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 whilst using the evidence of that same deficient system to bring about change, the strength of the majority of the recommendations was conditional. It was the opinion of the Guidelines Development Group however, that in 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 Guidelines 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 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 supporting 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[1]

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 about 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.

1 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[2].**

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

Although curricula are not only the means by which health professionals acquire knowledge, they can act as a vehicle for participation in inter-professional 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. THEnet consists of 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 sufficient robust evidence from systematic reviews carried out 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; a search and 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.

3 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 uneven distribution of these professionals, has 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 in addition to 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[4].

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 guidelines 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 practising 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 where the objective is to produce 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, and 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 the uneven distribution 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).

4.1.7 Inter-professional education (IPE)

RECOMMENDATION 9

Health professionals' education and training institutions should consider implementing Inter-professional education (IPE) in both undergraduate and postgraduate programmes.

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

We recommend the option only in the context of rigorous research.

Key considerations:

- IPE may be relevant not only to quantity but also to quality and relevance. IPE may be resource-efficient in a way that allows more health workers to be educated; there is a need to obtain much better evidence in institutions with both programmes and resources available to support the necessary research.

Summary of the evidence

A large body of evidence exists that provides data and perspectives from the different health professions. Data illustrates that education provided by different categories of health professionals requires a substantial amount of coordination among the educators and the curriculum developers. Evidence has also shown that making attendance compulsory and developing flexible scheduling can prevent logistical challenges from becoming a barrier to effective inter-professional collaboration. A review of the recent literature from 2005 to 2010 identified at least 30 studies that evaluated the impact of IPE. These published reports were on studies done in Australia, Belgium, Canada, Japan, Norway, Sweden, the United Kingdom and the USA. These countries have incorporated IPE in the curricula in the basic training of health professionals. Data drawn from the research ranges from cross-sectional surveys to longitudinal follow-up surveys and intervention studies.

The evidence derived from cross-sectional studies demonstrated that the students from the different professions participating in the programme felt a perceived improvement in their knowledge and appreciation of the roles of other professions (Ateah, et al., 2011; Dumont, et al., 2010; Nango and Tanaka, 2010; Cameron, et al., 2009; Ogawara, et al., 2009; Almas and Barr, 2008; Art, et al., 2008; Hamilton, et al., 2008). In specific practice areas, such as paediatrics and cardiovascular care, students felt that the IPE approach led to improved clinical and practice-based skills (Coster, et al., 2008). Evaluative studies on inter-professional focused workshops for specific subject areas revealed pre- and post-exposure statistics of significant increased knowledge and awareness of the subject area, including students improved communication and team working skills (Dumont, et al., 2010). Similar findings were shown among medical students, student nurses and student midwives (Dacey, et al., 2010). In addition, in multi-disciplinary student workshops, shared learning before and after qualification was shown to be helpful in becoming better team members.

In longitudinal surveys, specifically those involving students in undergraduate professional training, there was a significant increase in the students' views of the knowledge and benefits gained from a compulsory 45-hour IPE programme (Furber, et al., 2004). This remained true even when training was carried out through a problem-based approach during clinical training (Nango and Tanaka, 2010). In settings where joint learning took place over a long period of time and included at least eight professional groups with communication skills and ethics in the curriculum, the strength of professional identification declined over time. With the exception of student nurses, enthusiasm for IPE remained high for all categories of students (Steward, et al., 2010). The benefits of an integrated primary care experience through IPE, as well as the enhancement of collegial support and resources to community-based and academic training, have been well documented, and have led to important educational collaboration and successful IPE initiatives (Muller, et al., 2008). Longitudinal studies that evaluated the impact of IPE show that at qualification, professionals were more confident about their communication skills and inter-professional abilities. This reinforces the argument that IPE should be included in pre-qualifying curricula (Pipas, et al., 2004). Students in non-clinical professional categories such as biomedical sciences were less appreciative of IPE and felt that they needed more explicit learning objectives (Lewitt, et al., 2010).

Finally, intervention and experimental studies based on controlled trials where the impact of IPE was evaluated were analysed. Most of the studies compared groups that were allocated to IPE with those that were not. In all studies except one that compared students from one school with those from another, no significant difference was shown in the group that had experienced IPE

(Cameron, et al., 2009). Other studies showed an increase in first year students' confidence in their own professional identity and IPE helped them to be better prepared for clinical placement (Terry, et al., 2009). In another intervention, a group's experiences in a course where students met weekly for three hours during one semester showed positive attitudes to team collaboration (Hamilton, et al., 2008). Yet another interdisciplinary community-oriented exercise offered unique opportunities for students to appreciate health problems as they occurred in the community (Pollard, et al., 2006).

Implementation Considerations:

WHO identifies IPE as the process by which a group of more than two profession specific students from health-related occupations with different educational backgrounds learn together during certain periods of their education with interaction as an important goal (WHO, 2010c). The strategies and considerations for introducing or improving IPE have been well described in the document Framework for Action on Inter-professional Education & Collaborative Practice (WHO, 2010c) . Essentially, IPE is shaped by mechanisms that can be broadly classified into those driven by: (a) staff responsible for developing, delivering, funding and managing IPE; and (b) educator mechanisms (the term 'educator' includes all instructors, trainers, faculty, preceptors, lecturers and facilitators who work within any education or health-care institution, as well as the individuals who support them). Developing IPE curricula is a complex process, and may involve staff from different faculties, work settings and locations. More important however, is maintaining IPE. This can be equally complex and requires careful consideration. The following key issues should be considered as priority for policy-makers when introducing, improving and sustaining IPE.

- **Supportive institutional policies and managerial commitment.**
- **Good communication among participants.**
- **Enthusiasm for the work being done.**
- **A shared vision and understanding of the benefits of introducing a new curriculum.**
- **A champion who is responsible for coordinating educational activities and identifying barriers to progress.**
- **Careful preparation of instructors for their roles in developing, delivering and evaluating IPE.**
- **For most educators, teaching students how to learn about, from and with each other is a new and challenging experience.**
- **For IPE to be successfully embedded in curricula and training packages, the early experiences of staff must be positive. This will ensure continued involvement and a willingness to further develop the curriculum based on student feedback.**
- **Curricular development and delivery mechanisms should be fully appreciated. Health-care and education around the world are provided by different types of educators and health workers who offer a range of services at different times and locations. This adds a significant layer of coordination for inter-professional educators and curriculum developers.**

In inter-professional education, students from various professions learn together as a team. Their collaborative interaction is characterized by the integration and modification of different professions' contributions in light of input from other professions. The hallmark of IPE is the type of cognitive and behavioural change that occurs when participants understand and are familiar with the basic language and mind-sets of various disciplines. Prior to participating in IPE students must have basic knowledge and skills related to their own profession. IPE is an essential step in development of a collaborative health workforce.

A number of principles which are important in the design of IPE curricula include:

(a) relevance to learners' current or future practices;

(b) use of typical, priority health problems that require inter-professional approaches for their solution:

(c) inter-professional learning based on clinical practice

(d) learning methods that facilitate interaction between learners from different professions including small group learning. Formats such as case-based and problem-based learning have been shown to be particularly effective.

4.2 Accreditation

4.2.1 Accreditation

RECOMMENDATION 10

National governments should introduce accreditation of health professionals' education where it does not exist and strengthen it where it where it does exist.

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

We recommend the option

Key considerations:

- strengthen existing health professional accreditation
- accreditation must be based on standards
- it must be supported by legislation
- it should be done independently
- the process should be transparent
- the system and process should be periodically evaluated.

In spite of the low 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.

Summary of the evidence

Accreditation is defined as a process of review and approval by which an institution or programme is granted time-limited recognition of having met certain established standards (Uys and Coetze, 2012). Accreditation, if properly used, is a key tool for quality management of professional education and for ensuring that graduates have the competencies that correspond to accepted professional standards and to the needs of the population. The alignment of accreditation with health goals is one of the four enabling actions that contribute to scaling up the education of health professionals (Frenk, et al., 2010). Accreditation is particularly important at a time when private health professionals' education is proliferating, often in an unregulated environment.

There is no systematic assessment of accreditation practices worldwide; there is variation in its utilization and, in some countries, it is absent or exists only on paper. Accreditation mechanisms "*exist in three quarters of Eastern Mediterranean countries, just under half of the countries in Southeast Asia, and only about a third of African countries*" (Frenk, et al., 2010:29). Even in an integrated economic region such as the European Union (EU), there are important variations in how accreditation is conducted (Frenk, et al., 2010). There does not seem to be a relationship between the Gross National Income (GNI) level of countries and whether or not they have accreditation systems (Uys and Coetze, 2012). Also, private schools are less likely to undergo accreditation procedures (Frenk, et al., 2010).

In some countries, accreditation is performed by the government, in others it is the responsibility of professional councils or associations, or even private agencies (Uys and Coetze, 2012). Accreditation may target specific programmes or whole institutions. There is limited literature on the respective advantages and disadvantages of each modality, or on the impact of accreditation on quality improvement.

Nevertheless, it is understood considered that accreditation can have a significant positive effect on the quality and relevance of the health workforce in that it can guide professional education in addressing the priority health concerns of the community. A global strategy that incorporates the best of all practices with clear targets and outputs could encourage regions to create and reinforce national accreditation systems.

In order to be effective, such a global system should be based on standards developed and accepted by all stakeholders. The process of accreditation should be independent and transparent so as to be a stamp of quality (Baumann and Blythe 2008). Accreditation status should be time-limited, and the accreditation system itself should be periodically evaluated.

Implementation Considerations:

Accreditation, and similar mechanisms such as regular programme reviews, are well established in some countries (Australia, Canada, South Africa, USA), developing in others, and weak or absent in quite a number, particularly among lower income countries. A first action might be to raise awareness of the potential gains in quality and relevance that come with well-conducted accreditation practices. Political commitment to higher quality education is the first component to be considered in developing accreditation mechanisms, as some educational bodies may feel that accreditation threatens their vested interests, particularly if the objective is to sanction rather than to help institutions to improve their performance. Examples of successful practices need to be analysed and disseminated. Fostering voluntary accreditation may increase the commitment of participating institutions and the legitimacy of the whole process, which can be seen as a "social contract" between institutions and the community (Dussault, 2008). Being accredited by a reputable mechanism and accrediting body brings status and recognition, and can be a strong incentive to maintaining high standards.

Global cooperation and collaborative efforts aid in setting standards and assisting countries in developing the capacity for local adaptation and implementation, and in facilitating information exchange (Frenk, et al., 2010). The Global Consensus on Social Accountability and the long-standing WHO agenda on social accountability of health professions' schools can serve as basis for such cooperation.

In many countries, the essential components of internationally accepted regulatory good practices are missing. This is especially true in low-income countries where regulators, in particular professional councils, may lack the authority, resources or even technical capacity to ensure effective regulation. In such cases, the state should be the regulator and gradually delegate licensure and authority as professional groups' capacity develops (Dussault 2008). Care must be taken that quality assurance regulation does not restrict flexibility in the delegation of tasks or in the co-sharing of certain rights to practice. This would have negative effects such as making team work less effective, or limiting the possibility of creating new cadres who could help mitigate the shortages of certain professional groups, and provide essential care particularly to underserved populations. There is broad consensus that the accreditation of institutions is needed to ensure quality of care and patient safety, but there is no universal way of doing it.

The lack of evidence and studies assessing the impact of health professionals accreditation as part of regulation does not mean that there should be no regulation. In spite of the low quality of 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.

4.3 Continuous professional development (CPD) for health professionals

RECOMMENDATION 11

Health professionals' education and training institutions should implement continuous professional development and in-service training of health professionals 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:

- CPD would be transformative education if focused in areas where there are resource shortages.

Summary of the evidence

As part of a changing health services system, health workers need to keep up with the evolving health needs, policies, technologies and knowledge (WHO, 2006a; Frenk, et al., 2010). The exponential progress in technology, diagnostic tools and treatment methods, as well as changing population demographics and disease burden, makes updating and maintaining the knowledge and skills of health workers throughout their professional life more important than ever. Continuing professional development (CPD) refers to educational activities conducted after graduation to maintain, improve and adapt the knowledge, skills, attitudes and practices of health professionals, so that they can continue to safely and effectively provide health services.

There is some evidence of positive effects, for example, improvements in knowledge, skills and attitudes, as well as in clinical practice and health outcomes (weight gain or child-carers' retention of nutrition advice), but the effects of CPD have not been systematic. In some studies, knowledge had improved, but clinical habits had not always changed (Johnson, 2012). Stakeholders' acceptability was good and access to CPD was much valued and could be an important factor in retaining health professionals (WHO, 2010b).

The relative effectiveness of CPD methods depends on numerous factors, such as the intended target, the purpose (transfer of knowledge, acquisition of new skills, familiarity with a new technique), the techniques used, who delivers the training, and the subject. Reviews of studies of CPD programmes for medical professionals indicate that interactive techniques, reminders, patient-mediated interventions, outreach visits, multifaceted activities, audit with feedback, conferences, printed information and didactic activities without practice were found to be ineffective, though they are widely used (Davies, 1995; Bloom, 2005). The use of case studies and a combination of techniques, including multiple exposure, was found to be more effective (Mariannopoulos, et al., 2007; Forsetlund, et al., 2009). Effectiveness is also increased when CPD is linked to career progress and other educational interventions (WHO, 2010b). The strength of these conclusions is limited due to the variable quality of the methodologies used in the reviewed studies, but available evidence has good face validity and indicates credible trends.

Implementation Considerations:

Given the diversity of objectives CPD can pursue and the pedagogical approaches undertaken, CPD is difficult to standardize. CPD can be made mandatory, as is in place or being introduced in many countries, or can be include in accreditation criteria. In some countries, the educational institutions are accredited and left to decide how to organize CPD, and carry out periodic monitoring and reviewing by applying the same principles as for pre-service education. In other countries, professional councils are responsible for CPD.

Although warranting study, the cost-effectiveness of CPD interventions has had little attention. However, some impacts may be difficult to capture as CPD is not only an activity for knowledge acquisition or skills development, but it is also as an opportunity for health professionals to interact with other practitioners and to maintain professional and social networks, which is an important motivational factor. This is particularly important for professionals working in isolated regions (Van, et al., 2008).

4.4 Monitoring, implementation and evaluation

One of the main causes of shortages is inadequate numbers of persons with appropriate education and training entering the health workforce labour market. Many low and middle-income countries do not have the sophisticated data collection systems needed by ministries of health and education to assess unmet needs nor the capacity to analyse and utilize this data to inform and strategically envision, determine, and plan health workforce strategies.

4.4.1 Monitoring health workforce supply and planning for the future

It is critical to monitor and track each of the components of capacity and output. By drawing on assessments of oversupply or undersupply of various cadres of the active health workforce, institutional capacity for producing new health workers can be reduced or increased, or training programmes for new cadres can be developed. This information can be used to identify the specific bottlenecks in capacity so that if rapid increases in production are required, capacity can be increased accordingly.

4.4.2 Monitoring certification rates

Monitoring the intake of students into health professional programmes and pass/failure rates on licensing and certification exams may indicate problems with entry requirements, the curricula, the teaching methods used or a number of other issues such as the lack of clinical placements, or a combination of factors. Each situation would have to be evaluated to determine where the problems lie.

An important consideration, in addition to the number of graduates who are certified to practice, is their locale of practice upon graduation. High departure rates, through exit from the health sector or through migration to other countries, is an indicator of major retention problems that require the immediate attention of policy-makers. The same applies if data show an overconcentration of new graduates in well-served areas and organizations. There are cases where graduates succeed in the institutional proficiency tests, but fail the certification exam, indicating a mismatch in the level of proficiency expected at the institutional versus the certification level.

In settings with extreme shortages or uneven distribution of highly skilled service providers, it is important to institute mechanisms to monitor the quality of the large cadres of lower skilled workers who are trained to meet the immediate needs for basic health services among unserved and underserved, mainly rural communities. Since these workers will often be the first point of contact with the formal health-care system, and therefore will represent the system at the community level, guaranteeing the quality of their training and practice through proper certification and supervision is of extreme importance.

4.5 Good practice recommendations: Governance and planning

In addition to the twelve cited recommendations in this report, there are four good practice recommendations proposed that are equally viewed as vital for successfully transforming health professionals' education.

4.5.1 Good practice 1

Government at the highest level shows political commitment to reform and takes leadership of its implementation.

4.5.2 Good practice 2

There is formal collaboration and shared accountability between the ministry of health, the ministry of education, and other related ministries (e.g. finance, labour, public service), at national and/or sub-national level in the education and training of health professionals.

4.5.3 Good practice 3

A national plan to produce and retain graduates is developed in consultation with stakeholders, informed by the needs and absorptive capacity of the labour market, and aligned with the national health plan.

4.5.4 Good practice 4

The creation or strengthening of national or sub-national institutions, capacities or mechanisms to support the implementation of the reform and scale-up plan (e.g. legislation, policies, procedures).

4.6 Civil society suggestions

This section uses excerpts from the suggestions made by civil society based on the online survey that drew 160 responses out of 304 civil society organizations in low and middle-income countries[5]. To advance the contributions of what is termed 'Southern' civil society to the transformational education initiative, the results of the survey form the basis of the following suggestions:

1. **Research findings must be translated into practice to meet the needs and encourage the support of policy-makers and civil society advocates.**
2. **Cost-effectiveness studies on a larger scale are needed, but equal weight should be given to assessing and building up Southern civil society[6] capacity and ability to support the initiative.**
3. **Given the scope of the initiative, standard methods and metrics should be developed for transformational education research and practice.**
4. **The implementation of national agendas for civil society research and evaluation processes should be enabled to foster comprehensive polices that subsequently enhance the sustainability of the civil society workforce and leadership in guiding policy recommendations.**
5. **The inclusion of Southern civil society perspectives should be a critical step in the process of improving and scaling up health professionals' education.**
6. **The integration of Southern civil society in health population programmes should be promoted and enabled.**
7. **A phased/tailored approach to scaling up should be used.**
8. **Scaling up should be tailored to contextual circumstances, and delivery should be decentralized.**
9. **An integrated approach to scaling up should be adopted.**
10. **Strong leadership and governance are needed for the entirety of the scale-up process.**
11. **Local implementers and other stakeholders should be encouraged and engaged.**
12. **Both state and non-state actors should be used as implementers.**
13. **Engaged and "activated" underserved communities are key to the success of scaling up.**
14. **Political will should be demonstrated for national policies.**
15. **The critical issue of country ownership should be addressed consistently throughout the transformative process.**
16. **Research results should be incorporated into implementation: learning and 'doing'.**

5 http://www.who.int/hrh/education/en/

6 Civil society organizations located in the economic South. Civil society here is understood broadly to include for example, faith-based organizations, popular movements, interest-based organizations, essentially 'non-state' actors.