WORKING PAPER

Use of outcome metrics to measure quality in education and training of healthcare professionals

A scoping review of international experiences

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Preface

This document presents a rapid review of the published evidence on initiatives undertaken at international and national levels that may inform the further development of the proposed NHS outcomes framework for workforce planning, education and training in England. The working paper is in two parts. Part 1 is designed as an exploratory review, with a focus on the use of quality indicators to assess and monitor the delivery of healthcare education and training in international settings. Part 2 examines the use of two specific quality indicators to measure the quality of medical education in three countries. Together, they suggest that efforts to systematically assess the quality of the delivery of education and training of the healthcare workforce appear to be rarely addressed explicitly. We identify areas where further work may provide useful additional insights into quality measurement in healthcare education and training.

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Summary

1. In its 2010 Consultation document 'Liberating the NHS: Developing the Healthcare Workforce' the Coalition Government proposed a new framework for workforce development in the health sector that commits to the delivery of "high quality education and training that supports safe, high quality care and greater flexibility". As part of this commitment, it proposes an outcomes framework for workforce planning, education and training involving quality metrics, building on ongoing work on indicator development for commissioning non-medical and medical education and training.

2. This brief report provides a rapid review of the published evidence on initiatives undertaken at international and national levels that may inform the further development of the proposed outcomes framework. It is designed as an exploratory review, with a focus on the use of quality indicators to assess and monitor the delivery of healthcare education and training in international settings.

3. Assuring and enhancing the quality of care should form the ultimate goal of high quality training but the available evidence of a direct association between the quality of healthcare education and training and the quality of care provided remains scant. Evidence that is available tends to be limited to specific fields. The academic literature is beginning to address these issues and future work should aim to systemically assess emergent evidence.

4. We find that there is increasing interest and activity, nationally and internationally, in the further development of the healthcare workforce to better meet the present and future needs of a changing healthcare environment. However, the overarching focus of relevant initiatives tends to be on workforce planning and while education and training is seen as core component of planning as a means to secure (future) supply, efforts to systematically assess the quality of the delivery of education and training of the healthcare workforce appear to be rarely addressed explicitly.

5. Several countries are employing implicit or explicit accreditation schemes of medical schools and programmes, but the extent to which such schemes can be used to extract metrics for monitoring remains uncertain. A review by the Belgian Health Care Knowledge Centre (2010) of the experiences of the use of quality criteria for training settings and trainers in postgraduate medical education in Canada, France, the Netherlands, Switzerland and the UK found these to be still evolving.

6.   This report took a relatively narrow focus on the use of quality indicators to assess and monitor the delivery of healthcare education and training at national and international levels. There may be relevant initiatives at regional or local levels which we were not able to review within the scope of this work. Furthermore, we also focused on evidence published in English language only, so evidence presented here should be interpreted with caution. Finally, as mentioned earlier, this review relied on published evidence only so ongoing but not documented debates and initiatives are not captured here.

7.   In future, it will therefore be important to undertake a broader review of local and regional initiatives in a variety of settings so as to better understand the use and usefulness of quality metrics applied to the delivery of education and training of healthcare workers. Any such work would however have to be framed within in the context in which education and training takes place. Thus, a major challenge for international comparison of quality of education and training in healthcare and its assessment remains in the variation with which training, in its various stages, is organised and regulated both within and between countries.

Acknowledgements

Background

In its 2010 Consultation document 'Liberating the NHS: Developing the Healthcare Workforce' the Coalition Government proposed a new framework for workforce development in the health sector that commits, among other objectives, to the delivery of "high quality education and training that supports safe, high quality care and greater flexibility" (p. 6).[1] As part of this commitment, it proposes an outcomes framework for workforce planning, education and training involving quality metrics, building on ongoing work on indicator development for commissioning non-medical and medical education and training[2-3], such as those recently proposed (and scheduled for further testing) by Medical Education England.[4] The need to establish a sound system of quality governance was reaffirmed by the NHS Future Forum's 2011 report on education and training, highlighting the need to focus on educational outcomes while emphasising the challenges and requirement for further development in this area in particular.[5]

There is an interest, at the Department of Health, to learn more about international experiences in the use of indicators to measure quality in education and training of the healthcare workforce, in particular the extent to which quality metrics, where used, assess issues around ensuring sufficient supply; excellence of training for the current and future workforce; the safe delivery of training with relation to patients, staff and trainees; as well as measuring the impact of training on patient experience, staff and learners; creating a workforce receptive to research and innovation; and value for money in healthcare training and education.

This brief report aims to support this process through a rapid review of the published evidence on initiatives undertaken at international and national levels that may inform the further development of the proposed outcomes framework for workforce planning, education and training. The work presented here is not intended as an exhaustive review of the available evidence on the quality of education and training of the health workforce overall. Instead, it is designed as an exploratory review, with a focus on the *use of quality indicators to assess and monitor the delivery of healthcare education and training* in international settings.

About this report

The report is in three parts.

Part I. Use of outcome metrics to measure quality in education and training of healthcare professionals: Overview

Part I presents an overview of the use of outcome metrics to measure the quality of the delivery of education and training of healthcare professionals. It does so through three parallel streams of work:

(i) a scan of the published peer-reviewed and grey literature on assessing the quality of education and training of healthcare professionals, focusing on existing systematic reviews of the available evidence;

(ii) a rapid review of work undertaken by international organisations and initiatives on the quality health workforce education and training; and

(iii) a rapid review of initiatives of potential relevance in a small set of countries so as to provide a 'benchmark' to approaches foreseen for the NHS.

The evidence presented in Part I was identified through an iterative search of the bibliometric database Pubmed and web search engines (Google) of the academic and grey literature, as well as information from websites of international organisations and national government agencies. We applied broad search terms, using combinations of ("/" indicating "or"), 'health(care) workforce/professional', 'education/training', 'quality' and 'indicator/ measure'. It should be noted that, by, relying on published evidence, the review is likely to miss ongoing developments nationally and/or internationally on indicator development in education and training that are being debated but have not yet been documented or made available in the public domain.

Part II. An international comparison of the use of specific quality indicators to measure the quality of healthcare education and training

Part II builds on the evidence review presented in Part I of this report.

In this brief, we extend this work by examining:

(a) Have any other countries considered measuring board-level engagement with education and training and, if so, what indicators have they used?

(b) To what extent is safe supervision measured internationally and is it used to measure quality?

We focussed this work on three countries, Australia, Canada and the United States. This follows our earlier review of outcome metrics in healthcare education and training, country selection was in part to ensure comparability to the UK in terms of health system financing and organisation (in the cases of Australia and Canada), and we hypothesised that medical training outcomes metrics might have been designed in a similar way. We also included the United States because of its extensive experience in the use of quality indicators in healthcare more broadly.

Similar to work undertaken for Part I of this report, the evidence presented in Part II was identified through an iterative search of Pubmed and web search engines (Google) of the academic and grey literature, as well as information from websites of international organisations and national government agencies concerned with the education of medical

doctors, nurses and allied health professionals in each country of interest. We applied broad search terms, including 'medical training'; 'medical education'; 'nurse training'; 'nurse education'; 'occupational therapist training'; 'occupational therapist education'; and 'quality of medical education', each in combination with the country name, 'health(care) workforce/professional', 'education/training', 'quality' and 'indicator/ measure'. For this study we reviewed only reports and accreditation schemes produced by these bodies.

Part III provides a concluding summary of observations and suggests areas for further enquiry.

Part I. Use of outcome metrics to measure quality in education and training of healthcare professionals: Overview

Assessing the quality of the delivery of education and training of healthcare workers: a scan of the literature

We carried out a scan of the published academic literature on the use of indicators and metrics to assess the quality of the delivery of education and training of the health workforce, with a focus on existing review work.

At the outset it is important to note that there is a considerable body of literature which examines learning and training outcomes of medical and non-medical professions, including interventions to improve the learning environment and tools for the evaluation of teaching quality in undergraduate and postgraduate settings and residency, and in medical and nursing education.[6-10] However, there appears to be little work specifically aimed at developing metrics for the evaluation of the quality of the delivery of education and training. For example, a recent systematic assessment of analyses of nursing education outcomes identified 25 studies, with the majority examining strategies and interventions to improve knowledge and skills acquisition and effective learning, or investigating factors impacting on student learning.[6] Where the use metrics is being analysed, this tends to focus on medical or nursing school performance and much of the work on quality indicators appears to centre on academic productivity (eg number of academic papers published in a given period) and training success (eg proportion of students entering a given speciality). One study of nursing education outcomes reviewed by Spector (2007)[6] implemented a quality audit system within nursing colleges in one province in South Africa with a view to develop quality indicators for nursing education institutions in South Africa.[11] However, we were unable to identify published follow-up work to ascertain whether such a system was indeed implemented.

The Belgian Health Care Knowledge Centre carried out a systematic review of the published evidence on components of quality of postgraduate medical education with a view to inform the development of quality criteria for trainers and training settings.[12-13] Including 39 studies (32 reviews), the review found that relevant work mostly relied on descriptive studies and the most frequently assessed quality areas focussed on the training process and the assessment of trainees. The review failed to identify criteria that would enable assessment of the quality of staffing or criteria for training settings; however, it confirmed the importance of the quality of supervision. The review was also unable to identify evidence of an association between quality criteria for training settings or trainers

and learning outcomes and physicians' competences; indeed, none of the studies included analysed the association with quality of care.

Arguably, assuring and enhancing the quality of care should form the ultimate goal of high quality training and only more recent discussions appear to be addressing this question as for example within the Accreditation Council for Graduate Medical Education (ACGME) Outcome Project in the United States.[14] Evidence of a direct association between the quality of healthcare education and training and the quality of care provided remains scant and evidence that is available tends to be limited to specific fields.[15-16] There is an increasing body of work on quality improvement initiatives regarding residency training[17], with selected studies also aiming to link teaching quality improvement to patient outcomes.[18-19] Future work should focus on undertaking a systematic assessment of the emergent work around quality improvement initiatives in healthcare education and training and patient outcomes.

Assessing the quality of the delivery of education and training of healthcare workers: international experiences

There is increasing interest and activity, nationally and internationally, in the further development of the healthcare workforce to better meet the present and future needs of a changing healthcare environment involving changing patterns of illness and disease, ageing populations, accelerating technological advances and innovation, and new patterns of service delivery and funding. For example, over the past decade, the OECD, in its Human Resources for Health Care project (2002-2006), the World Health Organization (WHO) and the European Commission, have undertaken and/or funded work on health workforce development, frequently, although not exclusively, with a focus on supply and demand issues as well as the division of labour or skill mix.[20-25]

Yet, although education and training are seen as core components of planning as a means to secure (future) supply, efforts to systematically assess the quality of the delivery of education and training of the healthcare workforce appear to be rarely addressed explicitly. For example, the European Commission's 2008 "Green paper on the European workforce for health" and its subsequent report on the consultation emphasise the key role of workforce training.[26-27] However, training is conceptualised, mainly, in relation to securing supply and the need for continuing professional development[28], but the role of quality in the delivery of education and training is not mentioned specifically.

The OECD recently launched a new effort into health workforce planning, with the aim to

(i)   review and compare developments and new approaches towards assessing future demand and supply of healthcare workers across OECD countries;

(ii) explore aspects around skill requirements in the health sector; and

(iii) assess selected policy levers in education, recruitment and retention to address existing or projected imbalances in the skill mix.[29]

This work draws, in part, on the OECD Skills Strategy, which seeks to support countries in developing and optimising the skills in the workforce overall as a means to improve countries' economic and social outcomes.[30] One component of the strategy centres on the quality and efficiency in learning provision, that is ensuring that "the right skills are acquired at the right time, right place and in the most effective mode" (p. 3). Responsiveness, that is ensuring that the providers of education and training can adapt

efficiently to changing demand is also considered. The Skills Strategy is generic although sector-specific analyses are planned. However, in the area of health, the analysis is expected to focus on skill mismatch and skill transferability only.[29] Nevertheless, work is ongoing and outcomes of the Skills Strategy might provide important pointers towards the development of indicators for or measures of quality of the delivery of education and training that may be transferable to the healthcare sector. Similarly, ongoing OECD work on learning outcomes in the higher education sector more generally seeks, as part of the assessment, to collect information on the quality of the learning environment (see Box 1). This information might form a useful basis for the further development of indicators for the quality of the delivery of education.

Box 1 OECD Assessment of Higher Education Learning Outcomes

Quality of education has become an increasingly central part of OECD's work, with current efforts aimed at improving the evidence base on skills acquired in higher education.[31] The Assessment of Higher Education Learning Outcomes (AHELO) provides a tool for the evaluation of student performance as well as assessment of the relevance and quality of teaching in higher education. The assessment involves a generic skills test among undergraduate students, seeking to evaluate skills such as critical thinking, analytical reasoning and problem-solving; discipline-specific skills; and contextual information, which is expected to provide information on the quality of the learning environment, with the relevant instrument currently under development by the Australian Council for Educational Research. A feasibility study involving about 150 higher education institutions in 15 countries is ongoing, with wider roll-out to be decided on subsequently.

Globally, the Global Independent Commission for Health Education in the 21st Century launched, in 2010, a major report calling for transforming health professional education to better meet the changing requirements facing health systems worldwide.[32] It envisages instructional and institutional reforms to be guided by two main outcomes, referred to as 'transformative learning' and 'interdependence in education'. Drawing on the initial framework developed by the WHO for health system performance assessment[33], the report identified four functions that apply to educational systems:

(i) Stewardship and governance: norms and policies, use of evidence for decision making, and performance measurement to provide strategic guidance for the different elements of the educational system;

(ii) Financing: the allocation of resources to educational institutions;

(iii) Resource generation: faculty development; and

(iv) Service provision: delivery of educational services.

The *quality* of the educational delivery system, here focusing on postsecondary education establishments offering professional degrees in medicine, nursing and/or public health, is addressed implicitly, identified by means of key drivers for institutional improvement. These include accreditation, academic centres, collaboration, faculty and learning.

Defined as the "formal legitimisation of an institution to grant degrees, enabling its graduates to achieve licensing and certification for professional practice"[32] against meeting approved criteria, accreditation is considered as a means for quality assurance while at the

same time providing strong incentives for improvement and reform. In this context, the report refers to the global standards in medical education developed by the World Federation for Medical Education (WFME) (Box 2).

A number of countries have instituted accreditation mechanisms for medical schools and/or programmes, including, for example, Australia (medical schools and programmes, also covering New Zealand)[34] and the United States (undergraduate and graduate medical education)[35] (see also below). However, according to Frenk et al. (2010), overall, accreditation criteria and assessments are fairly uncommon, and metrics appear to be rarely used.[32]

Box 2 Standards in medical education for quality improvement

In 2004, the World Federation for Medical Education (WFME) published global standards for undergraduate and postgraduate medical education and continuing professional development[36-38], followed by the establishment of a joint international taskforce of the WHO and WFME on accreditation in medical education.[39] It involved the development of the 2005 WHO/WFME Guidelines for Accreditation of Basic Medical Education[40] and also sought to develop a 'Global Database of Health Education and Training Institutions, based on quality indicators and information about accreditation'.[39] However, we were unable to identify documented evidence as to the progress of this effort. In 2007, the WFME/Association of Medical Schools in Europe (AMSE) Task Force published a set of European specifications to the WFME global standards, taking account of specific European conditions, such as EU legislation and commitment to the European Higher Education Area, alongside general social and economic conditions as well as improvements in quality assurance and development of medical education in Europe.[41]

The WFME standards are organised at institutional and educational programme level, so addressing issues around structure and organisation of the programme/institution, the educational process, including content, and educational environment (facilities, resources).[42]

One recent initiative by the USAID-funded CapacityPlus global project has sought to develop an indicator set to enable monitoring of the healthcare workforce. The 'Human Resources for Health (HRH) Indicator Compendium' brings together (quantitative) indicators on a set of themes around health human resources including global leadership; workforce policy, planning and management; workforce development; and workforce performance support.[43] The majority of indicators was adapted from existing sources, in particular the WHO. To enable assessment of workforce development, the compendium proposes 18 indicators, which, given its focus on low- and middle-income countries, is largely centred on capacity in education. Quality of delivery of education and training is only touched upon indirectly, for example as assessed by 'student-to-faculty ratio' as an indicator of supervisory capacity or 'instructor attrition rate' as an indicator of staff turnover (see Appendix Table A1).

In summary, although the review of work undertaken internationally as presented here is by no means exhaustive, it does suggests that while efforts to strengthen the healthcare workforce have become an increasing focus internationally, the development of measurement systems to evaluate the quality of delivery of education and training does not appear to form a key feature of ongoing work.

Assessing the quality of the delivery of education and training of healthcare workers: national experiences

As indicated in the preceding section, internationally there is growing interest in the further development of the healthcare workforce and several countries are increasingly engaged in (more) systematic approaches to developing the current and future healthcare workforce.[24] [29] Examples include Australia[44-46], Finland[24], Ireland[47] and New Zealand.[48-49] Box 3 provides a brief illustration of ongoing efforts in the United States, summarising activities planned under the 2010 Patient Protection and Affordable Care Act.

Box 3 Health workforce planning in the United States

In the United States, the 2010 Patient Protection and Affordable Care Act (PPACA) stipulated the establishment of a National Health Care Workforce Planning Commission to undertake comprehensive workforce planning in healthcare and so help synchronising federal investments into workforce development.[50] The Commission is envisaged as a national resource that is centred on evaluating and meeting the need for healthcare workers. It is tasked to review healthcare workforce supply and demand, analyse effective mechanism for financing education and training in healthcare, review implementation of the newly established state healthcare workforce development grants programme, advise on improving healthcare workers' safety, health and protection in the workplace, and to review reports by the created National Centre for Health Workforce Analysis (NCHWA; also established under PPACA). Appointments for the Commission were announced in September 2010.[51]

However, with regard to assessing the quality of education and training, our exploration of international experiences suggests that only a small set of countries are considering or are in the process of developing a set of indicators to enable assessment of the quality of the delivery of education and training of (parts of) the healthcare workforce.

For example, the Belgian Health Care Knowledge Centre (2010) reviewed experiences of the use of quality criteria for training settings and trainers in postgraduate medical education (postgraduate training, PGT), examining Canada, France, the Netherlands, Switzerland and the UK.[12-13] It analysed the actors involved in the recognition of training settings and of trainers, the nature of standards used and approaches to assess standard achievement in each of these countries. Table 1 provides an overview of the principal processes adopted in four countries.

Table 1 Recognition processes of postgraduate medical education in four countries

Generic standards for training	Evidence used to determine whether standards are met	Future development relating to quality standards
France		
National logbook (*carnet de validation de stage*) defines minimum requirements for residency training programmes; these can be expanded at university level upon validation by the teaching and research units in medicine Inter-regional coordinator-teachers suggest quality standards for educational settings in (i) teaching capacities, (ii) practice and research opportunities and (iii) trainee autonomy There are no nationally defined quality criteria for training settings/ trainers	*Trainee* No theoretical assessment at end of specialty training; thesis counts as final outcome *Training setting* A 2004 decree foresaw self-evaluation of training settings, site visits and annual meetings of regional accreditation commission	There is debate about improving postgraduate medical education, with proposals to develop competency-based assessment
Canada		
1996 Canadian Medical Education Directions for Specialists (CanMeds) framework defines key competencies for family physicians and specialists Accreditation standards are based on the CanMeds framework and applicable to universities and affiliated sites	*Trainee* Objective-structured clinical examination (OSCE); specialty certification examination requires prior residency training assessment by the Royal College of Physicians and Surgeons of Canada (RCPSC) to ensure that speciality training standards are met ('Final in Training Report', FITER) *Training setting* Accreditation of training settings by an external committee composed of stakeholders representing different institutions/organisations, including the residents' institution[52]	The most recent update of accreditation standards for residency programmes introduced larger number of absolutely necessary standards (wording 'should' replaced by 'must') (for example: *The program must have effective mechanisms in place to manage issues of perceived lack of resident safety*, Standard B1/ 3.9). It also attempted to quantify a range of standards through replacing 'ensure' by 'able to demonstrate' (eg *The program must be able to demonstrate that it provides opportunities for all residents to learn the principles and practice of quality assurance*, Standard B5/4.5)[53]
Netherlands		
Specialty-standards through competency model derived from Canadian Medical Education Directives for Specialists (CanMeds) framework Standards for trainees, trainers, training teams and settings; there is mandatory training for trainers Professional associations have recommended to specify and translate qualitative standards into quantitative standards for each specialty	*Trainee* Work-based assessment of competence; mandatory regular in-training assessment and structured progress interviews by programme director/supervisor *Training setting* Accreditation procedure involving site visits	Not reported
Switzerland		
Federal Medical Profession Law (2006) defines the trainees' aptitudes requirements at the end of postgraduate medical education; it also defines general	*Trainee* Competencies are assessed through clinical evaluation exercises (CES) and direct observation of procedural skills	Current standards are based on international (WFME) and national (OAQ) organisations Further standards concerning technical competencies, (psycho-

Generic standards for training	Evidence used to determine whether standards are met	Future development relating to quality standards
quality standards of educational settings	(DOPS)	)social, ethical and economic aspects are under development
Standards used in practice are based on WFME standards and other general standards	*Training setting* Accreditation process as developed by the Centre of Accreditation and Quality Assurance of the Swiss Universities (OAQ) involves: self-evaluation by professional association; external evaluation by independent experts; and consultation with the Medical Profession Commission	

SOURCE: Adapted from Remmen et al. (2010)[13]

The review by the Belgian Health Care Knowledge Centre (2010) demonstrated that systems are still evolving.[12-13] Below we report on recent developments in Australia, Belgium and New Zealand. These three countries were identified from an iterative search of web-based search engines and by a targeted search of government agency websites, further informed by prior work by the authors on capacity planning in healthcare.[54] We should reiterate that our review relies on material available in the public domain. Therefore, ongoing but undocumented or unpublished national debates and developments on indicator development in education and training will not be captured here.

Australia

In Australia, the 2009 establishment of Health Workforce Australia (HWA), on initiative of the Council of Australian Governments (COAG), sought to meet the future challenges of providing a health workforce. HWA has subsumed the National Health Workforce Taskforce (NHWT), which supported health workforce planning and research. Its role is to advise the Australian Health Ministers Conference on reform directions with regard to workforce changes and it was tasked, in 2010, to develop a National Health Workforce Innovation and Reform Strategic Framework for Action which, among other things, was to aim at identifying approaches to "equip health professionals for current and emerging demands in the health care sector".[44]

The framework, under consultation to the end of May 2011[45], guides the development of policy and delivery of programmes in workforce planning, policy and research; clinical education, training and supervision; recruitment and retention of international health professionals; and workforce innovation and reform exploring opportunities to better utilise skills and competencies of the current workforce. It formulates a series of intermediate outcomes that are designed to achieve the three overarching future outcomes[45]:

(i)   increased equality in health outcomes and access to care;

(ii)   sustainable and affordable health system delivered by a committed and well supported workforce; and

(iii)   improved population and individual outcomes.

One intermediate outcome centres on a "strengthened outcomes focus in education and training program curricula" (p. 7), with others around inter-professional learning and practice and more efficient training practices overall. It emphasises the need for more competency based education and therefore a need to focus on outcomes rather than inputs in the belief that broad outcomes orientated educational approaches can provide considerable benefit.

The framework identifies five key domains for action:

  (i)   Health workforce reform for more effective and accessible service delivery;

  (ii) Health workforce capacity and skills development;

  (iii) Health workforce leadership for sustainable change;

  (iv) Health workforce planning; and

  (v)   Health workforce policy and regulation advice.

The objective of the second domain is to "develop an adaptable health workforce – equipped with the requisite competencies and support that provide team-based and collaborative models of care" (p. 23). This is to be achieved through a range of strategies, including accelerating "progress towards outcomes based and inter-professional education programs and practice." It remains unclear whether and how progress on this strategy will be monitored. However, the draft framework is expected to be developed further. Also, it foresees for the development of mechanisms that enable monitoring and evaluation of the effectiveness of interventions to improve workforce capacity and productivity system wide, and of progress of the overall reform nationally.

HWA is engaged in a range of other activities, including clinical training reform, such as the clinical supervisor support programme which also envisages the development of a performance assessment framework.[55] It acknowledges the need for clearer role definition for supervisors and identification of generic core skills and competencies, better information on student knowledge and skills and learning outcomes, training in supervisor skills, and explicit expectations around teaching.

The extent to which current developments indeed envisage the use of actual quality indicators as a means to assess training and education remains unclear; however, the Australian Medical Association has asked the Australian Medical Council to consider taking a lead in the development of key performance indicators designed to measure the quality of medical education and training in Australia.[56]

Belgium

In Belgium, a 2010 report by the Belgian Health Care Knowledge Centre set out to propose quality criteria for trainers and training settings in postgraduate medical training; however, it had to revise this goal because of the complexities involved and limited the scope of the study.[12-13] The study involved a systematic review of the published evidence on components of quality of professional medical training, a review of the experiences of five countries on the use of quality criteria for training settings and trainers (reported above), and an assessment of the situation in Belgium.

The report was commissioned on initiative of the Belgian Superior Council of Medical Specialists and General Practitioners (SC). The SC acts as a recognition body for trainers and training settings for both general practice and specialist training. At present, postgraduate medical education in Belgium is governed by a range of frameworks, including the European Framework, the federal framework, and individual university or speciality frameworks, which all define certain criteria for postgraduate training (PGT).

Thus, similar to other EU countries, the European legal context for PGT defines the regulatory framework for the training process and working conditions. The Belgium federal regulatory framework defines generic quality criteria for the recognition of trainers and training settings, and specific criteria for each speciality. Implementation of legislative frameworks appears to be suboptimal however and site visits tend to be uncommon. It may be worthwhile noting that the French speaking and Flemish parts of Belgium have very different regulations and criteria in place.

The review by Belgian Health Care Knowledge Centre (2010) demonstrated considerable gaps between regulatory environment and implementation in practice, creating legal uncertainty for trainees at postgraduate general practice and specialist level as well as trainers.[12] While generic quality criteria for the recognition of trainers and training settings have been defined, these tend to focus on structure rather than process-oriented criteria about the actual quality of training, resulting in considerable heterogeneity between specialties and even between training settings. Furthermore, there is a lack of systematic evaluation of the recognition procedure at federal level which, so far, has relied on self-evaluation. Ongoing work in general practice is pursuing a more systematic approach towards defining and monitoring quality criteria for trainers and trainer settings, including quality procedures and site visits.

New Zealand

In 2006, the New Zealand Ministry of Health published a review of health workforce development in the country since 2000.[48] Defined as "development of workforce capability and capacity to satisfy future service demands" (p. 1), the review was intended as a resource to inform assessment of challenges and approaches to development, as well as to signpost directions for responding to future needs in the health workforce. It set out a workforce development framework, summarising existing and proposed national workforce development activity, as identified under five themes:

(i)   Workforce development infrastructure: A national and regional workforce development infrastructure which supports stakeholders to progress workforce development;

(ii) Organisational development: Health services develop the organisational culture and systems which will attract and grow their workforce and meet service needs;

(iii) Recruitment and retention: Health services have a nationally and regionally co-ordinated approach to recruiting and retaining staff which results in increased capacity and capability of the health workforce;

(iv) Training and development: All stages of health workforce training are aligned to service needs and promote retention; and

(v) Information, research and evaluation: Information and research are available to support workforce development planning.

Key actions identified under theme (iv) 'Training and development' include the establishment of an agreed set of core competencies that are transferable across disciplines; the development and delivery of training to support new models of care; and the establishment of a "set of cultural competencies within training programmes to improve service delivery to cultural groups and recruitment of staff from them" (p. 41). The quality of delivery of education and training is not explicitly touched upon.

More recently, Health Workforce New Zealand (HWNZ) was set up in 2009 to provide national leadership on the development of New Zealand's health workforce, involving the production of a workforce development action plan foreseen for 2010 (at the time of writing not (yet) available in the public domain).[49] Identified programmes of action include a wide range of priorities, such as innovation in relation to new roles and models of service delivery; health workforce intelligence, referring to the establishment of an intelligence unit to ensure forecasting of demand and that purchase of workforce development activity and training is evidence-based; and workforce development investments that are aimed at aligning funding of education and training with responsiveness in relation to changing workforce priorities. Ongoing activities include the development of an 'alignment plan' between tertiary education institutions and district health boards (the purchasers of publicly funded healthcare in New Zealand) and the evaluation of leadership and educator programmes and schemes. The extent to which these activities incorporate measurement through the use of quality indicators remains uncertain at this stage however.

Part II. An international comparison of the use of specific quality indicators to measure the quality of healthcare education and training

An international comparison of the use of specific quality indicators to measure the quality of healthcare education and training

As indicated in the first part of this report, there is growing interest nationally and internationally in the further development of the healthcare workforce to better meet the present and future needs of a changing healthcare environment. However, while education and training is seen as core component of planning as a means to secure (future) supply, efforts to systematically assess the quality of the delivery of education and training of the healthcare workforce appear to be rarely addressed explicitly. The closest countries have come to employing quality criteria appears to be through implicit or explicit accreditation schemes of medical schools and programmes, but the extent to which such schemes can be used to extract metrics for monitoring remains uncertain.

Part II builds on the evidence review presented in Part I of this report. It examines:

(i) whether any other countries considered measuring board-level engagement with education and training and, if so, what indicators have they used; and

(ii) the extent to which safe supervision is measured internationally and whether it is used to measure quality.

We define the two indicators in line with that provided by Medical Education England (2011) which interprets board-level engagement in medical education as to include several measures, such as the inclusion of education and training as a regular item on the agenda for board meetings, and assigning to a board member accountability for education and training.[4] Safe supervision is defined as an indicator which aims to ensure that trainees are responsible only for taking decisions for which they have reached a suitable level of education, and that they are aware who to refer to if a decision is beyond their capacity.

Below we present a review of reports and accreditation schemes produced by national government and non-governmental agencies concerned with the education of medical doctors, nurses and allied health professionals in three countries: Australia, Canada and the United States. We focus specifically on whether accreditation schemes or standards can be related to 'measuring board-level engagement with education and training' and 'safe supervision'.

We find that while there are examples of outcome metrics that relate to high-level engagement and safe supervision in healthcare training and education, these are typically in the form of accreditation standards, rather than specific, quality indicators. We note that

accreditation is granted on a combination of provider self-review and accrediting-body confirmation of existing structures and processes, rather than on the basis of actual training outcomes. However, many schemes do require, as a standard or pre-requisite for accreditation, for providers to have in place a process for self-evaluation of student outcomes in relation to general standards in the field of practice. Furthermore we find that in Australia, Canada and the United States accredited organisations tend to be medical schools and not the hospitals where training is taking place.

In the following we have included examples of the standards used for accreditation, illustrating the similarities with the two proposed quality indicators under review.

Australia

The main body for accreditation of medical education and training in the Australia is the Australian Medical Council (AMC). The AMC assesses university medical education programmes, specialist medical training and continuing professional development. Alongside the AMC, Health Workforce Australia (HWA) contributes to workforce planning and to policy and programme development to address workforce shortages and improve the recruitment and education of the medical workforce.

Nursing, dentistry and other allied health professionals have established separate accreditation bodies which set standards relevant to each profession.

Physician education and training Australian Medical Council (AMC)
The Australian Medical Council (AMC) is a national standards advisory body for medical education and training in Australia. (The AMC also accredits medical schools in New Zealand under the terms of an agreement with that country.) The AMC undertakes two processes that assess standards of medical education and training. These apply to:

(i)   basic medical education programmes, provided by university medical schools; and

(ii)   specialist medical training and continuing professional development programmes, provided by national specialist medical colleges.

Assessment and Accreditation of Medical Schools: Standards and Procedures[57]:

Issues related to 'Board Level Engagement'
"As it is important that institutions associated or affiliated with university medical schools share the educational and research objectives of the medical school, the university should be represented on the relevant staff appointment committees, and preferably the board of management, of its affiliated institutions. In turn, the institutions should be represented on the committees of the medical school, especially those making appointments of academic staff who will have clinical responsibilities. It would also be expected that the appropriate hospital appointment committee would appoint clinical academic staff to the clinical staff of the hospital."

Issues related to Safe Supervision
"The curriculum addresses patient safety, risk assessment and quality assurance of medical care."

Accreditation of Specialist Medical Education and Training and Professional Development Programmes: Standards and Procedures[58]:

<u>*Issues related to 'Board Level Engagement'*</u>
Not documented

<u>*Issues related to Safe Supervision*</u>
"The duties, working hours and supervision of trainees should be consistent with the delivery of high quality, safe patient care. Ensuring trainees can meet their educational goals and service delivery responsibilities within safe hours of work is the responsibility of all parties."

Health Workforce Australia

Health Workforce Australia (HWA) is currently developing a Clinical Supervision Support Programme (CSSP) to expand clinical supervision capacity and competence in response to workforce shortages. A set of profession- and specialty-specific training plans will be developed by HWA for nurses, midwives and medical officers to assist in achieving self-sufficiency in these professions by 2025.

There is also work to develop a national competency framework for clinical supervision that defines quality clinical supervision across all levels and models of supervision.

Australian Dental Council

The Australian Dental Council (ADC) performs accreditation functions for the Dental Board of Australia. The ADC performs two key accreditation functions:

(i)   Accreditation of education and training programs for dental practitioners; and

(ii) Assessment of the knowledge, clinical skills and professional attributes of overseas qualified dental practitioners who are seeking registration with the Dental Board of Australia to practise in Australia.

ADC/DCNZ Accreditation Standards: Education Programmes for Dentists[59]:

<u>*Issues related to 'Board Level Engagement'*</u>
Not documented

<u>*Issues related to Safe Supervision*</u>
"Standard 9 Clinic administration: The School and its clinics must be safe for students, staff and patients. The clinics must provide adequate general dental patient care in a setting conducive to education and research."

Nurse and Allied Health Professionals education and training

Australian Nursing and Midwifery Accreditation Council

Standards and Criteria for the Accreditation of Nursing and Midwifery Courses Leading to Registration, Enrolment, Endorsement and Authorisation in Australia[60]:

<u>*Issues related to 'Board Level Engagement'*</u>
Not documented

<u>*Issues related to Safe Supervision*</u>
"The course provider is required to demonstrate or confirm:

How risk assessments of and risk minimisation strategies for any environment where students are placed to gain their professional experience are developed.

Risk assessment of and risk minimisation for all environments where students are placed to gain their professional experience (cross reference with standard 1, criterion 6)."

Australian Pharmacy Council

The Australian Pharmacy Council (APC) provides independent accreditation for Australian pharmacy on behalf of the Pharmacy Board of Australia (PBA). The functions of the APC are:

(i)   Accrediting pharmacy schools and programs, intern training programs, and organisations that accredit continuing professional development activities;

(ii) Conducting written internship examinations on behalf of the Pharmacy Board of Australia (PBA) that must be passed prior to sitting the final oral competency assessment; and

(iii) Assessing the qualifications and skills of overseas trained pharmacists and international students graduating from an Australian pharmacy program to determine their eligibility to apply to commence the registration process with the PBA.

Australian Pharmacy Council Accreditation Standards[61]:

Issues related to 'Board Level Engagement'
"The structure and systems must facilitate:

(i)   appropriate representation of staff responsible for the pharmacy school on decision-making committees; and

(ii) appropriate reporting relationships of committees at the school, faculty and university wide level."

Issues related to Safe Supervision
Not documented

Australian Physiotherapy Council[62]

The Australian Physiotherapy Council is an independent national body. One of its functions is the accreditation of physiotherapy programmes in Australian universities.

Issues related to 'Board Level Engagement'
"The curriculum is developed and regularly reviewed at a university level by the appropriate university board/committee and by academic staff of the programme with input from the programme advisory group, representatives of the profession, the student body and other interested groups."

Issues related to Safe Supervision
"Students are supervised on all clinical placements by a person or persons with qualifications and experience appropriate to the particular environment"

Australian Psychology Accreditation Council[63]

The Australian Psychology Accreditation Council (APAC) works on behalf of the Psychology Board of Australia, to set the standards for the education and training of psychologists in Australia.

APAC's activities include:

(i) Developing standards for the education and training of psychologists for approval by the Psychology Board of Australia;

(ii) Assessing higher education providers and the programs of study they offer to determine whether they meet the approved accreditation standards; and

(iii) Supporting higher education providers in developing and maintaining high quality programs of education and training in the psychology discipline.

Issues related to 'Board Level Engagement'
Not documented

Issues related to Safe Supervision
"Students in the Graduate Diploma of Professional Psychology must complete a minimum of 300 hours of logged supervised practical and skills training."

Optometry Council of Australia and New Zealand

The Optometry Council of Australia and New Zealand provides accreditation of undergraduate optometry courses and postgraduate courses in ocular therapeutics in Australia and New Zealand.

Accreditation Manual for Optometry Courses in Australia and New Zealand: Part 2 Guidelines[64]:

Issues related to 'Board Level Engagement'
Not documented

Issues related to Safe Supervision
Not documented

Australian and New Zealand Podiatry Accreditation Council

The Australian and New Zealand Podiatry Accreditation Council performs accreditation functions for the Podiatry Board of Australia.

Accreditation Standards and Procedures for Podiatry Programmes for Australia and New Zealand[65]:

Issues related to 'Board Level Engagement'
Not documented

Issues related to Safe Supervision
"Appropriately-supervised clinical experiences progressively providing an increasingly wide range of patients in various internal clinic and external placement situations to develop their skills, professional dispositions and understandings such that they achieve course outcomes and develop the required competencies and safe practice."

Canada

Physician education and training

In Canada, accreditation of physician education and training is carried out by different organisations. Thus, the *Liaison Committee on Medical Education* (LCME) provides accreditation for undergraduate (pre-MD) medical schools in the United States and Canada (see section on the United States below). The *Committee on Accreditation of Canadian Medical Schools* (CACMS) works with the Liaison Committee on Medical Education (LCME). The *Royal College of Physicians and Surgeons of Canada* (RCPSC) accredits residency programmes in postgraduate medical education. All residency programmes have to be sponsored by a medical school in a Canadian University. The accreditation process is based on a system of regular surveys of the residency programmes of each Canadian medical school on a six-year cycle.[52] The RCPSC develops General Standards of Accreditation, with subcommittees developing Specific Standards of Accreditation for each specialty.

Royal College of Physicians and Surgeons of Canada General Standards of Accreditation applicable to the University and Affiliated Sites[66]:

Issues related to 'Board Level Engagement'

    (i) "There must be a senior faculty officer, such as an assistant, associate or vice dean, appointed to be responsible for the overall conduct and supervision of postgraduate medical education within the faculty"; and

    (ii) "There must be a multidisciplinary faculty postgraduate medical education committee in place for the development and review of all aspects of residency education."

Issues related to Safe Supervision

    (i) "The committee must establish policies to ensure adequate supervision of residents in order to protect and preserve the best interests of the patient, the attending physician and the resident. Recognizing the principle of increasing professional responsibility in residency education, the faculty postgraduate medical education committee must ensure that there are adequate guidelines for the supervision of residents."; and

    (ii) "The components of resident supervision include:

       3.9.1 a mechanism of disclosure of the fact that residents are involved in patient care, and for patient consent for such participation;

       3.9.2 assurance of progressive competence and responsibility of the resident for graded independent performance;

       3.9.3 policies for notification of, and discussion with the attending physician by the resident regarding decisions in patient care;

       3.9.4 policies regarding the physical presence of the attending physician during acts or procedures performed by the resident."

Royal College of Physicians and Surgeons of Canada General Standards of Accreditation applicable to all residency programmes[67]:

<u>*Issues related to 'Board Level Engagement'*</u>

- "There must be a programme director with qualifications that are acceptable to either The Royal College of Physicians and Surgeons of Canada (Royal College) or the College of Family Physicians of Canada (CFPC) or the Collège des médecins du Québec (CMQ) for the Québec programmes.

- There must be a residency programme committee to assist the programme director in the planning, organization, and supervision of the programme."

<u>*Issues related to Safe Supervision*</u>

(i) "The programme must be organized such that residents are appropriately supervised according to their level of training, ability/competence, and experience;

(ii) The programme must be organized such that residents are given increasing professional responsibility, according to their level of training, ability/competence, and experience;

(iii) Teaching staff must exercise the double responsibility of providing high quality, ethical patient care and excellent teaching; and

(iv) Each resident must have opportunities, under appropriate supervision, to provide an initial assessment and consultative service to patients presenting with emergency conditions as appropriate to the specialty or subspecialty."

CanMEDS Physician Competency Framework

The Canadian Medical Education Directives for Specialists (CanMEDS), developed by the Royal College of Physicians and Surgeons of Canada, is an educational framework that defines the key competencies needed for medical education and practice. [68] It identifies and describes seven that are considered key to improving patient care: medical expert (central role), communicator, collaborator, manager, health advocate, scholar and professional. It describes the core knowledge, skills and abilities of specialist physicians.

Maintenance of Certification Programme

The Maintenance of Certification (MOC) Programme is a continuing professional development programme designed by the Royal College of Physicians and Surgeons of Canada to support the lifelong learning needs of Fellows and Health Care Professionals.

Nurse and Allied Health Professionals education and training

The Canadian Association of Schools of Nursing[69] is the national accrediting body for nursing education in Canada.

<u>*Issues related to 'Board Level Engagement'*</u>
Not documented

<u>*Issues related to Safe Supervision*</u>
"Accountability: the relationships that the educational unit fosters with its partners and its environment, and develops within its learners to value responsibility for professional practice that is safe, ethical and legal"

Committee on Accreditation of Continuing Medical Education (CACME)
The Canadian university offices of Continuing Medical Education are accredited by the Committee on Accreditation of Continuing Medical Education (CACME). CACME is a national committee supported through a partnership of six Canadian medical organisations.

CACME's accreditation standards[70]:

Issues related to 'Board Level Engagement'
Not documented

Issues related to Safe Supervision
Not documented

Physiotherapy Education Accreditation Canada
Accreditation standards for Physiotherapist Education Programmes in Canada (2010) notes that "The programme provides an environment that is safe and protects the rights of all individuals including students, faculty, staff, and others participating in activities associated with the programme".[71]

Canadian Association of Occupational Therapists
The Canadian Association of Occupational Therapists (CAOT) is the sole accrediting agency in Canada for university programmes that provide entry-level professional education in occupational therapy. CAOT produced accreditation standards, against which it assesses.

Canadian Association of Occupational Therapists Academic Accreditation Standards and Self-Study Guide (2010)[72]:
  (i)   "6.1 The environment is safe and enables participation by all users;

  (ii) "1.23 The occupational therapy department/school has representation on appropriate faculty level committees;

  (iii) "1.24 The occupational therapy department/school has representation on appropriate university level committees;

  (iv) "2.712 Each student's fieldwork hours are supervised by an occupational therapist; and

  (v)   "3.13 Students receive information pertaining to safety and well being.

The Canadian Council for Accreditation of Pharmacy Programmes
The Canadian Council for Accreditation of Pharmacy Programmes Accreditation standards and guidelines for the Baccalaureate Degree Programme in Pharmacy stipulate that "[s]tudents should provide pharmaceutical care under the supervision of pharmacist role models".[73]

The United States

The accreditation of medical education in the United States is split between the Liaison Committee on Medical Education, which sets standards for undergraduate medical education, and the Accreditation Council for Graduate Medical Education (ACGME)

which accredits post-MD medical training programmes. Nursing education is accredited by two separate bodies in the United States: The Commission on Collegiate Nursing Education (CCNE) and The National League of Nursing Accrediting Commission (NLNAC). Accreditation of the education of allied health professionals is undertaken by individual councils for each profession.

Physician education and training

Liaison Committee on Medical Education

The Liaison Committee on Medical Education (LCME) provides accreditation for undergraduate (pre-MD) medical schools in the United States and Canada. To achieve and maintain accreditation, a medical education programme must meet the standards set out in the LCME standards document which is updated on a regular basis.[74] The LCME bases its accreditation determination on a report written by surveyors and site visits. Most standards are descriptive and do not require specific or numerical qualifying measures.

Accreditation lasts for eight years with annual progress updates/questionnaires required from the school.

Issues relating to 'Board Level Engagement'

(i) "The governing board responsible for oversight of an institution that offers a medical education programme must have and follow formal policies and procedures to avoid the impact of conflicts of interest of members in the operation of the institution and its associated clinical facilities and any related enterprises. There must be formal policies and procedures at the institution to avoid the impact of conflicts of interest (e.g., the requirement that a board member recuse him or herself from any discussion and vote relating to a matter where there is the potential for a conflict of interest to exist). The institution also must provide evidence (e.g., from board minutes, annual signed disclosure statements from board members) that these policies and procedures actually are being followed." (IS-5);

(ii) "Terms of governing board members of an institution that offers a medical education programme should be overlapping and sufficiently long to permit them to gain an understanding of its programme." (IS-6);

(iii) "Administrative officers and members of the faculty must be appointed by, or on the authority of, the governing board of the medical education programme or its parent institution." (IS-7);

(iv) "The chief official of a medical education programme, who usually holds the title "dean," must have ready access to the university president or other official of the parent institution who is charged with final responsibility for the programme and to other institutional officials as are necessary to fulfil the responsibilities of the dean's office." (IS-8);

(v) "There must be clear understanding of the authority and responsibility for matters related to the medical education programme among the vice president for health affairs, the chief official of the medical education programme, the faculty, and the directors of the other components of the medical center and the parent institution." (IS-9); and

(vi) "The chief official of a medical education programme must be qualified by education and experience to provide leadership in medical education, scholarly activity, and patient care." (IS-10).

Issues relating to safe supervision

(i)   "An institution that offers a medical education programme must have in place a system with central oversight to ensure that the faculty define the types of patients and clinical conditions that medical students must encounter, the appropriate clinical setting for the educational experiences, and the expected level of medical student responsibility. The faculty must monitor medical student experiences and modify them as necessary to ensure that the objectives of the medical education programme are met;

(ii) The institution that offers a medical education programme is required to establish a system to specify the types of patients or clinical conditions that medical students must encounter and to monitor and verify the medical students' experiences with patients so as to remedy any identified gaps. The system must ensure that all medical students have the required experiences. For example, if a medical student does not encounter patients with a particular clinical condition Functions and Structure of a Medical School (e.g. because it is seasonal), the medical student should be able to remedy the gap by a simulated experience (e.g. a standardized patient experience, an online or paper case) or in another clerkship (or, in Canada, clerkship rotation)." (ED-2);

(iii) "There should be formal evaluation of the teaching and assessment skills of residents and other non-faculty instructors, with opportunities provided for remediation if their performance is inadequate. Evaluation methods could include direct observation by faculty, feedback from medical students through course and clerkship/clerkship rotation evaluations or focus groups, or any other suitable method." (ED-24); and

(iv) "At a medical education programme, the dean and a committee of the faculty should determine policies for the programme. The committee that, with the dean, determines policies for the medical education programme typically consists of the heads of major departments and may be organized in any manner that brings reasonable and appropriate faculty influence into the governance and policymaking processes of the programme." (FA-12).

General: Evaluation of Programme Effectiveness

(i)   "A medical education programme must collect and use a variety of outcome data, including national norms of accomplishment, to demonstrate the extent to which its educational objectives are being met. The medical education programme should collect outcome data on medical student performance, both during programme enrolment and after programme completion, appropriate to document the achievement of the programme's educational objectives. The kinds of outcome data that could serve this purpose include performance on national licensure examinations, performance in courses and clerkships (or, in Canada, clerkship rotations) and other internal measures related to educational programme objectives, academic progress and programme completion rates, acceptance into

residency programmes, and assessments by graduates and residency directors of graduates' preparation in areas related to medical education programme objectives, including the professional behavior of its graduates." (ED-46)

Accreditation Council for Graduate Medical Education[35]

Accreditation Council for Graduate Medical Education (ACGME) accredits post-MD medical training programmes (including more than 8,800 medical residency programmes) within the United States. Accreditation involves a peer review process based on the Association of American Medical Colleges (AAMC)-developed standards and guidelines.

ACGME 2011 standards, common programme requirements include:

"Supervision in the setting of graduate medical education has the goals of assuring the provision of safe and effective care to the individual patient; assuring each resident's development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishing a foundation for continued professional growth."[75]

"There must be a single programme director with authority and accountability for the operation of the programme. ... The programme director should continue in his or her position for a length of time adequate to maintain continuity of leadership and programme stability. ... Qualifications of the programme director must include: requisite specialty expertise and documented educational and administrative experience acceptable to the Review Committee; current certification in the specialty by the American Board of _____, or specialty qualifications that are acceptable to the Review Committee; and, current medical licensure and appropriate medical staff appointment."

ACGME requirements for accreditation are assessed by:

(i) Report from a site visitor who carries out interviews with residents and faculty;

(ii) Data from and the annual ACGME Resident/Fellow Survey Data Summary (Box 4); and

(iii) Evidence of faculty participation in maintenance of certification and involvement in CME and scholarly activity.

Box 4 ACGME survey questions for residents/fellows 2011

Question 1. How often did you break the rule that duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities?
Never - Rarely - Sometimes - Very often - Extremely often
Question 8. How often did you break the rule that at-home call must not be so frequent as to preclude rest and reasonable personal time for you?
Never - Rarely - Sometimes - Very often - Extremely often
Question 25. Has your programme adequately instructed you on how to manage the negative effects of fatigue and sleep deprivation on patient care?
Yes/No

Question 12. How often do your faculty and staff provide an appropriate level of supervision for residents when the residents care for patients?

Never - Rarely - Sometimes - Very often - Extremely often

Question 29. To what extent does your programme provide an environment where residents/fellows can raise problems or concerns without fear of intimidation or fear of retaliation?

Not at all - A little - Somewhat - Quite a bit - A great deal

Accreditation Council for Continuing Medical Education

The Accreditation Council for Continuing Medical Education (ACCME) offers a voluntary, self-regulatory system for accrediting CME providers. We were unable to identify references to safe supervision or board involvement.

Nurse and Allied Health Professionals education and training

There are two bodies accrediting nurse education programmes in the United States: The Commission on Collegiate Nursing Education (CCNE) and The National League of Nursing Accrediting Commission (NLNAC).

Commission on Collegiate Nursing Education

The Commission on Collegiate Nursing Education (CCNE) is an autonomous accrediting agency and operates within the American Association of Colleges of Nursing (AACN).

Baccalaureate and Graduate Nursing Programmes

The accreditation process consists of a self-study process (self-assessment) documenting a provider's assessment of how it meets CCNE's accreditation standards, followed by a site visit from an evaluation team of peers to validate the self study and determine whether the programme meets all accreditation standards: "No format for the self-study document is mandated by CCNE. As a general guide, the self-study document should be organized to facilitate an assessment of each accreditation standard by the evaluation team"[76]

None of the standards specifically refer to board involvement but standard I-C specifies that "(e)xpected faculty outcomes in teaching, scholarship, service, and practice are congruent with the mission, goals, and expected student outcomes. Elaboration: Expected faculty outcomes are clearly identified by the nursing unit, are written, and are communicated to the faculty. Expected faculty outcomes are congruent with those of the parent institution".[77]

This process is reinitiated every ten years or sooner, depending on the success of the programme in demonstrating continued compliance and improvements in the quality of the educational programme. The Commission periodically reviews accredited programmes between on-site evaluations in order to monitor continued compliance.

National League of Nursing Accrediting Commission

The National League of Nursing Accrediting Commission (NLNAC) accredits nursing education programmes including masters, baccalaureate degree, associate degrees and diplomas. The *Commission on Collegiate Nursing Education* (CCNE) accredits masters and baccalaureate level nursing programmes only.

American Nurses Credentialing Center

The American Nurses Credentialing Center (ANCC) is a subsidiary of the American Nurses Association (ANA). ANCC accredits continuing nursing education programmes. Voluntary recognition process involving a 'self-study' report from provider organisations. Application forms available to view by members only.

Other accrediting bodies for training in speciality nursing include the *Council on Accreditation of Nurse Anesthesia Educational Programs* (COA), which accredits nurse anaesthesia programmes, and the *American College of Nurse-Midwives Division of Accreditation* (ACNM) which accredits midwifery education programmes.

Occupational Therapy

Accreditation Council for Occupational Therapy Education (ACOTE) is the accrediting council subsidiary of the American Occupational Therapy Association (AOTA). ACOTE produces separate standards for doctoral programmes, master's programmes, and programmes for occupational therapy assistant degrees. The standards are mostly structure and process measures, e.g. "The programme must have a director who is assigned to the occupational therapy educational programme on a full-time basis. The director may be assigned other institutional duties that do not interfere with the management and administration of the programme. The institution must ensure that the needs of the programme are being met" (A.2.1.) and "Evaluation content and methods must be consistent with the curriculum design; objectives; and competencies of the didactic, fieldwork, and experiential components of the programme" (A.3.6).[78]

Regarding student outcomes of healthcare training, these ACOTE standards are commonly phrased requirements:

A.4.2. "Accurate and current information regarding student outcomes must be readily available to the public in at least one publication or Web page. The following data must be reported as an aggregate for the three most recent calendar years and specify the:

    (i)   3-year time period being reported;

    (ii) total number of programme graduates during that period;

    (iii) total number of eligible first-time test takers of the national certification examination during that period;

    (iv) total number of eligible first-time test takers who passed the exam during that period; and

    (v) percentage of the total number of eligible first-time test takers who passed the exam during that period."

A.5.3. "Programmes must routinely secure and document sufficient qualitative and quantitative information to allow for meaningful analysis about the extent to which the programme is meeting its stated goals and objectives. This must include, but need not be limited to:

(i) Faculty effectiveness in their assigned teaching responsibilities;

(ii) Students' progression through the programme;

(iii) Fieldwork and experiential component performance evaluation;

(iv) Student evaluation of fieldwork and the experiential component experience;

(v) Student satisfaction with the programme;

(vi) Graduates' performance on the NBCOT certification exam, if applicable;

(vii) Graduates' job placement and performance based on employer satisfaction; and

(viii)   Graduates' scholarly activity (e.g., presentations, publications, grants obtained, state and national leadership positions, awards)."

Part III. Summary and areas for further enquiry

Summary and areas for further enquiry

In summary, and keeping the limitations of this rapid review in mind, it is perhaps fair to conclude that while there is considerable interest in advancing education and training of the healthcare workforce, this seems to be most frequently embedded in general approaches to workforce development, with few explicit efforts to implement metrics to enable monitoring and assessment of the delivery of education and training at national levels. Several countries are employing implicit or explicit accreditation schemes of medical schools and programmes, but the extent to which such schemes can be used to extract metrics for monitoring remains uncertain. Furthermore, these schemes tend to focus on medical education. However, it was beyond the scope of this short report to systematically assess accreditation schemes of education and training programmes in the healthcare sector so this conclusion has to remain tentative at best.

This report took a relatively narrow focus on the use of quality indicators to assess and monitor the delivery of healthcare education and training at national and international levels. There may be relevant initiatives at regional or local levels which we were not able to review within the scope of this work. Furthermore, we also focused on evidence published in English language only, so evidence presented here should be interpreted with caution. Finally, as mentioned earlier, this review relied on published evidence only so ongoing but not documented debates and initiatives are not captured here. In future, it will therefore be important to undertake a broader review of local and regional initiatives in variety of settings so as to better understand the use and usefulness of quality metrics applied to the delivery of education and training of healthcare workers. Such work should also consider the emergent evidence in the academic literature aiming to link training to patient outcomes. Any such work would however have to be framed within in the context in which education and training takes place. Thus, a major challenge for international comparison of quality of education and training in healthcare and its assessment remains in the variation with which training, and its various stages is organised and regulated both within and between countries.

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APPENDICES

Appendix A: Human Resources for Health (HRH) Indicator Compendium

Table A1. Human Resources for Health (HRH) Indicator Compendium, Health Workforce Development Indicators (2011)

Indicator	Definition/description
Preservice Education	
% of secondary school graduates	No. of students graduating from secondary school, e.g., expressed as % of all children of secondary schooling age
Application rate, per cadre	No. of applicants per training place available, per cadre (over a given period)
Applicants accepted (no. and %), per cadre	No. and % of applicants accepted for health education training programs, per cadre
% of health schools accredited	Schools of clinical health sciences and, specifically, public health accredited by a recognized accreditation body
% of training programs that match or surpass position requirements	Current % of training programs for the designated professional groups (nurses, nursing auxiliaries, health technicians, and community health workers) that match or surpass the stated requirements for current employment positions.
% of courses on priority diseases	Proportion of courses devoted to country priority diseases
Training strategy addresses community health needs	Schools of clinical health sciences will have reoriented their education toward primary health care and community health needs and adopted interprofessional training strategies.
Training place capacity, per cadre and health education institution	No. of education and training places per cadre and health education institution.
Student:faculty ratio, per cadre and health education institution	No. of students per (full-time) qualified instructor, per cadre and health education institution
Instructor attrition rate, per cadre and health education institution	Attrition (turnover) rate among instructors, per cadre and health education institution (over a given period).
Student attrition rate, per cadre and health education institution	Attrition (drop-out) rate per student cohort, per cadre and health education institution (over a given period).
Annual no. of graduates, per cadre and health education institution	No. of students graduating each year, per cadre and health education institution.
Licensure of nationally trained health workers (no. and %)	No. and % of new nationally trained health workers granted professional certification/licensure, per cadre
Licensure of internationally trained (foreign-trained) health workers (no. and %)	No. and % of new internationally trained (foreign-trained) health workers granted professional certification/licensure, per cadre
Establishment of global code of practice and international	A global code of practice refers to an international agreement on ways and means to ethically recruit and manage skilled health workers. The code

Indicator	Definition/description
recruitment ethical norms (country level)	focuses on three broad themes: protecting individual migrant workers from unscrupulous recruiters and employers; ensuring that individuals are properly prepared for and supported by their places of employment; and ensuring that flows of migrant health workers do not unduly disrupt the health services of the source countries. Ethical norms refers to formal standards to guide countries in the international recruitment of health workers, based on the principles of transparency, fairness, and mutuality of benefit with respect to source countries, destination countries, institutions, recruiting agencies, and migrant health workers.
Workforce generation ratio	Ratio of entry to the health workforce
In-service systems	
% of facility staff who received in-service training, by cadre and type of training	Percentage of facility staff receiving in-service training during a reference period (e.g., annually), by cadre and type of training
Continuing Professional Development	
% of facility staff participating in CPD, by cadre	Percentage of facility staff receiving in-service training/continuing education annually (also measured by days of training per staff member annually), by cadre.

SOURCE: Adapted from Pacque-Margolis (2011)[43]