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LEADING HEALTH REFORM: A CRITICAL REVIEW OF 'LEADERSHIP' WITHIN ALLIED HEALTH COMPETENCY STANDARDS

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ABSTRACT

Objective

To examine if, when, and how select allied health professional standards currently articulate the Health LEADS Australia themes.

Methods

Eighteen allied health professional standards were searched to locate references to leadership. Data were extracted and inductively, deductively and thematically analysed as a meta-synthesis. Frequencies were counted, with sub-analysis by professional area, classification level, competency type, and Blooms (1) level.

Results

There were 953 direct and indirect leadership statements. Only 2 leadership definitions were located: pharmacists and dentists. The principal theme *Leadership* only appeared as 18 (2%) of the total data set that made direct references to leadership, which were mostly vague and unclear. The remaining indirect references to leadership are reported as four overarching themes: Self leadership (289,31%); Leadership with and of others (263, 29%); Improvement and change leadership (223, 24%) and Health reform leadership (139, 18%).

Conclusions

Health leadership is not easily recognisable in the examined allied health practice standards. With some refinement they could play a critical role in preparing future allied health graduates to support ongoing health system reform needed to improve public health.

What is known about the topic?

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Leadership is essential at all health system levels and leadership frameworks can usefully guide leadership development. However, little is known about allied health leadership compared to other clinical groups and their contributions to directional changes in health system reform may be overlooked.

What does this paper add?

Thematic leadership analysis of the existing competency frameworks for eighteen different allied health professional disciplines including exploration of alignment with the five themes of the Health LEADS Framework.

What are implications for practitioners?

- Reinstatement of a national Health Leadership Framework to articulate the need for, and capabilities of, leadership to support innovation and reform.
- Advocacy within AHPRA and Allied Health Professions Australia regarding further development and incorporation of leadership themes within the various allied health discipline competency frameworks.

INTRODUCTION

Enduring health leadership is required for sagacious health reform. While little is known about allied health leadership compared to other clinical groups (2), literature highlights the importance of: leadership at all health system levels; leadership frameworks to guide leadership development; allied health contributions to directional changes in health system reform (2). This paper presents a thematic leadership analysis of competency frameworks for 18 allied health disciplines and alignment with the five themes of the Australian LEADS Framework (HLA).

Leadership is critical to a well-integrated and high performing health system. It entails relational processes essential to navigating unknown, identifying new directions, and aligning people to pursue a common purpose (3, 4). Allied health professionals have demonstrated their capacity to rapidly transition from clinical positions to senior leadership positions. However, few studies examine the nature of these leadership journeys or how leadership development and career

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progression might be supported. In part, this is because allied health services historically been delivered from hospital-based single discipline departments (5) and few senior management roles in health and community service systems specifying allied health qualifications.

Further leadership development is required if allied health is to meaningfully steer organisational change and drive strategic objectives (6). Entry-to-practice education is largely focussed on clinical perspectives with limited focus on leadership (7) yet transition to clinical supervision can occur quickly after graduation. Many allied health clinicians may be ill prepared for leadership positions.

The HLA's founding principles were that everyone owns leadership; developing capable leaders builds health leadership capability; and the person you are is the leader you are (8, p4). In 2014 Health Workforce Australia was disabled. HLA was left without a structural base to realise the vision for a national health leadership framework (9), however, its associated frameworks and tools are often still used. Despite the HLA vision for national health leadership development allied health has been largely overlooked.

Allied health professionals are an important workforce resource currently under-utilised but well positioned to play a key leadership role in health reform (10). Professional standards set out the competencies required for allied health work functions, roles and professional outcomes (11). Among other things, these frameworks serve as benchmarks for learning and recognition of achievement in entry-to-practice programs. Hereafter referred to as the 'Standards', their architecture needs to reflect contemporary leadership competencies. This paper aims to clarify if, when, and how allied health Standards currently articulate the HLA themes: leading self, engaging others, achieving results, driving for innovation and shaping systems.

METHODS

In this meta-synethesis MeSH terms were combined with six keywords to broadly describe leadership (table 1). Eighteen allied health Standards were downloaded from peak body websites (supplementary file). A standardised naming structure (table 2) was developed to consistently label data as domain, standard, indicator, and cue.

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Each of the 18 Standards was searched using the keywords. Explicit definitions of leadership and sentences that included keywords, the profession and classification level where each sentence appeared were extracted to an Excel spreadsheet. Duplicates were removed. QSR International's NVivo 12 software was used for an inductive thematic analysis using a coding, categorising and theming process. Each Standard was then deductively analysed to extract data aligned to the themes but not identified with the keyword search. Data were classified as either a knowledge or skill competency guided by Blooms (1) taxonomy. Frequencies were counted, with sub-analysis by professional area, classification level, competency type, and Blooms (1) level. Results are presented as counts and percentiles.

RESULTS

Across the 18 allied health standards there were 953 direct and indirect leadership statements (table 3). Of these, only 18 (2%) from 8 disciplines (table 4) were directly within the primary theme of interest, *Leadership*. The remaining 935 all pertained to indirect references to leadership, which are presented as four themes: *Self-Leadership* (n=289, 31%), *Leadership With and Of Others* (n=263, 31%), *Improvement and Change Leadership* (n=218, 24%), and *Health, Healthcare and System Reform* (n=151, 16%). Figure 1 shows how leadership was articulated within the 18 Standards.

Leadership

Leadership as a concept was largely undefined with only 2 Standards providing explicit definitions. The Pharmacy Standards defined it as: *the process of influencing the behaviour of others toward a pre-determined goal* (12, p3). The dentist standards stated leadership:

> *requires reflection and improvement of self, fostering growth in and influencing others, and communicating a vision for the future and enabling decisions to align with the goal. To achieve outcomes, leaders embrace the spirit of change and innovation and strategically understand and align complex systems with the goal (13, p7).*

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18 (2%) direct leadership words or statements were at indicator (table 5) and Bloom's apply levels (table 6). Four (4, 22%) could not be classified. The concept of leadership was vague, unclear and interpretation left to the reader.

Self leadership

Pertained to recognising strengths and limitations and committing to continual personal and professional improvement. The pharmacy Standard defined it as:

> *a process where a person who knows their strengths and weaknesses, understands and displays self-awareness, self-regulation, motivation, empathy and social skill and commits to self-reflection and improvement (12, p3).*

This theme comprised 289 (31%) indirect leadership statements and had five subthemes (table 7). *Professionalism and integrity* related to consistently applying legal, ethical, and moral values of a chosen health allied profession. It appeared in all examined disciplines, except clinical psychology, and was mostly indicator (table 5) and Blooms (12) apply level (table 6). Fifteen (15, 22%) statements could not be classified.

Lifelong learning and professional development related to the ongoing, voluntary, and self-motivated pursuit of knowledge for professional development. It appeared in all examined disciplines, except audiology, and mostly at indicator level (table 5) and Bloom's (12) apply level (table 6). Seven (7,8%) statements could not be classified.

Scope of practice was about working within the boundaries for what a practitioner is educated, competent to perform and permitted by the terms of their professional registration and law. It appeared in all disciplines and was mostly at indicator (table 5) and Bloom's (12) apply level (table 6).

Reflective practice related to critically reflecting on one's actions to engage in a continuous process of self-understanding for professional growth. It appeared in all disciplines, except audiology, exercise physiologists, medical scientists and prosthetic and orthoptics. The statements were mostly at indicator (table 5) and Bloom's (12) evaluate level (table 6).

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Self-care was about taking care of mental, emotional, and physical health. It appeared in five disciplines, being chiropractic, dentists, dietetics, occupational therapy, optometry, paramedicine, physiotherapy, podiatry. social work and speech pathology. Most statements were at standard (table 5) and Bloom's (12) apply level (table 6).

Leadership with and of others

This theme was derived from 270 (29%) indirect references to leadership competencies related to working with others or encouraging others to see and accept opportunities to contribute, evolve and develop. It had five subthemes (table 8).

Values and diversity of others was about recognising and valuing differences between people and cultures and appeared in all disciplines, except medical science. It was mostly at indicator (table 5) and Bloom's (12) apply level (table 6). Exercise physiology had 1 statement listed as a 'graduate attribute'.

Teamwork, collaboration and communication elated to two or more people working together, within and across disciplines, to share ideas and thinking to accomplish a common goal. It appeared in all disciplines, except medical science and were mostly at indicator (table 5) and Bloom's (12) apply level (table 6). Exercise physiology had 1 statement listed as a 'graduate attribute'. Six (6,7%) could not be classified.

Development of others pertained to the process of educating, supporting or developing peers and colleagues to enable them to learn new knowledge, skills, values or attributes. It appeared in all disciplines except clinical psychology, dentists, exercise physiology and orthoptics. Most were at the indicator level (table 5) and at Bloom's (1) apply level (table 6).

Supervision and mentoring of others involved overseeing a student, peer or colleague to ensure they perform professionally and facilitate their professional development. It appeared in all disciplines, except clinical psychology, exercise physiology, medical science, orthoptics and prosthetic and orthotics. It was mostly at indicator (table 5) and Bloom's (1) apply level (table 6). One (1,3%) could not be classified.

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Delegation to others involved assigning activities or tasks to a colleague who has appropriate education, knowledge and skills to undertake the task safely. These statements only appeared in the chiropractic, occupational therapy, optometry, physiotherapy and podiatry disciplines. Most were at the indicator level (table 5) and at Bloom's (1) apply level (table 6).

Improvement and change leadership

This theme was derived from knowledge and skills requisite to driving improvement, innovation and discovery in health care. It comprised 223 (24%) of the indirect leadership statements and had five subthemes (table 9).

Evidence based practice related to using the best available evidence for informing professional practice but statements about conceiving or conducting research were not included. It appeared in all the disciplines examined, except medical science and mostly at standard (table 5) and Bloom's (1) apply level (table 6). One (1,1%) could not be classified.

Continuous Quality Improvement related to planning and executing a continuous flow of monitoring, reporting and improving aspects of practice and service delivery to provide quality health care. It appeared in all disciplines examined, except clinical psychology, exercise physiology and was mostly at indicator (table 5) and Bloom's (1) apply level (table 6). One (1, 2%) could not be classified.

Critical Thinking related to the need for objective systematic analysis and evaluation of an issue. It appeared in all disciplines examined, except audiology and exercise physiology, occupational therapy, orthoptics and social work. It was mostly indicator (table 5) and Bloom's (1) evaluate level (table 6). Four (4,14%) could not be classified.

Problem Solving involved identifying solutions to difficult or complex issues outside the scope of clinical reasoning. It appeared in all disciplines examined, except audiology, chiropractic, clinical psychology, exercise physiology, medical science, occupational therapy, prosthetic and orthotic, social work and speech pathology. It was mostly at the indicator (table 5) and Bloom's (1) apply level (table 6).

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Change Agency involved capabilities for influencing change. It appeared in eight disciplines, being clinical psychology, dietetics, medical imaging, occupational therapy, orthoptics, pharmacy, physiotherapy, and social work. It was mostly at standard (table 5) and Bloom's (1) apply level (table 6).

Health reform leadership

This theme was derived from 153 (16%) of the indirect leadership statements related to instigating and leading changes for improving public health, and reforming healthcare and the health system to improve its purpose, functionality, and sustainability. It had three subthemes (table 10).

Improving Public Health was about the use of health promotion and disease prevention strategies. It appeared in all disciplines examined, except clinical psychology, medical science, prosthetic and orthotics and social work. It was equally distributed between the standard and indicator levels (table 5) and mostly at Bloom's (1) apply level (table 6). One (1, 1%) could not be classified.

Health service and system change was about system modernisation and improvement and was reflected in all disciplines except Clinical Psychology. It was mostly at indicator (table 5) Bloom's (1) apply level (table 6).

Lead and advocate for the profession involved contributing to, promoting or developing the profession through activities such as supervision, education, mentoring, advocacy and research. It appeared in all disciplines, except Chiropractic, Clinical Psychology, Exercise Physiology, and Occupational Therapy. It was mostly at the indicator (table 5) and Bloom's (1) apply level (table 6). One (1,6%) could not be classified.

DISCUSSION

To affect strategic health reform in Australia a multidisciplinary and dispersed approach to health leadership is required. It is crucial to ensure our allied health professionals have the individual and collective leadership competencies to impel continual innovation, change and reform.

The Health LEADS Australia (8), Canadian LEADS in a Caring Environment (14) and the United Kingdom's National Health Service Leadership Framework (15), each demonstrate it is possible to

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create national frameworks that articulate the need for, and capabilities of, leadership to support innovation and reform. However, our review of Australian 18 allied health practice Standards illustrates that leadership is rarely defined and explicit leadership references are vague and unclear. Only 5 allied health Standards explicitly refer to leadership, however, while four themes that indirectly relate to leadership were identified most statements only addressed low level requirements (not higher-level learning) against Bloom's taxonomy. This highlights that most of the vague statements to leadership only require graduates to be skilled, but not necessarily knowledgeable, and only be able to apply these skills without any analysis or evaluation of leadership. As the need for leadership capabilities increase, graduates will be underdeveloped as leaders. Importantly, many of the indirect leadership references converge, but also diverge, from the national Health LEADs (8) framework.

Most Standards identified the need for *Self-leadership*. Emphasis on professionalism, life-long learning, scope of practice, reflective practice, and self-care relate to a leadership literature that recognises the importance of ethics and integrity (16, 17). Life-long learning relates to key theories of leadership development, which suggest leadership capabilities continually develop throughout one's life (6, 18). Scope of practice is not a central area of focus within leadership scholarship, but does relate to ideas of competency and humility (19) in recognising personal limitations. Frequent critical self-reflection is an essential component of leader development and self-care, wellbeing, mental health, and positive psychological resources are growing areas of investigation with in leadership scholarship (e.g. 20, 21-23). The now obsolete Australian Health LEADS framework articulates 'Leads Self' and stipulates that "leaders are always a work in progress. They know their strengths and limitations and commit to self-reflection and improvement. They understand and display self-awareness, self-regulation, motivation, empathy, and social skill. They demonstrate integrity in their role and context and show resilience in challenging situations" (8, p7). References to Self-Leadership in the Standards therefore align with the three capabilities Leads Self (Is self-aware; Seeks out and takes opportunities for personal development; and Has strength of character) as outlined in the Health LEADS framework (8).

The third substantive subtheme *Leadership with and of others* relates to values and diversity, developing others, supervision and mentoring, and delegation. While a universally accepted

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definition of leadership alludes even mainstream leadership scholarship, it is generally agreed that leading others entails complex relational processes that move others to action (24). Leading others implies initiating structure through delegating, mentoring, and developing others; leading others also necessitates consideration of others, including recognising and valuing individuals and diversity (25).

Within leadership scholarship, leadership *with* others is somewhat distinct to leadership *of* others. Scholarship that deals with leadership *with* others places more emphasis on the relationships between people and less on the role of a single leader (26). Leadership *with* others, or shared leadership provides an antidote to the traditionally hierarchical, vertical leadership reliant on a single top-leader. Leadership with others, or shared leadership, implies collective decision making, and greater responsibility on every individual involved in taking action and achieving outcomes (27). These sentiments are reflected in the Australian Health LEADS framework (8) that articulates 'Engages Others' as the ability of leaders to enable people to engage with a vision or goal through explanations that assist in making sense of complexity in ways that empowers others to identify and act on opportunities to contribute, learn and grow.

Improvement and Change, the fourth leadership-related theme represents the very heart of leadership as it is understood within leadership scholarship. Management and leadership are often confused and sometimes conflated, but the primary distinction between them is that management is focused on compliance and stability while leadership is about new directions, improvement, and change. The emergence of transformational leadership (25) and leadership sub-fields it has spawned (for example, authentic leadership 28, 29), articulates change and improvement of others and environments, as central to the function of leadership. Good management is needed to provide consistency and stability; but takes good leadership to instigate and drive improvement and change. Improvement and change is reflected in the Australian Health LEADS framework (8) as 'Achieves outcomes', which incorporates setting inspiring and motivating directions for improving the quality of care and sustaining the system.

Health reform was the fifth theme identified within the Allied health standards. The bulk of leadership scholarship focuses on leadership as the function of individuals or teams. However, there are emerging pockets of research that advance understanding of leadership in and of

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systems. Complexity leadership theory (30, 31) positions leadership as a “complex interactive dynamic” that enables outcomes such as learning, innovation, and adaptability (31). Adaptive leadership (32, 33) requires leadership at every level of a system or organisation and relies on individuals teams stepping up to fill and lead within ‘adaptive space’ (34). These theories posit that individuals must engage in complex relational dynamics and be willing to step into adaptive space to drive reform and improvement. Only then can system reform be enabled and sustained through continual improvement and adaptation in response to environmental factors.

The *Health reform* theme, and its subthemes improving public health, leading health service and system change and leading and advocating for the profession, converge with the Health LEADS framework (8) in terms of ‘Driving innovation’ and ‘Shaping systems’. Driving innovation relates to challenging the status quo and advocating for changes to business and models of care to achieve people-centred, values-based quality services (8). These changes are critical to ‘Shaping systems’ that can adapt as the complex and interconnecting components evolve as an outcome of service, legislation and funding change.

Ensuring our health system can appropriately serve the current and future health needs of Australia is a complex, adaptive process which will only be achieved through leadership at every level (3). Allied health professionals are ideally positioned to contribute to this kind of health leadership. The need to facilitate health leadership at a national level is well recognised with calls to action for governments and the international health community to recognise that healthcare performance and improvement are dependent on quality professional leadership (8, 35). The World Health Organisation asserts, (36, p1) “successful leaders are those who know how to create a workplace culture in which the safe and high quality care of patients is a priority — a culture that promotes inter-professional teamwork, sets strategic goals for patient safety, supports efforts within the organization to achieve improvement goals, provides resources for strengthening systems, removes obstacles for clinicians and health-care staff that interfere with safe care, and requires and maintains high performance of health-care providers”.

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CONCLUSION

For allied health to play its optimal role in health system reform, innovation and change, the Standards that guide allied health professionals must explicitly reflect health leadership competencies. In their present form, health leadership is not easily recognisable in most Standards. While most Standards link to important components of leadership, allied health professionals who are not familiar with the national health leadership framework or leadership theory might not recognise these references as attributes of leadership. Without specifying leadership capabilities as clear knowledge and skill domains the professional standards are open to interpretation and education may overlook leadership development opportunities. Failing to educate leadership competency, will fail to equip our future allied health graduates with the knowledge and skills they need to address the reality of complex health system innovation and clinical redesign. Nor will they be educationally prepared for guiding national policy makers on how to support this leadership work. This paper highlights the underutilised leadership potential of allied health professionals. By refining competency Standards and educating allied health professionals in leadership knowledge and skills, we can support the ongoing health system reform that is needed to improve public health.

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Table 1: MeSH terms (NLM 2019) used to describe leadership

MeSH term(s)	Associate entry term	Keyword
Leadership	Leader, Leaders, Leading	Lead*
Institutional Management	Manager, managers, management, managing	Manage*
Change Management	Influences, Influencer, Change	Influence*, Change*
Institutional Management Teams	Teams, teamwork, team leader, teammate,	Team*
Organisation and Administration	Supervises, supervisor, supervision	Supervis*

Table 2: Standardisation of levels of competency nomenclature

Disciplines	1. Domain	2. Standard	3. Indicator	4. Cue
Audiology	Standard	Indicator	Criteria	-
Chiropractic	Universal competency	Standard	Performance criteria	-
Clinical Psychology	Domain	Standard	Criteria	-
Dentistry	Domain	Standard	-	-
Dietetics	Domain	Key Tasks/Elements	Observable and/or measurable actions	-
Exercise Physiology	Standard	Guiding principle	Assessment expectations	Elements
Medical Imaging	Domain	Standard	Indicator	Cues
Occupational Therapy	Standard	Statement	-	-
Optometry	Unit	Element	Performance criteria	Indicators
Paramedicine	Domain	Standard	Indicator	-
Pharmacy	Domain	Standard	Enabling competency	General level/evidence examples
Physiotherapy	Role	Key competencies	Enabling components	-
Podiatry	Standard	Element	Performance criteria	Examples of evidence
Speech Pathology	Unit	Element	Performance Criteria	Cues

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Table 3: Summary of all leadership statements, by discipline

Discipline	Direct reference to leadership	Indirect references to leadership
Audiology	0	35, (4%)
Chiropractic	2	41, (4%)
Clinical Psychology	0	20, (2%)
Dentists	2	26, (3%)
Dietetics	1	55, (6%)
Exercise Physiology	4	71, (8%)
Medical Imaging	0	79, (8%)
Medical Science	0	25, (3%)
Occupational Therapy	1	53, (6%)
Optometry	0	73, (8%)
Orthoptics	0	31, (3%)
Paramedicine	5	66, (7%)
Pharmacy	2	74, (8%)
Physiotherapy	1	93, (10%)
Podiatry	0	38, (4%)
Prosthetic and Orthotic	0	30, (3%)
Social Work	0	68, (7%)
Speech Pathology	0	57, (6%)
Total	**18**	**935 (100%)**

Table 4: Direct Leadership Statements, by Discipline

Discipline	Knowledge	Skills
Dentists	2. Communication and Leadership	
Dietetics		1.3 Demonstrates professional leadership
Exercise Physiology		6.4.4 Revise communication and leadership to respond to changes in client and other health professional needs and manage changes in clinical situation(s). 8.4.5 Revise communication and leadership to respond to changes in client and other stakeholder needs and manage changes in clinical situation(s). 9.4.7 Revise communication and leadership style to respond to changes in client and other stakeholder needs and manage changes in clinical situation(s).
Pharmacy	Domain 4: Leadership and management	4.1 Show leadership of self 3. Display self-motivation, an innovative mindset and motivation

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		4.3 Show leadership in practice
		4.3.1 Inspire a strategic vision and common purpose
Physiotherapy	7. Manager/leader	7.2B recognise their leadership style and apply their leadership skills as relevant to the practice context

Table 5: Competency statement level of all leadership themes and subthemes

Themes	Subthemes	Domain	Standard	Indicator	Cue	Total
Leadership		5 (28%)	5 (28%)	7 (39%)	1 (6%)	18 (2%)
Self-Leadership						
	Professionalism and integrity	19 (21%)	24 (26%)	35 (38%)	14 (15%)	92 (44%)
	Lifelong learning and professional development	6 (7%)	22 (26%)	48 (57%)	7 (8%)	
	Scope of practice		11 (2)2%	30 (59%)	10 (20%)	
	Reflective practice		14 (33%)	21 (49%)	7 (16%)	
	Self care	1 (6%)	10 (59%)	6 (35%)		
Leadership With and Of Others						
	Values diversity of others	5 (2%)	33 (12%)	44 (16%)		
	Teamwork, collaboration and communication	8 (10%)	26 (31%)	45 (54%)	5 (6%)	
	Development of others		14 (26%)	33 (62%)	3 (6%)	
	Supervision and mentoring of others	1 (3%)	11 (31%)	19 (53%)	5 (14%)	
	Delegation to others		3 (33%)	4 (44%)	2 (22%)	
Improvement and Change Leadership						
	Evidence based practice		61 (51%)	35 (32%)	2 (22%)	
	Continuous quality improvement	1 (2%)	11 (24%)	24 (52%)	10 (22%)	
	Critical thinking	4 (15%)	8 (30%)	12 (44%)	3 (11%)	
	Problem solving	1 (4%)	7 (30%)	11 (48%)	4 (17%)	
	Change agency		5 (45%)	4 (36%)	2 (18%)	
Health Reform Leadership						
	Improving public health	6 (11%)	36 (45%)		5 (6%)	
	Health service and system change	3 (6%)	10 (19%)	34 (64%)	6 (11%)	
	Lead and advocate for the profession	3 (17%)	5 (28%)	6 (33%)	4 (22%)	

Table 6: Competency statements against Bloom's taxonomy level for all leadership themes and subthemes

Themes	Subthemes	Create	Evaluate	Analyse	Apply	Understand	Knowledge
Leadership							
Self-Leadership							
	Professionalism and integrity		2 (2%)		40 (43%)	11 (12%)	24 (26%)
	Lifelong learning and professional development		6 (7%)	6 (7%)	30 (36%)	4 (5%)	31 (37%)
	Scope of practice		1 (2%)		25 (47%)	15 (8%)	11 (21%)
	Reflective practice		29 (67%)	2 (5%)	10 (23%)	1 (2%)	1 (2%)
	Self care	1 (6%)	2 (12%)		9 (53%)	4 (24%)	1 (6%)
Leadership With and Of Others							
	Values diversity of others	3 (3%)	4 (5%)		46 (54%)	18 (21%)	14 (12%)
	Teamwork, collaboration and communication	3 (3%)	4 5%)(	3 (3%)	47 (54%)	18 (21%)	12 (14%)
	Development of others			5 (9%)	36 (67%)	9 (17%)	1 (6%)
	Supervision and mentoring of others	1 (3%)			21 (58%)	7 (19%)	6 (17%)
	Delegation to others				6 (67%)	2 (22%)	1 (11%)
Improvement and Change Leadership							
	Evidence based practice	6 (5%)	30 (26%)	8 (7%)	49 (43%	13 (11%)	7 (6%)
	Continuous quality improvement		4 (9%)	4 (9%)	26 (55%)	9 (19%)	3 (6%)
	Critical thinking		16 (57%)	1 (4%)	5 (18%)	2 (7%)	
	Problem solving	1 (4%)	3 (13%)	8 (35%)	9 (39%)	1 (4%)	1 (4%)
	Change agency		2 (18%)		6 (55%)	2 (18%)	1 (9%)
Health Reform Leadership							
	Improving public health	3 (4%)	3 (4%)	5 (6%)	32 (40%)	25 (31%)	12 (15%)

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Health service and system change		1 (2%)	28 (52%)	14 (26%)	8 (15%)
Lead and advocate for the profession	1 (6%)		12 (67%)	3 (17%)	1 (6%)

Table 7. Frequency of Subtheme, Self leadership

Subtheme	Frequencies and percentiles within theme 2
Professionalism and integrity	92, (44%)
Lifelong Learning and professional development	84, (40%)
Scope of practice	53, (25%)
Reflective practice	43, (21%)
Self care	17, (8%)

Table 8. Frequency of Subtheme, Leadership with and of others

Subtheme	Frequencies and percentiles within theme 3
Values diversity amongst others	87, (38%)
Teamwork, collaboration and communication with others	84, (36%)
Development of others	54, (23%)
Supervision and mentoring of others	36, (16%)
Delegation to others	9, (4%)

Table 9. Frequency of Subtheme, Improvement and change leadership

Subtheme	Frequencies and percentiles within theme 4
Evidence based practice	114, (58%)
Continuous quality improvement	47, (24%)
Critical thinking	28, (14%)
Problem solving	23, (12%)
Change agency	11, (6%)

Table 10. Frequency of Subtheme, Health reform leadership

Subtheme	Frequencies and percentiles within theme 5
Improving public health	81, (56%)
Health service and system change	54, (39%)
Lead and advocate for the profession	18, (13%)

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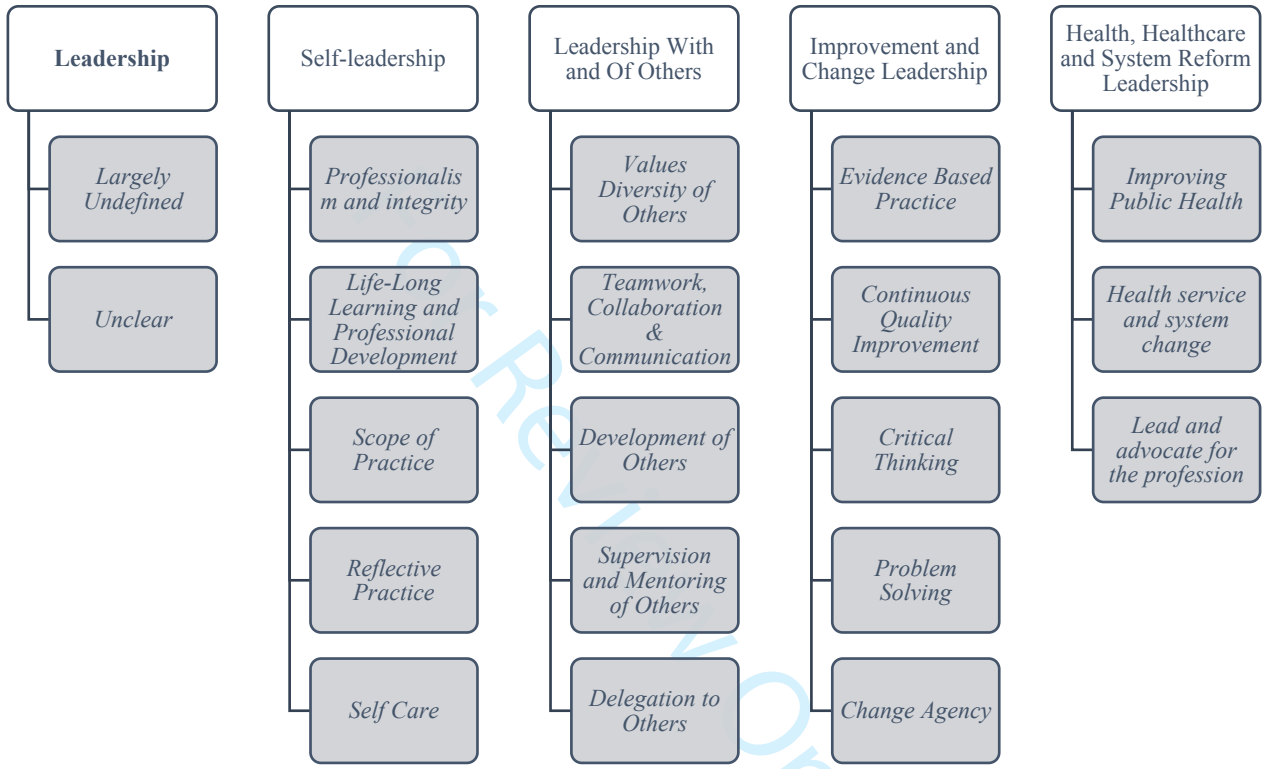
Figure 1: How leadership is articulated within the 18 Standards analysed



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Included allied health professions, year and web address for their Standards, and standardisation of the nomenclature

Disciplines	Year	Web address for each Standard	Standardisation of levels of competency nomenclature			
			Domain	Standard	Indicator	Cue
Audiology	2016	http://www.hearingservices.gov.au/wps/wcm/connect/71160a43-c362-4f6c-bca8-d9b85b6a40b8/National+Practice+Standards+for+Hearing+Care+Practitioner+updated+draft.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=71160a43-c362-4f6c-bca8-d9b85b6a40b8	Standard	Indicator	Criteria	-
Chiropractic	2017	https://www.chiropracticboard.gov.au/Accreditation.aspx	Universal competency	Standard	Performance criteria	-
Clinical Psychology	2016	https://www.psychologyboard.gov.au/standards-and-guidelines/registration-standards.aspx	Domain	Standard	Criteria	-
Dentists	2016	https://www.adc.org.au/sites/default/files/Media_Libraries/PDF/Accreditation/Professional%20Competencies%20of%20the%20Newly%20Qualified%20Dentist_rebrand.pdf	Domain	Standard	-	-
Dietetics	2015	https://daa.asn.au/maintaining-professional-standards/ncs/	Domain	Key Tasks/Elements	Observable and/or measurable actions	-
Exercise Physiology	2015	https://www.essa.org.au/Public/Professional_Standards/Professional_Standards.aspx	Standard	Guiding principle	Assessment expectations	Elements
Medical Imaging	2018	https://www.asmirt.org/media/371/371.pdf	Domain	Standard	Indicator	Cues
Medical Laboratory Science	2009	https://www.aims.org.au/documents/item/259	Unit	Element	Performance Criteria	Range Statements
Occupational Therapy	2018	https://www.occupationaltherapyboard.gov.au/codes-guidelines/competencies.aspx	Standard	Statement	-	-
Optometry	2014	http://www.optometryboard.gov.au/documents/default.aspx?record=WD16/20865&dbid=AP&chksum=YZKn2yxHIYkvvIKmWNlrUg==	Unit	Element	Performance criteria	Indicators
Orthoptics	2015	https://www.australianorthopticboard.org.au/Downloads/Competency%20Standards%20Jul15.pdf	Unit	Element	Performance criteria	Examples of indicators
Paramedicine	2018	https://www.paramedicineboard.gov.au/Professional-standards.aspx	Domain	Standard	Indicator	-
Pharmacy	2016	https://www.psa.org.au/wp-content/uploads/2018/06/National-Competency-Standards-Framework-for-Pharmacists-in-Australia-2016-PDF-2mb.pdf	Domain	Standard	Enabling competency	General level/evidence examples
Physiotherapy	2015	https://physiocouncil.com.au/wp-content/uploads/2017/10/Physiotherapy-Board-Physiotherapy-practice-thresholds-in-Australia-and-Aotearoa-New-Zealand.pdf	Role	Key competencies	Enabling components	-
Podiatry	2015	https://www.podiatryboard.gov.au/Registration-Endorsement/Podiatry-competency-standards.aspx	Standard	Element	Performance criteria	Examples of evidence
Prosthetics and Orthotics	2014	https://www.aopa.org.au/publications/competency-standards	Domain	Activity	Performance indicator	Range statement
Social Work	2013	https://www.aasw.asn.au/practitioner-resources/practice-standards	Domain	Standard	Indicator	-
Speech Pathology	2017	https://www.speechpathologyaustralia.org.au/SPAweb/SPAweb/Resources_for_Speech_Pathologists/CBOS/CBOS.aspx	Unit	Element	Performance criteria	Cues

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Article

LEADING HEALTH REFORM: A CRITICAL REVIEW OF 'LEADERSHIP' WITHIN ALLIED HEALTH COMPETENCY STANDARDS

ABSTRACT

Objective

To examine if, when, and how select allied health professional standards currently articulate the Health LEADS Australia themes.

Methods

Eighteen allied health professional standards were searched to locate references to leadership. Data were extracted and inductively, deductively and thematically analysed as a meta-synthesis. Frequencies were counted, with sub-analysis by professional area, classification level, competency type, and Blooms (1) level.

Results

There were 953 direct and indirect leadership statements. Only 2 leadership definitions were located: pharmacists and dentists. The principal theme *Leadership* only appeared as 18 (2%) of the total data set that made direct references to leadership, which were mostly vague and unclear. The remaining indirect references to leadership are reported as four overarching themes: Self leadership (289,31%); Leadership with and of others (263, 29%); Improvement and change leadership (223, 24%) and Health reform leadership (139, 18%).

Conclusions

Health leadership is not easily recognisable in the examined allied health practice standards. With some refinement they could play a critical role in preparing future allied health graduates to support ongoing health system reform needed to improve public health.

What is known about the topic?

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Leadership is essential at all health system levels and leadership frameworks can usefully guide leadership development. However, little is known about allied health leadership compared to other clinical groups and their contributions to directional changes in health system reform may be overlooked.

What does this paper add?

Thematic leadership analysis of the existing competency frameworks for eighteen different allied health professional disciplines including exploration of alignment with the five themes of the Health LEADS Framework.

What are implications for practitioners?

- Reinstatement of a national Health Leadership Framework to articulate the need for, and capabilities of, leadership to support innovation and reform.
- Advocacy within AHPRA and Allied Health Professions Australia regarding further development and incorporation of leadership themes within the various allied health discipline competency frameworks.

INTRODUCTION

Enduring health leadership is required for sagacious health reform. While little is known about allied health leadership compared to other clinical groups (2), literature highlights the importance of: leadership at all health system levels; leadership frameworks to guide leadership development; allied health contributions to directional changes in health system reform (2). This paper presents a thematic leadership analysis of competency frameworks for 18 allied health disciplines and alignment with the five themes of the Australian LEADS Framework (HLA).

Leadership is critical to a well-integrated and high performing health system. It entails relational processes essential to navigating unknown, identifying new directions, and aligning people to pursue a common purpose (3, 4). Allied health professionals have demonstrated their capacity to rapidly transition from clinical positions to senior leadership positions. However, few studies examine the nature of these leadership journeys or how leadership development and career

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progression might be supported. In part, this is because allied health services historically been delivered from hospital-based single discipline departments (5) and few senior management roles in health and community service systems specifying allied health qualifications.

Further leadership development is required if allied health is to meaningfully steer organisational change and drive strategic objectives (6). Entry-to-practice education is largely focussed on clinical perspectives with limited focus on leadership (7) yet transition to clinical supervision can occur quickly after graduation. Many allied health clinicians may be ill prepared for leadership positions.

The HLA's founding principles were that everyone owns leadership; developing capable leaders builds health leadership capability; and the person you are is the leader you are (8, p4). In 2014 Health Workforce Australia was disabled. HLA was left without a structural base to realise the vision for a national health leadership framework (9), however, its associated frameworks and tools are often still used. Despite the HLA vision for national health leadership development allied health has been largely overlooked.

Allied health professionals are an important workforce resource currently under-utilised but well positioned to play a key leadership role in health reform (10). Professional standards set out the competencies required for allied health work functions, roles and professional outcomes (11). Among other things, these frameworks serve as benchmarks for learning and recognition of achievement in entry-to-practice programs. Hereafter referred to as the 'Standards', their architecture needs to reflect contemporary leadership competencies. This paper aims to clarify if, when, and how allied health Standards currently articulate the HLA themes: leading self, engaging others, achieving results, driving for innovation and shaping systems.

METHODS

In this meta-synethesis MeSH terms were combined with six keywords to broadly describe leadership (table 1). Eighteen allied health Standards were downloaded from peak body websites (supplementary file). A standardised naming structure (table 2) was developed to consistently label data as domain, standard, indicator, and cue.

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Each of the 18 Standards was searched using the keywords. Explicit definitions of leadership and sentences that included keywords, the profession and classification level where each sentence appeared were extracted to an Excel spreadsheet. Duplicates were removed. QSR International's NVivo 12 software was used for an inductive thematic analysis using a coding, categorising and theming process. Each Standard was then deductively analysed to extract data aligned to the themes but not identified with the keyword search. Data were classified as either a knowledge or skill competency guided by Blooms (1) taxonomy. Frequencies were counted, with sub-analysis by professional area, classification level, competency type, and Blooms (1) level. Results are presented as counts and percentiles.

RESULTS

Across the 18 allied health standards there were 953 direct and indirect leadership statements (table 3). Of these, only 18 (2%) from 8 disciplines (table 4) were directly within the primary theme of interest, *Leadership*. The remaining 935 all pertained to indirect references to leadership, which are presented as four themes: *Self-Leadership* (n=289, 31%), *Leadership With and Of Others* (n=263, 31%), *Improvement and Change Leadership* (n=218, 24%), and *Health, Healthcare and System Reform* (n=151, 16%). Figure 1 shows how leadership was articulated within the 18 Standards.

Leadership

Leadership as a concept was largely undefined with only 2 Standards providing explicit definitions. The Pharmacy Standards defined it as: *the process of influencing the behaviour of others toward a pre-determined goal* (12, p3). The dentist standards stated leadership:

> *requires reflection and improvement of self, fostering growth in and influencing others, and communicating a vision for the future and enabling decisions to align with the goal. To achieve outcomes, leaders embrace the spirit of change and innovation and strategically understand and align complex systems with the goal (13, p7).*

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18 (2%) direct leadership words or statements were at indicator (table 5) and Bloom's apply levels (table 6). Four (4, 22%) could not be classified. The concept of leadership was vague, unclear and interpretation left to the reader.

Self leadership

Pertained to recognising strengths and limitations and committing to continual personal and professional improvement. The pharmacy Standard defined it as:

> *a process where a person who knows their strengths and weaknesses, understands and displays self-awareness, self-regulation, motivation, empathy and social skill and commits to self-reflection and improvement (12, p3).*

This theme comprised 289 (31%) indirect leadership statements and had five subthemes (table 7). *Professionalism and integrity* related to consistently applying legal, ethical, and moral values of a chosen health allied profession. It appeared in all examined disciplines, except clinical psychology, and was mostly indicator (table 5) and Blooms (12) apply level (table 6). Fifteen (15, 22%) statements could not be classified.

Lifelong learning and professional development related to the ongoing, voluntary, and self-motivated pursuit of knowledge for professional development. It appeared in all examined disciplines, except audiology, and mostly at indicator level (table 5) and Bloom's (12) apply level (table 6). Seven (7,8%) statements could not be classified.

Scope of practice was about working within the boundaries for what a practitioner is educated, competent to perform and permitted by the terms of their professional registration and law. It appeared in all disciplines and was mostly at indicator (table 5) and Bloom's (12) apply level (table 6).

Reflective practice related to critically reflecting on one's actions to engage in a continuous process of self-understanding for professional growth. It appeared in all disciplines, except audiology, exercise physiologists, medical scientists and prosthetic and orthoptics. The statements were mostly at indicator (table 5) and Bloom's (12) evaluate level (table 6).

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Self-care was about taking care of mental, emotional, and physical health. It appeared in five disciplines, being chiropractic, dentists, dietetics, occupational therapy, optometry, paramedicine, physiotherapy, podiatry. social work and speech pathology. Most statements were at standard (table 5) and Bloom's (12) apply level (table 6).

Leadership with and of others

This theme was derived from 270 (29%) indirect references to leadership competencies related to working with others or encouraging others to see and accept opportunities to contribute, evolve and develop. It had five subthemes (table 8).

Values and diversity of others was about recognising and valuing differences between people and cultures and appeared in all disciplines, except medical science. It was mostly at indicator (table 5) and Bloom's (12) apply level (table 6). Exercise physiology had 1 statement listed as a 'graduate attribute'.

Teamwork, collaboration and communication elated to two or more people working together, within and across disciplines, to share ideas and thinking to accomplish a common goal. It appeared in all disciplines, except medical science and were mostly at indicator (table 5) and Bloom's (12) apply level (table 6). Exercise physiology had 1 statement listed as a 'graduate attribute'. Six (6,7%) could not be classified.

Development of others pertained to the process of educating, supporting or developing peers and colleagues to enable them to learn new knowledge, skills, values or attributes. It appeared in all disciplines except clinical psychology, dentists, exercise physiology and orthoptics. Most were at the indicator level (table 5) and at Bloom's (1) apply level (table 6).

Supervision and mentoring of others involved overseeing a student, peer or colleague to ensure they perform professionally and facilitate their professional development. It appeared in all disciplines, except clinical psychology, exercise physiology, medical science, orthoptics and prosthetic and orthotics. It was mostly at indicator (table 5) and Bloom's (1) apply level (table 6). One (1,3%) could not be classified.

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Delegation to others involved assigning activities or tasks to a colleague who has appropriate education, knowledge and skills to undertake the task safely. These statements only appeared in the chiropractic, occupational therapy, optometry, physiotherapy and podiatry disciplines. Most were at the indicator level (table 5) and at Bloom's (1) apply level (table 6).

Improvement and change leadership

This theme was derived from knowledge and skills requisite to driving improvement, innovation and discovery in health care. It comprised 223 (24%) of the indirect leadership statements and had five subthemes (table 9).

Evidence based practice related to using the best available evidence for informing professional practice but statements about conceiving or conducting research were not included. It appeared in all the disciplines examined, except medical science and mostly at standard (table 5) and Bloom's (1) apply level (table 6). One (1,1%) could not be classified.

Continuous Quality Improvement related to planning and executing a continuous flow of monitoring, reporting and improving aspects of practice and service delivery to provide quality health care. It appeared in all disciplines examined, except clinical psychology, exercise physiology and was mostly at indicator (table 5) and Bloom's (1) apply level (table 6). One (1, 2%) could not be classified.

Critical Thinking related to the need for objective systematic analysis and evaluation of an issue. It appeared in all disciplines examined, except audiology and exercise physiology, occupational therapy, orthoptics and social work. It was mostly indicator (table 5) and Bloom's (1) evaluate level (table 6). Four (4,14%) could not be classified.

Problem Solving involved identifying solutions to difficult or complex issues outside the scope of clinical reasoning. It appeared in all disciplines examined, except audiology, chiropractic, clinical psychology, exercise physiology, medical science, occupational therapy, prosthetic and orthotic, social work and speech pathology. It was mostly at the indicator (table 5) and Bloom's (1) apply level (table 6).

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Change Agency involved capabilities for influencing change. It appeared in eight disciplines, being clinical psychology, dietetics, medical imaging, occupational therapy, orthoptics, pharmacy, physiotherapy, and social work. It was mostly at standard (table 5) and Bloom's (1) apply level (table 6).

Health reform leadership

This theme was derived from 153 (16%) of the indirect leadership statements related to instigating and leading changes for improving public health, and reforming healthcare and the health system to improve its purpose, functionality, and sustainability. It had three subthemes (table 10).

Improving Public Health was about the use of health promotion and disease prevention strategies. It appeared in all disciplines examined, except clinical psychology, medical science, prosthetic and orthotics and social work. It was equally distributed between the standard and indicator levels (table 5) and mostly at Bloom's (1) apply level (table 6). One (1, 1%) could not be classified.

Health service and system change was about system modernisation and improvement and was reflected in all disciplines except Clinical Psychology. It was mostly at indicator (table 5) Bloom's (1) apply level (table 6).

Lead and advocate for the profession involved contributing to, promoting or developing the profession through activities such as supervision, education, mentoring, advocacy and research. It appeared in all disciplines, except Chiropractic, Clinical Psychology, Exercise Physiology, and Occupational Therapy. It was mostly at the indicator (table 5) and Bloom's (1) apply level (table 6). One (1,6%) could not be classified.

DISCUSSION

To affect strategic health reform in Australia a multidisciplinary and dispersed approach to health leadership is required. It is crucial to ensure our allied health professionals have the individual and collective leadership competencies to impel continual innovation, change and reform.

The Health LEADS Australia (8), Canadian LEADS in a Caring Environment (14) and the United Kingdom's National Health Service Leadership Framework (15), each demonstrate it is possible to

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create national frameworks that articulate the need for, and capabilities of, leadership to support innovation and reform. However, our review of Australian 18 allied health practice Standards illustrates that leadership is rarely defined and explicit leadership references are vague and unclear. Only 5 allied health Standards explicitly refer to leadership, however, while four themes that indirectly relate to leadership were identified most statements only addressed low level requirements (not higher-level learning) against Bloom's taxonomy. This highlights that most of the vague statements to leadership only require graduates to be skilled, but not necessarily knowledgeable, and only be able to apply these skills without any analysis or evaluation of leadership. As the need for leadership capabilities increase, graduates will be underdeveloped as leaders. Importantly, many of the indirect leadership references converge, but also diverge, from the national Health LEADs (8) framework.

Most Standards identified the need for *Self-leadership*. Emphasis on professionalism, life-long learning, scope of practice, reflective practice, and self-care relate to a leadership literature that recognises the importance of ethics and integrity (16, 17). Life-long learning relates to key theories of leadership development, which suggest leadership capabilities continually develop throughout one's life (6, 18). Scope of practice is not a central area of focus within leadership scholarship, but does relate to ideas of competency and humility (19) in recognising personal limitations. Frequent critical self-reflection is an essential component of leader development and self-care, wellbeing, mental health, and positive psychological resources are growing areas of investigation with in leadership scholarship (e.g. 20, 21-23). The now obsolete Australian Health LEADS framework articulates 'Leads Self' and stipulates that "leaders are always a work in progress. They know their strengths and limitations and commit to self-reflection and improvement. They understand and display self-awareness, self-regulation, motivation, empathy, and social skill. They demonstrate integrity in their role and context and show resilience in challenging situations" (8, p7). References to Self-Leadership in the Standards therefore align with the three capabilities Leads Self (Is self-aware; Seeks out and takes opportunities for personal development; and Has strength of character) as outlined in the Health LEADS framework (8).

The third substantive subtheme *Leadership with and of others* relates to values and diversity, developing others, supervision and mentoring, and delegation. While a universally accepted

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definition of leadership alludes even mainstream leadership scholarship, it is generally agreed that leading others entails complex relational processes that move others to action (24). Leading others implies initiating structure through delegating, mentoring, and developing others; leading others also necessitates consideration of others, including recognising and valuing individuals and diversity (25).

Within leadership scholarship, leadership *with* others is somewhat distinct to leadership *of* others. Scholarship that deals with leadership *with* others places more emphasis on the relationships between people and less on the role of a single leader (26). Leadership *with* others, or shared leadership provides an antidote to the traditionally hierarchical, vertical leadership reliant on a single top-leader. Leadership with others, or shared leadership, implies collective decision making, and greater responsibility on every individual involved in taking action and achieving outcomes (27). These sentiments are reflected in the Australian Health LEADS framework (8) that articulates 'Engages Others' as the ability of leaders to enable people to engage with a vision or goal through explanations that assist in making sense of complexity in ways that empowers others to identify and act on opportunities to contribute, learn and grow.

Improvement and Change, the fourth leadership-related theme represents the very heart of leadership as it is understood within leadership scholarship. Management and leadership are often confused and sometimes conflated, but the primary distinction between them is that management is focused on compliance and stability while leadership is about new directions, improvement, and change. The emergence of transformational leadership (25) and leadership sub-fields it has spawned (for example, authentic leadership 28, 29), articulates change and improvement of others and environments, as central to the function of leadership. Good management is needed to provide consistency and stability; but takes good leadership to instigate and drive improvement and change. Improvement and change is reflected in the Australian Health LEADS framework (8) as 'Achieves outcomes', which incorporates setting inspiring and motivating directions for improving the quality of care and sustaining the system.

Health reform was the fifth theme identified within the Allied health standards. The bulk of leadership scholarship focuses on leadership as the function of individuals or teams. However, there are emerging pockets of research that advance understanding of leadership in and of

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systems. Complexity leadership theory (30, 31) positions leadership as a “complex interactive dynamic” that enables outcomes such as learning, innovation, and adaptability (31). Adaptive leadership (32, 33) requires leadership at every level of a system or organisation and relies on individuals teams stepping up to fill and lead within ‘adaptive space’ (34). These theories posit that individuals must engage in complex relational dynamics and be willing to step into adaptive space to drive reform and improvement. Only then can system reform be enabled and sustained through continual improvement and adaptation in response to environmental factors.

The *Health reform* theme, and its subthemes improving public health, leading health service and system change and leading and advocating for the profession, converge with the Health LEADS framework (8) in terms of ‘Driving innovation’ and ‘Shaping systems’. Driving innovation relates to challenging the status quo and advocating for changes to business and models of care to achieve people-centred, values-based quality services (8). These changes are critical to ‘Shaping systems’ that can adapt as the complex and interconnecting components evolve as an outcome of service, legislation and funding change.

Ensuring our health system can appropriately serve the current and future health needs of Australia is a complex, adaptive process which will only be achieved through leadership at every level (3). Allied health professionals are ideally positioned to contribute to this kind of health leadership. The need to facilitate health leadership at a national level is well recognised with calls to action for governments and the international health community to recognise that healthcare performance and improvement are dependent on quality professional leadership (8, 35). The World Health Organisation asserts, (36, p1) “successful leaders are those who know how to create a workplace culture in which the safe and high quality care of patients is a priority — a culture that promotes inter-professional teamwork, sets strategic goals for patient safety, supports efforts within the organization to achieve improvement goals, provides resources for strengthening systems, removes obstacles for clinicians and health-care staff that interfere with safe care, and requires and maintains high performance of health-care providers”.

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CONCLUSION

For allied health to play its optimal role in health system reform, innovation and change, the Standards that guide allied health professionals must explicitly reflect health leadership competencies. In their present form, health leadership is not easily recognisable in most Standards. While most Standards link to important components of leadership, allied health professionals who are not familiar with the national health leadership framework or leadership theory might not recognise these references as attributes of leadership. Without specifying leadership capabilities as clear knowledge and skill domains the professional standards are open to interpretation and education may overlook leadership development opportunities. Failing to educate leadership competency, will fail to equip our future allied health graduates with the knowledge and skills they need to address the reality of complex health system innovation and clinical redesign. Nor will they be educationally prepared for guiding national policy makers on how to support this leadership work. This paper highlights the underutilised leadership potential of allied health professionals. By refining competency Standards and educating allied health professionals in leadership knowledge and skills, we can support the ongoing health system reform that is needed to improve public health.

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Table 1: MeSH terms (NLM 2019) used to describe leadership

MeSH term(s)	Associate entry term	Keyword
Leadership	Leader, Leaders, Leading	Lead*
Institutional Management	Manager, managers, management, managing	Manage*
Change Management	Influences, Influencer, Change	Influence*, Change*
Institutional Management Teams	Teams, teamwork, team leader, teammate,	Team*
Organisation and Administration	Supervises, supervisor, supervision	Supervis*

Table 2: Standardisation of levels of competency nomenclature

Disciplines	1. Domain	2. Standard	3. Indicator	4. Cue
Audiology	Standard	Indicator	Criteria	-
Chiropractic	Universal competency	Standard	Performance criteria	-
Clinical Psychology	Domain	Standard	Criteria	-
Dentistry	Domain	Standard	-	-
Dietetics	Domain	Key Tasks/Elements	Observable and/or measurable actions	-
Exercise Physiology	Standard	Guiding principle	Assessment expectations	Elements
Medical Imaging	Domain	Standard	Indicator	Cues
Occupational Therapy	Standard	Statement	-	-
Optometry	Unit	Element	Performance criteria	Indicators
Paramedicine	Domain	Standard	Indicator	-
Pharmacy	Domain	Standard	Enabling competency	General level/evidence examples
Physiotherapy	Role	Key competencies	Enabling components	-
Podiatry	Standard	Element	Performance criteria	Examples of evidence
Speech Pathology	Unit	Element	Performance Criteria	Cues

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Table 3: Summary of all leadership statements, by discipline

Discipline	Direct reference to leadership	Indirect references to leadership
Audiology	0	35, (4%)
Chiropractic	2	41, (4%)
Clinical Psychology	0	20, (2%)
Dentists	2	26, (3%)
Dietetics	1	55, (6%)
Exercise Physiology	4	71, (8%)
Medical Imaging	0	79, (8%)
Medical Science	0	25, (3%)
Occupational Therapy	1	53, (6%)
Optometry	0	73, (8%)
Orthoptics	0	31, (3%)
Paramedicine	5	66, (7%)
Pharmacy	2	74, (8%)
Physiotherapy	1	93, (10%)
Podiatry	0	38, (4%)
Prosthetic and Orthotic	0	30, (3%)
Social Work	0	68, (7%)
Speech Pathology	0	57, (6%)
Total	**18**	**935 (100%)**

Table 4: Direct Leadership Statements, by Discipline

Discipline	Knowledge	Skills
Dentists	2. Communication and Leadership	
Dietetics		1.3 Demonstrates professional leadership
Exercise Physiology		6.4.4 Revise communication and leadership to respond to changes in client and other health professional needs and manage changes in clinical situation(s). 8.4.5 Revise communication and leadership to respond to changes in client and other stakeholder needs and manage changes in clinical situation(s). 9.4.7 Revise communication and leadership style to respond to changes in client and other stakeholder needs and manage changes in clinical situation(s).
Pharmacy	Domain 4: Leadership and management	4.1 Show leadership of self 3. Display self-motivation, an innovative mindset and motivation

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		4.3 Show leadership in practice
		4.3.1 Inspire a strategic vision and common purpose
Physiotherapy	7. Manager/leader	7.2B recognise their leadership style and apply their leadership skills as relevant to the practice context

Table 5: Competency statement level of all leadership themes and subthemes

Themes	Subthemes	Domain	Standard	Indicator	Cue	Total
Leadership		5 (28%)	5 (28%)	7 (39%)	1 (6%)	18 (2%)
Self-Leadership						
	Professionalism and integrity	19 (21%)	24 (26%)	35 (38%)	14 (15%)	92 (44%)
	Lifelong learning and professional development	6 (7%)	22 (26%)	48 (57%)	7 (8%)	
	Scope of practice		11 (2)2%	30 (59%)	10 (20%)	
	Reflective practice		14 (33%)	21 (49%)	7 (16%)	
	Self care	1 (6%)	10 (59%)	6 (35%)		
Leadership With and Of Others						
	Values diversity of others	5 (2%)	33 (12%)	44 (16%)		
	Teamwork, collaboration and communication	8 (10%)	26 (31%)	45 (54%)	5 (6%)	
	Development of others		14 (26%)	33 (62%)	3 (6%)	
	Supervision and mentoring of others	1 (3%)	11 (31%)	19 (53%)	5 (14%)	
	Delegation to others		3 (33%)	4 (44%)	2 (22%)	
Improvement and Change Leadership						
	Evidence based practice		61 (51%)	35 (32%)	2 (22%)	
	Continuous quality improvement	1 (2%)	11 (24%)	24 (52%)	10 (22%)	
	Critical thinking	4 (15%)	8 (30%)	12 (44%)	3 (11%)	
	Problem solving	1 (4%)	7 (30%)	11 (48%)	4 (17%)	
	Change agency		5 (45%)	4 (36%)	2 (18%)	
Health Reform Leadership						
	Improving public health	6 (11%)	36 (45%)		5 (6%)	
	Health service and system change	3 (6%)	10 (19%)	34 (64%)	6 (11%)	
	Lead and advocate for the profession	3 (17%)	5 (28%)	6 (33%)	4 (22%)	

Table 6: Competency statements against Bloom's taxonomy level for all leadership themes and subthemes

Themes	Subthemes	Create	Evaluate	Analyse	Apply	Understand	Knowledge
Leadership							
Self-Leadership							
	Professionalism and integrity		2 (2%)		40 (43%)	11 (12%)	24 (26%)
	Lifelong learning and professional development		6 (7%)	6 (7%)	30 (36%)	4 (5%)	31 (37%)
	Scope of practice		1 (2%)		25 (47%)	15 (8%)	11 (21%)
	Reflective practice		29 (67%)	2 (5%)	10 (23%)	1 (2%)	1 (2%)
	Self care	1 (6%)	2 (12%)		9 (53%)	4 (24%)	1 (6%)
Leadership With and Of Others							
	Values diversity of others	3 (3%)	4 (5%)		46 (54%)	18 (21%)	14 (12%)
	Teamwork, collaboration and communication	3 (3%)	4 5%)(	3 (3%)	47 (54%)	18 (21%)	12 (14%)
	Development of others			5 (9%)	36 (67%)	9 (17%)	1 (6%)
	Supervision and mentoring of others	1 (3%)			21 (58%)	7 (19%)	6 (17%)
	Delegation to others				6 (67%)	2 (22%)	1 (11%)
Improvement and Change Leadership							
	Evidence based practice	6 (5%)	30 (26%)	8 (7%)	49 (43%	13 (11%)	7 (6%)
	Continuous quality improvement		4 (9%)	4 (9%)	26 (55%)	9 (19%)	3 (6%)
	Critical thinking		16 (57%)	1 (4%)	5 (18%)	2 (7%)	
	Problem solving	1 (4%)	3 (13%)	8 (35%)	9 (39%)	1 (4%)	1 (4%)
	Change agency		2 (18%)		6 (55%)	2 (18%)	1 (9%)
Health Reform Leadership							
	Improving public health	3 (4%)	3 (4%)	5 (6%)	32 (40%)	25 (31%)	12 (15%)

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Health service and system change		1 (2%)	28 (52%)	14 (26%)	8 (15%)
Lead and advocate for the profession	1 (6%)		12 (67%)	3 (17%)	1 (6%)

Table 7. Frequency of Subtheme, Self leadership

Subtheme	Frequencies and percentiles within theme 2
Professionalism and integrity	92, (44%)
Lifelong Learning and professional development	84, (40%)
Scope of practice	53, (25%)
Reflective practice	43, (21%)
Self care	17, (8%)

Table 8. Frequency of Subtheme, Leadership with and of others

Subtheme	Frequencies and percentiles within theme 3
Values diversity amongst others	87, (38%)
Teamwork, collaboration and communication with others	84, (36%)
Development of others	54, (23%)
Supervision and mentoring of others	36, (16%)
Delegation to others	9, (4%)

Table 9. Frequency of Subtheme, Improvement and change leadership

Subtheme	Frequencies and percentiles within theme 4
Evidence based practice	114, (58%)
Continuous quality improvement	47, (24%)
Critical thinking	28, (14%)
Problem solving	23, (12%)
Change agency	11, (6%)

Table 10. Frequency of Subtheme, Health reform leadership

Subtheme	Frequencies and percentiles within theme 5
Improving public health	81, (56%)
Health service and system change	54, (39%)
Lead and advocate for the profession	18, (13%)

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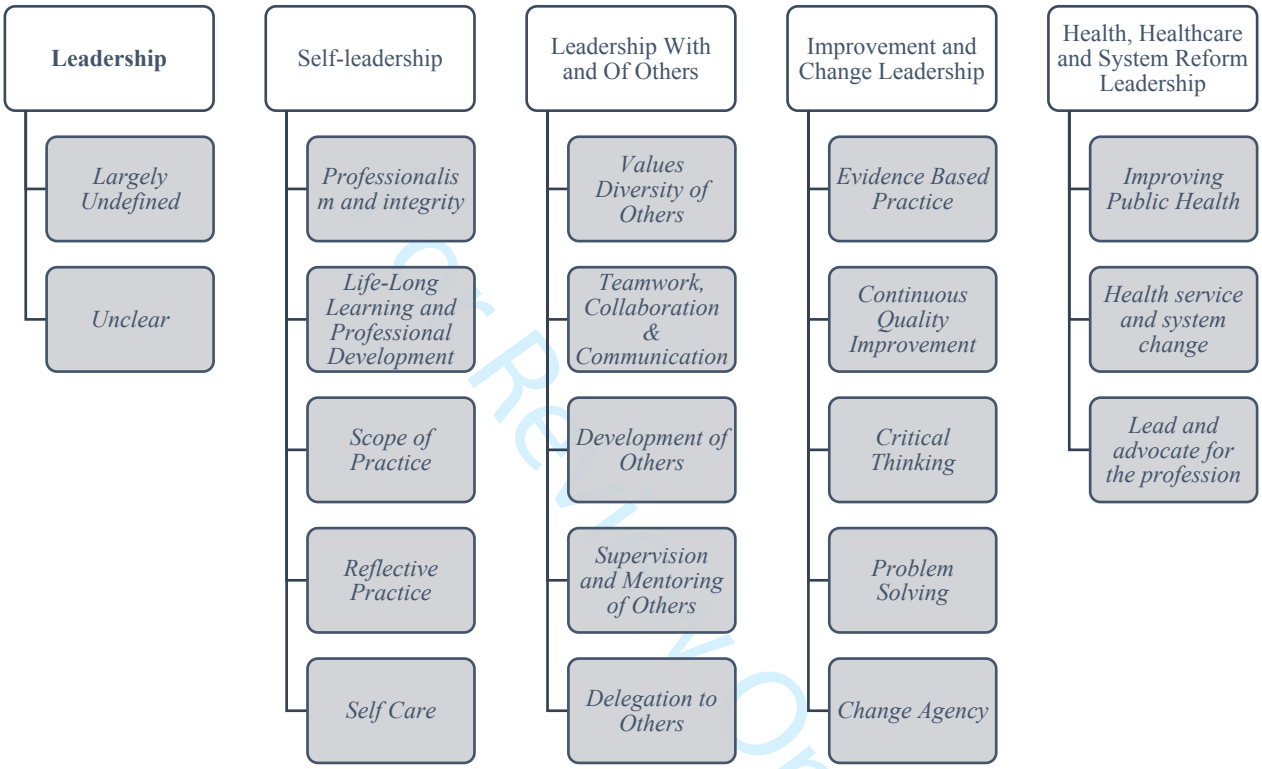
Figure 1: How leadership is articulated within the 18 Standards analysed



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