

the guiding principles for transforming and scaling up health professional education and training, was developed to inform the development of the (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 (Annex 9).
- The commissioning of policy briefs by external experts as well as contributions by the WHO secretariat were undertaken on the following topics: accreditation of education institutions and programmes; regulation to ensure quality and relevance of health professional education practice; faculty development to support increasing the numbers of health workers and ensuring quality and relevance; financing of scaling-up efforts; and monitoring and evaluation of health professional education. As the evidence gathering process progressed, it became increasingly clear that some of the data gathered from the initial PICO questions, would be strengthened by expert opinion. The analysis began with a search of available information to answer an initial list of 22 PICO questions by means of 13 systematic reviews. After discussions with the Secretariat and methodologist, the list was reduced to 16 questions by merging some of the initial list (Annex 3). Areas for which there was insufficient evidence but still considered important were addressed by the policy briefs. The process then continued by summarizing and commenting on the relevant literature and survey results to provide documented answers to each question. These are presented in summary decision tables in Annex 4.
- 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. 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 better identify 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 Group¹. Discussions were conducted via e-mail and in two workshops which took place in Divonne-les-Bains (France) in May 2011 and in Washington D.C. (USA) in March 2012.

In summary, the process of developing WHO guidelines is one of synthesizing available evidence, assessing its quality, estimating resource needs, and considering its feasibility and likely acceptability by stakeholders, including the end beneficiaries, e.g. users of the services of health professionals. All efforts were made to comply with standards for reporting, processing and using evidence set by the WHO Guidelines Review Committee (GRC). This includes using the GRADE system (Grading of Recommendations Assessment, Development and Evaluation) for assessing and presenting the quality of the evidence for interventions which is presented in the form of decision tables (Annex 9). When the GRADE system is applied to an area where randomized controlled trials are rare, and generally not feasible, the evidence collected may seem less robust. Studies in the field of education of health professionals are mostly observational and rarely use a control group, but their results can still be useful. Given the multidimensional nature of education interventions, their success is highly context-determined which makes their evaluation challenging. This is not to say that policy-makers cannot learn from documented experiences and use the lessons in the design and implementation of their policies.

The process of guideline development was facilitated by the WHO Secretariat and undertaken by the members of the Core Group, which formulated the PICO questions. The WHO Secretariat reviewed the questions and worked with the GRADE methodologist to rationalize and focus on the PICO questions addressing interventions to transform health professionals education and training. This was done on the basis of the available evidence produced by systematic reviews and the grey literature. These were finalized by the Core Group who voted on the recommendations. The final list of PICO questions can be found in Annex 3.

Expected beneficiaries and benefits

The primary beneficiaries are policy- and decision-makers in the field of health and education, educators and future health professionals. However, the guidelines are conceived for the ultimate benefit of users of health services, whose needs should

¹ Results of this survey will be made available online at: http://www.chestrad-ngo.org/index.php?option=com_docman&task=cat_view&gid=54&Itemid=174 (accessed 29 November 2012).

determine the quantity, quality and relevance of the education of health professionals. 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 country context.** They are rather orientations that stakeholders should consider as they develop their own responses to their country's problems. Not all needs to change; some practices may be maintained and improved, other should be abandoned and new ones introduced. Policy-makers must decide what is most relevant for their population.

Civil society can benefit from these recommendations and it certainly can contribute to their successful implementation through advocacy and policy dialogue, and by demanding accountability from government, training institutions and development partners. Already, several suggestions for advocacy messages emerged from our survey: for instance, the transformation of health professional education should take place in the context of broader HRH management and coordination processes as it can promote the retention of personnel, quality of services and system strengthening. Others are that social accountability should be a component of the curricula and training of health workers at all levels, and that governments should remain the custodian of the training of health professionals, and ensure the independence of peer accreditation processes where they exist.

Structure of the document

The guidelines cover issues that are broader than the areas for which recommendations have been made, but the body of the document is largely grouped around five 'domains' or dimensions of the education of health professionals: education and training institutions, regulation, financing, monitoring and evaluation, and governance. Each domain includes various sub-dimensions. Recommendations correspond to these five domains; for each, we present a summary of the evidence and a commentary which includes guidance for implementation.

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

2. 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 which decision-makers face in the five main areas for interventions to transform and scale-up the education of health professionals which the Core Group has identified: governance and planning, education and training institutions, accreditation and regulation, financing and sustainability, and monitoring, implementation and evaluation

It should be noted that whilst there are policy issues that address all areas of health professional education and training, the policy recommendations do not cover all these areas. This is because only what were seen as priority areas by both WHO and the Core Group were selected for inclusion. Furthermore, there are a number of areas where more research is needed even with regard to the 5 main domains on which recommendations were made and these are outlined in Section 4 *Knowledge gaps and research agenda*.

2.1 Education and training institutions

In almost every country in the world there are health workforce imbalances in terms of deficits, shortages or inequitable distribution of workers (Celletti et al. 2011; Frenk et al. 2010). Together with the urgency 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 their education and training 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 times.

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, the current level of production is insufficient in view of the numbers needed, and deficient in terms of quality and relevance. 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 (Frenk et al. 2010) has identified a series of reforms of education processes to be undertaken in order that health systems effectively answer population needs (Frenk et al. 2010). These reforms aim at the acquisition of competencies responding to local needs but connected globally, which includes a culture of critical enquiry and the effective use of information technologies. Reforms should also trigger a renewal of professionalism. The ultimate goal is to have in place a transformative² and interdependent³ professional educational system for health professionals to provide equity in health. To achieve that goal, it is essential to mobilize leaderships within the educational and in 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.

2.1.1 Key policy issue 1: Which competencies should students acquire? Moving towards competency-based curricula.

The principles of current curricula were established a century ago, following the recommendations of the Flexner Commission in 1910 and other major commissions of enquiry (for example the Gies Commission on the education of dentists in 1926) into the quality of the education of health professionals (Frenk et al. 2010). 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. Over time, the demographic, epidemiological, socioeconomic and technological environment has changed more and

² "... 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.)

³ "... 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.)

more rapidly placing new demands on health workers. However, educational institutions have not all followed at the same pace. As a result, there is 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.) This is why 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.

However, it is not sufficient to adapt the curricula in line with the changing environment and technologies, health professionals must also 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 sometimes faced with providing health care in an environment where the stigma of having HIV hinders their access to patients.

2.1.2 Key policy issue 3: Which teaching and learning strategies? Moving towards inter-professional education?

Many education programmes are now competency-based and use problem-based learning (PBL) or a combination of traditional didactic and PBL techniques. The location of learning experiences is also being modified to encompass community-based learning so that they are not limited to hospital settings. This move from a didactic to a learning approach to educate future health professionals is meant to continuously update their competencies and maintain their relevance. Continuing professional development (CPD) has, therefore, become a philosophy for continuous learning since it has now been accepted that learning is a continuous process in the working life of a health professional. In many countries however, this change is still incipient. An important type of competency needed by all health professionals is the capacity to collaborate more closely 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. At a time when team work is increasingly the model for care delivery⁴, boundaries need to be opened and inter-professional education may be a step in that direction. It 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 care. This 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. These objectives are obviously appropriate, but there is little or only weak evidence on the effectiveness of inter-professional education in improving collaboration and patient care. Only three small controlled trials have assessed the intermediate outcomes of inter-professional education. The conclusions show that it may increase confidence in health professionals' identity and appreciation of the roles of other professions, and improve communication and team-working skills.

Another innovative teaching and learning strategy is e-learning which can be used in both high-income and resource-constrained countries. Several studies have demonstrated an overall positive effect of e-learning or blended learning courses compared to traditional didactic teaching, in the acquisition and retention of knowledge. Health professionals working in remote areas can continue developing their competencies through distance education strategies using e-learning. This seems to have a positive effect on the retention of professionals in rural areas. However, not all competencies can be developed without some contact with trainers or peers; the utilization of blended and even traditional strategies should be considered in such cases.

2.1.3 Key policy issue 4: Which educators and trainers? Which career pathways?

The selection and recruitment of qualified educators and trainers is 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.

⁴ 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.

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 meet social and moral responsibilities to the communities which 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. The current and proposed effort to train more doctors, nurses 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. Access to faculty development is part of the response. It can 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. As far as facilitating the attraction and retention of educators is concerned, career structures, and incentive and reward systems need to be developed.

2.2 Accreditation and regulation

Regulation is an essential part 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? 4) Who should regulate? 5) How should the effects of regulation be measured?

2.2.1 Key policy issue 1: Why regulate?

Market failures in relation to 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 rare 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 and 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. In human services, such as health, the need for protection is enhanced by the information asymmetry between provider and consumer, and regulation is needed to guarantee that health professionals do not take advantage of the relative dependency of their clients.

2.2.2 Key policy issue 2: What to regulate?

Regulators first have to establish what should be regulated and what can be left to the market. What should be and is most commonly regulated are: (i) training institutions and programmes by some form of accreditation; (ii) the scope of practice by systems of licensure; and (iii) oversight of professional practice to ensure it meets the recognized standards with disciplinary proceedings against transgressors; (iv) continuing competence to practice by requiring continuous professional development as a condition for re-licensure (though this is as far from universal). In matters of the education of health professionals, important questions will be: who can set up a training institution; should there be international/national standard programmes and curricula; should educators meet basic qualification standards; what should be the link between education programmes and legal definitions of the scope of practice of different professions? All these questions are inspired by the importance of ensuring that regulation is guided by the objective to scale up the quantity, quality and relevance of health professionals.

The most common approach to accreditation is the process model. It has three components: self-evaluation based on published standards; a peer review that usually includes a site visit; and a report indicating the outcome of the accreditation (full accreditation, conditional accreditation and no accreditation). Depending on the country, this may be carried out by a ministry, a professional regulatory body, a national

accrediting body or a professional society. However, in more than half the countries of the world, credible, transparent and comprehensive accreditation systems do not appear to be in place. In these countries, reviews of schools and programmes are not done or are done arbitrarily (Uys, Coetzee 2012).

Accreditation is not without its critics. Sutherland and Leatherman (2006) make two points relating to the premier accrediting body in the USA, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). The first is that there is an element of complicity, stemming from the fact that it is the fees paid by accredited institutions that provide most of JCAHO's income, which makes it (and presumably other similarly financed accrediting bodies) reluctant to deny accreditation. The second is that there is only weak evidence of a causal link between accreditation and higher quality. While there is evidence of association, the explanation may be that it is higher quality institutions that choose to become accredited.

Whatever the auspices of the accreditation body, there is nothing in existing practice to foster social accountability in training institutions. Uys and Coetzee (2012) propose that this lack be addressed by adding additional standards, as follows:

- institutions and programmes addressing population needs;
- provision of holistic health professional education, including aspects such as human rights, social responsibility and ethics;
- shows evidence and concern for health workforce needs.

In developing countries, the coverage of regulatory bodies and the effectiveness with which they perform their key roles is highly variable. In terms of coverage, it is common for there to be a statutory authority for the regulation of the medical, nursing and midwifery professions, but it is much less frequent for a host of other mid-level health workers, leaving in particular non-physician clinicians in a legal limbo. In a small number of countries, there exists a Council for Professions Allied to Medicine, which, in certain cases, does cover clinical officers and medical assistants. In terms of effectiveness, there are sometimes grave deficiencies in the processes of determining competence to practice prior to licensure. This is particularly likely to occur when the regulatory body is a branch of the same entity responsible for training health workers (e.g. ministry of health) where graduates of the training programmes are automatically licensed to practice with no independent assessment of competency.

Even when there is a relevant legislative authority in place, Johnson (2012) notes that they are often outdated and fail to take account of current good practice. Two deficiencies in particular are highlighted: the evolving roles of health workers are not adequately recognized (an example is the emergence of new prescribers in response to the HIV epidemic); and the shift from a single lifetime registration or licensure to a pattern of periodic re-licensure subject to evidence of Continuous Professional Development and/or re-assessment of competence to practice.

As with accreditation bodies, the risk of complicity is high when regulatory bodies are beholden to the professions they are regulating, resulting in bias in favour of narrow sectional interests over those of the population in general.

2.2.3 Key policy issue 3: To what extent regulate?

Regulation can be a barrier to innovation if it is too rigid, excessive or not responsive to evolving needs. Rules and norms can also be too costly to implement and therefore deprive institutions of resources that could be devoted to improving their performance. A balance between flexibility and effectiveness needs to be found. For example, a recommendation to regulate the creation of schools and programmes should ensure that the conditions for doing so do not generate disincentives and subsequently hinder the expansion of the supply of educational opportunities. When there is no mechanism to ensure that students in the same profession receive the same quality of education, some form of regulation is needed; but to what extent should there be standardization of curricula and teaching strategies, without limiting space for innovation and adaptation to changes in the environment or allowing for cultural variations between countries? There is no easy answer to the question of the extent of regulation. Each country has its own cultural and legal traditions and specificities, and what is acceptable in one country may not be in another. However, the criterion which policy-makers should use is the same everywhere: which regulation will contribute more to improving the quantity, quality and relevance of health professionals?

2.2.4 Key policy issue 4: Who should regulate?

States with a tradition of centralization tend to assume this function through their ministries of health or agencies created for that purpose. This is the case in most

countries of Latin administrative culture. In those more influenced by the British one, the state has the ultimate responsibility for protecting public interest, but it delegates regulation rights and duties to professional councils. Regulation is done by peers instead of bureaucrats or the market (Girardi 2008). However, increasingly in these situations, there is greater oversight and accountability of the regulator and a move to greater public engagement in regulation. This is because it is increasingly recognized that the original impetus to statutory recognition was to secure a professional monopoly, the continued protection of which is not necessarily in the public interest. There are also independent organizations, such as professional associations, which in some countries may regulate access to medical specialties, or accreditation agencies which regulate educational institutions and programmes. In general, countries use a combination of these mechanisms. The effectiveness of each modality depends on numerous factors and varies according to the country, period and even the professional group (Friedson 2001). The ability of the professions to govern themselves and to balance their self-interest with the public interest is an issue of continuing debate. To determine who should be the regulator and what should be its role, with what powers, and how and to whom it should be accountable is a matter of acceptability as much as of effectiveness. For example, in Australia and Canada, accreditation is a bottom-up peer-managed process whereas in France, it is government-led. In some instances, educational institutions apply the standards of international accreditation bodies, in addition to or in substitution of national mechanisms. This is the case for medical education in Canada, for public health in Europe⁵, and management, principally in Canada and the United States of America, and increasingly in Asia, Europe and Latin America⁶.

2.2.5 Key policy issue 5: How should the effectiveness of regulation be measured?

Any form of regulation of the education of health professionals should be assessed in terms of its impact on quantity, quality and relevance on the basis of appropriate indicators. Transparency of process, accountability and public reporting mechanisms should be in place to ensure that regulation produces the expected results and that it is not captured by interest groups.

⁵ Association of Schools of Public Health in the European Region (ASPHER) – <http://www.old.aspher.org/> (accessed 29 November 2012)

⁶ Commission on Accreditation of Healthcare Management Education (CAHME) – <http://www.cahme.org/> (accessed 29 November 2012) and the Association of University Programs in Health Administration (AUPHA) – <http://www.aupha.org/> (accessed 29 November 2012).

2.3 Financing and sustainability

Financing is at the heart of enabling actions that make scaling up of the education of health professionals feasible: other actions include “Mobilize leadership”, “Align accreditation, “Strengthen global learning” (Frenk et al. 2010:35). With regard to financing, policy-makers need to address several issues: (1) how much education changes will cost and how much the country can afford; (2) sources of funding; (3) where to allocate the funds; and (4) how to ensure a flow of funds to make scaling up sustainable.

2.3.1 Key policy issue 1: Estimating the costs of scaling up and their affordability

The Taskforce on Innovative International Financing for Health Systems estimated that nine per cent of the total costs of scaling up health systems were related to pre-service training of health workers (WHO 2009). The Lancet Commission estimated current global spending in education and training of health professionals at 100 billion US dollars, or less than two per cent of total health expenditure. The Commission described this level of investment as “not only insufficient but unwise, putting the remaining 98% at risk.” (Frenk et al. 2010:35.) If two per cent is not enough, how much should a country spend?

Producing more health workers requires training, recruiting and remunerating more educators and trainers, additional infrastructure (laboratories, classrooms, dormitories) and equipment. There are two categories of costs that need to be considered in planning the expansion of the health workforce. First, there are the costs of expanding training capacity, which are a mix of capital costs for additional infrastructure and equipment, and recurrent costs for staff salaries and operating costs of training facilities. Second, there are the costs associated with the employment of an expanded workforce, which are largely recurrent. The high proportion of recurrent costs in the total costs of scaling up presents a problem for low-income countries dependent on external aid, since donors are generally reluctant to take on long-term financing commitments. The affordability of additional expenditures generated by the scaling up is a matter for political decision based on value choices as well as on economic criteria, and consideration of the benefits in terms of health outcomes. Spending more on the education of health professionals would be acceptable if addressing the health needs of

the population were considered a priority. There are strong arguments to do so as evidence shows that the strengthening of health systems leads to better health outcomes and to economic development (Commission on Social Determinants of Health 2012; Figueras, McKee 2012; McKee, Basu, Stuckler 2012). However, care is needed to ensure that the fiscal space is sufficient to cover the new expenditures, which raises the second issue.

2.3.2 Key policy issue 2: Where will the money come from?

The issue of the source of financial resources will be addressed differently in accordance with the level of wealth of a country. In high-income countries, domestic resources will likely be the only source of funding. Options available to policy-makers are: (i) to use existing public revenues, by shifting resources within the health sector, for instance from costly hospital services to education, or from other sectors to the education of health professionals; (ii) to look for efficiency gains, for instance by increasing the utilization of mid-level and community workers, by reducing attrition (GHWA 2008:72), and by making savings in the current educational system to increase its productivity; (iii) to generate revenue through higher taxes; (iv) to mobilize private funds through fees paid by students or creating incentives for the opening or expansion of private educational institutions, which are largely funded by student fees; (v) a combination of the former. Whichever the choice, the process will be politically sensitive because of vested interests involved and particularly difficult in the context of economic and financial crisis in many countries. In lower income countries, the same domestic options exist, but they are unlikely to yield sufficient resources and external aid will be needed.

Policy options relevant to this section are contained in a separate policy brief on financing the education of the health professions, which is published in support of the recommendations. They are not exhaustive and need to be supported by well-designed and coordinated research which can help inform current knowledge and experience.

- To scale up the number of students attending both public and private institutions, public direct or indirect financial support to students is needed to cover tuition, fees and, in some cases, even living expenses and books.
- Governments' financial support to students can take several forms, but in low-income countries, providing access to highly subsidized public loans may not be

a sustainable financial strategy in the long run due to very low repayment ratios and recovery ratios.

- Private investments in health professional education can contribute to increasing the number of health workers but, without appropriate regulation, the evidence suggests that fees are unaffordable to most students [and] the quality and relevance of the people trained is compromised.
- Public expenditure on infrastructure is needed to reduce regional inequalities in the location of training facilities, and ensure enrolment of students from underserved areas.

Donors will expect the country to produce a credible plan for scaling up and documenting estimates of the financial support needed⁷. In their preparation, countries must take into consideration their external funds absorption capacity, first in terms of having the basic human resources (teachers, students, managers) to implement the scaling up, and second in their ability to manage the fiscal risks of injecting money into their economy too rapidly⁸. The critical shortage of tutors is often a bottleneck, which suggests that the ideal aid package should be a mixture of financial and human capital in the form of trainers. Countries also need to note that increasing the number of health workers and raising salaries may lead to undesirable effects, such as strengthening of the national currency which makes local products less competitive, resulting in higher housing and basic products prices or higher public debt.

2.3.3 Key policy issue 3: Where should the money go?

Spending more is important, but spending better is even more so. Funds should be used to increase the quantity, quality and relevance of health workers and thereby have the highest impact on the type and volume of services which the country needs. This is an issue of efficiency in the allocation of available funds: in what proportion should the funds be allocated to training physicians (and among them specialists or family practitioners), nurses and other technical personnel, or community workers? The policy brief on financing the education of health workers refers to the lack of evidence

⁷ For examples of costing methodologies, see GHWA Taskforce (2009) and Tyrrell et al. (2010).

⁸ The sums of money involved in scaling up education for health workers are small in relation to aggregate international flows. However, this issue is relevant to overall aid dependency policy at the macro level rather than at sub-sectoral level.

on efficiency in resource allocation but recommends that: “Investing in midwives and nurses is cost effective, in particular when population access to public health services is limited for financial reasons.”

What is the right balance between investing in infrastructure, compensation and working conditions, including continuing education, for health professionals? In the case of small countries without a faculty of medicine or specialty training, should they opt for training abroad or for developing their own training capacity? The policy brief referred to above suggests that “Training health professionals abroad...is feasible for countries with relatively small population sizes and good relationships with countries which have an overcapacity in their [health professional⁹] education system.” It also states that: “governments’ financial support to health professional schools can take several forms such as investment in infrastructure, equipment and operating revenues; (students, research and other) grants as well as different forms of contracting.” (Sousa, Flores 2012:2.) There are two other recommendations that are relevant.

- The strategy of training health professionals to work abroad might reduce the number of health workers willing to work in their own country. It might also have an impact on the quality of training and exacerbate existing imbalances in the skill mix.
- There are two devices that increase the likelihood of health workers practicing in underserved areas: selective recruitment favoured by financial incentives, and regional learning experiences. Thus, regional inequalities in access to health services could be tackled by combining preferential training for health professional students who are willing to work in underserved areas with conditional scholarships. This strategy has been shown to reinforce the probability that they will continue to practice in these areas. There is a substantial literature on recruiting and retaining trained health workers for service in rural and remote areas.

2.3.4 Key policy issue 4: How to ensure a flow of funds that makes scaling up sustainable?

⁹ Replaces the term medical education in the original document.

In order to circumvent the risk that decisions on the expansion of training capacity are taken without adequate consideration of the long-term cost consequences, it is suggested that countries prepare a series of plans with both long-term or prospective timeframes, and short-term or operational timeframes. The training plan should be consistent with the human resources for health plan, which in turn should be consistent with the health sector plan. This plan should set out health improvement objectives and the strategies by which they would be achieved, including the respective roles of public and private sector actors, and should be compatible with the predicted available resources, both capital and recurrent. The HRH plan should derive from the health sector plan and provide realistic estimates of the effective demand for different categories of health workers, taking into account employment in both public and private sectors. It should then formulate strategies for matching available supply to anticipated demand, also taking account of attrition from all causes, including emigration and employment outside the health sector. The HRH plan may well call for expansion in training outputs, which is the starting point for the formulation of a plan for the development of training capacity. This plan would review existing installed capacity, including the human resources dimension, and make proposals for the quantitative and qualitative improvements necessary to meet the training outputs specified in the HRH plan, within the available resource envelope. Note that, if this series of planning tasks is undertaken, the risk is much diminished that training capacity will be expanded in excess of the capacity of the health system to absorb the outputs from training.

2.4 Monitoring, implementation and evaluation

The implementation of transformative changes in the education of health professionals is justified by clear objectives: to ensure the availability of a workforce that is sufficient in number and skills mix, and has the competencies and professional outlook which correspond to the needs of the population it will serve. To ensure that these objectives are being achieved, mechanisms to track changes and their effects must be in place so that policy-makers can be informed in good time if their policies need adapting. To that end, valid and updated information is needed in an easily accessible and interpretable format. Monitoring and evaluation are key components of change implementation, but making them effective is always a challenge. Leaders planning the transformation of the health workforce's education will face a number of challenging policy issues: what to monitor, how to do it, who should be responsible, and how to ensure that the information produced by monitoring and evaluation will be used?

2.4.1 Key policy issue 1: What to monitor, for what purpose, and how to do so?

Monitoring is not an end in itself; there is little value in producing information that will not be used. Also, not all information has the same weight and potential influence on decision-making. It is, therefore, critical that policy-makers and implementers of change identify their information needs. There is no need to monitor everything and thereby accumulate data which will be left unused. The issue here is to identify what data and information are critical for decision-making, whether to adjust an intervention to changing circumstances (formative evaluation) or whether to continue or stop its implementation (summative evaluation). Typically, information is needed on the inputs, processes and results of interventions, the latter always being the most difficult to measure as they take time to produce.

The WHO *Handbook on monitoring and evaluation of human resources for health* proposes that monitoring of entry into the health labour market focus on seven dimensions, of which four concern the education pipeline: (i) the pool of eligible candidates for health education and training; (ii) recruitment and selection of students; (iii) accreditation of education and training institutions; (iv) capacity and output of education and training institutions (Tulenko, Dussault, Mercer 2012:38). This framework can be a starting point for the definition of what it is worth monitoring. Indicators can be defined for each dimension to provide the information needed for the effective monitoring of the implementation process and the results.

2.4.2 Key policy issue 2: How to conduct monitoring and evaluation and who should be responsible?

Effective monitoring requires information systems that produce relevant and reliable data in a timely and easily accessible manner (Dal Poz 2012). In most countries, basic health workforce data, including those relating to the process of being educated, are deficient. Typically, data are dispersed among numerous organizations which collect information on different parameters, and use different definitions and timeframes, with the result that data quality vary in terms of validity, reliability, comprehensiveness and comparability over time. In general, data on health professionals employed in public services are more complete than on those in the private sector. Few countries produce data on multiple employment, productivity, or on the mobility of health workers. The

introduction of transformative changes in education is an opportunity to review the strengths and weaknesses of current information systems, and to build ones which will make it possible to monitor and assess the effects of changes on the quantity, quality and relevance of new health professionals. In order to interpret data and to pass judgement on policy implications, explicit criteria and targets for these expected results are needed.

Data collection is best done by organizations closely involved, e.g. training institutions (for quantity), professional regulatory bodies such as accreditation agencies and professional councils (for quality and relevance), and employers (for quantity, quality, and relevance). A high level of collaboration between key stakeholders is needed to reach agreement on the data to be collected, the definition of indicators, and on the sharing of the resulting information. Some sort of clearinghouse which brings together data from different sources is needed. It can take different forms, such as an independent public institute (Canadian Institute for Health Information¹⁰, the UK Centre for Workforce Intelligence¹¹), or a health workforce observatory (Brazil's network¹²), for example. Whatever the type of organization, its goal should be to ensure the quality and relevance of data.

2.4.3 Key policy issue 3: How to facilitate the utilization of information for policy development and implementation?

A major challenge is to bring the information to those who can best use it for policy and decision-making purposes, and to ensure that it is properly interpreted and used. Policy decisions are not based only on "evidence", but valid data can be a critical input. Some countries have shown the way in how to build bridges between data collection and analysis and decision-making. Leaders of change in education can learn much from the experience of organizations such as the Canadian Health Services Foundation¹³, the Health Foundation in England¹⁴ or the Center for Advancing Health in the USA¹⁵. Knowledge brokering and exchange can be carried out systematically. Lower income countries may not be able to afford the investments that have been made in Canada,

¹⁰ Canadian Institute for Health Information (CIHI): <http://www.cihi.ca> (accessed 29 November 2012).

¹¹ Centre for Workforce Intelligence (CFWI): <http://www.cfwl.org.uk/> (accessed 29 November 2012).

¹² Rede Observatório de Recursos Humanos em Saúde do Brasil (ObservaRH): <http://www.observarh.org.br> (accessed 29 November 2012).

¹³ Canadian Foundation for Healthcare Improvement: <http://www.chsrf.ca> (accessed 29 November 2012).

¹⁴ The Health Foundation Inspiring Improvement: <http://www.health.org.uk> (accessed 29 November 2012).

¹⁵ Center for Advancing Health (CAH): <http://www.cfah.org> (accessed 29 November 2012).

the United Kingdom or the USA, but low-cost actions are feasible, not doing anything to inform decisions costs more.

2.5 Governance and planning

The success of a radical transformation in any complex system requires strong leaders and policy entrepreneurs (champions) as well as solid governance, e.g. planning and policy/decision-making rules and processes, regulation and accountability mechanisms, at all levels of implementation of the proposed changes. To change the education of health professionals is not a mere technical exercise. It is a very political process that takes place in a complex environment; it affects the values, objectives, power and interests of numerous stakeholders. A new model for the education of health professionals supposes major cultural and organizational changes, and it requires important new investments. All this requires a strategic approach to transforming and scaling up, and some form of planning, in terms of defining clearly the expected results, what needs to be done to achieve them, how it will be done and with what resources. A plan is certainly useful but far from sufficient: stakeholders must commit and stay committed to implementing it, resources need to be mobilized, and political support maintained. This is where leadership and good governance become critical to progress on education reform, which is “*a road strewn with obstacles*” (Jolly, Louis, Thomas 2009).

The leaders who are most needed are those who can grasp the multiple dimensions and interconnections of the components of the transformation and scaling up of education and training, as well as the complex relationships between the various stakeholders. Governance also needs to be adjusted. By this we refer to the formal and informal rules and norms which define roles, responsibilities, and policy and decision mechanisms in a certain sector (Brinkerhoff, Bossert 2008).

Good governance results from the combination of institutional and organizational mechanisms that support change, and the technical and political capacity to conduct change. Often governance in matters relating to the health workforce is concentrated in ministries of health at levels where capacity is weak, as is the case in sub-Saharan Africa, which has the greatest number of countries experiencing a human resources crisis (Nyoni, Gedik 2012).