

Australia's Competencies and Other Competency Models

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Besides dealing with the regulation of disciplinary matters, the major question that concerns The International Chiropractic Regulatory Forum at this time is that of maintaining chiropractic professional standards internationally, particularly as a basis for practitioner mobility.

It is a privilege to present this paper on competency-based chiropractic professional standards and competency-based assessment strategies as bases for chiropractic regulation and international mobility and particularly to comment on our Australian experience.

To serve the needs of this very important forum this paper will address competency-based professional standards in three parts:

- 1. As a basis for expressing international chiropractic standards.**
- 2. Practitioner registration and international mobility; and**
- 3. The accreditation of competency-based educational programs.**

1. Competencies as a basis for expressing international chiropractic standards.

Globalization of Chiropractic

The issues concerning the establishment and recognition of equivalent standards for entry into the profession world-wide and of practitioner mobility across international borders is a problem that is not unique to chiropractic. In fact, globalization has already been addressed extensively in medicine [1; 2; 3; 4].

Some 30 years of experience by the Australia and New Zealand chiropractic regulatory bodies and the Council on Chiropractic Education Australasia (Inc), very strongly suggest that the use of core professional competencies as the basis for educational accreditation, competency based assessment strategies; and registration, can overcome many problems that now complicate international mobility of chiropractic registrants (www.ccea.com.au) [5].

Globalization of Medicine

The process of globalization is increasingly evident also in medical education and makes the task of defining global essential competences required by 'global physicians' an *urgent matter*. This issue was addressed by the Institute for International Medical Education (IIME) who developed the concept of 'global minimum essential requirements' ('GMER') and defined a set of global minimum learning outcomes that medical school students must demonstrate at graduation. The 'Essentials' are grouped under seven broad educational domains with a set of 60 learning objectives. They suggest that "besides these 'global competences', medical schools should add national and local requirements"; and that the focus on student competences as outcomes of medical education should have deep implications for curricular content as well as the educational processes of medical schools [1].

Competency-based Education and Assessment

Competency based education; training and assessment provide probably the most scientific approach to gathering evidence on the competency and capability of registrants as entrants to the profession internationally.

The development and assessment of competency-based professional standards in Australia was stimulated by government decisions implemented by the National Office of Overseas Skills Recognition (NOOSR) in the Department of Employment, Education and Training and by the National Training Board Ltd (NTB) in May 1990 [2; 6; 7]. It subsequently involved all major professions who were engaged on developing national competency-based standards with funding from NOOSR as part of its responsibilities to encourage the establishment of competency standards in the professions [7]. Because of signals to the professions from the Department of Employment, Education and Training, it became necessary to focus activities of both course accreditation and professional competency assessment more sharply on professional competencies. These competencies relate to the knowledge, skills and attitudes required of practitioners in performing their required practice roles and tasks [5; 7].

NOOSR is the body responsible for reviewing credentials of overseas graduates who seek to practice in Australia. It works in close collaboration with the Council on Chiropractic Education Australia (CCEA) and bases its decisions on competency-based professional standards for chiropractors.

The research discussed in this paper was motivated by the recognition that society is becoming increasingly concerned with issues of competency and accountability in the professions [5; 8; 9].

Practical application of competency-based professional standards

TABLE 1 - Practical purposes served by competency-based professional standards	
PURPOSE	DETAILS
1 International standards document	It provides a decision on international standards for chiropractors' practice expressed in a published form.
2 Transfer of qualifications	It facilitates interjurisdictional transfer of registration.
3 Assessment of foreign trained graduates	It forms a sound, scientific basis for the assessment of foreign trained graduates and the certification of their competence for registration purposes.
4 Curriculum development	It greatly facilitates curriculum development. This includes the preparation of learning objectives which encompass and provide for the achievement of competency-based standards. The establishment of competency-based standards is particularly helpful in determining any curriculum deficiencies or superfluity and in balancing and placing emphasis on relevant sections.

5 Articulation and stratification	It facilitates articulation of competency, knowledge and skills between courses for assistants; pre-registration (first professional programs); postgraduate (specialty); and continuing education programs.
6 Interprofessional comparison	It assists in determining articulation and overlap with other disciplines on the basis of comparing competency-based standards.
7 Accreditation	The granting of accreditation to institutions and programs is based on self-evaluation of the curriculum process and assessment of teaching and learning outcomes. For this process to be meaningful, it needs to be based on competency-based standards.
8 Certification	It will enhance the process of providing formal recognition that competency has been attained and demonstrated.
9 Review	It forms a basis for review. Competency-based standards and related curricula and higher education programs for chiropractors need to be systematically reviewed to ensure they remain relevant to the profession.
10 Monitoring and verification	It forms a basis for ongoing research. It is reasonable to expect most modern governments to require that national competency standards be regularly monitored, reviewed and verified. Internal, local and external validation is required as part of a quality assurance process to satisfy society on both issues of accountability and competence.
Adapted in part from NTB 1991:4-8; [10]; Butler 1990 [11]; Kleyhans 1992:99 [5].	

What is Competency?

Competency describes the ability to perform a task in a given context and comprehend the principles and concepts which underlie its application in order to transfer that knowledge and skills to new tasks and situations in both vocational and social settings.

Chiropractic Competency-based Assessment describes a method of assessing candidates for registration that is designed and developed to meet the competency standards of the profession [5].

The chiropractic competency standards used for assessment are a compilation of the requirements which are considered necessary for a chiropractor to be regarded as competent [5].

The component parts of a competency-based system of education and assessment are in the following hierarchical arrangement:

TABLE 2 - The hierarchical arrangement of components of the Australian competency based system

<p>DOMAINS OF COMPETENCIES COVER DIFFERENT PARTS OF PRACTICE</p> <p>UNIT OF COMPETENCY DESCRIBES A BROAD AREA OF PROFESSIONAL PERFORMANCE</p> <p>ELEMENTS OF COMPETENCY DESCRIBE IN MORE DETAIL WHAT IS <i>DONE</i> IN THE PROFESSIONAL WORKPLACE</p> <p>PERFORMANCE CRITERIA DEMONSTRATE <i>ACHIEVEMENT</i> OF EACH ELEMENT</p> <p>RANGE STATEMENT COVERS <i>WORK ENVIRONMENTS AND SITUATIONS</i> THAT AFFECT PERFORMANCE</p> <p>THE EVIDENCE GUIDE FOR ASSESSMENT IS <i>LINKED</i> TO PERFORMANCE CRITERIA, SKILLS, KNOWLEDGE RANGE STATEMENTS AND ASSESSMENT GUIDELINES.</p> <p>METHODS OF ASSESSMENT</p>

Each of the components is explicated below:

Unit of competency describes a broad area of professional performance. However, a unit is still likely to be too large to be practically demonstrable or assessable for the purposes of recognition of competence of individuals in the workplace - one of the major roles of competency standards. These **units** are high level statements that sit over other statements designed to reduce the competency units into elements and performance criteria that are measurable (5). Competencies are also characterised as being “hard” (comprising observable behaviours in specific tasks) or “soft” (encompassing traits and individual style) [12].

Elements of competency describe in more detail what is *done* in the professional workplace. There are usually several elements within each unit of competency. Each element has one or more performance criteria – each of which can be assessed (5).

Performance Criteria describe the required performance needed to demonstrate achievement of the element. In order to facilitate assessment, the performance indicators are further clarified by range indicators and relevant knowledge and skills are defined. Assessment of performance has to be consistent with an evidence guide (5).

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts (5).

The Evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines (5).

Method of assessment

Table 3. Recommended assessment methods for the 12 learning outcomes of a competent and reflective physician.

Learning outcome		Assessment methods		Learning outcome	Assessment methods
<i>What the doctor is able to do</i>				<i>How doctors approach their practice</i>	
1	Clinical Skills	OSCE Observation Logbooks Written examination	8	Principles of Social, Basic and Clinical Sciences	Written examination Portfolios Observation OSCE
2	Practical Procedures	OSCE Portfolios and logbooks Observation Written examination	9	Attitudes, Ethics and Legal Responsibilities	Observation Portfolio Peer/self assessment OSCE Written examination
3	Patient Investigation	Written examination OSCE Observation Portfolio	10	Decision Making, Clinical Reasoning and Judgement	Portfolio Observation Written examination OSCE Peer/self assessment
4	Patient Management	Written examination OSCE Observation Portfolios	<i>Doctors as professionals</i>		Assessment methods
5	Health Promotion and Disease Prevention	OSCE Portfolios Observation Written Assessment	11	Role as a Professional	Observation Peer/self assessment Portfolio OSCE Written examination
6	Communication	OSCE Observation Peer/self assessment Portfolio	12	Personal Development	Portfolio Observation Peer/self assessment OSCE Written examination
7	Information Management Skills	Portfolio OSCE Observation Written examination			

From: Shumway J.M. & Harden R.M. AMEE Guide No. 25: The assessment of learning outcomes for the competent and reflective physician Medical Teacher, Vol. 25, No. 6, 2003, pp. 569–584 [13].

Domains of Competencies

Competencies have been mapped in different ways by different groups. Some interesting examples are presented below.

1. The chiropractic competencies developed in Australia were classified according to domains of practice as indicated in Table 4 [5].

TABLE 4 - The Australian domains, units and elements of chiropractic practice

DOMAINS OF PRACTICE	UNITS AND ELEMENTS OF PRACTICE
Competence to interact with society	Competence to interact with the community Competence to interact with the health care system
Competence to interact with the profession	Competence to interact with the profession
Competence to manage a practice situation	Competence to interact with staff Competence to manage practice finances Competence to manage the practice environment
Competence to manage patients	Competence to assess patients Competence to reach diagnostic decisions Competence to plan patient care Competence to implement patient care

2. The IIME Core Committee has defined the minimum essential core competences and grouped them under **seven** broad educational domains listed below.

TABLE 5 – The seven broad educational domains of the IIME Core Committee

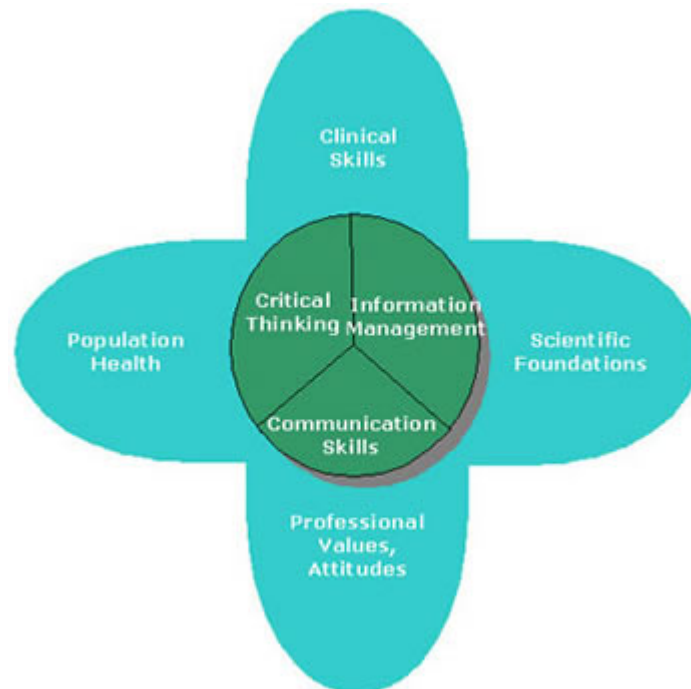
#	DOMAIN	DESCRIPTION
1.	Professional Values, Attitudes, Behaviour and Ethics	This reflects the essence of medical and public opinion essential to the practice of medicine. Many of the daily complaints against physicians and medical services relate to this area. Physicians must be prepared to meet the consequences of the rapid advances in biomedical sciences, information technology, changes in organization and management of healthcare and increasing economic constraints without losing the traditional values that have guided medicine for thousands of years. In addition, the advances bring their own unique and new ethical, social and legal challenges that physicians must respond to.
2.	Scientific Foundation of Medicine	'Scientific Foundation of Medicine' and 'Clinical Skills' is well understood and universally accepted since they have always created the foundation for effective medical care.
3.	Clinical Skills	
4.	Communication Skills	the physician must be able to teach, advise and counsel patients, families and the public about health, illness, risk factors and healthy lifestyles.

5.	Population Health and Health Systems	Physicians must work in teams with other health professionals to promote, maintain and improve the health of a given population
6.	Management of Information	Physicians need to know how to use modern communication and information technology to access and manage medical information.
7.	Critical Thinking and Research	As a priority domain, reflects the need for critical evaluation of existing knowledge, technology and information. This is essential if a physician is to be able to solve health problems. In caring for individual patients, physicians must apply the principles of evidence-based medicine in making decisions about the utilization of limited medical resources

From: Core Committee, Institute for International Medical Education. Global minimum essential requirements in medical education. *Medical Teacher*. 2002;24(2):130-135 [1]

These 'essential core competencies' represent only the core of a medical curriculum since each country, region and medical school also has unique requirements that its individual curricula must address. Hence, each school's educational program will be different but all will possess the same core [1].

The presented 'global minimum essential requirements' are considered an instrument for improvement of the quality of medical education and, indirectly, of medical practice. It is hoped that the IIME project will have significant influence on medical school curricula and educational processes, thus paving the road to competence-oriented medical education [1].



Relationship of the seven broad educational domains of the IIME Core Committee.

From: Core Committee, Institute for International Medical Education. Global minimum essential requirements in medical education. *Medical Teacher*. 2002;24(2):130-135

3. The Dundee Competencies

<p align="center">TABLE 6 - TWELVE LEARNING OUTCOMES FOR A MODEL OF OUTCOME-BASED EDUCATION</p> <p align="center">Adapted <i>mutatis mutandis</i> to chiropractic from Harden et al - the Centre for Medical Education, University of Dundee, Dundee, UK.[14]</p>	
<p align="center">GROUP 1 - SEVEN LEARNING OUTCOMES THAT DESCRIBE <i>WHAT</i> THE DOCTOR OF CHIROPRACTIC SHOULD BE ABLE TO DO</p>	
(1) Competence in clinical skills:	The doctor should be competent to take a comprehensive, relevant medical and social history and perform a physical examination. He or she should be able to record and interpret the findings and formulate an appropriate action plan to characterize the problem and reach a diagnosis.
(2) Competence to perform practical procedures:	The doctor should be able to undertake a range of procedures on a patient for diagnostic and/or therapeutic purposes. This usually involves using the practitioner's hands, special treatment tables and an instrument or some device.
(3) Competence to investigate a patient:	The doctor should be competent to arrange or do appropriate investigations for a patient and where appropriate interpret these.
(4) Competence to manage a patient:	The doctor is competent to identify appropriate treatment for the patient and to deliver this personally or to refer the patient to the appropriate colleague for treatment. Included are contexts for care such as acute care and rehabilitation.
(5) Competence in health promotion and disease prevention:	The doctor recognizes threats to the health of individuals or communities at risk. The doctor is able to implement, where appropriate, the basic principles of disease prevention and health promotion. This is recognized as an important basic competence alongside the main merit of patients with disease.
(6) Competence in skills of communication:	The doctor is proficient in a range of communication skills, including written and oral, both face-to-face and by telephone. He or she communicates effectively with patients, relatives of patients, the public and colleagues.
(7) Competence to retrieve and handle information:	The doctor is competent in recording, retrieving and analysing information using a range of methods including computers.

GROUP 2 – THREE LEARNING OUTCOMES ABOUT <i>HOW</i> THE DOCTOR OF CHIROPRACTIC APPROACHES THE SEVEN COMPETENCES	
(1) With an understanding of basic, clinical and social sciences:	Doctors should understand the basic, clinical and social sciences that underpin the practice of chiropractic. They are not only able to carry out the tasks described in outcomes 1 to 7, but do this with an understanding of what they are doing, including an awareness of the psychosocial dimensions of practice and can justify why they are doing it.
(2) With appropriate attitudes, ethical understanding and understanding of legal responsibilities:	Doctors adopt, appropriate attitudes, ethical behaviour and legal approaches to the practice of chiropractic. This includes issues relating to informed consent, confidentiality, and practice in a multicultural society. The importance of emotions and feelings is recognized as the 'emotional intelligences' (Goleman 1998).
(3) With appropriate decision-making skills and clinical reasoning and judgement:	Doctors apply clinical judgement and evidence-based chiropractic to their practice. They understand research and statistical methods. They can cope with uncertainty and ambiguity. Chiropractic practice requires, in some cases, instant recognition, response and unreflective action, and at other times deliberate analysis and decisions, and action following a period of reflection and deliberation. This outcome also recognizes the creative element in problem solving that can be important in practice.
GROUP 3 – TWO LEARNING OUTCOMES ABOUT THE <i>PERSONAL DEVELOPMENT</i> OF THE DOCTOR OF CHIROPRACTIC AS A PROFESSIONAL	
(1) Appreciation of the role of the doctor within the health service:	Doctors understand the healthcare system within which they are practising and the roles of other professionals within the system. They appreciate the role of the doctor as teacher, manager and researcher. It implies a willingness of the doctor to contribute to research even in a modest way and to build up the 'evidence base for chiropractic practice. It also recognizes that most doctors have some management and teaching responsibility.

(2) Aptitude for personal development:	The doctor has certain attributes important for the practice of chiropractic. He or she is a self-learner and is able to assess his or her own performance. The doctor takes responsibility for his or her own personal and professional development, including personal health and career development.
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Adapted *mutatis mutandis* to chiropractic from: Harden RM et al. AMEE guide no14: outcome-based education: part 5 – from competency to meta-competency: a model for the specification of learning outcomes. *Medical Teacher*.1999;21(6):546-552 [14]

Competencies and educational objectives

There is a strong relationship between these two elements of curriculum intent which result in real advantages to curriculum design as illustrated in Table 6.

TABLE 7- Advantages of basing objectives on competencies

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1. Students will know what they will be expected to be able to do at the end of the course.
 2. Lecturers will be working towards the course goals.
 3. It is a superior (more reliable) method of ensuring that graduates would possess the necessary attributes to meet societal needs.
 4. Establishment of competencies assists curriculum planners in determining content, methods, and assessment.
 5. It assists with decisions on deletion of content and lessens the burden of assimilating a great deal of factual content, i.e. it prevents overcrowding of the curriculum (Blunt, 1976).
 6. Student and staff knowledge of the objectives allow more valid and reliable evaluation techniques to be developed to assess whether students have acquired the essential competencies.
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Based on data from: Beenhakker JC. 1987. Determinants in physiotherapy education. *Medical Teacher* 9(2):161-5.[15]

2. Practitioner registration and international mobility.

It is our understanding that in order to be registered as a chiropractor in terms of statutory law in countries such as Australia, New Zealand, the United Kingdom and South Africa, *certification of competence* by the Chiropractic Institution in the form of the degrees awarded is the basis for registration.

In the United States of America and Canada, registration or licensure is based for the most part on candidates graduating from an accredited institution AND passing relevant Examination Board assessments.

The following suggestions for a competency-based model for global recognition of registered or licensed chiropractors may warrant further exploration:

- In the absence of external examinations prior to registration in countries where the Institutional award/qualification is accepted as the sole *competency* criterion for registration, it is critically important that Institutions should have evidence that they have in place validated processes and procedures to ensure competency of all graduates.
- The registration or licensing of chiropractors educated in one country, who move to another, will be greatly facilitated if competency is used as a model for the specification of learning outcomes and if the processes used to determine competency are globally acceptable.
- It should, however, be recognised that each country, region and chiropractic institution has unique requirements that its individual curricula must address. Hence, each institution's educational program could be different but all should possess the same core (Adapted from: Core Committee IIME 2002:130 [1]).

The extensive work of the US National Board of Chiropractic Examiners over several decades and the work of the International Board of Chiropractic Examiners is not only recognized but applauded. The staff expertise intrinsic to the NBCE and IBCE represent a major force for change to Competency Based Chiropractic Education.

Likewise, the important work of the Federation of Chiropractic Licensing Boards (FCLB), supported by many statutory Boards; and the Canadian National Board of Chiropractic Examiners have extensive experience to contribute to the establishment of Competency Based Chiropractic Education. Chiropractors Registration Boards have existed in many parts of the world for some decades now and have likewise a great deal of expertise to offer. These include the New Zealand Chiropractic Board, the Australian Chiropractic Board, the South African Allied Health Professions Board, the British General Chiropractic Council and other boards that were established more recently.

3. A basis for the accreditation of educational programs

Provision of evidence in an institutional self-evaluation of its competency-based education and assessment strategies offer an excellent way of determining whether the programs offered by educational institutions are compliant with international core competency standards.

Besides collecting information through a self-evaluation of all aspects of the Institution, covering the usual parameters outlined by the Councils on Chiropractic Education, evidence about outcomes of the programs offered could be readily obtained if the procedures developed within the competency-based system in countries such as Australia and the United Kingdom are implemented.

This would require that the Councils on Chiropractic Education make continuing accreditation and institutional compliance contingent on the Institution providing satisfactory evidence that teaching materials and practical and tutorial sessions satisfy the performance criteria for all of the Units of core competency that need to be covered. Specifically including:

- Advice to students on how each unit will be assessed
- Assessment tasks for the unit(s) that are consistent with and meet the requirements of the unit(s) of competency
- Maps indicating where each performance criterion for each element of each Unit of competency is covered.
- Maps indicating where knowledge and skills to satisfy each criterion for each element of each Unit of competency is covered.
- Maps indicating where each of the performance criteria for each element of each Unit of competency is assessed.
- Copies of the teaching materials that are used for each element of each Unit of competency.
- Assessment criteria/model answers for each assessment task for each of the Units of competency.
- Documented assessment validation approach.
- Information guide for assessors on the process of assessment used by the Institution
- Rigorous processes to ensure that no student can be recorded as competent without clear evidence that they have successfully completed all specified assessment requirements.

Once this competency-based system is in place, it can be readily:

- Updated to accommodate new evidence, information and procedures important to the patients to be served by graduates.
- Audited for quality control based on feedback from students; staff and the consumers of graduates' services, particularly patients and employers of graduates.

It is stressed that Institutional autonomy and staff/faculty academic freedom will not be compromised but that, in the interest of maintaining global standards for the sake of the patients and future patients of practitioners and students, competency of graduates will be evidenced.

This means that institutions will be able to teach their chiropractic programs in the manner that they elect, including curriculum content, sequencing of the subject matter and teaching flow plan, as long as they can provide evidence that all global, core, chiropractic competencies are covered.

Current Trends in Medical Education Internationally

- The Royal College of Physicians and Surgeons of Canada convened an international “theory to practice consensus conference” on Competency Based Medical Education in 2009 [16]
- Participants in this process formed the International CBME Collaborators group to work in partnership on key themes [17]. They have concluded that:
 - CBME (Competency-based education) is a resurgent paradigm in professional education.
 - CBME is organized around competencies, or predefined abilities, as outcomes of the curriculum. .
 - The CBME paradigm employs redefined concepts of competence and its development.
 - CBME holds great promise along with many challenges for physician training worldwide.
 - CBME has the potential to transform contemporary medical education.
- CBME has entered the lexicon of the profession and is now debated in the top general medical journals [18; 19]
- “Competencies” have become the unit of medical educational planning in many jurisdictions [18; 20]
- Competency frameworks such as CanMEDS [21; 22] the Outcome Project of the (US) Accreditation Council for Graduate Medical Education [23] and the Scottish Doctor [24] (Simpson et al. 2002) now arguably form the basis of training for the majority of medical learners in the Western world – at least on paper [17]
- The Institute for International Medical Education (IIME) developed the concept of ‘global minimum essential requirements’ (‘GMER’) referred to above [1].
- Two monographs have been published on CBME by the Australian Primary Health Care Research Institute at the Australian National University. College of Medicine and Health Sciences [24].
- Aspects of the New Formal Competency-Based Curriculum at Indiana University, School of Medicine have already had a five-year review [25].

Summary of Findings

- Some 30 years of experience by the Australia and New Zealand chiropractic regulatory bodies and the Council on Chiropractic Education Australasia (Inc). supports the notion of an international system of professional regulation and education based on professional competencies.
- The success of extensive methodologies that have been developed and implemented *via* Australian competency-based education for many professions very strongly suggest that if the chiropractic professional bodies and institutions would use required professional competencies as the basis for educational accreditation, competency based assessment strategies; and registration, this can overcome many problems that now complicate international mobility of registrants.
- The extensive work that has taken place in competency-based medical education and globalisation as outlined above suggests that it is reasonable to expect that chiropractic will be left behind in the globalisation of healthcare unless steps are taken to establish similar mechanisms to deal with the many problems facing the profession.

Discussion

Agreement on the adoption of international competency based chiropractic professional standards and competency-based assessment of entry level chiropractors will provide a very solid basis that will overcome a range of very important questions and concerns including:

1. A basis for the accreditation of educational programs that prepare candidates for licensure or registration
2. Equivalent strategies for the competency-based assessment of new practitioners.
3. Practitioner mobility across international borders based on internationally agreed expected competencies.
4. Equivalent standards for entry into the profession world-wide.
5. A basis for the assessment of continuing competency for practitioners with relevant disciplinary problems.

Recommendations

It is strongly recommended that strategies be implemented to establish international chiropractic standards.

Several models are available for undertaking this important task:

- The Institute for International Medical Education (IIME) which developed the concept of 'global minimum essential requirements' in medicine ('GMER') established a "Core Committee" that identified domains and major outcomes through a review process involving literature searches, obtaining input from unpublished sources and from educational experts, and by a pooling of the experience and expertise of the 'Core Committee' members. Every existing major published listing of standards, outcomes and processes of medical education was incorporated into reference materials for the committee [Schwarz & Wojtczak 2002:127].
- In Australia a significant group of people were involved in various steps leading to the establishment of competency-based chiropractic standards and the development of competency-based assessment strategies. Detailed methodologies and background information have been developed that could be extrapolated to serve an international project.
- Review of other models and domains and lists of competencies used by medical universities are readily available and will be of great benefit – particularly the work done by Professor Harden and associates at the University of Dundee – probably the greatest centre for medical education research in the world.

It is strongly recommended that a Steering Group be established to investigate the issues raised under "discussion" above.

It is imperative that this project should be supported by all relevant chiropractic bodies/groups and stakeholders and that it should draw on existing expertise and groups and individuals who are motivated to get the task done expeditiously and efficiently.

Conclusions

There needs to be an internationally agreed set of expected competencies for competency based chiropractic education and regulation.

A competency-based model for global recognition of registered or licensed chiropractors can be readily developed.

It is imperative that the proposed project should be supported by all bodies and stakeholders in the interest of patients and future patients of future students and registrants that the Boards have the statutory duty to regulate.

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TABLE 6 - Twelve learning outcomes for a model of outcome-based education

TABLE 7 - Advantages of basing objectives on competencies

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