High-Level Commission on
Health Employment
and Economic Growth

FINAL REPORT of the EXPERT GROUP

Richard Horton (Chair), Edson C Araujo, Haroon Bhorat, Saskia Bruysten,
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Abbreviations

ASHIP	Association of Statutory Health Insurance Physicians (Germany)
BMI	body mass index
CARICOM	Caribbean Community
CHW	community health worker
COPD	chronic obstructive pulmonary disease
CT	computerized tomography
CVD	cardiovascular disease
EC	European Community
EEA	European Economic Area
eHealth	electronic health
EHP	Emergency Hiring Plan
EMA	European Medicines Agency
EU	European Union
FDA	Food and Drug Administration (United States)
FTE	full-time equivalent
GCCN	Grameen Caledonian College of Nursing
GP	general practitioner
GDP	gross domestic product
HIC	high-income country
HRH	human resources for health
ICT	information and communications technology
ILO	International Labour Organization
IMF	the International Monetary Fund
INDC	Intended Nationally Determined Contribution
IPECP	interprofessional education for collaborative practice
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
ISIC	International Standard Industrial Classifications
IT	information technology
LMIC	low- and middle-income country
MOU	memorandum of understanding
mHealth	mobile health
MDG	Millennium Development Goals
MRI	magnetic resonance imaging
NGO	nongovernmental organization
NP	nurse practitioner
NPM	New Public Management
OECD	Organisation for Economic Co-operation and Development
P&T	posting and transfer
PET	positron emission tomography
PPP	purchasing power parity
PSI	Public Services International
RPL	recognition of prior learning
SDG	Sustainable Development Goals
TVET	technical and vocational education and training
UHC	universal health coverage
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	Office of the United Nations High Commissioner for Refugees
WHA	World Health Assembly
WHO	World Health Organization

Foreword

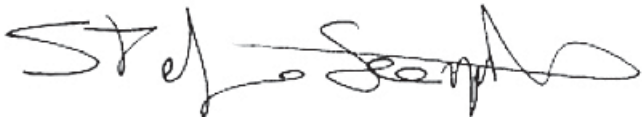
The United Nations Secretary-General, Ban Ki-Moon, established the High-Level Commission on Health Employment and Economic Growth in March 2016. Its task is to propose intersectoral actions to guide and stimulate the creation of health and social sector jobs to advance inclusive economic growth.

In support of the Commission's work, an Expert Group was convened to critically review the available evidence. Against a context of high and often growing inequalities and persistently high global unemployment; the Expert Group finds that effective investments in the health workforce could generate enormous improvements in health, well-being and human security, as well as decent jobs and inclusive economic growth.

Realizing the full potential of such investments will however, require radical reforms in the manner in which the health workforce is allowed to acquire the right skills and adapt them during ones working life as well as ensuring an adequate allocation of health workers across countries and an equitable distribution within them, with priority to primary and preventive care. It will also require a coordinated and comprehensive effort of health, education, finance, labour and foreign affairs sectors of government, together with civil society, the public and private sectors, trade unions and associations, institutions and academia.

We applaud the Expert Group for their landmark synthesis of the evidence and the key issues they have highlighted. The report reflects their much needed multi-disciplinary expertise, including economics, education, health, human rights, and labour. It makes the strong case that investing in the health workforce can accelerate progress across many of the Sustainable Development Goals. Its content, and the urgency for action it conveys, is a robust and articulate contribution to inform the Commission's scope of work and deliberations.

Gilbert Houngbo
Deputy Director-General for Field Operations and Partnerships
International Labour Organization



Stefano Scarpetta
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Executive summary

The advent of the Sustainable Development Goal era, in the context of new threats and instabilities to peoples worldwide, offers an ambitious agenda for revitalizing political commitments to human well-being—for future generations as well as our own. The High-level Commission on Health Employment and Economic Growth provides a special opportunity to design and implement a new policy framework across several sectors that are critical for sustainable development.

The relationship between wealth and investment in the health sector has been firmly established, as has the role of the health economy in stimulating inclusive economic growth and job creation. Now, there is emerging evidence that investment in a transformed health workforce has the potential to create the conditions for inclusive economic growth and job creation as well as for greater economic stability and security.

Evidence presented to the Expert Group does not support a business-as-usual approach. On the contrary, the opportunities to be realized depend upon radical reform – putting gender equality and women's empowerment at the centre of our thinking; transforming the education of health professionals; investing in rural training to reach the underserved; reappraising the contribution to be made by nurses, midwives, community-based health workers and other underutilized groups within the health and non-health workforce; paying greater attention to young people and their education needs to prepare them for decent jobs in the health sector; and more deeply considering the part to be played by technical and vocational education and training.

We propose to the Commission a five-year action plan (2016–21) to accelerate progress towards inclusive economic growth and universal health coverage. We recommend, first, that there must be a remedying of existing failures in planning and vision by investing in the skills of an expanding number of health workers, especially those focused on delivering primary and preventive care, and non-health workers. Second, that employment of this enlarged pool of health workers must be increased with the goal of achieving universal health coverage.

We have three key messages:

Message 1: Transforming and expanding the health and public health workforce, including reform of the skills and mix of that workforce, has the potential to accelerate inclusive economic growth and progress towards health equity.

Message 2: Achieving person- and community-centred universal health coverage by increasing employment, through the equitable distribution of decent jobs for health and non-health workers, will be a crucial foundation for inclusive economic growth and sustainable development.

Message 3: Reforming aid and accountability for health system strengthening with a focus on skilled health workers can initiate a new era of international cooperation and action for economic and human security.

We make **ten specific recommendations to the Commission**—on educational reform, workforce innovation, technological transformation, health workforce for growth, prioritizing women, guaranteeing rights, transforming aid, international migration, humanitarian crises, and information and accountability. We also identify **seven essential enabling actions**—for humanitarian settings, on migration, social protection, transformative technology, gender equality, financing and governance.

Our vision is to implement a five-year action plan (2016–21) for an expanded, transformed, interdependent and sustainable health workforce to accelerate inclusive economic growth and to ensure healthy lives, well-being, equity and economic security for all.

CHAPTER 1

Introduction

1. As we have watched the terrifying and tragic terrorist events in cities around the world; as we continue to observe violence and massive human displacement across the Middle-East; as we contemplate the aftermath and lessons of the Ebola outbreak in western Africa; as we grapple with the consequences of the epidemic of the Zika virus in Latin America; as countries respond to catastrophic natural disasters, such as Typhoon Haiyan in the Philippines; and as we struggle to adapt to the rapid demographic and epidemiological transitions across Asia, it is hard not to conclude that we are living in an age of insecurity.

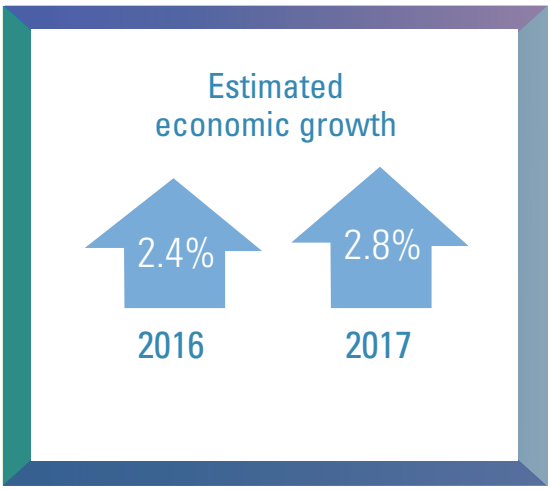
When faced with pervasive anxiety it is tempting to limit rather than widen the scope of our vision. We may prefer to retreat into isolation rather than embrace our interdependence. We may cleave towards more cautious solutions instead of bolder actions. Or instead, we might take this occasion of crisis as a moment for new thinking.

2. During the 400th anniversary of Shakespeare's death, it is worth recalling his remarkable wisdom. "The fault, dear Brutus, is not in our stars, but in ourselves." Here was Cassius explaining (in *Julius Caesar*) that we should not blame forces outside our control for our fate. Our future depends on our own free will, on our own decisions and actions. But if those decisions and actions are to prove sound, they clearly have to be informed by a full and accurate understanding of the predicaments we face. Politicians and policy-makers have never had such an abundance of information on which to base their judgements. Yet even in such an evidence-rich environment, errors can be made. The economic turbulence of the past eight years has its roots in human fallibility. Those years are a useful reminder that sometimes the orthodoxies that shape our thinking, the standard measures we use to influence our choices, can lead us into danger.

3. Conversely, surprising opportunities may be found in aspects of our lives we had hitherto judged unpromising. This report from the Expert Group to the High-level Commission on Health Employment and Economic Growth, chaired by President François Hollande (France) and President Jacob Zuma (South Africa), argues that health employment offers a new opportunity to accelerate inclusive

economic growth. (For our method of working, see Panel 1). It is an opportunity traditionally seen as a cost burden on the economy, one that is often thought to be inefficient and resistant to gains in productivity. But, in the evidence we have gathered, we conclude that the employment of all those engaged in actions whose primary intent is to enhance health (see Panel 2) can be an extremely attractive investment, not only to deliver health equity but also to strengthen and stabilize inclusive economic growth. This message comes at a critical political moment: the advent of the Sustainable Development Goals, the most ambitious global political commitments ever made to address major aspects of human well-being, universally and for future generations as well as our own. The aspirations of the Sustainable Development Goals are widely supported. What is less clear is how they will be delivered.

4. The World Bank estimated, in June 2016, that global economic growth is forecast to be 2.4% in 2016 and 2.8% in 2017 (*1*). The International Monetary Fund (IMF) has described the economic situation for developing and emerging economies as "challenging". Worse, the risks to this fragile future are serious—China's economic slowdown, lower energy and commodity prices, and strains in several emerging market economies may make any potential recovery all the more difficult to achieve. In 2016, the G20 Summit of finance ministers and central bank governors reinforced these concerns, emphasizing that the global recovery "falls short of our ambition for strong, sustainable, and balanced growth" (*2*). G20 minsters expressed their wish "to do more" for global growth. As the World Bank's *Global economic prospects* report noted, "the main cure for poverty is economic growth".



5. The impact of these forces on nations and communities is substantial. The International Labour Organization (ILO) estimates that the global employment outlook is set to worsen over the next five years (*3*). Global unemployment in 2015 stood at 197.1 million people and that figure is projected to rise in 2016 by 2.3 million to 199.4 million people. It will rise again in 2017 by an estimated 1.1 million people. The employment situation is especially challenging in developing and middle-income countries (where high population growth coupled with insufficient job creation is leading to rises in youth unemployment). The ILO also draws special attention to the association between unemployment, poverty, lack of social protection (including

health protection), loss of trust in governments and social unrest. Social unrest is now 10% higher than before the financial crisis, in line with global unemployment rates.

6. This period of economic turbulence comes at a time when the world is turning its attention to sustainable development, notably promoting inclusive economic growth, full and productive employment, and decent jobs for all (SDG 8). As the *Human development report 2015* concluded, "Work enables people to earn a livelihood and be economically secure. It is critical for equitable economic growth, poverty reduction and gender equality" (*4*). Indeed, jobs, when attention is paid to decent pay, job satisfaction, social protection and opportunities to improve individual skills and rights, are one of the most powerful engines for sustainable development. The argument goes beyond jobs. The notion of "work" captures an idea that goes further than simple employment to include care, creative and voluntary work.

PANEL 1

Methods used by the Expert Group

The Expert Group consisted of a mix of health, health workforce and economics specialists, recognizing the importance of the intersection between these disciplines to meet the Commission's ambitious objectives. The Expert Group met in person three times—to map out key areas of evidence and argument, to review our initial draft report and recommendations and to finalize our conclusions. We were fortunate to have considerable input into our work:

- the combined knowledge base and resources of ILO, OECD and WHO,
- the contribution of 17 Policy Briefs, written or commissioned by ILO, OECD and WHO,
- the regular inputs of the Commissioners (via a Contact Group),
- the results of two public calls for evidence,
- the results of a literature review completed by the Expert Group and its secretariat,
- the availability of new (as yet unpublished) evidence,
- contributions from several public fora and consultations, including at the 2016 World Health Assembly and a francophone intersectoral consultation in Abijan, Côte d'Ivoire,
- the inclusion of several case studies, published as vignettes within this Report, to illustrate some of our key themes.

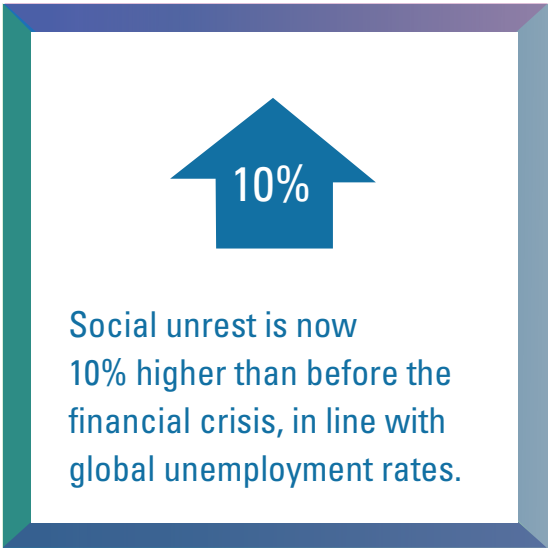
Although the Expert Group was working to tight deadlines, we provided two complete drafts of our report for consultation with the Commissioners. The discussions that ensued provided valuable further inputs into our work. We offer one caveat. In seeking answers to critical questions, we found that sometimes there was a lack of evidence. Moreover, inputs to the Expert Group occasionally conflicted. As one might expect, different contributors disagreed on the interpretation of evidence and on policy recommendations. The Expert Group hopes that its report will be seen as a document to provoke discussion and debate, as well as a summary of the available evidence.

7. The opportunity afforded by this Commission to promote economic and human security comes at an especially propitious moment. The world is embarking on a new era of development—the Sustainable Development Goals, which encompass broad multisectoral objectives, such as inclusive growth, decent jobs, health and education. We now understand better than ever the mechanics of development. As the *World development report 2013* noted, "Jobs are the cornerstone of economic and social development" (*5*). The symbiosis between work and development is well established, but perhaps underappreciated by governments. Linking the idea of decent jobs with health enables the Commission to articulate a new policy agenda that can unlock the potential of sustainable development. The *World development report 2013* emphasized that decent jobs are transformational for development because of the impact jobs have on living standards, productivity and social cohesion. Work enhances incomes, thereby giving opportunities for a further accumulation of health options and educational possibilities for a new generation of workers. The types of jobs needed depend on a country's stage of development, the quality of its institutions and its demography. The jobs agenda will therefore differ from country to country. A government will have to ask itself a series of questions. What are the best jobs for its development? Are there enough of those jobs? And what can be done to remove the constraints limiting those jobs? This Commission sought to study and make recommendations for one specific sector—health employment, linking it with inclusive economic growth, gender equality and improved health outcomes.

Linking the idea of decent jobs with health enables the Commission to articulate a new policy agenda that can unlock the potential of sustainable development.

8. But the global forces shaping conditions affecting the likelihood of achieving the Sustainable Development Goals are strong and not necessarily favourable. Our global community is undergoing an unprecedented rebalancing of power: political, economic, social and technological. That rebalancing is producing sometimes disturbing undulations and uncertainties—apprehension and doubt that may not only stall human advance, but might also trigger societal fracture, even social unrest. Ageing populations living with multiple morbidities in need of chronic medical and social care will put additional pressures on health and social protection systems. Climate change and ecological degradation will precipitate further displacement of populations, increasing international flows of migrants. And new threats to human security—especially from conflict, terrorism and the transmission of infectious diseases—will only add to global uncertainties and instabilities. A special concern is the international migration of health workers away from nations with significant workforce shortages. Over the past decade the number of migrant doctors and nurses working in OECD countries has increased by 60% (or 84% if one considers only countries with severe health workforce shortages) (*6*). While every person has the right to do all they can to improve their living conditions, socially irresponsible recruitment can worsen the situation in vulnerable countries.

9. The priorities for political leaders of all nations will likely be to deliver sustained employment and inclusive economic growth to create the fiscal space for further critical investments in human and physical capital. By inclusive economic growth, we mean "economic growth that creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and nonmonetary terms, fairly across society".[1] Formulating a high-quality, inclusive growth strategy led by health employment recognizes that work is not secondary to economic growth. Increasing decent employment and the skills of the workforce, together with coordinated actions to strengthen other key components of the health system (i.e. governance, health information, service delivery, and medicines and equipment), can have direct effects on economic growth. But a troubling question lingers over this ambition. Formulating a high-quality, inclusive growth strategy led by health employment recognizes that work is not secondary to economic growth. Increasing decent employment and the skills of the workforce, together with coordinated actions to strengthen other key components of the health system, such as governance, health information, service delivery, and medicines and equipment, can have direct effects on economic growth. But a troubling question lingers over this ambition.



1 www.oecd.org/inclusive-growth.

PANEL 2

What is health employment?

International standards guide the categorization of occupations and the industries in which people work. The International Standard Classification of Occupations (ISCO) and the International Standard Industrial Classifications (ISIC) enable the measurement of jobs in the health and social sector, either through an occupation approach or a sector approach. Labour force surveys limit the definition of employment to those working for "pay or profit". To understand the magnitude of "health employment", it is important to count not only those with specific health-related skills, but also a wider group of workers employed in the health and social work sector and in those industries that support the sectors.

ILO extends a broad definition of health workers, including those working within and outside the health and social work sector, both paid and unpaid. The OECD definition and data capture both people working in the health and social work sector and in various health occupations. It is narrower than the ILO definition in that it does not include unpaid workers. WHO defines health workers as all those "engaged in action whose primary intent is health" and collates data based on the International Standard Classification of Occupations, excluding some lower-skill cadres (e.g. personal care workers). These classifications and approaches generate variable results when quantifying health employment and health workers.

Estimates of the global health economy workforce vary according to the occupations or workers that are counted. The WHO method, counting those most directly engaged in providing health care, yields a figure of 43 million health workers in 2013. OECD, under its wider definition and approach, reports that in 2013, 58.5 million people were working in the health and social work sectors in OECD countries (accounting for 11% of all employment in OECD countries). Under the broadest definition of health workers, using combined ILO and WHO data, over 200 million people are estimated to be contributing to the health and social sectors globally in one way or another. This would include, for example, unpaid personal care work, private sector health employment, as well as cleaners and caterers supplied by service provision contractors.

More effort is needed to collect labour force data that would refine these estimates, but it is clear that the provision of health care requires a large, varied and growing workforce. The skills they bring to their work and the conditions in which they work make an important contribution to the realization of the 2030 Sustainable Development Goal Agenda.

CHAPTER 2

What can countries do to promote health employment and economic growth?

10. The results from investing in health, for both health and for the economy, are likely to be substantial.

The Commission on Investing in Health, led by a former Treasury Secretary of the United States of America and Chief Economist of the World Bank, Lawrence Summers, reported that around one quarter of economic growth between 2000 and 2011 in low- and middle-income countries resulted from the value of additional life years gained by improvements to health (*7*). This finding, which builds on the work of the *World development report 1993* and the 2001 Commission on Macroeconomics and Health, enabled Summers and his colleagues to look forward to a grand convergence in health: "We have the financial and ever-improving technical capacity to reduce infectious, child, and maternal mortality rates to low levels universally by 2035." Summers predicted that mortality in low- and middle-income settings could fall to levels presently seen in the best-performing middle-income nations. Philippe Aghion and colleagues have also explored the relation between health and economic growth (*8*). He and his colleagues found that between 1960 and 2000 improvements in life expectancy had a directly positive impact on per capita GDP growth.

11. Economic growth is mainly determined by increases in the quantity and quality of labour, capital stock, production and technology. However, the health sector is traditionally seen as a cost to the economy—an expense that has to be carefully controlled to protect opportunities for inclusive economic growth. There is no question that investments in health workers are critical for advancing health and health equity. Investing in health workers is one of the most optimal investments in public health. But the health workforce and health sector are rarely viewed as positive forces for inclusive economic growth. This view is misguided.

12. There is an emerging shift in understanding about the health sector. Health has an economy, an economic footprint and a labour market dynamics all of its own. Instead of health being mainly financed through public funds, there are increasingly diverse mechanisms of pricing, insurance and payment to sustain health systems (the distinction between who pays for health services and who delivers those services is important). And instead of a predilection with inputs into the health system, proper attention is now being paid to outcomes.

13. The economist, William Baumol, has had a profound, although controversial and contested, influence on the way economists see sectors such as health. Baumol developed the idea of "cost disease" in modern economies. Some industries will succeed in increasing their productivity (known as progressive sectors). They will accrue the resources to increase the wages of their employees. For those sectors where productivity gains are difficult to achieve (e.g. where human interaction is important in labour-intensive sectors, such as health care, or because those sectors are not making the most efficient use of human resources or technologies), wages will rise, but not because of productivity gains. Wages will rise to ensure that workers do not leave less productive sectors for higher productivity industries where wages are higher. If this happens in the health sector, the costs of health care would therefore rise because of this failure to improve productivity at the same pace as other parts of the economy—hence the idea of health as a "cost disease" to the economy and the notion that health might be a drag on economic growth.

14. If this argument is correct, it could be a major political and economic disincentive to invest in health. Earlier tests of the Baumol hypothesis in the health sector found robust evidence favouring the cost disease argument in a group of OECD countries (*9, 10*). But new evidence suggests that the Baumol effect may not hold when tested in a larger group of other countries, including low- and middle-income nations. A recent World Bank report has re-examined the links between health sector employment, health-care spending and economic growth (*11*). The findings of this report are exciting, although preliminary, and contradict conventional thinking. The analysis expanded previous tests of Baumol's cost disease argument in the health sector (based on OECD countries) to a larger sample of nations (including from low- and middle-income regions). The authors found that, contrary to Baumol's earlier findings, health expenditure is not driven by increases in wages in excess of productivity growth, thereby rejecting the cost disease argument. The report also estimated the contribution of health-care employment to the growth rate of other sectors, such as manufacturing. The authors found that potential productivity gains in the manufacturing sector, derived from greater health-care employment, can be large—mainly through improvements in population health outcomes, including the health status of people working in the manufacturing sector. Indeed, the effects of health-sector employment are significantly greater than, for example, financial development (*12*). Although these findings need confirmation, they provide an important and plausible new perspective on the value of investment in the health workforce.

Investing in health workers is one of the most optimal investments in public health.

15. These findings are also supported by additional research. Klaus-Dirk Henke, from the Technical University of Berlin, described how the health sector is an important contributor to exports and employment (*13*). In 2012, the health economy in Germany provided six million jobs. Between 2005 and 2012, 700 000 new jobs were created in the health economy—every seventh German is working in the health economy. Recent investigations by ILO find a similar employment effect in the wider economy of health care at the global level. The health sector's annual growth rate exceeded that of the manufacturing and service sectors. The health economy is an important stabilizing factor during economic slowdowns. Although the German national economy grew faster than the health economy in 2006 and 2007, in 2008 and 2009, as the national economy grew more slowly and even contracted, the health economy continued to grow unabated.

16. Christopher Pissarides, the 2010 Nobel Laureate in Economics, looked at where new jobs will come from in the coming decades (*14*). In OECD countries, for example, his view is that manufacturing jobs are unlikely to return as an important source of employment and economic growth. Instead, investment in services provides a powerful alternative source of growth, especially services for individuals and businesses. Many of these jobs will be relatively low-paid. It will therefore be essential to make these jobs more attractive and respectable for school leavers in order to decrease school drop-outs and to encourage school leavers to enter further education and training that will be personally and economically transformative. As a sector driven by research and technology, the health economy is well positioned to be one beneficiary of this workforce redeployment, while also being able to respond to the challenge of providing decent jobs.

17. Women's contributions to the health-care labour force deserve particular attention (*15*). Women play a crucial and underappreciated part in providing health care to families and communities. They are important drivers of the wealth, as well as the health, of nations. In one recent analysis, the financial value of women's contributions to the health system (in 2010) was estimated to be 2.4% of global GDP for unpaid work and 2.5% of GDP for paid work—the equivalent of US$ 3.1 trillion. Inclusive economic growth and sustainable development need women's economic, social, political and environmental inputs—which should be valued, counted, enabled and empowered. Demographic and epidemiological transitions will further drive demand for health and social care, which are major sources of employment for women. Yet women are currently severely disadvantaged in work. In most countries women work more than men. The *Human development report 2015* estimates that women contribute to 52% of global work. Yet labour force participation for women is far less than for men (50% versus 77%). Female participation in the labour force is shaped by cultural and social traditions. These traditions often seriously limit the part women can and should play in the health economy. Men dominate the world of paid work, while unpaid work is mainly provided by women because of persistent discrimination, disadvantage, and physical and sexual abuse. The health sector could play a far larger part in expanding and financing decent work opportunities for women. Across a sample of 123 countries, for example, women make up 67% of health and social sector employment compared with 41% of total employment (*16*). As Claire Mathonsi, Executive Director of the Businesswomen's Association of South Africa, noted: "
The marginalisation of women within a majority of formal industries is not only a national issue that needs to be addressed, but rather a worrying international trend that needs immediate rectification" (*17*).

Inclusive economic growth and sustainable development need women's economic, social, political and environmental inputs—which should be valued, counted, enabled and empowered.

18. Furthermore, creating jobs for young people in the health sector could be an important tool to address youth unemployment. As ILO has shown in its *Global employment trends for youth 2015*, global youth unemployment has stood at 13% between 2012 and 2014. Peak youth unemployment was seen in 2009 when 76.6 million young people were out of work. That figure declined to 73.3 million in 2014. Despite this slow improvement, two in five economically active young people are still either unemployed or even if working are living in poverty. It is not easy to be young in today's labour market. The health sector could be one important means of productive assistance. Offering young people better opportunities to move into a decent job in the health sector will require serious attention to secondary

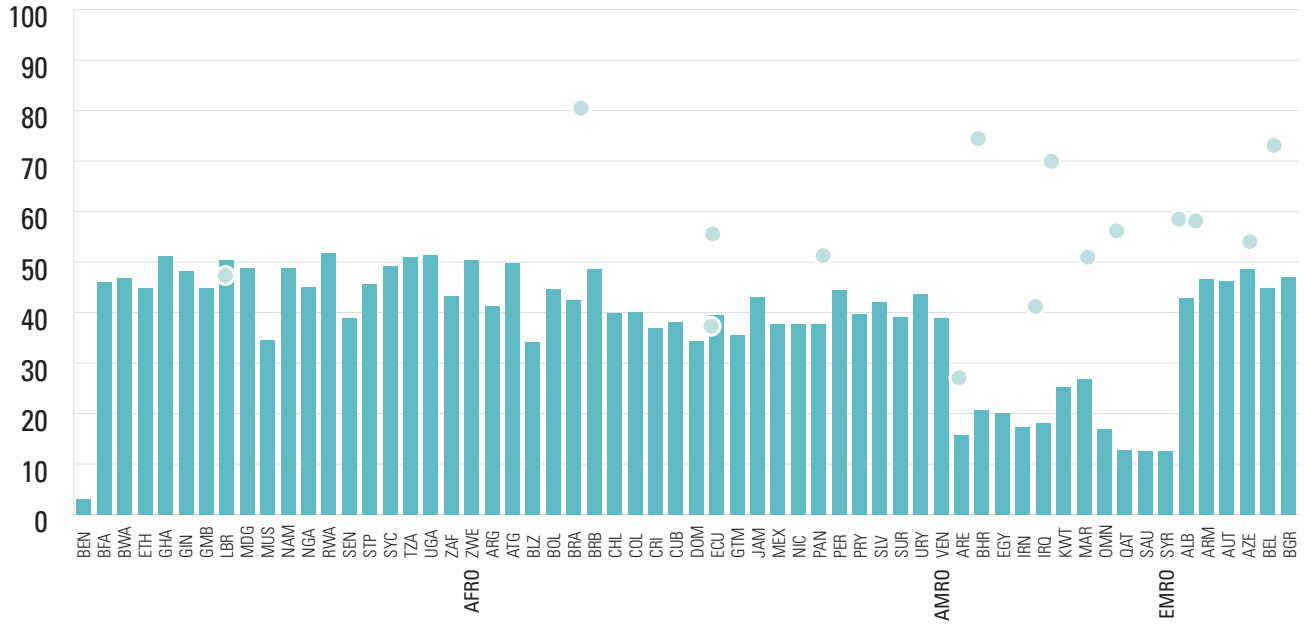
VIGNETTE 1

Recognizing, rewarding and protecting women's work in health

The health and social sector is a leading employer of women. In most countries, women's share of employment in the sector is significantly higher than their share of employment in the economy. Across a sample of 123 countries, women constitute an (unweighted) average of 67% of health and social sector employment compared with 41% of total employment (see figure below).

Significant occupational segregation occurs by gender, and institutionalized hierarchies are prevalent within and across occupations, particularly in terms of pay rates, career pathways and decision making power. A pay penalty has been identified for care-related work (i.e. from health care to childcare), with lower pay when compared with other occupations requiring similar qualifications (*1, 2*). Within health occupations, male health workers often earn more than their female counterparts (*3–8*). The health-care industry was also recently identified as having the highest gender pay gaps, adjusted for individual and contextual factors, among different industries studied in the United States of America (9). Moreover, women are underrepresented in positions of leadership and decision making relative to their share of employment in health (*10*). A 2016 survey of laws in 173 countries found that less than half explicitly mandates equal pay for work of equal value (41%) or nondiscriminatory hiring based on gender (40%) (*11*).

Women's share of employment in the health and social sector versus total employment (%), by WHO region, average values for the period 2005–2014



Source: ILOSTAT

Gender biases create systemic inefficiencies in health systems by limiting the productivity, distribution, motivation and retention of female health workers – a large share of the health workforce (*12*). Health systems also rely heavily on unpaid and informal work. Women's contribution to health care has been estimated to account for nearly 5% of global GDP, but almost half of this is unpaid and unrecognized (*13*). A study of volunteer caregivers in six African countries found that women made up the majority of such workers (81%), with only 7% of volunteers receiving a stipend (*14*). Costa Rica, Turkey, and the United Kingdom, among others, have recognized the important contribution of unpaid caregivers to health systems by introducing regulations that remunerate care work and provide employment-related protections (*15*).

Physical and sexual violence and harassment and, increasingly, targeted attacks, pose an important risk to health workers: one to which women, particularly those working informally, are especially vulnerable (*16, 17*).

The health sector plays a positive role in drawing women into employment. It could, however, make a larger contribution to the sustainable development agenda by addressing persistent gender biases and by fully recognizing and protecting women's work in the sector.

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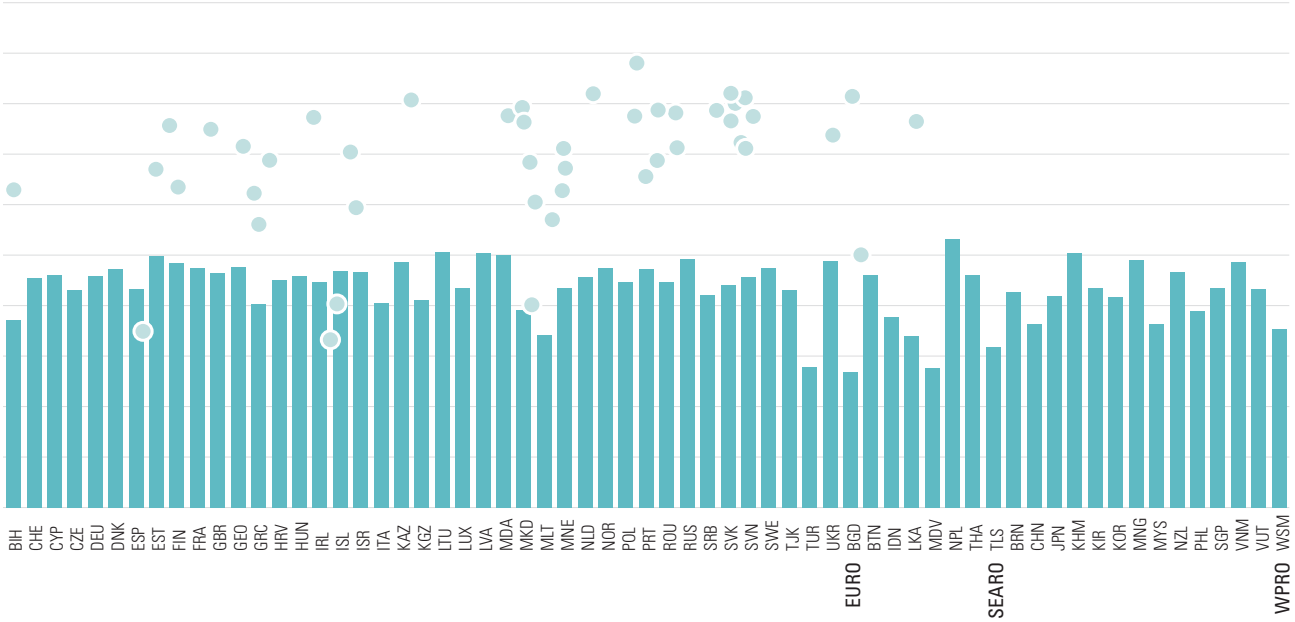


education—not only in terms of fundamental knowledge, but also in understanding the personal skills required, the social relevance of the health workforce, and the importance of promoting learning pathways in education as further means to securing decent jobs. Adequate schooling is an essential prerequisite for social mobility and for transforming the life opportunities of the young person. It is therefore deeply concerning that estimates from UNESCO indicate that universal primary education will only be achieved by the early 2050s; 95% lower secondary education by the late 2080s; and universal upper secondary education will not be achieved this century in low- and middle-income nations. These matters are inseparable from the issues of health employment and inclusive economic growth.

19. In sum, therefore, here is a new opportunity to consider in the quest to achieve sustainable and inclusive economic growth. There is a needs-based shortage of over 18 million health workers by 2030, largely concentrated in low- and middle-income countries (*18*). Rather than seeing this need as a cost to achieve universal health coverage, the best evidence available suggests that it can be a wise investment in the future inclusive economic growth of a nation. Health and inclusive economic growth are synergistic, not opposing, goals.

20. The Expert Group actively sought additional views through two calls for evidence. While there was full support for investment in health workers to achieve universal health coverage, many submissions to the Expert Group also called for stronger linkages between health, health employment and wealth. Investments in the health workforce will translate into improved efficiency and productivity. Benefits for economic growth will be especially high if new jobs are focused on community-based health programmes, primary prevention and self-care for chronic conditions, often in the context of physical and mental multimorbidities. These investments should be made in all countries and across a broad range of groups, including new cadres of health workers—doctors, but also nurses, midwives, community-based health workers, pharmacists, laboratory technicians, health service managers, social- care providers and other non-health workers, such as managers, IT specialists, and providers of cleaning and food services. Investments in such workers have the potential to deliver substantial efficiency gains for health systems, another example of how health workforce expenditures must not be seen as business-as-usual. A crucial message that emerged from our consultation was that workforce and health-service reforms and policy-making should be much more closely coordinated and integrated.

Six such pathways deserve special consideration by the Commission.

21. Investments in health employment could boost economic growth through several "pathways" (Figure 1). Six such pathways deserve special consideration by the Commission:

- **Health pathway:** The health pathway has two components—full-income and activity. The full-income pathway recognizes that health has intrinsic value to people. This intrinsic value has economic benefits through increased life expectancy and improved quality of life. The activity pathway refers to enhanced activity in the labour market and therefore increased economic productivity and advantages for family and social roles through optimal levels of health. These benefits are positive externalities of the health system—that is, the health system does not specifically set out to deliver these benefits, but does so through its spill-over effects.

- **Economic output pathway:** The health sector delivers direct economic value through its effects on the wider health economy—expanding the number of decent jobs, building skills through education and training, establishing infrastructure and facilities, purchasing supplies and technologies, and delivering communications and logistics. Expansion of the health economy means that the health sector is playing an increasingly important part in inclusive economic growth and, therefore, sustainable development.

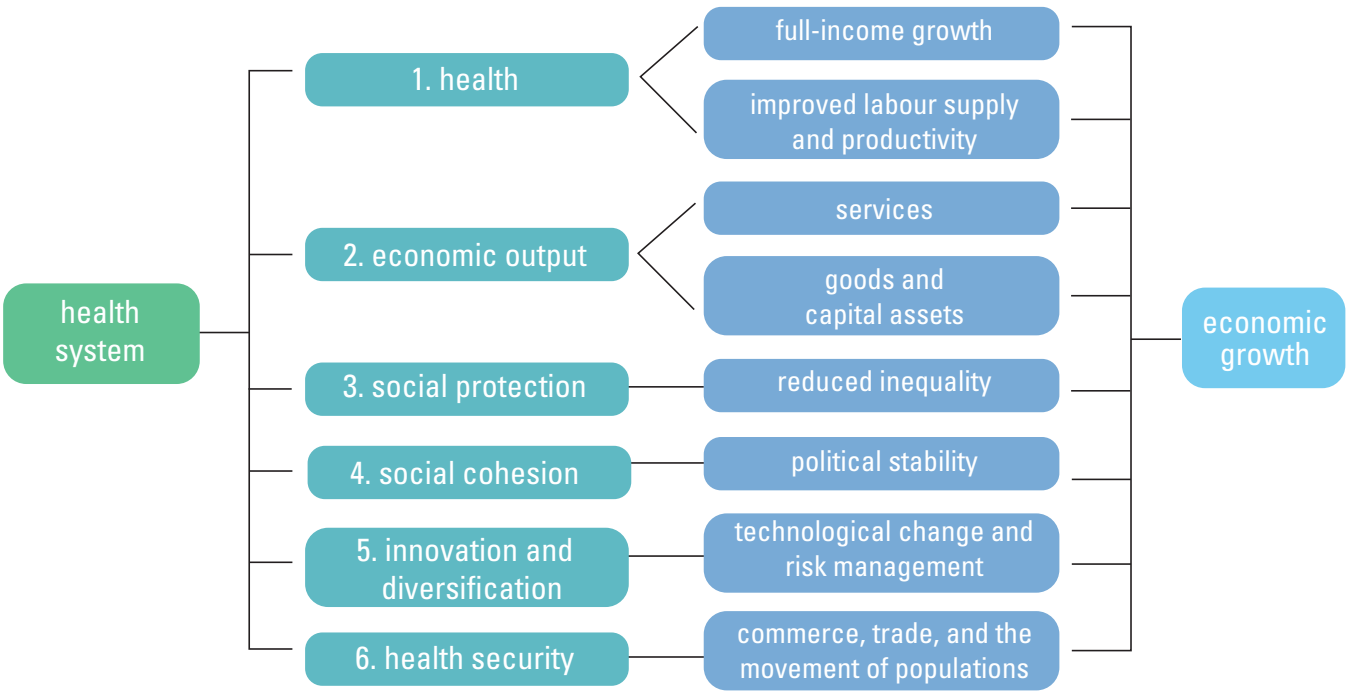
- **Social protection pathway:** Investing in decent jobs in the health sector contributes to social protection financing and thereby enhanced social protection schemes and systems—social protection against sickness, disability insurance, unemployment and retirement benefits, and financial protection from out-of-pocket and catastrophic health expenditures. Out-of-pocket health expenditures, for example, are estimated to tip 150 million people into poverty every year.

- **Social cohesion pathway:** Highly unequal societies are less economically productive societies (*19*). The political stability that is engendered by more equal societies is an important precondition for economic growth. The provision of universal health coverage is a vital element in delivering greater equity in society, together with decent jobs for women, young people and the poorest.

- **Innovation and diversification pathway:** Several countries have invested in their health economies as a deliberate means to increase economic growth—for example, by creating internationally competitive medical services that attract patient referrals from outside their own borders.

FIGURE 1

Pathways linking health employment to economic growth



- **Human security pathway:** Weak health systems, with inadequate numbers of health workers, perform poorly in the surveillance, prevention and control of infectious disease outbreaks. These outbreaks can quickly develop into pandemics that not only threaten the lives of many people in affected countries, but also can do great damage to their economies because of adverse effects on trade, travel, tourism and investment. Increasing health worker numbers and improving their skills will help to insulate emerging economies from such health-generated shocks. Investments in the health sector, for example, in epidemic surveillance and response, strengthen a country's ability to protect its people (and therefore its economy) from infectious diseases and other dangers (such as Ebola and Zika virus epidemics, but also epidemics of noncommunicable disease too). The Ebola outbreak in western Africa had huge effects on economic output, growth, trade and tourism, and food production (*20*). Investments in the health workforce and the health economy create the resilient health systems that are essential to protect nations from pandemics. Health workers are the human capital of human security. Investments in the health workforce must make guaranteed individual and global health security a priority concern—for peace, development and economic growth.

This Commission makes an explicit connection between SDG

3 GOOD HEALTH AND WELL-BEING

8 DECENT WORK AND ECONOMIC GROWTH

22. Investments in the health workforce are a critical foundation for sustainable development, as expressed in the 17 Sustainable Development Goals. This Commission makes an explicit connection between SDG 3 (health) and SDG 8 (decent work and inclusive economic growth). But there are additional connections and benefits for SDG 1 (poverty reduction through social protection floors), SDG 4 (education), SDG 5 (gender equality), SDG 10 (inequality), SDG 16 (social justice) and SDG 17 (multisectoral partnerships). These linkages are important since they suggest a broader set of indicators to monitor the effects of investing in the health workforce (*21*).

23. We emphasize that the health economy is not a static entity. It is undergoing continuous and substantial change. As a 2016 World Economic Forum report on the future of jobs recently made clear, health care is one of the most dynamic sectors in the economy today (*22*). Despite worldwide economic disruptions, health care is a growing sector with increasing levels of job security and compensation.

24. There is now an urgent need to move away from the notion of health and health workers as purely an expenditure to be contained. To the extent that resources are wisely spent, investing in health is a productive investment. In addition to rights-based arguments for health and health equity, we should also view the health workforce as an opportunity to create decent jobs and accelerate sustainable social and economic development—critically important returns to society. Health employment offers added benefits. For example, it can potentially smooth economic downturns and may act as a source of growth independent of the business cycle. It can provide resilience in times of crisis. And greater health employment increases the productivity of other sectors and amplifies the efficiency of non-health workers.

CHAPTER 3

Investing in the health workforce for inclusive economic growth

25. The *Global strategy on human resources for health: workforce 2030*, adopted by the 69th World Health Assembly in May 2016, aims to accelerate progress towards universal health coverage by ensuring universal access to health workers. The key global milestone is to create, fill and sustain an additional 10 million full-time jobs in the health and social care sectors in low- and middle-income countries by 2030.

In addition, WHO is seeking to reduce inequalities in access to health workers, reduce prequalification attrition rates in health professional training, implement its Global Code of Practice on the International Recruitment of Health Personnel to reduce dependency on foreign-trained health professionals, improve the effectiveness of aid for education and employment, and strengthen the rights and responsibilities of migrant health workers.

26. Despite progress, there is still an urgent need to strengthen political will and to translate those commitments into the mobilization of resources for (and transformation of) the health workforce. Chronic underinvestment in job creation and the appropriate education and training of health workers is reducing the quality and sustainability of health systems. Those weaknesses are compounded by mismatches between population needs and health worker supply, within and between countries. Put simply, where there are health workers, they are too often of the wrong kind with the wrong skills in the wrong place at the wrong time to make a difference to the lives of those in the communities they serve.

27. The latest estimates for the number of health workers come from WHO (Table 1) (*23*). In 2013, there were an estimated 43.5 million health workers in the world—9.8 million doctors, 20.7 million nurses/midwives and 13 million other health workers. By 2030, there will be an estimated 67.3 million health workers (a 55% increase)—13.8 million doctors, 32.3 million nurses/midwives and 21.2 million other health workers. But these numbers do not give an indication of need. There is a vitally important gender dimension to these figures too. In many countries, women's share of health sector employment is higher than their share of employment in the economy overall. According to evidence submitted, in a sample of 123 countries, women make up 67% of health and social sector

TABLE 1

Stock of health workers (millions), 2013[a] and 2030[b]

	PHYSICIANS		NURSES/MIDWIVES		ALL OTHER CADRES[c]		TOTAL HEALTH WORKERS		
	2013	2030	2013	2030	2013	2030	2013	2030	% Change
WHO REGION	N	N	N	N	N	N	N	N	
Africa	0.2	0.5	1.0	1.5	0.6	1.0	1.9	3.1	63%
Americas	2.0	2.4	4.7	8.2	2.6	3.4	9.4	14.0	50%
Eastern Mediterranean	0.8	1.3	1.3	1.8	1.0	2.2	3.1	5.3	72%
Europe	2.9	3.5	6.2	8.5	3.6	4.8	12.7	16.8	32%
South-East Asia	1.1	1.9	2.9	5.2	2.2	3.7	6.2	10.9	75%
Western Pacific	2.7	4.2	4.6	7.0	3.0	6.1	10.3	17.3	68%
Grand total	**9.8**	**13.8**	**20.7**	**32.3**	**13.0**	**21.2**	**43.5**	**67.3**	**55%**

a WHO Global Health Observatory.

b Forecast.

c Refers to the seven other broad categories of the health workforce as defined by the WHO Global Health Workforce Statistics Database, i.e. dentistry, pharmacy, laboratory, environment and public health, community and traditional health, health management and support, and all other health workforce categories. A multiplier for "all other cadres" was developed based on the values of countries with available data.

Since values are rounded to the nearest 100 000, totals may not precisely add up.

Source: World Health Organization (*23*).

employment, compared with 41% of total employment. In addition, health systems rely heavily on unpaid and informal work—work that disproportionately falls to women and girls because of the unequal division of care responsibilities at the household and community level. Gender biases also exist in paid employment. Often male health workers earn more than their female counterparts. What's more, women are underrepresented in leadership positions. Although women are drawn into the health sector, the health sector could and should make a larger contribution to sustainable development by addressing and valuing women's unpaid and paid work.

28. Taking account of the burdens of infectious and noncommunicable disease, together with needs for reproductive, maternal, newborn and child health, WHO has calculated a new health worker threshold for the Sustainable Development Goal era, that is a median density of 4.45 doctors/nurses/midwives per 1000 population. This density has been used to calculate health worker needs by 2030 (Table 2). The shortage in health workers is large—17.4 million, comprising 2.6 million doctors and 9 million nurses. The greatest needs are in Africa (a shortage of 4.2 million health workers) and South-East Asia (a shortage of 6.9 million health workers). Based on current trends, there will still be a deficit of 14 million health workers by 2030. Although the need and demand for health workers is high (as much as a total of 80 million by 2030), they will likely not be educated and distributed where they are most needed.

29. Given these figures, there is clearly an urgent need to remedy health system failures where the supply of health workers does not match the need or the demand. In particular, there is a need for a workforce educated for and deployed in primary care where the disease burden is increasingly characterized by patients living with chronic multimorbidities. An emphasis on health promotion

TABLE 2

Estimates of health worker needs-based shortages (millions) in countries below the SDG index threshold by region, 2013 and 2030

	2013				2030				
REGION	Physicians	Nurses/ midwives	Other cadres	Total	Physicians	Nurses/ midwives	Other cadres	Total	% Change
Africa	0.9	1.8	1.5	4.2	1.1	2.8	2.2	6.1	45%
Americas	0.0	0.5	0.2	0.8	0.1	0.5	0.1	0.6	–17%
Eastern Mediterranean	0.2	0.9	0.6	1.7	0.2	1.2	0.3	1.7	–1%
Europe	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	–33%
South-East Asia	1.3	3.2	2.5	6.9	1.0	1.9	1.9	4.7	–32%
Western Pacific	0.1	2.6	1.1	3.7	0.0	1.2	0.1	1.4	–64%
Grand Total	**2.6**	**9.0**	**5.9**	**17.4**	**2.3**	**7.6**	**4.6**	**14.5**	**–17%**

Since values are rounded to the nearest 100 000, totals may not precisely add up.

Source: World Health Organization (*23*).

and protection is critical, expanding the scope and impact of primary prevention services. The skills required by future health professionals will substantially differ from those required in the past. An emphasis on critical thinking—recognizing the need for lifelong learning, communication, technology and management—will be priorities. According to WHO and the World Bank, health workforce shortages mean that around half the global population lack access to quality health services. The resultant negative externalities of untreated sickness and disability will have direct adverse economic consequences on the countries concerned.

30. What steps should be taken to correct these imbalances and to achieve the full economic potential from investing in health? **First, there must be a remedying of existing failures in planning and vision by investing in the skills of an expanding number of health workers, especially those focused on delivering primary and preventive care, and non-health workers.** As demand has exceeded supply, creating an increasingly acute shortage of health workers, governments need to unlock the constraints to more and better education. This expansion is about more than investing in the global health professional labour force. It is also about transforming the education and mix of health professionals—doctors, nurses, midwives and community-based health workers, among others—to meet the health needs of their communities. It means harnessing technologies to do so. It means focusing on the distribution and quality of the health workforce (through curriculum and accreditation reform), as well as its quantity. And it means thinking carefully about the mechanisms of financing the expansion of the workforce (e.g. the balance between the roles of the private and public sectors). This expansion must include consideration of the non-clinical workforce, indispensable to the support of health professionals. Without adequate numbers of non-health workers, the goals set out here cannot be achieved—non-health workers comprise an estimated 60% of all formal health jobs globally.

In preliminary estimates, the ILO calculates that each health worker with an education in a health field is supported by 2.3 non-health workers. Moreover, the ILO estimates that there is a need for 57 million more decent jobs for non-health workers to deliver universal health coverage by 2030.

31. The centenary of the Flexner Report, which introduced a stronger scientific foundation to the university-based education of doctors, together with the Welch-Rose (public health, 1915) and Goldmark (nursing, 1923) reports, provided a unique opportunity to review the challenges of educating health professionals for the 21st century. A global independent Commission led by Julio Frenk and Lincoln Chen, concluded that, "all is not well" in the way health professionals are educated today (*24*). They wrote about "glaring gaps and inequities" and "our collective failure" to share dramatic health advances for all. Their critique was trenchant:

> *Professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates. 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 labour market; and weak leadership to improve health-system performance.*

They argued that the health and education systems needed to be thought about far more as an integrated whole, connecting the primary and secondary education of young people to the future of a country's health, well-being and economy. (See Figure 2) (*24*).

32. The Frenk/Chen Commission estimated that less than 2% of health expenditures worldwide were dedicated to health professional education, "pitifully modest for a labour-intensive and talent-driven industry". Even worse, there was scarce information or research evidence to draw on to guide reforms. But one could still discern three generations of reform: informative (a science-based curriculum focused on knowledge and skills and designed to produce experts), formative (problem-based learning, socializing students around values, designed to produce professionals) and transformative (adapting competencies to specific contexts, drawing on global knowledge, developing leadership, aimed at improving the performance of health systems, and designed to produce enlightened change agents). (See Figure 3) (*24*).

They advanced a distinctive vision:

> *All health professionals in all countries should be educated to mobilise knowledge and to engage in critical reasoning and ethical conduct so that they are competent to participate in patient and population-centred health systems as members of locally responsive and globally connected teams. The ultimate purpose is to assure universal coverage of the high-quality comprehensive services that are essential to advance opportunity for health equity within and between countries.*

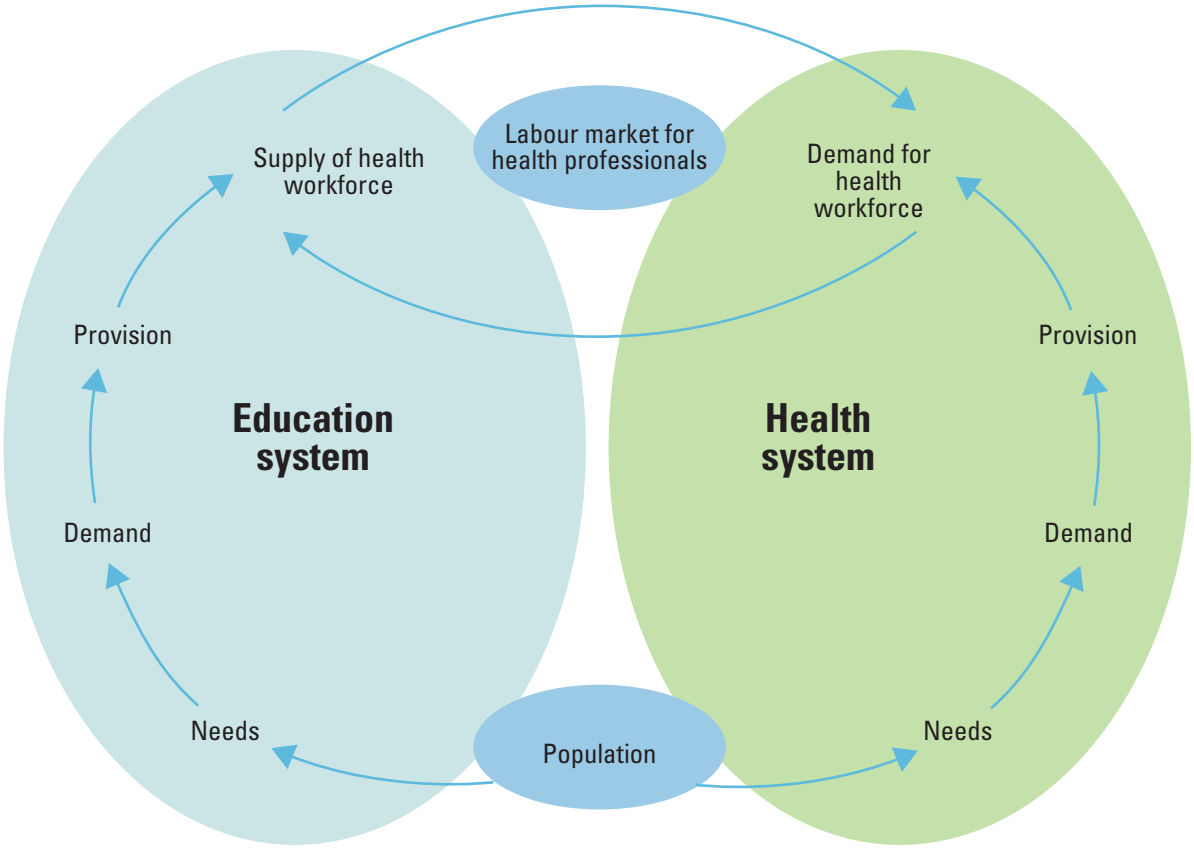
33. The realization of this vision requires instructional and institutional reforms, guided by two outcomes—transformative learning and interdependence in education.

Transformative learning is the result of instructional reforms and involves three fundamental shifts:

- from fact-based learning to searching, analysis and synthesis of information for decision-making;
- from professional credentials to core competencies for effective teamwork in health systems;
- from passive adoption of educational models to creating systems adapted to local needs.

FIGURE 2

An integrative systems framework for health professional education



Reproduced with permission from Frenk et al. (24).

Interdependence is the result of institutional reforms and emphasizes interaction. It also involves three fundamental shifts:

- from isolated education to health systems and learning pathways;
- from single institutions to partnerships and networks;
- from internal preoccupations to notions of the globalist of educational content and resources.

34. The Frenk/Chen Commission made ten recommendations for instructional and institutional reform.

Instructional reform

- Adopt competency-driven approaches to instructional design. (See Figure 4) (*24*).
- Adapt these competencies to changing local conditions, drawing on global resources.
- Promote inter-professional and trans-professional education that breaks down professional silos, while enhancing collaborative and nonhierarchical relationships in effective teams. (See Figure 5) (*24*).
- Exploit the power of information technology for learning.
- Strengthen educational resources, with special emphasis on faculty development.
- Promote a new professionalism that uses competencies as objective criteria for classification of health professionals and that develops a common set of values around social accountability.

To these points might also be added the importance of promoting diverse learning pathways, bridging programmes and apprenticeships, and recognizing the value of prior learning, certification and career guidance, and other innovative strategies to foster life-long learning.

FIGURE 3

Three generations of reform in health professional education

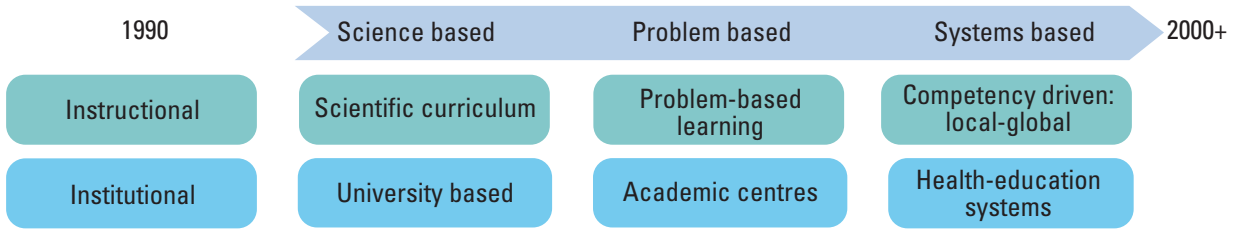


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FIGURE 4

Competency-based education of health professionals

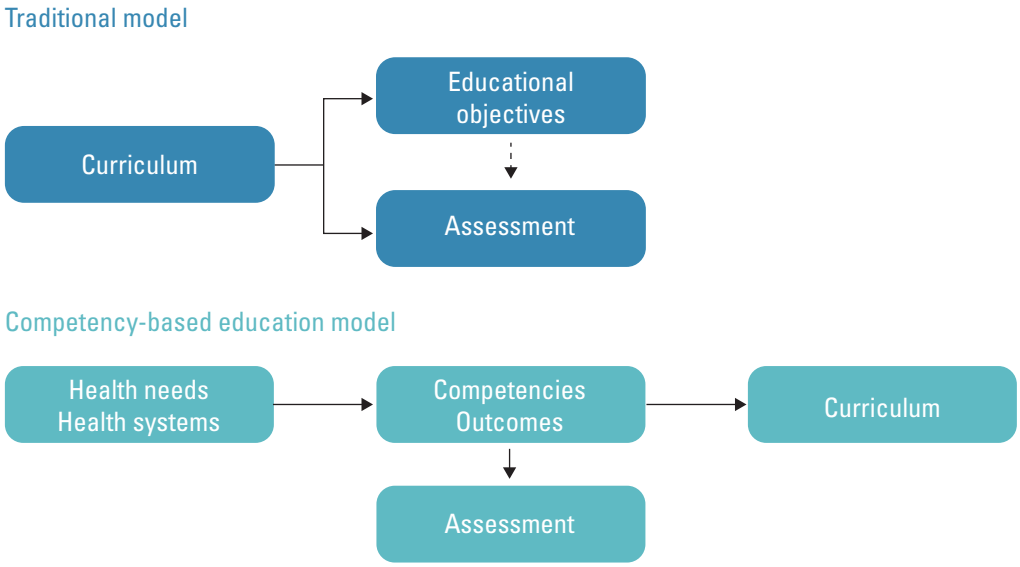

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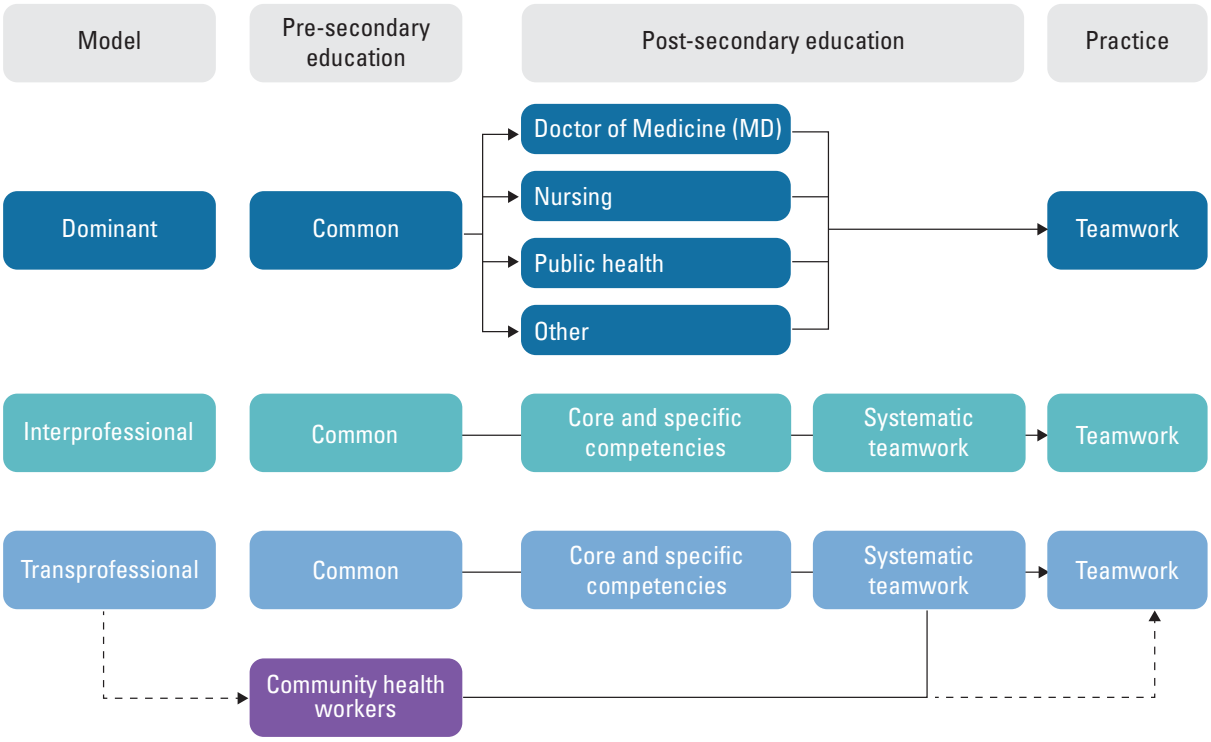
FIGURE 5

Models of inter-professional and transprofessional education



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Institutional reform

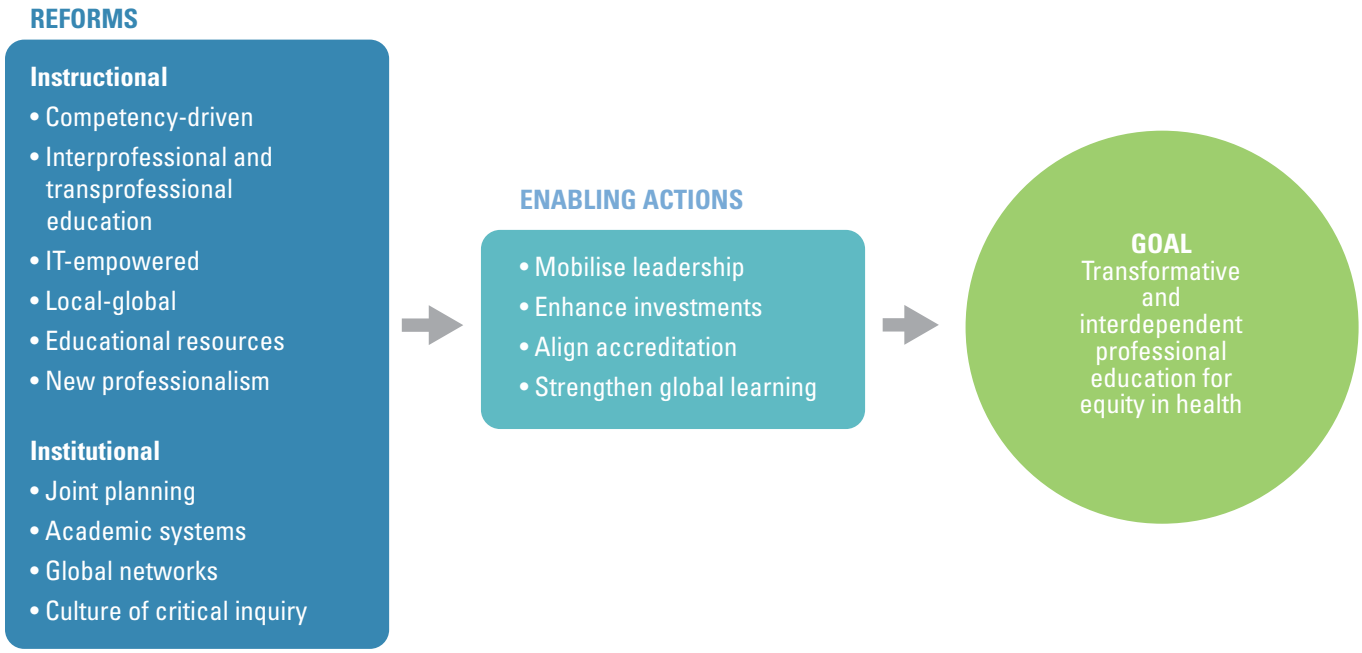
- Establish joint education and health planning mechanisms in every country that take into account dimensions such as social origin, age distribution and gender composition of the health workforce;
- Expand academic centres to academic systems, encompassing networks of primary care centres and hospitals;
- Link together through global partnerships, networks, alliances, consortia, multi-stakeholder governance, and joint planning and accountability mechanisms;
- Nurture a culture of critical inquiry.

35. These reforms will not be achieved without the fulfilment of four enabling actions:

- **Leadership**—both from within the academic and professional communities, and by political leaders in government;
- **Financing**—substantial investments in health professional education from all available sources, public and private;
- **Governance**—to ensure maximum results for any level of investment;
- **Evaluation**—to build a reliable global knowledge base for shared learning, focusing on quality as well as competence.

FIGURE 6

Frenk/Chen recommendations for reforms and enabling actions



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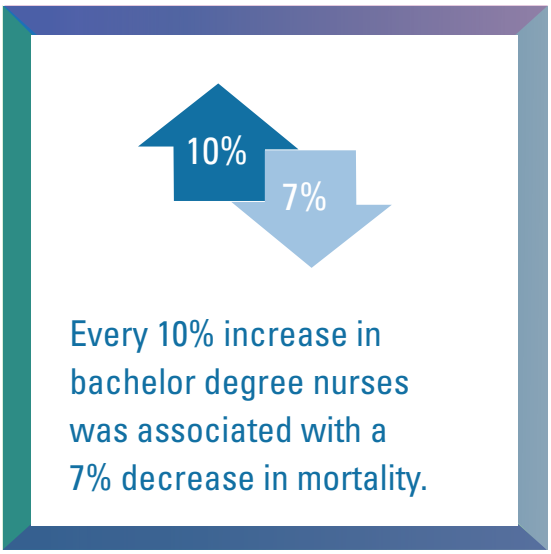
The goal for these reforms is universal health coverage, which includes provision of public health services (health promotion and health protection, as well as health-care services) and attacking the broader social determinants of health. (See Figure 6) (*24*).

36. Nursing and midwifery have been especially under-recognized to the health economy. Nursing plays a central role in ensuring safe and effective medical care. A high-quality nursing workforce delivers improved patient outcomes (*25–27*). Indeed, in one large European study, a better educated nursing workforce (measured as the proportion of nurses with bachelor's degrees) was associated with substantially lower patient mortality (*28*). Every 10% increase in bachelor degree nurses was associated with a 7% decrease in mortality. Patients looked after by nurses among whom 60% had degrees and who cared for no more than 6 patients each had a 30% lower mortality than patients in hospitals where only 30% of nurses had degrees and nurses cared for an average of 8 patients. Midwifery is also associated with more efficient use of resources and improved health outcomes for women and newborns. These positive outcomes depend on midwives who are educated, trained, licensed and regulated. Midwives must be fully integrated into the health system—in effective teams and with efficient referral mechanisms and adequate resources (*29*). The overwhelmingly proven contribution that nursing and midwifery services make to the pathways we have set out linking health to economic growth is compellingly clear. But the challenge is great. The International Council of Nurses held a consultation to inform the work of the Expert Group. The meeting included representatives from 47 national nursing associations. The discussion revealed the workload pressures and poor quality working environments that are critical issues to address if universal health coverage, and the economic advantages that would follow are to be delivered. Evidence also points to opportunities for prioritizing the deployment of interprofessional primary care teams of health workers, avoiding the pitfalls and cost-escalation of specialist and tertiary care. This strategy requires harnessing the potential of community-based health workers within these teams.



37. A further question relates to the role of the private sector in the education of health professionals. The growth of unregulated private sectors in the medical and nursing education arena has been flagged as a major threat to high-quality universal health coverage (*30*). In India, private medical schools have often been set up under political pressure. As Mohan Rao et al. have concluded "the shortage of available doctors is partly due to the failure of the Medical Council of India to set and monitor standards". Many of these private medical schools have grossly inadequate facilities, shortage of qualified faculty and poor-quality education. They are not evenly distributed across the country. And the cost of private medical education is high. Indeed, private medical education has become a "lucrative business". Graduates of these private schools are rarely attracted into the public sector, again diminishing the opportunity to achieve universal health coverage. Brazil has also seen a large expansion in private medical education (*31*). The

private sector is now responsible for educating over half of all medical students in the country, which is raising concerns about the quality and equity of health care. Many of these same concerns apply to nursing education, and perhaps even more so since nursing schools have often been neglected more than medical schools. For example, in India, Kenya, South Africa and Thailand, the private sector is playing an increasing part in nurse production (*32*). Again, there are pervasive concerns about the quality of nurses emerging from these private schools. As is the case for doctors, strategies are needed to ensure that nurses are educated to meet the service needs of their communities. In evidence received by the Expert Group in its public consultations, there is widespread concern that regulation is frequently inadequate to protect and advance the quality of health professional education.

38. One important lesson of the diverse public and private arrangements for health professional education is that market forces play an important and neglected part in shaping educational opportunities for health workers (*33*). Too often those responsible for guiding the evolution of health systems pay little attention to the effects of these market forces. For example, policies that invest in producing primary care practitioners will fail if they do not create incentives for retention and development. Putting primary care professionals into poorly rewarded and dilapidated working environments will not create the correct market signals to support a policy of primary care prioritization. In their analysis of the economics of health professional education and careers, Barbara McPake and colleagues pointed to both public and market failures, and drew four important conclusions:

As is the case for doctors, strategies are needed to ensure that nurses are educated to meet the service needs of their communities.

- Economic incentives are vitally important for shaping the education of health professionals.
- Most countries manage these economic incentives poorly—the consequence is an overspecialized workforce that undermines efforts to build an effective, high-quality, primary health-care system.
- There are opportunities for public investment in health professional education to be more efficient and effective.
- Although the demand for qualified health professionals has never been higher, the evidence suggests that liberalization of education markets provides "important grounds for caution in encouraging the private sector to fill the gap".

39. The Frenk/Chen Commission called for a global social movement to advance their vision and recommendations. Since their report was published, in 2010, there have been several endorsements, additions and refinements to their findings. Universal access to primary care can be achieved by training and deploying a wide range of primary care health workers—not only doctors, but also, for example, advanced medically trained clinicians. Adding qualified health workers without addressing issues of distribution will have little impact. Public and private medical and nursing schools need to pay more attention to their social accountability mandate. Part of social accountability means active efforts

to recruit students from underserved communities in order to solve inequities and address local health priorities. Securing a rural pipeline of health workers is crucial—the flow in the production and retention of health workers in rural and underserved areas. Health professional representation on policy and regulatory bodies must be balanced with public representation, to ensure that professional interests are not dominant. There should be an expansion of rural and community-based health professional training. Private investment in health professional education should be encouraged providing there is strong and effective regulation. A so far neglected role for government is to ensure the equitable distribution of health workers to underserved areas. All countries, but especially OECD countries, should educate a sufficient number and an optimal mix of health professionals to address their domestic needs, without relying on the education and resources of other nations.

40. Second, employment of this enlarged pool of health workers must be increased with the goal of achieving universal health coverage. Expanding employment opportunities, for health professionals and other workers employed in ensuring the provision of health care, requires creating sufficient skills and jobs, according to the needs of both rural and urban communities—to provide available, accessible, acceptable and high-quality care for all. WHO has calculated that the median density of health workers (doctors, nurses and/or midwives) needed to meet the needs-based shortage by 2030 is 4.45 per 1000 population. More will have to be done to foster employment in rural areas and other underserved communities. But the "ask" is not simply about hiring more health workers. We envision a future where the demand for decent jobs in the health sector will be expanding. Countries should be ready to grasp this opportunity. But at present the major limitation is a lack of skills to meet the coming need.

We envision a future where the demand for decent jobs in the health sector will be expanding. Countries should be ready to grasp this opportunity.

41. Employment opportunities must be based on the principle of decent jobs—promoting more jobs, securing rights at work, ensuring social protection and establishing means for social dialogue. Poor working conditions are a major disincentive for attracting and retaining health professionals. Improving health service delivery and, consequently, inclusive economic growth from health workforce investments will not be possible unless proper attention is paid to decent working conditions. The key issues to address include:

- ensuring adaptable working time arrangements, equal opportunities and pay, career paths, and the recognition and compensation of unpaid care work, mainly done by women, due to lack of skilled workers in formal employment;
- poor wages and benefits;
- absence of social protection;
- unsafe working conditions;
- absence of career planning and development opportunities;
- quality of daily living (e.g. accommodation and transport);

- professional/personal isolation and burnout;
- rural and other allowances to incentivize meeting community needs;
- the need to take on multiple jobs to make up for poor salaries;
- lack of access to necessary equipment and resources;
- inability to influence the conditions of work;
- avoidance of age discrimination;
- lack of voice for health workers and their organizations.

The returns on investment from the provision of decent work are substantial—reduced costs associated with staff turnover and health gains from more effective health care. Social dialogue—negotiating terms and conditions of employment through collective agreements—is critical if these objectives are to be delivered.

We are advocating a new model of education and employment for the health workforce...

42. What we are proposing is not business-as-usual. We are advocating a new model of education and employment for the health workforce, one specifically optimized to serve the underserved and leave no one behind, while increasing efficiencies in health-care delivery and strengthening the conditions for inclusive economic growth. Our recommendations around transformative, competency-based, interprofessional education; the training and equitable distribution of health workers from (and in) underserved communities; the power of technology to accelerate change; and developing the skills for lifelong learning are designed to create a workforce adapted to meet the rapidly changing needs of populations worldwide, notably to address the growing burden of noncommunicable diseases. Furthermore, these recommendations aim to respond to a necessary shift from health and education systems designed for treatment to systems designed for prevention—the only way to sustainably address the emerging demographic and epidemiological challenges facing all countries.

43. One outstanding question is the desirable mix of health workers to be achieved in any particular setting. This is where there needs to be far closer integration between systems of education and health. A recent trend has been to see community-based health workers as an important solution to health workforce shortages (*34*). For example, a High-Level Panel on Strengthening Primary Health Care through Community Health Workers concluded that "cadres of trained Community Health Workers (CHWs) can play an important role in increasing coverage of essential health-care interventions and enhancing the resilience of health systems to crisis" (*35*). This panel, led by the Prime Minister of Ethiopia and the President of Liberia, concluded that there is a strong case for investing in community health workers as a component of primary care. Some countries, such as Nigeria with its investment in Community Health Extension Workers, are already discovering innovative means to expand their health workforce. In South Africa, the creation of Clinical Associates, a new cadre of mid-level health worker, has expanded opportunities to assess and diagnose patients, prescribe treatments and conduct minor surgery—all under physician supervision. Clinical Associates

VIGNETTE 2

Community health workers

The term "community health workers" is used largely in a nonspecific manner within the global health community. It is used in reference to a diverse typology of lay and educated, formal and informal, and paid and unpaid health workers. The definition of CHWs in the International Labour Organization (ILO) International Standard Classification of Occupation (ISCO) is itself broad, identifying these workers as providers of "health education, referral and follow-up, case management, basic preventive health care and home visiting services to specific communities" (*1*).

Widely differing policies relating to CHWs scope of practice, their education and their relation to health systems, as well as blurred boundaries with other cadres delivering service at the community level have undermined efforts to systematically assess their contribution when considered as a homogenous group.

The support for CHWs and their integration into the health system, in particular, remains uneven across and within countries. Programmes are fraught with numerous challenges, including poor planning, unclear roles and education pathways, multiple competing actors with little coordination, fragmented and disease-specific training, donor-driven management and funding, tenuous linkage with the health system, poor coordination, supervision, quality control and support, and underrecognition of their contribution (*2*).

Several systematic reviews and studies have, however, demonstrated the effectiveness of various types of CHWs in delivering a range of preventive, promotive and curative services related to reproductive, maternal, newborn and child health (*3–5*), infectious diseases (*6*), noncommunicable diseases (7, 8) and neglected tropical diseases (*9*). In parallel, other systematic reviews have identified the most effective policy approaches for a successful integration of health workers in health systems. Approaches include providing CHWs with predictable financial and nonfinancial incentives, frequent supervision, continuous training and embedding this work in health systems – with clear roles and communication channels for CHWs (*10–13*). There is also significant evidence that delivering essential health services through CHWs may represent a cost–effective approach in some contexts (*14, 15*).

Building on existing evidence, work is underway to develop WHO Guidelines on Health Policy and System Support for Community Health Workers. The forthcoming WHO guidelines will provide recommendations on the definition, education, regulation, remuneration, performance, quality and career advancement prospects of these cadres.

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help to solve the problem of a doctor shortage in districts and communities. Other mid-level cadres of non-physician providers are found in at least 46 countries. Recent work on task sharing/shifting has shown that care outcomes are not significantly different than those achieved by physicians. Expanded access to interventions provided by all levels of community health workers could prevent

3 million deaths annually. Investment in a community-based health workforce in sub-Saharan Africa can produce an economic return of 10 to 1. Community-based health worker programmes succeed when they are integrated into primary health-care teams, focus on prevention, and when those workers are adequately trained and provided with decent jobs.

44. This exploration of additional new cadres to the health workforce demands attention not only to health professional education, but also to technical and vocational education and training (TVET)—a long neglected issue for building a workforce that can deliver universal health coverage. The current model of health workforce education and training will not be able to meet future health worker requirements. The result of policies that focus only on health professionals in the traditional sense is that poor communities in rural settings will continue to suffer. TVET is more inclusive, accessible and gender sensitive. Therefore, national plans for the health workforce should take account of the potential that TVET offers. TVET should be prioritized by governments, thereby catalysing a transformation of the health workforce by endorsing, promoting and implementing diverse learning pathways.

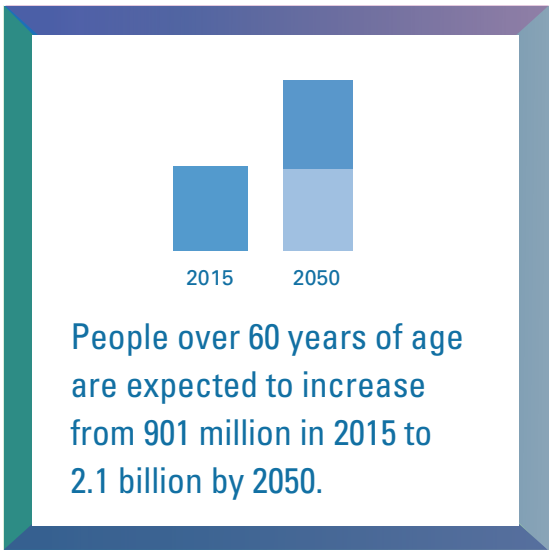
The current model of health workforce education and training will not be able to meet future health worker requirements.

45. The evidence favouring the deployment of community-based health workers is strong (*36*). Community-based practitioners are cost-effective, improve coverage of essential services and contribute to saving lives (*37*). What is often lacking are models of how to deploy such workers. In evidence to the Expert Group, South Africa provided two useful examples—ward-based primary health-care outreach teams and school health services. The former focuses on strengthening the district health system, delivering community-based health services and addressing social determinants of health. School health services seek to provide a comprehensive school health programme, enabling access to health promotion and health education services, thereby enhancing the learning potential for children. The workforce needed to provide these school services includes optometrists, audiologists, speech therapists, oral hygienists, physiotherapists, psychologists and occupational therapists. What we can therefore say with some confidence is that where community-based health workers are part of integrated multidisciplinary teams, supported by a well-functioning health system, they provide important opportunities to accelerate progress towards universal health coverage, especially by focusing on prevention.

46. The provision of community-based health workers, while certainly an important option to consider, should not displace efforts to strengthen higher-level health professions. Community-based health workers play a complementary part that is of special importance in rural settings where access to more qualified health professionals might be limited. Investment in nursing and midwifery, in particular, is another opportunity to be seized. The roles of nurses and midwives are increasingly being expanded to fill physician shortages, improve access to quality care and provide supervision to fellow health workers. But for nurse recruitment and retention to be successful, it will be necessary to invest in healthy workplaces as well as a health workforce. This was emphasized in evidence presented to the Expert Group by the Royal College of Nursing in the United Kingdom of Great Britain and Northern Ireland.

47. Moreover, the mix of skills and competencies in the workforce needs to be tailored to the population being served. One example is providing appropriately trained human resources for older populations (*38*). People over 60 years of age are expected to increase from 901 million in 2015 to 2.1 billion by 2050. The health and social care needs of this rapidly enlarging population are substantial—more health workers trained to serve the needs of an older population, better integration of health and social care, and diversification of the health and social care workforce to promote functional ability and meet and coordinate the often complex care demands of this population. Countries will need to adopt appropriate policies for the right number of health workers, the right knowledge and skills for these workers, the right locations for them to deliver care, and the right roles for them to assume. They will need to review these policies on an ongoing basis.

48. Additional cadres of health workers who are traditionally overlooked in estimates of health workforce needs should also be considered. They consist of a large group of "hidden" non-health workers who deliver indispensable services to the health sector. ILO estimates that worldwide there are 106 million paid non-health workers and 57 million unpaid non-health workers (mostly female long-term care workers providing care to older relatives), all of whom work to support the health sector. Their working conditions can be precarious. Often these workers are low-paid women, subcontracted, working outside normal office hours, and doing physically demanding work. Another such group is pharmacists. The International Pharmaceutical Federation estimates that US$ 0.5 trillion in global health spending could be saved through the responsible use of medicines. Pharmacists have a direct contribution to make to these efficiency savings. Pharmacists reduce the use of inappropriate or unnecessary medicines. And they also provide direct services to deliver universal health coverage—diagnosis and treatment of minor ailments, immunization, smoking cessation, avoiding hospital admissions and visits to primary care physicians and specialists, and preventing illness-related absences from work. Community pharmacies are an attractive and cost–effective platform for delivering primary care services, especially in rural areas where other health professionals might be scarce.



49. What part should the private sector play in the expansion of employment opportunities for health workers? Evidence submitted to the Expert Group by Public Services International (PSI), a global trades union federation representing 20 million women and men across 150 countries, argued strongly that public sector provision is the only way to ensure universal health coverage. Even small fees can decrease uptake of health services for the poorest households. Government investments, PSI argued, led to better health outcomes. In addition, PSI concludes that public–private partnerships "are an expensive and inefficient way of financing infrastructure and services, since they conceal public borrowing, while providing long-term state guarantees for profits to private companies".

50. The Expert Group received direct evidence of these concerns in action from Dr Aaron Motsoaledi, Minister of Health of South Africa, representing one of the co-chairs of this Commission. Minister Motsoaledi introduced his National Health Insurance for South Africa White Paper in December, 2015. His Ministry has been working to meet the commitment of Section 27 of the South African Constitution—namely, "Everyone has the right to have access to health-care services...The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of...these rights." But he has described the intense difficulty of meeting his objective because of an increasingly active and disruptive emerging corporate private health sector. In hearings held by South Africa's Competition Commission in early 2016, evidence was presented showing how private sector companies were increasing health-care costs, undermining quality of care, creating supply-induced demand for surgical procedures, and damaging the doctor–patient relationship through overly prescriptive and intrusive medical schemes. Dr Motsoaledi's anxiety, which he also signalled to the Competition Commission, is that unregulated commercialization threatens his efforts to create a fair system that will make access to health care possible for all South Africans. In his view, both private and public health-care sectors need substantial reform if universal health coverage is to be attained. OECD and WHO have amply confirmed his concerns. In their own investigation, they concluded that

> *South Africa's private hospital prices are expensive relative to what could be predicted given the country's wealth...South Africa's private hospital price level is ranked the least affordable among all countries analysed...Prices are likely to be expensive for 90% of South Africans.*

The private sector has to be energetically engaged as we think about health employment.

When Dr Motsoaledi reiterated his concerns during a technical briefing at the World Health Assembly in 2016, WHO Director-General, Dr Margaret Chan, offered her support, emphasizing that, "there is a difference between greed and profit".

51. The Expert Group is deeply concerned by the evidence and experience shared by Dr Motsoaledi. We also share the concerns of PSI. But it is important to underline that the "private sector" is not one single monolithic entity. The private sector is highly diverse and does not only include corporate health providers. It also includes faith-based services, other not-for-profit voluntary groups and individual practitioners. The private sector cannot be ignored. In Africa, for example, the private sector accounts for around 80% of total economic output. In global terms, the size of the private sector economy is likely to be 3–4 times larger than the public sector economy. In health, the position is approximately reversed. Public financing accounts for 66% of total health expenditure in OECD countries. But in non-OECD countries, the private sector's contribution to health is far higher—around 56% in 2013 figures. Indeed, one can observe a clear gradient of private sector involvement in health care—rising from 36% in high-income economies, to 43% in upper-middle income economies, to 66% in lower-middle income economies, before falling again to 56% in low-income countries. In other words, the private and public sectors are intimately entwined. Indeed, the private sector has to be energetically engaged as we think about health employment.

52. We are clear that private financing for health is not a reliable solution for financial risk protection as part of universal health coverage. But the best available evidence suggests that a good quality and accessible public health sector will lead to a private health system with similarly desirable characteristics (*39*). Instead of pitting competing ideologies about private and public sectors against one another, our task should be to keep the goal of universal health coverage firmly in mind, ensuring that whatever mix of public and private health provision exists meets that goal, all within a well-designed, regulatory framework that guides the quality and costs of care. Those regulatory frameworks will partly be concerned with care providers based on standards for premises, practice and professionals (best implemented through independent authorities). In the case of private providers, regulation of standards may not be sufficient. Markets alone cannot guarantee that private providers will offer the services a community needs. Therefore, additional incentives (or regulation) will be needed to encourage private providers to offer appropriate services. The public and private sectors cannot be seen as mutually exclusive entities within the health system—each depends on the other, and the performance (and regulation) of one is often closely linked to the other (*40*).

53. There is no ideal prescription for the perfect mix of public and private health-care provision. Each country will have to make choices to manage its public and private sectors with the overall objective being universal health coverage. Governments should choose policies to cover the performance of the sector as a whole, and not the individual parts. Effective regulation is required to ensure compliance with health-care standards by both public and private providers. Governments should identify incentives—financial, legal and professional—to encourage private and public health providers to deliver on public goals, making equity and quality more important measures of success, while addressing the very real dangers of a predatory corporate health sector.

The public and private sectors cannot be seen as mutually exclusive entities within the health system.

54. One option to consider further is the social enterprise (or social economy organization). In evidence submitted to the Expert Group, one of our Commissioners, Muhammad Yunus, makes the case for the concept of a "social business":

> *These are problem-solving businesses, each one designed to solve one particular type of problem. A social business is a non-dividend company to solve human problems. It addresses the problems unattended by the profit-making enterprises with their own technologies and business methods.*

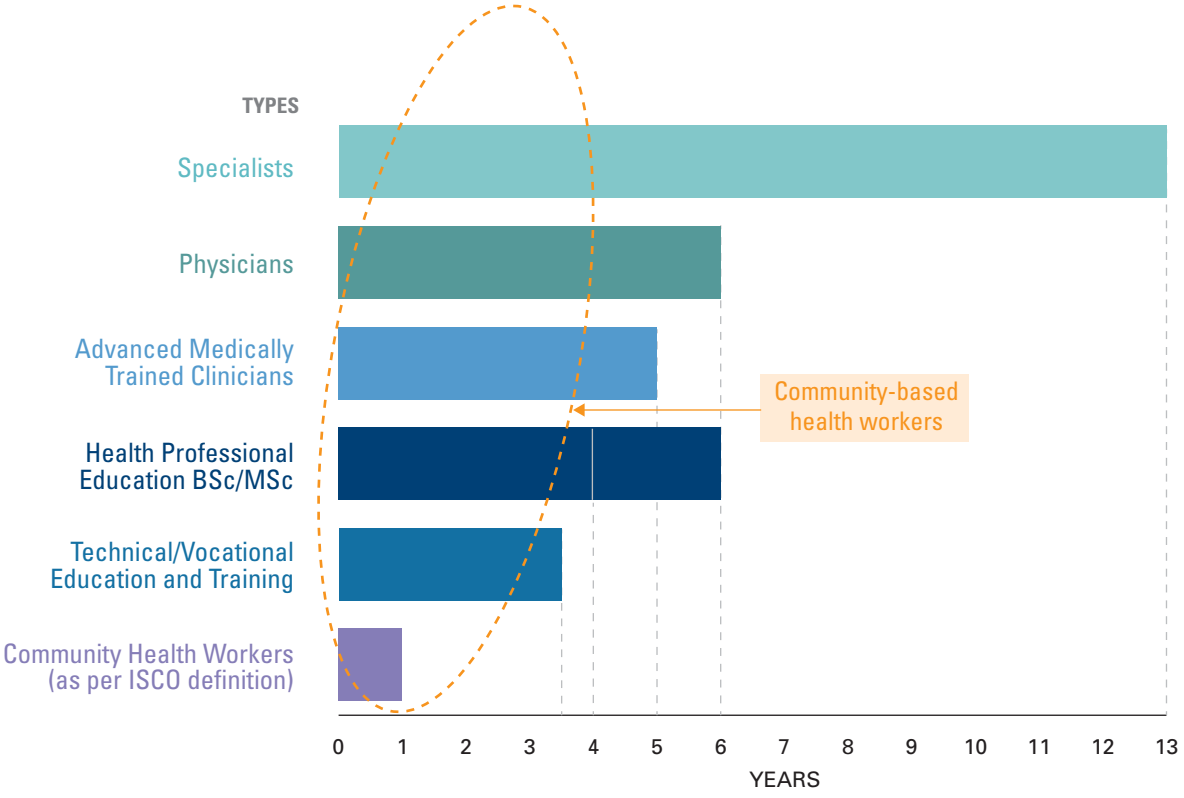
Investors recoup their outlays and receive a charge to cover the opportunity cost of the capital they have invested, but they do not share in the profits of the business, which are reinvested internally. In relation to health employment, one example is the Grameen Caledonian College of Nursing (GCCN). This partnership is between the Glasgow Caledonian University, a public institution incorporated in the United Kingdom, the Nike Corporation, a large multi-national and the Grameen Healthcare Trust, a health-care delivery network. The GCCN began in 2010 and was created to address severe shortages of qualified nurses, especially in rural areas, in Bangladesh. It provides nursing education for underprivileged girls whose parents are borrowers from the Grameen Bank, which itself is a social business offering financial services to the poor. GCCN promotes high training standards and has received approval from the Bangladesh Nursing Council to grant a diploma

in nursing and midwifery. Tuition is low-cost but sufficient to cover running costs and to recoup the initial capital investments. Low-cost financing to support tuition fees for students can be provided from the Grameen Bank, thereby promoting an ecosystem of mutually reinforcing social businesses. The first 38 nurses from GCCN graduated in 2013.

55. Each nation will be starting its investment in health employment at a different moment in its evolution toward sustained economic growth and a more advanced human development. Figure 7 depicts the potential categories of health worker to consider and their approximate time to qualification and availability to enter the workforce. In a Francophone, intersectoral consultation held in Côte d'Ivoire in June, 2016, representatives from 23 nations drew particular attention to financing and fiscal space for investments in education and employment, the economic impacts of those investments, international mobility of health workers, the need for institutional reforms and stronger governance, and investment in education and career development for health professionals. Despite these and other challenges, this new evidence points to a potential double dividend. By investing in health education and employment, governments will not only achieve greater health equity through universal health coverage, they will also deliver greater inclusive economic growth, stability and efficiency.

FIGURE 7

Optimizing the health workforce



CHAPTER 4

Challenges and enabling actions

56. The Expert Group has identified seven critical areas that will determine future conditions for the success of its recommendations—humanitarian settings, migration, social protection, transformative technology, gender equality, financing and governance.

Humanitarian settings

57. Designing policies to take advantage of opportunities for economic growth and health equity through investments in the health workforce cannot take place in the abstract. The reality for many countries is that they are struggling with these issues in the face of ongoing conflicts, post conflict reconstruction, or predicaments of current or recent natural disasters (i.e. floods, famines and earthquakes). Around a billion people today live in fragile settings, and more people are displaced now than at any time since the Second World War. Unless our recommendations take account of these complex realities, we risk overpromising and underdelivering. To take two examples: maternal and child health—almost two-thirds of maternal deaths and over half of under-5 deaths take place in settings of humanitarian crisis. And many countries in partnership arrangements with development cooperation agencies are affected by conditions of fragility. These countries often lack the capacity for providing basic health and social care to their citizens. They are seeing health workers, who are commonly first responders in emergencies, and health facilities become new targets in conflict (*41, 42*). They may have weak capacities for leadership and stewardship. And the state may lack the legitimacy to implement reforms, no matter how much compelling evidence is available. Simply applying policies that do not incorporate these challenges will lead to failure, disappointment and demotivation. Specifically, generations lost through conflict may exacerbate shortfalls in human resources for health. And health workers need preparedness training and direct protection themselves.

58. The goal, therefore, must be to incorporate policies that seek to contribute to the rule of law, peace, stability and security, as well as investing in the health workforce—adapting concept to context. The consequence of this dual track in policy is to understand the context as well as adopt pragmatic and realistic timeframes for success. Engaging civil society and nongovernmental

VIGNETTE 3

Health workforce in humanitarian settings

Humanitarian crises are increasing globally. The number of political conflicts has doubled over the last decade (*1*).The number of people displaced due to conflict during this period has also increased: from 37 million to 60 million (*1*). Moreover, between 2008 and 2014, 184 million people were displaced due to natural disasters (*1*).

Health-care and emergency relief workers are of particular importance in humanitarian settings. They are also especially vulnerable. Despite well-established international humanitarian law, health workers have been targeted in Afghanistan, Central African Republic, Colombia, Democratic Republic of the Congo, Iraq, Libya, Mali, Myanmar, Nigeria, Pakistan, Somalia, South Sudan, Sudan, the Syrian Arab Republic, Thailand, Turkey, Ukraine, the West Bank and Gaza Strip, and Yemen (*2*).

The first consolidated data on attacks on health care in emergencies were recently published by WHO (see table). In 2014–2015, there were 594 reported attacks on healthcare resulting in 959 deaths and 1561 injuries in 19 countries and territories with emergencies (*3*). Sixty-two percent of the attacks were reported to have intentionally targeted health-care settings (*3*). Almost 40% (228) of all attacks during the two-year period took place in the Syrian Arab Republic; with 352 deaths among health personnel (*3*). By December 2015, only 43% of public hospitals in the Syrian Arab Republic were reported to be fully functional (*2*).

Many health and emergency aid workers in complex emergency settings have little or no training before their deployment (*4*). During the Ebola outbreak, shortages in human, medical and material resources led to major breaches in medical protocols (5). Fatality rates among health workers in all three countries were markedly higher than for the general population: 1.45% in Guinea, 8.07% in Liberia and 6.85% in Sierra Leone (6). Approximately 8% of the 164 doctors in Sierra Leone had died within 10 months of the Ebola outbreak according to WHO estimate (*7*).

In May 2016, the United Nations Security Council unanimously adopted Resolution 2286 (2016) strongly condemning attacks against medical personnel and facilities in humanitarian settings (*8*).

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organizations may be crucial adjuncts to working with states. Taking account of the special part that women play will be important too. But, as one commentator has noted, "success stories are rare" (*43–45*). Humanitarian crises may evolve in unexpected ways. Capacity shortages may be a greater hurdle to overcome than funding gaps for the health workforce. There are unlikely to be few quick wins in these settings. The recent agreement of an outcome statement at the first World Humanitarian Summit, held in Istanbul in May 2016, "putting health at the centre of collective humanitarian action", was one encouraging indication that this issue is being taken far more seriously today. It now needs to be built on with specific commitments and actions. The escalating dangers to global health security provide one motivating force to do so.

Number of reported attacks on health care in emergencies in 2014 and 2015

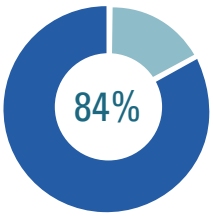
Countries and territories (n = 19)	Attacks (n = 594)	Percentage of total
Syrian Arab Republic	228	38%
West Bank and Gaza Strip	53	9%
Iraq	43	7%
Pakistan	43	7%
Libya	33	6%
Ukraine	32	5%
Central African Republic	30	5%
Yemen	22	4%
Sudan	20	3%
Afghanistan	19	3%
South Sudan	18	3%
Guinea	11	2%
Democratic Republic of the Congo	10	2%
Nigeria	10	2%
Colombia	7	1%
Somalia	6	1%
Liberia	5	1%
Sierra Leone	3	1%
Myanmar	1	0%
Total	**594**	**100%**

Source: World Health Organization (*3*).

Migration

59. Migration of skilled health professionals—internationally and internally within countries—is rising. As Jean-Christophe Dumont and Gaétan Lafortune describe in their policy brief to this Commission (46), in OECD countries in 2010/11, foreign-born doctors accounted for 22% of medical practitioners, compared with 20% in 2000/01 (the figures for nurses were 14% and 11%, respectively). The two sending countries supplying most of these doctors and nurses were India and the Philippines (the latter trains nurses with the express intention of migrating). Africa is also increasingly seeing its health professionals leave. The number of doctors and nurses departing countries with serious health workforce shortages in order to work in OECD nations has increased by 84% over the

past decade. Dumont and Lafortune make three recommendations. First, those countries losing skilled health professionals must do more—and be supported by the international community to do more—to retain their health workforce. Part of the answer lies in improving job satisfaction, salaries, working conditions (including dignity and respect), in-service training, career opportunities, rewards for outstanding performance, housing and social protection, together with reducing work-related stress and deprofessionalization in what can sometimes be highly bureaucratic management structures. Clearly, there will be substantial costs to these measures. (Public Services International made the point to the Expert Group that strong trade unions and collective bargaining in sending countries "is central to reducing outward migration".) One recent study of retention of graduates from surgical training programmes in eight African countries over almost 40 years revealed illuminating findings (*47*). Between 1975 and 2012, 84% of surgical trainees were retained in their home country of training. The authors conclude that, "the expansion of national surgical training initiatives are an effective solution of addressing the surgical workforce shortage...and counter long-held arguments regarding brain drain in the region".



Over the past decade, there has been an 84% increase in healthcare workers departing countries with shortages to work in OECD nations.

60. Second, destination countries could do more through better longer-term planning of their own health worker needs—that is, achieving greater self-sufficiency in workforce numbers. More accurate forecasting may require increasing the domestic education of doctors and nurses to accommodate shortfalls currently being filled by overseas graduates. There may be less costly solutions. For example, Aarathi Prasad reported recently that the curricula of some Indian medical schools are so closely modelled on western medical systems that doctors educated in those schools were better trained to work in the West than at home (*48*). Retention of health professionals is therefore closely linked to the instructional education reforms we outlined earlier in our report. There are, however, good examples of countries (i.e. Norway), which have been able to recruit and retain health workers in rural (sometimes remote) areas (*49*). Lessons from these successes deserve wide promulgation. Such lessons include exposing students to rural settings early in their training, establishing specific recruitment and relocation services, building social awareness, presenting rural work as a personal and professional challenge, delivering competitive remuneration packages, implementing exchange and rotation schemes, ensuring good rural infrastructure, offering strong career development opportunities (education, training and research), and providing domestic and social support. For low-income settings, WHO has given valuable guidance (50). For example, targeted admission policies to enrol students with a rural background, locating health professional schools outside cities, and ensuring that curricula include rural health topics. The experiences of countries with vastly differing economic circumstances often share common themes (*51*).

61. Finally, Dumont and Lafortune make the intriguing suggestion that more ambitious approaches might be considered—such as a multilateral commitment

to the WHO Global Code of Practice on the International Recruitment of Health Personnel, citing the Paris climate agreement as an example. Even if these recommendations were fully implemented, there would still be health worker migration—for example, in times of crisis, such as the migration of health professionals from the Syrian Arab Republic during the past five years of civil conflict. Defending the rights of migrants is essential—facilitating their opportunities to work in host countries through mutual recognition of health professional qualifications and accreditation (perhaps using new technologies to allow health workers to carry portable electronic records of their accreditation status), and providing decent working conditions, a living wage, opportunities to join trade unions and continuous professional development. There are good examples of mutual recognition agreements already in action—for example, across the 20 member states of the Caribbean Community (CARICOM) and across the European Union.

62. In addition, bilateral agreements between countries might be a more immediately practicable step to address issues of migration. One policy offers special possibilities: resource transfers from destination to sending countries. We encourage ILO, OECD and WHO to work together to negotiate the framework of an agreement on resource transfers to those countries that lose health professionals through international migration. Such mechanisms might include sponsorship programmes for human resources, competency development programmes and mutual benefit packages, such as health technology transfers. The Expert Group received a proposal from Susana Barria and her colleagues at People's Health Movement. They emphasized that "taxpayers in sending countries have a right to reimbursement for their investment in training health workers who migrate out of the country". They suggest a multisectoral action plan to financially mitigate this inequitable transfer of resources, for example, through cost-sharing or via a Global Health Resource Fund. They continue: "A sustainable funding mechanism could be supported through a targeted system of taxation involving ring fencing tax paid by trained health workers who migrate to high-income countries...and returning a negotiated percentage to the sending country...." A part of that reimbursement would be allocated to the education of health workers. In addition, internal migration through the employment of health workers into higher-paying jobs (e.g. at nongovernmental organizations) can weaken the health system by withdrawing talented local health professionals and non-medical workers from that system. This matter too should be an urgent consideration for ILO, OECD and WHO.

Bilateral agreements between countries might be a more immediately practicable step to address issues of migration.

Social protection

63. Based on many countries' experiences and research, ILO considers that one of the most important tools to progressively realize the human right to health and social security is universal health protection—defined by ILO as, "a series of public or publicly organized and mandated private measures against social distress and economic loss caused by the reduction of productivity, stoppage or reduction of earnings, or the cost of necessary treatment that can result from ill health". This includes financial protection, addressing out-of-pocket payments and income replacement in times of sickness to avoid poverty and vulnerability. Practically, health protection refers to inclusive national legislation that guarantees access to health care, maternal care and prevention to meet

VIGNETTE 4

Health professionals seeking refuge: enabling practice

The number of refugees worldwide is currently at its highest since the end of the Second World War (*1*). Afghanistan, Somalia and the Syrian Arab Republic are the source of over half of all refugees under the mandate of the Office of the United Nations High Commissioner for Refugees (UNHCR) (1). Globally, the Syrian Arab Republic is the largest source country of asylum seekers. As of 2016, UNHCR had registered almost 5 million Syrian refugees, with most in Turkey (2 748 367), Lebanon (1 048 275), Jordan (651 114) and Iraq (264 589) (*2*).

Syrians are also the largest group of asylum seekers to the European Union member states. Of the 145 100 first time Syrian asylum applicants in Europe, 60% were registered in Germany (*3*). Numbers continue to increase.

Though there is limited reliable data on the skills and education of asylum seekers, the International Monetary Fund estimates that 21% of Syrian asylum seekers who arrived in Germany between 2013 and 2014 had tertiary education (*4*). There is also evidence, that in general, Europe has been receiving the richer, more skilled and educated among Syrian migrants and refugees (*5*).

Skilled health workers constitute a substantial proportion of Syrian migrants and refugees, though the precise number is unknown. Prior to the conflict, the Syrian Arab Republic had roughly 31 000 doctors. Fewer than half remain. In general, receiving countries are not equipped to allow health professional refugees to practice (*6*). Many countries, such as Germany, are themselves facing significant shortages of skilled health personnel.

The German Recognition Act, also known as "the law to improve the assessment and recognition of professional and vocational education and training qualification acquired abroad", was adopted in 2012 to streamline and extend recognition of highly-skilled non-EU and non-European Economic Area (EEA) personnel (*7*). Between half and three-quarters of all applicants are from the health sector (*8*).

the criteria of availability, accessibility, acceptability and quality. Core principles should also be applied, such as equity, adequacy, solidarity in financing, and coherence with social, economic and employment policies. When applying solidarity-based efficient financing mechanisms for universal health protection, such as taxes and/or contributions, sufficient funds can be generated for employing an increasing number of skilled health professionals. Currently, however, there are large deficits in social protection schemes and systems in many low- and middle-income nations. Therefore, one critical enabling action for the Commission to consider is how to raise social protection floors, build consensus and promote action around the implementation of suitable social protection mechanisms within countries.

Key elements of the legislation (*7*):

- It made the European Professional Qualification Directive (2005/36/EC applicable to citizens from all countries (not limited to EU/EEA and Switzerland).
- When medical training does not correspond to German standards, the competent agency can take into consideration work experience and/or request the applicant to take an assessment test.
- The applicant may be granted a two-year provisional licence to practise medicine while continuing the recognition process.
- Refugees can submit their application from their home country.

In October 2015, Germany's Bundestag adopted the Act on the Acceleration of Asylum Procedures, allowing immigrant doctors to work in refugee centres, alongside certified physicians, without the required German licence (*6*). According to the German Medical Association, it is estimated that over 1500 Syrian physicians are now working in Germany, with 319 approved and registered in 2014 alone (*6*).

Scotland provides another example related to the integration of health professional refugees. The Bridges Programmes, supported by the Scottish Government and the United Kingdom's General Medical Council, provides language training, access to medical and academic curricula as well as work placement in health facilities while health professional refugees complete the recognition and licencing process (*9, 10*).

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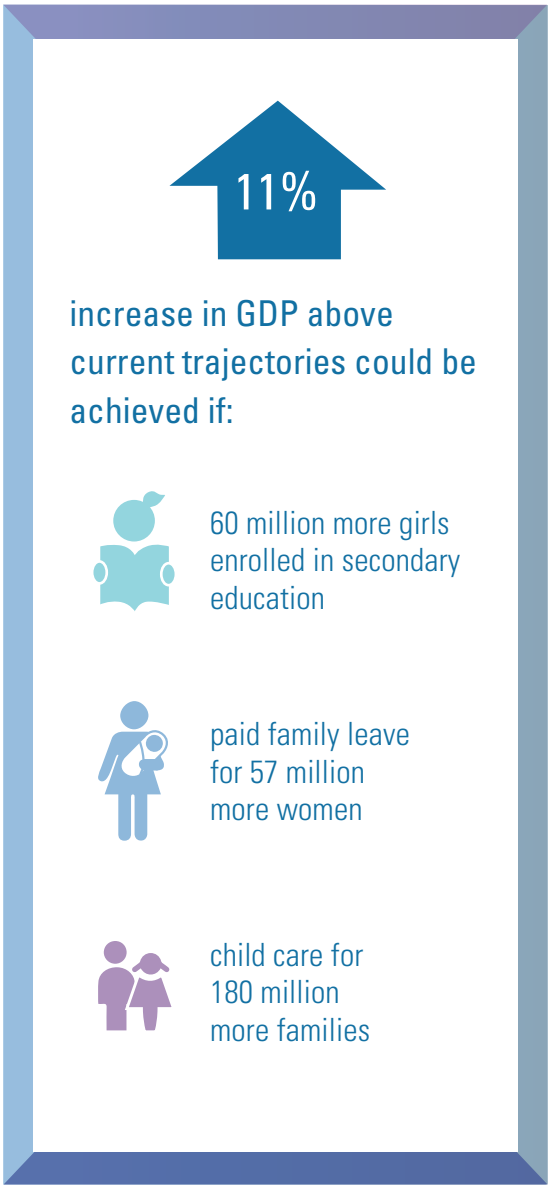
Transformative technology

64. Digital technologies have the potential to accelerate reforms in health professional education and lifelong learning, enhance access to health systems, improve the responsiveness of those systems to the needs of individuals and communities, and to alter the relationship between patient and professional (in the patient's favour). Technology can indeed be truly transformative. A range of opportunities can be considered—e-learning, electronic health (eHealth) and mobile health (mHealth), social media, massive open online courses, webcasts, podcasts, high-fidelity simulation, decision-support tools, electronic medical records, electronic systems for disease surveillance, civil registration and vital statistics, and laboratory and pharmacy information systems. These technologies can substantially broaden the reach of health systems, even in the

face of health worker shortages in remote and inaccessible areas. They also strengthen collaborative teamwork and accountability and facilitate person-centred approaches to care. In one example reported to the Expert Group, mPowering Frontline Workers described their focus on providing mobile training content to community-based health workers. Training for community-based health workers is often inaccessible or ineffective, and yet it is these very workers who offer prospects for rapid acceleration towards universal health coverage. Community-based health workers need a core training package to provide the information they require to manage increasing patient demand and expectations. At the same time as WHO is reviewing competencies for such roles, mPowering is developing high-quality, openly licensed training content for community-based health workers and governments.



65. However, as Robert Bollinger and colleagues have pointed out, there are many obstacles to overcome before fully realizing the potential of technology to fill the health workforce gap, including lack of Internet access and ICT infrastructure for two thirds of the world's population, costs of connectivity, lack of electricity supply, insufficient numbers of experts in health information technology, lack of computer literacy among health workers, resistance to change among existing educators and health system managers, and an absence of evidence that investments in technology deliver cost savings and productivity gains, let alone improved health outcomes (*52*). And introducing new technologies will not be without its own effects. Will new technologies reduce or increase the number of health professionals required to deliver health services? What will be the impact of new technology on the work of existing health professionals? Will new cadres of health professionals be created (e.g. data managers)? What new organizations will need to be invented to adapt to these technologies? What might be the unforeseen political consequences of introducing new technologies? Evidence to answer these questions is lacking. The effects of digital technologies on the health workforce, although potentially positive, remains unclear. It is essential that the evolution of digital technology in health be carefully monitored to ensure that opportunities are seized and barriers are overcome.

Gender equality

66. The contribution of women to health, health equity and the economy has been vastly underestimated (*53*). This message is a core argument in our report and not a peripheral observation. Gender equality is a central objective of the Sustainable Development Goals, and it should be a central objective of whatever recommendations are made by the Commission. The evidence for the importance of gender equality is compellingly clear. One example. The success of Norway's economy is often attributed to the discovery of oil. In fact, the trigger for Norway's rapid economic growth owed far more to the entry of women into

the labour market. One recent study concluded that if countries matched the historical progress towards gender parity achieved by their best-in-region country, US$ 12 trillion could be added to global GDP by 2025 (*54*). This figure represents an 11% increase in GDP above current trajectories. The roadmap to achieve this massive return on investment would require 60 million more girls enrolled in secondary education, paid family leave for 57 million more women and child care for 180 million more families. Unmet need for access to modern contraception, reductions in maternal mortality and digital inclusion are also critical enablers. The biggest opportunities lie in expanded leadership roles for women, pay for unpaid care work, addressing gender biases, hierarchies and vulnerabilities (including violence against women), challenging gender stereotypes and political representation. Sex-disaggregated data and analysis must be supported so that women's contributions to health can be more accurately represented and recognized. Health employment with a strong gender lens can be a powerful lever to promote female empowerment in society.

Financing

67. Where will the money for this ambitious reform agenda come from? There has been limited growth in development assistance for health since 2010 and this pattern of insufficient financial flows is expected to continue (*55*). Moreover, although global spending on health is projected to rise, current rates of growth in domestic resource mobilization are not enough to meet population health needs. Therefore, how should the necessary resources be mobilized in low-income countries for sustainable, effective and efficient investments in health employment? How can the fiscal and financial space to invest in human resources for health be expanded? How can fair remuneration be set for health workers in a highly globalized market? How should the roles be divided between public and private financing? The answers to some of these questions can be found elsewhere in this report. Several additional solutions have been proposed. According to the 2013 Lancet Commission on Investing in Health, "The expected economic growth of low-income and middle-income countries means that most of the incremental costs of achieving convergence could be covered from domestic resources, although some countries will continue to need external assistance." This conclusion was reinforced in evidence provided to the Expert Group. That is: domestic financing from all sources might be able to fund needed health worker wage bills in 2030 even in some of the poorest countries. Modest assumptions about the growth of government revenues for health show that, except for up to around 15 nations, public-sector financing has the potential to fund these wage bills. (Important note: These optimistic conclusions depend on the validity of economic growth projections, estimates of cadre-specific health worker wage levels, and estimates of needed numbers of cadre-specific health workers in 2030.) Our provisional and very cautious conclusion is that governments can prioritize domestic investments in skills and a transformed health workforce to achieve both improved health outcomes and economic growth.

Domestic financing from all sources might be able to fund needed health worker wage bills in 2030 even in some of the poorest countries.

68. The way aid is disbursed is also likely to change. Although a small number of countries will still require direct assistance, greater investment in global public goods (e.g. health information systems or research systems) may be one important evolutionary trend. In the realm of the health workforce, this could

mean investment in global educational resources or multilateral agreements on international migration. Some observers, drawing lessons from the devastating Ebola virus outbreak, have also proposed an emergency International Health Systems Fund to support a Global Health Emergency Workforce (*56*). Innovative financing mechanisms—such as tackling tax avoidance or evasion in diaspora communities, gifts-in-kind (land, accommodation, equipment, faculty time), local government development funds, health insurance funds, reallocating existing educational budgets, donations and endowments, alumni, concessional lending, social impact bonds and revenues from clinical care—might together have a substantial part to play. And rethinking the role of vertical health financing facilities, such as GAVI and the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund), might offer one very powerful means of boosting investments in human resources for health. For example, despite large health worker shortages, GAVI, the Global Fund and the World Bank invest relatively little in preservice education and training (*57*). And where there is investment in the health workforce, there may be poor coordination with national health plans (*58*). Finally, consideration should be given to a new international financing mechanism—such as a Global Health Resource Fund (*59*)—to support investments in the health workforce. We note that the resolution passed by the World Health Assembly, in May 2016, implicitly recognizes the synergy between health, health employment and inclusive economic growth:

Bringing critical parties together to effect change—often radical change—in national and global policies will be challenging.

> *The International Monetary Fund, the World Bank, regional development banks, and other financing and lending institutions [are called on] to adapt their macroeconomic policies and investment criteria in the light of mounting evidence that investments in health workforce planning, and the training, development, recruitment, and retention of health workers, are conducive to economic and social development and achievement of the Sustainable Development Goals (60).*

Governance

69. None of our proposals, recommendations, or enabling actions can be delivered without greater attention to issues of governance. Bringing critical parties together to effect change—often radical change—in national and global policies will be challenging. For example, the education transformations we are proposing may well meet professional resistance since they are likely to address traditional sources of power in universities or professional training schools. The keys to success, we believe, lie in:

- strengthening capacities and defining responsibilities for delivering universal health coverage, including health workforce stewardship, planning, regulation and management;
- defining clearly the goals and values of universal health coverage, equity and quality;
- making reliable data publicly available to monitor progress towards these goals;

- creating national mechanisms for transparent, participatory discussion and debate about what these data mean (including, for example, all stakeholders, such as health workers, trade unions, patient organizations and families);

- committing to act on these findings at the highest political level, backed, if necessary, by appropriate legislation;

- monitoring and review on an ongoing basis, involving parliaments, trade unions, civil society, health professions and academia;

- implementing appropriate regulatory measures, with consideration of harmonization across countries, for premises, practices and professionals to achieve the goals of high-quality universal health coverage, one essential prerequisite for inclusive economic growth.

70. The promotion of youth participation in the implementation and governance of our proposed reforms is an additional dimension to consider. The participation of young people in community-based health programmes, in vocational education and training, and in all aspects of direct employment in the health sector is essential when addressing youth employment. Their participation matters not only for their own futures, but also for inclusive economic growth, social stability and sustainable development.

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71. These governance reforms will be accelerated if there is greater demand by citizens for the overriding goals of our proposed reforms—universal health coverage and inclusive economic growth. Civil society activism to deliver social accountability will be a crucial instrument to translate our recommendations into actions. The importance of strengthening social dialogue cannot be overestimated. In its evidence to the Expert Group, South Africa emphasized the importance of strong legal frameworks to act as secure foundations for governance (based on its Constitution). But South Africa also stressed the value of bargaining councils as platforms where employers and employees, together with trade unions, could meet and negotiate. We additionally wish to note that our call for more leadership to catalyse action is also a call for more women to occupy these positions of leadership.

VIGNETTE 5

A hidden health workforce challenge: personnel posting and transfer

Posting and transfer (P&T) encompasses initial health worker deployment and subsequent transfers. "Irrational P&T" refers to health personnel deployment and transfer that is inconsistent with population health needs. In many countries, the existing maldistribution of health workers results partly from irrational P&T practices.

Irrational P&T in the health sector has been described in many diverse low- and middle-income countries, including the Dominican Republic, Ethiopia, Ghana, Guatemala, India, Indonesia, Nepal, Niger, Nigeria, Sierra Leone and the United Republic of Tanzania (*1–11*). Public officials responding to World Bank perception surveys reported that purchasing posts in the health sector was relatively common, ranging from 9% in Benin to 50% in Zambia (*12*). Existing data suggest that irrational P&T affects many cadres of health-care workers and administrators – from specialist doctors to outreach workers – with some indications that there are fewer transfers among the lowest level cadres, who are often hired locally (*8, 13, 14*).

P&T is intimately related to the distribution of power at multiple levels of governance. Negotiations often go beyond individual preferences, as they occur in a context of official and informal regulations and incentives, lack of adequate human resources for health, political patronage and networks, personal networks and corruption (*1, 4–6, 8–10*). Irrational P&T has individual and systems-level effects. It can contribute to skewed distribution and absenteeism of workers, undercutting efficiency and health worker morale as well as governmental efforts to improve access and quality. Often, the poorest regions are the most negatively affected by irrational P&T (*1, 15*).

Despite its relevance to global health goals, P&T remains a largely unnamed health system governance function, though it is more frequently discussed within public administration. Since actual practice is often tacit and operating in a parallel system, P&T is rarely explicitly addressed in national or global fora. Given its links to retention and equitable distribution of health workers, public administration reform and corruption, P&T relates to multiple global and national strategies and policy-setting priorities.

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CHAPTER 5

A five-year action plan: conclusions, recommendations and policy options to the Commission

72. Governments around the world seek to maximize not only their national security, but also their economic security. Whereas the former can be strengthened through a delicate mix of diplomacy and defence, the latter can seem a more mysterious objective. There is no simple formula for achieving sustained and inclusive economic growth, decent jobs and prosperity for all. Textbooks of economics do not provide compelling recipes for success. But our view is that, if governments make the right choices about health employment, they can look forward to one of the most inspiring outcomes for their peoples in the 21st century—universal health coverage, decent jobs for all, sustainable and inclusive economic growth, and human and economic security.

In addition, governments must now consider the issue of global health security. The emergence of devastating old and new epidemics has revealed the fragility of countries, and of health systems in particular. Global health security begins with individual health security—the security of peoples depends on delivering universal health coverage.

73. Our vision, which we propose to the Commission, is to implement a five-year action plan (2016–21) for an expanded, transformed, interdependent and sustainable health workforce to accelerate inclusive economic growth and to ensure healthy lives, well-being, equity and economic security for all. We are not recommending business-as-usual. We are not proposing that governments invest in increasing the number of health workers in the way they do now. Instead, we are offering a new perspective on the future: one of change, reform and value for money. The evidence we have gathered shows that the health system is a core economic, as well as social, institution. Health workers, from community-based health workers to health professionals such as midwives, nurses and doctors, together with non-health workers supporting the achievement of health objectives, are an investment in economic growth and stability. We have three key messages and make ten recommendations—which should be progressively implemented over a five-year (2016–21) period—to realize our vision for triggering a new era of economic and social prosperity through investments in the health system (see Panel 3 and Figure 8).

PANEL 3

A five-year (2016–21) timetable for action: key messages, recommendations and policy options that we propose to the Commission

A. Transforming and expanding the health and public health workforce, including reform of the skills and mix of that workforce, has the potential to accelerate inclusive economic growth and progress towards health equity.

1. Educational reform

Countries must begin to establish transformational reform of health worker education and training programmes, emphasizing competency-based curricula, interprofessionalism, team work, social commitment, ethical conduct, respect for rights, skills for effective and culturally sensitive communication, learning pathways and lifelong learning—educating health workers equipped with skills to provide community-centred public health services and person-centred, continuous and integrated clinical care.

2. Workforce innovation

Countries at all stages of development should initiate ambitious scaling up of health worker education and training, using carefully regulated public and private sector investments within the context of national plans, to produce sufficient numbers of the full range of health workers needed, considering task-sharing and new cadres, to supply the most efficient workforce.

3. Technological transformation

All countries must initiate programmes to enable health workers to use appropriate technologies, not only for optimally delivering a wide range of health services, but also for efficiently and sustainably operating programme and policy relevant health information systems.

B. Achieving person- and community-centred universal health coverage by increasing employment, through the equitable distribution of decent jobs for health and non-health workers, will be a crucial foundation for inclusive economic growth and sustainable development.

4. Health workforce for growth

Countries, especially in low and middle-income settings, through political mobilization and new financial investments must guarantee and implement strategies to employ sufficient numbers of health workers to deliver quality universal health coverage and access progressively—including financial risk protection, provision of public health as well as health-care services, and addressing the broader social determinants of health through, for example, raising social protection floors—by better anticipation of future health workforce requirements.

5. Prioritizing women

Women's central role in providing health care must be recognized and fully rewarded: countries must invest in opportunities for increasing women's participation in the health workforce, through gender-sensitive data collection, recruitment, retention, workplace support, equal pay, career advancement policies and innovative leadership development programmes.

6. Guaranteeing rights

Countries must reform regulatory frameworks to secure decent jobs and labour rights for health workers and non-medical workers, paying special attention to fair pay, social protection, gender equity, safe and healthy work environments, and a voice for health workers and their organizations, which will contribute to the improved efficiency of health systems.

C. Reforming aid and accountability for health system strengthening with a focus on skilled health workers can initiate a new era of international cooperation for economic and human security.

7. Transforming aid

Greater proportions of donor assistance, including that from financing facilities such as the Global Fund and GAVI, must be invested into the health workforce while ensuring the predictability of financing. Development partners, including bilateral partners and multilateral aid mechanisms, should augment, coordinate and align their investments in education, employment, health, gender and labour in support of domestic financing aimed at addressing national workforce priorities.

8. International migration

Countries must address push and pull factors driving loss of skilled health workers from countries with the most serious health worker shortages, including a global mechanism to strengthen the accountability of destination and sending countries. In line with ILO Conventions and the WHO Global Code of Practice, countries must also ensure mutual benefit from international mobility of health workers, protecting individuals and origin/destination countries and ensuring equal treatment of international workers alongside nationals. Consideration should be given to resource transfers to origin countries—for example, through investments in the training systems of those countries from which destination countries draw staff.

9. Humanitarian crises

The international community must establish global strategies for the deployment of health workers, together with standards for their security and protection, during war, post-conflict, natural disaster and other humanitarian or complex crises—including during recovery from crises—recognizing the high-value health workers bring and the risks they face, in these special but increasingly common and important settings.

10. Information and accountability

We urge countries and partners to implement a data revolution for human resources for health, monitoring, tracking and reporting progress on scaling up the health workforce. Furthermore, an independent review mechanism should be established by, for example, the Global Health Workforce Network, to track progress over the next five years (between 2016 and 2021) regarding the implementation of this Commission's recommendations and policy options. The review process would report annually to the United Nations Secretary-General on health employment and economic growth. Development partners should prioritize research funding to resolve uncertainties about the contributions of health workers to economic growth and stability. Finally, we invite the Commission to consider and support the idea of an "International Day of the Health Worker", to support awareness, attention, action and accountability.

The Expert Group recommends that the Commission takes action on these ten priority areas, designing actionable recommendations with deadlines and indicators to promote, encourage and deliver strong, independent accountability.

74. The *Global strategy on human resources for health: workforce 2030* emphasizes the importance of reliable data and accountability. By accountability, the Expert Group means a framework building on the independent Expert Review Group on Information and Accountability for Women's and Children's Health (*61*)—including, but not limited to, monitor, review and act. This work is the foundation for a new, extended model of accountability developed by the Independent Accountability Panel, consistent with international law. There are two levels at which accountability can operate—globally and in countries. Applied at these two levels, accountability mechanisms can be a powerful means to galvanize political support and action for human resources for health. It will be important to link accountability processes to reliable data on human resources for health, perhaps tracked with data from, for example, WHO or the Institute of Health Metrics and Evaluation. By establishing an independent review mechanism within the Global Health Workforce Network for the period 2016–21 the Commission will be seen to be committed to ensuring its recommendations are not only taken seriously but also delivered. Without this defined time-interval for action and without an independent accountability mechanism, the Expert Group is anxious that its recommendations and those of the Commission may be too easily marginalized.

The Expert Group recommends that the Commission takes action on these ten priority areas, designing actionable recommendations with deadlines and indicators to promote, encourage and deliver strong, independent accountability

75. Despite ongoing technological advances, health and social care will remain labour-intensive. Yet pressures to improve health sector productivity are acutely felt in health systems at times of fiscal and financial pressure. Improving productivity is a long-term objective that countries need to address in the context of a growing demand for health services. Increasing productivity in health systems has been notoriously difficult. Many countries are looking at investments in IT and digital infrastructure. Skilled health workers in most countries are already working hard, so the objective must not be to make them work even harder. Rather, work organization and proper coordination, making a fuller use of health professional skills and competencies and optimizing their scopes of practice, are key measures to achieve productivity growth. For example, evidence shows that non-physician providers can lead to productivity gains, such as lower costs per service provided in primary care and hospitals. Achieving such productivity gains is crucial for health workers to provide services for all the population at an affordable cost. Despite such initiatives, much more is possible and necessary. More efforts are needed around task sharing and changes in the mix of staff. Innovative delivery models, together with the development of intermediate professionals, is still lagging behind. Further reforms will help to ensure that increased employment in the health sector achieves better health outcomes and productivity gains. Robust evaluation of the impacts of these reforms must follow.

76. Success will not only depend on technical solutions. Political solutions are also necessary. One example is the resolution passed by WHO Member States at the 69th World Health Assembly in May 2016. where a new workforce strategy was formally adopted by governments (*60*). In that resolution was the powerful commitment by member states,"to include an assessment of the

health workforce implications of technical resolutions brought before the Health Assembly and the WHO regional committees". This explicit commitment to accountability regarding the health workforce is welcome. The Expert Group asks that the Commission goes further and invites governments, in the immediate aftermath of its launch, to convene a Ministerial Summit—including Ministers of Finance, as well as Ministers of Health, Education and Employment—to seize a unique political moment: to focus on the intersectoral challenge of skills and job creation for inclusive economic growth, and specifically the special contribution we believe the health sector can make to employment and economic success.

77. We are also conscious that countries will require their own tailored solutions. It is not possible to design a single blueprint for health employment and inclusive economic growth for all countries. The appropriate mix of community-based health workers, mid-level health professionals and professional cadres, such as midwives, nurses and doctors, will vary from country-to-country. And countries will each be at different moments in the evolution of their workforce strategy. For some nations, investments in community-based health workers might be the best opportunity to accelerate progress towards delivery of essential services and universal health coverage. For other countries, immediate reforms to the professional education of nurses and doctors might be more urgent. Given this rich diversity of nations and policy options, we ask the Commission to invite ILO, OECD and WHO to establish a Scientific Advisory Group across their organizations to continue the work initiated by this Commission, with a particular focus on country actions, practices and lessons learned—reporting each year to the global community at the World Health Assembly. A Scientific Advisory Group could consider issues we have been unable to address fully in our own work—for example, emerging innovations in education, policy options for fiscal intervention, and recommendations for non-health worker education, recruitment, deployment and retention.

Despite ongoing technological advances, health and social care will remain labour-intensive.

78. For the effective delivery of our recommendations, we also need to be able to track their progress (62). We have therefore devised a provisional list of indicators for monitoring purposes (Panel 4). These indicators should evolve and be improved upon over time. For now, they seem a reasonable beginning and we commend them to the Commission.

79. Our recommendations to the Commission should not be read out of context. They must be part of larger efforts to strengthen health systems and deliver universal health coverage. Health workers are necessary but not sufficient for both universal health coverage and inclusive economic growth. In this regard, the passing of a resolution by WHO Member States at the 69th World Health Assembly, in May 2016, presents a significant opportunity. The resolution on Strengthening Integrated, People-Centred Health Services (WHA69.24) urged Member States to make health systems more responsive to people's needs, while recognizing their rights and responsibilities with respect to their own health; to promote coordination of health services within the health sector and intersectoral collaboration to address the broader social determinants of health; and to ensure a holistic approach to health services, including health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation and palliative care services.

PANEL 4

Proposed indicators to monitor progress in implementing our five-year action plan, recommendations and policy options

1. *Educational reform*
   Adoption, by governments, of reform plans for the transformative education of health professionals.

2. *Workforce innovation*
   Publication and implementation of a review of the health workforce mix and its match to population health needs.

3. *Technological transformation*
   Evidence of active use of appropriate technology assessment procedures, and implementation and evaluation of those technologies with respect to health outcomes.

4 . *Health workforce for growth*
   Increases in public investments in health to achieve universal health coverage.

5. *Prioritizing women*
   Implementation of gender-sensitive recruitment and career-development policies.

6. *Guaranteeing rights*
   Evidence of robust labour rights frameworks applying to health workers—in place, implemented and regularly reviewed.

7. *Transforming aid*
   All aid agencies operating in health have clarified publicly their ethical principles in engaging with the health workforce.

8. *International migration*
   Evidence of a national independent monitoring mechanism to track implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel.

9. *Humanitarian crises*
   Establishing global and country mechanisms to support health workers operating in crisis zones as well as provisions to protect their safety and labour rights.

10. *Information and accountability*
    Establishing a global independent accountability mechanism within the Global Health Workforce Network.

80. Respectful, compassionate and effective health care can only be delivered within a system that supports such care. We are especially hopeful about linking the work of this Commission to UHC 2030, a new initiative that focuses on universal health coverage. The overall aim of UHC 2030 is to trigger and support a movement for accelerated, equitable and sustainable progress towards universal health coverage (SDG 3.8). Its elements—derived from IHP+—include a platform to coordinate health system strengthening across countries, consolidation

of political momentum for universal health coverage, implementation of accountability for progress towards these objectives, and sharing knowledge to learn lessons. UHC 2030 will be launched at the United Nations General Assembly in September, 2016, the same time as this Commission launches its report and recommendations. We see virtuous synergies between these two initiatives and believe that incorporation of the Expert Group's and Commission's recommendations into UHC 2030 could embed our work into an effective and proven framework for action. These proposals are entirely aligned with the 2016 G7 Ise-Shima vision for global health (*63*).

81. The Expert Group faced several tensions in its work, tensions that stemmed mainly from lack of evidence—the appropriate contribution of public and private sectors to education and employment, the balance between health professionals and community-based health workers (and health and non-health workers), ensuring health worker retention in countries while respecting freedom of movement, the appropriate use of technology, best practices in settings of humanitarian crisis, filling the large finance gap that exists for meeting health employment needs, and delivering accountability in countries to make sure that what gets said gets done. One observation during our work was that whatever recommendations we made would need to be supported by a research agenda to generate urgently needed new knowledge to guide the transformation we see possible. And, as noted in Norway's submission to the Expert Group, it is important to be careful when making generalizations from evidence derived in one context and applied to another. Here are some examples of the uncertainties we could not resolve fully:

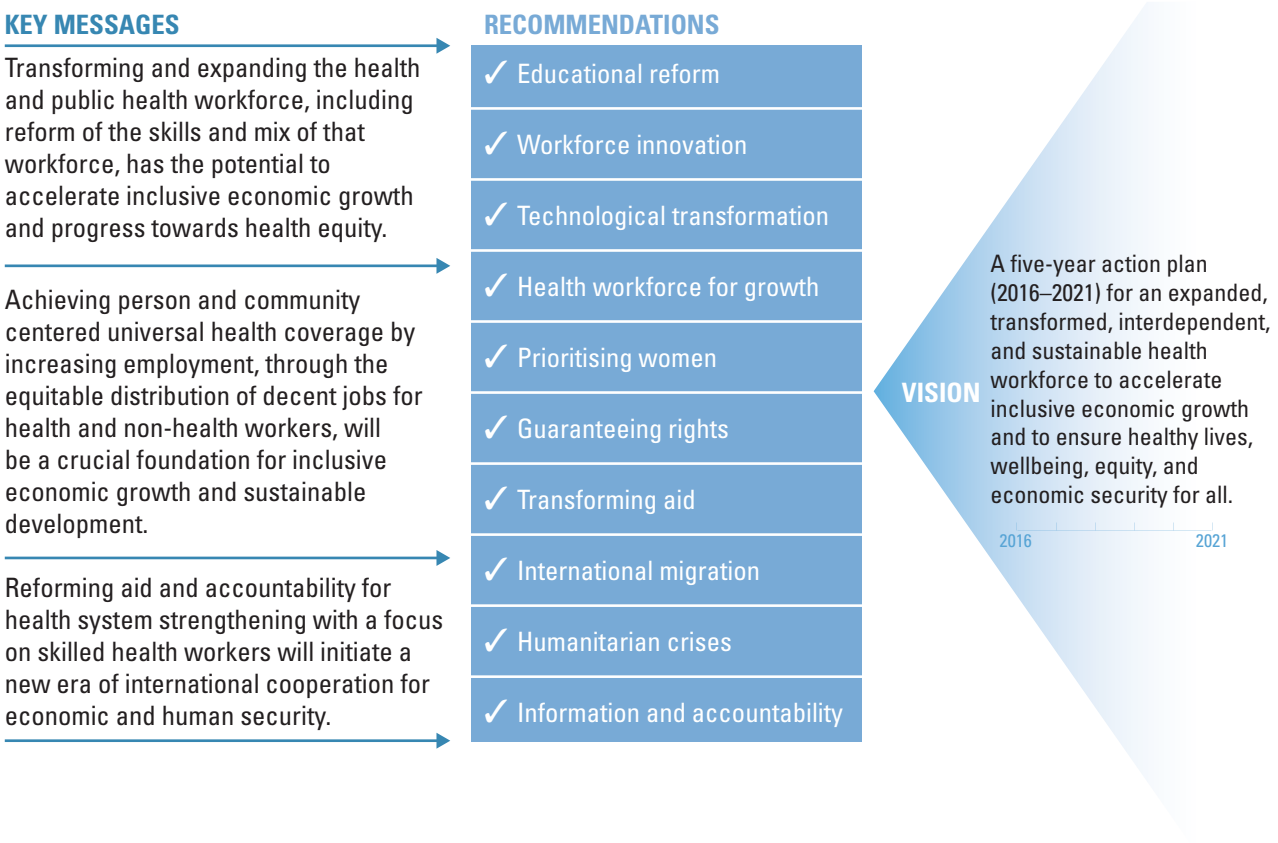
- What are the effects on patient care and economic growth from different types of health professional education?
- How could community-based health workers join with more skilled health professionals to build effective multi-professional teams?
- What are the most effective means to retain health workers tempted to leave their country of origin?
- Are there countries who can provide direct evidence that investments in the health workforce lead to economic growth? Do such effects vary according to the income category of country?
- What will be the impacts of the epidemiological transition on economies and how might those impacts be influenced by the health workforce?
- What are the specific skills and effects (health and economic) of a health workforce focused on prevention compared with one focused on treatment?
- What models of health workforce mix and deployment are best suited to different settings of humanitarian crisis?
- What are the likely impacts of trade agreements on health and the health workforce?

- What are the health impacts of different categories of private and public sector providers and different mixes of those providers?
- What are the lessons for health, the health workforce and economies from different humanitarian settings?
- Can the impact of technological interventions in health be disaggregated by the economic category of country?
- What regulatory mechanisms are required for educational institutions to optimize the quality and equitable distribution of health workers?
- What are the impediments and opportunities for women to enter the health workforce?
- What are the measurement challenges with respect to prices and productivity in the health sector?
- What are the economic and health returns from investing in the primary care workforce?
- What are the mechanisms by which investments in the health workforce promote social cohesion?
- If governments have failed in delivering effective regulation, why would they be expected to succeed in investing in health employment?

82. The contribution that health workers make to society is deeply felt by all of us, but often in hidden and invisible ways. Countries must do more to cherish their health and non-health workers and the contribution they make to advancing national social and economic goals. The direct effects of the health workforce on improving the health of individuals and populations is clear and demonstrable. But we believe there is now compelling evidence to show that the health workforce has additional and, so far, underappreciated positive impacts on the economy. We believe the wide promulgation of this evidence, together with our three key messages and ten recommendations to the Commission, within the framework of a five-year action plan, could trigger a reappraisal of the dynamic power of health in society—a universal message to all nations.

FIGURE 8

Summary of the Expert Group's five-year action plan (2016–21), key messages, recommendations, policy options and vision



83. At the beginning of a new epoch of sustainable development, investing in health and the health workforce, as one key element of the health system, is an exquisite moment to renew the social contract among and between peoples and governments—creating demand for reforms from civil society; agreeing that the right to the highest attainable standard of health, progressively realized, is a common social objective; promoting national and global solidarity; and achieving a societal consensus that healthy living is seen not only as a government responsibility but also a civic duty. Investing in the health workforce can catalyse intersectoral action, especially around the social determinants of health. Investing in the health workforce can accelerate gender equality. These are political imperatives, as much as they are health and economic matters. The goals we have set out demand political struggle as well as technical support. The High-level Commission on Health Employment and Economic Growth is a powerful example of the political meaning of sustainable development—a means to promote universal advantages to society, intergenerational equity, and ensuring that we act for the future as much as we do for the present. We invite the Commission to seize these opportunities now.

ANNEX 1
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Vignette 5 – A hidden health workforce challenge: personnel posting and transfer

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ANNEX 2
Terms of reference

The following are the terms of reference and working procedures for Members serving on the Expert Group that is advising the Commission on Health Employment and Economic Growth (hereafter 'Commission').

Background on the Commission and the Expert Group

The United Nations has convened a high-level Commission in order to support the creation of health sector employment opportunities as a means to advance economic growth that is sustainable and inclusive. The Commission's specific objective is to propose actions in support of the creation of around 40 million new jobs in the health and social sector by 2030, paying specific attention to addressing the projected shortage of 18 million health workers by 2030, primarily in low-and lower-middle-income countries. These actions will need to contribute to global inclusive economic growth, creation of decent jobs and achieving Universal Health Coverage, and also to complement the various global development efforts set by the international community, and also to complement the various global development efforts set by the international community.[1] The Commission is a strategic political initiative designed to complement broader initiatives developed by other international agencies and global health partners.

The Commission will be guided and informed by an Expert Group comprised of technical experts. The technical experts are drawn from the disciplines of economics, education, health, human rights and labour. The Expert Group has two co-chairs, with respective competencies in the areas of health and economics.

Scope of Work for the Expert Group

The Expert Group will contribute to the Commission's overall objective, in particular through responding to the Commission's ten articulated tasks:

a. to determine (i) the conditions needed for investment in employment in the health and social sector to produce inclusive economic growth (particularly for women and young people) as the result of a local and sustainable source of new decent jobs (ii) how the sector contributes more broadly to the global and local economy and employment, and estimate social and economic costs of inaction (particularly with regard to global health security and a loss of economic growth);

b. identify obstacles in the development of health human resources capacity for achieving SDGs and progress towards Universal Health Coverage (UHC), taking account of assessments over the next 15 years in terms of demand and production (at global level and by main area of specialization);

c. to analyse the risks of global and regional imbalances and unequal distribution of health workers, and assess the potential disparities between needs and the availability of human resources, in light of the specific health challenges faced by different regions in the world;

d. to study the potential beneficial and adverse effects of international mobility (financial transfers, innovation, movement of qualified staff, obstacles to the deployment and retention of workers, discrimination and stereotypes in access to employment), and recommend innovative alternatives;

e. to make recommendations on the revision of education and training models and the development of the range of skills in the health and social sector, to facilitate the production of qualified health personnel, especially in the poorest countries and in disadvantaged geographical areas (rural physicians, community nurses, etc.), and to ensure that health worker competencies are in line with priority health services and the health needs of populations;

f. to identify sources of funding, including innovative financing, to initiate action, as well as identify means to maximize future return on investment by 2030;

g. to make recommendations on the institutional reforms required, such as combating corruption, effecting international and national governance mechanisms, in order to achieve the objectives set;

h. to make recommendations for a multisectoral response that extends beyond the health sector and includes economic, social and other relevant sectors. The development, protection and security of health workers require commitment across sectors and of partners beyond government;

i. to generate the political commitment from governments and key partners necessary to support the implementation of the Commission's recommendations.

Timeframe and Modalities

The work of the Commission is time bound: the Commission's report will be submitted to the Secretary-General of the United Nations at the margins of the 71st session of the UN General Assembly (13-26 September 2016). During this period, the Expert Group members shall serve according to their professional capacity and expertise in support of the development of the Commission's report. The technical and analytical work carried out will be made available to decision-makers and the public.

A series of technical papers have been commissioned by the Secretariat in order to provide the Commission with a strong base of contemporary evidence. Working with the Secretariat, the Expert Group shall have primary responsibility for reviewing and synthesizing the technical evidence; and for identifying a set of actionable recommendations for Commission deliberation, as related to specific tasks identified above. The co-chairs of the Expert Group shall present to the Commission on behalf of the Expert Group.

Expert Group members will meet virtually on a monthly basis, with at least two face-to-face meetings in 2016. In-person Expert Group meetings are expected to take place in February and April 2016, prior to planned Commission meetings in March and September.

1 See TOR for the Commission on Health Employment and Economic Growth.

ANNEX 3
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ANNEX 4

A list of contributors and evidence submitted is available at:
http://www.who.int/hrh/com-heeg_submissions/en/

ANNEX 5
Consultations

The Expert Group Report to the Commissioners has been informed by the evidence and inputs from two calls for contributions as well as technical consultations with various stakeholders. Below are the Consultations that have been organized:

Kuwait, 6 April 2016, with the Middle East and North Africa (MENA) region health and finance officials as part of the Health Policy Seminar of the IMF-Middle East Center for Economics and Finance co-organized by the World Bank, Islamic Development Bank and WHO;

Pretoria, 8 April 2016, with a technical meeting with the Department of Health stakeholders;

Geneva, 11 April 2016, Consultations with representatives from health professions and students associations and unions;

Geneva, 18 May 2016, with representatives of national nursing associations attending the TRIAD nursing meeting

Geneva, 27 May 2016, with an open consultation with governments, civil society, professional bodies, unions, employers, academia organized by ILO.

Abidjan, Côte d'Ivoire, 15–16 June 2016, francophone consultation with policy makers from health, labour, education and finance from 23 countries. The consultation was co-organized by WHO, French Ministry of Foreign Affairs and International Development with ILO, UNFPA, UNICEF, UN Women and OECD.

Durban, 20 July 2016, a briefing and presentation for participants at the 2016 International AIDS Conference.

ANNEX 6
Policy Brief Abstracts

All policy briefs listed below are forthcoming in: Buchan J, Dhillon I, Campbell J, editors. Health employment and economic growth: an evidence base. Geneva: World Health Organization; 2016 [Forthcoming].

Health workforce needs, demand and shortages to 2030: an overview of forecasted trends in the global health labour market *(Cometto G, Scheffler R, Liu J, Maeda A, Tomblin-Murphy G, Hunter D, Campbell J.)*

This brief is based on analyses conducted by WHO and the World Bank using the best available evidence. Variability in completeness and quality of data required the use of assumptions, imputation and modelling techniques. Modelled estimates identify that the growing demand for health workers is projected to add an estimated 40 million health sector jobs to the global economy by 2030. Most of these jobs will reside in upper-middle and high-income countries. At the same time, modelled estimates point to the unmet need for over 18 million additional health workers by 2030 vis-à-vis the health workforce requirements to meet Sustainable Development Goals and universal health coverage targets; with gaps concentrated in low- and lower middle-income countries.

In low-income and some lower middle-income countries both demand and supply will continue to fall short of population health needs. In these contexts, it is necessary that investments–from both the public and private sectors–in health worker education be accompanied by an expansion of the fiscal space to support the creation and filling of funded positions in the health sector and the health economy. Health workforce strategies should ensure that the expansion of the health resources envelope leads to cost-effective resource allocation.

Women's contributions to sustainable development through work in health: using a gender lens to advance a transformative 2030 agenda *(Magar V, Gerecke M, Dhillon I, Campbell J.)*

This brief explores trends in women's work in health as related to the achievement of the Sustainable Development Goals (SDG), focusing on SDG3, SDG 5, and SDG 8. It outlines challenges arising from gaps in the knowledge base, gender biases in health systems, and gender biases in the institutions that surround health systems. A qualitative literature review was supplemented with sex-disaggregated data from several international organizations.

The health and social sector is a leading employer of women. However, significant occupational segregation occurs by sex and institutionalized hierarchies are prevalent within and across occupations, particularly in terms of pay rates, career pathways, and decision-making power. Gender biases create systemic inefficiencies in health systems by limiting the productivity, distribution, motivation and retention of female health workers.

While the health sector plays a positive role in drawing women into employment, it could make a larger contribution to sustainable development by addressing persistent gender biases and recognizing and valuing women's unpaid and informal work. The brief calls on policy makers to build the evidence base on women in the health workforce; to work across sectors to recognize and reform gender-unequal laws and institutions; and to address gender biases in health systems.

Achieving sustainable and appropriately trained health and social care workers for ageing populations (*Salsberg E, Quigley L.*)

Chronic illnesses increase with age while intrinsic capability decreases. Globally, the population age 60 and over is projected to grow from 901 million, 11% of the world's population in 2015, to 2.1 billion, 22% of the world's population, by 2050. Such rapid growth of this high need population will drive a need for services.

Following a review of 127 articles, this brief recommends a three-pronged strategy to ensure an adequate supply and distribution of health and social care workers to maximize the quality of life as people live longer. These include support to countries to assess the quantitative and qualitative gaps between services currently available and those needed over the next fifteen years, and the design of appropriate workforce strategies; ensure that health and social care workers have skills and competencies to provide quality effective care to older people, including support to a cadre of health workers with expertise in geriatrics; and to organize and deploy the workforce to make effective and efficient use of health and social care workers (e.g. expanding scopes of practice; deploying more workers with specific roles such as care coordinators to engage with needed health and social support services; and expanded use of care teams).

International migration of doctors and nurses to OECD countries: recent trends and policy implications (*Dumont J, Lafortune G.*)

This brief examines recent trends in the international migration of health workers to OECD countries since 2000. In total, the number of migrant doctors and nurses working in OECD countries has increased by 60% over the last decade. This rate is higher for those immigrating to OECD countries from countries with severe health workforce shortages, with an 84% increase during the same time period. Immigrant doctors and nurses account for growing shares of health professionals working in OECD countries. Foreign-born doctors accounted for 22% of active doctors in OECD countries in 2010/11 (up from 20% in 2000/01), whereas foreign-born nurses represented 14% of all nurses (up from 11% in 2000/01).

The brief calls for movement towards greater self-sufficiency in OECD countries through increased domestic education and training capacity, as required to respond to current and future projected demand; implementation of retention measures (e.g. better working conditions and pay rates) in lower-income countries, which itself will require good governance of the health systems and may require international support as called for by the WHO Global Code; and better management of health workforce migration through negotiation of mutually beneficial agreements, as well as consideration of more ambitious approaches to global governance.

Human resources for health care in the Nordic welfare economies: successful today, but sustainable tomorrow? (*(Merker T, Kristiansen I, Saether E*)

The Nordic countries are "welfare superstars" with high-income economies, no extreme inequality, high life expectancies and well-functioning care services. High proportions of public funding through taxes, a majority of publicly owned providers and modest co-payments with universal access to care characterize the Nordic health care model. This brief presents forecasts evidencing the need to reform the health care model, even in the wealthiest of Nordic countries, to achieve sustainability.

Projections estimate a shortage of 76 200 FTEs (full-time equivalents) in the Norwegian health care sector, including 28 200 FTE nurses and 1400 FTE doctors by 2035. The numbers are expected to increase further towards 2060. Estimates by Statistics Norway suggest that a staggering 38% of Norway's workforce will need to work within the health sector by 2060 if the system is not reformed. The brief calls for increasing efficiency and patient focus in the sector; introduction of mechanisms to curb demand and reduce the tax burden; and leadership to create a more optimal personnel mix, respecting the WHO Global Code of Practice.

Global estimates of the size of the health workforce contributing to the health economy: the potential for creating decent work in achieving universal health coverage (*Scheil-Adlung X, Nove A.*)

The achievement of health objectives requires workers in health occupations (HO workers), such as doctors and nurses, and workers in non-health occupations (NHO workers) who provide necessary goods and services (e.g. pharmaceuticals, cleaning). In this paper, family care workers who provide care informally, very often women, are also included in the NHO category. NHO workers contribute to economic growth and health goals, yet neither the global size of the NHO workforce nor their economic contributions have been assessed. This brief takes a broad health economy perspective and presents new evidence on the size and scope of NHO workers.

It is estimated that NHO workers, including unpaid NHO workers, currently constitute 70 per cent of all health economy workers globally. Population growth indicates that perhaps as many as 57 million decent jobs for NHO workers would be needed by 2030 to achieve UHC. These findings highlight that policies for strengthening the health economy workforce must take into account both HO and NHO workers. The brief specifically calls on policy makers to address shortages of decent jobs for NHO Workers through enabling macro-economic and labour market policies; to invest in new and better jobs to enhance economic growth by extending health protection towards UHC; and to transform informal work into formal jobs to create inclusive and sustainable growth.

Pathways: the health system, health employment and economic growth (*Lauer J, Soucat A, Araujo E, Weakliam D.*)

The principal purpose of a health system is to provide healthcare. However, viewed as an economic sector, the health system contributes to growth. Moreover, the health system offers additional benefits that contribute both to economic growth and to health, as well as to non-health welfare. Although these benefits are all realized through distinct pathways of cause and effect, we do not present a complete causal account of the interactions between health system and the economy. We merely outline the main pathways that are relevant to the work of the Commission because they involve the employment of health workers and promote economic growth. The six pathways discussed are the following: (1) The *health pathway* addresses intrinsic the health benefits of the health system. (2) The *economic output pathway* addresses the intrinsic (market valued) economic benefits of the health system. (3) The *social protection pathway* addresses sickness, disability, unemployment and old age benefits, as well as financial protection against loss of income and catastrophic health payments. (4) The *social cohesion pathway* addresses the role of a health system in promoting equity and fostering redistribution and growth. (5) The *innovation and diversification pathway* addresses the role of the health system in driving technological development and in offering protection against macroeconomic shocks. (6) The *health security pathway* addresses the role of the health system in protecting against epidemic outbreaks and potential pandemics.

Health and inclusive growth: changing the dialogue (*James C.*)

This brief demonstrates how the health care sector and better health outcomes contribute to inclusive economic growth and how this contribution can be further enhanced. The brief is largely, though not exclusively, based on experiences from OECD countries.

Health systems are central to the effective functioning of a country's economy. Adults in good health are more productive; children in good health do better at school. This strengthens economic performance and makes growth more sustainable and inclusive. The health care sector is also an important source of employment. On average, health and social work activities constituted around 11% of total employment for OECD countries in 2014. Moreover, the percentage of workers employed in health and social work has steadily risen across much of the OECD over time. This is likely to continue. Health care should therefore not be viewed solely as a cost driver, but as an investment that can offer valuable returns to society. This does not mean more spending on health is automatically worthwhile. Rather, it requires critically assessing the investment case for different types of health spending, so that employment in the health sector achieves better health outcomes and increases the overall productivity of the sector.

Paying for needed health workers for the SDGs: an analysis of financial and fiscal space (*Lauer J, Soucat A , Araujo E, Bertram M, Edejer T, Dale E, Brindley C, and Tan A.*)

The world is facing a shortage of health workers, and meeting the SDGs implies a growing need for health workers of all types. This paper addresses two questions: (1) can low-income and low-middle-income countries meet the wage bills for additional needed health workers ('financial space')?, and (2) can governments worldwide meet these additional wage bills from public revenues ('fiscal space')? To focus on the gap, we subtracted the number of current and projected health workers ('supply) from the number of needed health workers ('needs') (estimates taken from Cometto G et al., Health workforce needs, demand and shortages to 2030), and multiplied the difference by the wages of health workers as estimated from ILO data on salaries. These wage bills were then compared to different revenue scenarios. Conditional on economic development, sustainable financing for health workers, mostly domestic financing from public and private sources, can be secured in most low-income and low-middle-income countries. Progressive fiscal policies and structural reforms can also mobilize funds. Should the necessary conditions (e.g. growth in public revenue and economic development, with necessary priority to the health system and the health workforce) be put into place, all but a small number of countries worldwide could meet the recurrent cost of their health workforce from public funds. Technical cooperation and international financing can be used to support catalytic investments in developing human capital and skills.

Evidence on the effectiveness and cost-effectiveness on nursing and midwifery: a rapid review (*Suhrcke M, Goryakin Y, Mirelman A.*)

This rapid review considers both evidence of (1) effectiveness of nursing and midwife (N&M) related interventions (which included studies on the role of N&M as determinants of health) and (2) cost-effectiveness. In light of what remains a still scarce, under-developed cost-effectiveness evidence base, it is especially important to consider evidence on effectiveness. The brief focuses in particular on two types of policy questions – (1) increasing the amount of nurses and midwives and (2) shifting the skill mix away from more expensive medical staff (esp. doctors) to nurses and midwives. The good news is that there is certainly selected evidence to support the effectiveness and cost-effectiveness case for N&M. However, we need to acknowledge that the evidence base as a whole appears fairly limited and mixed, if less so in terms of effectiveness than cost-effectiveness. Many of the systematic reviews discussed in this paper

concluded that the evidence base was "inconclusive". More often than not this was attributed to the several methodological challenges involved in the assessment of (cost-) effectiveness of N&M policies. What evidence exists is also–not surprisingly–biased towards high income countries.

A health labour market perspective on the economics of health professional education and careers (*McPake B, Araujo E, Gillian L.*)

Universal health coverage is not possible without an adequate volume of educated and trained professionals to deliver quality health care services. The processes by which health professionals are educated, trained and supported throughout their careers are therefore critical. The health care profession is currently facing a triple challenge of changing population health needs, professional preference for specialization and the quality of education. An integrative review of 206 academic papers was undertaken to consider these issues.

This brief argues that the evolution of professional clinical education and health labour markets reflects underlying market failures by which the return to those health professions most important for responding to population need is undervalued. It calls for policy makers to recognize the importance of market forces in professional education, training and labour policies; to redirect public investments in education to primary care, low and mid-level providers and innovative pedagogy; to balance professional with public representation in key policy and regulatory bodies that influence the rate of return within all clinical professions; to mobilize private international investment in systems for regulating private training providers; and to prioritize research that includes evaluation of the social rate of return in economic analyses.

Transforming the health workforce: unleashing the potential of technical and vocational education and training (*Fisher J, Holmes K, Chakroun B.*)

This brief argues that special attention should be given to education and training for the achievement of UHC. An inter-sectoral approach to SDGs 3 and 4 would help to unleash the potential of technical and vocational education and training (TVET) for health workforce employment, economic growth, and social equity, supporting the implementation of the SDG agenda as a whole.

The conventional model of health workforce education, premised upon a narrowing formal schooling pipeline, oriented towards pre-service education and training, and founded on a biomedical approach, will be unable to meet future health workforce needs. Significant bottlenecks are the proportion of students attaining upper-secondary education and the shortage of qualified teachers, particularly in low-income countries. TVET is a well-established and increasingly prominent subsector within education. Its potential for transforming the health workforce has, however, been largely overlooked. TVET, as part of lifelong learning, can facilitate school-to-work transitions, youth apprenticeships, employment and decent work, continuing professional development, recognition of prior learning, and develop the range of skills and competencies required in the health sector. The brief identifies four related domains of policy action necessary to unleash the potential of TVET, including inter-sectoral collaboration on governance and programming; data, knowledge, and research; innovation and technology; and funding and investment.

Enabling universal health coverage and empowering communities through transformative and socially-accountable workforce education (*Pálsdóttir B, Cobb N, Strasser R, Salomon M, Fisher J, Gilbert J, Reeves C.*)

This brief presents contemporary evidence on the positive role of transformative and socially accountable education in improving the availability, distribution, and impact of health workers. Evidence is presented from a variety of country contexts, including Australia, Bolivia, Brazil, Canada, Cuba, Philippines, South Africa and Thailand.

Key strategies of this agenda include alignment of educational curricula to community needs, targeted student selection with priority to underrepresented populations, interprofessional training in underserved locations and on areas of need, expansion of faculty in rural areas, as well as close partnership with communities. The University of the Philippines' (UPM-SHS) socially accountable interprofessional stepladder program, which utilizes these strategies, is provided as one important example. A recent study highlighted that UPM-SHS medical graduates were 10 times more likely to practice in small towns and 8 times more likely to practice in poorer towns than graduates of a traditional medical school in the same region; with over 80% of UPM-SHS midwifery, nursing and medical graduates choosing to remain in underserved regions.

To reduce inefficiencies and maximize benefit from such strategies governments and education institutions should engage in cross-sector participatory planning, increase their investment in underserved regions, and adopt right-touch regulations to ensure quality.

Equipping health workers with the right skills, in the right mix, and in the right numbers in OECD countries (*Moreira L, Lafortune G.*)

This brief identifies the education, training, and service delivery reforms required to transform the health workforce. While results focus on doctors and nurses, the brief stresses the need to move beyond traditional professional boundaries.

The brief identifies policies to ensure health workers with the right skills, the right mix in the right places and in the right numbers. Skills mismatch waste human capital when health workers are over-skilled, and harm quality of care when under-skilled. Countries need to adapt health professional education and training to better match the skills acquired in training with the skills required at work, and make more effective use of skills through interprofessional collaboration and engagement with digital technology. Moreover, to respond to population health needs, countries will need to train a sufficient number of generalists, prepare nonphysician providers to deliver primary health services and make better use of technology to reach underserved populations. Finally, the brief calls for all countries, particularly OECD countries, to educate and train the right number of health workers to respond to their domestic needs. This requires more robust labour market information and health workforce planning models, incorporating impacts of changes in technology and models of care, to guide decision-making.

The role of decent work in the health sector (*Wiskow C.*)

This brief focuses on the importance of decent work in the health sector for the achievement of SDGs 3, 5 and 8. It considers all workers in or contributing to the health sector as part of the health workforce, including a broad range of skill levels and occupational groups. Referencing ILO normative work and recent literature, the paper summarizes decent work challenges and opportunities, and suggests strategies to create quality jobs in the health sector.

The brief emphasizes the need and value of investment in decent work in the health sector, as related to attracting and retaining health workers and enabling the provision of quality care. Core issues to be addressed include secure employment, safe and healthy work environments, fair pay and benefits, social protection, and education and professional development; with particular attention to gender dimensions. The brief calls for a rights-based approach to health employment, with collective bargaining, organizing, and freedom of association rights as fundamental. It additionally highlights the positive contribution of social dialogue, as an integral part of decent work, to health sector development and reforms. Consensus-based responses to health sector challenges resulting in policies that more effective and sustainable.

A hidden human resources for health challenge: personnel posting and transfer (*Schaaf M, Sheikh K, Freedman L, Juberg A.*)

Posting and transfer (P&T) encompasses initial health worker deployment and subsequent transfers. Irrational P&T refers to deployment and transfer that is inconsistent with population health needs. This brief is based on a comprehensive literature review to uncover the actual practices and informal regulations characterizing P&T in low- and middle- income countries (LMICs).

Irrational P&T in the health sector is described in many diverse low- and middle-income countries. Existing data suggest that irrational P&T affects many cadres of health care workers and administrators– from specialist doctors to outreach workers. P&T is intimately related to the distribution of power at multiple levels of governance. Negotiations often occur in a context of official and informal regulations and incentives, lack of adequate human resources for health, political patronage and networks, personal networks, and corruption. Irrational P&T can contribute to maldistribution and absenteeism, undercutting efficiency and health worker morale. Often, the poorest regions are the most affected.

Despite its relevance to global health goals, P&T remains a largely unnamed health system governance function. The brief calls on policy makers to improve health worker deployment as a core system function; to introduce direct accountability to communities around health workforce deployment; and to improve collaboration between health-specific and broader public administration actors.

Regional disparities in outpatient physician supply in Germany (*Scholz S, Greiner W.*)

This brief provides empirical evidence on factors associated with regional variation in the supply of outpatient physicians in Germany. There are substantial district level differences in physician-to-population ratios within the country, with higher physician density evident in urban areas as well as areas close to the Alps and the shores. Statistical links to both demand side factors (population, morbidity and financial incentives), as well as supply side factors (health care system, cultural facilities, labour/economy, attractiveness and infrastructure) are examined.

Among the demand side factors, physician density evidenced the strongest association, positively for specialists and negatively for general practitioners, with the number of inhabitants in a district. No significant association was found between morbidity and physician density. Supply side factors representing the health care system, cultural variety, economy, infrastructure and attractiveness of a district also show significant correlations with both general practitioner and specialist densities.

The results presented in this brief could only be achieved due to the availability and accessibility of a broad range of data in Germany. A further and essential improvement of evidence is possible, if more disaggregated data on physicians (e.g. on region or demographics) was made accessible in the public domain.

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