

An overview of the essential value of health professionals working to their full scope of practice in primary care

Contents

Acknowledgements	iv
Executive Summary	v
1 Introduction	1
1.1 Aims, objectives and considerations	1
Key objectives	1
Key considerations	2
1.2 Definitions	2
2 Background	3
The Unregulated and Regulated Health Workforce	4
Australian Health Practitioner Regulation Agency (Ahpra)	5
National Alliance of Self-Regulating Health Professions (NASRHP)	6
2.1 What is scope of practice?	7
2.2 How is scope of practice determined?	9
2.3 What is primary care?	11
3 Methodology	13
Published literature strategy	13
Grey literature search strategy	13
Screening, extraction and collation	13
Data synthesis	13
4 Results	15
4.1 PRISMA Chart	15
4.2 Summary of evidence	16
Improved patient experience (Aim 1)	17
Better outcomes (Aim 2)	18
Lower costs (Aim 3)	20
Clinician wellbeing (Aim 4)	20
Health equity (Aim 5)	21
4.3 Funding policy	21
Integrated care to promote full scope of practice	23
Case study: The Diabetes Care Project and Health Care Homes (Australia)	24
4.4 Legislation and regulation	27
Case Study: The Umbrella Framework – Canada	27
Case Study: Non-Medical Prescribing in the UK	29
Case Study: Pharmacists Administering Vaccinations in Canada	30

4.5	Education and training.....	32
	Interprofessional education and practice	33
	Case study: Interprofessional opioid training program for Nursing and Social Work graduate students (USA)	34
	Non-medical Advanced Practice Roles.....	35
	Case study: Advanced Clinical Practitioner (ACP) training and competence (UK)	35
4.6	Employer practices and settings.....	36
	Case Study: Non-Regulatory Barriers for Midwives in the United States	37
	Case Study: Expanding the Workforce: Additional Roles Reimbursement Scheme in the UK	38
	Case Study: Community Paramedics in Rural Areas of the United States	39
4.7	Technology	41
	Telehealth	41
	Electronic medical records	42
	Technology and integrated care models.....	42
	Technology and culturally safe care	42
	Limitations.....	43
	Case study – Digital health technology in Canada.....	43
5	Discussion	46
6	Conclusions.....	49
7	References.....	50
	Appendices.....	66
	Appendix 1. Search Strategy.....	66
	Search string: Scope of Practice	66
	Search string: Professions.....	66
	Search string: Limits.....	66
	Appendix 2. Screening inclusion and exclusion criteria	67
	Appendix 3. In-scope health professions for the Evidence Review.....	68
	Appendix 4. Evidence Review tagging	70

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Executive Summary

The Strengthening Medicare Taskforce Report outlines a vision for a high quality, integrated and person-centred primary care system in Australia. At the heart of this system is a need for all health practitioners to work to their full scope of practice. The Unleashing the Potential of our Health Workforce, Scope of Practice Review (The Review) aims to identify evidence of the barriers, enablers, benefits, and risks associated with health professionals working to their full scope of practice and will explore examples of multidisciplinary teams working together to their full scope of practice to deliver best practice primary care.

The aim of this current evidence review is to examine the evidence supporting (or not supporting) the essential value of health professionals working to their full scope of practice in primary care, across both academic and grey literature. Australian and international examples are explored using a 'context-mechanism-outcome' framework associated with realist evaluations. This approach recognises that the political, social, cultural, and other contexts significantly influence whether and how an intervention produces outcomes. The key objectives of the evidence review are to examine and highlight the impact of the political, social, and healthcare context on scope of practice changes. The key considerations for this evidence review are informed by focus areas of The Review (i.e., education and training, employment practices, leadership and culture, technology, legislation and regulation, and funding mechanisms).

The evidence review examined full scope of practice across individual professions, representing multiple countries and health systems. There are five key findings related to the quintuple aim of healthcare (improved patient experience, better outcomes, lower costs, improved clinician wellbeing and improved health equity) when health professionals are enabled to work at full scope of practice;

- Evidence of improved access through longer consultations, more information sharing, and appropriate care utilisation across professions like nursing, midwifery, pharmacy, physiotherapy;
- Evidence of equal or better outcomes in areas like chronic disease management, mental health and prescribing, when health professionals are enabled to work at full scope of practice;
- Evidence of cost savings, with some studies showing lower total costs and prevention of unnecessary services;
- Evidence that full scope of practice increases access in rural/remote and medically underserved areas, moderately improving workforce maldistribution in the short-term.

While the evidence specifically examining impacts on culturally appropriate care and health equity for First Nations populations was more limited, the models of care demonstrated in the literature showed the importance of multidisciplinary, culturally capable workforces. Overall, the direct evidence for impact on clinician wellbeing for scope of practice was limited, but there was a clear interest from professions seeking more ability to contribute to patient care. There is a pressing need for more research investigating clinician wellbeing, and how culturally safe care and equitable health outcomes can be achieved through an optimised workforce.

It is clear from the evidence review that countries acknowledge that overcoming the complexity of scope of practice optimisation for their health workforce requires a comprehensive multi-stakeholder approach, system leadership, policy, and culture change. Effective implementation of innovative models of care, including interprofessional and collaborative practice models in primary care utilising full scope of practice have been shown to require clear leadership, culture change, influence, and support. These culture and

leadership changes need to occur at all levels of the system (individual, workplace, profession, system etc) to be effective.

Overall, the results of the evidence review have emphasised key indication for improved access to care and improved patient experience; evidence for equal or improved health outcomes; evidence for reduced costs and improved cost effectiveness; evidence for improving access and health outcomes and support for improved practitioner well-being. While also highlighting the considerable evidence from individual professions and countries which connects to the Unleashing the Potential of our Health Workforce, Scope of Practice Review focus areas of education and training, employment practices, leadership and culture, technology, legislation and regulation, and funding mechanisms. While there are valuable learnings in what can or could work within the Australian context within each individual focus area, there are significant overlapping connections between the areas (e.g. legislation/regulation and funding) and a continuous thread woven between them pointing to the importance of culture and leadership in creating a changed practice environment for the future.

1 Introduction

The Strengthening Medicare Taskforce Report was released in February 2023 and outlines a vision for Australia's future primary care system. It recommends significant changes to how primary care is funded and delivered to enable high quality, integrated and person-centred care for all Australians (Australian Government, 2022).

The Taskforce recommendations were endorsed by National Cabinet in April 2023 and one of these was that the Australian Government work together with states and territories to review the barriers and incentives for all health practitioners to work to their full scope of practice. Funding for a Scope of Practice review was provided in the 2023-2024 Budget.

The Unleashing the Potential of our Health Workforce, Scope of Practice Review (The Review) is an independent review led by Professor Mark Cormack that commenced in September 2023. The aim of The Review is to identify evidence of the barriers, enablers, benefits and risks associated with health professionals working to their full scope of practice and will explore examples of multidisciplinary teams working together to their full scope of practice to deliver best practice primary care. This includes identifying barriers and opportunities for innovation. This evidence review provides key evidence of health professionals currently working to their full scope of practice, as well as barriers to this occurring. Full aims and objectives of this evidence review are detailed below. The evidence review will inform future Issues Papers that will be available for feedback from stakeholders before final recommendations and an implementation plan are provided to the Australian Government in late 2024.

1.1 Aims, objectives and considerations

The aim of the current evidence review is to examine the evidence supporting (or not supporting) the essential value of health professionals working to their full scope of practice in primary care. Australian and international examples are explored using a 'context-mechanism-outcome' framework associated with realist evaluations. This approach recognises that political, social, cultural and other contexts significantly influence whether and how an intervention produces outcomes.

Key objectives

The key objectives of the evidence review are to examine and highlight the impact of the political, social and healthcare context on scope of practice changes, including:

- the "current status" of full scope of practice by major professional groups and by areas of clinical practice in Australia;
- exemplars within Australia and internationally (including how international best practice may be applied to the Australian context);
- opportunities for consideration within Australia for full scope of practice;
- barriers, risks, policy, and regulatory settings which would need to be addressed to implement and sustain the value and benefits of full scope of practice.

Key considerations

The key considerations for this evidence review are informed by focus areas in The Review (i.e., education and training, employment practices, leadership and culture, technology, legislation and regulation, and funding mechanisms). Against each of these themes, the evidence review will consider the questions:

- What works, for whom, in what circumstances and why?
- Which social and cultural resources are necessary to sustain the changes?
- What is it about the initiative which might produce change?
- Which individuals, groups and locations might benefit most readily from the initiative?

1.2 Definitions

The broad definitions used for the evidence review are:

- **Full Scope of Practice** refers to professional activities that a practitioner is educated (has the skills and knowledge), competent and authorised to perform, and for which they are accountable. There is some variation in the use of full, top, expanded and extended scope of practice terminology across professions and jurisdictions, with some terms used interchangeably. Definitions are further detailed in section 2.1.
- **Primary Care** is health care people seek first in their community (Department of Health and Aged Care, 2023a). Generally, this is health care outside of a hospital or specialist. It includes diagnosis and treatment of health conditions and long-term care. Primary care also covers health promotion and prevention services. Primary care may include General practice, Aboriginal Community Controlled Health Services, Community health centres and walk-in clinics, Community nursing services, Community pharmacies, Allied health services, Oral health and dental services, Mental health services, Drug and alcohol treatment services, Sexual and reproductive health services, Maternal and child health services.

2 Background

Health care is provided by a wide variety of health professions, technical and support workers in the public and private sector in Australia.

A fundamental component of safe practice, common to all countries, is practitioners understanding and compliance with the legal and regulatory context in which they practice. The range of services able to be provided by health professionals and workers, under their supervision, direction or delegation is understood as 'scope of practice' in the health care division of labour.

Increasing complexity in health needs, often associated with multiple co-morbidities and chronic disease, has triggered expansion of regulatory systems to protect the public from misadventure and maintain trust in the quality of both the health system and the workforce. International reviews of approaches to regulating the health care workforce are increasingly prioritising the need for processes capable of responding to several challenges (Leslie et al., 2021):

- Greater clarity and transparency on what constitutes full scope of practice;
- Mechanisms that respond to innovation in models of care and technological advances;
- Greater emphasis on risk-based approaches to safety and accountability;
- Regulatory flexibility to accommodate multi-disciplinary team practice and interprofessional competencies outside traditional profession-based practice;
- Capacity for local needs and service settings (e.g., rural and remote) to be accommodated in regulatory systems;
- Shorter timeframes to respond to needs-based local developments prompted by persistent workforce recruitment and retention challenges.

The mechanism for achieving regulation of health professional practice (scopes of practice) shows a range of approaches from voluntary codes through to legislative Acts and frameworks across various countries. Despite difference in approaches, the central goal is to ensure public safety through assurance of high-quality care from qualified, competent and authorised providers.

As public expectations about health care service and access to services have risen, and the interests of private and public payors and other stakeholders have become more central to considerations of value, greater complexity has been steadily observed in regulatory approaches over time. Greater complexity is needed to respond to new challenges, such as non-traditional models of care through telehealth or new mechanisms to advertise health professional services (i.e., social media). The extent of regulatory activity includes monitoring, controlling and complaint investigations in relation to what health professionals do in professional interactions with clients, in communications and behaviour between health professionals and in public statements via social media. Training standards, qualifications and program quality are monitored and accredited to ensure standards for new health professionals are maintained. There are additional regulatory standards to ensure health professional suitability, such as criminal history checks or requirements around ongoing professional development and recency of practice. These all ensure public trust in the health system is maintained.

The Unregulated and Regulated Health Workforce

The health workforce in Australia consists of both unregulated and regulated providers. Unregulated health providers, often described as support workers or assistants, may have no nationally defined scope of practice or mandated education standards (Wiggins et al., 2022). They may operate under supervision or delegation models to regulated professions such as nurses or allied health professionals in public and private sector hospitals, health services and private practices. Most jurisdictions have developed frameworks and guidance documents that describe components of the allied health assistant role, competencies, tasks that may and may not be allocated to assistants, and delegation and supervision requirements that underpin the scope of the role in the public sector (NSW Health, 2020).

Major growth in unregulated workers has occurred as aged and home care and disability services have expanded. The scope of growth is evident from National Disability Insurance Scheme (NDIS) 2020 data: “11,600 active NDIS providers employing around 270,000 workers across 20 occupations: support workers accounting for 90% and allied health professionals 7.4% of the workforce respectively”. (Department of Social Services, 2021). The sector is forecasted to require 385,000 Disability Support Workers, 51,000 Allied Health Workers and 17,000 Other Workers to meet demand by June 2025 (Australian Government, 2023). It is recognised that to achieve this in the NDIS sector requires significant action by government to strengthen the overall care and support workforce.

Support workers are an under-utilised workforce fundamental to strengthening the capacity of the health sector and the care and support sector to meet the needs of the communities into which they provide care (King et al., 2022; Lawn et al., 2017; Saks, 2020). As frontline workers providing support and supervised health care to some of the most vulnerable populations in the community, there are strong arguments to redress their inconsistent access to education and limited career paths through greater coordination, leadership, and regulatory alignment.

The Australian Allied Health Assistants' National Association Ltd (AHANA) was formed in 2022 as a peak body to strengthen the assistant workforce through developing peer support, professional development, undertaking research, advocating alignment of scope of practice nationally, providing indemnity insurance and seeking occupational co-regulation to increase and assure the quality and safety of practising assistants (AHANA, 2023). AHANA covers all sectors (health, disability, aged care, etc) and all profession specific (i.e., dietitian assistants) and multi-disciplinary allied health assistant roles.

Regulated health practitioners may be subject to one of two approaches in Australia via:

- Australian Health Practitioner Regulation Agency (Ahpra), or
- National Alliance of Self-Regulating Health Professions (NASRHP)

Australian Health Practitioner Regulation Agency (Ahpra)

In 2010 separate regulatory approaches operated by states and territories were replaced with a national system. Ahpra was established to implement and administer the National Registration and Accreditation Scheme (NRAS) across Australia (Department of Health and Aged Care, 2024a). The National Law, the Health Practitioner Regulation National Law, was established through legislation in each state and territory.

A key advantage of a national scheme was registration across all jurisdictions and consistent national standards set by a Board for each profession included in the Scheme, enabling practitioner mobility across jurisdictions. There are currently fifteen national boards with a total of 877,119 registrants across 16 registered professions working in partnership with Ahpra (Australian Health Practitioner Regulation Agency, 2023).

Of the fifteen National Boards, four have further divisions (Chinese Medicine Board, Dental Board, Medical Radiation Practice Board and the Nursing and Midwifery Board).

Table 1: Ahpra registered professions

National Board	Profession	Division
Aboriginal and Torres Strait Islander Health Practice Board of Australia	Aboriginal and Torres Strait Islander Health Practitioner	
Chinese Medicine Board of Australia	Chinese Medicine Practitioner	<ul style="list-style-type: none"> • Acupuncturist • Chinese herbal medicine practitioner • Chinese herbal dispenser
Chiropractic Board of Australia	Chiropractor	
Dental Board of Australia	Dental Practitioner	<ul style="list-style-type: none"> • Dentist • Dental therapist • Dental hygienist • Dental prosthetist • Oral health therapist
Medical Board of Australia	Medical Practitioner	
Medical Radiation Practice Board of Australia	Medical Radiation Practitioner	<ul style="list-style-type: none"> • Diagnostic radiographer • Nuclear medicine technologists • Radiation therapist
Nursing and Midwifery Board of Australia	Nurse	<ul style="list-style-type: none"> • Registered nurse (Division 1) • Enrolled nurse (Division 2)
Nursing and Midwifery Board of Australia	Midwife	
Occupational Therapy Board of Australia	Occupational therapist	

National Board	Profession	Division
Optometry Board of Australia	Optometrist	
Osteopathy Board of Australia	Osteopath	
Paramedicine Board of Australia	Paramedic	
Pharmacy Board of Australia	Pharmacist	
Physiotherapy Board of Australia	Physiotherapist	
Podiatry Board of Australia	Podiatrist	
Psychology Board of Australia	Psychologist	

Source: Ahpra & National Boards, 2023

Each Board has 5 core registration standards, with significant commonality across professions, in addition to profession specific standards. National Boards have the capacity to develop and recommend standards about other matters deemed relevant to the eligibility for registration within a profession. Oversight of the National Scheme is undertaken by a Ministerial Council of Health Ministers from the Commonwealth and other jurisdictions.

National Alliance of Self-Regulating Health Professions (NASRHP)

Professions such as Speech Pathology, Dietetics, Audiology, Orthotics and Prosthetics, Exercise Science and Physiologists are not included under the remit of Ahpra and are self-regulating through accreditation of their members.

The National Alliance of Self-Regulating Health Professions (NASRHP) was incorporated under a company structure in December 2016 from an informal alliance established in 2008 under the auspices of Allied Health Professions Australia. The Alliance makes provision for three membership categories; full, provisional and qualifying (NASRHP, 2023), as outlined in Table 2.

Table 2: Membership of NASRHP

Full members	Provisional members	Qualifying members
Dietitians Australia	Australian Music Therapy Association	Australian, New Zealand and Asian Creative Arts Therapies Association
Exercise and Sports Science Australia		Australian Association of Social Workers
Audiology Australia		Australian and New Zealand College of Perfusionists
Speech Pathology Australia		Rehabilitation Counselling Association of Australia
Human Genetics Society of Australasia Board of		Australian Society of Rehabilitation Counsellors

Full members	Provisional members	Qualifying members
Censors for Genetic Counselling		
Australian Orthotic Prosthetic Association		Psychotherapy and Counselling Federation of Australia

NASRHP has eleven regulatory standards to be met by member organisations that broadly follow those of Ahpra (NASRHP, 2023), as listed below. NASRHP does not accredit or monitor standards of individual professionals; that is within the remit of each self-regulating profession.

1. Scope (Areas) of Practice
2. Code of Ethics/Practice and/or Professional Conduct
3. Complaints Procedure
4. Competency Standards
5. Course Accreditation
6. Continuing Professional Development
7. English Language Requirements
8. Mandatory Declarations
9. Professional Indemnity Insurance
10. Practitioner Certification Requirements
11. Recency and Resumption of Practice Requirements

2.1 What is scope of practice?

The most comprehensive study to date of scope of practice of the Australian health workforce sought to understand the conceptual underpinnings of the concept, with the aim of revealing the diversity and limitations of its use through a systematic review and content analysis (Downie et al., 2023). The findings, in the form of six conceptual domains of scope of practice, provides a unifying model capable of reducing confusion and the potential to apply in a universal context across healthcare professions, practice settings and jurisdictions. Further research to unpack the cross-jurisdictional complexities and create universal scope of practice definitions is anticipated.

The six conceptual domains expressed as themes are:

1. Professional qualification and training defines what practitioners can do;
2. Scope of practice is concurrent for the profession and the professional;
3. Conventions for defining scope of practice are varied;
4. Scope of practice is informed by the individual's ongoing training and experience;
5. Scope of practice as a dynamic construct for the profession;
6. Scope of practice boundaries and overlap in professional territory.

This line of research is particularly valuable in the context of dynamic service transformation and unleashing the potential of the workforce, where new multidisciplinary team models of care, inter-professional collaboration and optimisation of workforce scope of practice and skill mix are fundamental to implementing reforms. Among the most important findings were that in addition to significant variation in definitions of scope of practice, many documents from Boards, professions, government agencies, peak bodies and other industry stakeholders did

not formally define scope of practice at all, seeming to assume (incorrectly) an unconscious but universal shared understanding.

Where documents did have an explicit statement of scope of practice many referred in full or part to the definition of the Nursing and Midwifery Board of Australia (2020):

...‘the scope of practice of an individual is that which the individual is educated, authorised and competent to perform ... (and) may be more specifically defined than the scope of practice of their profession (Nursing and Midwifery Board of Australia, 2020, p. 14).

Similarly, the Health and Care Professions Council (HCPC) in the UK, Standards of conduct, performance, and ethics, the NMBA incorporates a responsible action imposed on the registrant to consult with and refer to other services or practitioners if patient needs were beyond their scope of practice (Health and Care Professions Council, 2016). Clauses on consultation and referral are fundamental to:

1. Ensuring patient safety in relation to their specific clinical needs;
2. Acknowledging the difference in scope of practice between novice and experienced practitioners in the same profession;
3. Understanding that an individual’s scope of practice may be a subset of a profession’s wider scope of practice;
4. Recognising that scopes of practice between different professions may have elements that are both distinct and overlapping.

The literature on Scope of Practice is also beset by definitional variation in describing associated elements of full, advanced, expanded and extended scope of practice, irrespective of country of origin, professional workforce or authorising authority.

Full scope was cited as definitionally less variable in the literature. It could be typically expressed as:

‘The full scope of practice of a profession includes the full spectrum of roles, functions, responsibilities, activities, and decision-making capacity that individuals within that profession are educated, competent and authorised to perform. The full scope of a profession is set by professional standards and in some cases legislation.

Working to full scope means working to the full extent of the profession’s recognised skill base and/ or regulatory guidelines, acknowledging that some functions may be shared with other professions, individuals, or groups” (Queensland Health, 2017).

Advanced, expanded, and extended scope of practice are often used interchangeably and more likely to reflect jurisdictional or professional preferences established over time. Although not consistently applied, advanced practice is more akin to working at the top of a traditionally recognised scope of practice. Advanced practice is particularly problematic in terms of definitional purity and consistency where it has been linked to jurisdictional industrial relations workplace gains in gradings and salary and has become embedded in custom and practice. The independent or uncoordinated development of advanced practice career building frameworks can lead to reduced ease of inter-jurisdictional career movement where career points and qualifications don’t align.

Extended (or expanded) scope of practice implies practice beyond the traditional boundaries of the scope of practice and is often in receipt of legislative or state-sponsored endorsement in the regulatory framework. Extended scope of practice may be more contested in an interprofessional work environment as it implies the potential for encroachment into other professions’ scopes of practice. Extended scope of practice is not being considered by the current Review as it is outside the Terms of Reference. The focus of the Review is on full scope of practice.

A critique of factors influencing the scope of practice of Australia's five largest health care professions argued that absence of greater specificity and guidance about scope of practice (and the limits of practice) beyond general statements of standards is confusing and leads to uncertainty about legal ramifications for providers (Wiggins et al., 2022).

2.2 How is scope of practice determined?

Australia's approach to regulation of the health workforce focuses on title protection and does not generally provide 'detailed explanations of scope of practice or regulate through restricted acts but rather maintains the outer boundaries of practice through their registration and practice standards' (Leslie et al., 2021).

Individual practitioners are charged with knowing their own competence, developing, and maintaining it through continuous learning and professional development to ensure they are able to give the best evidence-based practice aligned with the highest levels of patient safety. This is supported by codes of conduct or similar guidance provided by professional bodies. Similarly, entities such as the UK's Health & Care Professions Council (HCPC), which covers 15 professions (but excludes coverage of doctors, nurses, midwives, dentists and pharmacists), do not 'define' registrant's scope of practice in the form of a list of tasks able to be performed and those that are outside of scope (Health & Care Professions Council, 2021).

Health professionals may not be able to work to their full scope (individual competence and profession education standards) if the organisational context of practice is restricted due to historical boundary disputes or inflexible funding models (King et al., 2015). Obstructed practice opportunities result if managers and leaders aren't assertive in advocating for greater flexibility in scopes of practice and authorising local credentialing and governance processes. Local credentialing and privileging models in this context can be both enabling and restricting.

At a system-level of legislatively embedded regulatory machinery such as NRAS, scope of practice is determined through communication of standards, codes and guidelines which together establish the requirements for the professional and safe practice that protects the public. In practice, individual health professionals are responsible and accountable for the full gamut of services, advice, and treatments they deliver to patients based on their self-assessment of their knowledge, competence, skill and professional judgement.

Within the NRAS regulated health professions, several Boards have released additional guides, fact sheets and statements about Scope of Practice (Dental Board of Australia, 2020, Paramedicine Board, 2021; Nursing and Midwifery Board, 2022a and Nursing and Midwifery Board, 2022b). Self-regulating professions under the NASRHP system such as Audiology Australia, Speech Pathology Australia and Dietitians Australia each have Codes of Conduct, Ethical Standards, Practice Standards and Competencies and Scope of Practice advice which largely follow the Ahpra approach. Audiology Australia (and Dietitians Australia) for example have a flow chart 'Decision Tool to aid individuals when determining the scope of their own practice' (Audiology Australia and Australian College of Audiology and the Hearing Aid Audiometrist Society of Australia, 2016). Regulatory Councils for each self-regulating profession receive complaints about members of the professional association. For example, Dietitians Australia has adopted a Complaints and Disciplinary Procedures by-laws framework (Dietitians Australia, 2023).

Perceived difficulties implementing and operationalising scopes of practice in the workplace has led to 'practical' guidance being issued by the Australian Commission on Safety and Quality for Health Care specifically for managers and clinicians responsible for credentialing and managing a clinician's scope of clinical practice. The guide complements and supports

state, territory or organisational policies, by-laws or rules on credentialing (Australian Commission on Safety and Quality for Health Care, 2021).

Health professional associations and colleges typically play a major role in determining the standards of care, codes of practice and the competency and credentialing of their members. Although integral to regulatory processes, they essentially operate at arm's length from the state, particularly in self-regulating models.

Vocational and higher education institutions offering health professional education programs also play a role in shaping scope of practice by ensuring training programs reflect evidence-based content that is fit-for-purpose in settings that students will find employment. A further avenue of ensuring a practitioner can meet the requirements of regulatory standards in relation to scope of practice are the Continuous Professional Development programs and micro credentialing linked to a practitioners practice setting that focus on ongoing learning and updating skills.

Although part of the 'system of regulation' professional associations and education providers are not primarily focused on public safety in the same way as the National Boards operating under NRAS.

How scopes of practice are structured and regulated has an impact on health workforce optimisation. There is historical evidence that long-standing professions have shaped and controlled the regulatory frameworks that influence scope of practice at both an inter and intra-profession level (Leslie et al., 2021).

A review into Australian health workforce programs a decade ago noted for example that advocacy and peak groups (allied health) were 'less supportive' of allied health assistant roles than rural practitioners and local managers responding to community need and access issues (Mason, 2013). Uptake of equivalent assistant roles were noted to be markedly slower in Australia compared to the UK where the professions were more active in assisting the establishment of new support roles. The role of a monopsony employer (National Health Service or NHS) had an important impact compared to a more mixed model in Australia (Nancarrow & Borthwick, 2021).

Transparency on the relative merits of public interest and profession interests is important in the integrity and public trust in regulatory frameworks. When public interest is secondary to provider interests, rigid, stagnant scopes of practice can result that undermine the flexibility needed to reform health care and respond to patient needs for complex multi-disciplinary care.

Innovation can be dampened in rural and remote and primary care settings where the full staffing complement of typical urban health care teams (and their cumulative scopes) is not available due to maldistribution and other well-known factors precipitating recruitment and retention challenges. Lack of clarity about scope of practice and how it is determined can also undermine skill mix options in the planning of multi-disciplinary care teams. The rural-generalist pathway offers one strategy to support multiple professional groups in advancing competencies towards practice at full scope. The Medical Board of Australia is currently undertaking a consultation process to determine if Rural Generalist Medicine should be 'recognised as a new field of specialty practice within the specialty of General Practice, under the Health Practitioner Regulation National Law (National Law)' (Medical Board of Australia, 2023). Several Australian jurisdictions have been investing in the Allied Health Rural Generalist Pathway (Barker et al., 2021).

Modernisation of regulatory infrastructure is based on increasing the centrality of community need and optimising 'health professional scopes of practice to innovative models of care' where flexibility, team-based practice and accountability is increasingly valued (Nelson et al., 2014).

Building on the abovementioned, and adopting an integrating perspective, we propose to adopt the following modified working definition for Scope of Practice; a definition that is holistic in focus with greater potential for supporting clarity and responsiveness to change in which community need and service planning can be more easily accommodated.

Proposed definition of Scope of Practice:

- Professional activities that a practitioner is educated (skill/knowledge), competent and authorised to perform, and for which they are accountable
- Individual scope is time-sensitive and dynamic
- Scope of Practice for individual practitioners is influenced by the settings in which they practice, the health needs of people, the level of their individual competence and confidence and the policy requirements (authority/ governance) of the service provider.

2.3 What is primary care?

According to the World Health Organization (WHO), primary care is a model of care that supports first-contact, accessible, continuous, comprehensive, and coordinated person-focused care (World Health Organization, 2023a). WHO views primary care as a key pillar in a health system to enable provision of health promotion, prevention, and treatment services throughout the life course. Primary health care itself, is a whole-of-society approach to effectively organise and strengthen national health systems to bring services for health and wellbeing closer to communities comprising three components: integrated health services to meet people's health needs throughout their lives, addressing the broader determinants of health through multisectoral policy and action, and empowering individuals, families, and communities to take charge of their own health.

Effective primary care is crucial to the health system. Primary health care enables health systems to support a person's health needs and allows patients to access the right care at the right time – from health promotion to disease prevention, treatment, rehabilitation, palliative care and more. This strategy also ensures that health care is delivered in a way that is centred on people's needs and respects their preferences. Primary health care is widely regarded as the most inclusive, equitable and cost-effective way to achieve universal health coverage (World Health Organization, 2023b).

In Australia, primary care generally refers to health care people seek first in their community, outside of a hospital or specialist centre (Department of Health and Aged Care, 2023a). It is differentiated from secondary health care delivered by specialists where a referral is usually required, and tertiary care delivered in hospitals. These primary health care services include for example: general practices, Aboriginal Community Controlled Health Services, community pharmacies, many allied health services, mental health services, drug and alcohol services, community health and community nursing services, maternal and child health services, sexual health services and oral health and dental services.

In Australia, primary care is provided in multiple ways, often by small private businesses (e.g. GP clinics, pharmacies, and allied health practices). Primary Health Networks (PHNs) who are independent government funded organisations, also coordinate primary health care (Department of Health and Aged Care, 2022b). PHNs assess the needs of their community and commission health services so that people in their region can get coordinated health care where and when they need it. Comprehensive and culturally competent holistic primary health care services are also delivered by Aboriginal Community Controlled Health Organisations (ACCHOs), which are initiated and operated by local Aboriginal and Torres Strait Islander communities (National Aboriginal Community Controlled Health Organisation, 2022).

Australia's primary health care workforce is diverse, and includes doctors, nurses, midwives, a wide variety of allied health professionals and assistants, pharmacists, dentists, Aboriginal and Torres Strait Islander Health Practitioners and health workers, and administrative and technical staff with expertise in primary health care services (Harris et al., 2011). Each group has distinctive workforce practices and distribution, often determined by specific work policies and funding models.

However, changing population health needs, population growth, new technologies, a rise in healthcare costs and a global skills shortage in key areas are all putting pressure on the health care system and the primary care health workforce (WHO, 2016). Utilising the full scope of practice for the health workforce, or in other words allowing practitioners to use the full range of their skills, education, and training without unnecessary restrictions, offers potential to provide support for the health system, patients, and the workforce (Duckett & Breadon, 2014; Department of Health and Aged Care, 2023b).

A careful examination of the policy levers available to facilitate full scope of practice while ensuring quality and safety is warranted. The Strengthening Medicare Taskforce was convened in 2022 to provide concrete recommendations to the Australian Government in relation to:

- improving patient access to general practice, including after hours;
- improving patient access to GP led multidisciplinary team care, including nursing and allied health;
- making primary care more affordable for patients;
- improving prevention and management of ongoing and chronic conditions;
- reducing pressure on hospitals.

In February 2023, the *Strengthening Medicare Taskforce Report* outlined the Strengthening Medicare Taskforce's priority recommendations to improve primary care. One of these was that the Australian Government work together with states and territories to review the barriers and incentives for all health practitioners to work to their full scope of practice.

The Unleashing the Potential of our Health Workforce, Scope of Practice Review ('The Review') is being completed between September 2023 and December 2024. The Review Terms of Reference highlights six focus areas. In this evidence review, academic and grey literature related to barriers, enablers, benefits and risks of health professionals working to full scope of practice will be explored in summary, and in relation to five of these focus areas;

- Funding policy
- Legislation and regulation
- Education and training
- Employer practices and settings
- Technology

The sixth focus area, leadership and culture will be explored as a cross-cutting theme within the *Discussion*.

3 Methodology

Published literature strategy

The following health-science databases were selected and searched to provide relevant peer-reviewed literature: Medline (Ovid), EMBASE (Ovid), CINAHL (Ebsco), Web of Science Core Collection (Clarivate), and Informat. A core search strategy for Medline (OVID) (see Appendix 1) was created and then modified for each subsequent database accordingly. Outputs were restricted by year (publication date from 1 January 2000 to 31 December 2023), language, professional group and geography (Appendix 2 + Appendix 3).

Grey literature search strategy

A systematic search of the grey literature was conducted employing a three-phase strategy. In the first phase, the research team and Subject Matter Experts (SMEs) identified sources of high-quality grey literature using their academic expertise including known exemplars, local literature of best practice cases for their area of professional expertise, either in Australia or internationally. In the second phase, the Medline OVID search was replicated in Altmetric (<https://www.altmetric.com/>) to track sources that cite the articles retrieved in the original search, limiting to outputs from major organisations and policy documents. Finally, in phase three, a targeted advanced Google search was performed for each included profession (e.g. allintitle: (nurse) (scope practice)), limited to policy relevant domains (e.g. site:.gov.au) and relevant file type for analysis (e.g. filetype:.pdf).

Screening, extraction and collation

Articles retrieved from published literature and grey literature databases were imported into EndNote (V.9, Clarivate Analytics) for initial management and deduplication, then imported to Covidence (Veritas Health Innovation Ltd) for screening. After collecting all potentially relevant literature, title and abstract screening was undertaken to determine potentially eligible articles. As previously outlined, articles were included if they: (1) addressed health care professions as listed in Appendix 2; (2) described role/s and scopes of practice (top/full/expanded); and (3) were able to provide information about the practice / health care models (e.g., task-shifting, collaborative care models). The intention was for the literature to be focused within the primary care health care sector, or directly influence it.

Title and abstract / source screening of the literature was performed by a team of analysts. Any disagreement was resolved by consultation and discussion amongst the analyst team. The tagging function in Covidence was used to nominate exclusions as well as indicate profession, country and perspective.

Data synthesis

Analysts leveraged the Covidence tagging function developed in the screening phase with other keyword filtering to identify key outcomes of the literature related to five identified themes:

- Funding policy
- Legislation and regulation
- Education and training
- Employer practices and settings
- Technology

Analysts also incorporated a new feature of Covidence whereby relevant studies are tagged with “Possible RCT” using machine-learning based Cochrane Randomized Controlled Trial (RCT) classifier (Mellor, 2022) to quickly identify high-quality literature. A similar approach was followed using keyword filters for all studies in EndNote, including grey literature.

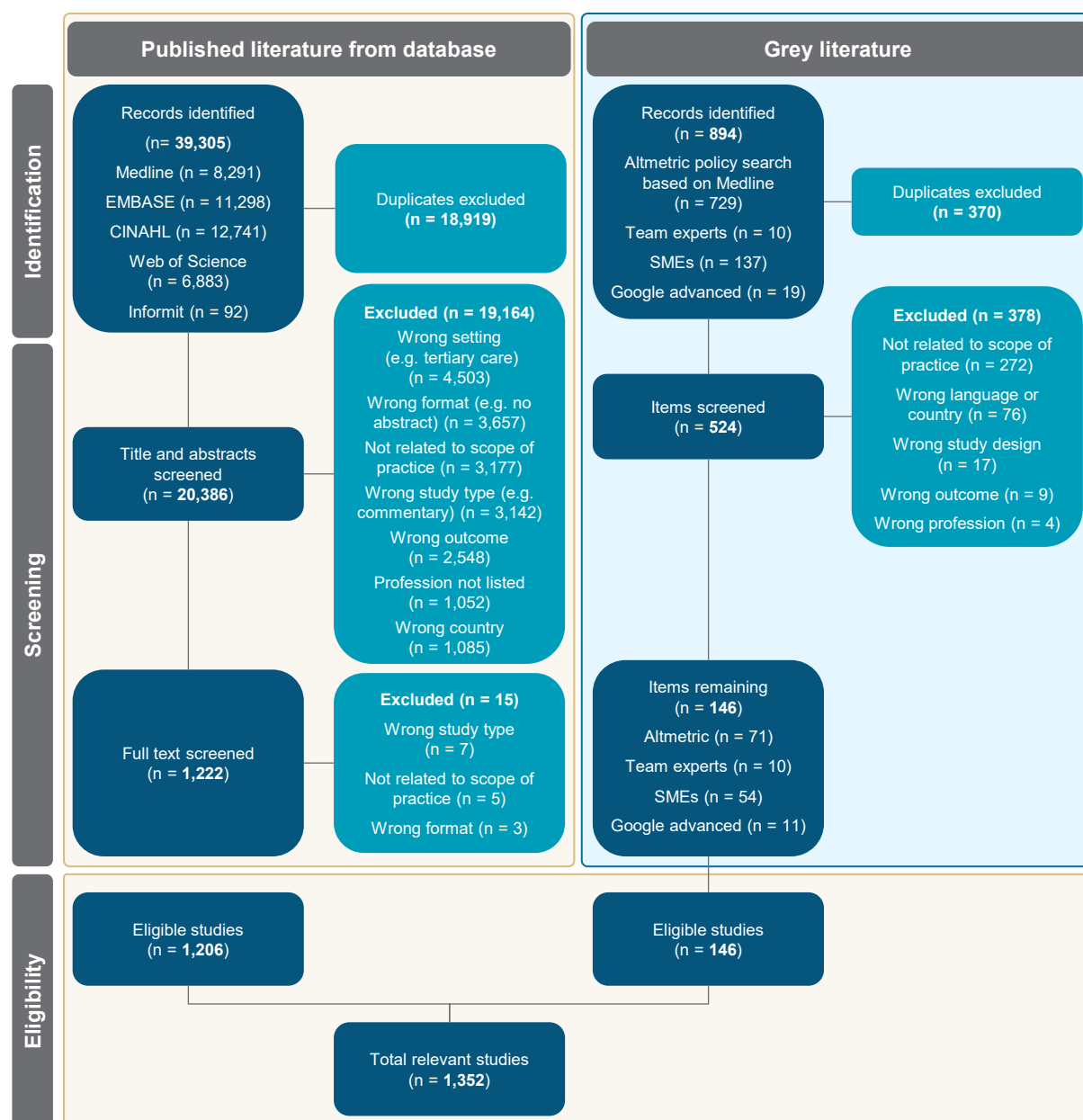
Relevant literature for each theme is explored in section 4 (Results). Australian and international examples are explored using a ‘context-mechanism-outcome’ framework associated with realist evaluations. This approach recognises that the political, social, cultural and other contexts significantly influence whether and how an intervention produces outcomes.

4 Results

4.1 PRISMA Chart

Figure 1 presents the number of records that were under consideration at each stage of the evidence review (i.e., identification, screening, eligibility, and included) for both published and grey literature. In total 1,352 relevant studies were identified, 1,206 from the published literature and 146 from grey literature screening.

Figure 1: PRISMA Diagram



Note: Phase 1 of stakeholder consultations from the Review provided a set of academic and grey literature for additional consideration which were compared and consolidated with those identified above.

4.2 Summary of evidence

The results of the review are presented below and provide information from more than a dozen countries and over 20 professional groups as per the search strategy in Appendix 1. While the distinct nuances of each country and professional context need to be considered fully when interpreting the outcomes, there are several key results and themes across countries and professions related to evidence for the full scope of practice for health professionals in primary care. A summary of the data extraction is provided in Tables 5 and 6 of [Appendix 4](#).

The bulk of the available literature came from the United States, followed by Australia and New Zealand, Canada and the UK. Nursing, midwifery, pharmacy, and medical professionals represented the largest volume of the literature available for review.

In this section, rather than taking a siloed or health profession focus, we discuss the included literature in relation to the “quintuple aim of healthcare” (Itchhaporia 2021; Nundy et al., 2022) outlined in Figure 2: (1) improved patient experience; (2) better health outcomes; (3) lower costs; (4) clinician well-being; and (5) health equity. The quintuple aim is essential to guide value-based care, fostering patient centred care and improved population health outcomes, whilst balancing the wellbeing of healthcare providers and the need to control health care costs. It provides a recognised overarching framework to guide health policy development and evaluation. Our key focus is on aims 1-3, however literature that addresses aims 4 and 5 are also included. It must be noted that the search strategy was more focussed on scope of practice rather than health equity or clinical wellbeing, which could be reflected in the results presented for these aims (4-5).

Figure 2: Quintuple Aim of Healthcare



Adapted from: Itchhaporia, 2021

Overall, in relation to health professionals working to their full scope of practice, the literature highlights:

- Strong evidence from high quality studies for improved access to care and some evidence of improved patient experience;
- Strong evidence from high quality studies for equal or improved health outcomes;
- Reasonable evidence from high quality studies of reduced costs and improved cost effectiveness;
- Little high-quality evidence of improved clinician wellbeing, but a large and increasing volume of practitioner-led studies, suggesting that working to full scope of practice is of high importance to practitioners; and

- Some high-quality evidence of a reduction in health inequity of access and health outcomes.

Each of the quintuple aims will be discussed in turn, using sub-headings to summarise the results. As described in the Methodology section, this section focuses on describing the highest levels of evidence available from randomised controlled trials, systematic reviews and high quality quasi-experimental studies where available. Notable gaps in the literature are highlighted.

Improved patient experience (Aim 1)

Improved patient experience is a central tenant of the quintuple aim of healthcare. In this context, the evidence for access to care, as well as patient-centred outcomes and experience of care is discussed.

Improved access to care

Overall, the evidence for improved access to care is strong and spans a number of health professions, including nurses and nurse practitioners (Blank et al., 2014; Hanrahan et al., 2011; Alexander & Schnell, 2019; Kurtzman et al., 2017; Laurant et al., 2018; McMichael 2023; Traczynski & Udalova 2018; Tran et al., 2022), midwives (Hoehn-Velasco et al, 2023; Markowitz & Smith 2023), physician assistants (McMichael 2023), pharmacists (Tsuyuki et al., 2015; Donovan et al., 2019; Beahm et al., 2018; Santschi et al., 2015; Spinks et al., 2020; Isenor et al., 2016), physiotherapists (Lafrance et al., 2023; Vedanayagam et al., 2021; Desmeules et al., 2012; Ross et al., 2019; McCrum et al., 2022) and dietitians (Benson et al., 2019).

Improved access should be evaluated not just by an increase in the amount of care (which could be inappropriate if adequate care is already provided), but also the appropriateness of care. A Cochrane review that looked at various outcomes related to the substitution of doctors by nurses in primary care (Laurant et al., 2018) found nurses provided longer consultations and gave more information to patients than doctors (which was associated with greater patient satisfaction). Additional evidence was found for improved appropriateness of care, for example, Traczynski & Udalova (2018) found that increased nurse practitioner independence increased the frequency of routine check-ups and decreased emergency department use. Markowitz et al (2017) found that the increased access to care is also of high quality, as indicated by lower rates of induced labour and caesarean sections under nurse practitioner and midwife care. Improved patient access was also found for treatment for uncomplicated urinary tract infections, (Beahm et al., 2018) vaccinations services (Spinks et al., 2020; Isenor et al., 2016) and blood pressure control (Tsuyuki et al., 2015) by pharmacists. Lower waiting times (Blackburn et al., 2009) and faster discharge for musculoskeletal conditions (Goodman et al., 2018) were achieved by physiotherapists. Primary care physicians (GPs) were also identified as potentially being able to improve access to dermatology services, particularly in rural and remote areas (Guzman et al., 2020). Team composition, for example the ratio of sufficient doctors (GPs) and nurse practitioners to provide out of hours care (Van der Biezen et al., 2017), was also found to be important in the context of access.

Patient-centred and culturally appropriate care

Evidence for improved patient-centred and culturally appropriate care as a result of practitioners working to full scope was less available. Some higher quality studies reported improved patient satisfaction, for example, for nurse-delivered cardiovascular care (Voogdt-Pruis et al., 2010) and midwife-led counselling following traumatic childbirth (Gamble et al., 2005). The apparent lack of evidence could be the result of the focus of this literature review

being on scope of practice, rather than patient reported experience, and should be interpreted in this context.

Some exceptions were found. For example, a systematic review sought to answer the question: “What can primary care services do to help First Nations people with unhealthy alcohol use?” (Purcell-Khodr et al., 2020). This review took a more agnostic view of who provided the service, focussing on whether or not the service was acceptable and available to patients rather than the health professionals who were involved in care. Another paper by Ziegler et al. (2020) described access to primary care from the perspective of transgender patients using qualitative methodologies. They concluded that whilst provision of care by primary care doctors to transgender people is within their scope of practice, doctors tended to work alone, and instances of multidisciplinary care were uncommon.

Examples of practice models that included practitioners with cultural skills and capabilities to work with different cultural groups, including Aboriginal and Torres Strait Islander peoples, and other First Nations peoples, were also identified (Pidgion 2015; Procter 2005; Martel et al., 2020). Only a few studies were found that specifically focused on the scope of practice of First Nations health professionals themselves, rather than the populations they serve (see for example Khalil & Gruis, 2019; Bennett-Levy et al., 2017; Sabo et al., 2023). One paper described challenges faced by Aboriginal Health Practitioners to contribute to medication safety services, despite problems with medicines being a commonly described need in community (Khalil & Gruis, 2019) and another detailed organisational and administrative challenges for Aboriginal and Torres Strait Islander health practitioners to implement an e-mental health intervention (Bennett-Levy et al., 2017). Another paper from the United States of America took a systems lens to integration of First Nations health workers, which included a discussion of the importance of scope of practice in this context (Sabo et al., 2023).

Whilst not the focus of this literature review, there was evidence that collaborative care between providers can improve the quality of care, for example, for people living with Alzheimer’s disease (Callahan et al., 2006).

Given the obvious advantages to supporting a culturally safe workforce to work to full scope of practice to improve the appropriateness and access to culturally safe services for the population, the lack of literature found in this area, particularly around culturally and linguistically diverse sub-populations, is somewhat surprising, but may be explained by the search strategy limitation described above.

Better outcomes (Aim 2)

The majority of studies screened under this category were descriptive or observational and focused on barriers and enablers for a particular profession and service. Examples of the range of services provided were diverse. In the nursing and physician assistant literature, for example, examples included mammography (Martin et al., 2020), up titration of cardiac medicines post myocardial infarct (Rahman 2021) and memory services (Clibbens et al, 2019). Examples from other professions included radiographers reporting magnetic resonance imaging (MRI) (Bolton & Slater, 2016), occupational therapists undertaking hand therapy to support waiting lists for surgery (Rose & Probert, 2009) and pharmacist prescribing (Petrosyan et al., 2021, Bailey 2020). Examples of literature that took a broader view of a range of services from a single professional group were also found, for example, the extended role of rural paramedics in Australia (O’Meara et al., 2012) and practice nurses at sexually transmitted disease clinics (Chambers et al., 2022).

High-level evidence for equal or better patient outcomes was found for professionals working to full scope of practice, similar to improved accessibility of care. Literature within this category made up the largest group of literature found in this review. The majority of higher-quality studies were found for the scope of practice of larger, more established health workforces and may represent better funding opportunities and longer traditions of

undertaking research in this area, rather than more evidence of quality, safety and effectiveness of service provision for these professions.

Examples of improved outcomes are diverse and include the provision of contraception care by midwives and other non-doctor providers (Currie et al., 2020), improved mental health outcomes for people living with human immunodeficiency virus (HIV) by advanced practice nurses (Blank et al., 2011), and equally effective diabetes control by dietitians compared to usual primary care provider (Benson et al., 2019). It is important to note that many of these higher-quality studies demonstrated that a treatment management role, rather than substitution of discrete tasks, was undertaken with equal or better health outcomes.

Two randomised controlled trials of pharmacist prescribing and management of hypertension (Tsuyuki et al., 2015) and dyslipidemia (Tsuyuki et al., 2016) compared to physician prescribing and usual care showed statistically significant benefits of better outcomes in the pharmacist prescribing groups. Another example was a randomised controlled trial of dietitian-nutritionists managing care for people with type 2 diabetes, including prescribing within a treatment protocol, versus usual care (Benson et al., 2019). Results showed the intervention group had slightly better diabetes control than the control group, but medication prescribing occurred at a higher rate in the intervention group, meaning that care may differ by the type of health practitioner.

A pragmatic randomised controlled trial of practice nurses in the Netherlands substituting for GP care found (Voogdt-Pruis et al., 2010) that practice nurses achieved patient outcomes equivalent to, or slightly better than GPs in terms of management of cardiovascular risk factors, such as blood pressure control, lipid control and body-mass index. However, many patients in this trial did not achieve cardiovascular goals, so although practice nurses achieved results equal to doctors, there are still improvements to be made in terms of achieving patient outcomes, irrespective of who delivers care.

Choudhury and Plemmons (2023) reported an analysis of giving psychologists prescribing rights in the USA, using state-based differences in prescribing authority to undertake a natural experiment. The authors found some evidence of improved outcomes, with decreased mortality resulting from self-inflicted injury following prescriptive authority expansions for psychologists. Hughes and colleagues (2022) found associations between nurse practitioner authority to prescribe and reduced incidence of foot debridement (as a complication of diabetic foot ulcers). Whilst this finding is not causal, it attempts to link health outcomes with the presence or absence of full scope of practice.

There was also evidence (Benson et al., 2019) that although health professional groups with newly introduced scope of practice authority may be safe and effective, care patterns between providers are not always identical. It may be likely that care patterns by professions where full scope of practice is introduced would evolve and change over time. Johnson and colleagues (2019) directly compared the care provided by physicians and advance practice providers (nurse practitioners and physician assistants) in the USA in relation to practice patterns and response to quality improvement feedback. Although there was no overall difference in practice seen at baseline, individual components of care did differ, for example, the ordering of low-value tests and the quality of history taking. Importantly, after four-rounds of quality improvement feedback, differences between health professional type disappeared, suggesting that both groups are equally willing to undertake self-reflection and change practice as required to increase quality and safety of care. A qualitative study of recently qualified nurse prescribers suggested that it takes time for the confidence levels of professionals working to full scope to grow, and that newly qualified professionals could benefit from ongoing mentoring and support (Bradley et al., 2007).

Lower costs (Aim 3)

There were fewer examples of health service efficiency gains and the relative cost effectiveness of services being provided by practitioners working to full scope of practice were found in the literature compared to the previous two aims. Two economic evaluations were identified. Hughes and colleagues (2023) used a modelled economic analysis based on literature review to compare nurse full practice authority versus restricted practice authority in the United States in terms of accessibility of buprenorphine prescribing for opioid use disorder. While this analysis did not include trial or registry data, it showed that full practice prescribing was cost-effective under all scenarios compared to restricted practice, with more patients being treated.

Schutte and co-authors (2023) [abstract only available] used Canadian RCT data in an economic evaluation of pharmacists providing care for hypertension (including prescribing), and found this was cost effective compared to usual care (by a GP). Given that the majority of allied health professionals generally set an equivalent or lower price for service provision, assuming an equivalent outcome to usual care is shown, it would be expected that alternative providers could be cost effective compared to GPs.

A number of higher-quality quasi-experimental studies were also found. Traczynski & Udalova (2018) found that full independence for nurse practitioners leads to increased health care utilisation, patient reported care outcomes and health outcomes, particularly for medically underserved groups, whilst decreasing costs. They concluded that removing the administrative burden and oversight of nurse practitioners, and allowing more independence, had a greater effect on lowering health care costs. The authors also recognised that nurse practitioners were one of many practitioner types that may lower costs, and similar effects may also be seen in future research. Kleiner et al (2016) found that the wages of nurses and doctors (as a component of overall costs) both increased when nurses were provided greater practice authority, while the price of well-child visits fell. However, Stange (2014) found minimal impact of changes to nurse practitioner and physician assistance scope of practice on health care costs and preventive screening. Markowitz et al. (2017) estimated substantial health care savings through the provision of more appropriate care (reduction in caesarean sections for first births) compared to care provided by obstetricians.

Other papers examined potential cost savings more from a budget impact perspective. For example, Spetz and colleagues (2013) used regression analysis (with some effort to control for potential selection bias) to estimate the effect of nurse practitioners operating in a retail setting at full scope of practice could be cost saving, producing similar health outcomes to status quo without increasing unnecessary services. Results showed that total costs for retail clinic visits were lower than for doctor-led clinics, urgent care clinics and emergency departments, however lower-acuity problems were more likely to be treated. Hooker & Muchow (2015) undertook a simulation study to estimate potential cost savings of service provision by nurse practitioners and physician assistants, due mainly to a reduction in emergency department visits; however an empirical analysis was not included.

Implicit, but rarely addressed in the literature are the potential financial gains for individual professional groups linked to full scope of practice, depending on the funding mechanism being considered. Further, no literature regarding the potential for introduction of perverse payment incentives being introduced as a result of changes to scope of practice was found. An example may include an increase in ordering diagnostic tests driven by a health professional group who stood to gain a financial reward, rather than the increase being driven by clinical need.

Clinician wellbeing (Aim 4)

No high-quality manuscripts were found specifically addressing enhanced health professional wellbeing due to ability to work at full scope of practice. However, the high volume of

profession-driven manuscripts found may be interpreted as showing that working to full scope of practice is of great interest to all primary care professional groups. The intrinsic motivation of health professionals to meet the needs of their patients is a common theme found in the descriptive literature and does appear as a motivating factor for many case examples.

Numerous examples in the literature were found describing the value of more autonomous practice to providers, with medical dominance of the sector being a perceived barrier to achieving the desired level of autonomy. It is yet unclear from the literature if the desire for increased autonomy, *per se*, is more closely linked to the opportunity for increased financial gains, intrinsic motivation, or a combination of both of factors.

Health equity (Aim 5)

Equity of health outcomes is of growing interest to governments and patients alike. Few manuscripts were found that addressed the equitable access to professionals operating at full scope of practice; which may represent a gap in the literature, or as for Aim 1, may indicate that the search strategy was more focused on other aims.

Specific examples of addressing disparity in access to services were found, most notably, due to geographic location. Many cases studies were found of how particular practitioners can and already do operate at full scope of practice in rural and remote areas to meet community needs. Fewer studies were found from a system-level perspective of how scope of practice may be harmonised across jurisdictions to ensure the needs of medically underserved communities could be met.

Young et al (2020) assessed the impact of nonphysician prescribers on spatial access to primary care in the USA. Using an optimisation model, the authors found that almost all the improvement in access to primary care was shown in sparsely populated areas, which were also the areas of greatest health care need. Complimentary to this finding, DePriest et al (2020) undertook an analysis of nurse practitioner full practice authority laws using a quasi-experimental method, also finding that the change increased access to care in underserved areas, as well as self-employment by health professional. A working paper by Tran and colleagues (2021) demonstrated reduced need for aged care services, particularly in medically underserved communities. However, Graves et al (2016) cautioned that although they found better accessibility of non-physicians than physicians in more rural areas in the USA, working to full scope of practice as a means to decrease clinician maldistribution may only improve workforce shortages modestly and in the short term.

4.3 Funding policy

Funding arrangements and mechanisms are but one of several system level variables which can influence health professional scopes of practice. Beyond individual professionals' remuneration, funding plays a key role in determining how different professions can work collaboratively across their individual scopes, and deliver quality, accessible, coordinated, and comprehensive patient-centred care to improve health outcomes.

Medicare is Australia's publicly funded universal health care scheme that covers private and public service sectors and involves multiple levels of government in the funding and provision of health care (McInnes et al., 2017; Wise, et al., 2022). In Australian general practice, more than 90% of income is claimed through Medicare fee-for-service (FFS) arrangements, with additional revenue raised by client co-payments and government incentive schemes (McInnes et al., 2017). FFS schemes tend to incentivise providers to deliver a high volume of services, without directly incentivising quality (Wise et al., 2022). The current funding model in Australia, and its complexity, is reflected by an increasingly fragmented primary healthcare

system that struggles with integration, coordination, and continuity across sectors; with limited incentives for patient-centred care (Angeles et al., 2023).

While FFS can be an effective reimbursement scheme, the evidence suggests that it is most appropriate for simple health problems which are easy to treat (e.g. episodic care), or where increased service volume is desirable (e.g. vaccinations) (OECD, 2015; Wise et al., 2022). But for individuals with chronic conditions, or those at risk of developing them, FFS tends to result in reactive and fragmented care by incentivising high volume over high value coordinated services which could lead to improvements in longer-term health outcomes (Angeles et al., 2023; Duckett et al., 2017 ; OECD, 2015). Some research suggests that FFS creates a focus on service volume that leads to shorter consultation times, over-streamlined services, excessive referrals to secondary providers, and lack of attention to patient preferences (Oliver-Baxter & Brown, 2013; Wranik & Durier-Copp, 2010). The Strengthening Medicare Taskforce report states:

“our primary care system funding mechanisms reward episodic care and fast throughput, creating barriers for many people to get the comprehensive care they need.” (Australian Government, 2023)(p.6).

International evidence suggests that FFS funding schemes constrain the potential for integration of other types of providers into primary care settings and hinders working to full scope of practice for many allied health professionals when compared to other funding models (Freund et al., 2015; OECD, 2015). For example, research in Aotearoa/New Zealand has demonstrated that it is capitation, rather than FFS, that fosters increased involvement of nurses in primary care delivery (Adams et al., 2024; Pullon et al., 2009). Capitation-based funding mechanisms are not linked to a specific episode or condition but rather aim to incorporate all the health needs for an enrolled population for a specified time-period, and therefore fall under the category of population-based funding (Wise et al., 2022). With a broad scope of practice, and access to nationally available capitation funding, nurse practitioners in Aotearoa/New Zealand practice autonomously and provide primary health care in much the same way as GPs, including prescribing medications and completing specialist referrals (Adams & Carryer, 2023; Adams et al., 2024). As a result, more than 60% of registered nurse practitioners in Aotearoa/New Zealand now work in primary health care settings such as general practice, urgent care, and community and health services for Māori and Pacific peoples (Adams & Carryer, 2023). It has been highlighted from these examples in Aotearoa/New Zealand that the critical next step for nurse practitioners is to deliver meaningful, culturally safe, and holistic care alongside careful diagnosis and prescribing practices, rather than being seen as substitutes for medical practitioners (Adams & Carryer, 2023).

Beyond the constraints of FFS, there are several other funding-related issues which constrain the ability of health practitioners to practice at full scope. Stakeholder consultations led by a Queensland Health Ministerial Taskforce investigating enhanced scopes of practice for allied health practitioners (AHPs) uncovered several issues (The State of Queensland – Queensland Health, 2014), including:

- a lack of systems-level resource allocation to achieve the most clinically appropriate and cost-effective mix of allied health professionals, medical officers, nurses and support workers
- a lack of opportunity to invest budget savings from service redesign into the service that generated the savings;
- a lack of financial resources to design, implement and evaluate change;
- concern that the national funding agreement requires referrals to be directed to the medical specialist or speciality indicated on a referral rather than to the most appropriate health professional for the presenting condition;

- a misconception that activity-based funding results in reduced funding to hospital and health services when provided by an allied health professional rather than a medical officer;
- the threat to hospital and health service revenue raised through Medicare rebates if allied health professionals request investigations or undertake tasks typically carried out by a medical practitioner (e.g. diagnostic imaging and pathology);
- limited allied health access to Medicare item numbers and the requirement for medical referrals, care plans and practitioner credentials to access some of the available rebates; and
- the ineligibility of allied health professionals services for Medicare rebates when these are provided in most public health facilities.

Integrated care to promote full scope of practice

Increasingly, the limits of the current FFS funding model in Australia in terms of scopes of practice and best practice care are being recognised and calls for payment reform are being heard across most health professions and sectors (Australian Government, 2023; Australian Physiotherapy Association, 2024; Pharmacy Guild of Australia, 2023; RACGP, 2019). Nationally, the recent report from the Strengthening Medicare Taskforce (Australian Government, 2023) explicitly states:

We must rethink how we fund general practices and other primary care providers to deliver wrap-around care for the people who need it most. Funding arrangements need to be strengthened and remodelled to enable health professionals to provide longitudinal care that improves the quality of life for patients and reduces pressure on the health system.” (Australian Government, 2023)(p.4)

Altogether, the evidence suggests that the incompatibility of business models across sectors remains an important barrier to integrated care in Australia (e.g. FFS in primary care and activity-based funding in hospitals) (Oliver-Baxter & Brown, 2013). Aligning financial incentives across sectors through blended models could promote the wider organisational reforms required for more coordinated and integrated models of care (Wise et al., 2022). However, funding reform is a complex challenge for jurisdictions. First, funding reform directly impacts provider incomes by challenging longstanding business models; and second, funding reform requires significant organisational reforms to better integrate fragmented healthcare systems and sectors (Wise et al., 2022). Funding reform is further complicated by the specific contexts in which different payment models are implemented, resulting in variable consequences on service characteristics such as volume, quality, outcomes, efficiency, integration and coordination (Duckett et al., 2017; Oliver-Baxter & Brown, 2013).

Evidence suggests that optimal funding models blend funding mechanisms to maximise system strengths and offset weaknesses. Such models include a combination of population-based funding and patient-focused funding (Duckett et al., 2017 ; OECD, 2016; Oliver-Baxter & Brown, 2013). Population-based funding (e.g. capitation) is a type of block funding where funds are allocated to providers as a periodic lump sum based on catchment size and perceived needs of the population served (Oliver-Baxter & Brown, 2013). In contrast, patient-focused funding (e.g. pay-for-performance, activity-based funding) leverages financial incentives to support improvements in quality and efficiency of care for patients (Oliver-Baxter & Brown, 2013).

In Australia, patient-level incentive payments (in addition to the existing FFS model) are the primary mechanism through which value-based patient-centred primary care is promoted (Oliver-Baxter & Brown, 2013). For example, Practice Incentive Payments (PIPs) incorporate blended payments for general practices so that regular FFS payments through Medicare can be supplemented with incentive payments linked to after-hours care or deliver preventative

care for patients with diabetes (Australian National Audit Office, 2023). However, as PIPs require services to be coordinated by the GP, their transformative potential continues to be limited (Oliver-Baxter & Brown, 2013). This type of blended funding model was first introduced in the 1990s, for example the Enhanced Primary Care Package (1999) and the subsequent Chronic Disease Management Program (2005). Both these programs were underpinned by the principles of integrated care and incentivised GPs to improve coordination of multidisciplinary care for patients with chronic conditions and complex needs via funded mechanisms like multidisciplinary case conferencing tailored to individual patient needs, which encourages health professionals to work together and leverage their respective scopes of practice. (Mitchell et al., 2020).

More recent examples include programs such as the Diabetes Care Project (discussed in detail in the below case study) and the Australian Health Care Home model, both of which embed alternate and flexible funding models directly into their design. However, as their predecessors, they have been limited in scope and scale despite demonstrated improvements in value and patient-centred care via enhanced care integration (Fountain & Bennett, 2016).

Case study: The Diabetes Care Project and Health Care Homes (Australia)

Context

In Australia, chronic health conditions account for more than 85% of the total burden of disease, 90% of all deaths, 40% of GP visits, and 60% of disease allocated expenditure (Fountain & Bennett, 2016). In 2011, the largest randomised controlled trial of coordinated care for individuals with a chronic disease was implemented in Australia. The Diabetes Care Project (DCP) involved 184 general practices and 7,781 patients with diabetes in South Australia, Queensland, and Victoria (Department of Health and Aged Care, 2015; Fountain & Bennett, 2016).

The aim of the DCP was to investigate a new model of care which included flexible funding components (which would eventually become the Australian Health Care Home model). The DCP funding model meant that eligible patients, who enrolled with a single primary health care service, would be supported through a package of flexible funding to strengthen continuity through coordinated multidisciplinary care (Fountain & Bennett, 2016). The DCP enabled a broader range of allied health professionals, including dietitians, podiatrists, and exercise physiologists, as part of the multidisciplinary care team, greatly enhancing service delivery compared to the traditional physician-focused care model. The DCP funding was bundled into regular quarterly payments for participating general practices, effectively moving away from a strictly FFS model towards a more flexible funding model (Fountain & Bennett, 2016).

Mechanism

The DCP tested five new care components including: 1) an integrated information platform for GPs, allied health professionals and patients; 2) continuous quality improvement processes informed by data-driven feedback; 3) flexible funding allocated based on patient risk stratification; 4) quality improvement support payments linked with a range of patient population outcomes; and 5) funding for care facilitation, provided by dedicated Care Facilitators (Department of Health and Aged Care, 2015). Participating

practices were randomised into a control group, or one of two intervention groups. The first group received only the first two components (i.e. new information technology and regular reporting of clinical performance measures) without any of the funding components, while the second group received all five components including the flexible funding model (Department of Health and Aged Care, 2015).

Outcome

The DCP highlighted that modifications to current funding mechanisms can enhance care to meet the needs of individuals with chronic and complex conditions (Department of Health and Aged Care, 2015). Information systems and quality improvement processes alone were insufficient to improve health outcomes, however when combined with a flexible funding model, these care components significantly improved patient health outcomes by making it easier for providers to coordinate multidisciplinary care and incentivise quality (Department of Health and Aged Care, 2015; Fountaine & Bennett, 2016).

Multidisciplinary care enables different health professionals to work together, understand each other's roles and promote more collegiality to leverage their respective scopes of practice. Enhancing funding flexibility fostered more innovative patient-centred care by integrating a broader range of allied health specialties and allied health professional consultations tailored to individual patient needs; particularly in remote catchments where the flexibility of the funding allowed for visiting allied health practitioner arrangements (Department of Health and Aged Care, 2015). The availability of funding for Care Facilitators in the DCP was also highlighted as a key enabler to care innovation, allowing providers to arrange and compensate for the involvement of various health professionals required for comprehensive patient care (Department of Health and Aged Care, 2015).

Internationally, initiatives aimed at funding reform have taken many forms, and most of these efforts have been rooted in efforts to develop more coordinated and integrated models of care. For example, Accountable Care Organizations (ACOs) in the United States adopt a shared savings approach whereby regular FFS payments are supplemented by bonus payments if coordination efforts and service improvements translate into slower risk-adjusted health spending growth and improved performance on quality measures (Oliver-Baxter & Brown, 2013). Similarly, Germany's *Gesundes Kinzigtal* ("Healthy Kinzig valley") integrated care model operates on a shared saving contract with a block grant to incentivise efforts to improve population health outcomes via investments in prevention programs leading to reductions in morbidity and prevalence of chronic diseases (Oliver-Baxter & Brown, 2013). Evidence suggests these models can lead to gains in efficiency, coordination, integration, and reduction in healthcare costs by aligning funding with value and cost-effectiveness rather than volume (OECD, 2015; Oliver-Baxter & Brown, 2013).

In the UK, similar pay-for-performance programs, like the UK Quality and Outcomes Framework and the pilots of the NHS Vanguard Models of integrated health care, also incentivised different forms of organisation, planning and service delivery ultimately leading to the development of Primary Care Networks (PCNs) in England. PCNs aim to enhance collaboration across a range of health and social care services and providers through collective service commissioning and service provision via cross-practice Network Contract Directed Enhanced Service (DES) contracts (NHS England, 2024a). To further support the

new PCNs, the NHS also launched the Additional Roles Reimbursement Scheme (ARRS) which provided funding to recruit additional roles to work together in providing health care services (MacConnachie, 2024). By building upon existing primary care services, PCNs enable greater provision of proactive, personalised, coordinated and more integrated health and social care for people close to home, through better collaboration between GP practices and others in the local health and social care system (NHS England, 2024b). This has contributed to improved access to general practice, with over 50 million more appointments made in 2023 than in 2019 (MacConnachie, 2024).

In Ontario, primary health care reform has also been constrained by the dominant FFS funding model, and similarly to Australia, efforts for funding reform have tended towards more blended models including capitation and incentives in addition to FFS.

For example, the province created Family Health Teams (FHTs) and Family Health Organisations (FHOs) to improve access to primary care and improve delivery by implementing interdisciplinary teams and promoting the health and wellness of the communities served (Aggarwal & Williams, 2019). To support FHTs and FHOs, a funding model was introduced to include a larger number of billing codes for GPs, additional capitation payments, incentive payments for preventative care and chronic disease management, as well as funding to support the integration of non-medical providers like Nurse Practitioners into teams (Aggarwal & Williams, 2019). Despite these significant innovations, including the implementation of interprofessional teams in FHT/FHOs, only a quarter of Ontarians are served by these models, further constraining timely access to care, continuity, and coordination for more than 75% of the population (Aggarwal et al., 2023). Evidence suggests that Ontario's shift towards blended capitation models has also created important inequities by servicing more advantaged populations since the capitation payments based on age and gender are not risk adjusted (Aggarwal et al., 2023). Moreover, similar outcomes have been noted in other Canadian provinces including Quebec, Alberta, and British-Columbia despite provincial variations in approaches to funding primary care reform (Aggarwal et al., 2023).

The experiences of the United States, Germany, the United Kingdom, and Canada provide insights into various approaches to funding reform aimed at promoting more coordinated and integrated models of care. These initiatives have adopted blended funding models that combine traditional FFS payments with capitation, pay-for-performance incentives, and other population-based funding mechanisms. While these approaches have demonstrated potential for improving efficiency, coordination, and quality of care, they also highlight the complexities and challenges associated with funding reform, such as inequities in service delivery and limited scalability. These international experiences underscore the need for a carefully designed and context-specific approach to funding reform in Australia, one that addresses the fragmentation and disconnects within the current primary health care system, while promoting patient-centred, integrated care through innovative funding models tailored to the Australian healthcare landscape.

In addition to restricting funding to allow for greater integrated care, funding policies can incentivise practitioners to work to full scope of practice including through payments based on activity rather than payment based on practitioner type. This type of payment mechanism can encourage a redistribution of activities to encourage efficiencies and productivity enhancement of the health system. For example, payment parity for vaccine administration can allow for patient choice or preferred provider.

The role of integrated care is a necessary component to health professionals working to full scope. A substantial barrier that inhibits health professionals working to full scope is inefficient funding distribution. The above examples show alternatives that may be used to enhance this integrated care.

4.4 Legislation and regulation

Legislation and regulation play a key role in determining a health professional's scope of practice as this determines which health services they are legally authorised to perform. Authority may be provided at a national, jurisdictional and employer/setting level or influenced by a combination of these levels depending on the task, profession, or practice setting. Practice settings are explored further in Section 4.5 (Employer Practices and Settings).

Nationally, as noted in Background, the Australian Health Practitioner Regulation Agency (Ahpra) administers the National Registration and Accreditation Scheme (NRAS), under the Health Practitioner National Law, which ensures all regulated health professionals offer consistent, high quality, and professional services (Ahpra & National Boards, 2023). This applies to 16 professions (Table 1) including nurses, pharmacists, chiropractors, optometrists, and midwives. The NRAS has been pivotal to Australian healthcare as it has condensed the need for multiple governing health practitioner boards, established national consistency in regulatory policy, and harmonised legislation. However, there are variations across states and territories in the application of the NRAS due to state-specific legislation, which combined with individual employer credentialing, and clinical contexts, all determine individual scope of practice (Leslie et al., 2021).

In addition to professions regulated under NRAS, there are self-regulated professions that are regulated under profession-specific colleges and associations, and unregulated health workforces. The scope of practice of these professions may be limited when pieces of legislation or regulation refer to self-regulated professions, without sufficient consideration of their role alongside other healthcare providers. For example, pieces of legislation or regulation may refer to protected titles or 'named' professions, making those professions alone authorised to perform selected functions as described within that legislation or regulation. This excludes other professionals based purely on their titles, regardless of whether these professional groups hold the knowledge, skills, and competency to safely perform the described activities. In contrast, the implementation of an umbrella framework model, which recognises skills and capability rather than title, could be expected to drive more efficient operation of the health system. A case study from the Canadian implementation of umbrella frameworks in health workforce legislation is presented below.

Case Study: The Umbrella Framework – Canada

Context

Scopes of practice for health professionals in Canada have traditionally been structured around regulatory systems based on history and politics rather than best utilising skills and knowledge to meet contemporary population health needs (Nelson et al., 2014). Discontinuity in workforce organisation within the Canadian primary health care system harbours accessibility concerns that result in long waiting times, poor continuity of care, and limited diagnoses and referrals (Flood et al., 2023). The need to improve health workforce collaboration, efficiency, and flexibility in response to these issues has driven innovation in regulation. Traditionally, health profession regulation across Canadian provinces was based on separate statutes and exclusive scopes of practice for each individual profession. There has been a move away from traditional regulation models towards umbrella frameworks characterised by overlapping scopes of practice (Bourgeault & Mulvale, 2006). This approach began at the province level with the

Regulated Health Professions Act of 1991 in Ontario, CA, with similar umbrella legislation following in other provinces (Leslie et al., 2021).

Mechanism

Within the context of legislation, umbrella frameworks seek to apply uniform standards to multiple health professions named within the same legislative framework. This approach sets out consistent provisions for governance, registration, complaints, discipline, appeals, public representation, regulation, and by-law making powers. The umbrella act is accompanied by specific regulations or statutes for individual professions that confer title protection and include broad, non-exclusive scope of practice statements. These legislative statements are then used by the regulatory bodies to develop competencies, guidelines, and standards of practice. Legislative scope of practice statements and regulatory policies generally set the outer limits of the professions' scope of practice.

In addition to title protection and non-exclusive scope of practice statements, the umbrella legislative frameworks itemise several controlled or restricted acts. Specification of these acts (such as immunisation) are an effort to balance the promotion of interdisciplinary care while restricting higher risk activities to specific professional groups. Controlled or restricted activities may be granted to more than one profession and may also be delegated under certain conditions. The introduction of overlapping scopes of practice through the non-exclusive scope of practice statements and controlled acts model is intended to enhance flexibility for provider(s) who deliver services and encourage interprofessional practice.

Outcome

Umbrella frameworks introduce regulatory flexibility and loosen restrictions on scope of practice through the recognition of skill and capability rather than title (Bourgeault & Mulvale, 2006). The recognition of overlapping scopes of practice through controlled acts in provinces better enables a collaborative care model with suitable substitution possible based on health professional availability, consumer preference or other factors (Bourgeault & Mulvale, 2006). This model fosters greater interprofessional collaboration and improves patient experiences and access to care, which is likely to benefit overall health outcomes.

An analogous model is contained within the Health Professionals Prescribing Pathway (HPPP), which contains a national competency framework to provide a consistent approach to skill and capability recognition for medication prescribing by Australian health professionals, including medical practitioners, endorsed midwives, nurse practitioners, dentists, optometrists and podiatrists (Fox et al., 2023). Qualitative evaluations of non-medical prescribing trials in Queensland have shown prescribers and their team members consider non-medical prescribing to be safe, effective, and improve timely patient access to services (Bettenay, 2020; Tan et al., 2013). Professions covered under the NRAS can prescribe certain medications after obtaining the correct certifications. As set out in the HPPP, NRAS professions can obtain prescribing authority following this process which entails appropriate education, national board recognition, authorisation to prescribe within a certain scope of practice and maintenance of competence to prescribe. National Board

recognition for endorsement for scheduled medicines for NRAS professions is achieved through the Guide for National Boards (Ahpra, 2018). Following this, health professionals may be authorised to prescribe via a structured arrangement, under supervision, or autonomously if within their scope of practice (Aphra & National Boards, 2022).

Innovations such as these are hampered by jurisdictional differences that relate to transferability of authority between states, affecting continuity of care particularly for consumers in cross-jurisdictional regions. If a health professional is considered skilled, competent, and safe in one jurisdiction to complete an activity but not in another, not only does this limit the health professionals' scope of practice and professional satisfaction, but it can also create confusion and undermine trust amongst consumers and health professionals. Specifically, this includes legislation regarding medicines administration, radiation safety, termination of pregnancy, and voluntary assisted dying. Additionally, whilst the HPPP acknowledges national prescriber recognition through regulatory boards is possible, implementation has been hampered at a jurisdiction level through individualised requirements associated with Drugs and Poisons regulations. For example, a prescription that is valid in one state or territory may be invalid elsewhere, and the medicines affected by possible prescription invalidity are not consistent across jurisdictions (Hope et al., 2017).

Progress towards expanding prescribing rights have been established in other countries such as the UK, as detailed below.

Case Study: Non-Medical Prescribing in the UK

Context

Traditionally in the UK, prescribing medicines has been limited to "medical roles," with only medical professionals and dentists having full prescribing rights. This was challenged when the National Health Service (NHS), the main UK healthcare provider, sought to modernise the nation's healthcare system, by extending prescribing rights to non-medical professions (Graham-Clarke et al., 2019). In 2000, a white paper, "The NHS Plan," extended the scope of nursing and health professional roles to prescribe certain medications (Department of Health, 2000). This amendment intended to provide an opportunity to reduce wait times, decrease hospital admissions, and widen the skills of healthcare teams.

Mechanism

The Department of Health specifies which registered professionals can become non-medical pre-scribers including nurses, midwives, pharmacists, physiotherapists, podiatrists, paramedics, op-tometrists, therapeutic radiographers, diagnostic radiographers, and dietitians (Health Education England, 2018). Following the NHS Plan, non-medical prescribers were required to complete a certified training course and register with a professional regulatory body that may designate them as an independent, supplementary, or community practitioner prescriber (Graham-Clarke et al., 2019). The training course follows a national competencies framework that outlines what best practice prescribing looks like (Royal Pharmaceutical Society, 2021).

Outcome

Non-medical prescribing has been shown to improve both patient satisfaction and job satisfaction for practitioners, while allowing for more efficient and effective access to medicines for consumers (Dunn & Pryor, 2023). Ultimately, this legislative advance has helped in addressing broader health issues by increasing service capacity to meet patient demand. However, sub-optimal utilisation of non-medical prescribers may exist relative to physicians (Drennan et al., 2014) due to implementation issues and a low perceived value to the health care system (Cooper et al, 2008; Bhanbhro et al., 2011).

Following the continual advancement of prescribing rights by non-medical prescribers in the UK, Australian providers have also moved towards expanding their roles. Over 80% of Australian nurses report they would be highly likely to pursue expanding their scope of practice into prescribing medicines (Fox et al., 2022). Non-medical prescribers, such as Emergency Physiotherapy Practitioners, were found to provide patients with a high level of consumer confidence and satisfaction, improving community access and appropriate prescribing when necessary (Cruickshank et al., 2019). A recent systematic review from the United States shows that expanded state nurse practitioner practice regulations were associated with greater nurse practitioner supply and improved access to care among rural and underserved populations without decreasing care quality (Yang et al., 2021). This reinforces that the potential for benefit is even more significant in rural and remote Australian communities, where there is a maldistribution and shortage in the traditional prescriber workforce and socioeconomic factors disproportionately affect healthcare (Noblet et al., 2018).

Similar to non-medical prescribing in the UK, policy change in Canada has extended the scope of practice of pharmacists to include administration of vaccinations.

Case Study: Pharmacists Administering Vaccinations in Canada

Context

In Canada, pharmacists in ten provinces and one territory can apply for authorisation to administer vaccines by injection following completion of required training courses (Canadian Pharmacists Association, 2023). Pharmacists are among the most accessible health care professionals; thus, global vaccine access and uptake can be greatly improved by introducing pharmacists as the primary immunisation administrator with proper legislation. This helps reduce coverage in essential childhood vaccination as well as meeting the increasing life-course vaccination requirements of an aging population (Fonseca et al., 2019).

Mechanism

Vaccination services provided by pharmacists are not universal upon licensure but require additional certification to modify their scope of practice. Upon completion of the training program and appropriate certifications, pharmacists have the capacity to administer twelve different vaccinations against influenza, pneumococcal, and herpes zoster (Fonseca et al., 2019). The competencies expected are standardised by the National Association of Pharmacy Regulatory Authorities and accredited by the Canadian Council on Continuing Education in Pharmacy, which varies by provincial/territorial level (Fonseca et al., 2019).

Outcome

Over the past ten years, Canadian pharmacists have drastically increased the geographic area they service and played a critical role in the COVID-19 pandemic (Ontario Pharmacists Association, 2022). Pharmacy-based vaccination services have resulted in significant increases in vaccination uptake, predominantly due to flexible hours and wide geographic spread (Houle, 2022). Legislation changes in vaccination authority standards and methods have enabled healthcare to adapt to its contemporary demands and reach underserved communities.

In Australia, all states and territories modified their legislation between 2014 and 2016 to expand pharmacists' scope of practice to include vaccination services. These amendments aimed to improve immunisation uptake and promote public health. Since its inception, pharmacist-administered vaccinations have evinced strong economic and public health gains. One of the prominent benefits of this legislation change is the increased access and convenience for consumers. A study of consumers receiving vaccination from Western Australian pharmacists considered the service to be convenient, accessible, and safe for use (Hattingh et al., 2016). In addition, consumers valued the flexibility of scheduling appointments either by appointment or walk-in. Pharmacist administered immunisations are often cheaper than seeing a GP or entirely free if listed under the National Immunisation Program Schedule (Hattingh et al., 2016). To complement pharmacist as immunizer legislation, specific vaccination training programs are now incorporated into undergraduate and graduate pharmacy courses in line with the National Immunization Education Framework for Health Professionals, emphasising continuing education to optimise the skills of the medical workforce (Bushell et al., 2020).

The creation of flexible and broad training proved invaluable for meeting workforce demand during the pandemic, in which pharmacists were shown to be the most frequent immunizer professional groups (representing nearly half of all COVID-19 vaccinations) followed by nurses, midwives, and general practitioners (Giles et al., 2022; Pharmacy Guild of Australia, 2022). Utilising directives from the Australian Technical Advisory Group on Immunisation (ATAGI), pharmacists could adapt, expand, and utilise their vaccination skills during the pandemic (Department of Health and Aged Care, 2020). In some jurisdictions, vaccination administration was enabled for a broader range of health professionals, such as Aboriginal and Torres Strait Islander Health Practitioners, Midwives, Dentists, Oral Health Therapists, Occupational Therapists, Dietitians, Speech Pathologists, Podiatrists, and others, if they had completed the required Commonwealth and state training programs (Queensland Health, 2022a). This was enabled through changes to Section 58 of the Medicines and Poisons Act 2019 under an Emergency Order – COVID-19 Vaccination Service Providers – COVID-19 Vaccine and Influenza Vaccine (Queensland Health, 2022b). As evidenced by the vaccination experience during COVID-19, it is possible to initiate more task-based activities that enable a wider range of health professionals to contribute to care in a controlled and safe manner. The increased vaccination workforce available made it possible to alleviate pressure from doctor shortages on the health system, work more collaboratively with other professions, and demonstrate the ability of health professionals to adapt their roles (Nguy et al., 2020). This task-based recognition has not been maintained or extended to other activities outside of this emergency context.

Scope of practice legislation and regulation plays a defining role in exploring and affirming what services health professionals may offer, as exemplified in case studies globally and in Australia. The effective use of non-medical prescribers, such as nurses and midwives, in Australia has potential to help tackle broad and complicated public health issues such as antimicrobial resistance, as they follow a continuity-of-care model and appear to be following

antimicrobial stewardship and evidenced-based therapeutic guidelines (Hawley et al., 2023). Non-medical prescribers also ensure equitable and appropriate access to healthcare for all, which is especially useful in rural communities who disproportionately bear the burden of workforce shortages, access, and affordability inequities in the healthcare system. By fully utilising the healthcare workforce and taking proactive measures to educate all professions, health professionals can work collaboratively to meet and adapt to the needs of the community and enhance the healthcare experience for both providers and the communities they serve.

4.5 Education and training

Education and training are important system-level elements which can impact a given profession's scope of practice. While most health professional educational programs are nationally accredited, suggesting a similar level of profession-specific competencies, sub-national jurisdictional differences continue to create variability in the scopes of practice for a given health profession within the same national jurisdiction.

As outlined in 2. Background, in Australia, the NRAS covers 16 registered health professions and National Boards which regulate these professions, register practitioners, and develop profession-specific standards, codes and guidelines. There are also significant contributions by self-regulated professions and the unregulated workforce.

One might assume moving away from a state and territory regulatory system to a national regulatory system would eliminate jurisdictional variations in scope of practice. But despite national-level accreditation and educational standards, the expression of a given profession's scope of practice in Australia continues to be shaped by other system level variables such as federal, state, and territory legislation and regulation related to funding and scheduled medicines; jurisdictional and clinical contexts of practice; and employer and professional association level credentialling within specific organisational environments (Birks et al., 2019; Scanlon et al., 2016; Smith et al., 2019). As a result, most health professions in Australia continue to see variations in scopes of practice across state/territory jurisdictions.

There are similar challenges internationally. In the United States, most health professionals are trained in educational programs which are nationally accredited via standard curriculums, and professionals must complete national competency exams prior to entry-to-practice. Despite these standards, there are several state-level regulatory and legislative restrictions which can impede the ability of health professionals to practice at the full scope of their trained competencies (Leslie et al., 2021). The scope of practice for any given health profession is regulated by state-based licensing laws rather than national competency standards, resulting in significant variations in the scope of practice for the same profession across different states. Evidence suggests this variability in scope can restrict the provision of health services, particularly across state borders (Leslie et al., 2021). Similar to registration endorsement in Australia, credentialling and privileging is a process through which health care institutions can expand practice authority for specific professionals within their organisations independently from federal and state legislation (Leslie et al., 2021). First, the credentialling process verifies and assesses an individual's qualifications to provide a given service, followed by privileging which allows organisations to independently authorise an individual to perform a specific scope within that facility (Leslie et al., 2021). For example, credentialling and privileging are often used to enhance the scope of practice of pharmacists to provide direct patient care services in their facilities (American Pharmacists Association, 2020).

In Canada, substantial variation in scopes of practice across the provinces persists despite national-level accreditation and educational standards for most health professions. What distinguishes Canada from other national jurisdictions is the self-regulatory status of health

professions via the statutory delegation of authorities to the provincial Ministers of Health to establish regulations, and to provincial regulatory authorities to govern the various professions (Leslie et al., 2021). In addition, these profession-specific regulatory authorities determine entry-to-practice credentials, uphold standards of practice via legislative statements, and develop competencies, guidelines, and standards for the profession (Leslie et al., 2021). In Canada, the limits of any given health professional's scope of practice are set via legislative statements and regulatory policies rather than defined by competencies, skills, and knowledge (Nelson et al., 2014). A lack of national coordination and the continued reliance on discrete provincial regulatory authorities for individual professions has created significant barriers to interjurisdictional workforce mobility and to broader health workforce reform (Leslie et al., 2021).

Interprofessional education and practice

The overall goal of interprofessional education, collaboration and practice is to provide health system users with improved health outcomes. Interprofessional collaboration (IPC) occurs when learners/practitioners, patients/clients/families and communities develop and maintain interprofessional working relationships that enable optimal health outcomes. Interprofessional education (IPE), which is the process of preparing people for collaborative practice, and IPC itself, are more and more frequently incorporated into health professional education and models of practice. For this reason, a clear understanding of the characteristics of the ideal collaborative practitioner is required to inform curriculum and professional development for interprofessional education and enlighten professional practice for interprofessional collaboration.

The Canadian Interprofessional Health Collaborative (CIHC) is made up of health organisations, health educators, researchers, health professionals, and students from across Canada (Canadian Interprofessional Health Collaborative, 2010). The CIHC identifies and shares best practices and its extensive and growing knowledge in interprofessional education and collaborative practice. The National Interprofessional Competency Framework, created by the CIHC, has formed a foundation for learners (students and educators) hoping to gain a sound understanding of the six different competency domains of interprofessional education. These competencies can be utilised as important cornerstones when building and facilitating interprofessional curricula or to evaluate and examine collaborative practice. The six competency domains are: 1) interprofessional communication 2) patient/client/family/community-centred care 3) role clarification 4) team functioning 5) collaborative leadership and 6) interprofessional conflict resolution.

Based on the foundations of the We are the NHS: People Plan for 2020/21 – action for us all plan which outlines actions to support transformation across the NHS workforce (National Health Service England, 2020). The Working differently together: progressing a one workforce approach Multidisciplinary Team toolkit provides practical guidance on effective implementation of multidisciplinary teams. It is part of a suite of resources and supports offered to support workforce design, including: HEE Star (NHS England, n.d.-a), a methodology for planning workforce design focusing on potential challenges including supply, upskilling, new roles, new ways of working and leadership and HEE Roles Explorer, a collection of support resources to support those responsible for planning and delivering workforce redesign (NHS England, n.d.-b)..

The toolkit is a step-by-step guide to help progress a one workforce approach across health and care organisations. In this context “one workforce” is drawn from a range of health and social care disciplines, designed to work together in a multi-functional team across clinical pathways for the benefits of patients/service users. It focuses on six enablers to effective multidisciplinary teams: 1) skill mix and learning, 2) planning and design, 3) working across boundaries, 4) shared goals and objectives, 5) communication and 6) culture. The toolkit

builds on the foundation recognition that there is no one set form of multidisciplinary team (i.e., setting, service or disciplines) and that many teams already work well together.

The Royal College of General Practitioners (RCGP) provides the Multidisciplinary Team Working toolkit – Royal College of General Practitioners (UK – England) (RCGP, 2018) to support practices to develop their clinical teams and create a way of working that is better able to meet their population needs for both urgent and routine primary care. The guide is intended for general practice and primary care teams who are thinking about introducing new clinicians into their multidisciplinary team. The RCGP recognise that expanding practice teams brings the opportunity to embed new skills into primary care, widening the range of services offered by general practice and working towards resolving some of the challenges currently faced in primary care.

Having ‘the right staff, with the right skills, in the right place at the right time’ is a complex process that requires careful planning and support. Leadership that involves everyone, including patients, and approaches to change management. The toolkit stresses that planning and optimising the health workforce skill mix should not just be a technical exercise (Buchan & Dal Poz, 2002). It emphasises that strategic workforce planning is a method of organisational change which requires careful planning, communication, implementation, and evaluation.

Healthcare needs are rapidly changing, intensifying conversation about the impacts of optimisation of scopes of practice on access to services. Currently jurisdictional laws and regulations often define specific legal scopes of practice for health professionals including the health services that can be legally offered (e.g., controlled acts) and the circumstances under which these services may be provided (the context for professional practice) (Leslie et al., 2021). Authorising regulations to support overlapping scopes of practice among health professionals is at the root of many of the contentious debates occurring across countries and professions. Standardising scopes of practice for health professions based on competencies or capabilities can enable service delivery to be unencumbered by state boundaries. Similarly, it is recognised that planning the establishment of new professions and expanding practice for existing professions must be based on the best available evidence and be within the parameters of training and competency for the profession (Dower et al., 2013).

The following case study describes the experience of an interprofessional education program for a skill set shared by multiple professions. This program is for social work and nursing graduate students to work collaboratively in the treatment of opioid use disorder (OUD) and other substance use disorders (SUDs).

Case study: Interprofessional opioid training program for Nursing and Social Work graduate students (USA)

Context

Over the last decade, opioid-related deaths in the United States have continued to rise despite law enforcement, governmental interventions, and healthcare education. Many states have critical shortages in addiction treatment and prevention resources to address the rising prevalence of substance use disorder yet continue to depend heavily on opioids to treat pain. Social workers and other behavioural health professionals trained to provide prevention, treatment, and recovery services for OUD are urgently needed (Fisher et al., 2024).

Mechanism

To help mitigate this workforce gap, an innovative three-year national grant-funded traineeship program was implemented to prepare social work and nursing graduate students to work collaboratively to assess and treat OUD and other SUDs, emphasising medically underserved communities in the Deep South. The traineeship included specialised coursework on evidenced-based practice in addictions, interprofessional telemedicine and simulation training, and field practice in outpatient treatment settings (Fisher et al., 2024).

Outcome

Significant increases were observed for trainees' self-reported knowledge, attitudes, and skills, with students reporting that the traineeship had improved their abilities to interact with underserved populations, collaborate and understand ethical issues in SUD treatment as well as enhancing their professional competence, clinical problem-solving, and health workforce skills. Findings suggest that the interprofessional training program may prepare social work and nursing graduate students to effectively serve clients with OUD and help to address a critical work-force gap in medically underserved communities (Fisher et al., 2024).

Interprofessional learning for entry-level health, nursing, and medical tertiary training programs in Australia is assessed using eight Interprofessional Learning Competencies (IPLCs) as reference points which are "formulated as assessable learning outcomes...intended to capture the knowledge, skills and application of knowledge and skills required for interprofessional practice" (O'Keefe et al., 2017). An evaluation of students' experiences of the IPLCs during a community-based interprofessional placement indicated that students had opportunities to attain all the IPLCs (Gordon et al., 2021, thus they appear suitable for inclusion in national curricula.

Non-medical Advanced Practice Roles

Non-medical advanced practice roles, such as Nurse Practitioners, Physician Assistants, and other allied health professionals, play a significant role in supporting the scope of practice of health professionals in various ways. Advanced Clinical Practitioners (ACPs) arose organically in the UK as early as the 1930s, not in response to formal policy from necessity, but due to healthcare workforce shortages (Timmons et al., 2023). The formal recognition of this work as "advanced clinical practice" in the UK began in the 1970s, however the title of "Advanced Clinical Practitioner" remains unregulated (Royal College of Emergency Medicine, 2022).

Case study: Advanced Clinical Practitioner (ACP) training and competence (UK)

Context

Advanced Clinical Practitioners (ACPs) have been described as "healthcare professionals educated to Master's level [who] have developed the skills and knowledge to allow them to take on expanded roles and scope of practice caring for patients" (NHS England, n.d.-d). They are increasingly embedded within a wide range of NHS healthcare settings spanning community services, mental health wards, and hospitals

with the aim to address the growing demand for skilled professionals in multidisciplinary care teams. ACPs can take on advanced and complex levels of clinical work with an aim to help alleviate the strain on medical professionals and enhance the efficiency of healthcare delivery (Kuczawski et al., 2024).

Mechanism

An NHS England framework sets out the standards for ACP training, incorporating clinical practice, leadership, education, and research pillars (England, 2024). As non-medical healthcare professionals, ACPs are required to undertake further education (Masters degree) and extended training in specific clinical areas such as nursing, pharmacy, or allied health professions to qualify. Within this framework, ACPs can deliver care with a high degree of autonomy and undertake complex decision making. The Centre for Advancing Practice has begun accrediting some of the many advanced clinical practice Masters programmes available in the UK which meet the standards laid out in the framework (Kuczawski et al., 2024).

Outcome

Nationally, the ACP role is increasingly integrated across many specialties, but challenges related to ACP training persist which impact the transition of professionals into the role. At a systems level, there remains a lack of structure and clarity around the ACP role, and at the professional level, ACPs continue to experience issues with supervision and support. Kuczawski and colleagues (2024) highlight how attaining advanced level practice is often challenging, and further improvements are necessary to successfully embed the ACP role into the workplace. The authors suggest that ensuring ACPs have appropriate continuous support, sufficient allocated time to learn and practice, and wider recognition of the ACP role via accreditation could improve the training experience and foster successful role transition (Kuczawski et al., 2024).

Education and training play a foundational role in supporting the scope of practice for health professionals, while continuing education requirements help professionals maintain and enhance their competencies over time. While education lays the groundwork, the specific scope individuals are authorised to practice within is further determined by state/provincial licensing laws, institutional credentialing policies, and other contextual workplace factors (see 4.5 Employer practices and settings). Overall, standardised accredited education is crucial for ensuring healthcare professionals have the competencies to practice safely and effectively within their defined scopes.

4.6 Employer practices and settings

Employer practices and settings have broad implications for an individual health professionals' scope of practice, which may include the extent of multidisciplinary collaboration. Individual practices and settings can also have system-wide influence and the potential to shape policy implementation, funding allocation, and uptake of health technology utilisation (e.g. telehealth). As outlined in 2. Background scope of practice for regulated professions, self-regulated professions and unregulated workforces in Australia is impacted by the National Scheme and Codes of Conduct, but the scope of practice of individual health professionals are also subject to employer practices and settings. The healthcare landscape

varies widely across states and territories, necessitating tailored resources for both private and public sectors in a wide array of professions. Depending on the locality, culture, and demographics of a particular setting, actual scope of practice may be highly divergent from state and federal law. These inconsistencies have the potential to cause health care workers to operate below their level of training and competence, restricting continuity of care.

The impact of individual employer practices and settings is highlighted below in the case study on midwifery practice roles in the United States. These roles are shaped by non-regulatory barriers, organisational and institutional policies, physician attitudes, and cultural practice norms.

Case Study: Non-Regulatory Barriers for Midwives in the United States

Context

Workload and workforce issues in primary care have led to an expansion in nursing roles globally. In the United States, advanced nursing roles, including Certified Nursing Midwives (CNMs), have worked in maternity care since its introduction in the early 1960s to meet demand, yet they are historically underused (Torrens et al., 2020). Many countries use midwives as their primary provider during antepartum, intrapartum, and postpartum care, yet the United States favours physician-led care, despite midwives generally offering lower medical costs, extensive knowledge, and reduced birth interventions (Raipuria et al., 2018). This is a critical shortcoming of the US healthcare system, which has one of the highest caesarean birth and maternal mortality rates of any high-income country that disproportionately affects disadvantaged and minority communities (Thumm et al., 2022). Although state-based regulation sets legal barriers for practice, non-regulatory factors such as workplace culture, institutional practices, and leadership varies strongly amongst practices, acting as a barrier to proper scope of practice utilisation.

Providers in Australia have reported similar positive experiences with expanding roles of non-medical workers, which may be variably supported or hindered by employer practices. Lowe and colleagues (2021) find that nurse practitioners may be increasingly available in primary care settings, which has been recognised by Australian and international policymakers as a key strategy to improve service delivery. However, a case study of nurse practitioners from Victoria found concerns regarding a lack of role definition and boundaries to guide their scope of practice (Considine & Fielding, 2010). In practice, this may lead to poor teamwork, lack of collaborative partnerships with other health-care providers, and a deficiency in established approaches to patient care that may jeopardise the long-term sustainability of such professions (Considine & Fielding, 2010). These barriers are rooted in a lack of review of policies and a lag in the uptake of federal legislation (Scanlon et al., 2016) which highlights the need for proactive approaches to practice standards to ensure performance is maximised and improve patient outcomes.

Primary care settings can greatly benefit from the implementation of multidisciplinary care teams, which have become globally more prominent to meet the chronic health needs of aging populations. These teams need adequate administrative and other support to ensure coordinated and collaborative care models are successful. Without these enabling environments, workforce fragmentation or the formation of silos within multidisciplinary care teams may develop.

The following case study details how fragmentation of multidisciplinary teams has been mitigated in the UK through the use of Primary Care Networks (PCNs), which combine tailored legislation and funding across a variety of practices and settings to properly serve communities. With careful implementation and support through mechanisms such as these, multidisciplinary teams can act as an enabler to scope of practice utilisation.

Case Study: Expanding the Workforce: Additional Roles Reimbursement Scheme in the UK

Context

To improve access to primary care services in England, the NHS launched the Additional Roles Reimbursement Scheme (ARRS) in 2019 (NHS England, n.d.-c). This program provided funding to recruit additional medical roles into Primary Care Networks (PCNs) to meet the specific needs of communities. PCNs draw together 18 professional roles such as hospital GPs, clinical pharmacists, paramedics, and nurse practitioners to collaborate in the planning and provision of health care services. This mechanism allowed pharmacies, mental health facilities, and hospitals to act as a collective unit to increase healthcare service capacity to serve communities of roughly 30,000 to 50,000 individuals and widen the range of services offered.

Mechanism

The ARRS sought to recruit 26,000 new medical staff and create an additional 50 million general practice appointments by 2024 in the five-year plan. Based on the size of the patient population, PCNs receive funding that can be put towards employment costs for the different roles employed in PCNs, including wages, pensions, and national insurance. These services are regulated by the Care Quality Commission (CQC) to ensure day-to-day support, continuous professional development, and maintain high clinical standards (NHS England, 2023).

Outcome

Ultimately, the ARRS has met its key targets as it achieved 50 million more appointments in November 2023 and recruited 26,000 ARRS staff in March of 2023 (MacConnachie, 2024). Additionally, over 99% of general practices in England are enrolled in PCNs with 1,250 networks established across the country (NHS England, 2024b). Case studies have exemplified many achievements including improved access, decreased workforce pressures, and increased the range of services that can be offered to communities (Bramwell, 2023). By employing multidisciplinary teams, practitioners can share knowledge and design more person-centred care plans that avoids fragmentation and discontinuity of health services. Ultimately, PCNs via ARRS have increased workforce collaboration, decreased the competitive nature of healthcare entities, and reduced pressure on secondary care, such as emergency department visits (MacConnachie, 2024). CQC supervision of the multidisciplinary teams assures the safety of patients, improves staff retention, and enhances overall productivity.

The above case study exemplifies how employer practices can be systematically modified in a way that promotes unification and collaboration on a multidisciplinary level across communities.

In 2015, Australia established Primary Health Networks (PHNs) to assess the health care needs of communities, connect, and commission health services to strengthen the primary health care system. PHNs regularly assess the needs of the community by identifying inefficiencies, looking at evidence from various sources, and reviewing existing health services. Alongside these reviews, this process is guided by consultations from a variety of key stakeholders including community workers, government departments, and academics (Australian Government Department of Health, 2022).

Despite the role of PHNs in primary care, the ability to utilise the full scope of practice of health professionals has not been realised. Case studies have shown consumers have reservations with the current system due to fragmentation in care, which hinders scope of practice. In South Australia, 10% of individuals aged 65 or older have unplanned admissions within 28 days of hospital discharge (Rupa et al., 2022). Qualitative studies have shown this is ultimately due to a lack of communication and collaboration between primary care establishments, hospitals, and aged care sectors (Rupa et al., 2022). An analysis of PHN planning documents has highlighted how PHNs planned activities were largely restricted to individualistic clinical and behavioural approaches and risk focusing too narrowly on a clinical level, but neglect to properly address issues with upstream social services or broader social determinants of health, allowing for inequities to persist (Windle et al., 2023).

Approximately 30% of the Australian population lives outside of metropolitan areas, with 11% considered very remote, including nearly half Aboriginal and Torres Strait Islander populations (Muirhead & Birks, 2019). The health of rural and remote individuals in Australia is poorer than their urban counterparts with higher chronic disease, injuries, and premature fatality (Muirhead & Birks, 2019). The Australian Government has acknowledged these health disparities and has taken strides to address this with the National Strategic Framework for Rural and Remote Health to build an appropriate workforce and explore scope of practice options. In Queensland, a state with significant rural and remote populations, a “fit for purpose” educational model has been proposed to create rural and generalist training for registered nurses (Queensland Health, 2017). One such initiative, the Rural and Isolated Practice Registered Nurse qualification, authorises nurses to initiate medicines such as antimicrobials and immunisations, with specific guidelines to meet the needs of communities (Muirhead & Birks, 2019).

In the United States, paramedics and emergency medical technicians with expanded scope have been critical in creating a more cohesive care network and alleviating the disparities rural communities experience with healthcare access, as outlined below.

Case Study: Community Paramedics in Rural Areas of the United States

Context

In the United States, over 46 million Americans, or 15 percent of the population, live in rural areas (Centres for Disease Control and Prevention, 2023), yet this large portion of the population faces stark disparities in healthcare due to limited access. The outcomes of these insufficiencies are evident in studies that have found rural Americans have higher morbidities, mortality rates, obesity, and chronic diseases than their urban counterparts (Skinner et al., 2022, p. 2). Due to policy changes, such as the Affordable Care Act, paramedics and emergency medical technicians (EMTs) can operate in

expanded roles to assist public health and primary health care by offering preventative services to underserved communities (Rural Health Information Hub, 2023).

Mechanism

Licensure and regulations for community paramedics vary from state to state but are typically treated as an expanded role for paramedics and EMTs without the need for additional licence or certifications. Implementation of many community paramedic programs requires a 44-hour supplemental training course with a focus on managing chronic health conditions and public health responses alongside typical emergency responsibilities. These individuals are typically employed by hospitals to reduce emergency department use and several states cover community paramedic visits under Medicaid. These processes are monitored under the State Flex Pro-gram to continually monitor rural community paramedicine programs (Rural Health Information Hub, 2023).

Outcome

Community paramedics have been shown to be effective in managing chronic disease, decreasing medical costs, and reducing emergency department visits and readmissions (Patterson et al., 2016). Notably, these expanded roles have been shown to fill gaps in health services, improve access to health monitoring, and improve support for vulnerable populations (Atismé, 2021). Collectively, this systematic change allows for better access to health care in settings that were previously underserved and limited in tailored resources. This has the potential to act as a model for other professions and sectors.

Similar paramedic initiatives are being undertaken in New South Wales, rural Western Australia, and in remote northern Queensland (O'Meara, 2012). In New South Wales, the Ambulance Service has recognised over a quarter of transportations were not explicitly warranted, highlighting a need to reorganise in order to address the rise of chronic disease, reduced availability of GPs and overall primary care service engagement (O'Meara, 2012). A study of older populations in rural Western Australia found that paramedic's screening of risk factors for hospital-inducing falls to be effective at identifying at-risk individuals (Peters et al., 2023). Lastly, reports from Queensland paramedics have identified a gap in training and educational practices on chronic illnesses, citing a need for expanded scope of practice (Glass, 2007).

Paramedicine continues to be tailored to the communities it serves through expanded roles in primary care and preventative medicine. Evidence has shown community paramedics are capable and greatly utilised in disadvantaged communities to improve access and reduce healthcare spending. One thematic study found paramedic roles in remote settings to be limited based on local legislation and education, even though practices in South Australia and the Northern Territory are heavily reliant on paramedics to fill in for GP and nurse shortages, respectively (Blacker et al., 2009).

Employer practices and settings have broad impacts on individual scope of practice utilisation and performance. Despite government legislation and regulation, inconsistencies exist amongst individual practices and settings due to individual community needs and available resources. The implementation and utilisation of multidisciplinary teams, as shown with the Primary Care Networks in the UK, can work as a powerful tool to prevent fragmentation of care and reduce duplication of efforts, thereby supporting scope of practice.

Although similar action has been taken in Australia with Primary Health Networks, a lack of communication and collaboration amongst entities has been criticised and thought to contribute to ongoing inequities in health (Rupa et al., 2022). This may particularly affect rural communities which disproportionately experience these inequities. One powerful initiative has involved expanding paramedic's role in the community to take a more preventative, rather than reactive role, in the healthcare system. Similar to the success experienced with community paramedics in the United States (Patterson et al., 2016; Atismé, 2021), these new models for paramedics have increased access to rural communities as well as decreased the pressure on primary health entities.

4.7 Technology

In the digital age, Australian Government agencies have strived towards incorporating technology in strategic plans to support primary care to deliver better outcomes. The Department of Health and Aged Care Digital Health Blueprint 2023-33 outlines an Action Plan to progress health system-wide digital reform, encompassing effort across Commonwealth, States and Territories, sector and consumers (Department of Health and Aged Care, 2024b). This is supported by the Australian Digital Health Agency's 5-year National Digital Health Strategy (Australian Digital Health Agency, 2023). The Strengthening Medicare Taskforce Report (Australian Government, 2022) states modernising of primary care through data and digital technology is one of its four core pillars to inform value-based care. Australia's Primary Health Care 10-year Plan 2022-2032 (Commonwealth of Australia, 2022) endorses the need for technology infrastructure to support a shift in the primary care system towards a patient-focused, value-based, multidisciplinary care team-based system. However, it emphasises that cultural shifts across professions are equally critical to effectively deliver the required reform and enable each element of the workforce to work to full scope.

Effective interprofessional communication is required for integration of health professionals into primary healthcare teams, which may be aided by effective utilisation of technology platforms and infrastructure. This is particularly important in the primary care setting where technological and other systems vary widely between practices, which raises challenges compared other often co-located settings like acute care. Benefits of these technologies include more informed care decisions and improved reach and accessibility of primary health care (including beyond traditional clinical settings). This can be particularly beneficial in rural or underserved areas where access to healthcare may be limited.

Enhancing availability and access to digital technology platforms was noted as a major facilitator of health practitioners working to their full scope of practice within the literature. This is due to their capacity to streamline processes, reduce administrative burdens, and facilitate more efficient care delivery and communication. Digital health technologies including electronic health records, telehealth services, predictive analytics, and other digital support tools were recognised as optimisers of primary health care scope of practice. There was emphasis on the need for suitable underlying mechanisms and support structures in order to effectively integrate digital technologies into primary clinical care and optimise their impact on health behaviours and outcomes (Antonio et al., 2020).

Telehealth

Interventions to allow health professionals to operate at full scope of practice are increasingly incorporating telehealth components. For example, Baral (2022) compared systolic blood pressure interventions delivered by nurse practitioners and pharmacists via telehealth with usual care (office-based primary physician intervention). The virtual blood pressure intervention was found to have a greater impact on systolic blood pressure.

Telehealth may also be used by GPs to more efficiently connect with specialists for advice. The Rapid Access to Consultative Expertise program connects GPs in British Columbia and Yukon to specialist colleagues for urgent advice within 2 hours. This has been found to reduce the volume of face-to-face specialist consultations required, which are a significant financial and time burden on regional patients, and reduced unnecessary Emergency Department presentations, improving health system efficiency (Wilson et al, 2016).

Electronic medical records

Digital integration has been progressed in Australia through the introduction of the My Health Record system, which a 2018 Auditor-General report concluded was 'largely effective' in its implementation (Australian National Audit Office, 2018). In an evaluation of the Health Care Homes trial (a multidisciplinary care team-based program and part of the Australian Government's Healthier Medicare initiative), My Health Record was described by providers as an increasingly useful information sharing tool over the course of the trial. However, there were opportunities identified for increased My Health Record functionality, and negative public perceptions of My Health Record were also noted as a barrier to enrolment in the trial, which initially mandated opt-in to My Health Record (Pearse et al., 2022). Digital systems at the State and Territory level seek to introduce additional interoperability and connectivity between primary health care services. In Victoria, the eReferral program enables referrals between providers through an encrypted digital format, managed at the PHN catchment level. While the Victorian program is yet to be formally evaluated for outcomes, a study of a similar eReferral program in northwest Tasmania found workplace culture, security concerns, ease of use and interoperability as barriers to fully embed the software (Hughes et al., 2021). Craig et al (2021) found that effective task shifting of documentation into electronic medical records by scribes or administrative staff resulted in notes of equal or greater quality compared to paper-based records. This also increased health professionals time to provide direct clinical care, enhancing job satisfaction and retention.

Technology and integrated care models

Technology was recognised across the literature as seeking to address entrenched barriers to interprofessional communication. Integrated information communication systems are therefore an enabler of integrated and collaborative care models, at both a micro (team-specific) and macro (system-wide) levels (Nelson et al., 2014) when accompanied by cultural change to help teams develop skills to work as partnerships (Schottenfeld et al., 2016). For example, technology was identified as one enabler of nurse-led models of care. A cost analysis of an American home-based nurse care coordination program found that use of medication dispensing technology was a cost-effective intervention for frail elderly consumers (Marek et al., 2014).

Technology and culturally safe care

The interaction between digital health technology and culturally safe primary care was also examined in the literature. In a review of the uptake of an e-mental health intervention among Aboriginal and Torres Strait Islander health professionals, a range of organisational barriers (including organisational culture and policies, lack of confidence and skills, beliefs about e-health) and enablers (change champions, dedicated consultation training sessions) were identified, highlighting the cultural considerations that are critical to the effective uptake of digital health technologies (Bennett-Levy et al., 2017). Furthermore, in a study of occupational therapy in remote First Nations communities in Australia, Canada and the USA, the increased use of technology was identified as a valuable supplement to underlying culturally safe approaches (such as a client/family-directed approach and relationship building), ultimately allowing remote-practicing therapists to work to what they observed as a fuller scope of practice in remote areas compared to non-remote areas (Pidgeon 2015).

Limitations

Across the literature, limitations were noted in technology as a stand-alone intervention, in that health professionals typically will require significant support from systems and infrastructure to provide full scope of practice and team-based care in addition to technology solutions. Significant challenges were also identified across countries and professions in the implementation or adoption of systems that allow for seamless communication and information sharing among primary health care providers. For some professions, there is a constraint on the type of technology and specialist tools available in primary care, compared with other more specialist practice settings (e.g. diagnostic equipment), which then affects the extent of the contribution they can provide. These barriers also extended to the availability of infrastructure and technology for remote consultations, telehealth, and access to digital health records, which if available could expand the scope of professional contribution and integration into primary care.

Canada offers insights into how a coordinated, government-led approach can drive the adoption of electronic health records and virtual care technologies to modernize the healthcare system and improve patient outcomes.

Case study – Digital health technology in Canada

Context

Government-funded agency Canada Health Infoway has spearheaded technology uplift in primary health care. In 2008, Alberta dissolved its health regions into a single entity, Alberta Health Services (AHS), with the goal of making the system more streamlined, efficient, effective, innovative and equitable (Government of Alberta, 2008a) and established a single electronic health record, AHS MyHealth Record intended to improve continuity of care and quality of treatment decisions (Government of Alberta, 2008b). In Alberta's 5-Year Health Action Plan 2010-2015, a need to increase the uptake of the portal among health professionals was identified, as well as an additional need for a reliable patient-facing electronic portal (Government of Alberta, 2010).

Mechanism

The AHS MyHealth Record is accessible by a range of medical and non-medical primary health care providers, giving health professionals visibility of up-to-date patient information (Government of Alberta, 2010). The platform tool enables addition and storage of personal health information, sharing between health providers, tracking of information from devices (e.g., blood pressure monitors or fitness trackers) and the ability to safely exchange messages with health care providers.

The patient-facing portal, MyAHS Connect, established in 2019, allows residents 14 years and older to access their personal health information including lab tests, diagnostic imaging, medications, and immunisations and interact directly with the AHS. Patients can manage upcoming appointments or see past appointment summaries, securely send and receive messages from their healthcare team, request prescription renewals, share smartphone and medical device data (e.g., Apple health, Fitbit) with their AHS care team and have access to trusted health information among other functions.

Outcomes

These dual systems have promoted interoperability between health services, greater consumer participation, and ultimately contribute to better primary health care services. Uptake of the system has grown significantly over its lifetime, with just under 20,000 profiles created at launch growing to 1.5 million users by the end of 2023 (Government of Alberta, 2019; Government of Alberta, 2023).

The AHS MyHealth Record has led the way for a suite of electronic health systems implemented across Canada. The 2022 Commonwealth Fund International Health Policy Survey of Primary Care Physicians examined access to care across 10 countries and found Canadian physician were receptive to recent efforts across Canada to increase uptake of virtual care technologies. Canadian primary care physicians were more satisfied with practising virtual care (84%) compared with international peers (68%) (Canadian Institute of Health Information, 2023). They generally did not find the implementation of a virtual care platform in their practice to be challenging, compared with their peers. Physicians observed positive outcomes, including improvements in the timeliness of care, and effective assessment of mental and behavioural health needs of their patients (Gunja et al., 2023).

In Ontario, the Digital First for Health strategy, released in 2019, supports the Ontario Government vision of a modern and fully connected health care system (Hein & Ontario Ministry of Health, 2019). The aim is for people to choose how they receive care and services, and control personal health information without needing to retell their stories. For health care providers, this means having the necessary information and supports at their fingertips, enabling them to focus on care rather than technology. The first phase of the strategy resulted in approximately 55,000 more video visits provided by physicians directly to patients in their location of choice in the first year. This expansion to virtual care was timely with the COVID-19 pandemic arrival in early 2020 placing significant pressure on the health care system.

The case study on Canada's efforts to implement electronic health records and virtual care systems presents several valuable learnings for Australia. It highlights the importance of a government-driven, centralised approach in rolling out such initiatives, as exemplified by the roles played by agencies like Canada Health Infoway and Alberta Health Services. It demonstrates the benefits of a dual system that caters to both healthcare professionals (through platforms like MyHealth Record) and patients (through patient-facing portals like MyAHS Connect), enabling seamless information sharing, better care coordination, and increased patient engagement. The case emphasises the positive outcomes of such initiatives, including improved continuity of care, better-informed treatment decisions, increased uptake of virtual care, and greater patient satisfaction. Lastly, it underscores the need for a comprehensive digital health strategy, like Ontario's Digital First for Health, that promotes system integration, information sharing, and patient choice, ultimately leading to a more modern and connected healthcare system.

Australia has made progress with initiatives like the My Health Record system and increasing uptake and reimbursement of telehealth services, especially during the COVID-19 pandemic. Implementation of a comprehensive national digital health strategies to drive further modernization and connectivity are commendable, but their success is subject to progress reviews which are forthcoming. Room for improvement is likely in areas such as increasing

uptake and usage of digital health tools among healthcare providers and patients, and better integration and interoperability between different healthcare systems and jurisdictions.

5 Discussion

Australia has a health system that is generally the envy of most other nations. Primary care health services, and the associated workforce is an essential component of that. The primary care workforce model in Australia aims to strive towards providing comprehensive, patient-centred, and accessible healthcare services, promoting a holistic approach to health and well-being, focused on better health outcomes for Australian people, health care providers and the health care system. However, the inability to fully utilise all members of the primary care workforce team is currently limiting the overall positive impact on the community.

Australia's Primary Health Care 10-year Plan 2022-2032 has outlined a need to shift primary care to a patient centred system, focused on wellbeing instead of illness (Commonwealth of Australia, 2022). The plan endorses the concept of a value-based view of the primary health care system rather than a volume-based one, with coordinated, and multidisciplinary care teams instead of multiple independent and sometimes competing providers. While the plan recognises that funding reforms and technology infrastructure will be needed to support these changes, it points to the need for key cultural shifts across the professions to effectively deliver multidisciplinary team-based care and an integrated care system to enable each element of the workforce to work to full scope.

These ambitions are also supported by the recommendations of the Strengthening Medicare Taskforce Report (Australian Government, 2022), which outlines four core pillars: Access to high quality primary care, multidisciplinary team-based care, modernising primary care, supporting change management and culture change. The report also recommends a suite of key initiatives to support and optimise the utilisation of the primary care workforce. Notably these include strategies to support and encourage team-based care, support for greater integration of nursing and allied health services and importantly work with states and territories to review barriers and incentives for all professionals to work to their full scope of practice.

Australia is not the only country examining how to improve the effectiveness and efficiency of the primary care workforce. These sentiments are echoed in similar pieces of work internationally, notably the Canadian Academy of Health Sciences (2014) report – Optimizing Scopes of Practice: New Models of Care for a New Health Care System, which sought to address the question “What are the scopes of practice that will be most effective to support innovative models of care for a transformed health care system to serve all Canadians?” The key findings of the report highlighted a pressing need to shift the health care system from one that is characteristically siloed to one that is collaborative and patient-focused by empowering the collaborative practice team to determine the relative responsibilities of the different practitioners based upon community need.

More recently the Canadian Academy of Health Sciences has completed a further piece of work Canada's Health Workforce: Pathways Forward (2023), where it was specifically noted that healthcare is delivered “to people by people” – a workforce of healthcare practitioners – without whom health systems cannot function. Importantly therefore, individual and population health outcomes are dependent on the time, effort, expertise, and skill mix of the health workforce. While recruitment and retention pathways were a key part of the outcomes of the report, two of the other priorities included: transforming care through optimized scopes of practice within team-based models, supported by appropriate technology and properly aligned incentives and embedding a culture of health workforce planning supported by enhanced data and decision-making tools.

The health workforce is one of our greatest health system resources (Maier et al., 2022). Globally, planning has frequently focused on the required density and distribution of specific health professions to ensure universal access to and coverage of health services (e.g., the

number of doctors or nurses per population) (Campbell et al., 2013). This current profession-based workforce planning method encourages a siloed approach to addressing patient and service need in turn driving service models, funding, and infrastructure planning.

Generally, there has been limited attention placed on identifying the right composition and skill-mix of the health workforce based on the needs on the population (Cometto et al., 2013). However, across the evidence review, constantly team-based care and optimising the skill and capability mix of health professionals was highlighted as a key enabler to better patient outcomes. The OECD report “right skills, right jobs, right places” has taken an integrated approach to health workforce covering density, distribution, and skill-mix of health professions (OECD, 2016) where it identifies primary care workforce as a critical component in achieving successful population health outcomes.

By including a scope of practice lens there is an opportunity to develop an interdisciplinary view and agreement on the essential services, and therefore skills and capabilities (not professionals) required to deliver optimal health outcomes in primary care (Nancarrow & Borthwick, 2005). This approach is consistent with the recommendations from a review of the UK workforce changes that the nature of work needs to be redesigned before the workforce can be changed (Bohmer & Imison, 2013). A similar approach has already begun within planning the National Mental Health Workforce Strategy 2022-2032 (Australian Government Department of Health and Aged Care, 2022a). The central role of consultation and evidence-based planning in the design of workforce strategy is highlighted in Australian (Victorian Department of Health, 2024) and international (Scottish Government, 2022; An Roinn Sláinte Department of Health, 2017; Health New Zealand, 2023) workforce strategy documents.

This evidence review has examined full scope of practice across individual professions, representing various countries and health systems. While individually each piece of evidence is valuable in offering a view of how a particular profession (or professions) may utilise their scope of practice to its full potential for patient care, the type of patients, location, funding model and training system may differ nationally and internationally and may be perceived to limit the specific application of the evidence to Australian professional practice. However, when the cumulative evidence of impact of how the full scope of practice of health professionals is considered in terms of improved patient experience, better outcomes, lower costs, clinician well-being and health equity we gain a greater view of the overall contribution of the primary care workforce. It is then the implications of this utilisation of health professionals to their full scope of practice to the health system in primary care health service delivery which provides potential key learnings for the Australian context.

While the evidence specifically examining impacts on culturally appropriate care and health equity for First Nations populations was more limited, the models of care demonstrated in the literature showed the importance of multidisciplinary, culturally capable workforces. There is a pressing need for more research investigating how culturally safe care and equitable health outcomes can be achieved through optimising this important workforce. This included the need to build capacity and capability to support education and research within the First Nations Health Workforce development area.

It is clear from the evidence review that countries acknowledge that overcoming the complexity of scope of practice optimisation for their health workforce will require a comprehensive multi-stakeholder approach, system leadership, policy, and culture change. It must include strategies not only to recruit and retain healthcare providers for primary care, but also to enhance team-based care models, and invest in healthcare infrastructure, support, funding, and resources (Buchan & Dal Poz, 2002; WHO, 2016; Nelson et al., 2014; McKenna et al., 2015). Effective implementation of innovative models of care, including interprofessional and collaborative practice models in primary care utilising full scope of practice have been shown to require clear leadership, culture change, influence, and support. These culture and leadership changes need to occur at all levels of the system

(individual, workplace, profession etc) for change to occur (Smolowitz et al, 2014, Lewis and Gill, 2023, Pipe et al, 2008).

Overall, the results of the evidence review have emphasised key evidence for improved access to care and improved patient experience; evidence for equal or improved health outcomes; evidence for reduced costs and improved cost effectiveness; evidence for improving access and health outcomes and support for improved practitioner well-being. While also highlighting the considerable evidence from individual professions and countries which connects to the Unleashing the Potential of our Health Workforce, Scope of Practice Review focus areas of education and training, employment practices, leadership and culture, technology, legislation and regulation, and funding mechanisms. While individually within the focus areas there are valuable learnings in what can or could work within the Australian context there are significant overlapping connections between the areas (e.g. legislation / regulation and funding) and a continuous thread woven between them pointing to the importance of culture and leadership in creating a changed practice environment for the future.

6 Conclusions

Australia's primary care workforce model is centred around an aim to provide accessible and comprehensive healthcare services to the population. The primary care workforce is diverse and operates across a wide variety of practice settings. The Australian primary care workforce model also reinforces the importance of a multidisciplinary approach and team care. While it aims to provide comprehensive, patient-centred, and accessible healthcare services, the current inability to utilise all members of the primary care workforce to full scope is limiting the overall impact on the community.

The outcome of this evidence review contributes evidence supporting the essential value of health professionals working to their full scope of practice and/or expanded scope of practice in primary care. The review provides a view of full scope of practice by major professional groups with international examples. The overarching barriers, risks, enablers, opportunities, and benefits arising from working to full scope of practice were extracted across the evidence review and the impact in the context of the health services performance framework were evaluated.

Overall, taking the evidence review outcomes into consideration, a comprehensive approach would fundamentally be required to enable the scope of practice optimisation in primary care. The ability to provide suitable incentive structures, regulation, training, and education, interprofessional collaborative team-based care environments, infrastructure and supports and advocacy and leadership for change will be critical in supporting any system change.

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Appendices

Appendix 1. Search Strategy

The core search strategy for Medline (OVID) outlined below was developed in consultation with an expert UQ health information science librarian. This core strategy was translated to the appropriate syntax for each database (Embase, CINAHL, Web of Science and Informit).

Search string: Scope of Practice

"scope of practice"[MeSH] OR "scope practice"[tiab:~2] OR "practice scope"[tiab] OR "role scope"[tiab] OR "full scope"[tiab] OR "advanced practice"[tiab] OR "extended practice"[tiab] OR "expanded practice"[tiab]

Search string: Professions

AND "Health Workforce"[Mesh] OR "Community Health Workers"[Mesh] OR "Physicians, Family"[Mesh] OR "Physicians, Primary Care"[Mesh] OR "General Practitioners"[Mesh] OR "Health Services, Indigenous" [Mesh] OR "Allied Health Occupations"[Mesh] OR "Allied Health Personnel"[Mesh] OR "Primary Health Care"[Mesh] OR "Nursing Assistants"[Mesh] OR "Pharmacy Technicians"[Mesh] OR "primary health*" OR "allied health" OR "health worker" OR "indigenous health" OR "aboriginal health" OR "first nations health" OR nursing OR nurse* OR midwifery OR midwife OR midwives OR audiologist* OR "dental assistant*" OR "dental hygienist*" OR "dental therapist*" OR dietitian* OR nutritionist* OR "diabetes educator*" OR paramedic* OR "first responder" OR "exercise physiologist*" OR "general practitioner*" OR physician OR "physician assistant*" OR "occupational therapist*" OR optometrist* OR orthoptist* OR "pharmacist" OR "pharmacy assistant*" OR "pharmacy technician*" OR physiotherapist* OR podiatrist* OR psychologist* OR psychotherapist* OR radiographer* OR "social worker*" OR sonographer* OR "speech therapist*" OR "speech pathologist*" OR orthotist* OR prosthetist*

Search string: Limits

NOT ("Comment" [Publication Type] OR "Editorial" [Publication Type] OR "Letter" [Publication Type]) NOT ("Animals"[Mesh] NOT "Humans"[Mesh]) AND (eng[la] OR und[la]) AND (2000:2023[dp]).

Appendix 2. Screening inclusion and exclusion criteria

Table 3: Screening inclusion and exclusion criteria

Parameter	Inclusion Criteria	Exclusion Criteria
Date	<ul style="list-style-type: none"> Peer reviewed literature published between 2000 and 31/10/2023. Grey literature published between 2010 and 31/10/2023. 	<ul style="list-style-type: none"> Peer reviewed literature published before 2000 or after 31/10/2023. Grey literature published before 2010 or after 31/10/2023.
Language	<ul style="list-style-type: none"> Published in English. 	<ul style="list-style-type: none"> Published in languages other than English.
Study design and document type	<ul style="list-style-type: none"> Empirical or review articles involving systematic methodologies, including scoping reviews. Must include description of methods indicating evaluation involved. May include grey literature if above criteria are fulfilled. 	<ul style="list-style-type: none"> Commentary or reviews without an evaluative component or with no methods described.^[1]
Population (i.e., health professionals)	<ul style="list-style-type: none"> All health care professions included in Appendix 3.^[2] 	<ul style="list-style-type: none"> Professions not included in the identified list (e.g., public health practitioners).
Setting	<ul style="list-style-type: none"> Focused on primary care setting per definition (and community care).^[3] 	<ul style="list-style-type: none"> Setting outside primary care.^[4]
Country	<ul style="list-style-type: none"> The main review will focus on Australian literature. An additional targeted search will include literature from the United Kingdom, Ireland, United States, Canada, New Zealand, and Western Europe.^[5] 	<ul style="list-style-type: none"> Countries and jurisdictions outside these areas.
Content/ evidence	<ul style="list-style-type: none"> Addresses (1) health care professions as listed in Appendix 2; (2) describes role/s and scopes of practice (top/full/expanded); (3) health care models (e.g., task-shifting, collaborative care models). Literature must be focused within the primary care health care sector, or directly influence it. 	<ul style="list-style-type: none"> Does not meet content criteria (e.g., extended scope activity or practitioner not listed). Literature that focuses on health-related models that exist outside primary care.

Appendix 3. In-scope health professions for the Evidence Review

Table 4: In-scope health professions for the Evidence Review

In-scope professions
Allied Health Assistants
Aboriginal and Torres Strait Islander Health Practitioners and Health Workers
Audiologist
Chiropractor
Counsellor
Dental Assistant / Hygienist / Therapist ^[7]
Dentist ^[8]
Diabetes Educator ^[9]
Dietitian
Exercise Physiologist
General Practitioner (GP) / Family Practitioner (Physician)
Medical Radiation Practitioner (Medical Imaging / Radiographer and Radiation Therapists)
Midwife
Nurse Practitioner
Nurse (including Registered Nurse)
Enrolled Nurse
Assistant in Nursing (AIN)
Nutritionist
Occupational Therapist
Optometrist
Orthoptists
Orthotist/Prosthetist
Osteopath

In-scope professions
Paramedic (First Responder)
Pharmacist
Pharmacy Assistant / Technician
Physician Assistant
Physiotherapist (Physical Therapist)
Podiatrist
Psychologist
Social worker
Sonographer (Medical / Cardiac)
Speech Therapist

[1] Note: These sources will be kept and reviewed for specific barriers, risks, and enablers component of the Scope of Practice Review.

[2] Note: This includes health care professionals outlined in Appendix 2 who deliver primary care in non-primary care settings (e.g., such as hospitals).

[3] Note: The term “community care” will also be searched as it is used in some jurisdictions to describe primary care.

[4] Note: Tertiary care settings providing primary care services will not be excluded in instances where primary care settings are unavailable (e.g., rural and remote communities). Aged care settings where primary care services are being provided are also in-scope.

[5] Note: Includes Austria, Belgium, France, Germany, Liechtenstein, Monaco, Netherlands, and Switzerland.

[7] Note: Only in-scope for the Literature Review to identify exemplars but not considered as part of the Scope of Practice Review.

[8] Note: Only in-scope for the Literature Review to identify exemplars but not considered as part of the overall focus group for the National Scope of Practice Review.

[9] Note: Several professions can underpin this role (e.g., dietitian).

Appendix 4. Evidence Review tagging

This section provides summaries of the sources included in the evidence review.

Tagging of sources occurred at the title and abstract screening phase. Sources were tagged by:

- Profession
- Country

It should be noted that not every source included in the evidence review had a tag for each of the categories mentioned above, and certain sources had multiple tags assigned to a single category (e.g., multiple professions). As a result, the figures presented in the tables below do not sum up to identical totals.

Table 5: Number of sources by country

Country	Number of sources
Australian/ NZ	154
Canada	88
US	216
UK	75
Western Europe	27
Multiple/ international	23

Table 6: Number of sources by profession

Profession	Number of sources
Assistants/ technicians	36
Audiology	0
Chiropractor	14
Dentistry	40
Diabetes educator	4
Dietitian/nutritionist	15
Doctor/GP/physician	130
Exercise physiology	2
First Nations Health worker	5
Midwifery	84
Nursing	532

Profession	Number of sources
Occupational therapy	32
Optometry	13
Orthoptist	0
Osteopath	6
Paramedic/First responder	48
Pharmacy	211
Physiotherapy	60
Podiatry	6
Psychology	14
Radiography	36
Social work	119
Sonography	8
Speech therapy	13

