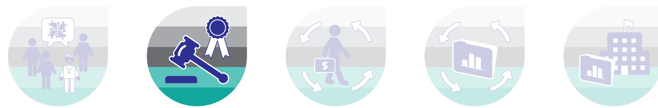

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Acronyms

ACME	Accreditation Commission for Midwifery Education
AMCB	American Midwifery Certification Board
ARC	African Health Profession Regulatory Collaborative
ARV	antiretroviral therapy
AUSAID	Australian Government Overseas Aid Program
CCNE	Commission on Collegiate Nursing Education
CPD	continuing professional development
DFID	Department for International Development (United Kingdom)
ECSA	East, Central, and Southern Africa
ECSACON	East, Central, and Southern African College of Nursing
GHWA	Global Health Workforce Alliance
IAMRA	International Association of Medical Regulatory Authorities
ICM	International Confederation of Midwives
ICN	International Council of Nurses
ICT	information and communications technology
IIME	Institute for International Medical Education
LCME	Liaison Committee on Medical Education
MCHIP	Maternal and Child Health Integrated Program
NBME	National Board of Medical Examiners
NCLEX-RN	National Council Licensure Examination for Registered Nurse
NCSBN	National Council of State Boards of Nursing
OSCE	Objective Structured Clinical Assessment
SBM-R®	Standards-Based Management and Recognition
URC	University Research Co.
USAID	United States Agency for International Development
WACN	West African College of Nursing
WFME	World Federation of Medical Education
WHO	World Health Organization

Executive summary

In the context of health care, regulators are charged with ensuring that the public have access to competent health care providers. The regulation of health professions education must therefore ensure that physicians, nurses, midwives and other allied health providers receive a quality education that prepares them to provide safe, competent and ethical care, are certified or licensed upon entry to professional practice and maintain competency throughout their active clinical careers.

Several key challenges affect the ability of countries to regulate the education of their health professionals. These include outdated and irrelevant practice acts[1], lack of clear core competencies guiding both education and practice, and lack of capacity to reliably measure attainment and maintenance of competency. In addition, professional boards or councils frequently lack the resources or authority appropriate for their regulatory responsibility.

International agencies such as the International Council of Nurses (ICN), International Confederation of Midwives (ICM), World Federation of Medical Education (WFME) and World Health Organization (WHO) have invested in the development of strategies and tools aimed at improving educational quality. Regionally, the East, Central, and Southern African College of Nursing (ECSACON) has used this guidance to develop regulatory guidelines in support of its member regulators and associations. Development agencies (United States Agency for International Development [USAID], United Kingdom Department for International Development [DFID], Australian Government Overseas Aid Program [AUSAID] and others) are currently making efforts to support the national and regional implementation of evidence-based strategies within projects directed at strengthening human resources for health.

In support of the above efforts, the following measures should be given serious consideration:

(a) In countries where regulation does not exist or is very minimal, professional regulation should be introduced, which includes the authority for the oversight of professional education.

(b Practice acts must be brought up to contemporary regulatory standards. New practice acts are needed to account for the issue of continuing professional development, which was not part of the educational picture when many acts were written decades ago.

(c) Government policymakers, regulators, and international development partners and their donors must all understand the basic tenets of regulation and work together to build strong systems of accreditation, licensure/registration and continuing professional development(see Figure below).

(d) Technical and process innovations that have potential to enhance regulatory scale-up and sustainability must be tested within an appropriate monitoring and evaluation framework.

(e) Efforts to connect novice to expert regulators—within and across professional, regional and international boundaries—should be encouraged.

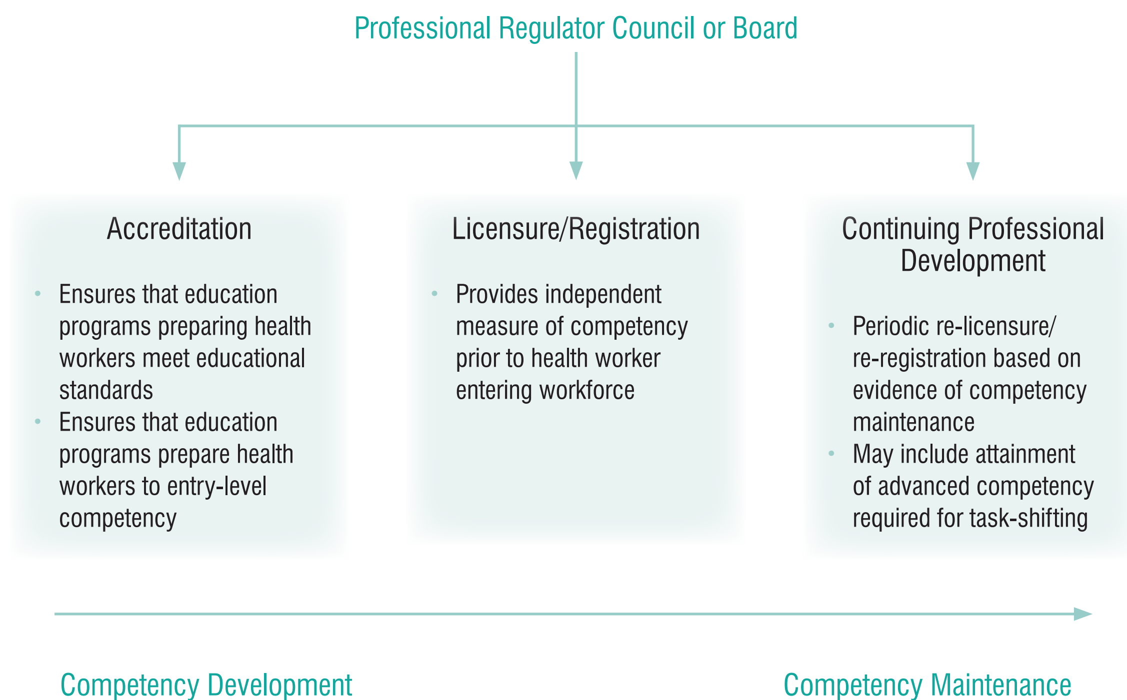
(f) Regulators should as much as possible make use of and incorporate international competencies and standards. A circumscribed area of minimal standards in all health professional education

1 A practice act is the law providing regulators with the authority to monitor the education and practice of health professionals. Under that law (act), councils or boards may develop regulations outlining standards for education, mechanisms for accrediting education programmes, requirements for entry to practice following graduation and continuing professional development requirements for re-registration.

and regulation may be an obtainable goal. This approach would provide some degree of international convergence and expectations and a minimum standard to address patient safety, while respecting the need to address capacity and relevance in the local context *(1)*.

Successful efforts will depend on policies that actively build capacity to implement regulatory solutions that are based on emerging, international evidence-based guidance.

Figure: Regulation of health professions education



1. Background

1.1 Definition of regulation in context of health professions education

As the public mechanism for ensuring safe and effective professional practice, regulation covers both the education and practice of health professionals. This policy brief is focused on regulating the quality of **health professions education** as a means of ensuring that: students can achieve entry-level competency before entering practice; entry to practice is based on independent assessment of competency; and maintenance of health professionals' competency is enabled through **continuing professional development (CPD).**

1.2 The issues/challenges

The overarching purpose of regulation within the context of health professions education is to ensure that the public has access to competent health care providers *(2-6)*. The regulation of education is essential to ensure that individuals entering the health workforce have obtained and maintain the core competencies required for safe practice within their profession. Education, for purposes of this brief, includes: (a) **pre-service education**, which is aimed at preparing health providers for initial entry to practice; and (b) **in-service training**, which is aimed at maintaining core competencies and developing new competencies in response to consumer demand and evolving public health needs. Note that in-service training must come under the auspices of CPD if health professions are to be able to monitor the attainment and maintenance of essential competencies, and mastery of emerging competencies needed to serve the public.

Regulators face a myriad of challenges in strengthening the regulatory systems that guide quality assurance mechanisms with health professions education, especially in low-income countries. Understanding some of the most pervasive challenges is essential for those seeking to optimize public health interventions, maximize the global health workforce and ensure sustainable access to quality health care.

In many countries, the regulatory systems themselves are antiquated and in need of substantive revision. Practice acts have not been reconsidered for decades in many countries (Regulator websites – Botswana, Lesotho, Swaziland and Zambia). In these countries, essential components of internationally accepted, regulatory best practices are missing. Specifically, regulators may lack authority to ensure quality education through accreditation or ensure maintenance of competency through CPD.

1.2.1 Outdated and/or expired practice acts

Many countries are regulating health providers under **outdated and/or expired practice acts** that do not reflect current regulatory or educational best practices. For example, the nursing and midwifery practice acts in Swaziland (1965), Botswana (1995) and Zambia (1997) have not been updated in well over a decade. The failure to keep practice acts in step with international regulatory standards (ECSACON, ICM, ICN, International Association of Medical Regulatory Authorities [IAMRA]) may hamper efforts to enact evidence-based best practices and explore innovations.

In Botswana, for example, the existing practice act for nurses does not reflect their contemporary roles—what they actually do. When the act was written, things were simpler with entry level nurses and midwives. Today, the regulator is grappling with the need to sort through a variety of advanced-practice nursing specialties, including mental health, anaesthesia and family nurse practitioner roles. On a global level, too, the HIV epidemic has created a need for health providers to shift roles so that more providers are available to prescribe antiretroviral (ARV) therapy and provide more comprehensive care for people living with HIV/AIDS. In most highly affected countries, existing practice acts for the cadres that are now assuming these roles have not yet accommodated this new reality.

There have been significant recent efforts to develop internationally vetted core competencies delineating recommended basic, entry-level practice for health professionals in nursing (ICN), midwifery (ICM) and medicine (Institute for International Medical Education [IIME]). While recent efforts have been made to align West African midwifery practice with international midwifery competencies (West African College of Nursing [WACN]) and Liberia Jhpiego [Draft Document] 2010), most national regulatory authorities lack operational guidance against which to measure safe and effective practice. The failure to adopt or develop national competencies has a significant impact on the regulators' ability to ensure meaningful systems of accreditation, licensure and CPD. Where such competencies have been adopted/developed, countries must ensure that they are relevant to the local context, considering issues such as disease burden, cultural preferences and mix of available health providers.

Most ministries of health maintain policies outlining an essential package of health services and job descriptions for health providers employed within the government sector *(7)*. Prospective alignment of pre-service and CPD curriculum to core competencies and job expectations of providers, however, is rare and often results in deployment of providers incapable of performing the basic services expected of them. This has an impact on both the quality of health services available and the retention of health providers.

1.2.2 Additional barriers for regulators

Regulators lack the technical capacity needed for meaningful assessment of competency; therefore, provider ability to perform safely is typically determined using arbitrary measures. Structured assessment of the competency of providers upon entering practice and re-registration of those in the workforce are uncommon, as is assessment of those migrating from another country.

In many countries, the regulatory systems themselves are antiquated and in need of substantive revision. Practice acts have not been reconsidered for decades in many countries. Countries that do attempt to assess immigrating provider qualification do so largely without validated assessment mechanisms, using subjective pass-fail standards. Most countries register providers from abroad

based on review of documented education, work and training experiences. Regulators relying primarily on such document review often have difficulty determining the authenticity of these documents, particularly in light of advancements in technology (NMCB registrar, personal communication).

Regulators may not have sufficient resources to maintain quality systems of accreditation, licensure and CPD. In many countries, regulators are quasi-governmental bodies, while in others they are subsumed within the government. According to a recent ICN international survey, nursing regulatory bodies—with the exception of those in African countries that rely significantly on grant support—fund themselves solely through the collection of regulation fees *(6)*. The low income of health providers in low- and middle-income countries makes it difficult to charge and collect registration fees that are compatible with essential regulatory functions. Insufficiently funded regulators struggle to keep up with the day-to-day functions required to maintain a registry. Therefore, while regulators may appreciate the need for accreditation of education programmes and assessment of provider competency, many may find these mechanisms impossible to develop or sustain *(8)*.

Regulators often do not have sufficient authority to ensure that educators and health providers adhere to promulgated educational standards. Even when councils are mandated by practice acts to ensure accreditation, licensure and CPD, they do not have the ability to enforce compliance. Some countries have difficulty simply ensuring that providers maintain their registration (e.g., Botswana and Lesotho, personal communication with registrars). According to the WHO *World Health Report* *(9)*, "Ministries of health may be reluctant to strengthen the very institutions that act as checks and balances on their own work, but in the long run it is in their own interest to have strong system of dialogue and cooperation."

The challenges outlined above are persistent and widespread particularly in low-income countries, leading to poorly regulated health professions and continued adverse health outcomes for populations served. Efforts to improve the pre-service education and CPD of health providers cannot be sustained without ongoing, focused engagement of all stakeholders. WHO, UN agencies, the Global Health Workforce Alliance (GHWA), international donors, NGO implementing partners, governments, regulators, private and public educators, professional associations, individual professionals and consumers all must be engaged in efforts to strengthen and sustain educational regulation.

2. Key issues in regulation

2.1 Existing situation

2.1.1 To what extent is regulation performed on a regular basis worldwide?

Regulation of medicine, nursing and midwifery is widespread *(8, 10, 11)*. For example, more than 80% of the 58 countries surveyed as part of the *State of the World's Midwifery* report indicated the regulation of midwifery. What is less clear, however, is the extent to which other health providers—such as pharmacists, social service providers and laboratory technologists—are regulated on a regular basis and to what extend accreditation of education occurs. According to the 2006 *World Health Report (9)*, accreditation systems for health professions exist in three-quarters of Eastern Mediterranean countries, approximately half of the countries in Southeast Asia and one-third of the countries in Africa.

Likewise, a recent ICN survey of regulators *(6)* revealed widespread requirement for completion of an approved programme of study but did not cite criteria for approval. This same survey revealed varied attention to formal assessment of individual competency prior to registration (Europe 36%, Western Pacific 56%, Canada 90% and USA 98%). In the ICN survey, 36% of regulators indicated the re-registration requirement for CPD.

2.1.2 What are the main forms of regulation of professional education and who is involved?

The regulation of education usually includes a combination of educational accreditation, individual licensure or certification and CPD (see Figure above). Accreditation is used to ensure that schools responsible for educating health professionals meet quality standards that enable graduates to obtain core competencies.

Licensure or certification, often accomplished through administration of a written examination, ensures that each individual has obtained the core competencies essential for safe and effective practice. In addition to ensuring readiness for individual entry to professional practice, licensure also serves as a check on educational quality.

CPD prescribes requirements for continued registration. Common CPD requirements include documented hours of practice and accrual of CPD credits. Professional portfolios are a less frequent, but emerging, practice for CPD. A portfolio may include documented clinical experience, self-reflection following adverse events, external peer review and contribution to clinical education *(4)*.

Regulatory bodies are responsible for setting standards for professional education. In the United States and Canada, these processes are almost exclusively delegated to private, not-for-profit agencies (e.g., Medical Licensure/Accreditation – National Board of Medical Examiners [NBME]/Liaison Committee on Medical Education[LCME]; Nursing Licensure/Accreditation – National Council Licensure Examination for Registered Nurse [NCLEX-RN]/Commission on Collegiate Nursing Education [CCNE]; Midwifery Licensure/Accreditation – American Midwifery Certification Board [AMCB]/Accreditation Commission for Midwifery Education [ACME]). In almost all African countries, regulatory bodies assume direct responsibility for implementing these systems.

2.1.3 To what extent are the various approaches to regulation utilized?

A comprehensive review of the peer-reviewed and grey literature failed to determine the number of countries requiring licensure, certification or CPD in medicine. ICN's recent survey of regulators revealed widespread requirement for completion of an approved programme of study but did not cite criteria for approval. This same survey revealed varied attention to formal assessment of individual competency prior to registration (Europe 36%, Western Pacific 56%, Canada 90% and USA 98%). In the ICN survey, 36% of regulators indicated the re-registration requirement for CPD.

2.2 Pathways towards improvement—examples, considerations, implications

2.2.1 What examples exist on effectiveness of regulation to quality improvement in education/ training?

Adherence to education standards can have a profound impact on the quality of education and training. Significant international efforts have resulted in education standards in nursing *(10)*, midwifery *(5, 13)* and medicine *(12)*. The education standards promoted by these documents are nearly identical. All include elements related to: (1) resource management; (2) a clinically and educationally competent faculty; (3) recruitment and support of students; (4) a competency-based curriculum; and (5) effective administration.

To date, the same efforts have not been made in the development of international standards for CPD. Recently, however, an in-service training improvement framework has been developed using Delphi consensus-building methods. This framework, funded by USAID, delineates recommended best practices in 14 thematic areas and could have significant impact on CPD. One recommendation calls for accreditation of all CPD programmes (USAID/University Research Co., LLC [URC]-led consortium, working document).

The community midwifery education programme developed by Afghanistan has been fully accredited using education standards and competencies aligned with ICM *(5)*. These standards are regularly monitored by schools using the Jhpiego Standards-Based Management and Recognition (SBM-R®) tools *(14)*. SBM-R has also been used to improve the quality of education in Ethiopia, Ghana and Liberia but without linkage to regulatory authorities. Unfortunately, little evidence can be found of linkages between educational quality assurance efforts and regulation in other countries.

2.2.2 What is the implication of regulation on the health professionals at national levels?

Regulation of health professionals at a national level ensures that quality education will lead to initial deployment of competent health providers and that all providers demonstrate continued competency throughout their careers *(3)*. Failure to ensure that students are appropriately selected and supported—and that their educators are qualified and have sufficient resources, working infrastructure and enabling management systems—will lead to dangerous exposure to unsafe health practices and suboptimal care. Regulatory requirement of CPD at the national level provides a strong incentive for health providers to access ongoing competency-based CPD. These training systems must also adhere to accepted best practices for training.

2.2.3 To what extent are private and public sectors regulated?

Linking registration to evidence that a health provider has graduated from an accredited programme of study provides a strong incentive for voluntary accreditation in both private and public settings. Nevertheless, the "mushrooming" private sector has placed a burden on under-resourced regulators, who may have difficulty keeping up with the accreditation of new schools in the private sector. Some countries accredit programmes only in the public sector. In contrast, Ethiopia, due to concerns about quality, accredits schools only in the private sector (Yigzaw, personal communication).

2.2.4 What are the key innovations related to addressing issues and challenges in regulation of health professions education?

A number of innovations targeting issues and challenges related to regulation are worth exploring. ICN, for example, in response to the need to modernize obsolete nursing practice acts, has recommended the development of a **model/template act** that would facilitate the development of quality practice acts *(6)*. In 2010, Tanzania had considerable success benchmarking its nursing and midwifery practice act, using the ten essential elements in the ICN model act *(15)*. Tanzania is now considered by experts to be a regional model for best practice (Kelly, personal communication). Several countries in Eastern and Southern Africa (e.g., Kenya, Malawi, Botswana and Lesotho) are actively exploring the development of acts that establish "**umbrella councils**," which will support all health professions. This concept, if realized, could potentially: (a) increase administrative efficiency; (b) provide a higher level of regulatory advocacy; (c) provide consistency in setting educational standards across professions; (d) promote interdisciplinary collaboration; and (e) increase transparency and public involvement. At this point in time however there is little or no evidence that the move to umbrella councils does in fact result in these effects. Within individual professions, however, with the move to umbrella councils, there be may concern about the potential of losing regulatory authority, professional autonomy and voice at decision-making tables and the ability to move profession-specific issues forward. Policymakers are therefore cautioned to ensure that: proper consultation occurs with the professions that will be coming under umbrella councils: (a) resources are commensurate with the size of the professions being regulated; (b) key technical decisions related to education and CPD are profession-specific; and (c) international standards and competencies from all professions are considered.

The **international competencies** established by international health professions associations in nursing (ICN), midwifery (ICM) and medicine (IIME) represent significant innovations. Successful translation of these standards into national regulatory policy is highly dependent on high-quality tools and technical assistance that, to date, are not widely accessible.

Task analysis, an evidence-based strategy for ensuring congruence between curriculum and provider job expectations, has been used with a high degree of success in Liberia, Mozambique and Zambia *(16)*. Jhpiego is currently using task analysis to assist the Nurses and Midwives Council of Botswana to develop an evidence-based, entry-to-practice exam for graduating and immigrating nurses. This strategy, which prioritizes tasks in terms of frequency of need/use and relevance to patient outcome, can have a positive impact on curriculum development, deployment decisions and allocation of scarce educational resources.

A circuit of **OSCE (Objective Structured Clinical Assessment)** stations mapped to essential competencies provided by international professional associations can provide an efficient, effective and sustainable means of objectively measuring competency before registration and re-registration.

OSCE—which uses structured role plays, standardized patients, anatomic models and validated checklists—has been widely promoted for formative and summative assessment of students in nursing, midwifery and medicine *(17)* but has not yet been adopted by regulators.

Mobile information and communications technology (ICT) strategies have remarkable potential, not only for promoting high-quality input into accreditation systems but also for providing flexible, timely access to highly relevant CPD topics. For example, simple mobile phones can be used by faculty to provide regulators with data on students, faculty, resources and curriculum. Busy health professionals could access mobile-based CPD on topics most relevant to their work. Imagine a midwife accessing a CPD module on postpartum haemorrhage immediately following a near-miss event, or a nurse assigned to a rural clinic accessing a CPD module on the latest ARV guidance. Successful mastery of the objectives of each such module would be automatically updated on the regulator's registry.

2.2.5 To what extent have these innovations resulted in improvements of quality of teaching, as well as improvements of competencies of students and subsequently better quality of care?

Documented evidence of how innovations have translated into substantial improvements in education or quality of care is limited. Notable exceptions include the use of task analysis in Liberia and Mozambique, which has resulted in a streamlined curriculum and realignment of educational resources *(16)*. Use of international midwifery competencies has resulted in educational improvements in Afghanistan, Ethiopia, Ghana and Malawi *(18)*.

The US Government-sponsored African Health Profession Regulatory Collaborative (ARC) is a four-year project aimed at strengthening regulatory frameworks in the East, Central and Southern Africa (ECSA) region. Through ARC, the use of "collaborative improvement cycles"—involving regional meetings, competitive micro-grants, south-to-south support and targeted technical assistance—has resulted in local investment and strong country ownership *(19)*. ARC is committed to completing a toolkit to guide the development of nascent, intermediate and mature regulatory systems.

2.2.6 What are the implications of the recognition of health professionals' qualifications across borders?

Health provider migration is ubiquitous and expected to increase in the future global economy *(9)*. The regulator is challenged to ensure that foreign health providers seeking registration have completed an education programme that meets country standards, achieved the core competencies required in their own country's health system and maintained their competencies in a manner consistent with the country's CPD requirements. Fraudulent documentation of educational transcripts, diplomas, degrees and registration certificates exacerbates this problem. Interstate compacts in the USA (National Council of State Boards of Nursing [NCSBN]) and within the European Union (General Medical Council) provide excellent models for ensuring regulatory consistency across borders. ECSACON *(20)* has developed a regulatory framework for nursing and midwifery councils in the ECSA region. The Nursing and Midwifery Council of Botswana is currently exploring OSCE as a mechanism for assessing the performance of nurses seeking registration from outside the country.

3. Relevance to policy guidelines

Regulation is essential for scale-up and sustainability in almost all public health improvement projects involving human resources. Improvements to pre-service education will quickly erode without strong accreditation systems. Vertical CPD opportunities aimed at important public health problems will be minimally accessed by over-burdened health providers if they are not required as part of a national regulatory CPD system.

4. Policy options

Policy options to be considered include:

(a) Aggressively support the sustainable capacity of regulatory agencies through increased donor funds. Public health implementing partners must quickly develop the technical capacity needed to support innovations and evidence-based best practices.

(b) Ensure that partners pursuing improvements in education and training implement projects in collaboration with regulatory bodies.

(c) Promote the exploration of evidence-based innovations that will lead to effective, efficient and sustainable regulatory systems. Develop a monitoring and evaluation framework to guide projects aimed at strengthening regulation.

(d) Encourage interdisciplinary and regional networking and collaboration between bodies through twinning, study tours and communities of practice.

5. Opportunities for future research

Areas for future exploration include:

(a) The effectiveness of various models for education programme accreditation in low- and middle-income countries. The impact of voluntary versus mandatory could be explored as the impact of the type of accrediting agency (e.g., regulator, national accrediting agency, government) on effectiveness and education outcomes.

(b) The impact of education programme accreditation on graduate competency upon entry to the workforce.

(c) The effect of cross-disciplinary models of regulation on individual health professions and the efficiency and effectiveness of regulatory processes.

(d) The effect that regulatory CPD requirements have on access to in-service training opportunities.

(e) The impact of regulatory CPD and the type of CPD model implemented on competency maintenance.

(f) Determining measurable indicators of regulatory programme success.

(g) Benchmarks of quality education across borders.

References

1. Barry J, Ghebrihewet T. An exploration of globalization through nursing regulatory and ethical lenses. *Journal of Nursing Regulation*, 2012, Volume 2/Issue 4.

2. Cutcliffe J et al. Nurse migration in an increasingly interconnected world: The case for internationalization of regulation of nurses and nursing regulatory bodies. *Archives of Psychiatric Nursing,* 2011, 25(5):320-328.

3. Fealy G et al. Models of initial training and pathways to registration: A selective review of policy in professional regulation. *Journal of Nursing Management,* 2009, 17:730-738.

4. Jordan C et al. Public policy on competency: How will nursing address this complex issue? *Journal of Continuing Education in Nursing,* 2008, 39(2):92-94.

5. *Global Standards for Midwifery Education (2010).* International Confederation of Midwives. Available from http://www.internationalmidwives.org/Portals/5/2011/DB%202011/MIDWIFERY%20 EDUCATION%20PREFACE%20&%20STANDARDS%20ENG.pdf (accessed on 20 December 2012).

6. *The Role and Identity of the Regulator: An International Comparative Study.* Geneva, International Council of Nurses, 2009.

7. Sabri B et al. Towards sustainable delivery of health services in Afghanistan: Options for the future. *Bulletin of the World Health Organization,* 2007, 85(9):649-732.

8. *The State of the World's Midwifery 2011: Delivering Health, Saving Lives.* United Nations Population Fund (UNFPA), 2011.

9. *The World Health Report 2006 - Working together for health.* Geneva, World Health Organization, 2006.

10. *2020: Exploration of the Present: Vision for the Future.* Geneva, International Council of Nurses, 2009.

11. *Sexual and Reproductive Health: Core Competencies in Primary Care.* Geneva, World Health Organization, 2011.

12. *Basic Medical Education: WFME Global Standards for Quality Improvement.* University of Copenhagen, Denmark, World Federation of Medical Education, 2003.

13. *Global Standards for the Initial Education of Professional Nurses and Midwives*. Geneva, World Health Organization, 2009.

14. Smith JM et al. Establishment of an accreditation system for midwifery education in Afghanistan: Maintaining quality during national expansion. *Public Health*, 2008, 122:558-567.

15. Verani A et al. Using law to strengthen health professions: Frameworks and practice. *African Journal of Midwifery and Women's Health,* 2011, 5(4):181-184.

16. Thomas U et al. Task analysis: An evidence-based methodology for strengthening education and training of nurses and midwives in Liberia. *International Journal of Nursing and Midwifery,* 2011, 3(9): 118-127.

17. ACGME and ABMS. A product of the joint initiative of the ACGME Outcome Project of the Accreditation Council for Graduate Medical Education (ACGME), and the American Board of Medical Specialties (ABMS). Version 1.1, September 2000.

18. Fullerton JT, Thompson JB, Severino R; International Confederation of Midwives. The International Confederation of Midwives essential competencies for basic midwifery practice—An update study: 2009-2010. *Midwifery*, 2011, Aug;27(4): 399-408. doi: 10.1016/j.midw.2011.03.005. Epub 2011 May 20.

19. Gross J et al. Strengthening nursing and midwifery regulations and standards in Africa. *African Journal of Midwifery and Women's Health*, 2011, 5(4):185-188.

20. *Nursing and Midwifery Professional Regulatory Framework.* Arusha, Tanzania, Commonwealth Regional Health Community Secretariat. East, Central and Southern African College of Nursing, 2001.

Other bibliography

Bhutta ZA et al. *Systematic Review on Human Resources for Health Interventions to Improve Maternal Health Outcomes: Evidence from Developing Countries.* Karachi, Pakistan, Division of Women and Child Health, The Aga Khan University, 2010.

Brenzel L. S*electing an Essential Package of Health Services Using Cost-Effectiveness Analysis: A Manual for Professionals in Developing Countries.* Paper prepared for the Population, Health and Nutrition Department, Population and Human Resources Sector, The World Bank, and The Data for Decision Making Project, Department of Population Studies and International Health, Harvard School of Public Health, 1993.

Burdick B et al. *Distance Learning Resources for Medical Education.* Foundation for Advancement of International Medical Education and Research, World Federation for Medical Education, 2012.

Standards for Accreditation of Baccalaureate and Graduate Degree Nursing Programs. Commission on Collegiate Nursing Education, 2009.

Strengthening Nursing and Midwifery Regulation and Standards in Africa, 28 February-2 March, 2011. Concept Note. The Commonwealth Secretariat, The U.S. Centers for Disease Control and Prevention, and Emory University, in collaboration with the Ministry of Health, Kenya, 2011.

Couper I et al. 2012, Transforming and scaling up health professional education and training policy brief: faculty development. Geneva, World Health Organization.

Crisp N et al. Training the health workforce: Scaling up, saving lives. *The Lancet,* 2008, 371: 689-691.
Dussault G. The health professions and performance of future health systems in low-income countries: Support or obstacle. *Social Science and Medicine,* 2008, 66(10): 2088-2095.

Fernandez R and Hebert G. Global licensure: New modalities in treatment and care require the development of new structures and systems to access care. *Nursing Administration Quarterly,* 2004, 28(2): 129-132.

Frenk J et al. Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world. *The Lancet,* 2010, 376: 1923-1958.

Gaym A et al. Report on the National Situational Analysis of Pre-Service Midwifery Training in Ethiopia. Addis Ababa, Ethiopia, Sponsored by the World Health Organization Country Office, 2008.

General Medical Council. Standards for Curricula and Assessment Systems, 2010.

Hastings-Tolsma M et al. 2007 Task Analysis: A Report of Midwifery Practice. Linthicum, MD, American Midwifery Certification Board, 2008.

Institute for International Medical Education. Global minimum essential requirements in medical education (available from http://www.iime.org/documents/gmer.htm).

Wendt A. The 2008 RN Practice Analysis: Linking the NCLEXC-RN® Examination to Practice. (Research Brief Vol. 36). Chicago, IL, National Council of State Boards of Nursing, 2009.

Riley PL. Advancing a midwifery perspective in health systems and human resources. Guest editorial. *African Journal of Midwifery and Women's Health,* 2011, 5(4): 162.

Rukanuddin RJ et al. Midwifery education and maternal and neonatal health issues: Challenges in Pakistan. *Journal of Midwifery & Women's Health,* 2007, 53(4): 398-405.

United States Agency for International Development, Health Care Improvement Project. Developing an In-Service Training Improvement Framework: Guidance for Improved Sustainability, Effectiveness and Efficiency. 2011, Bethesda, MD: University Research Co.

Quality Assurance and Accreditation of Nursing and Midwifery Educational Institutions. Report of Regional Workshop, Malé, Maldives, 9-12 July 2007. World Health Organization, Regional Office for South-East Asia, 2008.

Task Shifting: Global Recommendations and Guidelines. Geneva, World Health Organization, 2008.

Notes

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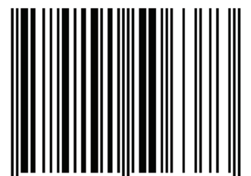
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