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Accreditation requirements in allied health education: Strengths, weaknesses and missed opportunities

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Abstract

This paper reviews the accreditation requirements for six Allied Health (AH) degree programs in Australia to understand the range of accreditation requirements and approaches, with a particular focus on requirements around clinical education in AH education. Strengths of current approaches and further requirements are identified. Of particular interest are those areas where accreditation could better support educational goals and processes, including the preparation of work ready graduates and the encouragement of the use of currently under-utilized opportunities for preparing the AH workforce for future healthcare needs. The findings suggest that the accreditation criteria perform well for the development of students' conceptual and procedural knowledge. However, there are several opportunities for improvement where accreditation could better support preparation of graduates to meet current and future needs of healthcare. These opportunities include increased emphasis on biopsychosocial perspectives of health as healthcare models shift from hospital to community-based settings, increased emphasis on development of interprofessional skills, encouragement of diverse supervision models, explicitness about intentions and interpretations of accreditation requirements, and increased employer representation on accreditation panels. Constraints on universities' uses of new educational approaches imposed by or arising from non-explicit accreditation requirements are outlined. Arising from this analysis, a summary of considerations for AH accreditation bodies is provided.

Keywords: Allied health, accreditation, curriculum, pedagogy, active learning clinical placements, work readiness, health graduates.

Introduction

Accreditation of AH programs (also known as courses in Australia) plays a crucial role in ensuring educational effectiveness, quality assurance and continuous improvement in higher education. It is largely seen as an organised means by which universities demonstrate quality education to students, universities, professional bodies, employer groups, the public and government (Wergin, 2005; Dodd, 2004). Accreditation requires programs to demonstrate achievement of clearly defined purposes and objectives related to the preparation of students for practice, to demonstrate that adequate resources are available to achieve the program objectives and to include reasonable quality assurance measures that will enable continuous improvement (Fauser, 1992). The main objectives of accreditation are ensuring the quality of programs and future graduates, and thereby protection of the public by ensuring that all health graduates are able to provide safe and high quality healthcare for patients. Traditional models of accreditation are compliance-driven (see for example Medical Radiation Practice Board of Australia [2014]) and require documentation to evidence the professional capabilities of graduates as described by the accrediting body, followed by site visits to clarify points of

uncertainty, collect additional evidence and triangulate data (evidence) from multiple sources such as academics, students, clinical supervisors and employers. Other models (see for example Australian Skills and Quality Authority course accreditation models [ASQA, 2013]) use a university-based internal systemic approach to quality assurance and continuous improvement. In the past, accreditation often focused on educational inputs and resources, but in recent times there has been a shift in this focus with an increased emphasis being placed on student learning outcomes and attainment of competencies (Wergin, 2005; Speech Pathology Australia, 2011). This shift in emphasis is linked to changes such as enhanced curricular coherence (Health Workforce Australia, 2011), more efficient preparation of the health workforce, and enhanced public accountability for investments in health professional education (AHPRA, 2013; Australian Government, 2011). In addition to accreditation, universities' academic quality performance against the Higher Education Standards Framework is also scrutinised by the Tertiary Education Quality and Standards Agency (TEQSA) (TEQSA, 2014).

In Australia, AH pre-entry programs are developed by universities, based on professional standards, competency statements, registration and accreditation requirements, as well as university requirements and statements of graduate attributes. Programs are then accredited by the relevant accrediting board or council of the Australian Health Practitioner Regulation Agency (AHPRA) for registered professions (e.g. Australian Physiotherapy Council) or professional associations for non-registered professions (e.g. Speech Pathology Australia) against their professional standards, competencies and accreditation requirements to ensure that all university programs meet the minimum standards and develop entry-level graduates ready for professional practice. Accreditation standards developed by accrediting authorities identify the essential knowledge, skills and attributes required for competent entry-level practice in a specific profession. Accreditation standards may take an international perspective to their accreditation standards (for example the World Federation for Occupational Therapists (WFOT) (2002)) or give importance to local contexts of practice (for example Exercise and Sports Science Australia (ESSA, 2012) or include both local and international perspectives. For example, WFOT have developed minimum standards for the education of occupational therapists worldwide so that upon successful completion of occupational therapy courses all graduates will have comparable levels of skill, knowledge and ways of working. These standards are used by the Occupational Therapy Board of Australia and particularized to the national contexts for accreditation of occupational therapy programs in Australia.

A focus on both current and future workforce and patient needs should be at the core of any accreditation. Consideration must be given to work readiness of graduates and their capacity to work within complex systems with complex patients needing interprofessional (IP) care, and deliver healthcare in both the community and hospitals (Health Workforce Australia, 2010a). A shift from current perceptions about what a particular discipline does now to what they might need to do in the future must occur. In preparing graduates, consideration must also be given to new educational approaches which support the attainment of competence and quality while ensuring the safety of graduates; for example, using simulation, role-emerging placements and service learning, IP learning and IP supervision. However, in some cases these are not allowed or are implicitly discouraged as part of clinical education deemed appropriate by accreditation bodies (for example, see Table 2 ESSA requirements for clinical supervision of exercise physiology students).

Given the changing needs for work ready graduates to be able to deliver healthcare in diverse settings, and the availability of new educational approaches to preparing health graduates, the purposes of this paper are to: a) review the accreditation requirements of AH professions (particularly in relation to clinical education); b) consider whether these requirements support the adoption of new educational technologies and approaches and c) investigate whether accreditation requirements are aligned with workplace requirements for work ready health

graduates. Although accreditation documents increasingly reference professional standards and competency documents, but these are often not explicitly included in accreditation documentation. The focus of this paper is on accreditation documentation.

Method

A document analysis of current accreditation requirements for six AH professions in Australia was conducted with a view to comparing the accreditation requirements across different AH professions, particularly in relation to clinical/fieldwork education components of the programs. While individual profession's competency statements were not analysed, they were embedded in the accreditation requirements of some professions. The AH professions included were: Occupational Therapy (OT), Physiotherapy (PT), Speech Pathology (SP), Exercise Physiology (EP), Medical Radiation Sciences (MRS) and Rehabilitation Counselling (RC). Table 1 lists the accreditation documents that were analysed.

Table 1: List of Allied Health Accreditation Documents used for Analysis

Profession	Document title	Date/Authors/ Websites
OT	Occupational Therapy Australia. (2011). Self-study manual (revised) for accreditation of entry-level occupational therapy education programs. (2nd ed.). Fitzroy. Occupational Therapy Australia. (2013, January). *Guidelines for Accreditation of Entry-Level Occupational Therapy Programs*. Fitzroy.	2013. Occupational Therapy Australia. http://www.otaus.com.au/about/entry-level-program-accreditation/accreditation-of-entry-level-education-programs
SP	Accreditation is based on two documents: 1. Speech Pathology Australia (2014). Accreditation of Speech Pathology Degree Programs. Melbourne, Australia: Speech Pathology Association of Australia (SPA).	Accreditation of Speech Pathology Degree Programs (document available on request to SPA) http://www.speechpathologyaustralia.org.au/professional-standards-ps/university-accreditation
EP	Exercise and Sports Science Australia (ESSA) (2012). National University Course Accreditation Program: Policies, procedures and application form for academic units applying for accreditation of a course with Exercise & Sports Science Australia.	Exercise and Sports Science Australia (ESSA) (2012). http://www.essa.org.au/for-universities/page1369-2/
PT	Australian Physiotherapy Board: Accreditation of entry level Physiotherapy programs – A manual for Universities Australian Physiotherapy Council (2006).	http://www.physiocouncil.com.au/accreditation
RC	Rehabilitation Counselling Association of Australasia (RCAA) Accreditation Manual for Rehabilitation Counselling Education Programs 2012.	RCAA (document made available via email to the authors upon request)
MRS includes Diagnostic Radiography (DR).	Medical Radiation Practice Board of Australia (2013). Accreditation Standards: Medical radiation practice December 2013. Medical Radiation Practice Board of Australia (2014). Medical radiation practice accreditation guidance material March 2014.	http://www.medicalradiationpracticeboard.gov.au/Accreditation.aspx

Comparison analysis

Table 2 summarises a comparison for each discipline of accreditation requirements for program length, the minimum number of hours of clinical practice required of students, categories in which experience should be obtained, supervisory requirements, prescribed general/fieldwork teaching modes and educational methods, assessment tools used, supervisor to student ratios for placements, and any other requirements related to placements.

Duration of Programs

AH programs range from three to four years duration for undergraduate and one to two years for graduate entry masters programs. Some AH programs (e.g. SP, PT, OT and EP) are delivered as four-year undergraduate or two-year graduate entry masters programs. Others (e.g. RC) have a minimum of three years for undergraduate programs and a minimum of one year full time for postgraduate programs. DR requires a minimum of three years for undergraduate and two or two and a half years for graduate entry master programs.

Hours of clinical practice

Some AH professions specified the minimum number of hours of clinical placement with or without any conditions while others did not prescribe minimum hours of placement or specify any conditions. In professions such as OT, EP and RC accreditation guidelines specified the minimum number of hours of clinical placement and any conditions were provided. For example, 1000 hours of clinical practice are required in OT and it is also a requirement that students spend those hours implementing an OT process or an aspect of OT process with or for a real person. EP specified that only 50 hours out of the minimum 500 clinical hours could be used for simulated activities; another 50 hours should involve exercise prescription and the activities delivered by students are to be within the scope of practice of an accredited exercise physiologist (AEP). In DR, PT and SP no specified number of hours of clinical practice was mandated. In these programs the clinical placement hours required for students varied from one university degree to another. For example, Health Workforce Australia (2014) shows that the clinical education hours across the physiotherapy programs in Australia during 2012 ranged from 594 hours to 1470 hours with an overall average of hours being 1000 hours. No specified minimum number of hours was provided for SP but students must be assessed as competent at the point of graduation, against the competency-based occupational standards (CBOS) (Speech Pathology Australia, 2011) for speech pathologists.

Categories in which experience should be obtained

Some AH professions specified the categories in which experience should be obtained and/or minimum and maximum number of hours for each experience category. For example, OT, SP, PT and EP requirements were very prescriptive. The type of prescription was however v varied. OTs need to have clinical experience in a range of placements across the lifespan and in rural/remote as well as metropolitan settings. SP, on the other hand, requires students to obtain experience with both adult and paediatric caseloads in impairment categories of language, speech, voice, fluency, swallowing and multi-modal communication for Units of Competence 1-4 (assessment, analysis and interpretation, planning evidence-based speech pathology practice and implementation of speech pathology practice), as well as experiences to demonstrate competence in Units 5-7 (planning, providing and managing speech pathology services, professional and supervisory practice and lifelong learning and reflective practice).

Table 2: A Comparison of AH Programs across Several Accreditation Requirements

Discipline and accrediting entity	*Program length*	*Hours (hrs)of clinical practice*	*Categories experience should be obtained in*	*Supervisory requirements*	*Teaching modes and educational methods for Work Integrated Learning*	*Assessment tools*	*Supervisor to student ratios for placements*
Occupational Therapy **Occupational Therapy Australia and WFOT**	4 years for Bachelor and 2 years for Graduate Entry Master (GEM).	1000 hrs minimum (as prescribed by international body WFOT)	Occupation and OT, body structures and functions, biomedicine, human and social environment and social perspectives of health.	Must be supervised and assessed by an OT with at least one year's experience as an OT practitioner. No requirement for supervisor to be onsite.	Case studies, learning with and from recipients of OT, discussion, skills training, assignments, reflective exercises, projects, literature review, experiential learning, problem-based learning, interprofessional learning, lectures. Education practices should address local contexts and be informed by international perspectives.	Assessment tool in Australian OT programs: Students Practice Evaluation Form (SPEF-Revised Edition Package (SPEF-R, 2013)	Not stated.
Exercise and sports sciences (includes Exercise Physiology) **Exercise and Sports Science Australia (ESSA)**	Exercise and Sports Sciences : 3 years for Bachelor. Exercise Physiology: 4 years for Bachelor and 2 years for GEM EP.	500 hrs minimum	Apparently healthy (low risk) clientele Minimum of 140 hrs in each of the following categories: Cardiopulmonary/ metabolic; Musculoskeletal/ Neuromuscular/ Neurological; Maximum of 80 hrs in Other clinical health delivery.	Depends on type of placement; Supervisor qualifications range from qualified / degree trained in Exercise Sciences/Physiology to Certificate 4 in Personal Training with ten years industry experience. Suitable supervisors for apparently healthy placements: An accredited exercise physiologist (AEP); An ESSA exercise science member (ES) A degree qualified exercise and sports science professional; A personal trainer with a Certificate 4 in Fitness with a minimum of 10 years industry experience; A degree qualified physical education teacher; A bachelor degree qualified/trained allied health professional with experience in exercise delivery (e.g. physiotherapist); A state, national and international level sports	Very prescriptive and detailed (ESSA, 2012). At least 60% of practicum hours should be face to face exercise delivery. Up to 35% hours can be used for preparation for exercise services; up to 5% hours can be used for administration. For other clinical health delivery area there is no requirement for apportioning hours into these three categories. Maximum of 50 clinical hours (out of the 500 hours) for simulated learning activities conditional that 50 hours involves exercise prescription and the activities are within the	Not stated	Clinical supervisor to student ratios may be up to 1:5 with the proviso that there must be some 1:1 supervision of each student at each placement.

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Discipline and accrediting entity	*Program length*	*Hours (hrs)of clinical practice*	*Categories experience should be obtained in*	*Supervisory requirements*	*Teaching modes and educational methods for Work Integrated Learning*	*Assessment tools*	*Supervisor to student ratios for placements*
				coach; An Australian Strength and Conditioning Association (ASCA) level 2 or 3 coach. Suitable supervisors for Cardiopulmonary/metabolic /Musculoskeletal/Neuromuscular/ Neurological placements: An accredited exercise physiologist (AEP); An ESSA exercise Science member (ES); A degree qualified exercise physiologist; A bachelor degree qualified/trained allied health professional with experience in exercise delivery (e.g. physiotherapist, cardiac care nurse, occupational therapist, doctor, clinical nurse consultant, osteopath). Some (greater than 2) clinical hours in each category must be supervised by an AEP (Accredited Exercise Physiologist). Flexibility in how 140 hours is spent (for example, 50 hours with cardiac nurse and 90 hours with AEP)	scope of practice of AEP (accredited exercise physiologist criteria)		
Speech Pathology **Speech Pathology Australia**	4 years for Bachelor and 2 years for GEM.	Not specified. No minimum hrs requirement, focus is on attainment of competency as defined by CBOS	Prescriptive: Range of practice (for Child and Adult) should cover 6 core areas and 4 principles. Core areas: 1) Language 2) Speech 3) Swallowing 4) Voice 5) Fluency 6) Multi-modal communication. Principles: Principle 1: In all work contexts and decision-	Qualified SP required as a supervisor.	Range of teaching modes used; flexible teaching modes with no prescribed conditions; simulation/ off-site experiences allowed; problem-based PBL or Case studies encouraged. Assessment using case-based and other exams, exams, case studies, essays, project work, and	Assessment tool: COMPASS	Not stated.

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			making, the speech pathologist must consider the recommended evidence base for the speech pathology practice. Principle 2:Speech pathologists at entry-level are not required to demonstrate full competence in areas of complex clinical practice. Principle 3: There are a number of designated areas within the range of practice of speech pathology that are acknowledged as advanced practice and require further training and/or workplace credentialing in order for the speech pathologist to provide them. Principle 4: Interprofessional practice is a critical component of competence for an entry-level speech pathologist.		direct observation of work with patients.		
Physiotherapy **The Australian Physiotherapy Council**	4 years for Bachelor and 2 years for GEM.	No minimum hrs requirement (used to be 850 hrs	Prescriptive: 3 core areas musculoskeletal PT, neurological PT, cardio respiratory PT and a range of settings and across the life span. Further details in Australian Physiotherapy Council (2006).	Experienced clinical supervisors /clinical supervision required. Not necessary for a qualified PT to supervise a PT student.	No prescribed modes. A variety of assessment modes is desirable including practical tests, objective structures clinical examination (OSCE), simulated skills and patients, role play/ performance, direct observation of work	Assessment tool: Assessment of Physiotherapy Practice (APP) (Dalton et al., 2009)	Not stated.

Table 2: A Comparison of AH Programs across Several Accreditation Requirements

Discipline and accrediting entity	*Program length*	*Hours (hrs)of clinical practice*	*Categories experience should be obtained in*	*Supervisory requirements*	*Teaching modes and educational methods for Work Integrated Learning*	*Assessment tools*	*Supervisor to student ratios for placements*
					with patients.		
Medical Radiation Sciences Diagnostic Radiography **Medical Radiation Practice Board of Australia (MRPBA)**	For Diagnostic Radiography 3 + 1 year of supervised practice or 4 years for Bachelor 2 +1 year of supervised practice or 2.5 years for GEM	Not specified	Not prescribed - General guidelines provided in MRPBA'S accreditation document for DR programs	Not stated. Supervisors must hold a general registration with MRPBA and have radiation license (for example, in NSW radiation license with NSW EPA) to supervise students on placements due to the nature of radiation (risks) and that such supervisors are onsite. Also see Note 2.	Not prescribed. If professional practice placement undertaken is at an international clinical site it should be equivalent (not defined) to those conducted in Australia.	Not stated for Diagnostic Radiography	Not stated.
Rehabilitation Counselling **The Rehabilitation Counselling Association of Australasia (RCAA)**	Min 3yrs full time Bachelor or minimum 1 yr full time GEM.	200 hrs minimum	Should include minimum of 80 hrs in direct service provision and direct client contact as appropriate for the program. Student to receive minimum one hour of individual supervision each week of their placement.	Not stated. General practice is that the supervisor should be a qualified Rehabilitation Counsellor.	Not detailed. Encourages use of a variety of approaches.	Not stated	Not stated. General practice is supervisor should be qualified and be available for direct supervision at least ONE hour per week of field placement.

PT also specifies core categories/caseload types (musculoskeletal, cardiopulmonary, neurological) with a requirement that students should gain experience across the lifespan. Like SP, the number of hours for each category was not specified. EP specified the categories of healthy placements, cardiopulmonary/metabolic, musculoskeletal, neuromuscular and neurological as well as the minimum and maximum number of hours against each category. No such prescriptive requirements for DR and RC are stated. Table 3 provides a detailed comparison of non-direct client care learning activities that are explicitly allowed as part of accreditation requirements.

Table 3: A Comparison of Non-direct Client Care Learning Activities Allowed by Six Professions

Profession	*Minimum hours for placements*	*Minimum hours of face to face contact with client*	*Services delivered with or for a real client (eg, report writing, resource development)*	*Simulation*	*Educating others (example, health promotion, carer/parent/ teacher/ other professional training)*	*IP learning or practice*
	Y = Yes; N = No; NS = Prescription within minimum hours not stated					
OT	Y	Y; Hours NS	Y	Y	Y	Y
EP	Y	Y; Hours prescribed	Y	Y	Y	N
SP	N	Y; Hours NS	Y	Y	Y	Y
MRS	N	Y; Hours NS	Y	Y	NS	NS
PT	N	Y; Hours NS	Y	NS	NS	NS
RC	Y	Y; Hours NS	Y	NS	NS	NS

Supervisor requirements

Requirements for supervisors varied across different AH professions in terms of supervisor qualifications, number of years of experience, location of supervisor, and/or supervisor type allowed for placement type. For example, EP had different supervisory requirements for different categories of clinical and non-clinical practice. Supervisors for 'healthy placements', focussed on providing clients with strength and conditioning training (e.g. at Australian Institute of Sports or elite sports clubs) have a set of skills different from those supervisors in clinical placements where patients are involved. Healthy placement supervisors may be: an accredited exercise physiologist (AEP); an ESSA exercise science member; a degree qualified exercise and sports science professional; a personal trainer with a Certificate 4 in Fitness with a minimum of 10 years industry experience; a degree qualified physical education teacher; a bachelor degree qualified/trained allied health professional with experience in exercise delivery (e.g. physiotherapist); a state, national or international level sports coach; an Australian Strength and Conditioning Association (ASCA) level 2 or 3 coach. The qualification requirements for AH clinical supervisors ranged from university degree trained (for example OT, PT and SP) to a Certificate IV level (EP allowed supervisors with Certificate IV in Personal Training and ten years' experience for healthy

placements).The number of years of clinical experience required before people could supervise students ranged from one year (e.g. OT) to ten years of experience (EP, for healthy placement types) and others such as PT just specified 'experienced supervisor' without stating the number of years of experience. DR did not state any specific supervisor qualification requirements. Requirements for an onsite supervisor were stated for some AH professions but not others. OT criteria explicitly state that there is no requirement for the fieldwork supervisor to be onsite. No reference is made to a requirement that fieldwork supervisors have to be onsite in SP, EP, DR, RC and PT. Supervision of a student by another AH professional was allowed in some AH professions (e.g. SP) if it was a generic or an interprofessional education (IPE) placement. In role emerging placements in OT it is acceptable to have a non-OT health professional work with a student onsite, with a university-based OT educator to provide distance student supervision. EP allowed supervisors from other AH professions for a selected component of the fieldwork but required an accredited AEP to supervise some hours for each category of experience.

Clinical supervisor to student ratios

Requirements for clinical supervisor to student ratios are specified for some AH professions. For example, EP criteria state that the clinical supervisor to student ratio may be up to 1:5 with the condition that there must be some 1:1 supervision of each student at each placement. Other professions do not state a ratio.

Teaching methodologies and modes of educational delivery

Consideration in accreditation documents of teaching methodologies (case studies, problem based learning, simulation etc.) and educational modes (face to face or via internet) ranges from being minimal (e.g. DR allowed for flexible teaching modes with no prescribed conditions) to detailed and prescribed requirements (e.g. EP stated that at least 60 per cent of practicum hours should be face to face exercise delivery). Some accreditation documents encourage a flexible approach to the use of teaching and learning modes; for example, OT and SP encourage use of a variety of teaching methods such as case studies, projects, interprofessional learning activities to build competence. Others prescribe the maximum number of hours allowed using certain education modes. For example, EP criteria prescribe that a maximum of 50 hours out of the required 500 clinical hours is allowed for simulated learning activities. Although there is increased acceptance that some learning activities could be simulated (Hill, 2012), support for inclusion of simulation is not yet explicitly stated in some accreditation documents (e.g. PT).

Assessment methods and modes

References to a range of assessment methods and modes are seen in the accreditation documents. For example, PT encourages use of a variety of assessment modes including practical tests, objective structured clinical examination (OSCE), simulated skills and patients and role play/ performance. PT, SP and OT use validated and reliable, standardised assessments, based on direct observation of student clinical performance: the APP (Assessment of Physiotherapy Practice) (Dalton, Keating & Davidson, 2009), COMPASS (Competency Assessment in Speech Pathology - Revised 2011) (McAllister, Lincoln, Ferguson & McAllister, 2011) and the SPEF-R (Students Practice Evaluation Form) (SPEF-R, 2013) respectively. These assessment tools are used in each program in Australia. Standardised assessment tools are in development for DR (Kilgour, 2011) and EP. Other AH professions (e.g. RC) do not yet have standardized or national assessments.

Strengths of AH accreditation standards

There is acknowledgment in AH that both academic and practice settings are important and each have a role in student learning. There is clear recognition that learning occurs both

inside and outside university. Competency standards detailed in the accreditation documents capture the *conceptual knowledge* that all AH graduates in a discipline are expected to know. They also capture the requirements for *procedural knowledge and skills* development such as the ability to adhere to occupation-specific procedures in a health practice setting. Universities use professional competencies and accreditation standards to develop learning goals and demonstrate that such goals are mapped to their AH curriculum requirements and used to guide assessment of student learning outcomes. There is also increased emphasis in some professions on problem-solving skills leading to shifts towards problem-based education (e.g. Occupational Therapy Australia (2011)) and reflective practice (e.g. Speech Pathology Australia (2011) CBOS Unit 7 on lifelong learning and reflective practice).

Accreditation standards and processes provide a means for achieving minimum standards across universities offering AH programs. If the standards are clear in terms of the outcomes that are desired in graduates then they should be useful for programs to frame up their curriculum and demonstrate how they develop the competencies and the outcomes that are required. Accreditation also requires universities to define, collect, analyse and provide evidence of student learning and achievement thus giving student learning outcomes a central focus in quality assurance (Wergin, 2005). Engagement with accreditation processes allows universities to evidence student learning and achievement. Some AH standards also take into account the international minimum standards for education programs (e.g. OT) thus ensuring that Australian competency standards for AH professionals are comparable to international standards for AH professionals, and that graduates will be recognised internationally.

In AH professions where minimum professional standards do not exist, accreditation standards serve as the minimum standards for that profession. They can be used to define the standards of performance that a) the public can expect when they use an AH service or interact with an AH professional or b) health employers and workplaces can expect when they recruit an AH professional. AH graduates from accredited university programs are able to register with their profession's Registration Board (or professional association for unregistered professions) because they can demonstrate achievement of core competencies consistent with entry level requirements for AH professionals.

Weaknesses and missed opportunities in AH accreditation standards

There are several areas of weaknesses and missed opportunities in AH accreditation standards. This discussion is presented under two headings: the first relates to work readiness of AH graduates and the second relates to constraints in the adoption of new educational approaches available to universities.

Work readiness of AH graduates

AH accreditation requirements aim to ensure that all AH university programs meet the minimum standards and develop entry-level graduates who are well prepared for work. However, employers suggest that new health graduates are not work-ready (Garling, 2008; NSW Ministry of Health, 2011). Skill deficiencies cited by employers include a lack of communication skills, interpersonal skills, problem solving abilities, and understanding of business practice (Walker, Young, Pang, Fullarton, Costa & Dunning, 2013). Employer comments as reported by Walker et al., (2013, p.118-119) include: *1) They might be brilliant, academic, clinical people but if you can't communicate then it's a bit of a waste of time; 2) She works in a team but I think she doesn't get that a team works with each other; 3) If they're not understanding what's policy and procedure, then what else are they missing?; 4) It is the hierarchical areas that really get the grads kind of worried so they feel like they can't go to anybody because they're on the bottom of the pack.* These views have serious implications for accreditation, university preparation, workplace supervision and support (Health Workforce Australia, 2010a), capacity to meet the demand for collaborative models

of healthcare (National Health and Hospitals Reform Commission, 2009), and health professionals' workforce satisfaction, performance and retention (Walker et al., 2013).

It may be that some AH accreditation requirements are out of step with current workplace requirements for new AH graduates and are grounded in old approaches to education (e.g. placement in hospitals when healthcare is moving to primary healthcare and community-based care). There appear to be mismatches in employer, university and professional expectations about preparedness of new AH graduates for practice. For example, health employers expect new graduates to have active learning skills, to proactively seek and manage learning opportunities in the workplace. However, this agentic learning style (Billett, 2009) cannot be fostered in overly prescriptive placement learning environments. Past studies have identified stressful transitions, negative workplace experiences and inability to cope with workplace challenges for new health graduates (Kelly & Ahern, 2009; Newton & McKenna, 2007; Walker et al., 2012; Deary, Watson & Hogston, 2003). Increased dialogue between employers, universities and accrediting bodies may reduce mismatches in expectations. It is suggested that there is a shared responsibility amongst accreditation bodies, employers and universities to ensure that graduates are able to cope with such challenges when they enter the workforce and a means to achieve that is through flexibility to prepare students to be active learners.

It is our recommendation that all AH accreditation panels include employers on their teams. There is some employer representation on university-based degree external advisory committees (comprised of academics, employers, clinicians, student representatives and perhaps also service users) that develop and monitor curriculum. While academics' perspectives are important for the development of accreditation standards, inclusion of employers and service users may add value by increasing the understanding of the contemporary practice needs and employer work readiness expectations of new AH graduates.

Preparing AH graduates for future practice needs

There is a shift in progress in healthcare services from hospital-based settings to community-based settings with increasing awareness of the need to address chronic diseases (WHO, 2008) and manage chronic conditions (Rodger, Webb, Devitt, Gilbert, Wrightson & McMeeken, 2008). An increase in Australia's ageing population combined with lifestyle factors such as smoking, increased levels of alcohol intake and sedentary behaviours and occupations are likely to increase the prevalence of chronic conditions such as diabetes, cardiovascular disease and musculoskeletal conditions resulting in an unprecedented demand on our chronic care services. NSW Treasury papers provide estimates that by 2020 chronic disease is expected to account for over 80 per cent of the total burden of disease in Australia (NSW Government, 2008). Such forecasts have implications for workforce preparation.

Our analysis of the accreditation documents shows that required educational goals and clinical placement types do not reflect this increasing focus on chronic disease and primary healthcare. During the consultation processes for the development of HWA's national strategic frameworks, healthcare providers indicated that health professional education is not keeping pace with the changing models and place of care (National Health Workforce Taskforce, 2009). Currently much of the focus of health professional preparation is on acute care, hospital-based settings and in-patients. Some of this focus is driven by accreditation requirements; some of it is driven by practitioner beliefs about the types of clinical placements that students require to meet accreditation requirements. For example, in seeking to expand the range of available clinical placement sites, some university physiotherapy programs (Blackford, McAllister & Alison, personal communication 2013) have met resistance from physiotherapists in aged care sites who insist that some placement types for example, rehabilitation can only be obtained in hospitals even though appropriate

patients live in aged care facilities and are in need of services. While this is probably not the intent of accreditation documents, requirements are variably interpreted by different stakeholder groups. We suggest that accreditation bodies consider making it explicit in accreditation documents that experience in chronic care is required, and that categories of clinical experience they require students to obtain (e.g. musculo-skeletal, cardio-pulmonary for PT) can be met through placements in diverse settings, not just from hospitals, and in collaboration with professional associations and universities, develop strategies to educate stakeholders about options and flexibility in meeting requirements, . This will provide clarity for university placement coordinators and for external clinical supervisors and facility staff.

The Australian Government's health priorities (NHMRC, 2013) acknowledge that ageing, chronic disease, and mental health are major challenges for the healthcare systems in Australia. To effectively deliver care for chronic diseases and conditions and primary adoption of a bio-psychosocial model of healthcare, such as that embodied in International Classification of Functioning, Disability and Health Framework (ICF) (WHO, 2013), which provides a holistic view of health based on biological, individual and social perspectives. A bio-psychosocial perspective on health and wellbeing, contrasts with the medical model which focuses on illness (NHMRC, 2013; WHO, 2013). These two differing models are variously reflected in curricula and accreditation standards in the AH professions. DR and PT, for example, predominantly reflect medical models and/or science perspectives of healthcare, in contrast to professions such as OT, SP, and RC which include a social perspective of healthcare. The technical requirements for the AH professions are well addressed in accreditation criteria but some AH professions appear not to emphasise the development of AH student knowledge and skills that address social dimensions of health. For example, Tinning, Jenkins, Collins, Rossi and Brancato (2012) argue that Exercise Science has suffered from its science-focussed approach to curriculum development which has led to insufficient engagement with issues that foster development of students' understanding of social aspects of health and factors leading to chronic conditions. It is important that all AH curriculum and standards take into account a holistic view of health based on biological, individual and social perspectives. Such an approach is necessary to ensure adequate preparation of health graduates to the meet both the current and future healthcare needs (Australian Government, 2011a).

Development of interprofessional practice skills

All health graduates are required to work in interprofessional teams. One of the key action objectives of the Health Workforce Innovation and Reform Strategic Framework for Action 2011-2015 (HWA, 2011) is to develop an adaptable health workforce that can support team based and collaborative models of care. Several authors have discussed the need for graduates to engage in interprofessional learning (Humphries & Hean, 2004) and collaborative practice, particularly given the changing nature of healthcare (Rodger et al., 2008). Yet there is no direct requirement in some AH professions' accreditation criteria regarding development of such skills. Supervisors from different professions bring different perspectives and capacities to develop students' knowledge, reasoning and generic skills development during clinical education. A requirement for profession specific supervision to a student may restrict opportunities for enhanced student learning and generic and IP skills development. These issues are discussed in detail in the next section on prescriptiveness. As evident in Table 2, some AH accreditation documents are silent about pedagogically sound models of education and do not explicitly encourage models of placement that will support the type of learning needed for graduates' workplaces using learning within teams, peer learning and learning through feedback and reflection.

Adoption of new educational approaches

Prescriptiveness

A range of new educational approaches is now available to universities that can enhance student learning and alleviate some of the pressure experienced with placement shortages (Health Workforce Australia, 2013). However, prescriptiveness in some accreditation requirements impedes the adoption of these approaches as well as innovation in placements. While it is acknowledged that students need experience with a diversity of placement and patient types, being overly prescriptive about the type and location of placement limits opportunities to tap the potential of placements in non-traditional sites, service learning and role emerging placements, all of which are highly relevant to the preparation of graduates for primary healthcare and chronic disease management (Thomas, Penman & Williamson, 2005). In addition, overly prescriptive placement requirements can lead to an increase in demand for specific types of learning experiences during placements that students must undertake prior to graduation. Rodger et al. (2008) also warn that if access to a prescribed area in which experience must be gained becomes problematic (for example, insufficient hospital based placements for rehabilitation clients) this makes it difficult for students to complete prescriptive placement requirements and graduate. Prescriptiveness about placement and patient types denies what we know about the generalisability and transferability of knowledge and skills. For example, Sheepway, Lincoln and McAllister (2014) studied the development of student competence in speech language pathology degree students and found that their competencies developed over a one year period of clinical placements irrespective of placement type or context or intensity of placement (daily versus block mode) thus indicating that there was a possible transfer of learning occurring between placement types.

Prescriptiveness regarding number of hours for placement types is also problematic for several reasons. First, it assumes that upon completion of the required number of hours students will have gained the required competencies and ignores the generalisability and transferability of knowledge and skills that can occur between placements. Second, it shifts emphasis from the quality of the placement experiences, supervision and clinical performance assessment, to quantity and the completion of required, but sometimes arbitrary number of, possibly low quality, hours. Wimmers, Schmidt and Splinter (2006) studied the professional performance of medical students across 14 hospital placement sites and concluded that the volume of experience was found to be less important for students' clinical competence development in comparison with repetition of experiences and quality of supervision provided during placement experiences. Holmes, Bossers, Polatajko, Drynan, Gallagher, O'Sullivan and Denney (2010) studied the competency development in Canadian OT students who undertook placements during their studies to determine if the evidence supports the 1000 hours of placement prescribed by WFOT. They found that student competencies increased with each placement and that entry-level status is achieved by the majority of students in most of the competencies. However, their studies found that student competencies in areas such as clinical reasoning, practice knowledge and facilitating change were not achieved at 1000 hours. The focus for accreditation should be more clearly on outputs (learning outcomes and competencies) rather than on inputs (specific placement types and experiences with patients). This would open up not only more diverse types of placements, but also recognise the contributions of other learning experiences which build knowledge and skills needed for practice. A shift away from prescriptiveness regarding patient types, placement locations, and requirements of hours for specific placement types also provides the flexibility required for consideration of new and innovative models of supervision.

Accreditation requirements that prescribe the levels of experience of clinical supervisors (number of years of industry experience) and/or mandate only same-profession supervision may limit utilisation of interprofessional placement opportunities, access to supervision

expertise outside of specific professions and does not support utilisation of peer learning opportunities that interprofessional placements can provide. These limitations have implications for achievement of rich student learning outcomes particularly in relation to the development of students' knowledge and understanding of perspectives of other health professions, communication and interprofessional team work skills. An evidence-based approach to supervision requirements that considers the requisite skills for supervision, which may not equate to years of clinical experience or same-profession supervision only, and which encourages opportunities for students to develop capacity to learn with and from peers, reflection and clinical reasoning skills, is essential to ensure achievement of student learning outcomes and good quality supervision. Prescriptions for face-to-face supervision modes and hours restrict the use of modern technologies and underestimate the powerful learning experiences such technologies can support. Generation Y learns in different ways to past generations of learners and hence new modes of teaching that are suited for this generation of learners is key to achieving student engagement and interest (Penman, Donnelly & Drynan, 2010; Jones, McKenzie & Wong, 2010).

Simulation

In real clinical settings clinicians must prioritise a patient-centred approach over learner-centred. Simulation enables a priority focus on student learning needs without compromising patient-safety or workplace productivity (Maran & Glavin, 2003). Health Workforce Australia (2010b) states that Simulated Learning Environments (SLE) provide a flexible alternative to traditional placement models, expand clinical placement capacity and have a positive impact on student learning during clinical supervision. They report widespread willingness amongst university education providers to consider SLEs for aspects of their programs of study. Repetition of simulation experiences until demonstration of mastery and use of contrasting cases can improve learning outcomes (Cook, Erwin & Triola, 2010). A recent US study conducted by the National Council of State Boards for Nursing (NCSBN, 2014) investigated the effectiveness of simulation as an alternative to traditional clinical placement program in a final year nursing program. Approximately 50 per cent of clinical placement time was replaced by a simulation based curriculum. The study found that simulation programs were just as effective as traditional clinical placements programs at preparing nursing students for professional nursing work. The evidence base for simulation in AH is growing. Watson et al. (2012) concluded that PT students' achievement of clinical competencies was as good in simulated learning groups as in traditional placement groups. Hill (2012) studied the use of standardised patients (or actors) in the clinical education of speech pathology students at an Australian University SP program and found that standardised patients can support the development of foundation clinical competencies in SP students. Nationwide studies in progress for PT and in preparation for OT and SP will further add to the evidence base.

Blackford, McAllister and Alison (paper under review) studied the impact of replacement of the first week of a five week physiotherapy clinical placement with a simulated learning experience using standardised patients and found that SLE significantly increased students' confidence to apply their professional and clinical skills. Further, simulated patients have been shown to enhance learner experience as well as address the problem of placement shortages (Howard, Blackmer & Markowski, 2006; Blackstock et al., 2013). Simulation has a role to play in clinical education and should be encouraged (explicitly) in AH accreditation documents.

Role emerging and service learning placements

Some AH professions (e.g. DR, PT) still place students primarily in occupation-specific placement sites. Other professions such as OT encourage role-emerging placements in non-traditional settings. Some studies in OT have shown that non-traditional placements and role-emerging placements assist with the development of students' reflection and clinical reasoning skills (Overton, Clarke & Thomas, 2009; Thew, Hargreaves & Cronin-Davis,

2008). Relatively few professions use service learning placements, in which students (typically in teams) engage in activities that address community identified needs together with structured opportunities intentionally designed to promote student learning and development (Jacoby & Associates, 1996). Service learning placements are valued for their capacity to develop interprofessional and generic competencies. While service learning is well established in North America, various barriers, including accreditation requirements have sometimes limited its adoption in Australia. Role-emerging and service learning placements need to be given more consideration in all AH professions both to increase placement capacity and to address generic skills development and work readiness of graduates.

Tele-supervision

Tele-health delivery of services to patients is well established and effective (Theodoros et al., 2006; Russell, 2004). Tele-supervision has the potential to tap into remote placements, utilise the supervision expertise of part-time clinical supervisors and support new supervisors both in rural and urban placement sites. Tele-supervision is not yet widely used but with increasing placement shortages, untapped potential placements as mentioned above, excessive clinician workloads, and difficulty in finding willing supervisors it is essential to develop innovative ways of using fieldwork supervision expertise. While face-to-face or direct supervision is needed for many placement experiences due to reasons such as patient safety, indirect or tele--supervision may still be appropriate for many placement types providing services to low risk patients. Some recent studies have shown the benefits of mobile technologies during clinical training (Vyas, Albright, Walker, Zachariah & Lee, 2010; Lee, Albright, O'Leary, Terkla & Wilson, 2008) to support the education and training of the health workforce and using such technologies to reach underserved communities. Hall (2013) discusses the results from a PT pilot project that explored the effectiveness of video calling using Skype in clinical education. The results showed that tele-supervision was a cost and time effective means of communication with students during their clinical education experiences and provided several opportunities for students to develop partnerships with clinical education academic coordinators and for academic and clinical supervisors to develop partnerships beyond local areas and into rural and regional areas.

Tele-supervision models can also be used to support remote supervisors and hence increase supervisor capacity, providing a win-win for students, universities and clinical supervisors. The evidence base is growing that tele-supervision has similar outcomes or nil negative impact on students' capacity to develop and demonstrate competence in comparison with traditional models of supervision. It is timely for AH accreditation documents to encourage tele-supervision explicitly where appropriate.

Multiple Student Placements

A missed opportunity in the AH accreditation documents is the encouragement of supervision models that have multiple students on placements at one time. It is acknowledged that some 1:1 supervision will still be required in high risk contexts (medically unstable patients, dangerous situations) but in our experience of requesting placements for thousands of students each year, some professions (and some clinicians irrespective of profession) cling to the traditional 1:1 model in the belief that this provides the best learning for students. There is no evidence to support this belief. There is evidence to support that 2:1 and 3:1 models in clinical supervision are as effective as the traditional 1:1 model of supervision (Lekkas et al., 2007; Ladyshewskey, 1995). Rindflesch et al. (2009) found that 3:1 or 4:1 models also produced learning outcomes in OT and PT students which were at least as good as 1:1 models. A comparison study of the three models of placement in OT found that the 2:1 model offered more opportunities for peer support and enhanced quality of the educational experiences through peer learning (Baldry Currens, 2010; Martin, Morris,

Moore, Sadlo & Crouch, 2004; Bristow & Hagler, 1997). Such approaches to supervision also address placement shortages encountered by many AH faculties.

Summary of considerations

Based on a review and comparison of accreditation documents for six AH professions in Australia, summarised in Tables 2 and 3, this paper has identified a number of areas for improvement, consideration and further dialogue. Accrediting bodies, universities and health industry stakeholders are encouraged to collaborate to ensure that accreditation requirements are aligned with workplace requirements for work ready health graduates. In particular, consideration needs to be given to making explicit in accreditation documents the following:

- A holistic view of healthcare by inclusion of bio-psychosocial perspectives in all AH programs.
- A balanced approach to the development of technical profession-specific skills, and generic and interprofessional skills.
- Encouragement of flexible approaches to the facilitation of student learning during placements using a combination of modes including use of modern portable information and communication technologies (i.e., tele-supervision) that is fit for the purpose and ensures patient and learner safety.
- Encouragement for the use of non-traditional and role emerging placements where appropriate.
- Encouragement for the use of simulation in clinical education where appropriate.
- Flexibility in patient types and settings to meet requirements for 'patient types' to be seen by students.
- Encouragement of supervision models that have multiple students on placements at a time and multiple supervisors sharing student supervision.
- A need for employers to sit on accreditation panels to ensure workplace needs for work ready graduates are considered.

Accreditation documentation that explicitly allowed for flexibility in achievement of work ready graduates would enable universities to work with placement sites and clinical supervisors to increase placement numbers, improve quality, more efficiently achieve desired learning outcomes and meet employers' demands for work ready graduates.

Conclusion

This paper analysed the accreditation documents for six Australian AH professions with a view to comparing the accreditation requirements using common criteria such as number of hours of clinical practice for students, patient types and caseload categories in which experience should be obtained, supervisory requirements, academic hours inputs, prescribed placement teaching modes and educational methods, and clinical supervisor staff to student ratios. The focus was primarily on the clinical placement requirements. The findings show that the accreditation criteria and standards perform well for the development of students' conceptual and procedural knowledge. However there are several areas for improvement such as the preparation of graduates to meet current and future needs of healthcare, a focus on biopsychosocial perspectives of health as healthcare models shift from hospital to community-based settings, addressing the gaps in interpretation and intentions of accreditation requirements, the development of AH students' active learning

capabilities, the encouragement of supervision approaches that are pedagogically sound, an increased emphasis on the development of interprofessional skills, and increased employer representation on accreditation panels. Finally, a summary of the points for consideration by AH accreditation bodies is provided. It is acknowledged that our discussion focused heavily on the missed opportunities in accreditation rather than the self-evident strengths of accreditation. Our aim in this paper was to initiate debate around how changing accreditation requirements might enable the adoption of educational approaches that would better meet future workforce needs.

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