1. Introduction

1.1 Introduction

This report on the Guidelines for Transforming and Scaling up Health Professionals' Education and Training provides a set of recommendations that are evidence-informed, practical, and relevant to ensure that globally there is a health professional workforce that meets the health care needs of the 21st century.

The primary goal in developing the Guidelines was to provide health policy-makers and other important stakeholders with evidence-informed guidelines to better understand the issues and to provide strategies to achieve transforming and scaling up of the education and training of health professionals that will contribute to health system strengthening and improve health outcomes.

The key objective for creating this report was to develop guidelines that would provide concrete implementation considerations that ensure equitable access to health services and aim at policy development for a workforce, with the right skills-mix and deployed rationally across different levels of care. A workforce is needed that is accessible to all citizens, and stays motivated to produce high quality services efficiently.

The guidelines aim to:

1. **provide sound policy and technical guidance in the area of pre-service education, particularly to countries experiencing shortages of health professionals;**
2. **foster the integration of continuing professional development (CPD) as part of health professionals' education scale-up, in order to ensure excellence of care, responsive health service delivery and sustainable health systems;**
3. **define and provide guiding principles for transforming and scaling up health professionals' education and training.**

Before developing the recommendations, the following definitions were used to guide the process:

"The transformative scale-up of health professionals' education and training is defined as the expansion and reform of health professionals' education and training to increase the quantity, quality and relevance of health professionals so as to best meet population health needs and expectations in an equitable and efficient manner and, in so doing, strengthen countries' health systems and improve population health outcomes."

Transformation and scaling up of education and training is a multidimensional process that involves not only increasing the number of health professionals, but also more importantly, ensuring that they have the knowledge, skills and competencies relevant to the needs of the population. This process also requires building the institutional capacity to produce and employ the desired number and skill mix of health professionals in a sustainable manner. Additionally, this process includes the development of a sufficient and competent workforce of educators and trainers, the utilization of effective education methods, and access to adequate infrastructure, equipment and learning tools.

Why is WHO developing Guidelines?

In 2006, the World Health Assembly (WHA) called on all Member States to contribute to a rapid scaling up of the production of health workers (resolution WHA59.23, Box 3). The resolution also called for the development of national comprehensive health workforce strategies.

Box 3. **Excerpts of WHA Resolution 59.23 – Rapid scaling up of health workforce production**

The Fifty-ninth World Health Assembly,

(...)

Recognizing that shortages of these health workers are interfering with efforts to achieve the internationally agreed health-related development goals, including those contained in the Millennium Declaration, and those of WHO's priority programmes;

(...)

Recognizing the importance of achieving the goals of self-sufficiency in health workforce development,

...URGES Member States to affirm their commitment to the training of more health workers by:

(...)

(2) promoting training in accredited institutions of a full spectrum of high-quality professionals, and also community health workers, public health workers and paraprofessionals;

(...)

(4) promoting the concept of training partnerships between schools in industrialized and developing countries involving exchanges of faculty and students;

(...)

(6) using innovative approaches to teaching in industrialized and developing countries, with state-of-the-art teaching materials and continuing education through the innovative use of information and communications technology....

Source: WHO (2006b).

1.2 The domains for action: focus of the guidelines

The Guidelines Development Group members identified five main 'domains' for attention and action by policy-makers:

1. **Education and training institutions**
2. **Accreditation and regulation**
3. **Financing and sustainability**
4. **Monitoring, implementation and evaluation**
5. **Governance and planning.**

The guidelines describe each of these domains, summarize available evidence and provide recommendations and implementation considerations. The last section identifies gaps in knowledge indicative of the need for further research, either at country or at global level.

To seek transformation in these five areas, the Group's work was guided by a series of principles considered fundamental for success (Box 4).

Box 4. **The fundamental principles for the transformation success**

- Be country-owned, country-led, context-specific, and embedded in the broader socio-economic and development characteristics of communities and populations.
- Respond to population health needs and expectations, and adapt to evolving epidemiological profiles and burden of disease.
- Aim at health equity, delivery of people-centred services, responsiveness and inclusion.
- Foster the use of effective strategies of promotion, prevention, education and rehabilitation.
- Contribute to universal access to health services.
- Be designed and implemented system-wide and through multi-sectoral coordination and inclusion of all relevant public and private sector stakeholders and policy-makers.
- Be aligned with national health objectives and strategies and human resources for health plans (evidence-based, costed and sustainable).
- Apply a combination of context-specific interventions, applicable in both the public and private sectors, in broad areas such as: governance; education and training institutions; regulatory frameworks; financing; and planning.
- Produce health professionals who are globally competent and locally relevant, able to serve their local communities in an effective manner.
- Ensure that increased production of health professionals is accompanied by an increased absorptive capacity of the labour market to employ and retain additional health workers.
- Be supported by significant long-term financial investment, and effective leadership and management, good information systems and political commitment.
- Be monitored and assessed with respect to the quantity, quality and relevance of professionals practicing within the health system, and not simply on the numbers of new graduates.

Source: Guidelines Development Group, 2012

1.3 Scope of the Guidelines

The Guidelines encompass the education and training of all groups of health professionals (see Annex 1 for definitions). The recommended considerations and interventions, thereby, apply to all levels of education and training of health professionals across the continuum of undergraduate, postgraduate, faculty development and continuing professional development in both the public and private sectors in all countries.

1.4 Methodology of Evidence-Informed Guidelines

The process of developing WHO guidelines encompasses the synthesis of all available published research and grey literature evidence; formal assessment of the quality of evidence; consideration of resource use and costs; and consideration of values and preferences. The formal assessment of quality of evidence includes the use of a transparent system for assessing evidence and rating recommendations following the GRADE methodology. This process links evidence to recommendations and explains the reason that judgements were taken at each step along the way. By design, the process was steered by the WHO secretariat with the support of the core guideline development group that included content experts for specialties involved, a methodologist and representatives of potential stakeholders and that maintained a geographic and gender balance.

Using a multi-pronged methodological strategy for creating evidence-informed guidelines, the approach was inclusive of a comprehensive scoping literature review and analysis of systematic reviews covering other related published evidence, in addition to a review of the grey literature.

The process of developing the guidelines began in 2009 with an extensive scoping of the literature on health professionals' education, gathering expert opinion through the formation of a large reference group that met three times in 2010, and building consensus that culminated in the first meeting of the core guidelines development group in Divonne, France in May 2011. The

guidelines have been developed in parallel with a strong implementation platform with the Medical Education Partnership Initiative (MEPI), the Nursing Education Partnership Initiative (NEPI), the United States President's Emergency Plan for AIDS Relief (PEPFAR), and other partners. The secretariat is also engaging additional multi-sector stakeholders and civil society to galvanize support for a global advocacy movement around the need for health professionals' education and training reform.

The second meeting of the group was called to:

- **advise on the priority of questions and scope of the guideline;**
- **advise on the choice of important outcomes for decision-making;**
- **comment on the evidence used to inform the guideline;**
- **advise on the interpretation of evidence, with explicit consideration of the overall balance of resource use, values and preferences, benefits and risks;**
- **formulate recommendations, taking into account diverse values and preferences according to GRADE.**

Every effort was made to comply with standards for reporting, processing and using evidence as set by the WHO Guidelines Review Committee (GRC). The Guidelines Development Group used a multi-pronged methodological approach to bring together the evidence available in support of the guidelines, so that countries can use them with reasonable assurance that they will facilitate sound policy development in matters of health professionals' education. The following steps were taken:

- **An outcomes framework, based on the guiding principles for transforming and scaling up health professionals' education and training, was designed to inform the development of the recommendations (Annex 14).**
- **A comprehensive literature review was undertaken to provide as wide an understanding of the areas involved as possible initially, followed by the drafting of PICO (population/intervention/comparison/outcome) questions and the commissioning of systematic reviews, covering other related published evidence and grey literature relating to these questions. A template was used for conducting systematic reviews in order to ensure uniformity and comparability and the data collected was recorded in a decision table (see Annex 7 for decision tables).**
- **Evidence tables were developed based on the systematic reviews (see http://www.who.int/hrh/education/planning/en/index.html).**
  The systematic reviewers assessed the risk of bias in each of the randomized studies included, guided by the following criteria:
  - Inadequate sequence generation;
  - Inadequate allocation concealment;
  - Lack of blinding of participants, providers data collectors, outcome adjudicators and data analysts;
  - Incompleteness of outcome data;
  - Selective outcome reporting, and other bias.

  The systematic reviewers assessed the risk of bias in each included non-randomized studies guided by the following criteria:
  - Failure to develop and apply appropriate eligibility criteria (e.g. under-or over-matching in case-control studies, selection of exposed and unexposed subjects in cohort studies, selection of exposed and unexposed in cohort studies from different populations);
  - Flawed measurement of both exposure and outcome (e.g. differences in measurement of exposure such as recall bias in case-controlled studies, differential surveillance for outcome in exposed and unexposed in cohort studies);
  - Failure to adequately control confounding (e.g. failure of accurate measurement of all known prognostic factors, failure to match for prognostic factors and/or adjustment in statistical analysis);
  - Incomplete follow-up.
  - With regard to how the data was synthesized, it should be noted that the same PICO question did not necessarily assess the same outcomes. Even when they did, they did not necessarily use the same measurement instruments or approaches. Even when using the same instruments or approaches, they did not report enough statistical data to allow a meta-analysis of the data. As a consequence, we report the results in a narrative manner and when available, we describe the statistical results as reported by the authors of the original studies. This means in some cases a range of relative effects (e.g. odds ratio or relative ratio) may be presented, while in other cases a relative effect with or without a confidence interval may be presented.

- **In addition to the above, and in order to strengthen the issue of relevance, which is one of**

the three outcomes guiding these recommendations, two surveys were conducted[1].
A feasibility and acceptability survey gathered the views of 136 stakeholders and potential beneficiaries of the recommendations from all WHO regions; and a civil society survey (169 respondents) provided views and expectations on the main areas of interest in the guidelines. This was also a strategy to identify better the roles and contribution of civil society to the transformational education agenda and movement and, at the same time, to deepen its engagement as a key stakeholder in the work of the Core Group. Discussions were conducted via e-mail and during two workshops that took place in Divonne-les-Bains (France) in May 2011 and in Washington D.C. (USA) in March 2012.

- **Decision tables were developed by the Guidelines Development Group based on all the evidence provided from the evidence tables based on systematic reviews, literature reviews and the feasibility and acceptability study.**

1.5 Expected beneficiaries and benefits

The primary beneficiaries of these Guidelines are policy and decision-makers in the health and education sectors, educators, and future and current health professionals. However, the Guidelines are conceived for the ultimate benefit of users of health services, whose needs should determine the quantity, quality and relevance of the education of health professionals. The Guideline recommendations can be strong or conditional depending on the quality of the supporting evidence, the balance of benefits and harms, resource use, feasibility and acceptability. *In no case should the guidelines be seen as a blueprint, which can be applied without taking into account the context.* They are orientations that stakeholders should consider in developing their own responses to their country's problems. Not all needs to change; some practices may be maintained and improved, others should be abandoned and new ones introduced. Policy-makers must decide what is most relevant for their population.

Civil society can also benefit from these recommendations and can contribute to their successful implementation through advocacy and policy dialogue, and by demanding accountability from government, training institutions and development partners.

1.6 Dissemination process

The Guideline document will be printed and made available on the WHO website. It will be complemented by an interactive ePlatform linked to the website for feedback and comments. It will also be available on CD-ROM and circulated through WHO channels for adaptation and implementation at country level.

An NGO in official relations with WHO has agreed to set up a Task Force consisting of representatives of education and training institutions, as well as NGOs involved in working with universities to improve governance of academic institutions and make curricula more relevant.

Because there were a number of policy makers, regulatory bodies, collaborators and country partners who were members of the Guidelines Development Group, they have committed, in the second meeting of the Guidelines Development Group, to implement the guidelines through mechanisms and activities in their own institutions. They have also indicated willingness to provide advocacy for the guidelines by inserting discussions into the guidelines in to the agendas of their global or regional meetings, with the objective of identifying areas in which their institutions can embed the guidelines into their work at the county level.

Given the involvement and interest of civil society organizations who are also service providers, they have also agreed to establish working groups in the areas of education and training institutions; governance of training institutions; accreditation and regulation, financing and sustainability; and performance and social accountability to provide global and country advocacy messages using the recommendations of the guidelines.

It is planned that the guidelines will be translated into all the UN languages and disseminated. The recommendations given in this document are expected to remain valid until 2016. The Human Resources for Health Team at WHO Headquarters in Geneva will be responsible for initiating a review of these global recommendations at that time, based on new evidence and research and feedback from countries that have been using the recommendations.

1 http://www.who.int/hrh/education/planning/en/index.html

1.7 Conflicts of interest

The WHO Secretariat reviewed all declarations, and found no case where there was involvement in remuneration that was seen as a compromising factor. There was also a further declaration at the Guideline Development Group meeting. Overall, the WHO Guideline Steering Group and WHO Secretariat were satisfied that there had been a transparent declaration of interests, and that no case necessitated exclusion from the deliberations. The broad range of constituencies represented on the Guideline Development Group was also noted, and that the majority of members had no declared interests. All individuals with declared interests therefore proceeded to participate fully in the Guideline Development Group meetings or to act as peer reviewers. Please see Annex 15 for further details.

1.8 Peer review process

A full draft of the Guidelines was circulated for comment to members of the Guideline Development Group and the external peer review group. All members of the Guideline Development Group and peer review group completed WHO declaration of interest forms (which included requests for information on receipt of payment for consultations and participation in advisory panels). A total of 37 Guideline Development Group members (excluding WHO staff) and all peer reviewers signed declarations of interest. In order to contain costs for attendance at the meeting employers of members of the group who could afford to were requested to sponsor their travel and others who could not were sponsored by WHO. This arrangement was made very clear in correspondence to Guidelines Development Group Members. Seven members of the Guidelines Development Group declared receipt of remuneration (via consultancy) from another university and five of the seven peer reviewers.

1.9 The Guideline Development Group

The composition of the Group was in accordance with WHO procedures for developing guidelines and included health professionals, academics, pedagogical experts, policy makers, representatives of regulatory bodies and professional associations, technical experts in human resources for health, development agencies, UNESCO, World Bank representatives, guideline methodologist and civil society representatives. Appropriate representation by geography and sex was also considered. Regional Advisers/programme managers of human resources for health of all the WHO Regional offices were also represented.

1.10 Structure of the document

The Guidelines discuss issues that are broader than the areas for which recommendations have been made, but the body of the document is largely grouped around the five 'domains': education and training institutions, accreditation and regulation, financing, monitoring and evaluation, and governance. Each domain includes various sub-dimensions. Recommendations are made in four of these five domains; for each, a summary of the evidence tables and a commentary on implementation considerations is presented.

A final section identifies gaps in available knowledge, which should be further researched at country and global levels.

2. Transforming and scaling up health professionals' education and training: **Why is it urgently needed?**

The vexing issue of the chronic and severe lack of health professionals worldwide is devasting for those countries where millions of people are without access to appropriate health services, principally primary care. This is the most critical challenge to achieving universal coverage of health services. If competent appropriately skilled health professionals are not available in adequate numbers and distributed proportionately to the population, many citizens will not receive the services corresponding to their health needs.

The World Health Report 2006 estimated that an additional 2.4 million doctors, nurses and midwives were needed globally (WHO, 2006a). There is no indication that this deficit has been significantly reduced since that estimate was first published. The health workforce is one of the six building blocks of the health-care system that countries need to strengthen if the objective of universal equitable access to good quality health services is to be achieved (WHO, 2007). Producing more health professionals alone will not be sufficient; what a population needs is a health workforce with the right competencies to respond to its evolving needs. In most countries, rich and poor, the education of health professionals has traditionally been isolated from health service delivery needs and has not been adapted to rapidly changing population health profiles. The excessive focus on hospital-based education and education that is segregated into professional silos do not prepare health professionals for team work, and for leadership skills required in 21st century health services (Joint Learning Initiative, 2004; WHO, 2006a; GHWA, 2008; Frenk, et al., 2010).

Undoubtedly, more health professionals are needed with new competencies and motivation to serve the needs of society. The transformation of health professionals' education can be achieved by competent and dedicated leaders focusing on health needs and the objectives of the health services system. The WHO *Initiative on transforming and scaling up health professionals' education and training* is a contribution to this difficult but inspiring task.

Policy discussions on health workforce education initially focused on the need for increased educational capacity and production. The problems of insufficient health workers were perceived to be exacerbated by migratory flows, largely from low-income to high- income countries, which resulted, in 2010, in the adoption by the WHA of a *WHO Global Code of Practice on the International Recruitment of Health Personnel* (WHO, 2010a[2]). A related issue, the inequitable geographical distribution of the available health workers, led to the publication of the WHO policy recommendations on *Increasing Access to Health Workers in Remote and Rural Areas through Improved Retention* (WHO, 2010b). Soon, the need was raised to address the shortcomings in current approaches to the education of health professionals in a more systematic manner. The Independent Commission on Education of Health Professionals for the 21st Century (Frenk, et al., 2010) directly addressed the issue.

As a global normative and technical health agency, WHO has assumed responsibility for providing guidance to countries on the transformative scaling up of health professionals education. In 2009, WHO began collaboration with the United States President's Emergency Plan for AIDS Relief (PEPFAR) and the United States Agency for International Development (USAID) who shared the objective "to strengthen the quality and capacity of nursing, midwifery, and medical education in Africa" with sound policy and technical guidance in order to build a quantitatively stronger health workforce with a greater capacity to respond to the health needs of individuals and communities.

Scaling up education and training is a critical component of the strategies to strengthen the health workforce, but much of its effectiveness will be lost if it is not complemented with policies to retain the graduates, and to provide them with working conditions that will enable them to use their knowledge and skills productively (GHWA, 2008).

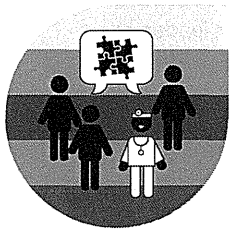
A strategic decision was made by the WHO Secretariat and endorsed by the Guidelines Development Group to broaden the range of health professionals from doctors, midwives and nurses to cover a wider range of health professionals (Annex 1), and not to confine the geographical focus to Africa, despite the high concentration of countries in human resources for health (HRH) crisis in the region. The intent of the guidelines is to serve the needs of a variety of groups: government leaders and policy-makers in health, education, finance, labour and the civil service; public and private education and training institutions; students, health practitioners; educators and researchers; professional associations and regulatory bodies; health services managers; civil society, and development partners intervening in the health sector.

2 Member States also called for WHO Resolutions on Health workforce strengthening (EB128.R9) and Strengthening nursing and midwifery (EB128.R11) which were adopted at the 64th World Health Assembly, May 2011.

3. Transforming and scaling up health professionals' education and training: **What are the key policy issues and possible responses?**

This section presents the main policy issues that face decision-makers in the five domains for interventions to transform and scale-up the education of health professionals identified by the Core Group, these being: education and training institutions, accreditation and regulation, governance and planning, financing and sustainability, and monitoring, implementation, and evaluation.

The policy recommendations do not cover all areas of health professionals' education and training. Only those seen as priority areas by both WHO and the Core Group were included. Furthermore, there are a number of areas where more research is needed even with regard to the five main domains and these are outlined in Section 5 *Knowledge gaps and research agenda*.



3.1 Education and training institutions

There are health workforce imbalances in terms of deficits, shortages or inequitable distribution of workers in all countries (Celletti, et al., 2011; Frenk, et al., 2010). Together with the imperative to deliver more and more effective health services, these imbalances create an urgent need to scale up the number of human resources for health, to adapt the education and training of health providers to the new epidemiological and demographic challenges, and ensure a proper skill mix, and to adopt measures and incentives to make the geographical and organizational distribution of health professionals more equitable (Frenk, et al., 2010). In many countries, this need has to be met in a context of difficult economic circumstances.

The link between education and health systems is close, as the former provides an essential resource to the latter: health professionals. There is consensus that, in most countries, there are insufficient health care providers, and many are deficient in terms of the quality and relevance of their training. New generations of health professionals equipped with appropriate competencies and capable of leading change must be educated and integrated into health systems in a continuous process of adaptation to a new reality in health.

The Lancet Commission has identified a series of reforms of education processes necessary for health systems to effectively answer population needs (Frenk, et al., 2010). These reforms aim at the acquisition of competencies responsive to local needs but connected globally, which include a culture of critical enquiry and the effective use of information technologies. Reforms should also trigger a renewal of professionalism. The ultimate goal is a transformative[3] and interdependent[4] professional educational system for health professionals to provide equity in health. To achieve that goal, it is essential to mobilize leadership within the educational and health systems, to invest more, to develop robust quality control mechanisms and to strengthen global learning.

In the process of building stronger education institutions, policy-makers face key questions such as: How to recruit the right type of students? Which competencies should they equip their graduates with? What profile of educators and trainers and which learning strategies are more appropriate? The Lancet Commission has identified four key policy issues corresponding to these questions: (1) admission; (2) competencies; (3) channels of instruction; and (4) career pathways (Frenk, et al., 2010). Additionally, there is the question of which institutions are best prepared to produce the desired quantity and quality of health professionals.

3 "... the highest of three successive levels [of education] (...) it is about developing leadership attributes; its purpose is to produce enlightened change agents." (Frenk, et al., 2010:6.)

4 "... involves three fundamental shifts: from isolated to harmonized education and health systems; from standalone institutions to networks, alliances, and consortia; and from inward-looking institutional preoccupations to harnessing global flows of educational content, teaching resources, and innovations." (Frenk, et al., 2010:6.)

3.1.1 Key Policy Issue #1:

Which competencies should students acquire?

In 1910, following the recommendations of the Flexner Commission and other major commissions of enquiry (e.g. the Gies Commission on the education of dentists in 1926) that explored the quality of the education of health professionals (Frenk, et al., 2010), the principles of current medical curricula were established. The emphasis was put on the acquisition of core competencies, e.g. a minimum set of scientifically based knowledge and skills, needed to deliver health care. As a result, Flexnerian reforms centralised training of health professionals in hospital settings, with the emphasis placed on a biomedical approach to education, at the expense of a more comprehensive understanding of social and community health problems. Although not all educational institutions followed this biomedical model at the same pace, the result overall has been a *"...mismatch of competencies to patient and population needs, poor team work, 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."* (Frenk, et al., 2010:5) More overtly, over the past century, the demographic, epidemiological, socioeconomic and technological environment has changed dramatically with increasingly complex and new demands on the health professional workforce. For all of these reasons, Frenk and his colleagues argue that curricula need to be adapted to produce professionals with the capacity to identify and adjust to new environments in a continuous process of learning and adapting their competencies.

Meanwhile, it is widely recognized that it is not sufficient to adapt the curricula in line with the changing environment and technologies, but what is more critical today, is that health professionals must be able to adapt to cultural variations and values, as well as attitudes to the different health problems of populations. A good example of the sort of adaptation required is HIV/AIDS where health workers are often faced with providing health care in an environment where the stigma of having HIV hinders their access to patients.

3.1.2 Key Policy Issue #2:

Which teaching and learning strategies are relevant?

The reflection on which competencies should be taught and developed is still going on, but a consensus exists that an important type of competency needed by all health professionals is the capacity to collaborate across professional boundaries. Traditionally, the education of the various categories of professionals has been conducted in silos, each group developing its own set of competencies within a culture of ownership of a specific area of work. In today's health environment, teamwork is increasingly the model for care delivery[5], where boundaries need to be expanded and inter-professional education considered as a step towards that collaborative practice model of care. Interprofessional education is the process by which students from different professional programmes learn together during certain periods of their education with a view to enhancing collaboration and team work, and ultimately improving patient-centred care. Interprofessional education aims to ensure that all members of the health team understand each other's roles, core competencies, basic language and mind-sets, and that they develop attitudes and behaviours that facilitate collaboration. Although these objectives are obviously appropriate, there remains a need for further research evidence on the effectiveness of inter-professional education in improving collaboration and patient care outcomes. Initial research studies reveal that IPE increases confidence in health professionals' identity and appreciation of the roles of other professions, and improves communication and team-working skills.

Another innovative teaching and learning strategy considered for IPE is e-learning. The richness of e-learning is that it can be used in both high-income and resource-constrained countries and serve as a tool for interprofessional education, particularly if it is delivered in an open access environment. Several studies have demonstrated an overall positive effect of e-learning or blended learning courses compared to the more traditional didactic teaching, in the acquisition and retention of knowledge. Another advantage to be considered for e-learning is that it is accessible by health professionals working in remote areas whereby they can continue developing their competencies through such means as a versatile distance education. Because of its role in alleviating professional isolation, distance learning can be a component of a strategy to retain health workers in rural and remote areas. However, not all competencies can be developed without some interaction with trainers or peers; the utilization of blended and even traditional strategies should be considered in such cases[6].

Some health professional programs incorporating interprofessional learning experiences are being developed using a community-based learning approach, so that not all experiences are limited to institutional formal hospital settings.

5 Virani (2012) identifies five types of inter-professional care models: inter-professional team models, nurse-led models, case-management models, patient-navigation models and shared-care models.

6 WHO commissioned a paper that was published in the Journal of Human Resources for Health entitled 'E-learning in Medical Education in Resource Constrained LMIC Countries'.. Seble Frehywot*#, Yianna Vovides*, Zohray Talib, Nadia Mikhail, Heather Ross, Hannah Wohltjen, Selam Bedada, Kristine Korhumel, James Scott. Human Resources for Health 2013, 11:4

3.1.3 Key Policy Issue #3:

Which educators and trainers? Which career pathways?

The selection and recruitment of qualified educators and trainers is a crucial part of the scaling up and transformation of the education of health professionals. Recruited staff should have adequate clinical and scientific competencies, but they rarely have the pedagogical preparation (communication, adult learning principles, use of new information technology, etc.) required to function in the transformed environment.

Faculty development is, therefore, important to ensure that teachers and trainers are well prepared to assume their responsibilities as educators. Faculty development is defined as a planned programme of events aimed at preparing individuals for their roles as teachers, clinicians, researchers and administrators with the purpose of enabling the institution to meet its goals, vision and mission, and its social and moral responsibilities to the communities it serves (Frenk, et al., 2010; Couper, et al., 2012). Another relevant issue is that, in many instances, teaching is not the most important activity of teachers, being considered complementary to, or even a diversion from, patient care and research which are perceived as more rewarding. The current and proposed effort to train more doctors, nurses, midwives and other health professionals puts an extra burden on institutions and their staff; more educators are needed and their function must be made more attractive. Incentives such as access to faculty development are part of the response to bridge the gap between teaching and clinical work by allowing interaction between monitoring and coaching, relationships and networks, organizations, systems and cultures, and tasks and activities. In order to facilitate the attraction and retention of educators career structures and incentive and reward systems need to be developed or improved. Specific efforts are needed to train and attract teaching staff with competencies in primary care in order to provide future health professionals not only with knowledge in the field, but also with role models which can stimulate them to choose this career orientation.

3.2 Accreditation and regulation

Regulation and accreditation are essential components of any strategy to improve the performance of a health-care system. Laws and regulations directly and indirectly affect "who in the health care world can do what to whom and where". Policy-makers can view regulation as a tool in addressing workforce imbalances and other challenges, and meeting the objectives of scaling up health professionals' training and education. Key issues to be considered are: 1) Why regulate? 2) What to regulate? 3) What extent of regulation and accreditation? 4) Who should regulate? 5) How should the effects of regulation be measured?

3.2.1 Key Policy Issue #1:

Why regulate practice and accredit courses?

Market failures in the health workforce are well known and not correcting them may result in severe harm to populations: for example, if there were no minimum qualification requirements to entering the health labour market, populations would be exposed to incompetent providers and to individuals misrepresenting themselves as qualified health-care providers. Also, an unregulated market would not respond to the needs of the poorer sections of the population, or to health-service needs that are not financially attractive, such as primary care, public health or diseases more prevalent among the poor. Training institutions would have an incentive to give priority to professions and specialities more sought after by potential students. There would be little interest in recruiting from minority groups or training for underserved regions. The rapid growth of private-for-profit actors in the health sector, not only as health-service providers but also as trainers of health professionals has made these concerns increasingly acute. For example, in India, 147 of the 191 new medical schools established in the last 30 years are in private universities (Uys & Coetzee, 2012). As guardian of the public interest, the state has a responsibility for ensuring that citizens are protected against poorly qualified or unqualified providers of health services, and therefore should act as a facilitator of the quality of education of health professionals, as well as insuring that sufficient health professionals are being trained and that their training meets the needs of the community. In human services, such as health, the need for protection is enhanced by the information asymmetry between provider and patient, and regulation is needed to guarantee that health professionals do not take advantage of the relative dependency of their clients