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

Key Policy Issue #2:

The scope of regulation and accreditation

Typically, the following aspects of health professions that are regulated rather than left to the market are: (i) access to education institutions; (ii) curricula; (iii) access to practice and the scope of tasks that can be performed; (iv) quality of professional education and respect of ethical norms; and (v) continuing maintenance of competencies. Regulatory mechanisms include accreditation, licensure (and sometimes periodical re-licensure), professional inspection and compulsory continuing education. As regards the education of health professionals, important questions are: who can set up a training/educational institution; should there be international/national standards for programmes, curricula, qualification of educators? How can regulation contribute to scaling up the quantity of health professionals and the quality and relevance of their education and training?

The most common approach to accreditation of institutions and programmes is the process model that includes: self-evaluation based on agreed 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). A ministry, a professional regulatory body, a national accrediting body or a professional society may carry it out. However, in more than half the countries of the world, reviews of schools and programmes are not done at all or not adequately (Uys and Coetzee, 2012). There is only weak evidence of a causal link between accreditation and higher quality. When accreditation is voluntary, the likelihood of such an association is higher, but the explanation may be that it is higher quality institutions that choose to become accredited (Sutherland & Leatherman, 2006).

In low-income countries, the existence of a statutory authority for the regulation of the medical, dental, pharmaceutical, nursing and midwifery professions is common, but rare for mid-level health workers, leaving them 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. 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 lifetime registration implying that there is a major risk of skill decay over time. 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 (Johnson, 2012).

However, good practice in the shape of 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 is increasingly encountered.

3.2.3 Key Policy Issue #3:

What is the right balance between regulation and autonomy of institutions?

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 or regions within 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 that policy-makers should use is the same everywhere: which regulation will contribute more to improving the quantity, quality and relevance of health professionals?

3.2.4 Key Policy Issue #4:

Who should regulate?

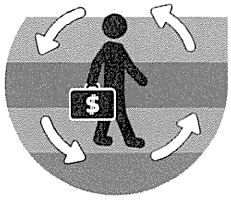
States with a tradition of centralization tend to assume this function through their ministries of health or education, or agencies created for that purpose. In others, the state has the ultimate responsibility for protecting public interest, but it delegates regulation rights and duties to professional 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 Europe[7], and for health services management in Canada and the United States of America, and increasingly in Asia, Europe and Latin America[8].

3.2.5 Key Policy Issue #5:

How should the effectiveness of regulation be measured?

In assessing whether a health workforce that fulfils its social accountability mandate to the population it serves, the education regulation system of health professionals should be assessed in terms of its impact on quantity, quality and relevance on the basis of appropriate indicators. A robust, transparent process of accountability and public reporting mechanisms should be in place to ensure that regulation produces the expected results and that it is not monopolized by interest groups. Evaluation tools produced by the Training for Health Equity Network (2011) or by the Global Consensus for Social Accountability of Medical Schools (2007) may serve as basis for the development of such measures that fit the objectives of regulators in a specific country.



3.3 Financing and sustainability

Financing is at the heart of enabling actions that make scaling up the education of health professionals feasible (Frenk, et al., 2010:35). With regard to financing, policy-makers need to address several key 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.

3.3.1 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, the question arises of how much should a country spend?

Producing more health workers requires more training, strategic marketing and recruiting, remunerating more educators and trainers, and additional infrastructure (laboratories, classrooms, dormitories) financial resources 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. Second, there are the costs associated with the employment of an expanded workforce, which are largely recurrent[9]. 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

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

8 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).

9 Increasing numbers of one category has implications on the need for more of other categories e.g. more physicians require more nurses; more midlevel workers may require more professionals to supervise or support them. But more nurses could also mean a reduction in the number of doctors needed.

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 to make them more effective in tackling population needs, namely through stronger primary care services, leads to better health outcomes and to economic development (Commission on Social Determinants of Health, 2012; Figueras and McKee, 2012; McKee, Basu and Stuckler, 2012). However, care is needed to ensure that the fiscal space is sufficient to cover the new expenditures, which raises the second issue.

3.3.2 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 or education sectors, 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. Whatever the choice, the process will be politically sensitive because of vested interests 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.

3.3.3 Key Policy Issue #3:

Where should the money go?

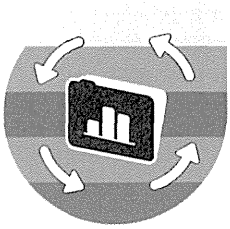
Spending more is important, but spending better is even more so. Funds should be used to increase the quantity, quality and relevance of health workers and thereby have the highest impact on the type and volume of services that the country needs. This is an issue of efficiency in the allocation of available 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? Evidence on allocation of resources among schools is scarce. Most studies compare the efficiency of different health workers in providing the same type of services, such as midwives/nurses/gynaecologists (Matendo R. et al, 2011, Rana TG et al, 2003). When studies on cost are performed, it is generally found that investing in midwives and nurses is cost-effective (Anderson RE , Anderson DA, 1999, Fagerlund K, 2009) although the evidence is mixed in highly developed health-care systems (Hendrix MJC et al, 2009).

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?

3.3.4 Key Policy Issue #4:

How to ensure a flow of funds that makes scaling up sustainable?

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 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.



3.4 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 that 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 often 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?

3.4.1 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 influence decisions. Also, not all information has the same weight and potential influence on decision-making. Therefore, it is critical that policy-makers and implementers of change identify their information needs. There is no need to monitor everything and thereby accumulate data that will be 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 education: (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 and Mercer, 2012). Do we need to include the subsequent employment of graduates? There is no point having educated health care graduates with no jobs. 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.

3.4.2 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 that collect information on different parameters, and use different definitions and timeframes, with the result that data quality varies in terms of consistency, 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 systems that 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 evaluate 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 results. Some sort of clearinghouse that gathers data from different sources is needed. It can take different forms, such as an independent public institute (Canadian Institute for Health Information[10], the UK Centre for Workforce Intelligence[11]), or a health workforce observatory (Brazil's network[12]), for example. Whatever the type of organization, its goal should be to ensure the quality and relevance of data, which should allow tracking graduates, in particular their professional options, such as their field and location of practice. This may be best done centrally rather than at an institutional level, by an accrediting body or a relevant government agency.

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

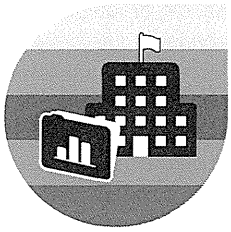
11 Centre for Workforce Intelligence (CFWI): http://www.cfwi.org.uk/ (accessed 29 November 2012).

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

3.4.3 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 Foundation[13], the Health Foundation in England[14] or the Center for Advancing Health in the USA[15] which show that 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, the United Kingdom or the USA, but low-cost actions are feasible; not doing anything to inform decisions costs more.



3.5 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 clearly defining the expected results, what needs to 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 and 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 that define roles, responsibilities, and policy and decision mechanisms in a certain sector (Brinkerhoff and Bossert, 2008).

Good governance results from the combination of institutional and organizational mechanisms that support change, and the technical and political capacity and will 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 and Gedik, 2012).

Lack of good governance is an open door to ineffectiveness, haphazard and politically motivated decisions, lack of transparency and accountability, and corruption. "Smart governance" in health has been defined as governing by collaborating, by engaging citizens/stakeholders, by mixing regulation and persuasion, through independent agencies and expert bodies, and by adaptive policies, resilient structures and foresight (Kickbush, 2012). This is a major departure from top-down, centralized governance based on coercion, and it requires leaders who understand change, who believe in it and who can engage others.

3.5.1 Key Policy Issue #1:

Will a national education plan to produce and retain graduates have an effect on quantity, quality and relevance?

Should the plan be developed in consultation with all stakeholders? Must the plan be informed by the needs and absorptive capacity of the labour market, and be aligned with national HRH plans and national health plans?

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 Centre for Advancing Health (CFAH): http://www.cfah.org (accessed 29 November 2012).

In reviewing the literature for evidence, four different interventions have been identified and analysed[16] which include the following:

Intervention 1: The mere existence of a health professionals' education plan.

Intervention 2: A health professionals' education plan that is integrated into a larger national health plan/policy.

Intervention 3: Strong collaboration efforts between all stakeholders involved in education plan development.

Intervention 4: Strategic steps in considering and taking into account the workforce market needs and absorptive capacities for the education plan development.

Concerning **Intervention 1**, the question of the necessity of an education plan for health workers to improve their quantity, quality and relevance still raises debate. First, to justify focusing on HRH and thus on the necessity of planning, the main issues related to HRH must be highlighted such as: imbalances in numbers, inadequate or inappropriate training, and the poor functional and geographical distribution,(Hall, et al., 1998).

These issues leading to the HRH crisis worldwide might be addressed through HRH plans and education planning among others (Mullan, et al., 2010; Ueffing, et al., 2009; Kabene, et al., 2006; Dovlo, 2005). It is well documented that education plans have to be defined according to national health policies, standards and/or recommendations (Gaye and Nelson, 2009). One concrete example is the Liberia's Emergency Human Resources for Health Plan developed in 2007 (Varpilah et al, 2011), for which training reforms were defined within a national-wide reform. A number of authors have mentioned the relevance and necessity that an education plan must be part of a lager national health plan and aligned with national health goals and objectives (Hall and Mejia (1998), Dussault and Dubois (2003), Hofler (2008), Stordeur and Leonard (2010), Schiffbauer et. al. (2008)). Moreover, an education plan is nearly always part of a broader HRH plan. Justifications mentioned by Dussault and Dubois (2003) imply that a HRH education plan is useful to facilitate planning, to support decision-making, to provide a framework for evaluating performance, and to let professionals and other sectors rally around health problems and to legitimize actions. For instance, in the case of high shortages due to migration of health workers and HIV/AIDS (South Africa) or in countries in conflict (e.g. Afghanistan, Southern Sudan) improved education of health workers and professionalization of management and leadership have been identified as requirements to address HRH imbalances (Schiffbauer, et al., 2008).

Nevertheless, HRH plans might present some limitations (Simoens and Hurst, 2006 – Box 3, p. 20) and thus, labour market forces can be more effective than HRH planning (thanks to lower costs, non-governmental accountability involved, and because other sectors and/or several countries apply this kind of regulation – Hall, et al., 1998). For instance, Buchan, et al. (2011) concluded that, in Brazil, it was not necessary to develop "a single detailed long term 'plan' or strategy for HRH change". In Belgium, the education plan for HRH failed and led to HRH shortages in the Flemish Community, whereas the French Community was beyond its quota (Stordeur and Léonard, 2010). Instead of developing a national HRH education plan to regulate numbers and skills of health workers, focusing on Human Resources Management within health facilities has been highly successful in the USA (Buchan, 2004 – the magnet hospital example).

Finally, Simoens and Hurst (2006) also presented several failures of health labour market forces (physician monopoly power thanks to licensing and regulatory requirements, pay structures potential excess demand due to modified price signals that health insurance may imply, induced demand by asymmetry of information and reimbursement structures). That is why HRH planning seems to be relevant according to some situations and will thus keep being useful: for instance, Hall, et al. (1998) define criteria for selection of HRH planning rather than labour market forces to determine at least the numbers of health workers. Interventions presented in the following paragraphs outline three main criteria that should lead to relevant and efficient HRH education plans: integration in the national health policy, strong collaboration between all stakeholders and definition of a plan that answers assessed needs and absorptive capacities of the national health labour market.

Regarding **Intervention 2**, it is well documented that education plans have to be defined according to national health policies, standards and/or recommendations (Gaye and Nelson, 2009). One concrete example is the Liberia Emergency HR Plan developed in 2007 (Varpilah, et al., 2011) for which training reforms were defined within a national-wide reform. Stordeur and Léonard (2010), Hofler (2008), Schiffbauer, et al. (2008), Dal Poz, et al. (2006), Dussault and Dubois (2003) all mentioned the relevance of and need for an education plan to be part of a larger national health plan and be aligned with national health goals and objectives. Moreover, an education plan is nearly always part of a broader HRH plan.

About **Intervention 3**, this review of literature illustrates the usefulness of national intersectoral collaboration: Gaye and Nelson (2009) identify one of the major traps related to training initiatives as the: "lack of country-level coordination of health training among donors, ministries and other key actors". Thus, they also propose promising practices related to HRH planning, such as "engaging stakeholders" and "ensuring coordination of training activities". Several authors mentioned the necessity of strong collaboration between all relevant stakeholders (Buchan, et al., 2011; Mullan, et al., 2010; Hofler, 2008; Dussault and Dubois,

16 See http://www.who.int/hrh/education/planning/en/index.html: Evidence table on recommendation 10.

2003). To rely on other countries' experiences can be one way of improving collaboration (Varpilah, et al., 2011; Mullan, et al., 2010).) The Vancouver case study (Purkis, et al., 2009) and the Afghanistan and Southern Sudan case studies (Schiffbauer, et al., 2008) well illustrate this positive impact of collaborative work between stakeholders involved in education plan development.

Eventually, **Intervention 4** reflects the necessity for HRH education plans to be based on needs and absorptive capacities of labour markets. Mullan, et al. (2010) recommended that, in sub-Saharan African countries, educational planning should focus on national health needs in order to improve the ability of medical graduates to meet those needs. Indeed, certain countries such as Liberia completed a HRH census to define Liberia's health worker needs (Varpilah, et al., 2011). Buchan et al. (2011) illustrated that in Brazil, the assessment and alignment with real needs was necessary. Another good example is the planning process based on population and health worker needs assessment undertaken in the USA (Thompson, et al., 2009). According to O'Brien et al. (2001), three different approaches are available to assess HRH needs: the needs-based approach, the utilization-based approach and the effective demand-based approach to human resources planning.

Moreover, labour market absorptive capacities must also be assessed. Relevant indicators of weak absorptive capacities in a country are underemployment, both in public and private sectors, and migration of medical workers. For instance in Mali and Benin, health workers are obliged to work in both the private and public sectors highlighting the lack of labour absorptive capacity in both sectors (Country Status Reports (CSR) of Mali, 2011, and Benin, 2009 – The World Bank). Other countries such as Belgium (Stordeur, et al., 2010), or Togo (CSR Togo, 2011) suffer from high rates of health workers' migration, illustrating the lack of jobs for health professionals both in public and private sectors. Health education plans can be used to regulate this phenomenon, often observed in developing countries (Kabene, et al., 2006). For instance, to address over supply of medical workers in Mexico (Frenk, 1982), the medical residency programme had to be first implemented and then regulated to absorb increasing numbers of students.

There are clearly some questions for which we need to continue building evidence.

3.5.2 Key Policy Issue #2:

How to secure political commitment across political cycles, e.g. government change, substitution of ministers?

- **Should the mandate come from the government and from parliament in order to stress the political commitment to reform?**
- **How can the various national stakeholders be engaged?**
- **Is there a role for international professional associations such as the International Council of Nurses (ICN), Secrétariat International des Infirmières et Infirmiers de l'Espace Francophone (SIDIIEF), World Medical Association (WMA), World Federation for Medical Education (WFME), International Confederation of Midwives (ICM), associations of educators, e.g. Conférence Internationale des Doyens des Facultés de Médecine d'Expression Française (CIDMEF)?**
- **In the case of lower income countries, what is the role of international technical agencies (e.g. WHO), financial agencies (e.g. World Bank, regional banks, bilateral cooperation agencies), or foundations (e. g. Bill and Melinda Gates, Rockefeller, W.K. Kellogg), and how can their support be mobilized?**

4. Recommendations to transform and scale up health professionals' education and training

Based on the best evidence available, but also noting that transforming the education and training of health workers requires changing a system that has not worked and using the evidence of that same deficient system to bring about change, due to the quality of most of the evidence, the strength of the majority of the recommendations was conditional. It was the opinion of the Guidelines Development Group however, that in the recommendation 10 on accreditation, although the quality of the evidence was assessed as low it was proposed as a strong recommendation. This was the same for the recommendation 5 on simulation methods. Although the quality of the evidence was moderate a strong recommendation was proposed.

The direction and strength of the recommendation reflects the extent to which the Guideline Development Group was confident that the desirable effects of following a recommendation are greater than the potential undesirable effects. In terms of implications, a strong recommendation can be adopted as a policy in most situations. A conditional recommendation implies the need for substantial debate and involvement of stakeholders in deciding whether or not to adopt the recommendation. In some cases, the panel may have decided to qualify the conditional recommendation by providing the "conditions" under which it should be considered. Examples of these conditions include: ensuring availability of experienced staff, space or equipment, conducting needs assessment and integrating the new intervention within existing programmes. One specific type of condition is implementing the intervention "in the context of close monitoring and evaluation". This is appropriate when monitoring of the feasibility of implementing of the implementation of the intervention and evaluation of some short-term outcome can ensure optimal implementation and adaptation if necessary. Another specific type of condition is implementing the intervention "only in the context of rigorous research". This is appropriate when there is a relatively high degree of uncertainty whether the desirable effects of following the recommendation is greater than the potential undesirable effects and the panel feels that the intervention should be adopted only when there is an opportunity to generate the needed evidence.

With respect to health service recommendations, the GRADE framework considers the following factors when deciding on the direction and strength of the recommendation: the magnitude of the problem, the balance of benefits and harms, resource use, equity, acceptability and feasibility (recorded in the decision tables at Annex 7). The decision table is a tool that: provides a systematic and explicit approach to making recommendations; makes transparent the judgements about the factors affecting the recommendations; provides supporting evidence to judgements; and provides guidance to policy makers on what to take into account when considering a recommendation.

4.1 Education and training institutions

4.1.1 Faculty development

RECOMMENDATION 1

Health professionals' education and training institutions should consider designing and implementing continuing professional development programmes for faculty and teaching staff relevant to the evolving health-care needs of their communities.

Quality of the evidence: **Moderate**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- the promotion and reward of teachers and trainers should consider taking into account their participation in such programmes
- understand the institutional / organizational culture
- determine appropriate goals and priorities
- conduct needs assessments to ensure relevant programming
- develop different programmes to accommodate diverse needs
- incorporate principles of adult learning and instructional design
- offer a diversity of educational methods
- promote 'buy-in' and market effectively
- work to overcome commonly encountered challenges
- prepare staff developers
- evaluate and demonstrate effectiveness
- provide and offer peer programme consultation to enhance faculty development initiatives.

RECOMMENDATION 2

Governments, funders and accrediting bodies should consider support- ing the implementation of higher education policies for mandatory faculty development programmes that are relevant to the evolving healthcare needs of their communities

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- determine appropriate goals and priorities
- conduct needs assessments to ensure relevant programming
- develop different programmes to accommodate diverse needs
- incorporate principles of adult learning and instructional design
- offer a diversity of educational methods
- promote 'buy-in' and market effectively
- evaluate and demonstrate effectiveness.

RECOMMENDATION 3

Health professionals' education and training institutions should consider innovative expansion of faculty, through the recruitment of community-based clinicians and health workers as educators.

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- these educators must come from and be based in the context in which health professionals are needed, in order to ensure socially accountable training;
- up-skilling and in-service education (faculty development) for these educators is a critical need as part of the implementation;
- there needs to be a support structure for the scaling up of educators. Without better infrastructure or ensuring the right level of relevant training with supervision and/or mentoring, there may only be temporary benefits.

Summary of the evidence[17]

Most health educators are expected to fulfil dual roles of clinical practitioner and teacher, and thus have at least two challenging sets of competencies to acquire. However, it is not clear that the expected high level of clinical practice competence is a feasible and sustainable goal of education in today's increasingly complex health care system.

Supportive evidence linking two competencies shows that students' or residents' ratings of faculty clinical excellence and teaching effectiveness were significantly correlated. In contrast, some controversial reports show that there was no significant relationship between measures of faculty clinical efficiency and teaching effectiveness scores for either resident or senior medical student learners. Additionally, comparative study of teaching effectiveness between senior faculty and student or resident teachers reported that tutees taught by student or resident teachers during clinical practical sessions performed just as proficiently, and in some cases possessed more clinical skills, than senior faculty. The results could be explained by the fact that the exact determination of what constitutes competent clinical practice for health educators is elusive; so various methods of evaluation were used in each report. Another reason is that the student and resident teachers may be closer in experience and be more enthusiastic in teaching clinical procedures, using a systematic step-by-step approach in teaching a skill compared to senior clinicians who may use a more constructivist approach.

Physicians who were farther in years from their training did poorly on the EBM knowledge and were less likely to incorporate EBM into their teaching. By contrast, young clinical faculty, who tended to be more enthusiastic for teaching, use of evidence-based medicine, and rapport with patients and other team members, received higher evaluation by the tutees. In association with these results, it was also reported that community-based physician faculty members were not as equipped or motivated to incorporate EBM into their clinical teaching as were academic full-time faculty.

Faculty development programmes can be an asset in recruiting and retaining teachers as they offer valued professional development opportunities. There is evidence that, in most countries, educators of health professionals are insufficiently prepared as teachers and trainers, even though their clinical knowledge and skills may be good. Their capacity to prepare future professionals for evidence-based practice, interdisciplinary team work, or management and leadership is often deficient. There is however, little evidence on how to prepare health professionals for their new roles.

Faculty development should be designed to help reach the objective of scaling-up the quality and relevance of the education of future health professionals, while covering key areas such as clinical teaching, small group facilitation, large group presentations, feedback and evaluation, personal and organizational development, leadership and scholarship, and change management. All categories of teachers and trainers should be targeted. Strategies and formats for faculty development can vary widely as long as they are adapted to the specific needs of the country, institution and learner. They can include ad hoc and continuing education activities, be work-based or classroom-based, face-to-face, via the Internet or tele/videoconferences, self-learning, mentorship and communities of practice, or a combination of all of these. Whatever the strategy, organizational structures and mechanisms should be created or developed to support its implementation. However, the cost effectiveness of different faculty development programmes is yet to be determined.

17 See Annex 4 on which this summary is based.

Implementation Considerations:

Experienced community clinicians in primary care are often excluded from teaching by the requirements of universities in terms of research or postgraduate qualifications, or because they are considered outside of the realm of academic teaching hospitals. Community clinical teachers represent a major educational resource that can be harnessed. When faculty is composed of mostly theoretically oriented teachers, a "theory-practice gap" appears.

Novice students require close supervision to effectively apply their theoretical knowledge and to develop their clinical practice safely, and this in turn requires educators interested in maintaining both teaching and clinical practice abilities. Faculty development programs can encourage and support the acquisition of a balanced mix of competencies by full-time educators and clinical practitioners engaged in teaching and training.

Policy-makers should be aware that making faculty development programmes mandatory entails important cultural and organizational changes. Faculty development should be promoted as a means of improving the performance of education programmes in terms of their quality and relevance, and will be more readily accepted if the leaders of institutions and representatives of the teaching staff are engaged in the planning of faculty development policies. Such policies should reward change both at the level of the institution and of the individual. Financial and professional incentives have the potential to facilitate the implementation of these programmes as well as adherence to their objectives. There is no blueprint for the development of incentive systems, but there is consensus that they are needed and that if some basic steps in developing programmes are followed, they can facilitate success Box 5. Programmes and strategies should be evaluated and, as far as possible, be based on evidence of their effectiveness.

Faculty development requires a supportive work environment and therefore closer links between education institutions and the health services system; this should help ensure that educational institutions are more responsive. Role models can be of importance in transmitting professional values to students which transcend the formal curriculum. Universities can utilize on campus and e-learning training of teaching skills to clinicians working in clinical settings that cover topics such as:

- **relating theoretical models of teaching practical skills to the physician's own practice;**
- **planning a teaching session in different clinical environments;**
- **training on assessment methods commonly employed to assess clinical skills[18].**

Finally, programmes should be submitted to an accreditation process to ensure that quality is maintained and continuously enhanced. Care must be taken to focus on outcomes rather than only on process, so that each institution retains the flexibility to adapt its programme to its specific needs.

Box 5. Important steps in designing a faculty development programme

- Understand the institutional/organizational culture
- Determine clear goals and priorities
- Conduct needs assessments to ensure relevant programming
- Develop different programmes to accommodate diverse needs
- Incorporate principles of adult learning in instructional design
- Use a diversity of educational methods
- Promote 'buy-in' and market effectively
- Prepare staff developers
- Evaluate and demonstrate effectiveness
- Encourage faculty initiatives
- Ensure ability to conduct meaningful formative and summative assessment of student performance

Source: Steinert (2009)

International financial and technical organizations can help by developing and supporting international inter-professional innovative experiences in faculty development, and by facilitating the exchange of good practices and lessons learned, for example by providing open-access, web-based faculty development programmes.

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4.1.2 Curriculum development

RECOMMENDATION 4

Health professionals' education and training institutions should consider adapting curricula to population needs through identifying and defining the core competencies that are required to meet the evolving needs of their populations.

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- regularly review and update core competencies.
- regularly review curricula and programme delivery to determine if the programme prepares students to attain the core competencies needed.
- resistance to curriculum change can occur; significant changes may have implications on faculty who may be uncertain of new understanding and practices, and will need to take into account issues of timelines for the rollout and faculty development.
- establishing or working with existing institutional structures including community placements for learning.
- continuous evaluation.

Summary of the evidence

Curricula are not only the means by which health professionals acquire knowledge, but can act as a vehicle for participation in interprofessional education and evidence-based practice. Core competencies have been used to refine curricula across health professionals' education in recent decades. The definition of competencies has been discussed widely in health professionals' education and practice (Gonczi, et al., 1990; Hird, 1995; Redfern, et al., 2002). Fleming and Holmes (2005) do however, point to the fact that there has been lack of a clear definition in much of the literature on nursing and midwifery.

All of the studies reviewed in the systematic review exhibited limitations in design. In some cases, this was a lack of a control group, comparison group, or validation of studies; others were limited only to one professional group, either doctors or nurses. An additional review of studies that addressed curriculum development (taken from the scoping of the literature on education of doctors, nurses and midwives by George Washington University) cast light on attempts to transform the curricula in health science institutions in many parts of the world. These studies mainly focused on attempts to make curricula more community-oriented and were primarily related to quality and relevance of curricula.

There was also consideration given to the findings of work on 'THEnet Evaluation Framework for Socially Accountable Health Professionals' Education' to transform their curricula and is aimed at, "identifying key factors that affect a school's ability to positively influence health outcomes and health systems performance and to develop ways to measure them across institutions and contexts." (The Training for Health Equity Network, 2011). This framework addresses issues that are related to transforming health professionals' education, i.e. by ensuring quality and relevance, although it is interpreted through the lens of social accountability. The Network consists of health professional schools working in marginalized urban, rural and remote regions in high and low income countries. It is clearly stated that the goal of the implementation of the Framework is to "build evidence to support effective and credible change towards greater impact and accountability of academic institutions."

Implementation Considerations:

In a rapidly changing environment, competencies quickly become outdated and therefore there is a need to adapt curricula. There are many factors to be considered when seeking to change health professional curricula. Critical factors for the process of curriculum adaptation include commitment by senior management and academic leaders, motivation of faculty and support staff, mechanisms to facilitate the evaluation of curricula and the implementation of necessary changes, including freeing staff time and securing adequate funding.

Much of the evidence on changes in curricula to make them more relevant has been mostly in the area of community-based or rural medicine. A shift is occurring in both developing and developed countries in pedagogical approaches. The following appear to be important factors influencing changes towards relevance in the curriculum:

- **more community-oriented approaches to delivering the curricula involving community placements/ learning;**
- **greater use of problem based learning;**
- **orientation of the curricula to work in rural settings;**
- **special curricula for rural students;**
- **curricula aimed at preparing health professionals to work in underserved areas and with disadvantaged and diverse communities.**

Institutional leaders and faculty members therefore need formal mechanisms to assess new needs and identify the changes curricula may require in terms of content and methods of learning.

4.1.3 Simulation methods

RECOMMENDATION 5

Health professionals' education and training institutions should use simulation methods (high fidelity methods in settings with appropriate resources and lower fidelity methods in resource limited settings) in the education of health professionals.

Quality of the evidence: **Moderate**
Strength of the recommendation: **Strong**

In spite of the moderate quality of the evidence the panel decided to issue a strong recommendation because a very high value was placed on an uncertain, but potentially important impact on both the quality and relevance of the health workforce.

Key considerations:

- availability of experienced staff
- availability of space and equipment
- cost of equipment
- seamless integration with the curricula and a focus on developing priority competencies, based on population health needs.

Summary of the evidence

There is robust evidence from systematic reviews done in developed countries on the effectiveness of simulation methods with different groups of health professionals. Several studies were done with medical, nursing and midwifery personnel but also with dentists, chiropracters and veterinarians. Medium to high fidelity simulators were used in the studies reviewed. Although in seven of the 11 sets of systematic reviews the countries in which the studies were done was not clear, it would not be unreasonable to think that they were in more developed countries, as seen from the results of the studies in identified countries that were similar in nature.

Simulation methods are useful in helping students to acquire skills and to accelerate learning. They allow for a variety of situations and are specially designed for the development of manual skills that can only be learned through repetition. Simulation methods seem to improve competencies and performance, as well as learner satisfaction, but for the benefits to last, practice in real-life situations must follow sooner rather than later. The integration of simulation methods supposes the availability of space, equipment and experienced staff to teach, supervise and evaluate. It may also require access to proxy or real patients. Simulators are particularly useful for practicing procedures and techniques that otherwise could not be performed for practical or ethical reasons.

Implementation Considerations:

The introduction of simulation methods in the pedagogical arsenal should only be dictated by their expected positive impact on the acquisition of competencies. As they require additional resources, their cost-effectiveness needs to be measured. More information is needed on the utilization of these methods, their comparative advantages and risks, and their impact on the performance of learners.

4.1.4 Direct entry of graduates

RECOMMENDATION 6

Health professionals' education and training institutions should consider direct entry[19] of graduates from relevant undergraduate, postgraduate or other educational programmes into different or other levels of professional studies

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- Educational institutions should give consideration to the type of studies students have undertaken prior to a degree course, as a number of studies were identified that evaluated the predictors of success; these studies were excluded because they did not match with the outcomes under review, but should be considered in any implementation process.

Summary of the evidence

This review of the evidence was approached in two stages. The first identified studies of midwifery only, but it was thought that this was too narrow a search; subsequently a further literature review identified studies of other categories of health workers and this is also reported here.

With regard to the evidence from the studies on direct entry for midwifery, the studies included in the review are likely to be at some risk of bias. The data from the studies was limited and the results of the review should thus be interpreted with caution. No data was available for some of the review's pre-specified outcomes (e.g. actual comparative effect of cost reduction, quantitative change of midwives, career progression rates, retention and attrition rates). There were no randomized controlled studies that analysed the effects of direct entry programmes.

Findings confirm other observations that showed a skewed geographical distribution of studies that analysed the effectiveness of direct entry. There is a dearth of published research in this area and we cannot therefore draw conclusions on the efficacy of direct entry midwifery in a variety of country contexts. Most evidence comes from high-income countries, such as USA, England, Scotland and New Zealand, with only one study originating from a developing country, i.e. Zambia. There were no evaluations from Latin America, Southeast Asia or the Eastern Mediterranean region. Notwithstanding the paucity of published evidence, there is a wealth of anecdotal evidence from many regions, and some may have been missed that were published in languages other than English.

Additional literature reviews of health professionals other than midwives only included studies where a traditional programme was compared to an accelerated programme. Most of these studies showed a general low level of evidence due to poor study quality. There were no randomized controlled trials and no well-designed quasi-experimental studies. Some studies were retrospective quasi-experimental, some cross-sectional surveys with historical or parallel group comparison. They were also labelled differently and only two had pre- and post-tests (critical thinking in student group). The studies also contained heterogeneity of participants (medical students, graduate nurses, student nurses and midwives). There were also different pre-entry criteria such as: a non-nursing degree; prior degree with science specification; prior degree with entry points; college credits; RN (Diploma or Associate Degree) as well as foreign medical doctors doing an accelerated programme.

19 See Annex 2.

Despite these limitations, in general, the results of the review for midwives suggest that direct entry programs may play an important role in increasing the number of midwives. There is a clear need to expand evaluation and operational research efforts in low- and medium-income countries. Further studies are needed and should be designed as prospective cohort studies to examine ways in which direct entry programmes contribute to increasing the numbers of midwives while maintaining the quality and relevance of their education.

Implementation Considerations:

The current severe shortage of health workers and the maldistribution of these professionals have led to the need to rapidly and effectively increase the number of registered health professionals. A number of direct entry programmes already exist in Australia, the United Kingdom and the USA. They appear to produce good outcomes in terms of critical thinking, pass rates for national examinations, professional practice, clinical competence and leadership. However, more evidence is needed about the benefits of these programmes in low- and middle-income countries and whether they are effective both in urban and underserved geographical areas.

There are admissions systems that build on previous learning experience and provide a way for individuals from relevant undergraduate, postgraduate, or other educational programmes to make the transition to higher levels of health professional studies. This has been tried in nursing and midwifery programmes, but the mid- and long-term effects of direct entry programmes are only now being studied. In all cases, the recruitment of high-quality students implies the existence of a solid secondary education system and attractive study and future professional life conditions.

There are other options to increasing the number of health professionals which also address the areas of quality and relevance. These are outlined in the table in Annex 2. They cover the areas of: graduate entry programmes; accelerated programmes; Registered Nurse (RN) to Master of Science in Nursing (MSN); and direct entry. The quality of the published supporting evidence varies across these programmes for the different categories of health workers and with the graduate entry programmes for medical students, but it was agreed that there was sufficient evidence to recommend direct entry of graduates from relevant undergraduate, postgraduate or other educational programmes into professional studies.

4.1.5 Admissions procedures

RECOMMENDATION 7

Health professionals' training institutions should consider using targeted admissions policies to increase the socio-economic, ethnic and geographical diversity of students.

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- Targeted admission policies should include mechanisms to ensure completion of education programmes:
  - they should be consistent with decisions concerning the supply of particular cadres of health workers and take into account the likely numbers of each cadre needed;
  - they should be accompanied by curriculum reforms to reflect different levels of certification depending on the entry qualifications and types of health workers needed;
  - the preferences of applicants should be taken into account (research shows students from rural areas are most likely to serve in rural areas).

Summary of the evidence

Extensive literature exists on recruiting and retaining trained health workers for service in rural and remote areas. However, less well documented are published studies on minority groups, nursing and allied professions, and medical mid-level providers.

Several studies have shown that health professionals do not always have the social and cultural profile and competencies corresponding to the needs of the population they serve: "health professional students are disproportionately admitted from higher social classes and dominant ethnic groups." (Frenk, et al., 2010:24.) The admission of students from rural or poorer areas is insufficient to produce a balanced workforce. There is, however, a substantial amount of evidence that shows the association between rural background before health professionals' training and rural practice following professional training.

A Cochrane review from which most of the evidence that links practice in rural areas to admission of students from rural areas is cited in Increasing access to health works in remote and rural areas through improved retention (WHO, 2010b) and states that "It appears to be the single factor most strongly associated with rural practice." (Grobler, et al., 2009.) The evidence on the ethnicity of the health professional in a rural area is not as strong, i.e. that coming from an ethnic minority group or being a member of an underserved population leads to practice in a rural area. However, if one wishes to change the dominant trend of recruiting based almost solely on academic qualifications, then it will be necessary to not only choose potential health professionals from rural and underserved areas but also, where necessary, from ethnic groups that best match the populations to be served. Reed (1999) argues that although under-represented minority applicants to medical school tend to have lower grade-point averages and admission test scores, success in postgraduate training as a practising physician is equivalent to that attained by the majority of students. Under-representation can be corrected by the proactive recruitment of underrepresented groups and by selection procedures that give more weight to social skills.

Implementation Considerations:

Unanimous agreement is evident in the literature regarding the direct association between students' rural backgrounds prior to admission to health professions and their choice of employment location after graduation. Broader consideration of the influence of entry criteria on eventual career choice would also look at the increasingly complex mixture of financial variables on entry. The evidence on the direct entry of doctors, midwives and nurses gathered for the previous recommendation, in addition to, the literature review in Annex 4 also informed this recommendation. However, given the influences on admission to health professional categories and the importance of preparing people who aspire to such professions, and the link to their preparation through the quality and choices in secondary school education, it was felt to be sufficiently important to include a recommendation requiring separate treatment. It is here where the interface between health and education in what is referred to as the "pool of eligibles" in the "pipeline to generate and recruit the health workforce" is acutely important. As the 2006 World Health Report observes, this "pipeline" spans "primary, secondary and tertiary education institutions and health services facilities that produce a range of workers from auxiliaries to technicians and professionals".

Selection of medical students can present a challenge to universities. One medical school that provided feedback has tried to avoid selecting students who have what are considered unprofessional personal characteristics likely to affect their ability to care for patients and work in a team. In order to provide such an assessment candidates are assessed for non-cognitive attributes that may be indicative of future professional behaviours in addition to the prior academic achievement. A specific test has been designed to consider potentially relevant character traits[20].

In addition, entry requirements may be modified according to the financial contribution the student is able/prepared to make. Bonding or other long-term commitments may also impact on the attributes and qualities of students on entry, and the financial and other commitments on exit. The effect of these changes on the proportion of graduates choosing general practice as a career remains unclear as does training and rural employment subsequent to that training, although many other factors influence the choice of location and career. This evidence is summarized and characterized as strong (in the case of rural origin) or weak (in the case of ethnic diversity) (Walker, et al., 2012; Bowman, 2008).

There is also a considerable literature on admission criteria as a predictor of performance within the training experience, which takes as the end point course completion or attainment of a qualification Student performance, does not directly bear on the outcomes of interest, that is, the quantity, quality and relevance of graduates. There are strong indications that the predictive power of pre-admission academic performance declines as students' progress through their basic training and postgraduate training.

It is clear that admission procedures by themselves will not overcome inequalities in health-care systems. Where targeted admission policies are used, support mechanisms must be in place to ensure conditions in which students are able to complete programmes. These may include adjustments to the curriculum, teaching and learning methods and financial support. Currently, many of the students who do not complete their courses do so for financial reasons, so disadvantaged students would need financial support (e.g. the South Africa subsidy system).

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4.1.6 Streamlined educational pathways and ladder programmes

RECOMMENDATION 8

Health professionals' education and training institutions should consider using streamlined educational pathways, or ladder programmes, for the advancement of practising health professionals.

Quality of the evidence: **Low**
Strength of the recommendation: **Conditional**

We recommend the option in the context of close monitoring and evaluation

Key considerations:

- avoid duplication of programmes – if its implementation is limited, this guideline can reinforce its implementation;
- regulations should be carefully examined;
- demonstrated commitment by senior management and faculty;
- interest and expertise among faculty and administrators;
- budget plan for increasing salaries of faculty;
- community contributions to implement the programme.

Summary of the evidence

Globally, health systems need health professionals who adapt to the health demands of clients and can address the multi-faceted needs of patients. Health system strengthening goals include improving professional development access and the retention of health care providers who can function in multiple settings and have a broad array of competencies.

Educational ladder programmes or other streamlined educational pathways such as clinical career ladder programmes have been utilized to develop an expanded array of competencies for health workers in underserved areas and to promote advancement of practicing health professionals.

Examples of documented educational ladder programmes are curricular innovations stringing together several health professionals' development curricula into one integrated undergraduate programme. These develop multiple competencies of health professionals who follow the continuum of learning through the entire ladder. Programmes like these promote retention and effectively address mal-distribution of health professionals especially in underserved areas. On the other hand, clinical ladder programmes have provided frameworks for recruiting, developing and evaluating health professionals, notably nurses, to promote career progression and retention.

A documented ladder curriculum programme was established by the University of the Philippines Manila – School of Health Sciences (SHS) in Tacloban, Leyte in 1977. This programme is radically different from those found in standard medical schools with the objective of producing a broad range of health workers to serve depressed and underserved communities. It designed and tested new programme models for health human resources development that would be replicable in different parts of the country, and in other countries with the same situation as in the Philippines.

The five levels in the ladder-type structure are: Barangay Health Workers programme (which was later incorporated into the first quarter courses of the Community Health Workers programme or midwifery course); Community Health Workers programme; B. S. Nursing programme; B.S. Community Medicine (Bachelor's degree on a par with baccalaureate degrees awarded by the University) and Medical Doctorate programme. Students are eligible to enroll in the programme if they come from depressed and underserved areas. They are nominated by their own communities for admission and do not go through normal university entrance admission screening processes. The students and their communities forge a social contract that ensures that upon graduation from a specific ladder programme, they return and serve in their community as a health worker. Service leaves between ladders are important components of the programme, providing opportunities for the student to serve and learn at the same time. During the service leaves, the school ensures a firm linkage between the student, the rural health unit and his/her village or barangay. Upon performing his/her tasks satisfactorily, the student returns to the school to move up the ladder again and is nominated by his/her community if there is a need for a health worker with more complex skills. Graduates of the ladder – type curriculum said that SHS had helped them recognize the importance of education and return service. They had learned

discipline and they had become conscious of the need for service to the Filipino community. With the SHS education, they had been able to understand and address the real needs of their people (Tayag and Clavel, 2011).

The step-ladder approach provides for less attrition and waste of resources as one may enter and exit at any level, and become a functional health provider in the health-care system. This continuum approach also allows for the progressive, unified and continuous development of competencies of a health worker. The ladder–type curriculum addresses brain drain and mal-distribution of health manpower (Tayag and Clavel, 2011).

Clinical ladder programmes provide a professional framework for developing, evaluating, and promoting registered nurses (Gustin et al., 1998; Krugman, Smith and Goode, 2000; Bjørk et al., 2007; Cook, 2008). Clinical ladders are designed to recognize and reward skills in nursing practice, and also aim to promote the administrative and education roles of nurses (Goodrich and Ward, 2004). Buchan (1999) considers them as grading structures which facilitate career progression and associated differentiation of pay through defining different levels of clinical and professional practice in nursing. Advancement through the ladder depends upon meeting the criteria of clinical excellence, skills and competency, professional expertise and educational attainment defined at each level.

In the 1970s, to enhance the ongoing process of growth in the practice of professional networking, clinical ladder programmes that focused on the retention, recognition and recruitment of nurses were established (Goodloe et al., 1996; Krugman, Smith and Goode, 2000; Drenkard and Swatwout, 2005; Ward and Goodrich, 2007). At first, the programmes were not well received by health professionals because they saw them as complex processes that were difficult to comprehend (Krugman, Smith and Goode, 2000). To address this issue, many hospitals started modifying clinical programmes to best suit the needs of the institution and health professionals.

Most of the mechanisms of clinical ladders (mostly three- or four-level systems) often refer to the work of Zimmer and Benner (Goodloe et al., 1996; Buchan and Thompson, 1997; Gustin et al., 1998; Krugman et al., 2000; Robinson et al., 2003; Goodrich and Ward, 2004; Drenkard and Swartwout, 2005; Buchan, 1999; Korman and Eliades, 2010; Pierson et al., 2010). Studies revealed that hospitals offering career ladders have higher levels of personal satisfaction among medical personnel than those who lack internal opportunities for professional advancement (Gustin et al, 1998; Krugman, Smith and Goode, 2000). Positive outcomes from clinical ladder programmes include improvement of staff satisfaction, patient satisfaction, physician satisfaction, professional development (Ward and Goodrich, 2007), increased diversity in the health care workforce coupled with a low drop-out rate (Dodgson et al., 1998). The literature reveals that the use of clinical ladders results in decreased costs (Drenkard and Swatwout, 2005), decreased use of nursing sick time, decreased turnover, and decreased use of agency nurses (Buchan, 1999). The intent to stay at the hospital for more than a year increased as nurses moved upward in the career ladder program. No quantifiable measures were reported, although authors hypothesized retention might be due to intrinsic motivation factors, such as updating of nursing knowledge and skills, personal development and the possibility of salary increase when moving up the ladder (Bjørk et al., 2007).

Participants in the ladder program showed a higher involvement in leadership ($p<0.001$) quality improvement ($p<0.02$) and preceptorship ($p<0.001$) compared to non-career ladder professionals in the same job role (Nelson and Cook, 2008). Qualitative research results described less attrition and waste of resources, as one may enter and exit at any level and become a functional health provider in the health care system. It also allowed for the progressive, unified and continuous development of competencies of a health worker. However, negative consequences of the ladder programmes are not well studied.

Additional evidence from a feasibility and acceptability survey showed that 92 per cent of all respondents agreed that the introduction of streamlined educational pathways and ladder programmes was acceptable but rather complicated to implement, only 78 per cent stated that it could be feasible. The mean score for acceptability was 6.92 and for feasibility 5.86. Respondents at the national and district levels ranked this intervention as more acceptable and equal (95 per cent) than at the regional level (84 per cent). Qualitative evidence showed "...There is potential interest from regulators but the idea is not completely accepted by educational institutions..."; "The feasibility would depend on acceptability among different groups of health professionals. This intervention needs an agreement or consensus among all health professions." (WHO, 2012).

Implementation Considerations:

Changes in the workforce generally occur much more rapidly than educational institutions can adjust to them, however, educational institutions can foster and drive change, such as the case in the development of the clinical associates programme in South Africa (Doherty et al., 2013). Regulations can fix rigid professional boundaries and create conditions that hinder a rapid response to new needs. This is often the case in low-income countries where the need for scaling up is greater.

To respond to the urgent problem of augmenting the quantity of health professionals without depreciating the quality of their education, initiatives can be taken that streamline educational pathways and adapt them to the needs of individuals already in the labour market who wish to upgrade their competencies and enter, or progress in a health career. This is often difficult

because of the rigid entry regulations in professional educational programmes or in the profession itself. The creation of 'career ladder programmes' for undergraduate or postgraduate education allows individuals in lower positions, within or outside the health sector, access to training programmes that will take them step-by-step to a career in health, or allow them to advance their career in health. Box 6 illustrates how this works.

Box 6. Career ladder case study: Maria

Maria is 19 years old. She graduated from high school with average grades. She works in the Environmental Services department at the local hospital. She earns US$10 per hour cleaning patients' rooms. Maria likes working at the hospital. She dreams of becoming a nurse, but she cannot afford to go to college. Through the hospital's career ladder programme, Maria can train to become a nurse's aide in less than a year. She will complete three months of classroom training in order to qualify for a position as a nursing assistant. While she works as a nursing assistant, she will learn new skills to help her qualify as a nurse extender. Her work will be closely monitored by a nursing supervisor, and she can get extra tutoring if she needs it. As a nurse extender, Maria can earn up to US$14 per hour. She will work directly with patients, helping the nurses provide care. If Maria wants to continue her studies to become a registered nurse, the hospital will provide tuition assistance and a flexible work schedule to enable her to attend classes at the local college.

Source: ExploreHEALTHCareers.org (2007).

These programmes promote retention and help address maldistribution of health professionals (Tayag and Clavel, 2011) by providing opportunities for students to serve in underserved areas, learn by doing, and receive recognition and rewards as they acquire new competencies and experience. They allows for career progression, and are particularly used in nursing (Buchan, 1999; Krugman, Smith and Goode, 2000; Bjørk, et al., 2007) although available in other fields, such as physical therapy or pharmacy. Its direct costs are compensated by lower turnover and sick leave rates, and by higher levels of satisfaction among personnel (Gustin, et al.,1998; Buchan, 1999; Krugman, Smith and Goode, 2000; Drenkard and Swatwout, 2005).