Strategic plan for osteopathy



Report authors: Chanelle Mastronardo, Lee Muddle, and Azharuddin Fazalbhoy





Acknowledgements

This work is a research project conducted by RMIT University and funded by Osteopathy Australia entitled Strategic Plan for Osteopathy 2030. The project team leaders would like to acknowledge the invaluable contributions and support of the Steering Committee who have advised and driven the two-year project. The expertise of the Steering Committee, comprising of leaders in academia, clinical practice and the Osteopathy Australia Board, has been critical to shaping the Strategic Plan. We would also like to extend our gratitude to all who have generously given their time and expertise to this project. Notably, we thank the osteopathic practitioners, consumers, and industry stakeholders who contributed their views to the many focus groups conducted.

The Strategic Project Team

Steering Committee

Dr Michael Mulholland (Osteopath, Chair) Dr Melinda Banks (Osteopath) Dr Angie Bruce (Osteopath) Dr Roger Engel (Osteopath) Prof Sandra Grace (Osteopath) Dr Julie Hjorth (Osteopath) Dr Stiofan Mac Suibhne (Osteopath) Dr Douglass Wong (Osteopath)

Osteopathy Australia Representative

Mr Antony Nicholas - CEO Osteopathy Australia

Project Leaders

Dr Azharuddin Fazalbhoy (Osteopath) Ms Lee Muddle (Osteopath)

Research Assistant

Miss Chanelle Mastronardo (Osteopath)

Acknowledgement of country

We the Steering Committee and Project Leaders acknowledge the Traditional Owners of Country throughout Australia and recognize their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging. RMIT University acknowledges the Wurundjeri people of the Kulin Nations as the Traditional Owners of the land on which the University stands and respectfully recognizes Elders both past and present.

Project Team Leaders



Dr Azharuddin Fazalbhoy

Education:

BAppSc (Osteo), MOst, PhD

Clinical practice:

2009-present

Teaching:

Discipline Leader, BHealthSc/BAppSc (Osteo), RMIT University, 2015-present

The University of NSW, 2013-2014

The University of Western Sydney, 2013-2014

Board positions:

RMIT University, School Executive Committee, 2015-2019

RMIT University, Research Integrity Advisory Committee, 2020

Osteopathy Australia, CPD and Conference Committee 2013-2018

Advisory consultations:

Strategic Plan for Osteopathy 2030, Project Leader, 2018-2020



Ms Lee Muddle

Education:

PhD candidate, BAppSc (Sports coaching), AdvDip (Remedial massage) BAppSc (Human Biosc), MOst, Dip (Prof Pilates), MSc Sports Medicine, exercise and health.

Visiting research scholar, University of Technology Sydney & Australian Research Centre in Complementary and Integrative Medicine, 2020-present

Clinical practice:

2004-2017

Teaching:

BHealthSc/BAppSc (Osteo), RMIT University, 2016-present

Board positions:

Wattle College, Academic Board, 2020-present

Osteopathy Australia, Board Director, 2013–2016

Advisory consultations:

Strategic Plan for Osteopathy 2030, Project Leader, 2018-2020

Guild Insurance, Industry Representative, 2018-present

Research Assistant

Steering Committee



Miss Chanelle Mastronardo

Education:

BSc, BHealthSc/BAppSc (Osteo), BBiomedSc (Hons)

Clinical practice:

2017-present

Teaching:

BHealthSc/BAppSc (Osteo), RMIT University, 2019-present

Policy & Research:

Osteopathy Australia, Education/ Clinical placement, 2020-present

Strategic Plan for Osteopathy 2030, Research Assistant, 2018-2020



Dr Michael Mulholland (Chair)

Education:

DO, MScMed (Pain Manag)

Clinical practice:

1986-present

Teaching:

Instituto Brasileiro de Osteopatia, 2011-present

Andrianov Institute of Osteopathic Medicine, 2011-present

MScMed (Pain Manag), University of Sydney, 2007-present

Vienna School of Osteopathy, 2002-present

MOst, University of Western Sydney, 2001-2007

Board positions:

Australian Osteopathic Association, Chair

World Osteopathic Health Organization, Chair

Australian & New Zealand Osteopathic Council, Chair

Osteopathic International Alliance, Chair

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee Chair, 2018-2020

Osteopaths Act, NSW Osteopaths Registration Board

Benchmarks for Safety and Training in Osteopathy, World Health Organisation

Benchmarks for Practice of Tuina, Traditional Medicine Strategy

Pain Management Clinical Practice Guidelines, Osteopathy Australia



Dr Melinda Banks

Education:

B.App.Sc/B.Ost.Sc, Grad Cert Neonatal and Infant Paediatric Manual Therapy, Phase IX Biodynamics, Treatment of Children (I-III)

Clinical practice:

2001-present

Teaching:

BHealthSc/BAppSc (Ost), Southern Cross University, 2014-2015

BHealthSc, Australian College of Natural Medicine, 2006

MOst, Unitech New Zealand, 2003-2005

Board positions:

Osteopathy Australia, State Secretary, 2009-2010 & National President/Director, 2012-2014

New Zealand Register of Osteopaths, Group Leader, 2004-2010

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020

Advisory Committee, Southern Cross University, 2012-2014

Steering Committee



Dr Angie Bruce

Education:

BAppSc (Human Biosc), MOst, Dip (Prof Pilates), BA (Comms)

Clinical practice:

2003-present

Teaching:

BHealthSc/BAppSc (Osteo), RMIT University, 2017-2020

MHealthSc (Osteo), Victoria University, 2017-2020

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020

Education Committee, Australian Osteopathic Accreditation Council, 2012-2018



Dr Roger Engel

Education:

BSc (Hons), DO, DC, PhD

Clinical practice:

1983-present

Teaching:

BHealthSc/BAppSc (Ost), Adjunct Associate Professor, Southern Cross University

MChiro, Macquarie University, 2001-present

Board positions:

NSW Chiropractors and Osteopaths Registration Board

Osteopathy Council Performance Review Panel

Professional Peer Reviewer Health Care Complaints Commission

Osteopathic Research Alliance, Founder

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020

Human Research Ethics, Program Advisory Committee, Departmental Director of Research & Higher Degree Research, Macquarie University



Prof Sandra Grace

Education:

DC, DO, Dip Acup, DBM, Cert Chiro Paeds, Grad Cert Sports Chiro, MSc (Res), PhD

Clinical practice:

1985-present

Teaching:

BHealthSc/BAppSc (Ost), Professor of Osteopathy, Southern Cross University

Board positions:

Southern Cross University, Academic Board Teaching and Learning, Deputy Chair

Southern Cross University, N-of-1 Clinical Trials Group

Southern Australian Health Practitioner Tribunal

Chiropractic Australia Research Foundation

Australian Traditional Medicine Society, Research Committee

Osteopathic Research Alliance, Founder

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020



Dr Julie Hjorth

Education:

BAppSc (Comp Med), MOst, Grad Dip Pub Health

Clinical practice:

2010-present

Teaching:

BHealthSc/BAppSc (Osteo), RMIT University, 2016-present

Board positions:

Human Ethics Advisory Group, Cohealth

Resources Coordinator, The Water Well Project

Health Sector Leader, Leadership Victoria

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020



Dr Stiofan Mac Suibhne

Education:

BSc (Hons), Mol Bio, Bsc (Hons) Ost, PGCE, PGrad Cert HealthSc (Western Acupuncture), MHealth Prac Rehab, Dip Med Acupuncture

Clinical practice:

2001-present

Teaching:

Myotherapy, Endeavour College Sydney

HealthSc, Auckland University of Technology

London School of Osteopathy

University College of Osteopathy

Board positions:

NSW Osteopathic Council, Deputy Chair, 2012-2018

New Zealand Osteopathic Council, 2006-2014

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018–2020

Scope of practice & extended vocational registration, New Zealand Osteopathic Council

Osteopathic pre-registration education, Ara Institute 2015-2018

Policy lead in clinical specialisation, Osteopathy Australia, 2010–2013



Dr Douglass Wong

Education:

BSc (Clin Sc), MNSc, MHealthSc (Osteo), Grad Cert Tert Educ

Clinical practice:

2007 (Osteopathy) & 2013 (Nursing)-present

Teaching:

BSc (Clinical Sciences) and BSc (Osteo)

MHealthSc (Osteo), Course Leader, Victoria University, 2016-2018

Nursing, Academic Tutor, The University of Melbourne, 2012-2013

Advisory consultations:

Strategic Plan for Osteopathy 2030, Steering Committee, 2018-2020

Why a strategic plan?

Osteopathy has thrived to become the fastest growing allied health profession in Australia¹, with trends of new registrants suggesting the profession will double in size from 2019-2024². In addition to unexpected external factors such as the novel COVID-19 pandemic, this rapid expansion will present numerous challenges and opportunities for the profession. Having a planned approach to growth will aid in advancing the profession and enable it to respond effectively with agility to the challenges and opportunities ahead. Education providers are already playing a central role in this process both within osteopathy and related professions.

With a strategic plan as its roadmap for the profession to take charge of its future, influencing decision-making processes are enabled. Strategic objectives are determined and balanced between the best information available at the time and the most realistic assessment of what can be achieved³. This project aimed to anticipate pivotal factors to influence the profession in the future. Strategic solutions were then devised to help the profession embrace and overcome the opportunities and challenges ahead to position itself for success in 2030.

- Private Health Insurance Administration Council: Industry Statistics [http://phiac.gov.au/industry/industry-statistics/statistical-tends/]
 Australian Health Practitioner Regulatory Agency Osteopathy Board of Australia, Registration Data Tables: June 2017, 2018, 2019 [http://www.osteopathyboard.gov.au/About/Statistics.aspx]
 Victoria State Government, Health and Human Services (2017), Strategic Planning Guidelines for Victorian Health Services, ISBN 978-0-7311-7257-3, [https://www2.health.vic.gov.au/about/publications/policiesandguidelines/Strategic-planning-guidelines-for-Victorian-health-services]

Abbreviations

AHPRA	Australian Health Practitioner Regulation Agency
GEM	Graduate-entry Masters program
GP	General practitioner
MHR	My Health Record
MRFF	Medical Research Future Fund
NHMRC	National Health and Medical Research Council
OA	Osteopathy Australia
OBA	Osteopathy Board of Australia
RMIT	Royal Melbourne Institute of Technology

Figures

Figure 1: Strategic recommendations for the future of the profession.

Figure 2: Environmental scanning process for the Strategic Plan for Osteopathy 2030.

Figure 3: Core activities and processes undertaken for the Strategic Plan for Osteopathy 2030.

Figure 4: Osteopathy practice in 2030.

Tables

Table 1: Strategic drivers and recommendationsfor the future of the Australian osteopathy profession.

Table 2: Key features of the current osteopathyworkforce in Australia.

Disseminations, outcomes, and resources

Peer-reviewed journal articles

Mastronardo, C., Wong, D., Grace, S., Fazalbhoy, A., Muddle, L. Preparing osteopathy graduates for future careers: A review of osteopathic education in Australia. Focus on Health Professional Education.

Mastronardo, C., Muddle, L., Grace, S., Engel, R. M., Fazalbhoy, A. Digital health technologies for osteopaths and allied healthcare service providers: A scoping review. International Journal of Osteopathic Medicine.

Mastronardo, C., Muddle, L. Fazalbhoy, A. A view of the osteopathy profession from Australian osteopaths and industry stakeholders: A qualitative study. (Manuscript)

Mastronardo, C., Muddle, L. Fazalbhoy, A. A view of the osteopathy profession from osteopathy consumers in Australia: A qualitative study. (Manuscript)

Reports and position papers

Mastronardo C. Environmental scan: Education and Careers

Mastronardo C. Environmental scan: Technology and My Health Record

Mastronardo C. Environmental scan: Regulation

Mastronardo C. Environmental scan: Funding

Mastronardo C. Environmental scan: Research

Mastronardo C. & Nicholas A. Environmental scan: Representation (Professional Associations)

Foreward

We are proud to deliver the Strategic Plan for Osteopathy 2030. The vision of this document is bold and ambitious and represents a clear attempt to define how we will continue to be successful as a united profession within a challenging and dynamic healthcare environment in Australia.

The plan has been devised to inform the decisions and actions that will advance the profession towards new and exciting aspirations as it undergoes the rapid growth that is forecast for the coming years. It will support the careers of new and existing practitioners of osteopathy, higher education providers, the professional association, stakeholders and importantly the consumers of osteopathy services across Australia. Broader career pathways and support for practitioners will facilitate better reach and delivery of care to the public where it is most needed.

It is interesting to remember that osteopathy was conceived in the 1870's in the wake of a viral epidemic. There was a need for patient-centred care beyond the capabilities of pharmacy of the day. Now we operate in a world of evidence informed medicine, where much has changed, however the need for patient-centred care that enables and empowers individuals to improve quality of life remains paramount.

Osteopathy continues to navigate a unique course in the health care delivery sector. This plan captures key priorities that will advance our position in the healthcare industry in Australia including technology, education and careers, government and private entity funding, research, regulation, practitioner wellbeing, patient experience and stakeholders' views.

Congratulations to the Strategic Project Team who committed much time and brought diverse expertise and perspectives to this process of research, analysis and publication. The entire operation was managed with integrity and professionalism. I am excited to endorse this Strategic Plan for Osteopathy 2030 and encourage the broader profession to embrace these ideas with your expertise and commitment to ensure a bright future for the osteopathy profession and the people in our care.



Dr Michael Mulholland (Steering Committee Chair)

Contents

1	Executive summary	10
1.1	Osteopathy practice in 2030	10
1.2	Strategic drivers for change	12
1.3	Recommendations for the future of practice	12
1.4	Osteopathy Australia will support and guide the practice of the future	15
1.5	Conclusions	15
2	Strategic planning	16
2.1	Purpose	16
2.2	Structure	17
2.3	Key recommendations	21
2.4	Stakeholder consultation	21
2.5	Townhall meetings	21
3	Today's practice at a glance	22
3.1	Current workforce	22
3.2	Practice types and services	23
3.3	Consumer base	24
3.4	Funding	24
3.5	Healthcare roles	25

4	Key priorities for the	26
	practice of the future	
4.1	Technology	26
4.2	Education and careers	27
4.3	Funding	28
4.4	Research	29
4.5	Regulation	30
4.6	Representation	31
4.7	Practitioner wellbeing	32
4.8	Patient experience	33
4.9	Stakeholder views	34
5	Strategic actions for the practice of the future	35
6	Conclusion	36
7	Limitations	36
8	Re-evaluation	36
9	Appendices	38

1 Executive summary

1.1 Osteopathy practice in 2030

Advances in healthcare have never been more necessary in light of recent socio-economic challenges and evolving healthcare priorities brought to light by the ageing population, rising incidences of chronic diseases, and more recently the novel COVID-19 pandemic. As the profession grows in size, osteopathy will be positioned to expand its role in the provision of allied healthcare services in Australia and must be adaptive and responsive to such challenges and opportunities mentioned above.

In an effort towards developing a strategic plan for the profession, Project Leaders from RMIT University aimed to explore the question, 'What does the osteopathy profession look like in 2030?'. Project Leaders assembled a Steering Committee of current leaders in the Australian osteopathy profession to reflect on this question. The aims and objectives of the strategic planning process were to articulate the challenges and opportunities ahead and provide recommendations for advancement of the profession in a number of key areas including technology, education and careers, funding, research, regulation, representation, practitioner wellbeing, patient experience, and stakeholders' views. The intended outcomes of the Strategic Plan were to:

- Strategically anticipate the future healthcare needs of Australians both within and beyond osteopathy;
- Provide the profession with insights on its current strengths, weaknesses, opportunities, and threats to guide future decision-making;
- Shape initiatives to enable future growth of the profession in the key areas identified;
- Inform the profession and stakeholders regarding a future vision for osteopathy; and
- Provide a framework for all future efforts towards strategic planning for the profession.

The Strategic Plan focuses on a broad view of the profession from its foundations in education to its advancement within the healthcare landscape. A multi-level analysis was conducted to consider all aspects of the profession from the practice, to the professional, the pre-professional, the consumer, and relevant external stakeholders. Both internal and external stakeholders were engaged to consider the role of osteopathy today, and the actions required to ensure its role in future. The Project Leaders from RMIT University acknowledge all stakeholders who have generously given their time and expertise to this project.





1.2 Strategic drivers for change

The following strategic drivers are forecasted to impact and shape the future of the profession:

- Technology: advances in technology will change healthcare delivery, from advertising and marketing to the provision of clinical services;
- Education and careers: career diversity enables a healthcare profession to expand across the healthcare landscape and develop their scope across multiple facets of patient care;
- Funding: allied healthcare professions remain vulnerable to changing economic circumstances and government/third party funding reforms;
- Research: growing incidences of chronic and age-related diseases will continue to drive greater demand for evidence-based healthcare;
- Regulation: evolving consumer needs will drive greater demand for flexible service models and a broader scope of practice among allied healthcare professions;

1.3 Recommendations for the future of practice

To position itself for success in 2030, the following recommendations were made by the Steering Committee and Project Leaders in response to these strategic drivers (Figure 1):

- Connected with technology: inclusion of telehealth capabilities and My Health Record compatibility into practice management software programs will enable the profession to deliver services remotely and liaise more effectively with other healthcare professionals;
- Diverse careers: a wider breadth of career pathways will strengthen and diversify the profession across the healthcare landscape, allowing complimentary skillsets to develop among practitioners and reducing professional attrition;
- An economical approach: emphasising the economical and sustainable practices of the profession will secure government/third party funding and strengthen the profession against funding reforms;
- A partner in research: a united and collaborative research strategy will strengthen the evidence-base for the profession and help increase outputs in highpriority areas;

- Representation: strategic thinking on behalf of a professional association allows the association to evolve with its members and position the profession for success into the future;
- Practitioner wellbeing: industry mentorship is an essential step in the transition from learning to practice and will be necessary to foster a sense of professional identity among healthcare graduates;
- Patient experience: evolving consumer expectations will call for high-quality service provision that is unique to a healthcare profession while also being outcomesdriven and cost effective for consumers; and
- Stakeholder views: as demand increases for costly medical intervention, primary healthcare professions and allied healthcare providers will be required to increasingly adopt a broader role in patient management beyond their current scope of practice.

- Adaptable and responsive: flexible care delivery models and scope to manage new and emerging healthcare priorities will secure the profession's longevity;
- Engaging the wider profession: strategic thinking on behalf of the professional association will lead to inclusive membership models and a greater focus on professional conduct/communication;
- Developing new professionals: accredited industry mentorship programs for graduates will support the transition to practice and provide a greater sense of professional identity;
- Providing consumer value and benefit: promoting a positive clinical experience where principles of osteopathy guide the approach to patient care and positive/timely clinical outcomes are prioritized will engage future consumers; and
- Primary care focus: functioning beyond its manual therapy skillset and embracing its primary healthcare role will broaden the scope of the osteopathy profession in the eyes of consumers, peers, regulators and funding bodies.

Strategic drivers for change

Technology

Education and careers

Funding

Research

Regulation

Representation

Practitioner wellbeing

Patient experience

Stakeholder views

Recommendations for the future of practice

Connected and informed

Strength in career diversity

An economical appraoch

A united strategy

Adaptable and responsive

Engaging the wider profession

Developing new professionals

Providing consumer value

Primary care focus

Table 1: Strategic drivers and recommendations for the future of the Australian osteopathy profession.

Key areas	Strategic drivers for change	Recommendations for the future
Technology	Advances in technology	Connected with technology
Education and careers	Limited complimentary skills and career pathways	Diverse careers
Funding	Economic uncertainty and funding reform	An economical approach
Research	Evolving priorities and low funding	United research strategy
Regulation	Evolving consumer needs	Adaptable and responsive
Representation	Strategic thinking for opportunities ahead	Engaging the wider profession
Practitioner wellbeing	Lack of mentorship and professional identity	Developing and supporting new professionals
Patient experience	Evolving consumer expectations	An osteopathic and outcomes-driven approach
Stakeholder views	Manual therapy scope	Primary care focus

1.4 Osteopathy Australia will continue to support and guide the practice of the future

As the peak professional body representing osteopaths in Australia, Osteopathy Australia plays a pivotal role in supporting, advocating for, and engaging the profession. In addition to identifying drivers for change, the aim of the strategic planning process was to inform Osteopathy Australia's future vision and determine ways in which they may action the recommendations made by:

- Facilitating strategic alliances and networks with key stakeholders, funders, private health insurers, and academic institutions;
- Advocating for Australian Osteopaths to play a broader role within, and promoting the significant contribution to be made to, the Australian healthcare system;
- Developing standards and guidelines to navigate the profession into a future of new technologies and evolving consumer expectations; and
- Engaging the next generation of osteopaths with training and support to broaden their skills and assist their transition into practice.

1.5 Conclusions

The strategic drivers for change identified in this Strategic Plan represent challenges and opportunities for the profession to embrace and overcome to position itself for success in 2030. The resulting recommendations made by the Steering Committee and Project Leaders are geared towards multiple levels of the profession including the practice, the professional, the pre-professional and the consumer. Osteopathy Australia will support the profession in its pursuit to embrace the challenges and opportunities outlined here by facilitating alliances, advocating for the profession, developing new standards and equipping graduates with the skills needed to succeed.

2 Strategic planning

2.1 Purpose

Strategic planning for a healthcare profession is essential for maintaining its relevance and longevity within the healthcare landscape. This type of planning influences fundamental decisions that shape and guide the profession into the future³.

The purpose of a Strategic Plan is to demonstrate:

- How a healthcare profession will meet the evolving needs of consumers;
- Its relative contribution to the priorities of the wider healthcare system; and
- Its approach to addressing consumer healthcare needs.

To achieve this, a Strategic Plan must demonstrate a clear understanding of a profession's:

- Current capabilities and scope of practice;
- Current and potential roles within the healthcare system;
- Current and emerging trends in consumer healthcare needs;
- Current policies and regulations in which it operates; and
- Current public and private funding streams.

Recommendations from the Strategic Plan must describe:

- The long-term strategies to deliver on the vision for a profession; and
- The long-term requirements and infrastructure needed to support this vision.

2.2 Structure

The strategic planning process began by conducting environmental scans in a number of key areas of the profession, incorporating an analysis of both internal and external factors impacting the profession (Figure 2).

Analysis of external factors involved gaining an understanding of:

- Market analysis: characteristics of the healthcare system including emerging healthcare trends and burden of disease;
- Consumer attributes: evolving healthcare priorities based on demographics, health behaviors, and healthcare expectations of consumers; and
- Environmental influences: the regulatory, economic, social, and technological factors influencing the profession.

Analysis of internal factors involved gaining an understanding of:

- Service profile: the type, scope, and capabilities of the profession;
- Performance: involvement in managing current and emerging healthcare priorities; and
- Resources: funding and regulatory frameworks supporting the delivery of services.

Environmental scanning provided the basis for the Steering Committee to identify key priority areas for the profession going forward into 2030. From this, strategic recommendations for the advancement of the profession were proposed. Meaningful action plans were then created, including a timeline and allocation of responsibilities and resources³. Figure 2: Environmental scanning process for the 'Strategic Plan for the Osteopathy Profession 2030'.



2.2.1 The Steering Committee

The Steering Committee was comprised of exemplary leaders in the field from diverse backgrounds and with varying levels of experience in clinical practice and education. Following a formal application process, key selection criteria for the Steering Committee included demonstrable experience in academia, clinical settings, or leadership in the osteopathy profession. A subcriterion applied to the selection process also ensured each member displayed exceptional qualities over the course of their career. Furthermore, their clinical experience was selected to encompass various jurisdictions of practice in Australia. Applications were reviewed by the Project Leaders and a final Steering Committee was chosen consisting of 11 members from a diverse range of backgrounds and settings. Committee members agreed from the outset that the ultimate goal of ensuing discussions was to identify areas for improvement and advancement for the profession by imparting knowledge and insights from their varied backgrounds and professional experiences. A Terms of Reference document was created stipulating a quorum of eight panelists and a consensus of 80-100% would be required on all strategic recommendations. Discussions took place in a series of four face-to-face meetings and six teleconferences headed by the elected Chairperson and guided by an agenda created by the Project Research Assistant.

2.2.2 Vision, mission and values

Vision, mission, and values statements for the project were agreed upon in the initial face-to-face meeting. These were intended to be meaningful to, and supported by,

key stakeholder groups including industry professionals, consumers, the Osteopathy Australia Board, and other healthcare professionals.

vision

To deliver an **effective** and **unified strategy** for the **advancement** of osteopathy in Australia.

mission

To **identify key priorities** and **develop strategies** for **advancement** for each of them.

values

- Mutual respect for diversity amongst views;
- Encouragement of innovative, visionary and novel viewpoints;
- Open mindedness in hearing all views;
- Integrity, respect, assertiveness, and honesty in the robust debate of views;
- Strive for a consensus but accept a majority in terms of decision-making; and
- Timeliness in responses and contributions.

Figure 3: Core activities and processes undertaken for the 'Strategic Plan for the Osteopathy Profession 2030'.



2.2.3 Core activities

Within the initial face-to-face meeting, a list of key priority areas was created by the Steering Committee for the advancement of the profession including technology, education and careers, funding, research, regulation, representation, practitioner wellbeing, patient experience, and stakeholders' views. An environmental scan was completed for each key area by the Project Research Assistant with contributions from relevant Steering Committee members detailing the current status-quo for each area. Additionally, several focus groups were conducted to gain deeper insights into practitioner wellbeing (n=18), patient experience (n=12), and stakeholders' views of the profession (n = 6). The results of the environmental scans and focus group discussions were presented to the Steering Committee in subsequent meetings. Ensuing discussions were used to develop SWOT analyses for each key area. From these analyses, a series of final recommendations were agreed upon by the Steering Committee for each key area with the purpose of advancing the profession towards success in 2030. Figure 3 highlights the core activities and processes undertaken for the 'Strategic Plan for Osteopathy 2030'.

2.3 Key recommendations

Strategic recommendations for the advancement of the profession were proposed for each of the key areas and meaningful action plans were created, including a timeline and allocation of responsibilities and resources. Actionable items were proposed for Osteopathy Australia in order to support and deliver on the outcomes of the project.

2.4 Stakeholder consultation

Both internal (Steering Committee) and external (focus group participants) stakeholders were consulted for the purposes of providing contextual awareness, challenging traditional thinking, and offering innovative solutions³. Focus group participants included osteopathy practitioners, osteopathy consumers, and stakeholders from various academic and professional backgrounds. Upon completion, additional profession-specific external stakeholders were consulted to express their views on the concepts presented. See Appendix 1 (9.1.3) for a full list of participating stakeholders.

2.5 Townhall meetings

Following consultation with external stakeholders, the wider profession was consulted in a virtual townhall meeting conducted online via Zoom on May 6th 2021. The Project Leaders, Research Assistant, and Steering Committee were in attendance to present the aims and outcomes of the project, followed by an opportunity for those in attendance to ask questions and make comments. The townhall proceedings were considered in the final Strategic Plan presented.

3 Victoria State Government, Health and Human Services (2017), Strategic Planning Guidelines for Victorian Health Services, ISBN 978-0-7311-7257-3, [https://www2.health.vic.gov.au/about/publications/policiesandguidelines/Strategic-planning-guidelines-for-Victorian-health-services]

3 Today's practice at a glance

3.1 Current workforce

Osteopathy plays a growing role in the provision of primary healthcare services in Australia, across the domains of diagnosis, treatment, management, and health promotion. Table 2 provides an overview of key features of the current workforce in Australia.

Table 2: Key features of the current workforce in Australia^{4,5,6.}

Osteopatny workforce 2019-20		
Registrants	2,803 practicing	
	121 non-practicing	
	5 provisional	
Representation	0.3% of registered Australian healthcare professionals	
Distribution	60.46% VIC	
	22.73% NSW & ACT	
	9.18% QLD	
	2.32% WA	
	1.81% TAS	
	1.54% SA	
	0.2% NT	
Practice setting	70-80% urban private practice	
	20-30% other*	
Consumers	3.9 million serviced per annum	

Key: * research, teaching, sports and recreation, aged care, public health and occupational health and safety.

3.2 Practice types and services

Main practice types include:

- Individual practice: a sole trader in a single practice location offering a limited range of services or highly specific service.
- Small practice: a small number of sole traders and/ or other practitioners in a single practice location offering a more comprehensive range of services or multiple specific services. The facilities and equipment offered may be more extensive and include adjuncts to treatment. Small practices compose the largest proportion of the industry.
- Multidisciplinary practice: in addition to osteopathy, this practice type offers other services delivered by a variety of health professionals from medical, complementary, and allied health disciplines.
- Practice network: multiple practice locations existing as a network or franchise with variations in size and services offered.

Main service types include:

- General services: these are typically offered by osteopaths and involve the management of a range of general presentations or areas of specific interest for which specialised training (beyond osteopathy) is not required.
- Advanced services: offered by osteopaths who have been recognized by Osteopathy Australia for their advanced knowledge and skills in a defined area of practice (exercise-based rehabilitation, occupational health, paediatrics, pain management, sports management). General services may or may not be provided in addition.
- Specific services: offered by osteopaths who have undertaken further training in certain presentations or consumer groups (e.g. perinatal, geriatric, paediatric). General services may or may not be provided in addition. Importantly, there is no specialist registration for osteopaths.
- Adjunct services: offered by osteopaths who have undertaken further training in adjunctive therapies including acupuncture, massage, exercise rehabilitation, Pilates, etc.

3.3 Consumer base

Osteopathy services are available to consumers of all ages and backgrounds; however, accessibility barriers influence the consumer demographic including location, finances and private health insurance status, and cultural/ socioeconomic background:^{4,5,6}

- Practitioner maldistribution is a significant issue within the profession as the vast majority of osteopaths practice within city Victoria and New South Wales.
- Osteopathy is not consistently included in 'ancillary cover' across all private health insurers and government funding is restricted to those with Chronic Disease Management plans and those under Work Cover, Department of Veteran Affairs, and Transport Accident Commission.
- Language may also be a barrier as osteopaths infrequently utilize translating and interpreting services, which are not currently subsidized.

3.4 Funding

In Australia, consultation fees are the primary source of revenue for the profession. The majority of services are engaged directly by consumers on a fee-for-service basis and contract-linked. There is some degree of integration of osteopathy with the Australian public and private health systems via Medicare and private health funds, respectively. The profession relies on a number of main funding streams:

- Out of pocket: this is the primary source of revenue for the profession.
- Medicare benefits: a limited number of services are reimbursable under the Chronic Disease Management Plan within the Medicare Benefits Schedule.
- Government initiatives: the National Disability Insurance Scheme, Department of Veteran Affairs, traffic accident and workers compensation schemes provide access to a limited group of consumers.
- Private health insurance: a component of services is reimbursed or subsidized by some private health insurers under ancillary policies.
- Contracted services: service provisions on behalf of other organizations (health services, aged care providers, sporting clubs) on a contracted basis is not typically done.

3.5 Healthcare roles

Consumers typically seek osteopathy services for the purpose of reducing pain and improving function^{7,8}. However, osteopaths may apply themselves in several clinical and non-clinical settings, providing a wide range of services many of which are listed below⁸. The scope of practice and range of services offered by osteopaths continues to expand in response to regulatory changes and consumer demands. A lack of appropriate funding and remuneration for such services may be a limitation for consumers.

Expanding osteopathic services include:



⁴ Osteopathy Board of Australia (2020), Registration Data to 31st March 2020, Osteopathy Board & AHPRA.

⁵ Adams et al (2018), A workforce survey of Australian osteopathy: analysis of a nationally-representative sample of osteopaths from the

Osteopathy Research and Innovation Network (ORION) project, BMC Health Services Research, 18(1). 6 Steel et al (2018), Impact of the workforce distribution on the viability of the osteopathic profession in Australia: results from a national survey of registered osteopaths, Chiropractic and Manual Therapies, 26(34).

 ⁷ Orrock (2017), Developing an evidence base for osteopathic healthcare (PhD Thesis). Southern Cross University.

⁸ Osteopathy Australia (2018), Statement of Scope of Practice in Osteopathy. Sydney.

4 Key priorities for the practice of the future

4.1 Technology

New and emerging digital health technologies will become increasingly important in the provisions of clinical care, practice management, and marketing/advertising. Healthcare providers and consumers stand to benefit from the capabilities of these technologies, allowing them to collect and share health information remotely and instantly, overcoming barriers of time and geographical distance. Digital health technologies provide consumers with unprecedented autonomy, transparency, and access to healthcare information. The practice of the future will need to harness the benefits of telehealth platforms, electronic practice management systems, personallycontrolled electronic health records, and social media platforms to streamline administrative processes, enhance marketing, and enable mass data collection for research purposes.

4.1.1 Strategic planning for technology

Harnessing new and emerging digital health technologies will:

- Promote patient autonomy: facilitate greater selfmonitoring, education, and compliance with advice;
- Streamline administrative processes: broaden opportunities to automate, centralize, and store clinical information in various formats to improve overall efficiency;
- Promote data access and sharing: concurrent use of these technologies and My Health Record by other healthcare professions will foster collaborative patient care and provide a rich data set for research purposes;
- Facilitate remote outreach: telehealth technologies will facilitate greater access to rural and interstate areas, thus broadening the consumer base and combatting practitioner maldistribution; and
- Broaden advertising and marketing opportunities: social media platforms and mobile computing will significantly improve industry exposure and help to engage new consumers.

4.1.2 Barriers for uptake

- Funding: government and third-party funding and appetite for telehealth services remain limited;
- Research: evidence regarding the quality and reliability of digital health data for allied healthcare applications is limited;
- Education and training: the current curriculum does not educate graduates to utilise digital health technologies, therefore these technologies are not integrated ubiquitously into existing practice models; and
- Infrastructure: practice management software programs for allied health are not universally compatible with digital health applications or My Health Record, nor do standardized osteopathic terms exist for data entry into these platforms.

4.1.3 Recommendations and planned outcomes

- To reflect our commitment to evolving with digital health, we will promote research into digital health data quality and reliability in allied healthcare applications. We will also advocate for digital health to be integrated into the osteopathy undergraduate curriculum and private practice, resulting in a technologically savvy generation of professionals.
- To ensure industry-wide engagement in the digital health movement, we will advocate for a single recommended software package for the profession with My Health Record compatibility, standardised osteopathic terms for data entry, fit for multidisciplinary use, and able to provide de-identified patient data for research purposes.

4.2 Education and careers

Breadth in education and diversity in careers will be critical to the profession going forward.

Cultivating employability skills that foster a range of diverse careers will cater to the changing needs and expectations for the workforce, while also providing an opportunity for the profession to expand into previously untapped areas of healthcare and address a wider breadth of consumer needs.

Furthermore, education serves as a pivotal point to engage undergraduate students from across Australia and postgraduate students from other professional backgrounds in order to combat practitioner maldistribution and diversify the profession, respectively.

4.2.1 Strategic planning in education and careers

Promoting breadth in education will:

- Encourage career diversity: incorporating broader electives into the curriculum will provide graduates with desirable employability skills to pursue diverse careers;
- Support further education: postgraduate study and micro-credentialing opportunities in specific areas (aged care, disability services, chronic disease management) will broaden graduate skills;
- Combat maldistribution: encouraging student intakes from rural areas/across all states will assist in combatting the significant maldistribution of osteopaths currently seen across Australia; and
- Promote enrolment: establishing graduate entry pathways into osteopathy will encourage postgraduate students from other backgrounds (e.g. nursing, physiotherapy, occupational therapy, exercise physiology) to enroll, thus enriching the profession and creating networks with others.

4.2.2 Barriers for uptake

- Curriculum: the current curriculum lacks diverse subject electives, formalized external clinical placements and micro-credentialing opportunities for students to engage with;
- Career pathways: a significant majority of graduates pursue careers in private practice with limited opportunities to diversify into other areas;
- Maldistribution: a lack of student intakes from rural areas/across all states and little financial incentive for relocation, perpetuates maldistribution of graduates in Australia; and
- Course location and duration: with courses in only two states, having to relocate for a lengthy period, coupled with absent graduate entry pathways, discourages prospective students from different backgrounds.

4.2.3 Recommendations and planned outcomes

- To demonstrate our commitment to producing graduates with diverse and sought-after employability skills, we will introduce diverse electives (e.g. economics, public health, work health and safety, risk management, insurance) and desirable employability skills (e.g. technology, teamwork, leadership, initiative, enterprise, business acumen) in osteopathic education. Furthermore, external clinical placements will be endorsed to promote exposure to diverse settings.
- To reflect our priorities in combatting practitioner maldistribution across Australia, we will advocate for a percentage of annual intakes to come from rural areas/across all states, with appropriate financial support from Osteopathy Australia. We will also work towards building an additional osteopathy course in Australia.
- To enrich the profession and promote enrolment, we will advocate for a graduate-entry masters (GEM) program with a blended model to capture the untapped market of postgraduate students seeking further study.

4.3 Funding

Economic uncertainty may impact the osteopathy profession as health costs inflate above household budgets and insurance premiums rise. Consumers and funders will increasingly expect value-for-money and outcome-based services. The osteopathy practice of the future will look towards securing both government and third-party funding by engaging with eligible government schemes and private health insurers. Efforts made towards highlighting the profession's economical, sustainable, and evidence-based practices will further contribute towards this end. To achieve this, the profession will need to promote itself as providing primary healthcare, preventative care, chronic disease management, and nonpharmaceutical pain management to consumers. These efforts will be amplified by greater affiliation with medical practitioners including general practitioners (GPs).

4.3.1 Strategic planning in funding streams

Securing funding streams may be achieved via:

- Public health: engaging with relevant government packages/programs and looking towards contracted services with Medicare Locals, My Aged Care, local hospital networks, and primary health networks; and
- Private health: sustaining and procuring further inclusion under private 'ancillary' or 'extras' insurance.

4.3.2 Barriers for uptake

- Government funding: the profession remains largely excluded from a number of relevant government packages/programs (e.g. 'Strengthening Primary Care', 'Community Health and Hospitals', 'Commonwealth Home Support Program/Health Care Homes') and rebated services under the National Disability Insurance Scheme are limited;
- Private health reforms: recent re-evaluation has seen the near exclusion of the profession under 'ancillary/ extras cover' based upon seemingly low evidence of efficacy and poor differentiation from related professions;

- Evidence of efficacy: data on the number of osteopathy treatments required for a desired outcome is not easily obtainable to substantiate the economical and sustainable features of the profession;
- Research trends and competition: emerging trends steer away from passive hands-on therapies and towards active exercise-based and biopsychosocial approaches to patient care, thus potentially favouring physiotherapy;
- Relationship with GPs: lack of interprofessional communication with GPs limits opportunities for collaborative funding and research efforts (e.g. rural-based multi-disciplinary research with local osteopaths and GPs); and
- Funder ignorance: misunderstanding regarding the profession's scope of practice ultimately limits funding opportunities, particularly in rural and remote areas with lower quality medical services.

4.3.3 Recommendations and planned outcomes

- To mitigate economic uncertainty, we will advocate for the profession to engage with government and third-party funding schemes to maintain and promote our eligibility.
- To reflect our priorities in research, we will advocate for a united research effort to highlight the economical, sustainable, and evidence-based aspects of the profession. We will also seek out ways to access large amounts of data on patient outcomes to bolster this.
- To foster ongoing relationships with GPs, we will seek to improve interprofessional communication (through engaging in Chronic Disease Management for example) and nurture collaborative research/ funding efforts.

4.4 Research

A call for greater efficacy, safety, economy, and sustainability in healthcare has perpetuated an evidencebased movement worldwide. Evidence establishes a scientific basis for the profession, influencing government and third-party funding, education, stakeholder engagement, and ultimately consumer choice. After a history of relying on evidence from related healthcare professions, osteopathy must establish a specialised body of knowledge with direct relevance to its practices and philosophies.

Mobilising the profession towards the research effort will involve multiple levels of the profession, from individual practitioners to professional associations, dedicated research networks, academic institutions and key stakeholders. The profession must support and engage qualified osteopathy research supervisors and willing graduates to undertake necessary critical mass projects. Furthermore, a united research agenda will be necessary to focus divided priorities and align with others for greater impact.

4.4.1 Strategic planning in research

A greater focus on research efforts will:

- Broaden the research workforce: supporting and engaging research supervisors and willing students will provide the foundation of the research workforce;
- Unite the research agenda: creating a united research agenda across the universities will focus divided priorities towards high-yield 'health services research' (e.g. workforce data, public safety, economics of treatment, efficacy or treatment) and 'scope of practice mapping';
- Encourage collaboration: research alliances within Australia and internationally will strengthen the impact of the evidence presented and facilitate critical mass projects; and
- Secure funding: Efforts towards critical mass research in high-priority areas (e.g. out of hospital care, preventative care, healthcare at home) will enhance funding opportunities, while stakeholder and philanthropic donations will serve to grow research funds.

4.4.2 Barriers for uptake

- Research workforce: the profession lacks a strong research culture nor enough skilled research supervisors and willing graduates to undertake necessary projects;
- Divided research agenda: research priorities have historically been divided into 'evidence of efficacy', 'education', 'applied physiology', and 'health services research' without a clear agenda;
- Research alliances: variation in global models of osteopathy practice pose a barrier for international research alliances. Furthermore, there is currently no provisional registration type for international researchers travelling to Australia to conduct studies; and
- Funding: the profession remains largely excluded from a number of relevant government and thirdparty grants and allocations (e.g. National Health and Medical Research Council (NHMRC) and the Medical Research Future Fund (MRFF); 'Keeping Australians out of Hospitals', 'Boosting Preventative Health Research', 'Targeted Health System and Community Organization Research', 'Next Generation Clinical Researchers Initiative').

4.4.3 Recommendations and planned outcomes

- To reflect our priorities in research, we will seek to mobilise the entire profession towards the research effort at multiple levels. At a university level, we will host an annual research symposium to focus our research priorities and encourage individuals to pursue specialty areas, thus creating research centers of excellence for early career researchers.
- At a regulatory level, we will advocate for a research funding drive to secure funds from professional association members, stakeholders, philanthropic organizations, and foundations. We will also advocate for a provisional registration type for international researchers to conduct projects in Australia.

4.5 Regulation

Australia's National Registration and Accreditation Scheme is considered a leader internationally. Regulation and accreditation standards described by the Osteopathy Board of Australia (OBA) and the Australian Health Practitioner Regulation Agency (AHPRA) ensure the profession is appropriately skilled, maintains professional standards, and engages in continued professional development. Recent trends suggest that registrant numbers increase each year while notifiable conduct and statutory offences lessen overall⁹. Regulating the profession is however complicated by difficulties associated with defining scope of practice. While current scoping documents do not impose restrictions on practice, they also fail to define a clear position on the treatment of specific groups/presentations⁸. This creates a system reliant on title protection as opposed to mapping the capabilities of the profession. The practice of the future will require a defined position within the healthcare system with skills mapped to consumer and stakeholder needs.

4.5.1 Strategic planning in regulation

A focus on skillset mapping will assist with:

- Clarifying a scope of practice: this will allow the profession to market and promote its relevance and expertise within the evolving healthcare system to consumers and funders; and
- Promote diversification and further education: education and training in the treatment of specific groups or presentations will broaden the scope of the profession in a safe and controlled manner.

4.5.2 Barriers for uptake

- Title protection: scope of practice currently hinges on title protection as opposed to mapping the capabilities of the profession; and
- Scoping threats: advertising breaches and underskilled treatment of specific groups (e.g. children, pregnant women, elderly) or presentations (e.g. non-musculoskeletal) brings negative publicity to the profession and increases the risk of scoping restrictions.

4.5.3 Recommendations and planned outcomes

Key ambitions:

- ✓ To reflect our priorities in maintaining the broad scope of the profession, we will advocate for further post-graduate education in the safe and proficient treatment of specific groups/presentations. We will also seek to collaborate with others to create externallyrecognized and profession-specific programs/courses in these areas. Furthermore, we will be committed to eradicating negative publicity and advertising breaches through continued professional development and advertising resources produced by Osteopathy Australia and advised by Guild Insurance.
- To demonstrate our commitment to skillset mapping, we will advocate for the establishment of a Scoping Committee to map the skills of the profession against the needs of Australian and international consumers.

9 Osteopathy Board of Australia (2020), Registration Data to 31st March 2020, Osteopathy Board & AHPRA, [https://www.osteopathyboard.gov.au/about/statistics.aspx]

4.6 Representation

Professional associations provide a voice for the profession. As the peak professional body representing osteopaths in Australia, Osteopathy Australia offers many advantages for members including access to a global network of professionals, professional development, practice support, and representation in leadership and public policy discussions. Current business and membership models will be under increasing pressure from the impacts of digital disruption, workforce demographic changes, competing organizations, and evolving consumer needs/ expectations. As such, strategic planning will be essential to anticipate these future challenges and opportunities for the profession. The practice of the future will require representation by a forward-thinking professional association that anticipates the evolving needs of the profession and positions it for future success.

4.6.1 Strategic planning in representation

Strategic leadership from our professional association will facilitate:

- Greater engagement: emerging technologies and social media platforms will allow the professional association to reach and educate members more effectively;
- Improve service delivery: adopting more intuitive membership structures and fee schedules alternative to the 'provider of services' model will help to engage the profession as a whole without excluding nonmembers; and
- Engagement with the 'new generation professional': capturing each new generation of osteopaths will require professional associations to embrace their evolving needs and expectations (e.g. providing a more personalized and technology-driven member experience).

4.6.2 Barriers for uptake

- Planning: the professional association has thus-far operated without a profession-driven strategic plan to guide it;
- Technology: traditional business and membership models are under increasing pressure from communications technologies and knowledge-sharing platforms that threaten to overtake them;
- Membership models: the 'provider of services' model has dominated the business practices of professional associations limiting their reach to members only, as opposed to engaging the wider profession; and
- Generational divide: the influx of a new generation of professionals will create a widening generational divide within the profession as a result of changing expectations.

4.6.3 Recommendations and planned outcomes

- ✓ To inform our professional association and help to guide their efforts, we will continue to update the Strategic Plan ensuring it reflects the voice of the profession.
- To engage the wider profession and new graduates, we will advocate for continued engagement with emerging information and communication technologies (including social media platforms) and more inclusive business and membership models.

4.7 Practitioner wellbeing

Each new generation of practitioners brings forth new ideas and career expectations. As such, the profession continuously faces the threat of job dissatisfaction, burnout, and ultimately attrition. The findings of 'practitioner wellbeing' focus groups suggest that job dissatisfaction arises from poor career diversity, absent professional mentorship, and inferior self-beliefs in comparison with other medical and healthcare professions. Driven by the greater needs and expectations of the professional workforce, the practice of the future will need to provide a more comprehensive program of professional mentorship to support new practitioners, facilitate diverse career pathways, and seek to improve the professional confidence of its workforce.

4.7.1 Strategic planning for practitioner wellbeing

A focus on supporting and engaging the professional workforce will:

- Reduce attrition: providing structured mentorship and clinical skills development will better prepare graduates for real-life practice and assist in managing expectations;
- Diversify and strengthen the workforce: creating diverse career pathways within the profession will improve job satisfaction and create opportunities to remain within the profession in the event of physical, emotional, or financial challenges; and
- Improve self-beliefs: encouraging inter-professional communication and collaboration will allow practitioners to better orient themselves within the diverse allied healthcare landscape in Australia.

4.7.2 Barriers for uptake

- Mentorship: a lack of formal mentorship and clinical supervision for early-career practitioners fails to bolster professional self-confidence nor address disparities between the expectations and realities of clinical practice;
- Clinical supervision: a lack of formal education and training for clinical supervisors may lead to inappropriate guidance and advice for students and new graduates;
- Inter-professional communication: poor interprofessional relationships with medical and related allied healthcare professionals leads to a lack of identity within the vast allied healthcare landscape; and
- Career diversity: the lack of diverse career prospects leads to attrition in the event of physical, emotional, or financial challenges and changing interests.

4.7.3 Recommendations and planned outcomes

Key ambitions:

✓ To reflect our commitment to reducing professional attrition and supporting the wellbeing of our workforce, we will advocate for an accredited mentorship program for early-career practitioners in private practice, greater career diversity (see 4.2), and improved inter-professional communication with others (see 4.3 & 4.6). Furthermore, external clinical placements will be endorsed to promote exposure to diverse settings with appropriate supervisor training. Supervisor training modules will also be created and endorsed by Osteopathy Australia to ensure quality external clinical supervision for students and graduates.

4.8 Patient experience

Consumer expectations evolve with each passing year as the healthcare landscape changes and new technologies emerge. The findings of 'patient experience' focus groups indicate that consumers value a positive clinical experience where principles of osteopathy (comprehensive, individualised, patient-centered) guide the approach. Distinctive features of the osteopathic experience (consultation time, philosophy, understanding of health and disease, technique) were juxtaposed against consumer desire for positive and timely clinical outcomes from their chosen healthcare modality. As such, the practice of the future will need to maintain and enhance its positive qualitative experience, while also becoming outcomes-focused and value-driven to engage consumers and funders. Furthermore, consumers increasingly seek out practitioners with expertise in specific areas pertaining to their individual needs. The practice of the future will also need to provide both general and specific osteopaths for discerning consumers, and alternate consultation models for those with accessibility barriers.

4.8.1 Strategic planning for patient experience

Catering to the evolving needs and expectations of consumers will facilitate:

- Consumer value and benefit: promoting a positive clinical experience where principles of osteopathy guide the approach and positive/timely clinical outcomes are prioritized will engage future consumers;
- An outcomes-focus and value-driven approach: a body of evidence to support positive clinical outcomes and cost-effectiveness will improve standing with funders;
- Improved accessibility: flexible consulting models that encompass telehealth technology, home consultation, and remote consultation will improve consumer access; and
- Tailored care: endorsed areas of expertise will engage the discerning consumer and cater for their individual needs.

4.8.2 Barriers for uptake

- Approach: a substantial body of profession-specific evidence supporting positive and timely clinical outcomes has yet to be developed;
- Accessibility: current consultation models exclude consumers with accessibility issues and fail to fully utilize the emerging capabilities of digital health technologies and telehealth platforms; and
- Expertise: lack of recognition and subsequent promotion of expertise fails to capture those consumers who increasingly undertake their own research when selecting a healthcare practitioner.

4.8.3 Recommendations and planned outcomes

- ✓ To demonstrate our commitment to enhancing the consumer experience, we will advocate for the continuation and expansion of Osteopathy Australia's endorsement initiative and recommend flexible consultation models that utilize telehealth technologies (see 4.1).
- To reflect our priorities in research, we will reiterate the importance of prioritizing evidence supporting positive and timely clinical outcomes for the profession (see 4.4).

4.9 Stakeholder views

Among the other primary healthcare services, the profession must continuously demonstrate how it is essential and relevant to the Australian healthcare system. While a unique selling position has been difficult to define, stakeholders acknowledged that highlighting the professions' relevant contributions to healthcare via skillset mapping will be necessary to:

- Support the longevity of the profession within the allied healthcare system in Australia;
- 2. Raise stakeholder understanding of the scope of the profession; and
- 3. Broaden the scope of the profession across multiple facets of healthcare.

Ultimately, this will necessitate broadening the definition and scope of the profession from a 'manual' or 'musculoskeletal' modality towards being a 'primary healthcare modality with an osteopathy skills focus'. This will involve taking an active role in disease prevention through health screening, education and monitoring, and referral of certain chronic disease states. To remain relevant and essential as a primary healthcare profession, the profession also will need to demonstrate its ability to manage new and emerging healthcare needs in a cost-effective way.

4.9.1 Strategic planning for stakeholder views

Driving and maintaining a primary healthcare identity will:

- Secure our role: providing greater evidence of efficacy in managing high-priority healthcare issues (e.g. age-related decline and chronic illness) will help to prove our worth among stakeholders;
- Promote healthcare economy: marketing the sustainable, low-tech, cost-effective and economical aspects of the profession will assist in securing future funding;
- Foster inclusion: evidence of positive and timely patient outcomes will promote inclusion in government and third-party funding initiatives; and
- Broaden our reach: redefining the profession as a 'primary healthcare modality with an osteopathy skills focus' will create opportunities for more diverse roles within the healthcare system.

4.9.2 Barriers for uptake

- Data sourcing: programs that provide large amounts of data regarding patient outcomes and timeframes of treatment are largely inaccessible;
- Funding: the profession remains largely excluded from a number of relevant government and third-party grants and allocations (see 4.3); and
- Narrow scope: the profession has classically defined itself as 'manual' or 'musculoskeletal modality', thus narrowing its scope of practice in the eyes of stakeholders.

4.9.3 Recommendations and planned outcomes

- ✓ To reflect our priorities in research, we will advocate for a specialised body of evidence in consultation with health economists to reflect positive and timely clinical outcomes (see 4.3).
- ✓ To promote our primary healthcare status, we will advocate for the establishment of a Scoping Committee to map the skills of the profession against high-priority areas in healthcare (see 4.5).
5 Strategic actions for the practice of the future

Advancement of the profession in these key areas must be supported at multiple levels, from individual practitioners to academics, leaders, regulators and accreditors, universities, and the peak professional body Osteopathy Australia.

The recommendations presented in this Strategic Plan may be actioned by Osteopathy Australia and other relevant parties in the following ways:

Technology:

 Osteopathy Australia to drive the creation of a profession-wide recommended software program (or necessary adjustments to a current ubiquitous program) filling the requirements identified by stakeholders from tertiary education and private practice.

Education and careers:

- Education providers to incorporate a diverse range of skills into the curriculum, creating a platform for Osteopathy Australia to lobby the government for greater inclusion in relevant funding schemes;
- Education providers and Osteopathy Australia to initiate a funding drive towards rural and interstate scholarships/grants to combat maldistribution; and
- Education providers and Osteopathy Australia to propose an additional osteopathy course in Australia and assist universities in the development of a blended GEM program (underway from October 2020).

Funding:

- Osteopathy Australia to devise educational modules and standardized templates to improve correspondence with GPs and other healthcare professionals for the purpose of joint research and funding efforts;
- Osteopathy Australia to make efforts to market the economical, sustainable, and outcomes-based features of the profession; and
- Osteopathy Australia to fund research regarding the economical practices of the profession (e.g. number of treatments required to achieve the desired outcome).

Research:

- Universities to host an annual research symposium to unite research priorities and encourage research centers of excellence; and
- Osteopathy Australia to initiate a research funding drive towards research projects, PhD scholarships, and remuneration for academics.

Regulation:

- Osteopathy Australia to disseminate a template against which advertising breaches must be justified and continue the endorsement initiative.
- Osteopathy Australia to advocate to regulators of the osteopathy profession for a review of current capabilities and accreditation standards to execute the strategic actions for practice of the future.

Representation:

• Osteopathy Australia to adopt more intuitive membership structures and fee schedules to better leverage and engage the profession as a whole.

Practitioner wellbeing:

 Osteopathy Australia to devise an accredited mentorship training program for new graduates and supervisor training modules for supervising practitioners to improve the transition to practice (underway from October 2020).

Patient experience:

 Osteopathy Australia to promote the uniquely osteopathic, outcomes-based and cost-effective aspects of the profession to consumers and funding bodies, and provide training in alternate/remote models of service delivery.

Stakeholder views:

 Osteopathy Australia to engage strategic teams of health economists, public health specialists, public relations and marketing specialists to devise economical and sustainable strategies for the profession and improve standing with consumers, stakeholders and funders.

6 Conclusion

This report has articulated a vision for osteopathy practice of the future. The role of the profession in 2030 will involve a broader range of services provided in new ways to more consumers. In addition to maintaining and enhancing the current strengths of the profession, the practice of the future will be tech-savvy, outcomes-focused and consumer-driven, with greater inclusion in government and third-party funding models.

Osteopathy will be more accessible than ever before, as digital health technologies provide new ways of marketing, servicing, and administering to consumers. Education and careers will be diverse, allowing practitioners to work across multiple facets of healthcare and pursue further knowledge. Diverse avenues for funding will be maximised in the face of economic uncertainty and private health reforms, while research funding will facilitate a specialised body of evidence for the profession. The scope of the profession will expand based on the evolving needs of consumers, led by the strategic actions of the professional association, Osteopathy Australia.

The Steering Committee recommend that Osteopathy Australia continues to support the profession and advance the Strategic Plan by facilitating strategic alliances, advocating for the profession, developing standards and guidelines to address future challenges, and engage the new generation of professionals towards these efforts.

The findings of this report can now be used to inform future strategic planning for the profession, by highlighting the opportunities and challenges ahead. The success of the profession will continue to be built upon delivering care that meets the current and emerging needs of consumers. Via the strategic planning process, these needs have been anticipated with information available in 2020 and recommendations have been made to secure the success and longevity of the profession into 2030.

7 Limitations

In our attempt to achieve a broad view of the profession, both internal (Steering Committee) and external (focus group participants) stakeholders were consulted on the final Strategic plan for Osteopathy 2030. Recruitment for the focus groups was limited to Osteopathy Australia members and yielded 18 practitioners, 12 patients, and 6 external stakeholders (Appendix 1). Time and budget restraints also impacted the final product. All Steering Committee consultations, focus groups, and townhall meetings were conducted within an 18-month period, leaving 6 months for the final product to be written. Furthermore, our inability to enforce our recommendations limits the profession-wide uptake of this Strategic Plan.

8 Re-evaluation

The Project Leaders and Steering Committee are committed to re-evaluating and updating the recommendations within this Strategic Plan in the future.

Figure 4: Osteopathy practice in 2030.













9.1 Appendix 1

9.1.1 Steering Committee

Michael Mulholland (Chair) Azharuddin Fazalbhoy Melinda Banks Lee Muddle Angie Bruce Roger Engel Sandra Grace Julie Hjorth Stiofan Mac Suibhne Douglass Wong Antony Nicholas (Osteopathy Australia Representative)

9.1.2 Focus group participants (external stakeholders)

Participant	Gender	Age (years)	Location	Registration with AHPRA	Registration type	Practicing status	Employment type	Focus group delivery
1	F	40-50	VIC	Y	G	NP	S	FF
2	М	20-30	VIC	Y	G2	Р	S	FF
3	F	20-30	VIC	Y	G	Ρ	S	FF
4	F	20-30	VIC	Y	G	Ρ	S	FF
5	F	20-30	VIC	Υ	G	Ρ	S	FF
6	F	20-30	VIC	Y	G2	Ρ	S	FF
7	М	30-40	VIC	Υ	G1	Ρ	E	FF
8	Μ	40-50	VIC	Y	G	Ρ	S	FF
9	F	20-30	VIC	Y	G1	Ρ	S	FF
10	F	20-30	WA	Υ	G1	Ρ	S	OL
11	F	30-40	WA	Y	G	Ρ	S	OL
12	F	30-40	WA	Υ	G	Ρ	S	OL
13	F	30-40	WA	Υ	G	Ρ	S	OL
14	F	30-40	WA	Υ	G	Ρ	S	OL
15	F	40-50	WA	Y	G	Ρ	S	OL
16	М	40-50	NSW	Y	G	P	S	OL
17	F	30-40	NSW	Y	G	P	S	OL
18	F	30-40	NSW	Y	G	P	S	OL

Table 1: Participant identification and demographics for 'Practitioner wellbeing' focus groups.

Key: F = female; M = male; VIC = Victoria; WA = Western Australia; NSW = New South Wales; Y = yes (with the Australian Health Practitioner's Regulation Agency);
 G = general; G1 = graduate year 1; G2 = graduate year 2; NP = non-practicing; P = practicing; S = subcontractor; E = employee; FF = face-to-face; OL = online.

Participant	Gender	Age (years)	Location	Complaint type	Complaint duration (years)	Focus group delivery
1	F	30-40	VIC	MSK	0.5-1	FF
2	F	50-60	VIC	Ρ	0.5-1	FF
3	М	60-70	VIC	MSK	2-3	FF
4	М	20-30	VIC	MSK	1-2	FF
5	F	70-80	VIC	MSK	5-6	FF
6	F	70-80	VIC	MSK	5-6	FF
7	Μ	70-80	VIC	MSK	0.5-1	FF
8	F	50-60	VIC	CDM	5-6	FF
9	М	50-60	VIC	MSK	0.5-1	FF
10	F	20-30	VIC	CDM	3-4	FF
11	М	20-30	VIC	MSK	0.5-1	FF
12	F	20-30	VIC	MSK	3-4	FF

Table 2: Participant identification and demographics for 'Patient experience' focus groups.

Key: F = female; M = male; VIC = Victoria; MSK = musculoskeletal; P = pregnancy; CDM = chronic disease management; FF = face-to-face.

Table 3: Participant identification and demographics for 'Osteopathy skills and expertise' focus groups.

Participant	Gender	Age (years)	Location	Stakeholder status	Status duration	Focus group delivery
1	F	30-40	VIC	E	6-7	FF
2	F	30-40	VIC	E	2-3	FF
3	М	30-40	VIC	Р	1-2	FF
4	F	20-30	VIC	Р	1-2	FF
5	F	20-30	VIC	С	4-5	FF
6	F	40-50	VIC	E	1-2	FF

Key: F = female; M = male; VIC = Victoria; E = educator; P = practitioner; C = committee member; FF = face-to-face.

9.1.3 Profession-specific stakeholders

Christie Boucher (Guild Insurance) Gary Fryer (Victoria University) Michelle Funder (Osteopathy Australia, President) Bimbi Gray (Southern Cross University) Nikole Grbin (Osteopathy Board of Australia, Chair) Fiona Stoker (Australian Osteopathic Accreditation Council, Executive Officer) Brett Vaughan (Australian Osteopathic Accreditation Council, former Chair) Cathy Woodward (Osteopathy Board of Australia, Executive Officer)

9.2 Environmental Scan: Education & Careers

Osteopathic education in Australia 42 1 1.1 Osteopathy courses and specs 42 1.2 Course structure and content 43 1.3 Course/program learning outcomes 45 46 1.4 Alignment with accreditation standards and capabilities 47 1.5 Capabilities of Osteopathic Practice (2019) 1.6 Major threats for osteopathic 49 education 2 Pathways and careers for 51 osteopaths in Australia 2.1 How is the current workforce 51 situated? 51 2.2 Career options for graduates Conclusion 53 3 4 References 53

1 Osteopathic education in Australia

1.1 Osteopathy courses and specs

Osteopathic programs are offered by Southern Cross University (SCU), on both Lismore and Gold Coast Campuses, and in Melbourne by RMIT University (RMIT) and Victoria University (VU).

Table 1: Course comparison (RMIT, 2019; VU, 2019; SCU, 2019).

	B.Health.Sc/	B.Sc (Osteo)/	B.Clin.Sc (Osteo)/	
	B.App.Sc (Osteo)	M.Health.Sc (Osteo)	M.Ost.Med	
Location	RMIT	VU	SCU	
ATAR	60.90	63.65	68.01	
Student cap	~200	~144	Unknown	
Duration	B.Health.Sc - 3 yrs FT	B.Sc (Osteo) - 3 yrs FT	B.Clin.Sc (Osteo) - 3 yrs FT	
	B.App.Sc (Osteo) - 2 yrs FT	M.Health.Sc (Osteo) - 1.5 yrs FT	M.Ost.Med - 2 yrs FT	
	Total = 5 yrs FT	Total = 4.5 yrs FT	Total = 4 yrs FT*	
Commonwealth supported	Y	Y	Y	
Student contribution p.a.	~\$9,527	~\$9,359	~\$9,352	
Tuition fees p.a.	B.Health.Sc/	B.Sc (Osteo) ~\$34,000	B.Clin.Sc (Osteo)	
	B.App.Sc (Osteo) ~\$32,640	M.Health.Sc (Osteo) ~\$33,800	~\$26,400	
			M.Ost.Med ~\$28,000	
Prerequisites	VCE - Y	VCE - Y	HSC - Y	
	VET - Y	VET - Y	VET/TAFE NSW - Y	
	Higher education - Y	Higher education - Y	Higher education - Y	
	Work/life experience - N	Work/life experience - N	Work/life experience - N	
Work integrated learning opportunities	Practice under supervision at the RMIT Health Sciences Clinic	Practice under supervision at the Flinders, St Albans and Werribee Osteopathy Clinics	Practice under supervision at the Gold Coast and Lismore SCU Health Clinics	
Placement and internship	Opportunity for placement at an external Australian osteopathic clinic	Opportunity for placement at an external Australian osteopathic clinic	Opportunity for placement at an external Australian osteopathic clinic	
International opportunities	Practice under supervision in India (6-week placement in final year of program)	Unknown	Unknown	
Career pathways	Professional registration in AUS and NZ as an osteopath and self- employment in private osteopathic or multidisciplinary clinics	Professional registration in AUS and NZ as an osteopath and self- employment in private osteopathic or multidisciplinary clinics	Professional registration in AUS and NZ as an osteopath and self-employment in private osteopathic or multidisciplinary clinics	
Further study	Honours – Y	Honours – Y	Honours – Y	
	Masters by research – N	PhD - Y	PhD - Y	
	PhD - Y			

*Combined total length of degree since 2017.

1.2 **Course structure and content**

1.2.1 **Delivery modes**

Ν S

F

Osteopathic programs are offered by Southern Cross University (SCU), on both Lismore and Gold Coast Campuses, and in Melbourne by RMIT University (RMIT) and Victoria University (VU).

	B.Health.Sc/	B.Sc (Osteo)/	B.Clin.Sc (Osteo±H.S.F)/
	B.App.Sc (Osteo)	M.Health.Sc (Osteo)	M.Ost.Med
	– RMIT	– VU	– SCU
1odel	Classical	Block*	Classical
itructure	x4 units (subjects) at a time	x1 unit (subject) at a time	x4 units (subjects) at a
	x12 weeks per unit	x4 weeks per unit	time
	Total = x4 units per semester	Total = x4 units per semester	x12 weeks per unit
		·	Total = x4 units per semester
ormat	Face-to-face lectures - Y	Face-to-face lectures - Y	Face-to-face lectures - Y

Table 2: Course delivery modes (RMIT, 2019; VU, 2019; SCU, 2019).

Practicals - Y

Tutorials - Y

Workshops - Y Online learning - N

*The VU-pioneered 'block model' initiated in 2018 was created with the aim of 'allowing students to focus their efforts on mastering one topic/skillset at any given time, allowing for a greater understanding of concepts' (VU, 2019). VU is currently conducting internal studies on student attitudes and achievements within the 'block model' of learning, which they aim to publish in 2020 (VU, 2019).

Practicals - Y

Tutorials - Y

Workshops - Y

Online learning - N

Practicals - Y

Tutorials - Y

Workshops - Y

Online learning - Y

1.2.2 Major areas of study

Table 3: Major areas of study (RMIT, 2019; VU, 2019; SCU, 2019).

	B.Health.Sc/	B.Sc (Osteo)/	B.Clin.Sc (Osteo)/
	B.App.Sc (Osteo)	M.Health.Sc (Osteo)	M.Ost.Med
	– RMIT	– VU	– SCU
Basic sciences	\checkmark	\checkmark	1
Biomedicine	\checkmark	\checkmark	\checkmark
Anatomy & physiology	\checkmark	✓	\checkmark
Pathology	\checkmark	✓	✓
Pharmacology	\checkmark	\checkmark	\checkmark
Neuroscience & pain	\checkmark	\checkmark	\checkmark
Psychology	🗸 (year 4)	🗸 (year 1)	🗸 (year 1)
Determinants of health	\checkmark	\checkmark	\checkmark
Common conditions	\checkmark	\checkmark	\checkmark
Conditions across the lifespan (childhood, pregnancy, etc.)	\checkmark	\checkmark	\checkmark
Professional communication	\checkmark	\checkmark	\checkmark
Research and EBP	🗸 (year 4)*	🗸 (year 4)*	🗸 (year 4)*
Diagnostic imaging	\checkmark	\checkmark	1
Rehabilitation	🗸 (year 4)	🗸 (year 4)	🗸 (year 2)
Law and ethics	🗸 (year 5)	🗸 (year 2)	🗸 (year 2)
Adjunctive therapies	\checkmark	\checkmark	\checkmark
Clinical reasoning	\checkmark	\checkmark	\checkmark
Medical examination	✓	\checkmark	\checkmark
Osteopathic theory & practice	🗸 (year 1-5)	🗸 (year 1-4.5)	🗸 (year 1-4)
Student clinic	🗸 (year 4)	🗸 (year 4)	(year 4)

*One unit/subject 12 weeks duration at RMIT and SCU and 4 weeks duration at VU. Additional workshops and tutorials are typically provided in the final year of study across all university courses to refresh this knowledge.

1.3 Course/program learning outcomes

B.Health.Sc/B.App.Sc (Osteo): RMIT (RMIT, 2019)

- 1. Provide patient-centred care as a competent, safe primary healthcare professional;
- 2. Provide osteopathic, musculoskeletal healthcare within a patient-centred, evidence-based framework;
- 3. Gather and interpret health information, and employ clinical reasoning to develop differential diagnoses, to inform assessment and management;
- 4. Effectively communicate with a wide audience (i.e. patients, carers, healthcare professionals and agencies), with respect and sensitivity to socio-cultural diversity, using a variety of media;
- 5. Manage all aspects of clinical practice to comply with ethical, legal, and regulatory standards in an evolving healthcare industry;
- 6. Work autonomously and collaboratively, to lead and/or contribute to inter-professional healthcare partnerships;
- 7. Develop and implement strategies to meet personal and professional demands, as a primary healthcare provider;
- 8. Develop a commitment to lifelong learning, recognising the historical development and evolution of the profession, and how this integrates with contemporary practice.

B.Sc (Osteo)/M.Health.Sc (Osteo): VU (VU, 2019)

- Provide patient-specific and evidence informed management based on the interpretation of physical, neurological, orthopaedic and osteopathic examination findings and clinical experience;
- 2. Resolve patient concerns as an ethical, flexible, reflective and consultative practitioner;
- 3. Exhibit professionalism and effective communication when interacting with the patient community, peers and colleagues;
- Interrogate the physical, socio-economic, psychological, spiritual and cultural factors contributing to a patient's presenting complaint;
- 5. Integrate osteopathic principles and theoretical science concepts including researched evidence for practice to inform the rationale of osteopathic treatment;
- Implement osteopathic manual techniques to specialised patient populations (e.g. elderly, adolescents, athletes) as well as patient groups with specific cultural and religious needs;
- Engage patients and the community by promoting health through effective communication, education and appropriate management based on evidence from osteopathic and public health principles;
- Evaluate patient progress using standardised outcome measures, and modify treatment accordingly considering current available evidence and when indicated, explore new treatment approaches;
- 9. Critically reflect on theoretical concepts, practical activities and personal and clinical experiences to inform practice and embrace lifelong learning as an osteopath.

B.Clin.Sc (Osteo)/M.Ost.Med: SCU (SCU, 2019)

- Intellectual rigor Demonstrate advanced and integrated understanding of a complex body of knowledge in osteopathy. Investigate, analyse and synthesise complex information, problems, concepts and theories and generate and evaluate complex ideas and concepts in osteopathic practice;
- 2. Creativity Develop innovative and creative responses to health problems and challenges within area of research and/or professional practice. Develop innovative and creative responses to health problems and challenges within osteopathic practice;
- 3. Ethical practice Develop an understanding of health practice informed by ethical and legal principles. Apply knowledge and skills with high level personal autonomy and accountability to fulfil primary health care responsibilities. Apply osteopathic knowledge and skills with creativity and initiative in professional practice in a way that reflects osteopathic philosophy and scope of practice;
- 4. Knowledge of a discipline Communicate and demonstrate technical research skills to justify and interpret theoretical propositions, methodologies, conclusions and professional decisions to specialist and non-specialist audiences. Demonstrate knowledge of research principles and evidence-based methods applicable to osteopathy and its professional practice;
- 5. Lifelong learning Demonstrate mastery of theoretical knowledge, an extended understanding of recent developments in osteopathy and its professional practice, and reflect critically on personal and professional osteopathic practice;
- Communication and social skills Demonstrate personoriented care and communication. Demonstrate professional relationships and behaviour with healthcare professionals from all disciplines;
- 7. Cultural competence Apply an understanding of healthcare provision that is informed by cultural awareness and cultural competence, an international perspective and respect for the rights of all persons. Demonstrate an understanding of the physical, social, political, ecological and cultural influences on health and disease that impact health.

1.4 Alignment with accreditation standards and capabilities

Appointed by the Osteopathy Board of Australia (OBA; the Board) under contract with the Australian Health Practitioner Regulation Agency (AHPRA), the Australasian Osteopathic Accreditation Council (AOAC) is the independent accrediting authority for osteopathy education under the National Scheme (AOAC, 2019). The AOAC assesses and accredits education providers and programs of study against approved standards, to ensure that programs provide individuals with the relevant knowledge, skills and professional attributes to practice as osteopaths in Australia (AOAC, 2019).

In the interest of public safety, all osteopathic education programs are subject to a national accreditation process, whereby the program is examined against relevant accreditation standards that define the knowledge, skills and professional attributes expected upon graduation; in broad terms how education and training should be provided (AOAC, 2016). According to the AOAC, these standards are 'developed in consultation with relevant stakeholders and reviewed regularly to ensure they align with Australian and international best practice' (AOAC, 2016).

The most recent AOAC-scheduled review of the Accreditation Standards for Osteopathic Courses in Australia was conducted in 2016 following initial meetings with relevant stakeholders and senior staff from relevant universities (i.e. RMIT, VU and SCU) (AOAC, 2018; AOAC, 2016). The current standards are based upon the Board's Capabilities for Osteopathic Practice (2009). These capabilities establish the core competencies (e.g. communication, knowledge, technical skills, clinical reasoning) expected of all registered osteopaths, including all graduates of accredited and approved osteopathy programs in Australia (OBA, 2019). An amended version of these capabilities was published in July 2019 following extensive consultation with both professional and public stakeholders. According to the Board, these capabilities define the 'knowledge, skills and professional attributes identified as entry-level capabilities for graduates and re-registrants' (OBA, 2018; OBA, 2019). They ultimately exist to 'communicate to consumers, employers, insurance companies and other stakeholders the level of competence expected of osteopaths' (OBA, 2019). At a practical level, this involves utilizing the capabilities to inform regulation and accreditation standards and the development of osteopathic curriculum and learning objectives.

1.5 Capabilities of Osteopathic Practice (2019)

According to the Board, the intention behind these capabilities is to *'enable graduates to develop adaptable and sustainable capabilities appropriate for a continuously evolving healthcare environment'* (OBA, 2019). This statement speaks to the longevity and relevance of the profession going forward as the role of the osteopath evolves over time in response to emerging evidence, advances in technology, and the changing needs of Australian healthcare consumers (OBA, 2019). Furthermore, the capabilities serve to assist graduates to contextualize their role within the healthcare system in response to a widening range of shared capabilities amongst related healthcare professions. This is achieved by highlighting

specific similarities and differences between osteopathic capabilities and those of the National Common Health Capabilities Resource (OBA, 2019). This resource details a number of common capabilities that are of significant importance to all healthcare professions, including provision of patient-centred care, collaborative practice, health values, professional and ethical practice, and lifelong learning (OBA, 2019). According to the Board, 'these common or generic capabilities receive greater or lesser emphasis in each health profession and it is these varying emphases, rather than specific capabilities, that appear to form the individual nature of each profession' (OBA, 2019). The osteopathy profession has interpreted these into a list of distinctive capabilities (Table 4), which are also reflected in the learning objectives of osteopathic training courses in Australia (Table 5).

Capability	Explanation
1. Provision of patient-centred care	The core elements of patient-centred osteopathic care include education and shared knowledge, involvement of the support system, sensitivity to cultural and spiritual determinants of care, and respect for patient needs and preferences
2. Collaborative practice	Inter-professional and collaborative practice involves effective teamwork between osteopaths and multiple different healthcare providers in order to deliver comprehensive, coordinated and evidence- based care
3. Health promotion and illness prevention	Osteopaths contribute to enhancing the health and wellbeing of individuals and the community by fulfilling their primary care role and providing education on a range of social and environmental interventions
4. Evidence-based practice	Evidence-based osteopathic practice involves the integration of clinical expertise, patient values and current research evidence into the decision-making process for patient care
5. Cultural competence and safety	Osteopaths in Australia require a working knowledge of factors that contribute to and influence the health and wellbeing of different cultural groups and must be committed to the expansion of cultural knowledge and the adaptation of services to meet culturally unique needs
6. Patient empowerment and information transparency	Healthcare consumers are no longer passive recipients of interventions and osteopaths must ensure they view patients as equal partners in decision-making regarding their own healthcare, including being transparent with health-related information

Table 4: Capabilities of osteopaths derived from the National Common Health Capabilities Resource (OBA, 2	2019).
---	--------

Table 5: Alignment of the Capabilities of osteopaths with learning objectives of osteopathic courses in Australia
(OBA, 2019; RMIT, 2019; SCU, 2019; VU, 2019).

Capability	B.Health.Sc/ B.App.Sc (Osteo) – RMIT	B.Sc (Osteo)/ M.Health.Sc (Osteo) – VU	B.Clin.Sc (Osteo±H.S.F)/ M.Ost.Med – SCU
1.	Provide patient-centred care as a competent, safe primary healthcare professional	Provide patient-specific and evidence informed management based on examination findings and clinical experience	Demonstrate person- oriented care and communication
2.	Work autonomously and collaboratively to lead and/or contribute to inter-professional healthcare partnerships	Exhibit professionalism and effective communication when interacting with the patient community, peers and colleagues	Demonstrate professional relationships and behaviour with healthcare professionals from all disciplines
3.	Develop and implement strategies to meet personal and professional demands, as a primary healthcare provider	Engage patients and the community by promoting health through effective communication, education and management	Apply knowledge and skills with high level personal autonomy and accountability to fulfil primary health care responsibilities
4.	Provide osteopathic, musculoskeletal healthcare within a patient-centred, evidence-based framework	Provide patient-specific and evidence informed management based on the interpretation of physical, neurological, orthopaedic and osteopathic findings	Demonstrate knowledge of research principles and evidence-based methods applicable to osteopathy and its professional practice
5.	Effectively communicate with a wide audience with respect and sensitivity to socio-cultural diversity	Interrogate the physical, socio- economic, psychological, spiritual and cultural factors contributing to a patient's presenting complaint	Apply an understanding of healthcare provision that is informed by cultural awareness and cultural competence
6.	Manage all aspects of clinical practice to comply with ethical, legal, and regulatory standards	Resolve patient concerns as an ethical, flexible, reflective and consultative practitioner	Develop an understanding of health practice informed by ethical and legal principles

1.6 Major threats for osteopathic education

As seen in Tables 3, 4 and 5, the 'major areas of study' and 'learning objectives' of osteopathic training programs in Australia align strongly with the Capabilities of Osteopathic Practice (2019). While this bodes well for the longevity and future direction of the profession, there are areas of weakness that threaten to destabilize the future of osteopathic education and practice in Australia. These include course lengthiness and absence of postgraduate entry options, shaky financial backing from universities, poor emphasis on research and evidence-based technique, lack of specialization and diversification, and narrow postgraduate/career pathways.

1.6.1 Course lengthiness and absence of graduate entry options

Course lengthiness and the absence of shorter postgraduate entry options may be a significant deterrent for student enrolment and represents a greater financial burden on universities. Osteopathic courses initially ran for 5 years full time (FT) across all universities up until 2017 when the acknowledgement of course lengthiness saw a reduction in the duration of SCU's course to 4 years FT and VU's course to 4.5 years FT. This is a promising step towards becoming competitive with shorter-duration undergraduate physiotherapy courses for example, which range from 4-5 years FT.

The lack of graduate entry options for osteopathy courses remains a significant deterrent for applicants and lags behind the options provided by related professions including physiotherapy and exercise physiology. Of the three osteopathy programs in Australia, none currently offer a graduate entry option, unlike most physiotherapy and exercise physiology courses which allow students with an undergraduate degree to enter a 2-3 year FT Doctor or Masters course (UM, 2019; LU, 2019). Establishing graduate entry options for potential osteopathy students may be an essential step in remaining competitive with related professions. This may also be important when considering that universities place greater value on courses with higher student intakes, particularly in the face of recent financial constraints.

1.6.2 Financial backing from universities

In December 2017, the Federal Government announced a \$2.2 billion cut to university funding in its Mid-Year Economic and Fiscal Outlook (MYEFO) (AGDE, 2017). According to the Turnbull government, these cuts were designed to 'consolidate chronic overspending in the Federal Budget while simultaneously improving the sustainability of higher education in Australia' (AGDE, 2017). The Federal Government has proposed capping the amount of Commonwealth Grant Scheme (CGS) funding provided to each university for Bachelors degree places at the 2017 level for the 2018 and 2019 financial years (AGDE, 2017). Essentially, this involves a two-year freeze on the amount of funding that universities receive towards undergraduate commonwealth-supported places (CSP), which will be capped at the amount paid by the government during the 2017 financial year (AGDE, 2017).

At its core, this change specifies that if universities want to accept more students into HELP or VET-funded positions, they must divide and re-distribute the funds they are already receiving to accommodate any increase in student intake (AGDE, 2017). The repercussions of this for students include higher entry requirements, earlier loan repayments and a lifetime loan limit without fee increases (AGDE, 2017). At a university level, these changes may significantly threaten the longevity of certain at-risk courses leading to potential cancellation. This could become a trend as budget pressure forces universities to cease intakes for courses that will be underfunded or have low enrolment numbers (AGDE, 2017).

Interestingly, access to growth in CGS funding for Bachelors degree courses will be performance-based from 2020 (AGDE, 2017). Performance indicators will include student attrition, low socio-economic-status participation, and workforce preparedness of graduates (AGDE, 2017). Universities will also be required to provide financial data to the government (e.g. cost of teaching and research) to foster transparency in spending (AGDE, 2017). In essence, tighter and more regulated university funding will place greater pressures on individual Bachelors courses to perform. In order to preserve funding and avoid course cancellation, osteopathy programs must work to maintain a consistent increase in enrolment numbers and high-quality education to prepare graduates for real-life practice. Reducing course duration and tailoring learning outcomes to emerging trends in healthcare may be positive steps towards this. Remaining evidence-based and fostering a research culture among graduates may also ensure the longevity of osteopathic courses.

1.6.3 Evidence-based practice and research

As described in the Funding report, passive hands-on techniques and technique-based education are at risk of becoming non-evidence-based. While emerging studies favour the outcomes of active exercise-based and psychosocial approaches, osteopathic students struggle to shift their mentality and expectations towards these approaches as they depart from traditional handson practice and understanding. Continuing to practice using non-evidence-based methods may significantly jeopardise funding for osteopathic courses and overall professional regard (e.g. GPs preferentially refer to physiotherapists based on provision of active, exercisebased intervention that does not promote reliance on healthcare). As such, a shift in education may be necessary and students must be informed of these changes prior to enrolling.

As evidence is an integral part of any healthcare profession, fostering a thriving research culture among graduates ultimately positions the profession well in the eyes of universities and the wider healthcare community. Osteopathy courses at RMIT, VU and SCU each provide evidence-based learning from the outset and throughout (RMIT, 2019; SCU, 2019; VU, 2019). They also offer the opportunity for graduates to undertake a higher research degree upon graduation (i.e. Honours, Masters except RMIT, PhD). However, their approaches differ with regards to encouraging graduates to pursue research pathways. While all students enrolled at VU and SCU complete a compulsory research project as part of their Masters degree, RMIT students who instead complete a double Bachelors are encouraged to seek out research opportunities should they wish to pursue a research pathway upon graduating. Although these approaches vary significantly, it is widely agreed that creating research pathways for students is necessary to foster a thriving research culture within the profession and to secure the longevity of osteopathic courses. Fostering alternate postgraduate pathways in addition to research may also be essential for the profession going forward, particularly with regards to diversification and specialization.

1.6.4 Diversification and specialization

A lack of opportunities for osteopathic graduates to diversify and specialise may also threaten the future of the profession as students struggle to find their place within the widening range of shared capabilities amongst related healthcare professions. While the Capabilities of Osteopathic Practice (2019) place a distinct osteopathic focus on these shared capabilities, graduates may still struggle to distinguish themselves from related professions with similar core values. Opportunities for graduate osteopaths to specialise are narrow and lag behind the specialty postgraduate courses offered by physiotherapy for example (e.g. paediatric physiotherapy). Without externally recognised postgraduate courses of their own in paediatrics for example, osteopathy graduates must turn to postgraduate programs run by other universities or professional bodies, which do not guarantee entry. In the absence of osteopathy-specific postgraduate courses that allow for specialization, osteopathy graduates remain at a significant disadvantage to related professions such as physiotherapy. Furthermore, transferrable skills for diversifying into alternative postgraduate pathways are also lacking in osteopathic graduates as community/ public health foci are notably absent from the course curriculum. These noticeable flaws in the osteopathic education system may significantly limit postgraduate and career options for students.

2 Pathways and careers for osteopaths in Australia

2.1 How is the current workforce situated?

According to OBA registration data from June 2019, there are currently approx. 2,450 practicing osteopaths in Australia (and 96 non-practicing). Osteopaths in Australia are spread across a number of roles with significant skewing towards private practice (OBA, 2019; Joboutlook. gov, 2019). Limited information is available regarding the profile and clinical practice characteristics of the osteopathy workforce in Australia. In light of this, the Osteopathy Research and Innovation Network (ORION) project headed by Dr Jon Adams analysed careers data from a nationally representative sample of Australian osteopaths and recently published these results.

In this study, data was obtained from a 2016 workforce survey of Australian osteopathy, investigating the characteristics of the practitioner, their practice, clinical management features and perceptions regarding research (Adams, 2018). A total of 992 Australian osteopaths participated in this study representing a response rate of 49% (Adams, 2018). The average age of the participants was 38 years with 58% being female and the majority holding a Bachelor or higher degree qualification (Adams, 2018). Unsurprisingly, results showed that approx. 80% of osteopaths were operating in urban-area private practices, with most osteopaths working in multi-practitioner locations (Adams, 2018). Data on the remaining 20% of the profession is very limited, however, we are aware that alternate careers for Australian osteopaths include roles in research and academia, public health, occupational health and safety, sports and recreation, aged care and rehabilitation, and animal healthcare. The significant skewing of osteopaths towards careers in private practice is indicative of limited career pathways and transferrable skills, which ultimately restricts the diversity and longevity of the profession. This is likely to stem from flaws in the osteopathic education system.

2.2 Career options for graduates

Predicated on the Capabilities of Osteopathic Practice (2019), the current osteopathic curriculum equips graduates with the skills and capabilities required to succeed in private practice. This bias may be detrimental to those graduates who choose to pursue alternate career pathways (Table 6), as transferrable skills are not a priority of the current curriculum. With most of the profession directed towards lifelong careers in private practice, a small remainder are charged with leading and educating the next generation of osteopaths, evidencing the profession, diversifying the profession across the current healthcare landscape, and creating new roles for the profession in public/community healthcare initiatives. An osteopathic presence must be spread across each of these facets in order to secure the longevity and relevance of the profession going forward. This may involve altering the curriculum to better equip graduates for alternative careers in osteopathy, which may be achieved by providing transferable skills, opportunities to diversify and specialise, stronger working relationships with the public health sector, and a greater breadth of 'sideways' career options.

Table 6: Alternate career pathways for osteopathy graduates and entry options.

Capability	Explanation
Research and academia	 All osteopathic courses offer postgraduate entry into higher research degrees (i.e. Honours, Masters, PhD)
	 VU and SCU students must complete a compulsory research projects in their Masters course
	 RMIT students are encouraged to seek out research opportunities upon graduation from their double Bachelors course
	 Institutions may have research relationships in place with healthcare facilities and rehabilitation centres
	 Osteopathic academics are commonly involved in research and may offer research projects to graduates
Public and	• Unlike UK osteopaths, the non-physician status of Australian osteopaths inhibits hospital employment
community health	 Very few Australian osteopaths work in multidisciplinary healthcare clinics, aged care facilities, rehabilitation centres, etc.
	Osteopathic courses lack public and community health education thus limiting transferrable skills of graduates
	Graduates are eligible to study a Masters in Public Health
Diversification and specialization	 Diversification is limited as osteopathic curriculum currently lacks transferrable skills in occupational therapy, community health, public health etc
	 Opportunities for graduate osteopaths to specialise are narrow and lag far behind the specialty postgraduate courses offered by physiotherapy for example (e.g. paediatric physiotherapy)
	 No externally recognised osteopathy-specific postgraduate training in paediatrics, perinatal care, geriatrics etc
	 Graduates wanting to specialise must turn to postgraduate programs run by other universities or professional bodies, which do not guarantee entry
Further education	 Osteopathy graduates are eligible for postgraduate entry into some but not all graduate programs, including nursing and some physiotherapy courses
'Sideways' careers	 Very limited information exists regarding 'sideways' career options for osteopaths in Australia Graduates are well prepared for traditional careers in private practice but poorly prepared for 'sideways' careers

3 Conclusion

In conclusion, while osteopathic curriculum is strongly aligned with current and emerging healthcare priorities and Capabilities of Osteopathic Practice, educators must continuously work towards improving flaws and mitigating threats of course cancellation in the face of financial constraints om universities. To secure the longevity of osteopathy courses, course lengthiness must be continuously reviewed, graduate entry options must be created, and educators must foster an evidencebased approach and a thriving research culture among graduates. Furthermore, significant flaws exist in the education system which may pigeon-hole graduates into private practice and restrict opportunities to diversify and specialize. In this way, osteopathy graduates are disadvantaged when compared to related professions including physiotherapy and exercise physiology. To become competitive in these regards, a greater emphasis must be placed on opportunities to diversify, specialise, and pursue alternative career pathways at an education level.

4 References

Adams, J. S. (2018). A workforce survey of Australian osteopathy: analysis of a nationallyrepresentative sample of osteopaths from the Osteopathy Research and Innovation Network (ORION) project . *BMC Health Services Research*, 352–358.

AGDE. (2017). *Higher education policy changes*. Retrieved from Australian Government Department of Education: https://www.education.gov.au/higher-education-policy-changes-provider-faqs

AOAC. (2016). Accreditation standards for osteopathic courses in Australia. AOAC.

AOAC. (2018). Annual Report 2016-2017. AOAC.

AOAC. (2019). Strategic Plan. AOAC.

Joboutlook.gov. (2019). Osteopaths: Main industries. Retrieved from Joboutlook.gov: https://joboutlook.gov.au/ Occupation?search=Career&code=252112

LU. (2019). *Master of Physiotherapy Practice*. Retrieved from La Trobe University: https://www.latrobe.edu.au/courses/master-of-physiotherapy-practice

OA. (2019). *Studying osteopathy*. Retrieved from Osteopathy Australia: https://www.osteopathy.org.au/about-osteopathy/ studying-osteopathy

OBA. (2018). Revised professional capabilities for osteopathic practice: Public consultation. OBA.

OBA. (2019). Capabilities of osteopathic practice . OBA.

OBA. (2019). Registration data June 2019.

RMIT. (2019). Bachelor of Health Science/Bachelor of Applied Science (Osteopathy). Retrieved from RMIT University: https://www.rmit.edu.au/study-with-us/levels-of-study/undergraduate-study/bachelor-degrees/bachelor-of-health-sciencebachelor-of-applied-science-osteopathy-bp279

SCU. (2019). Bachelor of Clinical Sciences (Osteopathic Studies) / Master of Osteopathic Medicine. Retrieved from Southern Cross University: https://www.scu.edu.au/study-at-scu/courses/bachelor-of-clinical-sciences-3007162/

UM. (2019). *Doctor of Physiotherapy*. Retrieved from The University of Melbourne: https://study.unimelb.edu.au/find/courses/graduate/doctor-of-physiotherapy/

VU. (2019). Bachelor of Science (Osteopathy) / Master of Health Science (Osteopathy). Retrieved from Victoria University : https://www.vu.edu.au/courses/bachelor-of-science-osteopathy-hbso

9.3 Environmental Scan: Focus Groups

1	Participants	55
1.1	Practitioner wellbeing	55
1.2	Patient experience	55
1.3	Osteopathy skills and expertise	55
2	Emergent themes	57
2.1	Practitioner wellbeing	57
2.2	Patient experience	57
2.3	Osteopathic skills and expertise	57
3	Example analysis for	58
	'practitioner wellbeing'	
3.1	Thematic analysis	58

1 Participants

1.1 Practitioner wellbeing

Overall, 22 participants were eligible to participate; 3 could not be interviewed due to scheduling conflicts. Although consent was obtained from 19 individuals, 1 practitioner was later unable to participate due to technical error. The final number of participants was 18 (Table 1).

1.2 Patient experience

Overall, 12 osteopathy patients were eligible to participate. No scheduling conflicts or technical issues were experienced. Consent was obtained by each and the final number of participants was 12 (Table 2).

Employment type Registration with AHPRA Focus group delivery Participant Gender Location Practicing Registration Age (years) type status F 40-50 VIC G NP S FF 1 Y 2 М 20-30 VIC Υ G2 Ρ S FF 3 F 20 - 30VIC Υ G D S FF 4 F VIC 20-30 Y G Ρ S FF 5 F 20-30 VIC Y G P S FF 6 F 20 - 30VIC Υ G2 P S FF 7 Ρ М 30-40 VIC Y G1 Е FF 8 М 40-50 VIC Υ G Ρ S FF 9 F VIC D FF 20 - 30Y G1 S 10 F 20-30 Λ/Δ \vee G1 D S \cap 11 F 30-40 WA Y G Ρ S OL 12 F 30-40 WA Y G D OL S 13 F 30-40 WA Y G P S OL 14 F 30-40 WA Υ G Ρ S OL F 40-50 Y Ρ S 15 WA G OL 40-50 NSW Ρ 16 Μ Υ G S OL 17 F NSW P 30-40 Y G S OL 18 F 30-40 NSW Y Ρ S OL G

1.3

was 6 (Table 3).

Osteopathy skills and expertise

Overall, 10 external stakeholders were eligible to

participate; 4 could not be interviewed due to scheduling

conflicts. No technical issues were experienced. Consent

was obtained by each and the final number of participants

Table 1: Participant identification and demographics for 'Practitioner wellbeing' focus groups.

Key: F = female; M = male; VIC = Victoria; WA = Western Australia; NSW = New South Wales; Y = yes (with the Allied Health Practitioner's Regulation Agency); G = general; G1 = graduate year 1; G2 = graduate year 2; NP = non-practicing; P = practicing; S = subcontractor; E = employee; FF = face-to-face; OL = online.

Participant	Gender	Age (years)	Location	Complaint type	Complaint duration (years)	Focus group delivery
1	F	30-40	VIC	MSK	0.5-1	FF
2	F	50-60	VIC	Ρ	0.5-1	FF
3	М	60-70	VIC	MSK	2-3	FF
4	М	20-30	VIC	MSK	1-2	FF
5	F	70-80	VIC	MSK	5-6	FF
6	F	70-80	VIC	MSK	5-6	FF
7	М	70-80	VIC	MSK	0.5-1	FF
8	F	50-60	VIC	CDM	5-6	FF
9	М	50-60	VIC	MSK	0.5-1	FF
10	F	20-30	VIC	CDM	3-4	FF
11	М	20-30	VIC	MSK	0.5-1	FF
12	F	20-30	VIC	MSK	3-4	FF

 Table 2:
 Participant identification and demographics for 'Patient experience' focus groups.

Key: F = female; M = male; VIC = Victoria; MSK = musculoskeletal; P = pregnancy; CDM = chronic disease management; FF = face-to-face.

Table 3: Participant identification and demographics for 'Osteopathy skills and expertise' focus groups.

Participant	Gender	Age (years)	Location	Stakeholder status	Status duration	Focus group delivery
1	F	30-40	VIC	E	6-7	FF
2	F	30-40	VIC	E	2-3	FF
3	М	30-40	VIC	Ρ	1-2	FF
4	F	20-30	VIC	Ρ	1-2	FF
5	F	20-30	VIC	С	4-5	FF
6	F	40-50	VIC	E	1-2	FF

Key: F = female; M = male; VIC = Victoria; E = educator; P = practitioner; C = committee member; FF = face-to-face.

2 Emergent themes

For each of the 3 main focus group topics, 6 individual subthemes were identified and divided evenly into positive and negative categories. Representative quotes were identified to illustrate the main subthemes of the focus group discussions. An example of the analyses performed for each topic can be seen for 'practitioner wellbeing' in Table 4.

2.1 Practitioner wellbeing

Thematic descriptive analysis of the osteopaths' accounts identied some common perspectives regarding positives and negatives of practitioner wellbeing with accompanying quotes (Table 4). Where applicable, variations in the views expressed by participants in different states are highlighted.

Positives included:

- a) High personal satisfaction relating to positive patient outcomes and the perception of personal growth within the role;
- b) High degree of work hour flexibility allowing for engagement in social and family life;
- c) Good career engagement relating to numerous opportunities for continued professional development and engagement with emerging evidence-basedpractice initiatives.

Negatives included:

- a) Poor career sustainability due to i) physical/emotional burnout, ii) a lack of opportunity for diversification and specialisation, iii) future uncertainty facing the osteopathy profession;
- b) Poor self-beliefs due to i) a lack of feedback and feeling unsupported in a solitary role and ii) poor regard amongst other medical and healthcare professionals;
- c) A lack of financial stability relating to the role of a subcontractor, specifically amongst Melbourne osteopaths.

2.2 Patient experience

Thematic descriptive analysis of the patients' accounts identified some common perspectives regarding positives and negatives of the patient experience.

Positives included:

- a) Accessibility as a primary healthcare profession;
- b) Satisfaction in the outcomes and approach of osteopathic treatment;
- c) Complementary nature of osteopathy allows it to be used in conjunction with other interventions.

Negatives included:

- a) Lack of awareness of osteopathy on behalf of the patient and, more importantly, their other healthcare professionals;
- b) Poor distinction between osteopathy and other related healthcare professions;
- c) Absence of externally recognised specialisation within the osteopathy field.

2.3 Osteopathic skills and expertise

Thematic descriptive analysis of the stakeholders' accounts identified some common perspectives regarding positives and negatives of the osteopathic skills and expertise.

Positives included:

- a) Primary nature of osteopathy allows it to be highly accessible;
- b) Economical modality;
- c) Complementary in nature with other forms of primary and allied healthcare.

Negatives included:

- a) Indistinct skillset and poor distinction from related professions;
- b) Undefined scope of practice;
- c) Low research output.

3 Example analysis for 'practitioner wellbeing'

3.1 Thematic analysis

Positive theme 1: Job satisfaction

Job satisfaction was generally high amongst practitioners and appeared to be reliant upon patient-reported improvement and practitioner self-growth. Making significant improvements in patient quality of life appeared to be a major positive indicator of job satisfaction [1.1 & 1.2]. However, this appeared to mean different things for different practitioners; for some it meant helping patients reclaim function and return to their activities of daily living, while for others it signified a positive change in their mindset or behaviours [1.3]. Accordingly, a major threat to job satisfaction was a lack of patient-reported improvement. Reliance on the feedback of returning patients as a measure of their skills and expertise posed a problem when patients did not return, leading to selfcriticism [1.4]. Furthermore, the solitary nature of the role complicated the process of seeking guidance and feedback from peers [1.5].

Self-fulfillment and personal growth were other positive aspects identified among practitioners, particularly those with prolonged careers in the field. Osteopathy was described as an occupation that fosters continued self-improvement, learning and development, ultimately allowing practitioners to remain engaged and interested in their role [1.6 & 1.7]. Furthermore, those from NSW and WA attributed a strong sense of community and likemindedness to their overall job satisfaction [1.8].

Positive theme 2: Career engagement

Practitioners generally identified osteopathy as a highly engaging career that involves continuous learning and engagement with new and emerging research [2.1 & 2.2]. This was echoed in responses regarding job satisfaction and career sustainability. A majority reported feeling mentally stimulated by their role and eager to utilize the 'numerous opportunities' available to develop their skills and knowledge [2.3]. Interestingly, there was a general preference towards learning with others in group settings as opposed to independently conducting research [2.4]. While research was deemed 'necessary' for the future of the profession, it was not regarded as the 'natural tendency' of practitioners, who ultimately study osteopathy with the aim of practicing [2.5].

Opportunities to engage in specialized learning were acknowledged. While some practitioners expressed interest in pediatrics, pregnancy, chronic pain and geriatrics, others maintained that their definition of osteopathy relied heavily on being more generalist in their approach [2.6 & 2.7].

Positive theme 3: Work flexibility

The flexibility of self-employment allowed subcontractors to regularly engage in family and social activities and obtain a favorable 'work-life balance'. Furthermore, it allowed subcontractors to plan major events/holidays far in advance and manage households and children more effectively [3.1 & 3.2]. Conversely, the ability to dictate one's own hours proved difficult for newer graduates who felt pressured to accommodate patients after-hours and on weekends. This was particularly evident in newer graduates from VIC who reported often missing out on family and social events at the expense of retaining the few patients they had [3.3]. Interestingly, subcontractors from WA reported very little patient demand for afterhours or weekend appointments, allowing them to work within regular hours [3.4]. Overall, setting boundaries for patients in terms of appointment availability was deemed necessary for career longevity and avoiding burnout [3.5].

While work hour flexibility was an asset, subcontractors were inhibited financially by the lack of funding for maternity/annual/sick/carers leave [3.6 & 3.7]. Those further along in their careers were able to put money aside to pay themselves for their leave, while newer graduates from VIC reported that their income was not regular nor consistent enough to do so [3.8 & 3.9].

Negative theme 1: Career sustainability

Despite being described as a highly engaging career, most newer graduates expressed wanting to ultimately change careers in future, citing physical burnout and financial instability [4.1]. In the interest of maximising earning potential, long workhours and high patient loads threatened the physical wellbeing of newer graduates leading to early career injuries [4.2 – 4.4]. Physical burnout was also a concern for those further along in their careers but was mitigated by reducing their working hours and changing their practice style to a more hands-off or indirect approach [4.5 – 4.7]. Financial instability was particularly evident among subcontractors from VIC, while those from WA did not report the same competitive hardships [4.8].

Some practitioners expressed concern regarding the future of osteopathy and felt they may be forced to pursue alternate careers due to practice restrictions, limited scope and a shift towards a 'reductionist' approach [4.9 & 4.10]. While some were interested in engaging in specialised learning to mitigate this scoping threat [2.6], others preferred to remain general in their approach [2.7].

Negative theme 2: Self-beliefs

Ideas of 'self' were also a challenge for practitioners, specifically regarding the way osteopathy is viewed by other healthcare professionals and peers within the industry. Practitioners commonly reported a disconnect and poor parity of esteem with other healthcare professionals [5.1]. This included being excluded from team care arrangements and preferenced after physiotherapy and chiropractic by GPs and specialists in most instances [5.2]. This was largely attributed to poor self-promotion, an insufficient evidence-base and poor communication with other members of a healthcare team [5.3]. Ultimately, these beliefs led practitioners towards self-doubt and questioning their own career choices [5.4].

Negative theme 3: Financial instability

Among those from VIC, financial instability as a subcontractor was a common theme. This was attributed to a saturation of osteopaths in Melbourne [6.1 & 6.2]. Subcontractors from NSW reported similar saturation but tended to be further along in their careers and thus have established patient lists. Financial instability was identified as a major driver for working longer hours, sacrificing work-life balance and working when sick or injured [6.3 & 6.4]. This was particularly evident among newer graduates from VIC who remarked on the competitiveness of their working environment and difficulty in building patent lists. To supplement their fluctuating income, newer graduates typically maintained their part-time jobs (e.g. retail, sports training, administration) in their first 1-2 years of practice [6.5]. Comparatively, subcontractors from WA reported feeling more financially stable. As many had practiced in Melbourne prior to moving to Perth, those practitioners acknowledged that Perth offered a less competitive and saturated working environment in comparison [6.6].

Overall, subcontractors felt vulnerable by their lack of maternity/annual/sick/carers leave, culminating in reluctance to start a family or participate in contact sports for fear of career-halting injury [6.7 & 6.8]. Some reported seeking other types of employment alongside their osteopathy work to combat this and support them through such injuries. Those further along in their careers with established patient lists were able to put money aside to pay themselves for their leave, while newer graduates from VIC reported that their income was not regular nor consistent enough to do so [6.9]. Despite the financial instability associated with subcontracting, practitioners generally preferred not to be employees due to the earning cap, lack of flexibility and extra responsibilities associated (e.g. cleaning, social media, promotion, advertising/ marketing, networking) [6.10].

Table 4: Table of participant quotes for 'Practitioner wellbeing'.

Quote number	Participant	Theme: Job satisfaction
1.1	5	Helping others or rather feeling like you're making a difference in their lives is the main satisfaction for me.
1.2	8	I feel like I make a positive change in the majority of people I see, which is enough for me.
1.3	3	I get more satisfaction from just talking [to patients] because you can tell that you've just made the greatest change in their mindset going forward.
1.4	18	[osteopathy] isn't like a regular job where you have performance indicators and reviews with your boss to track your progress besides rebooking rates we have little to go on.
1.5	18	When a patient doesn't come back, I find myself questioning: 'did I do something wrong?', 'are they seeing someone else?', 'is that someone else much more experienced than I am?'.
1.6	17	I'm satisfied by my own personal growth in the job [osteopathy] brings a journey of learning not just osteopathically but also in communicating.
1.7	11	one of my highest values is learning and that is something that osteopathy provides, a constant stream of learning from other osteopaths and patients.
1.8	9	being part of a community of very like-minded individuals is nice there is a sense of community in the profession despite differing opinions on treatment

Quote number	Participant	Theme: Career engagement
2.1	13	[osteopathy] has always been very mentally stimulating for me anyway I think that's something that would keep me in the profession longer than others.
2.2	8	[Osteopathy] is a career that provides constant opportunities to learn and grow, particularly if you're interested in keeping up with the research.
2.3	17	most of my colleagues are quite hungry to do more in healthcare and take on more challenges but that's obviously subject to the evidence.
2.4	7	I learn a lot more from doing workshops and courses rather than reading journal articles.
2.5	2	I know research is necessary, but I just don't think it's our natural tendency to do it most of us get into osteopathy because we are natural carers and nurturers research doesn't exactly foster that or scratch that itch.
2.6	17	because I love learning I would consider doing some of the specialties that OA do offer for pain and things like that so I can freshen up on that knowledge
2.7	16	I can see pros and cons to specialization for the general public it shows we have further knowledge in an area but in my personal view I think its counter to what our principles are in terms of being holistic I don't think we're meant to be breaking people up into parts, we should be treating the whole person.

Quote number	Participant	Theme: Work flexibility
3.1	16	I think that the flexibility of being self-employed is fantastic. I really love that aspect of being able to block time off for a future holiday and that kind of thing
3.2	9	That's one of the best things about the job is being able to plan in advance, take time off if you need it, or just work within your week around your commitments.
3.3	5	All the time I miss out on things because I feel too bad to reschedule my patients or I'll stay late for them we can't afford for them to see someone else really.
3.4	8	but specifically, in Perth compared to when I worked in Melbourne I used to work nights till late nine o'clock and I've really found here that after maybe seven [pm] patients don't really want to be coming at that time of night.
3.5	17	l generally find most people will accommodate you if you are strong in your boundaries but if you're swayed by wanting to please people and make them happy, as I've done for many years, then you're always cramming people in a lot more and getting exhausted.
3.6	11	So, it is a good job to be able to structure that work-life balance, especially once family comes along but then the trade-off again is financially it's not easy
3.7	10	I think being a female and an osteopath is quite challenging to begin with because we don't get paid any of the maternity leave benefits or anything like that 'cause we all work for ourselves
3.8	16	The downside to holidays, of course, is that my income and savings goes back to zero again, which is part of why I've had to readdress how I can develop a buffer or put aside money for annual leave so to speak.

Quote number	Participant	Theme: Career sustainability
4.1	3	I would probably want to eventually change careers not only because of the financial and physical stuff but because I can't really see myself doing any one job for my whole life
4.2	9	it's all well and good to try and earn lots of money by seeing lots of patients but it takes its toll from a physical, emotional and psychological perspective.
4.3	17	I think that the factors that definitely have threatened my physical wellbeing has been my patient load it's been a big one particularly in the early days of working five-six days a week for ten- twelve hours.
4.4	5	I think there's more pressure as a new graduate to take every shift and every patient you possibly can you feel the need to cement your status within the practice and to work hard while you're young before you develop injuries
4.5	15	as I've progressed through [my career] I've learnt a lot more about the biodynamic approach, myofascial/visceral as well it's definitely enabled me to take a lot of the pressure off myself physically and practice longer.
4.6	16	I had a similar journey in terms of starting of quite structurally oriented which was quite demanding in a very exhausting, tiring way, physically and emotionally but changing the way I practice has saved me really.
4.7	17	I went through a really challenging time in my career where I felt like I just physically couldn't keep going but with the help of advice from my partner I realised I'd have to cut down my hours and change my style it really helped
4.8	12	I started working in Melbourne I've worked in Adelaide and then to Perth Melbourne has got a very different dynamic and it's that competition factor and I've had friends that moved back to Melbourne and were quite shocked like how difficult it is to build a client-based over there. Perth certainly has been easier.
4.9	16	I feel like osteopathy is becoming quite a bit more reductionist, less in touch with its foundations and its connection to the principles, and that we're becoming a little bit more like physiotherapists in our perspective on treatment, which I think is probably a sign of the other aspect that I'm concerned about is regulations and the impact that's having on our scope and the way in which we practice
4.10	16	I just don't know whether it's going to be something that is a safe profession to practice in the sense of 'are we all going to be sued or are we all going to be actually able to practice in a way that is true to what our profession is?'.

Quote number	Participant	Theme: Self-beliefs
5.1	3	doctors will always refer [patients] to a physiotherapist with physio[therapists] there's proof that they work so they're allowed to get into hospitals but with osteo[paths] you're not allowed to say that something will definitely work you're not allowed to say that we actually do something or that something actually works.
5.2	5	[Osteopathy] is too small and the evidence base just doesn't cut it like the others.
5.3	6	In order [for osteopaths] to play a role there needs to be better communication with other members of a healthcare team and having more open channels for multidisciplinary work would help.
5.4	4	not getting the feedback for doing a good job I think that contributes as well to emotional stress because you are constantly comparing yourself to others or wondering if your patients are seeing someone else.

Quote number	Participant	Theme: Financial instability
6.1	7	I've had a couple of people say when they were first getting into work especially in Melbourne 'cause we're quite saturated here sometimes a lot of people have trouble having enough patients to go around.
6.2	3	as a subcontractor in Melbourne, you don't know whether you're going to get two patients a week or ten patients a week and that uncertainty is something that really impacts financial wellbeing.
6.3	5	I've got four jobs two osteo jobs and two PT jobs I want to maximise my earning potential even though I know I'm really overwhelmed and exhausted I'm finding it really hard to get rid of other commitments for something less secure.
6.4	8	I think it [financial instability] does incline you as well to come to work even if maybe you should've stayed at home sick because you don't want to inconvenience and lose your patients we wouldn't dream of doing that just because it's too hard to take a day off really.
6.5	3	I was very hesitant to give up working at Coles in my first year of practice, plus it came in handy when I broke my leg and had to take 3 weeks off because I got to claim sick pay.
6.6	11	I know that when I first graduated, I was here in Perth and what I would see in a day, some of my friends in Melbourne were happy to see in a week and for me, I was overwhelmed with how much work I was getting and trying to keep up physically and emotionally whereas they were struggling to pay the bills.
6.7	13	After a serious elbow injury, I've stopped playing netball totally because I'm actually nervous about getting hurt and unfortunately netball was a good outlet that was probably going to keep me out with my friends at a regular time and get a bit of catharsis
6.8	3	I don't know how things would go if I actually had regular expenses like a mortgage or family it wouldn't be possible right now.
6.9	9	when I first started, I found it really difficult to try and manage and budget when your income is constantly fluctuating which I've learnt to do with time and now I'm able to put money aside for emergencies and holidays
6.10	1	I certainly wouldn't prefer to be an employee despite the issues with subcontracting at least we have no earning cap and aren't forced to do social media

9.4 Environmental Scan: Funding

1	Major 3rd party funders	64
1.1	Medicare	64
1.2	NDIS	64
1.3	WorkCover	64
1.4	MVAS	64
1.5	DVA	65
1.6	Private Health Insurance	65
1.7	Australian government private	65

health insurance rebate

2	Government funding	00
	for osteopathy	
2.1	The 2019-20 Health Budget	66
2.2	The Budget for allied health	67
2.3	Osteopathy under Medicare	68
2.4	Is osteopathy appropriately funded?	70
2.5	Barriers for appropriate funding	72
	ofosteopathy	

2.6 Recommendations to secure and/or 72 improve funding of osteopathy

3	Non-government funding	73
	for osteopathy	
3.1	Private health funding	73
	for osteopathy and allied health	
3.2	Sustainability of allied health funding	73
3.3	A case for retaining allied health	73
	funding	
4	Conclusion	74
5	References	74

1 Major 3rd party funders

Osteopathic services are funded by a range of government agencies and private health insurers. These government agencies/initiatives include: i) Medicare, ii) National Disability and Insurance Scheme (NDIS), iii) WorkCover, iv) Motor Vehicle Accident Scheme (MVAS alt TAC), and v) Department of Veteran affairs (DVA).

1.1 Medicare (AGDH, Item 10966, 2019)

- Medicare provide rebates for osteopathic services for patients in the Chronic Disease Management (CDM) program. The CDM program allows General Practitioners (GPs) to refer patients for up to five (5) allied health professional consultations in a calendar year for patients with chronic medical conditions or complex care needs.
- The schedule of CDM fees sets the maximum amount Medicare will pay an osteopath for services given at \$62.25 as at November 2018. The osteopath may charge more than the schedule amount, meaning they charge a gap fee.
- Medicare rebates are available for some x-rays referred by an osteopath, including examinations of the hip, pelvic girdle, and spine. The imaging provider may charge more than the scheduled amount, meaning they charge a gap fee.

1.2 NDIS (NDIS, 2019)

- NDIS patients who self-manage an individualised funding package may claim osteopathic treatments with package funds pending approval by their case manager.
- The treatment must be deemed by the case manager to be 'reasonable and necessary' to enhance the patient's function for activities of daily living.
- The approval process involves the osteopath writing a letter to the case manager describing the therapeutic and functional approaches they would use to help a patient achieve their goals. In general, the osteopath will not be able to provide hands-on treatment but may use other intervention strategies including exercise programs and therapeutic activities for patients to perform at home or with carer supervision.

1.3 WorkCover (WorkSafe, 2019)

- Osteopaths are eligible to provide rebated workplace injury management services in each Australian state and territory.
- To be eligible to receive rebated services from osteopaths under WorkCover, individual case managers require evidence of an initial GP referral to an osteopath.
- Depending on the severity of the workplace injury and return to work goals, the case manager may grant approval for a certain number of clinical sessions with an osteopath. If work-related limitations persist after the approved number of sessions are used, the osteopath will generally need to seek further approval for more sessions from the case manager.
- In some jurisdictions, a schedule of fees caps the maximum amount an osteopath will be paid for workplace injury management services. When there is a capped schedule of fees, the case manager will only pay an osteopath up to the amount specified in the schedule. In some jurisdictions, osteopaths can charge a gap payment over the schedule of fees, to be paid outof-pocket by the patient.

1.4 MVAS (alt TAC) (MVAS, 2019)

- Osteopaths are eligible to provide rebated motor vehicle accident management services in each Australian state and territory.
- To be eligible to receive rebated services from osteopaths under MVAS, individual case managers require evidence of an initial GP referral to an osteopath.
- Depending on the severity of the motor vehicle injury and return to work goals, the case manager may grant approval for a certain number of clinical sessions with an osteopath. If injury-related limitations persist after the approved number of sessions are used, the osteopath will generally need to seek further approval for more sessions from the case manager.
- In some jurisdictions, a schedule of fees caps the maximum amount an osteopath will be paid for motor vehicle injury management services. When there is a capped schedule of fees, the case manager will only pay an osteopath up to the amount specified in the schedule. In some jurisdictions, osteopaths can charge a gap payment over the schedule of fees, to be paid outof-pocket by the patient.

1.5 DVA (DVA, 2019)

- Osteopaths are eligible to provide rebated veteran affairs management services in each Australian state and territory provided they are Medicare registered.
- To be eligible to receive rebated services from osteopaths under DVA, the veteran requires referral from a GP, specialist, treating hospital doctor, hospital discharge planner, or an osteopath with a current referral.
- The osteopath will claim from DVA directly for an eligible service. Veterans should not have to pay anything out of pocket, and osteopaths are not permitted to charge a gap fee.
- The level of cover is dependent upon DVA cardholder status; Gold Card holders have all osteopathic services covered, while White Card holders have only osteopathic services related to the accepted condition covered.

1.6 Private Health Insurance

- According to the recent review of private health insurance rebates, from April 1st, 2019 osteopathy will continue to receive a rebate from private health funds as a 'basic extras cover' item. This review was chaired by the former Commonwealth Chief Medical Officer found and informed by an evaluation of the evidence undertaken by the National Health and Medical Research Council (NHMRC) (AGDH, Private health insurance reforms: Changing coverage for some natural therapies, 2019).
- Most private health insurers currently provide rebates for osteopathy, although some provide more substantial rebates than others. Levels of cover vary depending on the premiums paid by the individual and the services offered by the health fund. Some funds provide flexibility regarding extras services under an annual cap. Others categorise services at different levels depending on the type of cover purchased.
- Considerations for individuals regarding private health insurance cover include i) the individual/s requiring cover, ii) the type of cover needed (hospital and/or extras including osteopathy), iii) services included in the policy, and iv) the specific needs of the individual/s.
- Osteopaths often charge a gap payment over the rebate determined by the private health insurer to be paid out-of-pocket by the patient. Osteopaths have no control over the rebate that a private health insurer provides.

1.7 Australian government private health insurance rebate

- The Australian Government Rebate on private health insurance provides a reduction in the premium cost of private healthcare.
- The Government's rebate on private health insurance is currently adjusted annually on the 1st of April based on the Rebate Adjustment Factor (RAF) which considers growth in the Consumer Price Index (CPI) and the industry weighted average premium increase.
- The RAF for 2019 is 0.986 and the industry weighted average premium increase for 2019 is 3.25% (AGDH, Private health insurance reforms: Changing coverage for some natural therapies, 2019).
- The private health insurance rebate is income tested and applies to hospital, general treatment and ambulance policies.

2 Government funding for osteopathy

2.1 The 2019-20 Health Budget

Health infrastructure

According to the 2019–20 Budget, an estimated \$81.8 billion (b) is being provided to the health system in 2019–20, with funding expected to grow to \$89.5b in 2022–23. The distribution of funds is as follows (AFG, 2019):

Table 1: Funding opportunities for allied health (AFG, 2019).

Funding	Opportunities for allied health
\$1.1b Strengthening Primary Care package including \$448 million (m) in increased funding to enhance the care and services GPs provide to high-need patients and \$187m to increase the patient rebate for a further 119 GP items on the Medicare Benefits Schedule (MBS) from 1 July 2019. This includes a resumption of indexation for Medicare GP services from 1 July 2019.	 Allied health is not included in this package.
\$199m to increase patient rebates for diagnostic imaging items on the MBS from 1 July 2020 and \$152m for new MRI licenses, bringing total funding since 2018 to \$379m for 53 new MRI licenses nationally. This includes a resumption of indexation for Medicare diagnostic imaging items from 1 July 2020.	 Medicare rebates are available for some imaging modalities referred by allied healthcare providers.
\$1.3b for the Community Health and Hospitals Program to boost health services across Australia in five priority areas: i) hospital infrastructure, ii) drug and alcohol treatment, iii) preventative health, iv) primary care and chronic disease management, and v) mental health. This includes \$736.6m over seven years for mental health services with a commitment of \$461.1m for youth mental health.	 This may provide opportunities for allied health in their preventative health, primary care, and chronic disease management roles.
\$337.2m comprehensive drug strategy to address harmful opioid use, improving family drug support services across Australia, and increasing the capacity of the drug and alcohol workforce in regional and remote areas.	 This may provide a role for allied health in non-analgesic pain management.
\$385.6m to build on Sports 2030 by encouraging Australians to increase their participation in sport and upgrading sporting infrastructure. This includes \$150 million to support the development of female change room facilities at sporting grounds and community swimming facilities across Australia.	 This may create further opportunities for allied health in sport and recreation.
\$448.5m will see older Australians with chronic diseases enrolled in the next iteration of the Health Care Homes (HCH) program to support those who wish to stay at home for longer through an additional 10,000 home care packages across all levels. This is part of a \$5.9b commitment over two years from 2020 21 to extend the Commonwealth Home Support Program.	 This funding continues to exclude allied health to an extent. See section f2.3 for more detail.
\$5b Ten Year Investment Plan for the Medical Research Future Fund (MRFF), which includes investments in projects to improve patient care, increase access to clinical trials and improve health outcomes for Australians. This includes \$605m in funding for infrastructure to support medical research, and \$220m for research into cardiovascular health. This is a significant increase from 2018-19, when a \$6b investment was spread over the MRFF (\$2b), the National Health and Medical Research Council (\$3.5b), and Biomedical Translation Fund (\$0.5b).	 Securing research funding for allied health research may significantly improve uptake and government funding.

2.2 The Budget for allied health

According to Allied Health Professions Australia (AHPA), their report entitled 'Federal budget a failed opportunity to improve access to allied healthcare' discusses the failure of this most recent budget to provide urgently needed improvements to the accessibility of allied health services for Australian health consumers given the growing burden of chronic disease (AHPA, Federal budget a failed opportunity to improve access to allied healthcare, 2019).

While the report welcomed a range of positive initiatives focused on home care for the elderly, mental health services, and continued investment in the My Health Record, it highlighted that funding continues to exclude allied healthcare services in prudent areas. The final recommendation of the report is that the new Government should focus their efforts towards increasing preventative and non-medical care in order to see significant improvements in the most significant areas of disease burden (AHPA, Federal budget a failed opportunity to improve access to allied healthcare, 2019).

Despite the continued growth of Australia's chronic disease burden and the deep inequity in the impact of chronic conditions on Indigenous Australians, rural and remote communities and low-income earners, this Budget has failed to provide the leadership and reform we need to begin providing genuinely universal access to health care.

A stronger primary care sector benefits all Australians. However, primary care is more than just general practice. Australians need access to genuine multidisciplinary primary care interventions to address chronic conditions such as diabetes, stroke, chronic musculoskeletal issues and mental ill-health. This Budget fails to deliver that, providing no meaningful investment in allied health care. While a significant investment will see older Australians with chronic diseases enrolled in the next iteration of the Health Care Homes program, that funding continues to exclude allied health to a large extent, providing no mechanism to access the follow-on services those consumers need.

Similarly, while the Government has pledged significant funding for Medicare, this investment fails to provide any real increase in access in non-medical care. This is likely to further exacerbate our current health inequities and ignores the recommendations of a wide range of clinical committees and reference groups participating in the Medicare Review process. While the Review process continues, this Budget could have provided a means of signalling future reforms through pilot programs or the implementation of smaller initial reforms. Instead, the budget has ultimately failed to listen to the emerging health needs of Australians. A report by the National Rural Health Alliance (NRHA) highlights further deficiencies of the Budget in failing to combat the critical shortage of allied health professionals in rural, regional, and remote Australia. The NRHA represents 37 national organisations whose members work in rural, regional and remote Australia. While they acknowledge 'considerable progress by previous governments in addressing rural health shortages', the NHRA highlights that this is only a 'partial solution' (NRHA, 2019). To ensure all Australians have access to appropriate allied health care, the NRHA have made the following key recommendations (NRHA, 2019):

- Fund an additional 3000 allied health care professionals (\$300m over 4 years).
- Fund 20 demonstration sites in rural and remote regions with a workforce to match the needs to each and use this to develop future workforce models (\$50m over 4 years).
- Establish a grants program to make sure Australians in rural, regional and remote areas have telecommunications connectivity so they can access healthcare remotely (\$400m over 4 years).
- Make Medicare rebates available for online or telehealth consults offered by allied health professionals to people in outer regional, remote and very remote areas (\$420m over 4 years and \$180m per year thereafter).

We acknowledge the Federal Coalition Government's \$550m commitment to fund 3000 additional doctors and 3000 additional nurses but doctors and nurses alone won't do it. We also need physiotherapists, psychologists, audiologists, social workers and many other allied health professions to be on the ground to provide the comprehensive care needed to address the woeful health statistics in our non-metropolitan regions.

Some regions, such as western NSW, had already identified that short-term contracts and fly-in, fly-out allied health workforces failed to provide sustainable care with strong impacts on health outcomes. As a demonstration site, these statistics can help to guide the workforce models of the future.

We know that telehealth can deliver things like homebased rehabilitation, mental health care services and aged care support, but when 80% of 400 Indigenous communities in the Northern Territory alone don't even have a 3G or 4G mobile phone signal, there is no way to deliver it. We want communities to identify digital connectivity solutions for online health care that will work for their area and for the Federal Government to fund these solutions through a national grants program.

(NRHA, 2019)

(AHPA, Federal budget a failed opportunity to improve access to allied healthcare, 2019)

2.3 Osteopathy under Medicare

2.3.1 Eligibility

- Medicare befits are available for certain services provided by eligible allied health professionals (including osteopaths) to individuals with chronic or complex care needs via Chronic Disease management (CDM) items or the Health Care Home (HCH) program.
- A chronic medical condition is defined as one that 'has been or is likely to be present for at least six months,
 e.g. asthma, cancer, cardiovascular disease, diabetes, musculoskeletal conditions, or stroke' (AGDH, Item 10966, 2019).
- An individual is considered to have complex care needs if they require 'ongoing care from a multidisciplinary team consisting of their GP or medical practitioner and at least 2 other health or care providers' (AGDH, Item 10966, 2019).

2.3.2 MBS Requirements

Osteopathy health services can be claimed as allied health item 10966 under the Medicare Benefits Schedule (MBS). Osteopathy health services may be provided to an individual by an eligible provider if:

- (a) The service is provided to a person who has:
- A chronic condition; and
- Complex care needs being managed by a medical practitioner (including a general practitioner, but not a specialist or consultant physician) under a shared care plan or under both a GP Management Plan (GPMP) and Team Care Arrangement (TCA) or, if the person is a resident of an aged care facility, the person's medical practitioner has contributed to a multidisciplinary care plan; and
- (b) The service is recommended in the person's TCA, multidisciplinary care plan or shared care plan as part of the management of the person's chronic condition and complex care needs; and
- (c) The person is referred to the eligible osteopath by the medical practitioner using a referral form that has been issued by the Department of Human Services (DHS) or a referral form that contains all the components of the form issued by the DHS; and
- (d) The person is not an admitted patient of a hospital; and
- (e) The service is provided to the person individually and in person; and

- (f) The service is of at least 20 minutes duration; and
- (g) After the service, the eligible osteopath gives a written report to the referring medical practitioner mentioned in paragraph (c):
- If the service is the only service under the referral in relation to that service; or
- If the service is the first or the last service under the referral in relation to that service; or
- If neither applies but the service involves matters that the referring medical practitioner would reasonably expect to be informed of in relation to those matters; and
- (h) For a service for which a private health insurance benefit is payable - the person who incurred the medical expenses for the service has elected to claim the Medicare benefit for the service, and not the private health insurance benefit; to a maximum of five services in a calendar year.

Fee: \$62.25 Benefit: 85% = \$52.95

(AGDH, Item 10966, 2019)

2.3.3 Health Care Homes

In December 2018 the Government announced the extension of the HCH program for an additional eighteen months to 30 June 2021 (DHS, 2018). The period allowed for enrolment has also been extended to 30 June 2019, or until enrolment reaches the program's new cap of 12,000 (DHS, 2018). HCHs are general practices or Aboriginal Community Controlled Health Services (ACCHS) that provide better coordinated and more flexible care for Australians with chronic and complex health conditions. A HCH shared care plan is a written plan that is prepared by a medical practitioner (including a GP but not a specialist or consultant physician) who is leading the individual's care at a HCH trial site.

HCH-enrolled individuals will have complex chronic conditions and are eligible to access MBS-funded allied health services that are normally triggered by a GPMP/ CDM Plan and TCA. Where clinically appropriate, they may also have to access limited MBS-funded allied health services that are normally triggered by either: i) a health assessment for Aboriginal and Torres Strait Islander People, or ii) a GP Mental Health Treatment Plan. Claiming processes for allied health professionals participating in the HCH program are identical to those used to claim under GPMP/CDM/TCA plans.

2.3.4 Prerequisites for patients

Patients must have received the following MBS services (AGDH, Item 10966, 2019):

- GPMP/CDM plan: MBS GP item 721 or medical practitioner item 229 (or GP review item 732 or medical practitioner review item 233 for a review of a GPMP); and
- TCA: MBS GP item 723 or medical practitioner item 230 (or GP review items 732 or medical practitioner review item 233 for a review of TCAs).
- For patients who are permanent residents of an aged care facility, their GP or medical practitioner must have contributed to, or contributed to a review of, a multidisciplinary care plan prepared for them by the aged care facility (MBS GP item 731 or medical practitioner item 232).
- For patients who are enrolled with a Health Care Home, a shared care plan must have been prepared by the medical practitioner who is leading the patient's care.
- While Medicare services are strictly available for individual services, those with type 2 diabetes may also access MBS items 81100 to 81125 which provide group allied health services.

2.3.5 Prerequisites for practitioners

Allied health items can only be claimed for services provided by eligible allied health professionals who are registered with the DHS. To enable registration with the DHS, osteopaths must be registered and accredited by the Osteopathy Board of Australia (OBA). The eligible allied health professional may or may not be a member of the TCA team convened by the GP or medical practitioner to manage an individual's chronic or complex care needs. Referral validity is as follows:

- Medicare benefits are available for up to five allied health services per patient per calendar year under a CDM plan. The five services can include one type of service or a combination of different services. According to Medicare, 'five services per calendar year are the legal maximum per individual and exemptions to this are not possible' (AGDH, Item 10966, 2019).
- Where an individual receives more than the limit of five services in a calendar year, the additional service/s will not attract a Medicare benefit and the MBS Safety Net arrangements will not apply to costs incurred for the additional service/s.

- If an individual has not used all allied health services under a referral in a calendar year, any 'unused' services received from 1 January in the following year under that referral will count as part of the total of five services for which the individual is eligible in that calendar year.
- It is not necessary to have a new CDM plan prepared each calendar year in order to access new referral/s for eligible allied health services. Individuals continue to be eligible for rebates for allied health services while they are being managed under the prerequisite CDM items or HCH shared care plan as long as the need for eligible services continues to be recommended in their plan.

2.3.5 Out-of-pocket expenses and Medicare Safety Net

Allied health professionals can determine their own fees for the professional service. As such, charges in excess of the Medicare benefit are the responsibility of the individual. While out-of-pocket costs will count toward the Medicare Safety Net for that individual (provides a higher Medicare benefit for out of hospital costs), allied health services in excess of five per calendar year will not attract a Medicare benefit and the Safety Net arrangements will not apply to costs incurred for such services (AGDH, Item 10966, 2019).

2.3.6 Publicly funded services

Allied health items are not provided as Commonwealth or state funded services. However, where an exemption under subsection 19(2) of the Health Insurance Act 1973 has been granted to an Aboriginal Community Controlled Health Service or state/territory government health clinic, allied health items can be claimed for services provided by eligible allied health professionals salaried by, or contracted to, the service or health clinic (AGDH, Item 10966, 2019). Medicare services provided under a subsection 19(2) exemption must be bulk billed (i.e. the Medicare rebate is accepted as full payment for services) (AGDH, Item 10966, 2019).

2.3.7 Private health insurance

Individuals must choose to use Medicare or their private health insurance ancillary cover to pay for allied healthcare services. They cannot use their private health insurance ancillary cover to 'top up' the Medicare rebate paid for the services (AGDH, Item 10966, 2019).

2.4 Is osteopathy appropriately funded?

In his 2018 article 'How can Australia's Medicare system be reformed so that exercise-based therapies are properly funded', sports and exercise medicine (SEM) physician and Australian Medical Association (AMA) member Dr John Orchard argues that physiotherapists and exercise physiologists are not funded fairly and presents a compelling case on how to increase funding and recognition for exercise-based treatments. The article argues that if all health professions were funded 'fairly' based on their evidence of efficacy, exercise-based therapies warrant greater funding and less comparison with well-funded medical professions. Orchard highlights his point using a hypothetical 'Patient X' scenario as follows (Orchard, 2018): Let's consider a hypothetical patient: 'Patient X' who is a 55-year-old sedentary female with breast cancer. As it is, there is very good evidence that successfully implementing an exercise program in this patient will decrease her mortality by 30%. But let's make her a typical real-life patient and give her a right knee medial meniscal tear with early osteoarthritis and bilateral tennis elbow pain, so that when her oncologist or GP ask her to "do some exercise," she says, "I can't exercise my legs because my right knee hurts and I can't do anything with my arms because my elbows hurt." We'll also put her on a Health Care Card and having her breast cancer treated in the Public Hospital System because she struggles to afford out of pocket expenses. How would a practitioner get this patient to be able to do more exercise? Let's see what the MBS has to offer her in terms of rebates for exercisebased therapies compared to other options (Table 2).

Practitioner	MBS Item number - 2018	Best MBS rebate for a 40-minute service in 2018	Service	Evidence- based?	Best MBS rebate for a 20-minute non-initial service	Best 40 min rebate in 2008	Best 20 min rebate in 2008
General practitioner	743	\$151.25	Coordinating multidisciplinary case conference	Yes	\$72.80	\$131.35	\$63.75
Physiotherapist	10960	\$52.95	Chronic care consult based on exercise & load management	Yes	\$52.95	\$48.95	\$48.95
Exercise physiologist	10953	\$52.95	Chronic care consult based on exercise & load management	Yes	\$52.95	\$48.95	\$48.95
Anti-vaccine Chiropractor	10964	\$52.95	Chronic care consult based on ??	No	\$52.95	\$48.95	\$48.95
Orthopaedic surgeon	49561	\$505.50	Arthroscopic menisectomy/ chondroplasty	No	\$37.15	\$467.10	\$33.75
Rheumatologist	132	\$227.70	Chronic care consultation including cortisone injections*	Yes?/No*	\$114.00	\$207.25	\$103.75
All other Physicians (not SEM)	132	\$227.70	Chronic care consultation	?	\$114.00	\$207.25	\$103.75
Sport & Exercise Medicine Physician	104	\$73.85	Chronic care consult based on exercise & load management	Yes	\$37.15	\$93.80	\$63.75

Table 2: Rebates available for various practitioners to treat Patient X.

*According to the 2017 Therapeutic Guidelines: Rheumatology, a rheumatologist should treat both knee osteoarthritis and tennis elbow with multiple cortisone injections. Randomised controlled trials against placebo injections has found that cortisone injections are harmful for both of these conditions when compared to placebo injections.
The most generous rebate offered (for a 40-minute service) is for a discredited procedure for her condition – a knee arthroscopy and meniscectomy/chondroplasty. Whilst discredited in multiple trials, it is by far the most generously funded item by Medicare. Although the number of knee arthroscopies have dropped in recent years as patients become more aware of evidence, item 49561 was still claimed 32,429 times in Australia in the most recent financial year July 2017 – July 2018.

The next most generous category of rebate is granted to almost all medical specialist physicians, with the glaring exception of SEM physicians (who are not deemed to qualify as "physicians" under the MBS). Consultant physicians can generally be relied upon to provide high-quality service; however, these services may be based upon outdated Therapeutic Guidelines for musculoskeletal complaints. This is evidenced by current Rheumatology 2017 guidelines, which state that both the knee osteoarthritis and tennis elbow of Patient X should be treated with "multiple" cortisone injections. The 2017 version offers a blanket recommendation for cortisone injection for every joint and every tendon listed. It states that the most important factor in considering a cortisone injection is the expertise of the practitioner (not whether there is evidence that it beats placebo).

On the third tier of MBS rebates for Patient X is the general practitioner (GP), who is awarded a mid-range rebate for a longer consultation which gets upgraded in the event of organising TCAs, which in the case of Patient X seems justified. Like any practitioner, there is the capacity for GPs to be delivering harmful treatment options, and the biggest failing of GPs in recent years is not "inappropriate antibiotics" but instead "inappropriate painkillers." Patient X can get sensibly prescribed opiate painkillers if she has entered palliative care for advanced cancer, however they would not be appropriate for her knee pain or tennis elbow. At the bottom tier for MBS practitioner rebates is a collective of all allied health care practitioners and SEM physicians, meaning that all exercise-based practitioners are part of a group that receive relatively low patient rebates from Medicare. As can be seen from Table 1, even though the Australian Medical Council (AMC) assessed SEM as being a medical specialty ten years ago, patient rebates are up to 66% lower than for Rheumatology & Rehab Medicine, which would be the closest specialties to SEM. It is not simply a matter of being penalised for being a "newer" specialty. Sexual Health and Addiction Medicine were recognised at the same time yet have subsequently been granted equity with the other physician specialties. Therefore, it could be concluded that SEM and other allied health professions are penalised under the MBS simply for the fact that they are exercise-based and not drug or procedure-based.

SEM physicians and other allied health practitioners can and do typically charge similarly to the fees that are the Medicare rebate amounts for other physicians, meaning that most of the fee must be paid out of the patient's pocket. Effectively, this creates a major financial barrier for accessibility, and since these professions aren't in public hospitals either, these important services may not be available to Patient X due to lack of government support. Physiotherapy and exercise physiology charges may be slightly lower and there is somewhat of a presence in public hospitals, however similar logic applies in that they are not fully subsidised by Medicare and hence, are services that higher socioeconomic patients can fully access, but public patients can't. In the case of Patient X, these are services that could potentially increase her lifespan but are not accessible to her due to lack of government funding.

(Orchard, 2018)

2.5 Barriers for appropriate funding of osteopathy

In his article, Orchard highlights a number of issues and barriers associated with increasing funding for allied health under the MBS, which are summarised as follows (Orchard, 2018):

a) The same political issue that is dividing medicine may apply in that the government may only agree to increased rebates for evidence-based treatments if funding is cut for non-evidence-based treatment.

With emerging evidence steering away from passive hands-on therapies and towards active exercise-based and psychosocial interventions, allied health groups such as physiotherapy, chiropractic, and osteopathy who typically deliver passive treatments are at risk of losing funding. Given that these professions have the ability to provide well-evidenced exercise-based and psychosocial interventions, they should be able to argue for higher rebates for musculoskeletal conditions that have been shown to respond to this type of management.

b) The lack of uniform evidence of efficacy within the allied health group may limit funding opportunities for select professions within the group.

Currently, the allied health group represents a vast array of practitioners and provides no quality differentiation between them. A chiropractor who claims that Patient X's cancer, tennis elbow, and knee pain can be cured by spinal manipulation gets the same MBS rebate as a physiotherapist who would implement well-evidenced exercise therapy. As such, funding struggles to increase for some and not others due to poor differentiation.

c) The hierarchy of 'eminence over evidence' reduces the credibility of the allied health industry among medical boards.

This is highlighted by an anecdote from Orchard: 'In 2017, I was a panel member to determine the Australian Clinical Care Standard for the management of knee osteoarthritis (OA). I had the temerity to suggest that exercise-based practitioners should be considered priority referral recommendations for GPs treating knee osteoarthritis based on the evidence that exercise was the best available treatment for knee OA. This was rejected by the Chair from the Australian Rheumatology Association based on: i) exercise-based therapists are not medical specialists and as such, specialists should remain the preferred referral choices for GPs, and ii) SEM physicians should not be included as preferred practitioners for GPs for knee OA as despite being medical specialists, their training and expertise was inferior to rheumatologists'.

Recommendations to secure and/or improve funding of osteopathy

In his article, Orchard argues that the key to increasing funding for exercise-based therapies lies in lobbying with the support of GPs as stated below (Orchard, 2018):

GPs may be the key health practitioner to drive the change of exercise-based practitioners being taken seriously by the health system. They are at the centre of the health system and can and do refer to everyone. GPs have now had enough contact with SEM physicians, physiotherapists, and exercise physiologists to determine that they provide an effective service in preference to non-evidence-based drug and surgical options for knee OA, back pain and tendon issues. However, GPs also know that the patients of exercise-based practitioners and allied health professionals as a whole are having to pay a lot out of pocket, not because of overcharging but rather underrebating.

Underpinning the need to get proper MBS rebates for exercise-based practitioners is the important evidence that exercise is an effective treatment and prevention for a vast number of chronic diseases. But it is lobbying that is now required for exercise-based practitioners to get fair funding under the MBS, and we must work with GPs to get it over the line. The main reason for this is to allow Australians from all socioeconomic backgrounds access evidence-based treatment.

(Orchard, 2018)

2.6

3 Non-government funding for osteopathy

3.1 Private health funding for osteopathy and allied health

Australia's health system in its current form comprises both publicly funded and private elements as part of its fundamental design. Private Health Insurance (PHI) funds treatments provided in private hospitals (and some public) and creates a fee-for-service system allowing doctors and allied health professionals to charge a co-payment as part of or above a scheduled fee-for-service. The two types of private health insurance include hospital and extras cover, which as of April 1st, continues to include osteopathy under the allied health banner. The logic behind this decision is evident in the *2017-18 Pre-Budget Submission* by Private Healthcare Australia (PHA), the Australian private health insurance industry's peak representative body. The content of this report is summarized in the following sections (PHA, 2018).

3.2 Sustainability of allied health funding

According to PHA, Australia's mixed private and public health system is generally well regarded, however, there is concern among Australians regarding the issue of health system sustainability. This unease is driven by the fact that inflation of health input costs has risen at a rate much higher than household income over the last decade, which in turn increases pressure on premiums and household budgets (PHA, 2018).

Market research has repeatedly shown premium affordability is the main reason deterring people from taking out PHI, and premium increases are the main driver of dropouts and downgrades from existing levels of cover (PHA, 2018). As such, Australian private health funds are acutely aware of the need for budget repair to *'ensure the sustainability of the Australian private health system in to the future'* (PHA, 2018). In the context of PHI rebates on *'extras' inclusive of allied health care services, government and other stakeholders have proposed removal of all or part of the rebate on extras as a savings measure.* However, according to the PHA *'there is no evidence that such a proposal would work in practice or realise any Budget savings'.*

Extras cover delivers value to younger people who are less likely to make hospital claims, but who derive considerable value from cheaper access to dental and allied health services in the community. It is worth noting that when asked about choosing a health fund for hospital cover, many consumers mention attributes related to extras cover, which reinforces the relevance of this product to consumers. The immediate consequences of the removal of the rebate on extras will cause a halving of their demand, which will have a detrimental impact on PHI uptake by younger people and thus reduce any potential savings made.

(PHA, 2018)

3.3 A case for retaining allied health funding

Conversely, the PHA have made a strong case for retaining allied health and extras cover in their submission, citing a critical role for allied health in combatting the healthcare issues of the future (PHA, 2018). Furthermore, the PHA recommend that the Federal Government review relevant legislation with the objective of permitting health funds to provide funding for services provided out-of-hospital which are either a substitute for hospital care, permit the better integration of care for the elderly and the chronically ill, or which have the potential to prevent avoidable hospital admissions (PHA, 2018).

Since the advent of Medicare in its current form, health funds have been excluded from funding care provided outside of a hospital including GP and specialist services, allied health consultations and diagnostic imaging and tests. In the initial construction of Medicare this made sense, but over time two things have occurred which makes this inflexible aspect of the system both inflationary and impractical. Firstly, the emergence of chronic health conditions as the predominant burden of disease, and secondly the emergence of new technology, particularly information and communications technology e.g. home monitoring of chronic conditions, which means health services can be safely and effectively delivered in many more care settings than a hospital.

Health funds must make a significant investment in better care of people at risk of complications from chronic disease, with a view to prevent avoidable hospital admissions and prolong length of stay in hospitals. GPs and allied health professionals are critical to this care model, which helps patients navigate available healthcare and social services.

(PHA, 2018)

3 Conclusion

In conclusion, while osteopathy under the allied health banner currently receives funding support from a number of government agencies (Medicare, NDIS, WorkCover, MVAS, and DVA), the longevity of this funding is threatened by: i) a lack of evidence-based treatment, ii) poor distinction from others in the allied health group who are poorly evidenced, and a lingering hierarchy of 'eminence over evidence' in the healthcare industry. While there have been some positive opportunities for allied health from the most recent Budget, there are still significant barriers for allied health participation in the telehealth movement and the HCH program. While allied health is acknowledged to have a potentially positive role in managing Australia's future healthcare priorities (e.g. the aging population and the mounting burden of chronic disease), government funding has not appeared to reflect this. Conversely, PHIs have acknowledged the significance of allied health and have renewed funding based on consumer demand (particularly younger individuals who do not require hospital care) and our role in reducing the burden of chronic disease on hospitals.

4 References

AFG. (2019, April 1). *Budget 2019-20 for Individuals, Families, and Businesses*. Retrieved from Budget 2019-20: https://www.budget.gov.au/index.htm

AGDH. (2012, Dec 20). Specialist video consultations under Medicare. Retrieved from MBS Online: http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/connectinghealthservices-patients-QA

AGDH. (2019, Jan 31). *Item 10966*. Retrieved from MBS Online: http://www9.health.gov.au/mbs/fullDisplay. cfm?type=item&qt=ItemID&q=10966

AGDH. (2019, April 17). Private health insurance reforms: Changing coverage for some natural therapies. Retrieved from Public and private healthcare: http://www.health.gov.au/internet/main/publishing.nsf/Content/privatehealth-insurance-reforms-fact-sheet-removing-coverage-for-some-natural-therapies

AHPA. (2019). Federal budget a failed opportunity to improve access to allied healthcare.

AIHW. (2018, June 20). Australia's Health 2018. Retrieved from Australian Institute of Health and Welfare: file://rmit. internal/USRHome/eh6/e92486/RA%20Osteo/Enviro%20Scan/AusHealth2018.pdf

DHS. (2018, December 17). About Health Care Homes. Retrieved from Helath Care Homes: https://www.health.gov.au// internet/main/publishing.nsf/Content/health-care-homes

DVA. (2019, June 28). Compensation claims. Retrieved from Department of Veteral Affairs: https://www.dva.gov.au/ financial-support/compensation-claims

MVAS (alt TAC, June 28). (2019). Who can make a claim? Retrieved from Transport Accident Commission: https://www.tac. vic.gov.au/what-to-do-after-an-accident/who-can-claim-with-the-tac

NHRA. (2019, April 23). *Rural Australia needs Allied Health Professionals*. Retrieved from National Rural Health Alliance: https://www.ruralhealth.org.au/media-release/rural-australia-needs-allied-health-professionals

NDIS. (2019, June 28). Understanding the NDIS. Retrieved from the National Disability Insurance Scheme: https://www.ndis.gov.au/understanding

Orchard, J. (2018). HOW CAN AUSTRALIA'S MEDICARE SYSTEM BE REFORMED SO THAT EXERCISE-BASED THERAPIES ARE PROPERLY FUNDED? FUNDING FOR EXERCISE-BASED THERAPIES.

PHA. (2018). Pre-Budget Submissin 2017-18. Private Healthcare Australia.

POA. (2017, August 4). Private health insurance. Retrieved from Parliament of Australia: https://www.aph.gov.au/About_ Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp1718/Quick_Guides/PrivateHealthInsurance

WorkSafe Victoria. (2019, June 28). Claims and Recovery. Retrieved from WorkSafe online: https://www.worksafe.vic.gov.au/

9.5 Environmental Scan: My Health Record

1	What is My Health Record?	76
1.1	When did MHR come into action?	76
1.2	Foundations of the MHR system	76
1.3	The rights of the individual vs the healthcare provider	76
2	Information available through MHR	77
2.1	Consumer-entered information	77
2.2	Medicare overview	77
3	Benefits and limitations of MHR	78
3.1	For the consumer	78
3.2	For the healthcare provider	78

3.3 For the healthcare system

78

4	MHR in allied healthcare	79
4.1	Using MHR for allied	79
	healthcare providers	
4.2	Alternate pathways & barriers for allied healthcare users	79
5	Use of MHR data for	80
	research purposes	
6	References	80

1 What is My Health Record

In response to a growing need for greater quality, safety and efficiency in the use of health data, the Australian federal government created My Health Record (MHR), a secure online summary of an individual's health information currently available to all Australians. The record is accessed and managed by the individual and their healthcare providers, provided they are authorized to do so by their healthcare organization. MHR brings together healthcare information from both the individual as well as healthcare providers across the sector, allowing pertinent information to be shared between them for continuity of care. Furthermore, MHR can be linked with MyGov and other health applications to enable ease of access for consumers (ADHA, My Health Record, 2019).

The MHR system has been heavily endorsed by the Australian Medical Association (AMA), the National Rural Health Alliance (NRHA), and the Consumers Health Forum (CHF) as an answer to poor multidisciplinary collaboration and communication between healthcare professionals in the management of complex-needs patients (ADHA, My Health Record, 2019). As such, this system is poised to significantly benefit individuals with complex needs who require multidisciplinary care, including the ageing population and those with chronic conditions.

1.1 When did MHR come into action?

In early 2019, the federal government established an electronic health record (MHR) for all Australians (adults and children), unless individuals chose to opt-out by 31st January 2019. This 'opt-out' system was chosen to increase public uptake in response to poor use of the 'opt-in' Personally Controlled Electronic Health Record (PCEHR) program launched in 2012.

1.2 Foundations of the MHR system

The current MHR system was founded on the back of the PCEHR program in 2012, a national system for providing access to individuals' key health information, intended to (OA, 2015):

- Help overcome the fragmentation of health information in Australia.
- Improve the availability and quality of health information.
- Reduce the occurrence of adverse medical events and the duplication of treatment.
- Improve the coordination and quality of healthcare provided to individuals by different healthcare providers.

In November 2013, the then Minister for Health announced a review of the PCEHR system. The report, *Review of the Personally Controlled Electronic Health Record 2013*, was publicly released in May 2014. The PCEHR Review found that there was overwhelming support for continuing the path of implementing a consistent eHealth record system for all Australians, but that a change in approach was needed to correct early implementation issues. The PCEHR Review made thirty-eight recommendations aimed at making the system more usable and able to deliver the expected benefits in a shorter period, including: i) a name change to My Health Record, ii) new governance arrangements, iii) moving to an opt-out system, and iv) improving usability for healthcare providers and individuals (OA, 2015).

1.3 The rights of the individual vs the healthcare provider

Individuals have the power to access and manage their own MHR. They can restrict access to some, or all documents stored on the record. However, in an emergency, healthcare providers are authorised to override these safeguards to ensure they have appropriate access to pertinent information required to carry out immediate care (ADHA, My Health Record, 2019). Records can be cancelled after the opt-out deadline; however healthcare providers reserve the right to retain copies of any records which they have contributed to the MHR and store them in their own record-keeping systems (ADHA, My Health Record, 2019).

2 Information available through MHR

Information available through MHR can be entered by the consumer and the healthcare provider, including (ADHA, My Health Record, 2019):

- A patient's shared health summary
- Event summaries
- Medication prescribing and dispensing history
- Their Medicines Information View
- Discharge summaries
- · Specialist letters and referrals
- Advanced Care Planning information
- Pathology reports
- · Diagnostic imaging reports
- Childhood development information
- · Consumer-entered information (see below)
- · Medicare overview (see below)

2.1 Consumer-entered information

Consumer entered information is currently only visible to healthcare providers through the National Provider Portal, as clinical information systems are yet to have these functional abilities. Consumer entered information may include (ADHA, My Health Record, 2019):

- Personal health summary: individuals can enter information about allergies, adverse reactions, and current medications into their MHR, which is visible to healthcare providers.
- Advance care directive custodian: individuals can enter the contact information of a person or organisation who is the holder of their advance care directive (or 'living will').
- Emergency contact details: individuals can create a list of important emergency contacts in their MHR, which is visible to healthcare providers.
- Personal health notes: individuals can enter information to help them keep track of their own health, akin to a health journal. These notes are not visible to healthcare providers.

 Child development: parents can record results of their child's scheduled health checks, childhood development, and other useful information. The objective is to provide an integrated view of a child's health status for the parents/guardian and healthcare providers involved in the child's care. The Child Development section of a child's MHR contains: i) immunisations, ii) child health check schedule, iii) child growth charts, information for parents, and more.

2.2 Medicare overview

When an individual's MHR is created, they can choose to have their Medicare data included. This can include past (up to two years of prior transactions) and future: i) Medical Benefits Schedule (MBS) and Pharmaceutical Benefits Scheme (PBS) transaction information, ii) their organ donor status (sourced from the Australian Organ Donor Register), and iii) details from their Australian Immunisation Register (AIR) records (ADHA, My Health Record, 2019). These records may be viewed individually or in summary via the digital health record Medicare overview (ADHA, My Health Record, 2019).

3 Benefits and limitations of MHR

3.1 For the consumer

- Hastens the procurement and delivery of healthcare information for faster diagnosis and treatment.
- Facilitates ease of sharing of health information and results between providers and from provider to patient and vice-versa.
- Gives consumers greater autonomy and responsibility over their health information and encourages greater health-literacy.
- Helps to avoid medical error and misadventure, including adverse drug events caused by medication errors by patients and healthcare providers.
- · Helps to avoid service duplication.

3.2 For the healthcare provider

- Improves provider access to patient health information.
- Improves health information exchange between interprofessional/multi-disciplinary teams for faster and more effective patient management.
- Facilitates patient self-management, freeing up time for providers to be productive in more critical activities.

3.3 For the healthcare system

- Reduces costs associated with medical misadventure, medication errors, and service duplication.
- Improves the safety and security of patient healthcare data sharing.
- Facilitates continuous improvement of the healthcare system through effective reporting and sharing of health outcome information.
- Supports informed policy, investment, and research decisions through access to timely and comprehensive reporting on Australian health system activities and outcomes.

The major limitation, or rather risk, involved in the MHR system is data security. The MHR system is a 'centralized system'. Instead of having multiple separate files with every healthcare provider seen by the individual, all this information exists in one central and accessible online location. Centrally stored information, while beneficial and easy to access, brings the risk of exposing sensitive patient information in the event of a data breach. Despite this, the government assures that security is a key design element of the MHR system, with all data storage occurring within Australia (ADHA, My Health Record, 2019).

4 MHR in allied healthcare

4.1 Using MHR for allied healthcare providers

Full use of the MHR system allows allied healthcare providers to (ADHA, My Health Record, 2019):

- · View a patient's MHR and download clinical documents.
- Author clinical documents for MHR.
- Upload clinical documents to MHR.
- Manage organisational interactions with the Healthcare Identifiers (HI) Service and MHR.

For a healthcare provider to use to the MHR system they must (ADHA, My Health Record, 2019):

- Work for an organisation which is registered with the MHR System Operator, and
- Use conformant clinical/practice management software containing an authenticated digital certificate to access the MHR system.

4.2 Alternate pathways & barriers for allied healthcare users

More recently, new registration processes for allied healthcare providers have been established, allowing them to connect to the MHR system via the Healthcare Provider Registration System (HPOS). All AHPRA-registered allied healthcare providers may register for a Provider Digital Access (PRODA) account, which can be linked with a HPOS account. This HPOS account can then be used to register a provider with the Healthcare Identifiers (HI) Service, allowing them access to MHR systems in one of three capacities (ADHA, My Health Record, 2019):

- Accessing MHR via conformant software: the Register of Conformity lists software products that have been assessed for conformance with national digital health requirements. Full use of the MHR system is granted to healthcare providers utilizing these conformant software platforms. Currently, the Register of Conformity excludes practice-management software programs that are commonly used by allied healthcare practitioners, including Cliniko and Front Desk. The Register does include medically geared programs such as Best Practice and Medical Director, which are not necessarily suited to the needs of allied healthcare providers.
- Accessing MHR via the Network Provider Portal (NPP): the National Provider Portal (NPP) is a web-based interface through which allied healthcare providers can access the MHR system without the need for conformant software. However, the NPP is a read-only service that limits use of the MHR system to viewing documents only. As such, this option inhibits healthcare providers from engaging fully in the use of MHR.
- Accessing MHR via a Contracted Service Provider (CSP): Contracted Service Providers (CSP) provide IT services or health information management services relating to the MHR system to healthcare provider organisations and interact with the MHR system on their behalf.

From an osteopathic perspective, key barriers for osteopathic engagement with the MHR system include: i) limited access to conformant software, and ii) restricted use of the MHR system via the NPP pathway. These findings suggest that lobbying software providers for MHR compatibility and inclusion may be an important step forward for osteopathy.

5 Use of MHR data for research purposes

The MHR system is a valuable source of information on Australia's health system and the outcomes of healthcare being achieved. This information can guide service planning, policy development and research to further improve the Australian health system. Following significant public consultation, a Framework to guide the secondary use of My Health Record system data (the Framework) has been developed and published (ADHA, My Health Record, 2019). At present, the policy decision has been taken that MHR data will not be made available for research and public health purposes pending the establishment of robust processes and governance arrangements. These arrangements will ensure the privacy of healthcare recipients whose de-identified data and health information is made available for approved research and public health purposes. In accordance with the time frames in the Framework, data will not be made available before 2020 in order to provide sufficient time for governance, security, privacy and technical arrangements to be implemented (ADHA, My Health Record, 2019).

6 References

ADHA. (2019, February 1). *My Health Record*. Retrieved from Australian Digital Health Agency: https://www.myhealthrecord.gov.au/for-healthcare-professionals/allied-health

OA. (2015). Submission to Consultation on Electronic Health Records and Healthcare Identifiers: Legislation Discussion Paper . OA.

WHO. (2018). A national telehealth strategy for Australia. Australian National Consultative Committee on Electronic Health.

9.6 Environmental Scan: Professional Associations

1	The role of professional associations	82	3
			- 23
2	The benefits of professional associations	83	
2.1	Pioneering a common vision and goal	83	4
2.2	Giving a voice to the profession	83	_
2.3	Aggregating efforts, thoughts, and ideas of members	83	5
2.4	Giving power and credibility to the profession	83	6
2.5	Giving a visual identity to the profession	83	- - -
2.6	Driving professional expertise and standards	83	6
2.7	Advocating for the provision of quality care	84	7
2.8	Driving professional development	84	_
2.9	Structuring and governing the profession	84	8
2.10	Liaising with stakeholders	84	9

3	Professional associations	85
	for osteopathy in Australia	
3.1	Osteopathy Australia	85
3.2	Other professional associations	85
	for osteopaths	
4	Role in accreditation	86
5	Role in law and policymaking	86
6	Threats facing professional	87
	associations	
6.1	Technology	87
6.2	Competition	87
6.3	Generational divide	87
7	The future of professional associations	88
8	Conclusion	89
9	References	89

Professional associations were traditionally formed to establish the legitimacy of their members within a specialised professional field. They have since evolved to offer a wider range of benefits to their members including access to a global network of professionals, lifelong learning, mentoring, professional development, practice support and representation in leadership and public policy discussions and debates (Guthrie, 2016). However, with their traditional business and membership models under increasing pressure from the impacts of digital disruption and demographic changes, professional associations must continuously re-evaluate their relevance and value (Burritt, 2016). Not only must professional associations remain responsive in this rapidly changing environment, they must also be forward thinking and strategic in anticipating the changing needs of the profession. This report explores the benefits, limitations and threats facing professional associations in their efforts to support members.

A professional association (also called a professional body, professional organization, or professional society) seeks to further a profession, the interests of members of that profession and engage the public in the benefit or role of that profession.

(Guthrie, 2016)

The role of professional associations

Professional associations maintain an oversight of the knowledge, skills, conduct and practice of their members and perform several necessary functions including lobbying, advocacy, lawmaking, research, education and professional image. Traditionally accused of being slow in their uptake of new social platforms, professional associations are now communicating and performing these functions through emerging technological platforms (e.g. Facebook, Twitter, LinkedIn) (Stokes, 2016). Crucial to the survival of the professional association is a steady increase in members. To facilitate this, recruitment must be ongoing and both existing and prospective members should clearly understand the benefits of belonging to the association.

These include (OA, 2019):

1

- Lobbying and representation
- Policy development and submissions
- Information and advice on professional issues or problems
- Events, conferences, and opportunities for networking and professional development
- Research and publications on areas of practice quality and innovation
- Development and provision of clinical or professional guidelines
- Access to salary information based on surveys conducted by the association, and advice on workplace agreements
- Mentoring schemes, career advice, industry information
- Various types of job vacancy listings specific to the industry
- Scholarships, awards and prizes
- Information on professional registration requirements

2 The benefits of professional associations

2.1 Pioneering a common vision and goal

A successful professional association gives a common vision and goal to unify its profession. When this vision is shared amongst all members, the professional association has a common purpose and outlook regarding the provision of care it provides. A shared vision and goal serve to inspire members and promote commitment and motivation among them. When the vision and goal are understood, members become responsible for accomplishments and develop a sense of ownership and achievement.

2.2 Giving a voice to the profession

A professional association co-creates the vision, mission, and strategic directions with its members and espouses them with all new members and external stakeholders. Through collaboration and consultation, it ensures that all members have the opportunity to participate and be heard, thereby encouraging motivation and commitment to the cause.

2.3 Aggregating efforts, thoughts, and ideas of members

A professional association provides a platform to collect and collate the thoughts and ideas of the members who constitute the profession; common viewpoints and agreed upon stances regarding specific issues of practice and policy are frequently established. This creates a model unique to the profession which in turn results in certain expectations from the government, policy makers, and other stakeholders regarding the profession. This common frame of mind regarding the provision of care, behaviour, and personal conduct enhances a sense of identity and belonging among members. Within the professional association, members gather to share knowledge, findings, and experience about the profession; ideas can be exposed and discussed; and plans can be put into action. The professional association becomes an information repository from which stakeholders obtain information and direction.

2.4 Giving power and credibility to the profession

When members of a profession are organized into a professional association, the professional association gains and gives power and credibility to the profession. The voice of one member represents a synthesis of thoughts from a group of individuals. The opinion of one individual may not be heard, but a professional association helps to accomplish what an individual cannot accomplish alone. The professional association becomes a visible representation of the existence of the profession in a specific country, and a legal entity with the right to mobilize resources (human, financial, and material) to implement activities and reach goals.

2.5 Giving a visual identity to the profession

The legal name, logo, and graphic design of a professional association contribute to profiling the profession. With a strong visual identity, the professional association attracts additional financial, human, and social resources and builds more key partnerships. A visual identity and an attractive and informative web site are tools that assist the general population to recognize the professional association. The professional association becomes a recognised and trusted resource for information about the profession, and what it has to offer to the public.

2.6 Driving professional expertise and standards

The professional association also functions as a conduit for professional development. The association scans the horizon for what is new in the profession and what is happening at a policy level that may affect the work of its members. Leaders and members of a professional association have various backgrounds, experiences, expertise, and skills; when stakeholders require expertise, the professional association becomes the 'go-to' resource. The more members there are in the professional association, the more expertise there is. Therefore, it is important to regularly recruit new members and to provide a favourable environment to retain current members.

2.7 Advocating for the provision of quality care

A professional association contributes to the provision of quality care. If a regulatory body exists as the primary gate keeper of quality, the association will work collaboratively with this body to guide and inform members about the provision of up-to-date, evidence-based care. It advocates for the development and implementation of regulations for the profession to support mechanisms that protect the public and ensure safe and competent professionals provide high standards of care. The professional association may also support, where appropriate, the enforcement of ethical practice, and motivate new and experienced health care professionals to continually improve the quality of the care they provide.

2.8 Driving professional development

Associations are responsible for ongoing education and professional development of their members. It is the main channel through which members access Continuing Professional Development (CPD) opportunities. To fulfil this role, associations need to continually evaluate new developments in the professional field and determine 'how best' to inform members about such opportunities. Following this surveillance, associations should then promote, and support interested members to take advantage of the professional development opportunities. Additionally, the association should consistently make critical contributions to innovations within the field through use of its leaders and experts.

2.9 Structuring and governing the profession

The governance structure of the association reflects upon the governance structure of the profession. A well organised, managed, and led association gives the impression of a highly organised professional group. A goal-and results-oriented professional association raises the profile of the profession and leads to consultations from community and ministry, invitations to high level meetings, and invitations to policy and decisionmaking forums. Overall, this provides the inclination for involvement of members and stakeholders.

2.10 Liaising with stakeholders

A professional association is responsible for communicating with different audiences to ensure that the profession is widely known, and that the association knows of other similar stakeholders within the same sector (health). To be effective, the association needs a well-developed communication strategy. One of the key reasons to have effective communication with the government is for the association to have access to opportunities regarding policy making and policy influencing and to advocate for quality care provision. As such, it is imperative for the association to communicate in a way that emphasises its role as a source of professional expertise and current information in the industry.

3 Professional associations for osteopathy in Australia

3.1 Osteopathy Australia

In Australia, there is only one professional association focused purely on the osteopathy profession. Osteopathy Australia represents over 80% of registered osteopaths as members of the association. Osteopathy Australia is the peak body representing the interests of osteopaths, osteopathy as a profession and consumer rights to access osteopathic services. Osteopathy Australia was founded as a Victorian state-based organisation in 1955 and became the national body in 1991 after a merger of state-based osteopathic associations. Today, Osteopathy Australia represents osteopaths in every state and territory across Australia (OA, 2019).

Core focus

The core external focus of the association is raising awareness of osteopathy, lobbying, policy development and clinical quality; while its focus for membership services includes a wide array of information and advice, clinical excellence and guidelines, continuing professional development, healthcare business and support (OA, 2019).

Osteopathy Australia's Mission and Vision

Our Mission is that Osteopathy Australia strives to enhance and promote the profession. Our Vision is that Osteopathy Australia is acknowledged by government and stakeholders as the peak representative body for all Australian osteopaths. Osteopaths' role in primary health and multidisciplinary care is recognised and osteopathy will continue to develop and strengthen as the manual healthcare of choice for all Australians. We support and expect high quality university-based education for graduates. We will be the provider of choice for professional development; with core practice standards as a platform for an osteopath's professional journey and increasing diverse career opportunities.

Structure

The Board of Osteopathy Australia is a mix of osteopaths and other skills-appointed Directors. The Board will always consist of a majority of five (5) member-elected Directors (osteopaths), and no less than two (2) and no more than four (4) Board-appointed, skills-based Directors. To ensure jurisdictional diversity at all times, at least one (1) member-elected Director on the Board shall have his or her primary practice and/or reside in any one of the following jurisdictions: Australian Capital Territory, Northern Territory, South Australia, Tasmania or Western Australia. Osteopathy Australia strives to ensure that our Board reflects the gender, cultural and clinical mix of our profession (OA, 2019).

Core challenges

In a country as large as Australia, a core challenge for any osteopathy association is the workforce distribution issues, with five states or territories having less than 50 osteopaths. This makes providing sustainable and engaging services incredibly difficult to equitably service members across high- or low-density populations of the profession. Osteopathy Australian has addressed this by a heavy reliance on technology and online services for information and advice; online e-learning or communications; over a more traditional and high cost model of face-to-face interactions (OA, 2019).

3.2 Other professional associations for osteopaths

Osteopaths are free to join a large range of multidisciplinary professional associations such as:

- Australian Natural Therapists Association (ANTA): the largest national association of 'recognised professional' traditional, complementary medicine and natural therapy practitioners who work in the areas of health care and preventative medicine.
- Australian Traditional Medicine Society (ATMS): supports professional practitioners of natural medicine occupations who work in areas of complementary healthcare.
- Chiropractic and Osteopathic College of Australasia (now defunct).

4 Role in accreditation

Many professional bodies are involved in accrediting, defining, and examining the skills and competencies necessary to practice a person, and granting professional certifications to indicate that a person is qualified. Sometimes membership of a professional body is synonymous with certification, though not always. Membership of a professional body, as a legal requirement, can in some professions form the primary formal basis for gaining entry to and setting up practice within the profession (AOAC, 2016).

In Australia, professional associations for registered health professions, such as osteopathy, do not carry out such licensure or accreditation functions. Registration duties are carried out by the Osteopathy Board of Australia and university accreditation functions by the Australian Osteopathic Accreditation Council. This does not prevent professional associations from having a role in educational development, scope of practice or clinical healthcare standards. Osteopathy Australia develops a range of clinical or practice guidelines, risk management tools or build understanding of regulatory requirements (AOAC, 2016).

According to the Osteopathy Board of Australia, the intent of developing policy, clinical guidelines or standards is to (OBA, 2019):

- Promote best practice within the profession
- Promote the effective use of current research to develop modern practice and influence changes within education and training if needed
- Raise awareness among consumers, health practitioners and osteopaths on research that build the osteopathic evidence base
- Provide support and resources for prosperous, healthy careers
- Promote practitioner well-being through support, training and mentoring

Although professional associations may not have a direct role in regulatory or practice compliance, they can have a role in highlighting and promoting best practice, which in turn has positive flow-on effects in the areas listed above.

Role in law and policymaking

To legally and autonomously function, professional associations must be registered according to legislation. This gives the association legal capacity to enter into agreements or contracts, assume obligations, incur and pay debts, sue and be sued, and be held responsible for its actions (OBA, 2019). Registration ensures that the association is recognized by the government and gives legitimacy to the professional association to represent, defend, and act on behalf of its members. While professional associations help to raise the profile of the profession, educate members and maintain high standards and/or ethical behaviour, they must ensure their membership criteria, voluntary codes and advice to members comply with a wide range of legislation and regulation. These include the:

- Competition and Consumer Act;
- Corporations Act and ASIC requirements;
- Australian Charities and Not-for-profits Commission Act;
- Charities Act;

5

- Privacy Act;
- Components of the Health Practitioner Regulation National Law Acts; and,
- State or Territory associations incorporation legislation.

Although professional associations aim to develop promotion and benefits for their members they must not:

- Act outside the ASIC controls that apply to all corporations;
- Develop codes of conduct or voluntary professional rules that don't comply with various Acts;
- Negotiate contracts, arrangements or understandings on behalf of members that relate to prices or contracts (unless the ACCC has granted an exemption) or restrict members' dealings with competitors;
- Insist that members use advertising that confuses or misleads consumers by taking advantage of the consumer-professional knowledge or limits competition within the profession.

6 Threats facing professional associations

Belinda Moore in her report 'Association Apocalypse -Navigating the Rapidly Changing Landscape to Ensure Future Success encapsulate the challenges for the future' identifies several threats facing professional associations should they not embrace nor adapt to:

- New technological platforms for communication with members
- Competition from self-organising networks and competing associations
- Widening generational divide and the influx of young professionals
- Desire for a personalised experience among members

6.1 Technology

The traditional business and membership models of professional associations are under increasing pressure from the impacts of digital disruption. With the rapid development of communication technology and the rise of Facebook, Twitter, LinkedIn, Google, Instagram, etc. many of the necessary functions of professional associations (e.g. education and professional development) are being undertaken outside of their traditional sphere of influence (Guthrie, 2016). Some authors argue that in fact many of the traditional functions of professional associations can be achieved through mechanisms such as 'self-organising networks, distributed peer accreditation, knowledgesharing platforms and algorithmic market oversight' (Burritt, 2016). In light of this, the longevity of professional associations relies on their ability to adopt new approaches and 'facilitate the inevitable transformation of the professions they support' (Stokes, 2016). This is aptly exemplified by Osteopathy Australia's commitment to providing the profession with important updates on the evolving COVID-19 situation via social media.

6.2 Competition

Professional associations with a small percentage of potential memberships lack credibility and appear to be unrepresentative of the profession to external stakeholders (Moore, 2019). This may occur when there are two or multiple professional bodies representing a single profession, resulting in policy arguments often to the detriment of profession. Disunity or disagreement within a policy framework is often a major disincentive for Government progress (Stokes, 2016). This was seen in the New Zealand osteopathic profession until the two associations disbanded in favour of one. The ongoing disunity of the Australian Chiropractor Association and Chiropractic Australia is also an example of what occurs when two professional bodies cannot work cohesively. A potential influx of new competitors in future may disrupt the existing competitive landscape and professional associations must navigate the impact of mergers and consolidations between them.

6.3 Generational divide

Following an increase in enrolment for professional degrees, an influx of young professionals will create an ever-widening generational divide within a profession. With this comes new expectations of a professional association to provide a more personalised, technologically savvy and strategic-minded member experience (Moore, 2019). Professional associations must strive to embrace these to bridge the gap and capture young professionals. Importantly, associations must segment and personalise their services and communications to satisfy new members (Moore, 2019).

7 The future of professional associations

Vollmer and Mills (1966) define professionalisation as 'a process by which an occupation obtains exclusive rights to perform a particular kind of work; control over training for, and access to it; and control of the right to determine and evaluate how the work is performed'. They argue that the absence of professional associations would be a barrier for members to contribute to policy and decision making, and for a profession to be recognised and consulted. As such, professional associations still play a major role but must strategically plan for the changing needs of the profession (Guthrie, 2016). Furthermore, business practices and membership structures must also evolve to meet new expectations and facilitate greater member involvement (Moore, 2019).

Professional associations are often criticised for being reactive rather than proactive in their approach (Moore, 2019). Anticipating the needs of a changing profession does however require forward-thinking and strategic planning. These strategic efforts must be communicated with ample opportunity for member consultation. As such, professional associations must look towards the future, anticipate challenges, create strategic plans and consult with members regularly in order to remain relevant (Moore, 2019). The 'provider of services' model has thus-far dominated the business practices of professional associations (Moore, 2019). Associations must move away from purely relying on this model to become a platform that facilitates positive outcomes for members as well as the professional or industry community (Moore, 2019). Adopting more intuitive membership structures, fee schedules, and payment methods may also be necessary to better align with new business models. Encouraging greater member involvement outside of branches, special interest groups and committees may also serve to leverage and engage the professional community (Moore, 2019).

8 Conclusion

In conclusion, there is a way forward for professional associations should they strive to evolve and adapt to advances in technology, competition from others and generational gaps for new members. This will likely require ongoing strategic planning to anticipate the challenges ahead, in addition to a shift in business/membership models to better involve members and the professional community as a whole.

9 References

AOAC. (2016). Accreditation standards for osteopathic courses in Australia. AOAC.

AOAC. (2018). Annual Report 2016-2017. AOAC.

AOAC. (2019). Strategic Plan. AOAC.

Beaton, G. and Farrow, B. (2016), 'The future of the legal profession', Academic Leadership Series, Vol. 7, pp. 48-54.

Burritt, R. G. (2016). Professional associations – Past contributions present tensions and future opportunities. Academic Leadership Series.

Dawson, R. (2016), 'Relevance and the future of professional associations', Academic Leadership Series, Vol. 7, pp. 25–31.

Guthrie, J. E. (2016). Relevance and professional associations in 2026. Chartered Accountants Australia and New Zealand.

Moore, B. (2019). Association Apocalypse. Whitepapers.

OBA. (2018). Revised professional capabilities for osteopathic practice: Public consultation. OBA.

OBA. (2019). Capabilities of osteopathic practice . OBA.

OBA. (2019). Registration data June 2019.

Stokes, G. (2016). Professional associations - towards a new role for thought leadership. Academic leadership series. Vollmer, H. M. and Mills, D. L. (1996). Professionalization. JSTOR.

9.7 Environmental Scan: Regulation

1	Regulation	91					
1.1	The National Registration	91					
	and Accreditation Scheme						
1.2	Regulation of osteopaths in Australia	92					
1.3	Regulators	92					
1.4	Roles and responsibilities	93					
	of AHPRA and the Board						
2	Accreditation	95					
2.1	.1 Accreditation of osteopaths						
	and osteopathy programs						
2.2	Accreditation authorities	95					
2.3	Accreditation Standards	96					
2.4	Capabilities	96					
2.5	Independent review of	96					
	Accreditation Standards						
2.6	Key stakeholders for regulation	96					
	and accreditation						
3	Registration	98					
3.1	Registration standards	98					
3.1 3.2	Registration standards Registration types	98 99					
3.1 3.2 3.3	Registration standards Registration types Recent registration statistics	98 99 100					
3.1 3.2 3.3	Registration standards Registration types Recent registration statistics for Australian osteopaths	98 99 100					
3.1 3.2 3.3 4	Registration standards Registration types Recent registration statistics for Australian osteopaths Professional codes and guidelines	98 99 100					
3.1 3.2 3.3 4 4.1	Registration standards Registration types Recent registration statistics for Australian osteopaths Professional codes and guidelines Major codes and guidelines	98 99 100 101					
3.1 3.2 3.3 4 4.1 4.2	Registration standards Registration types Recent registration statistics for Australian osteopaths Professional codes and guidelines Major codes and guidelines Code of conduct	98 99 100 101 101					
3.1 3.2 3.3 4 4.1 4.2 4.3	Registration standardsRegistration typesRecent registration statistics for Australian osteopathsProfessional codes and guidelinesMajor codes and guidelinesCode of conductScope of practice	98 99 100 101 101 101					
3.1 3.2 3.3 4 4.1 4.2 4.3 5	Registration standards Registration types Recent registration statistics for Australian osteopaths Professional codes and guidelines Major codes and guidelines Code of conduct Scope of practice Stakeholder relations	98 99 100 101 101 101 101					
3.1 3.2 3.3 4 4.1 4.2 4.3 5 5.1	Registration standardsRegistration typesRecent registration statistics for Australian osteopathsProfessional codes and guidelinesMajor codes and guidelinesCode of conductScope of practiceStakeholder relationsAccreditation	98 99 100 101 101 101 101 102					
3.1 3.2 3.3 4 4.1 4.2 4.3 5.1 5.2	Registration standards Registration types Recent registration statistics for Australian osteopaths Professional codes and guidelines Major codes and guidelines Code of conduct Scope of practice Stakeholder relations Accreditation Regulation	98 99 100 101 101 101 101 102 102					

6	Regulating the workforce: audits,	104
	notifications, and complaints	
6.1	Practitioner audits	104
6.2	Notifications and complaints	104
6.3	Notifiable conduct & mandatory notification	104
6.4	Statutory offences	105
6.5	Recent notification statistics for Australian osteopaths	105
6.6	Actions of the Board & appeals	107
6.7	Monitoring compliance	107
6.8	Monitoring streams	107
6.9	Timeframes and review	108
6.10	Recent notification outcome statistics for Australian osteopaths	108
6.11	Notifications in NSW and Queensland	108
7	Overseas regulation of osteopaths	111
7.1	How does the National Scheme compare internationally?	111
7.2	Global accreditation of osteopathy	112
7.4	Global regulation of osteopaths	112
7.5	Establishing common accreditation and regulation standards for osteopathy	113

8 References 114

1 Regulation

1.1 The National Registration and Accreditation Scheme

Established in July 2010 by state and territory governments Australia-wide, the National Registration and Accreditation Scheme (NRAS; The National Scheme) for health practitioners is a vitally important part of the Australian health system. It is governed by the Health Practitioner Regulation National Law Act 2009 (The National Law) and overseen by a Ministerial Council of all Australia's Health Ministers (AHPRA, Annual Report 2017/18, 2019). It is supported locally by relevant stakeholders and nationally by the Australian Health Practitioners Regulation Agency (AHPRA), which manage stakeholder engagement and work with National Boards at a local level (AHPRA, Annual Report 2017/18, 2019).

The National Scheme provides a regulatory framework for the accreditation and registration of healthcare practitioners in Australia for the purpose of protecting the welfare of the public; only suitably trained and qualified practitioners are registered. Furthermore, the Scheme facilitates and supports: i) a direct relationship with individual practitioners through regulation, ii) professional transparency via the National Register of practitioners, and iii) the provision of high-quality education and rigorous assessment of practitioners (NRAS, National Registration and Accreditation Scheme, 2016).

1.1.1 Regulatory Principles for the National Scheme

The Regulatory Principles for the National Scheme 2014 guide the actions and decision-making of the National Boards and AHPRA (AHPRA, Regulatory principles for the National Scheme, 2014). The principles ensure a primary focus is on public protection while 'using the minimum regulatory force needed to manage any risk to the public' (AHPRA, Regulatory principles for the National Scheme, 2014). They shape the thinking about regulatory decision-making and have been designed to 'encourage a responsive, risk-based approach to regulation across all professions' (AHPRA, Regulatory principles for the National Scheme, 2014). The principles focus on the following key points (AHPRA, Regulatory principles for the National Scheme, 2014).

- Administer the National Law: when considering an application for registration, or concerns regarding a health practitioner, AHPRA and the Board protect the public by taking timely and necessary action under the National Law.
- Ensure registrants are qualified: AHPRA and the Board protect the health and safety of the public by ensuring that only health practitioners who are suitably trained and qualified to practice in a competent and ethical manner are registered.
- Work with stakeholders: AHPRA and the Board work with stakeholders, including the public and professional associations, to achieve protective outcomes. They do not represent the health professions or health practitioners, but instead work with practitioners and their representatives to achieve outcomes that protect the public.
- Uphold professional standards: AHPRA and the Board uphold professional standards in the way in which they manage individual practitioners, in addition to regulatory decision-making, including in the development of standards, policies, codes and guidelines.
- Identify and respond to risk: AHPRA and the Board respond to risk in a way that considers the need to uphold professional standards and maintain public confidence in the regulated healthcare professions.
- Use appropriate regulatory force: AHPRA and the Board use the minimum regulatory force appropriate to manage the risk posed by their practice, to protect the public. Their actions are designed to protect the public and not to punish practitioners.

1.2 Regulation of osteopaths in Australia

Under the National Scheme, regulation and accreditation standards for healthcare professions are in place to enforce appropriate qualification, engagement in ongoing professional development, and adherence to professional standards for all healthcare providers (AHPA, Allied Health Accreditation, 2019). Classified under the allied healthcare banner, osteopathy is among the 15 healthcare professions regulated and accredited under the National Scheme (AHPRA, Annual Report 2017/18, 2019). As is the case with allied healthcare professions, the regulation of osteopaths in Australia is complicated by difficulties associated with defining scope of practice. This creates a system where allied health practitioner regulation is based more-so on title protection, rather than models that map scopes of practice (NRAS, National Registration and Accreditation Scheme, 2016). Furthermore, the current regulatory system for allied healthcare professions is a reactive system that directs attention and resources towards notifications (complaints), rather than proactive monitoring and compliance; except in known matters which usually result after a notification (OBA, Annual Report 2017/18, 2019).

1.3 Regulators

Under the National Scheme, the Osteopathy Board of Australia (OBA; The Board) work with the support of AHPRA to regulate osteopaths in Australia (OBA, Annual Report 2017/18, 2019). The ultimate aim of these regulators is to protect the public by upholding the quality and safety of osteopathic care across Australia. Guided by the National Law, the Board make decisions regarding osteopathic registrants, which they enforce with the support of AHPRA. AHPRA and the Board liaise with the wider community to help inform their decision-making processes, including: i) the public, ii) relevant stakeholders in government, and iii) the education and health sectors (AHPRA, Annual Report 2017/18, 2019). Other regulators are highlighted though a vast array of legislation, government departments, and third-party funders (see report on 3rd Party Funding). These include (OBA, Annual Report 2017/18, 2019):

- The Work Health and Safety Act
- The Privacy Act
- Various poisons acts
- Medicare acts, regulations, or terms
- DVA acts, regulations, or terms

- NDIS acts, regulations, or terms
- Private health insurance terms
- Several state-based traffic accident scheme acts
- · Several state-based Work Health and Safety (WHS) acts

1.3.1 The Osteopathy Board of Australia

The Osteopathy Board of Australia (OBA; The Board) is one of 15 National Boards working with the support of AHPRA to enforce the National Scheme across Australia (OBA, Annual Report 2017/18, 2019). The OBA regulates the profession, registers practitioners, and develops standards, codes and guidelines for professionals. AHPRA administers the National Scheme based on the decisions of the Board and provides administrative support (NRAS, National Registration and Accreditation Scheme, 2016). Appointments for the Board are made by the Australian Health Workforce Ministerial Council (Council of Australian Governments; COAG) and include a mix of osteopaths and community members (OBA, Annual Report 2017/18, 2019).

1.3.2 The Australian Health Practitioner Regulation Agency

AHPRA is the national organisation responsible for implementing the National Scheme across Australia (AHPRA, Annual Report 2016/17, 2019). AHPRA and the Board work together to register and renew practitioners and, where required, investigate notifications (complaints) or concerns. Furthermore, AHPRA publish and maintain a National Register of practitioners, which serves to facilitate professional transparency by providing public access to practitioner details (AHPRA, Annual Report 2017/18, 2019).

Each year, AHPRA in conjunction with the Board publish a *Health Profession Agreement 2019*, which details the services provided by AHPRA that enable the Board to carry out its functions under the National Law. Effectively, the Board delegates most of its administration and functioning to be undertaken by AHPRA (AHPRA/OBA, 2019). Delegation principles for the functions of the Board include (AHPRA/OBA, 2019):

- The purpose of this instrument is to allow the Board to discharge its functions as set out in s 35 of the National Law and the Trans-Tasman Mutual Recognition Act.
- To the extent that the Board's functions are capable of being delegated, the Board delegates its functions to AHPRA and associated committees.

- A delegate may in the performance of a delegated function do anything that is incidental to the delegated function.
- A delegation does not derogate from the power of the Board to act itself in the matter, so long as the delegate has not yet exercised the function or power.
- A delegate may only exercise a function, or make a decision, subject to the limitations imposed on the delegated function. If the decision to be made is not within the limitation which applies to the delegated function, or the delegate is not sure what the decision should be, the delegate must not make the decision. The delegate may, however, make recommendations to the Board or another delegate.

1.4 Roles and responsibilities of AHPRA and the Board

AHPRA and the Board's main purpose is to 'protect the Australian public by regulating healthcare practitioners, including osteopaths, under the National Law as in force in each state and territory' (AHPRA/OBA, 2019). While this law is nationally consistent, two states have adopted a coregulatory approach (see below). The functions of AHPRA and the Board include (AHPRA, Annual Report 2017/18, 2019):

- Professional standards, codes and guidelines: the Board, advised and supported by AHPRA, develop registration standards, codes and guidelines for practitioners.
- Registration: the Board define registration standards that practitioners must meet to be registered, in collaboration with the General Osteopathic Council in the UK and the Osteopathic Council of New Zealand. In partnership with the Board, AHPRA manage the registration and renewal process for local/overseasqualified practitioners and students, ensuring that only practitioners with the skills and qualifications to provide competent and ethical care are registered to practice.
- Notifications: AHPRA manage complaints and concerns raised about the health, performance and conduct of individual practitioners on behalf of the Board*. AHPRA also refer community concerns regarding certain practitioners to the appropriate health complaints entity (e.g. Health Complaints Commissioner).
- Compliance: AHPRA monitor and audit practitioners to make sure they are complying with Board requirements.
- Accreditation: AHPRA work with accreditation authorities and committees to ensure graduating students are suitably qualified and skilled to apply to register as a practitioner, including the Australasian Osteopathic Accreditation Council (AOAC). The Board

approves accreditation standards for courses of study.

- Advising: AHPRA advise the Australian Health Workforce Ministerial Council (AHWMC) regarding the administration of the National Scheme. Additionally, the AHWMC (funded by registrant fees) oversees the work of AHPRA and appoints all Board members.
- Policy: The Board is responsible for determining and agreeing AHPRA policies and setting the strategic direction for the National Scheme. The Board also collaborate on multi-profession policy initiatives.
 Furthermore, the Board develop awareness campaigns to enhance understanding regarding practitioner obligations under the National Law & represent the profession at forums and conferences (OBA, Annual Report 2016/17, 2019).
- * Except New South Wales (NSW) where notifications are managed by health professional councils and the Health Care Complaints Commission (HCCC), and Queensland (QLD) where the Office of the Health Ombudsman (OHO) may refer complaints to AHPRA and the Board.

1.4.1 Vision and mission

According to AHPRA, their mission is 'to protect the public by regulating health practitioners efficiently and effectively to facilitate access to safer healthcare' and envision 'to be recognised as a leading risk-based regulator that enables a competent and flexible health workforce to meet the community's current and future health needs' (AHPRA/OBA, 2019). To track the performance of AHPRA over the coming years in relation to their mission, vision, and statutory obligations, AHPRA and the National Boards are working to a five-year corporate strategy: *The National Registration and Accreditation Scheme Strategy 2015–20.* The aims of the strategy include (AHPRA, The NRAS Strategy 2015-20, 2015):

- Reduce risk of harm to the public associated with the practice of regulated health professions.
- Ensure that only health practitioners who are suitably trained and qualified to practise in a competent and ethical manner are registered.
- Increase public confidence in the effective and efficient regulation of health practitioners.
- Increase public benefit from data pertaining to practitioner regulation, health workforce planning and research.
- Improve access to healthcare through our contribution to a more sustainable health workforce.

1.4.2 Regulation of AHPRA

AHPRA is overseen by an Agency Management Committee (AMC) appointed by the Ministerial Council in accordance with the National Law (AHPRA, Annual Report 2016/17, 2019). The Committee currently consists of 8 people including: i) a Chair who is not a registered health practitioner and has not been a health practitioner in the last 5 years, ii) at least 2 people with expertise in health and/or education and training, and iii) at least 2 people with business or administrative expertise who are not current or previous registered health practitioners (AHPRA, Annual Report 2017/18, 2019). The AMC's key responsibilities include (AHPRA, Annual Report 2017/18, 2019):

- Being accountable to the Ministerial Council for the operation and performance of the National Scheme.
- Appointing and managing the performance of the CEO, and through the CEO, the performance of the National Executive.

- Approval of AHPRA's development of corporate strategy and performance objectives.
- Ensuring effective partnership with the Board and other entities in the achievement of National Scheme objectives and performance.
- Reviewing, ratifying and monitoring systems of risk management and internal control, codes of conduct, and legal compliance.
- Monitoring implementation of strategy and financial performance.
- Approving and monitoring the progress of major capital expenditure, capital management, and acquisitions and divestitures.

2 Accreditation

2.1 Accreditation of osteopaths and osteopathy programs

Accreditation provides a framework for evaluating whether individuals seeking registration are suitably trained, qualified and competent to practise as osteopathic practitioners in Australia (AOAC, Strategic Plan 2017/18, 2019). Accreditation standards serve as a quality assurance and risk management mechanism to ensure the following (AOAC, Accreditation standards for osteopathic courses in Australia, 2016):

- Graduates of approved osteopathic programs of study have the knowledge, skills and professional attributes necessary to practise their profession, and
- Overseas-trained practitioners are subject to rigorous assessment to determine whether they have the knowledge, skills and professional attributes necessary to practise their profession in Australia.

2.2 Accreditation authorities

Accreditation authorities develop, review, and submit accreditation standards to National Boards for approval. Approved standards are then published on the relevant Board's website and made available for public consultation (AOAC, Accreditation standards for osteopathic courses in Australia, 2016). Appointed by the Board under contract through AHPRA, the AOAC is the independent accrediting authority for osteopathy education under the National Scheme (AOAC, Strategic Plan 2017/18, 2019). The AOAC assesses and accredits education providers and programs of study against approved standards, to ensure that programs provide individuals with the relevant knowledge, skills and professional attributes to practice as osteopaths in Australia (AOAC, Strategic Plan 2017/18, 2019).

2.2.2 Role of the AOAC

The role of the AOAC is to 'protect the health and safety of the Australian community by establishing highquality standards of osteopathy education, training and assessment'. In April 2018, the Board conducted public consultation on the future accreditation arrangements from mid-2019, when the current term of assignment of accreditation functions ends. In June 2018, the Board decided that the AOAC should continue to exercise accreditation functions for the osteopathy profession (AHPRA, Annual Report 2017/18, 2019). In response, the AOAC recently published a *Strategic Plan 2017/18* detailing their roles and responsibilities going forward (AOAC, Strategic Plan 2017/18, 2019):

- Develop, review and maintain accreditation standards and processes to assess osteopathy programs of study in Australia.
- Determine whether programs of study for osteopaths seeking to practice in Australia meet the required education standards.
- Create a policy framework that helps ensure that equivalency, as encompassed in the Trans-Tasman Mutual Recognition Agreement, is maintained.
- Assess for the purpose of granting accreditation to programs leading to the eligibility of people for registration as an osteopath in Australia.
- Advise and make recommendations to the osteopathic regulatory authorities relating to the accredited status to be granted to an osteopathic program.
- Advise and make recommendations to the osteopathic regulatory authorities (or successor body/s) and other relevant interest groups on matters concerning the registration of osteopaths.
- Develop, review and maintain accreditation standards and processes to assess osteopathic programs.
- Assess the suitability of overseas-trained osteopaths to practice in Australia.
- Provide information and advice to government bodies concerning the adequacy of a person's skills in the field of osteopathy for the purposes of migration to Australia.
- Establish and maintain relationships with bodies or organisations having objects and functions in whole or in part similar to the objects and functions of AOAC.

2.3 Accreditation Standards

In the interest of public safety, the AOAC develops and reviews accreditation standards for osteopathy programs of study in Australia (AOAC, Accreditation standards for osteopathic courses in Australia, 2016). All osteopathic education programs are subject to a national accreditation process, whereby the program is examined against relevant accreditation standards that define the knowledge, skills and professional attributes expected on graduation; in broad terms how education and training should be provided (AOAC, Accreditation standards for osteopathic courses in Australia, 2016). According to the AOAC, these standards are 'developed in consultation with relevant stakeholders and reviewed regularly to ensure they align with Australian and international best practice' (AOAC, Accreditation standards for osteopathic courses in Australia, 2016).

Most recently, the AOAC completed a scheduled review of the profession's accreditation standards for osteopathic education courses in Australia (AOAC, Annual Report 2016-2017, 2018). The AOAC conducted initial meetings with senior staff of all three universities providing programs of study in osteopathy in Australia including: i) RMIT University, ii) Southern Cross University and iii) Victoria University. The AOAC then circulated draft versions of the revised standards to relevant stakeholders for feedback and discussion (AOAC, Annual Report 2016-2017, 2018). In 2016, the Board approved and published the revised Accreditation Standards for Osteopathic Courses in Australia in accordance with the National Law (AOAC, Accreditation standards for osteopathic courses in Australia, 2016). The new standards focus on the following key areas (AOAC, Accreditation standards for osteopathic courses in Australia, 2016):

Field 1: Education provider context and governance

- Education provider registration and standing
- Program accreditation
- Resource allocation

Field 2: Standards relating to the osteopathic curriculum

- Assessment
- Scholarship and research in the curriculum
- · Learning outcomes and curriculum content

The AOAC recently hosted a Strategic Education Forum in September 2016, which was attended by Board members and representatives from Australian and New Zealand osteopathy councils (AOAC, Annual Report 2016-2017, 2018). The forum focused on the new accreditation standards, current university programs and implications for the future, competencies, mentoring, and continuing professional education and development (AOAC, Annual Report 2016-2017, 2018). This will be further discussed in the Education report.

2.4 Capabilities

The Accreditation Standards for Osteopathic Courses in Australia are based on graduates meeting a set of defined capabilities (AOAC, Annual Report 2016-2017, 2018). The current Capabilities for Osteopathic Practice were published by the Board in January 2009 and is currently under review (OBA, Capabilities of Osteopathic Practice, 2009). After preliminary consultation with targeted stakeholders in early 2017, the Board sought a provider to amend the Capabilities based on the feedback received from stakeholder consultation (AHPRA, Annual Report 2017/18, 2019). With Southern Cross University as the chosen provider, the Board published a consultationbased draft of the Revised Professional Capabilities for Osteopathic Practice in July 2018, in order to seek both professional and public views on the knowledge, skills and professional attributes identified by the Board as entrylevel capabilities for graduates (OBA, Revised professional capabilities for osteopathic practice: Public consultation, 2018).

2.5 Independent review of Accreditation Standards

In October 2018, the COAG Health Council published Australia's Health Workforce: strengthening the education foundation as the result of an independent review of accreditation systems within the National Scheme for healthcare professions (COAG, 2018). The review, conducted by Professor Woods from the Centre for Health Economics Research and Evaluation at the University of Technology Sydney, invited responses and recommendations from selected organisations representing professional associations, NRAS accreditation authorities and boards, medical colleges, education providers and other relevant bodies (COAG, 2018). Relevant stakeholders (see below) were then invited to consider the issues proposed by Health Council, including the costs, benefits and risks of implementing the recommendations (COAG, 2018).

Since the completion of the review, NRAS entities including AHPRA, the Board, and AOAC have progressed relevant changes and recommendations in the area of accreditation, suggesting they may have significant future impact in osteopathic accreditation (COAG, 2018). The final report makes 32 recommendations for accreditation systems reform in areas such as i) funding and cost effectiveness, ii) improved efficacy, iii) relevance and responsiveness of education, and iv) governance (COAG, 2018).

2.6 Key stakeholders for regulation and accreditation

Relevant stakeholders with a possible vested interest in the regulation and accreditation of healthcare professions such as osteopathy (COAG, 2018):

- Governments: set the overarching strategic direction of the health care system, determine health regulation, and contribute significantly to services and funding. In doing so, governments play a key role in setting workforce policy and practice.
- Health service regulators: AHPRA and the National Boards have a significant stake in the regulation and accreditation of healthcare professionals and are able to lobby for change in this regard.
- Health service regulators: the Australian Commission of Safety and Quality in Health Care (ACSQHC) is the government agency responsible for developing the National Safety and Quality Health Service (NSQHS) Standards and oversees the accreditation of health service settings against these standards. The NSQHS Standards and accreditation processes outline key healthcare practices that underpin the curricula of all health professions across the career continuum.
- Education regulators: the quality assurance agencies for higher education systems, such as the AOAC, are responsible for regulating, monitoring and evaluating the performance of education providers. Education providers must meet the accreditation requirements of education regulators before they can seek accreditation under the National Scheme.
- Education providers: develop and deliver health programs of study designed to meet accreditation standards and attract students to their institution.
 Education providers consult and engage with a range of stakeholders including consumers and other health professions to ensure that their programs of study continue to respond to the demands of the students, the needs of the health sector, and the health care needs of the community.

- Research bodies: regulation and accreditation standards of the healthcare profession frame research opportunities and areas of interest for research bodies.
- Employers: have a strong interest in the outcomes of education health programs. Employers require healthcare graduates to have the knowledge, skills and professional attributes to deliver safe and highquality health services. Many employers also provide clinical placements and/or vocational training to enable students/trainees to obtain practical experience and consolidate their academic learning.
- Professional associations: professional associations represent, and advocate for, the profession. Professional associations, such as Osteopathy Australia, can collaborate to inform and influence the development and implementation of accreditation standards and competency standards. By identifying (or opposing) opportunities for innovation and reform in professional education and/or practice, associations can lobby to influence the education and training of that profession.
- Consumers: as end-users of the health system, they have a direct interest in influencing education and training to ensure the workforce remains responsive to the evolving health care needs of the community. Consumers provide a useful lens for assessing whether accredited programs are culturally appropriate and are responsive to population and demographic changes and to broader health and social care issues.

All Australian osteopaths are registered with the Board and AHPRA (AHPRA, Annual Report 2017/18, 2019). In partnership with AHPRA, the Board considers every application for registration and assesses it against the following registration requirements: i) professional qualifications, ii) English language proficiency, iii) professional indemnity insurance, iv) criminal history, and v) recency of practice standards (OBA, Registration standards, 2015). Registered osteopaths are listed on AHPRA's Register of practitioners; once on the Register, osteopaths must apply to renew their registration each year and make declarations on the relevant registration requirements (AHPRA, Annual Report 2017/18, 2019). Where appropriate to protect the public, and in accordance with the regulatory principles of the National Scheme, the Board may decide to impose conditions on a practitioner's registration or to refuse the application if registration standards are not met (OBA, Registration standards, 2015).

3 Registration

3.1 Registration standards

The Board's registration standards define the requirements that applicants and registrants must meet to be registered as osteopaths in Australia (OBA, Registration standards, 2015). In addition to providing consistency across practitioners, these standards also serve to make the Board's requirements clear and inform decisionmaking when concerns are raised about practitioners' conduct, health, or performance (OBA, Registration standards, 2015). It is the role of the National Boards to set registration standards. Whenever possible, the Boards seek to work together to develop common standards across professions; others are profession-specific (OBA, Registration standards, 2015).

3.1.1 Common registration standards

Criminal history

This registration standard sets out the factors that the National Board will consider in deciding whether a health practitioner's criminal history is relevant to the practice of their profession (OBA, Registration standards, 2015). While every case is decided on an individual basis, these 10 factors provide the foundation for the Board's consideration (OBA, Registration standards, 2015):

- The nature and gravity of the offence or alleged offence and its relevance to health practice.
- The period of time since the health practitioner committed, or allegedly committed, the offence.
- Whether a finding of guilt or a conviction was recorded for the offence or a charge for the offence is still pending.
- The ages of the health practitioner and of any victim at the time the health practitioner committed, or allegedly committed, the offence.
- Whether or not the conduct that constituted the offence or to which the charge relates has been decriminalised since the health practitioner committed, or allegedly committed, the offence.
- The health practitioner's behaviour since he or she committed, or allegedly committed, the offence.
- The likelihood of future threat to a patient of the health practitioner.
- Any information given by the health practitioner or prior matters that the Board considers relevant.

English language skills

The English language skills registration standard is largely common to all National Boards, except the Nursing and Midwifery Board of Australia and the Aboriginal and Torres Strait Islander Board of Australia (OBA, Registration standards, 2015). This registration standard requires the applicant to demonstrate their English language competency to ensure it is sufficient to practice in their relevant profession (OBA, Registration standards, 2015). This is determined by several models including: i) existing education and training within English languages, or ii) achieving the required minimum scores in English language tests (OBA, Registration standards, 2015).

3.1.2 Profession-specific registration standards

Recency of practice

This registration standard sets out the Board's minimum requirements for recency of practice for all practitioners, with the exception of students or non-practicing registrants (OBA, Registration standards, 2015). To maintain recency of practice in the clinical domain, the practitioner must have carried out at least 450 hours of clinical practice in the previous three years. A practitioner who has been working as an academic but has not carried out clinical practice or clinical supervision would not meet this standard (OBA, Registration standards, 2015). Importantly, according to the Board, meeting these requirements 'doesn't automatically satisfy professional and ethical responsibilities to ensure that a practitioner can maintain adequate knowledge and skills to provide safe and effective care' (OBA, Registration standards, 2015).

The Board defines 'practice' as 'any role, whether remunerated or not, in which the individual uses their skills and knowledge as a health practitioner in their profession. For the purposes of this registration standard, practice is not restricted to the provision of direct clinical care. It also includes working in a direct nonclinical relationship with clients, working in management, administration, education, research, advisory, regulatory or policy development roles, and any other roles that impact on safe, effective delivery of services in the profession and/or use their professional skills' (OBA, Capabilities of Osteopathic Practice, 2009).

Continuing professional development

This registration standard sets out the Board's minimum requirements for continuing professional development (CPD) for all practitioners, with the exception of students or non-practicing registrants (OBA, Registration standards, 2015). It may not apply to registrants with limited registration for supervised practice who must sit an examination (OBA, Registration standards, 2015).

To meet this registration standard, an osteopath must: i) complete a minimum of 25 hours of CPD per year, which includes 4 hours of mandatory topics approved by the Board, and ii) hold a current senior first aid certificate at the minimum standard of a Senior First Aid (Level 2) or equivalent (OBA, Registration standards, 2015). CPD topics should be relevant to a practitioner's area of practice, with a focus on clinical aspects including diagnosis, evidence-based practice, and patient safety (OBA, Registration standards, 2015).

Professional indemnity insurance

This registration standard sets out the Board's requirements for professional indemnity insurance (PII) arrangements for all practitioners, with the exception of students or non-practicing registrants (OBA, Registration standards, 2015). A practicing individual must be covered by their own or third party PII arrangements that meet the following standards (OBA, Registration standards, 2015):

- · Provides cover for all aspects of practice.
- · Covers all locations where they practice.
- Provides cover whether working in the private, nongovernment and/or public sector.
- Provides cover whether practicing full-time, part-time, self-employed, employed, or in an unpaid or volunteer capacity, or any combination of these factors.

3.1.3 Failure to meet registration standards

Under the National Law, the Board has established the following possible consequences for failure to meet registration standards (OBA, Registration standards, 2015):

- For failure to meet a required standard, the Board can impose a condition/s or refuse an application for registration or renewal of registration (sections 82, 83 and 112 of the National Law).
- Practitioners who have not quite met, but are very close to meeting, their registration standard are given the chance to achieve full compliance by undertaking education during their audit period (see section 7.1).
- A failure of the standards may not be an offence but may be behaviour for which health, conduct or performance action may be taken by the Board (section 128 of the National Law).
- Registration standards, codes or guidelines may be used in disciplinary proceedings against osteopaths as evidence of what constitutes appropriate practice or conduct for osteopaths (section 41 of the National Law).

3.2 Registration types

Under the National Law, there is a range of categories under which a practitioner can be registered as an osteopath in Australia (OBA, Annual Report 2017/18, 2019):

- General registration: may be granted to practitioners who meet the eligibility and qualification requirements set out in sections 52 and 53 of the National Law, and any registration standards issued by the Board. In general, practitioners who hold general registration have graduated from a Board-approved and accredited program of study in the profession and completed any required period of supervised practice or internship.
- Limited registration: may be granted to practitioners who do not qualify for general or specialist registration, but who meet the eligibility and qualification requirements set out in sections 65-70 of the National Law, and any registration standards issued by the Board. Under section 72 of the National Law, limited registration may not be renewed more than three times, but a new application may be made. This is often used to undertake a return to practice.
- Provisional registration: may be granted to a practitioner who meets the eligibility and qualification requirements set out in sections 62 and 63 of the National Law, and any registration standards issued by the Board. This type of registration is intended for practitioners in a profession who have completed an approved, accredited qualification in the profession, but are required to undertake a period of supervised practice or internship to be eligible for general registration.
- Non-practising registration: may be granted to a practitioner who meets the eligibility and qualification requirements set out in sections 62 and 63 of the National Law, and any registration standard issued by the OBA. This type of registration is available to practitioners who have previously held general or specialist registration in a profession, but who do not wish to practise the profession during the registration period. The National Law states that a practitioner who holds non-practising registration in a profession must not practise the profession.
- Student registration: granted to people who are enrolled in an approved program of study that qualifies them for general registration in a profession, or people undertaking clinical training that has been arranged by an education provider.
- Osteopathy has no recognised specialist registration.

3.3 Recent registration statistics for Australian osteopaths

According to the OBA Annual Report 2017/18, of the 702,741 registered health practitioners across the 14 healthcare professions, 0.3% were osteopaths. As of 30 June 2018, there were 2,389 osteopaths registered under the National Scheme. This represents a 7.1% increase from the previous year. NSW, Victoria, and Queensland were the principal place of practice for over 90.2% of registered osteopaths (Figures 1 and 2). Of the registrant base, 96.0% of all osteopaths held some form of practising registration. There was a 6.7% increase from the previous year in the number of osteopaths moving to non-practising registration (Tables 1-3). Of the total osteopathic registrant base, only two practitioners held an endorsement (for acupuncture). Women comprised 54.7% of the profession,

Figures 1-2 and Tables 1-3: (OBA, Annual Report 2017/18, 2019).

with 0.7% of the profession identified as being Aboriginal/ Torres Strait Islander (17 osteopaths nationally).

AHPRA received 273 new applications for registration as an osteopath in 2017/18. A total of 2,149 osteopaths renewed their registration in 2017/18, with 99.1% of practitioners renewing online: an increase of 0.8% from 2016/17.

The National Boards, in conjunction with relevant stakeholders, have published a series of codes and guidelines to provide guidance and direction to registered health practitioners, employers, and education providers (OBA, Code of Conduct for Registered Health Practitioners, 2014). These also help to clarify the board's views and expectations on a range of issues including code of conduct, safety in practice, and scope of practice (OBA, Code of Conduct for Registered Health Practitioners, 2014; OA, 2014; OCNSW, 2014).





Table 1: Number of registered osteopaths as at 30 June 2018

Registrants	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	No PPP ¹	Total
2017/18 total registered osteopaths	38	582	3	216	36	45	1,358	63	48	2,389
2016/17 total registered osteopaths	35	564	3	209	38	41	1,231	63	46	2,230
% change from 2016/17 to 2017/18	8.6%	3.2%	0.0%	3.3%	-5.3%	9.8%	10.3%	0.0%	4.3%	7.1%
All registered health practitioners in 2017/18	12,297	202,033	7,419	139,056	55,060	15,188	182,674	70,859	18,155	702,741

¹ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

Table 2: Registered osteopaths, by age

Year	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	Total
2017/18	68	472	450	444	334	215	114	101	86	64	26	8	7	2,389
2016/17	51	440	422	431	293	192	114	105	88	56	20	11	7	2,230

Table 3: Registered osteopaths, by principal place of practice and gender

Osteopaths	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	No PPP ¹	Total
Total 2017/18	38	582	3	216	36	45	1,358	63	48	2,389
Female	17	271	1	97	19	24	818	32	28	1,307
Male	21	311	2	119	17	21	540	31	20	1,082
Total 2016/17	35	564	3	209	38	41	1,231	63	46	2,230
Female	15	251		96	21	23	757	32	22	1,217
Male	20	313	3	113	17	18	474	31	24	1,013

¹ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

4 Professional codes and guidelines

4.1 Major codes and guidelines

Major codes and guidelines for the osteopathic profession include:

- Code of Conduct for Registered Healthcare Practitioners (OBA, Code of Conduct for Registered Health Practitioners, 2014)
- Guidelines for informing a National Board about where you practice (AHPRA, Guidelines for informing a National Board about where you practice , 2018)
- Osteopathy guidelines for continuing professional development/clinical records/informed consent/ supervision/sexual and professional boundaries/ mandatory notifications/advertising regulated health services/social media/framework pathways for registration of overseas-trained osteopaths (OBA, Codes and Guidelines, 2018)
- Statement of Scope of Practice in Osteopathy (OA, 2014)
- Position Statement on Scope of Practice in Osteopathy (OCNSW, 2014)
- Osteopathic service descriptors (WorkSafe, 2009)
- Capabilities for Osteopathic Practice (OBA, Capabilities of Osteopathic Practice, 2009)
- Credentialing health practitioners and defining their scope of clinical practice: A guide for managers and practitioners (ACSQHC, 2015)
- Benchmarks for training in osteopathy (WHO, Benchmarks for training in osteopathy, 2010)

4.2 Code of conduct

The Code of Conduct for Registered Healthcare Practitioners is used by 10 National Boards under section 39 of the National Law, with some minor professionspecific changes (OBA, Code of Conduct for Registered Health Practitioners, 2014). The code is a regulatory document that provides an overarching guide to support and inform good practice (OBA, Code of Conduct for Registered Health Practitioners, 2014). As the code was last published in March 2014, the Board has begun a scheduled review that aims to 'draw on the best available research and data and involve additional stakeholder consultation and engagement' (OBA, Annual Report 2017/18, 2019). The current Code focuses on good osteopathic practice within the areas of (OBA, Code of Conduct for Registered Health Practitioners, 2014):

- Providing good care
- Working with patients
- Working with other practitioners
- Working within the healthcare system
- Minimizing risk
- Maintaining professional performance
- Professional behaviour
- Ensuring practitioner health
- Teaching, supervising, and assessing
- Undertaking research

4.3 Scope of practice

According to the Board, a registered health practitioner's scope of practice is defined as 'the professional role and services that an individual health practitioner is educated and competent to perform' (OCNSW, 2014). Scope is also defined by the core competencies outlined in University accreditation standards that all graduates must meet (OCNSW, 2014). Contention exists regarding the usefulness of defining a specific scope of practice for osteopathy. While some suggest that a defined scope would help the profession lead and define itself, others argue that a defined scope would 'restrict the profession into a treatment modality as opposed to a philosophy' (OCNSW, 2014).

'A lack of scope may pose considerable problems; how would one determine what constituted competence? Which healthcare needs should osteopathy seek to meet? How would one determine training requirements? Conversely, if osteopathy is framed as a narrowly defined field of interest, how and who would determine what constituted legitimate forms of practice? An overly restricted scope could serve to restrict options for osteopaths and reduce patient choice!

Osteopathic Council of NSW (OCNSW, 2014)

OA Scope of Practice Statement

According to the leading professional association for osteopathy, Osteopathy Australia (OA) 'firmly believe that the profession should own and lead the development of its scope of practice statement. This is an important development for the profession and helps osteopathy to define itself, not letting others do it for us' (OA, 2014). In light of this, OA published a Statement of Scope of Practice in Osteopathy 2013 with the purpose of *'helping* others to conceptualise osteopathy within healthcare' (OA, 2014). According to OA, this statement has been developed in alignment with the Osteopathic Service Descriptors, the Capabilities for Osteopathic Practice, the Code of Conduct for Registered Health Practitioners, and Benchmarks for Training in Osteopathy (see Section 5) (OA, 2014). The statement is further influenced by broader health policies, legislation, regulation and health workforce debate, following 'a wide range of consultations including discussions with members and meetings with key stakeholders both within Australia and abroad regarding scope of practice' (OA, 2014).

The document covers i) a preamble on how the document sits with a range of regulatory frameworks, clinical or funding guidelines, ii) an overview of osteopathy principles and clinical practice, iii) a brief overview of regulation, education and continuing professional developments, iv) advanced clinical standing and further credentialing, and v) osteopathy within the Australian healthcare systems and globally (OA, 2014).

'Osteopaths are committed to effective patient-centred healthcare. As the scientific understanding of health and disease evolves, this Scope of Practice Statement will require ongoing revision.

The emphasis on the neuromusculoskeletal system as integral to the body's function, a person's health and to patient care is a defining characteristic of osteopathy.

Osteopaths understand the wider healthcare environment and the role of the primary care practitioner within the healthcare system'.

OA Scope of Practice Statement (OA, 2014)

5 Stakeholder relations

5.1 Accreditation

The AOAC facilitates the development of content for accreditation standards in consultation with relevant stakeholders and representatives from the profession (Table 13) (AOAC, Stakeholder Engagement Framework, 2018). Stakeholders are identified as 'any individual, group or organisation who has a vested interest in the outcome of AOAC's business activities as a national accreditation authority and skill migration assessment service' (AOAC, Stakeholder Engagement Framework, 2018).

In August 2018, the AOAC published a Stakeholder Engagement Framework to provide direction in stakeholder relations (AOAC, Stakeholder Engagement Framework, 2018). The Framework aims to ensure that stakeholder engagement activities are 'integrated and undertaken in a co-ordinated manner to improve the effectiveness of AOAC's engagement efforts' (AOAC, Stakeholder Engagement Framework, 2018). The Framework outlines a strategic approach to stakeholder engagement activities consisting of: i) five key principles of engagement (purposeful, relevant, openness, inclusive and responsiveness), and ii) a four-phase engagement process (identifying the purpose of engagement, the relevant stakeholders, models for engaging, and evaluating the process) (AOAC, Annual Report 2016-2017, 2018). The Framework relates to the spectrum of engagement activities AOAC undertakes with stakeholders in achieving outlined objectives, including (AOAC, Stakeholder Engagement Framework, 2018):

- Digital communications: email correspondence, AOAC website, e-newsletter, social media.
- · Advice services: telephone and email correspondence.
- Education resources: guides, webinars, factsheets, website content.
- Public presentations: educational events and conference presentations.
- · Relationship management: meetings with stakeholders.
- · Consultation processes: professional reference groups,

5.2 Regulation

The Board, supported by AHPRA, is responsible for establishing procedures for the development of accreditation standards, registration standards, and codes and guidelines to ensure good practice (OBA, Codes and Guidelines, 2018). The National Law requires the Board to undertake wide-ranging public consultation and review regarding the content of these documents (OBA, Codes and Guidelines, 2018). This includes enabling relevant stakeholders to provide effective input.

The consultation process involves the preparation of a consultation document which addresses: i) the purpose and desired outcomes of the proposed registration standard, code or guideline, ii) the proposed content of the document, iii) an outline of the implementation plan and any transitional requirements, and iv) an assessment

Group	Stakeholders
Education providers	Higher education providers
	Academics
	Researchers
Government and regulatory agencies	State and territory governments
	Australian Government Department of Health
	Australian Government Department of Education
	Australian Government Department of Home Affairs
	Australian Government Department of Prime minister and Cabinet
	Office of Best Practice Regulation of the Department of Prime minister and Cabinet
	The Osteopathy Board of Australia
	The Australian Health Practitioner Regulation Agency
	Other health practitioner regulation agencies
The community and consumer representatives	The Consumer Health Forum
Industry	Healthcare providers
Peak bodies and professional associations	Osteopathy Australia
	Chiropractic and Osteopathic College of Australasia

of the likely impact of the registration standard, code or guideline. The document is then published on the Board's website and distributed to professional associations and other known stakeholders for review (OBA, Codes and Guidelines, 2018). Following review, the document is then made available for public consultation and finalization (OBA, Codes and Guidelines, 2018).

A National Board may choose to establish a working party to support the development and review of codes and guidelines, which has rarely happened in osteopathy according to the Board. The working party may provide policy advice and feedback to the Board about codes and guidelines and may assist in the development of proposals for wider public consultation (OBA, Registration standards, 2015). While final decisions will be made by the Board, the working party may provide a mechanism for input from key stakeholders, including the profession and the community (OBA, Registration standards, 2015).

5.3 Recent stakeholder relations

According to the OBA Annual Reports 2016/17 and 2017/18, the Board continued to engage with professional associations both with regular teleconferences and faceto-face meetings over this period. The Board attended an education forum held by the AOAC in September 2016, which was an opportunity to discuss current accreditation standards and vote on accreditation authorities (as previously mentioned). The Chair and Executive Officer attended the Osteopathic International Alliance conferences held in Los Angeles in September 2016 and New Zealand in September 2017. They met with international regulators in osteopathy to share ideas, initiatives and research. The conferences focused on osteopathy regulation, education, research, and association leadership; they served as an opportunity to discuss issues of mutual interest, including common regulatory functions, outcomes, and pathways for overseas-trained osteopaths.

In 2016, a memorandum of understanding (MOU) was signed between the Board, the AOAC, General Osteopathic Council in the United Kingdom (UK), and the Osteopathic Council of New Zealand. The MOU was created with the following aims (OBA, Annual Report 2017/18, 2019):

- Streamline regulatory processes between the jurisdictions.
- Facilitate movement of osteopaths between the UK, New Zealand and Australia.
- Develop and maintain a common understanding of regulation and education standards for osteopaths in the UK, Australia and New Zealand.
- Promote communication and information exchange about regulatory best practice.
- Inform and share information about projects.

6 Regulating the workforce: audits, notifications, and complaints

6.1 Practitioner audits

AHPRA conducts regular audits of random samples of health practitioners across all professions on behalf of the National Boards (OBA, Annual Report 2017/18, 2019). Audits provide assurance that practitioners are meeting the registration requirements for their profession (OBA, Annual Report 2017/18, 2019). During an audit, a practitioner is required to provide evidence in support of the declarations they made in their previous year's renewal application, including evidence of meeting the required registration standards (i.e. recency of practice, PII, CPD, criminal history, and English language proficiency) (OBA, Annual Report 2017/18, 2019).

According to the AHPRA Annual Report 2017/18, AHPRA audited 7,193 practitioners across all health professions. For all audits initiated and completed this year, 99% of osteopaths were found to be in full compliance or required minor education to comply with the registration standards being audited, and 1% changed their registration to nonpracticing or surrendered their registration during the audit.

6.2 Notifications and complaints

AHPRA and the Board work in close partnership to manage notifications and complaints under the National Scheme (AHPRA, Annual Report 2016/17, 2019). AHPRA supports the Board by performing all operational and administrative functions of the National Scheme. Notifications or complaints are delivered to AHPRA, who collect all relevant information and refer the complaint to the Board to assess. AHPRA then manage the complaint at the Board's direction (AHPRA, Annual Report 2017/18, 2019). Most notifications received regarding individual osteopaths are managed by decisions that affect a practitioner's registration and often require monitoring by AHPRA; others are considered 'statutory offences' which can instead result in prosecution by AHPRA and the Board (OBA, Annual Report 2017/18, 2019).

6.3 Notifiable conduct & mandatory notification

Anyone can notify AHPRA about an osteopath's health, performance, or conduct (OBA, Annual Report 2017/18, 2019). While registered osteopaths and employers have mandatory reporting obligations under the National Law, most of the complaints or concerns received by AHPRA are made voluntarily by patients or their families (OBA, Annual Report 2017/18, 2019). Standards of clinical care continues to be the primary reason people lodge a notification about an osteopath (OBA, Annual Report 2017/18, 2019).

All health practitioners, their employers, and education providers must inform AHPRA if they have formed 'a reasonable belief that a registered osteopath or student has behaved in a way that constitutes notifiable conduct' (AHPRA, Mandatory Reporting, 2019). Notifiable conduct by registered health practitioners is defined as (AHPRA, Mandatory Reporting, 2019):

- · Practising while intoxicated by alcohol or drugs.
- · Sexual misconduct in the practice of the profession.
- Placing the public at risk of substantial harm because of an impairment (health issue).
- Placing the public at risk because of a significant departure from accepted professional standards.

6.4 Statutory offences

The National Law sets out four types of statutory offences (see below) (OBA, Annual Report 2017/18, 2019). Breaches of the National Law that constitute a statutory offence may be committed by registered health practitioners, unregistered individuals, or corporate entities and can pose significant risk to the public (OBA, Annual Report 2017/18, 2019). These offences may constitute a criminal offence and are commonly subject to decision by a Court of Law (OBA, Annual Report 2017/18, 2019):

- · Unlawful use of protected titles.
- Unlawful claims by individuals or organisations regarding registration.
- Performing a restricted act.
- Unlawful advertising.

In light of new *Guidelines for Advertising Regulated Health Services 2014*, a breach of these guidelines constitutes a criminal offence and may involve a penalty of up to \$5,000 for an individual and \$10,000 for a body corporate, in addition to disciplinary action by the Board (AHPRA, Guidelines for advertising regulated health services, 2014).

6.5 Recent notification statistics for Australian osteopaths

According to the 2017/18 OBA Annual Report, AHPRA received the highest number of notifications (7,276) about health practitioners across all professions in any single reporting year since the National Scheme began. Just 0.2% of all notifications received in 2017/18 related to osteopaths (17 notifications in total). Of all jurisdictions, Victoria (13 notifications) and Queensland (two notifications) accounted for over 88% of notifications relating to osteopaths in 2017/18. Of all registered health practitioners, 1.4% of the osteopathy workforce had notifications made about them in 2017/18, which is a 0.3% increase from 2016/17 (Figures 4-7 and Tables 4-10).

AHPRA received 908 mandatory notifications across all regulated health professions in 2017/18. Noting the relatively small number of complaints lodged about osteopathy overall, one mandatory notification was about osteopaths. The Board assessed and closed 17 notifications about osteopaths during the year: 30.8% more than in 2016/17. These closures accounted for 0.2% of all closed notifications nationally across all professions. Of the osteopathy notifications closed, 23.5% resulted in some form of regulatory action being taken by the Board.

AHPRA received five new statutory offence complaints about osteopaths in 2017/18, which is a significant decrease of 98% when compared to the 252 complaints received in 2016/17. In 2016/17 the increase in statutory offences was due to a series of bulk complaints by several external organisations about alleged advertising breaches. Two offence complaints received about the profession during the year were about the alleged improper use of a protected title; two were about advertising breaches and one related to 'other' offence. Complaints about osteopaths accounted for 0.9% of all statutory offence complaints received by AHPRA nationally across all regulated health professions during the year (Table 12).



Figures 4-7: (OBA, Annual Report 2017/18, 2019)

Figures 4-7: (OBA, Annual Report 2017/18, 2019)



Figure 5: How AHPRA and the Board manage notifications

Figure 6: Sources of notifications lodged with AHPRA about osteopaths



Figure 7: The most common types of complaint lodged with AHPRA about osteopaths


6.6 Actions of the Board & appeals

Following a complaint or notification, the Board may impose restrictions on the registration of the practitioner or student in question, depending on the nature of the notification or complaint (AHPRA, Annual Report 2017/18, 2019). These restrictions can take the form of conditions or undertakings and can be imposed by a National Board, panel, or tribunal. The restrictions are designed to keep the public safe while the practitioner remains in practice. The potential outcomes of a notification by the Board include (AHPRA, Annual Report 2017/18, 2019):

- Refuse an application for registration or endorsement of registration or refuse renewal of registration or renewal of an endorsement of registration.
- Impose or change a condition placed on registration or refuse to change or remove a condition imposed on registration or an undertaking given by a registrant.
- Suspend/cancel registration or reprimand a practitioner.

The actions of the Board are enacted via the following (AHPRA, Annual Report 2017/18, 2019):

- Immediate action: a serious step that the Board can take when it believes it is necessary to limit an osteopath's registration in some way to keep the public safe. It is an interim measure that the Board may take only in high-risk cases while it seeks further information.
- Tribunals: the Board can refer a matter to a tribunal for hearing. Usually, this happens when the allegations involve the most serious of matters, such as when the Board believes an osteopath has behaved in a way that constitutes professional misconduct. Tribunals exist in each state and territory.
- Panels: the Board has the power to establish two types of panels to decide certain matters depending on the type of notification, including i) health panels for issues relating to a practitioner's health and performance, or ii) professional standard panels for conduct and performance issues.

The National Law provides a mechanism of appeal against a decision by the Board in the above circumstances (AHPRA, Mandatory Reporting, 2019). There is also a mechanism of appeal by judicial review if the appeal relates to a perceived flaw in the administrative decisionmaking process, as opposed to the merits of the individual decision itself (AHPRA, Mandatory Reporting, 2019). According to the OBA Annual Report 2017/18, there were no osteopathy decisions made by the Board that were subject to an appeal in 2017/18.

6.7 Monitoring compliance

On behalf of the Board, AHPRA monitors osteopaths and students who have restrictions (conditions or undertakings) placed on their registration, and those with suspended or cancelled registration (AHPRA, Annual Report 2017/18, 2019). The health practitioner or student in question is responsible for complying with those restrictions; this includes providing any reports to AHPRA as evidence of their compliance and completing the required education (AHPRA, Annual Report 2017/18, 2019). AHPRA assesses this evidence to determine whether the practitioner or student is complying with the restrictions. By identifying any non-compliance and acting swiftly and appropriately, AHPRA supports the Board to manage risk to public safety. The Board then decides whether to lift the restrictions in place based on practitioner or student compliance. If a practitioner is found to be non-compliant, the Board may consider taking further disciplinary action, including registration suspension or cancellation (AHPRA, Annual Report 2017/18, 2019).

According to the National Law, AHPRA is required to maintain and publish a publicly accessible Register of practitioners (AHPRA, Annual Report 2017/18, 2019). When decisions are made in relation to a practitioner's registration, the Register is updated to inform the public about the current status of individual health practitioners and any restrictions placed upon their practice (AHPRA, Annual Report 2017/18, 2019). Tribunal decisions that result in the cancellation of a practitioner's registration due to health, performance, or conduct issues result in the individual appearing on a Register of cancelled practitioners (AHPRA, Annual Report 2017/18, 2019).

6.8 Monitoring streams

Notification or complaint cases are assigned to one of five monitoring streams (AHPRA, Monitoring and Compliance, 2016):

 Health: the health of a practitioner or student is being monitored because they have a physical or mental impairment, disability, condition or disorder (including substance abuse or dependence) that detrimentally affects or is likely to detrimentally affect their ability to practice the profession or undertake learning/clinical training.

The Board may require a practitioner to undergo a health assessment (medical, physical, psychiatric, or psychological examinations or tests) to determine impairment. Performance: the practitioner is being monitored to ensure they practice safely and appropriately while demonstrated deficiencies in their knowledge, skill, judgement, or care in the practice of their profession are addressed.

The Board may require a practitioner to undergo a performance assessment by one or more independent practitioners from their profession to make decisions about the quality of the health practitioner's performance.

- Conduct: the practitioner is being monitored to ensure they practice safely and appropriately because of their criminal history, or they have demonstrated a lesser standard of professional conduct than expected.
- Suitability/eligibility: the practitioner is being monitored because they: i) do not hold an approved or substantially equivalent qualification in the profession, ii) lack the required competence in the English language, iii) do not meet the requirements for recency of practice, or iv) do not fully meet the requirements of any other approved registration standard.
- Prohibited practitioner/student: the practitioner or student is subject to a cancellation order, surrender of registration or change to non-practicing registration.

6.9 Timeframes and review

The monitoring and compliance process does not always start at the end of the notifications process; conditions and undertakings come into effect as a result of the Board taking immediate action to protect public safety while an investigation or a health or performance assessment is carried out (AHPRA, Monitoring and Compliance, 2016). Conditions can also be applied to the registration of a health practitioner when they initially apply for registration or apply to renew their registration (AHPRA, Monitoring and Compliance, 2016).

The length of time that restrictions are in place on a health practitioner's or student's registration varies with each individual; some restrictions may only be in place for a short period of time, while others may remain in force for many months or years (AHPRA, Monitoring and Compliance, 2016). The Board has the power to: i) change a condition in place on the registration of a practitioner or student when it reasonably believes this is necessary, and ii) remove a condition or revoke an undertaking in place on the registration of a practitioner or student when it reasonably believes the condition or undertaking is no longer necessary (AHPRA, Monitoring and Compliance, 2016).

When imposing conditions on a practitioner's or students' registration, the National Board, panel or tribunal must decide on a review period for the conditions (AHPRA, Monitoring and Compliance, 2016). The review period establishes a time during which the practitioner or student cannot apply to have their conditions changed or removed, nor can the Board change or remove a condition, unless they reasonably believe there has been a material change in the circumstances (AHPRA, Monitoring and Compliance, 2016). The Board does not review a practitioner's or student's compliance with their restrictions after a review period has ended, unless it believes it is necessary to do so (AHPRA, Monitoring and Compliance, 2016).

6.10 Recent notification outcome statistics for Australian osteopaths

According to the 2017/18 OBA Annual Report, 17 notifications were lodged with AHPRA about osteopaths. 1.4% of all registered osteopaths had notifications made about them. Of the 17 notifications closed this year; 17.6% resulted in accepting an undertaking or conditions being imposed on an osteopath's registration, 5.9% resulted in an osteopath receiving a caution or reprimand by the Board, and 76.5% resulted in no further action being taken. Immediate action was taken once, and one mandatory notification was made regarding practitioner impairment. Nine osteopaths were monitored by AHPRA for health, performance and/or conduct during the year; one for health reasons, three for performance, one for a prohibited practitioner/student act, and four for suitability/eligibility for registration (Tables 4-10).

As of 30 June 2018, there were nine active monitoring cases, which related to nine individual osteopaths. The nine monitoring cases of osteopaths represent 0.2% of all monitoring cases managed by AHPRA across all the regulated health professions. Over 40% of these cases were being monitored for suitability/eligibility for practice (Table 11).

Tables 4-12: (OBA, Annual Report 2017/18, 2019)

Table 4: Notifications received about osteopaths, by state or territory (including HPCA)

Osteopaths ¹	ACT	NSW ²	NT	QLD ³	SA	TAS	VIC	WA	No PPP ⁴	Subtotal	HPCA ⁵	Total
Total 2017/18	1	0	0	2	0	0	13	1	0	17	15	32
Total 2016/17	0	0	0	2	1	0	10	0	1	14	11	25

1 Data relating to notifications (complaints or concerns) are based on the state or territory of the practitioner's principal place of practice (PPP).

² Matters managed by AHPRA about practitioners with a PPP in NSW, where the conduct occurred outside NSW.

³ Matters referred to AHPRA and the National Board by the Office of the Health Ombudsman (OHO) in Queensland.

⁴ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

⁵ Matters managed by the Health Professional Councils Authority (HPCA) in NSW.

Table 5: Percentage of the profession with notifications received, by state or territory

Registrants	ACT	NSW (including HPCA complaints)	NT	QLD (including OHO complaints)	SA	TAS	VIC	WA	No PPP ¹	Total ²
Osteopaths 2017/18	2.6%	2.2%	0.0%	2.8%	0.0%	0.0%	1.0%	1.6%	0.0%	1.4%
Osteopaths 2016/17	0.0%	1.2%	0.0%	2.4%	2.6%	0.0%	0.8%	0.0%	4.3%	1.1%
All registered practitioners 2017/18	1.6%	1.8%	1.8%	2.1%	1.6%	1.5%	1.1%	1.2%	0.3%	1.6%
All registered practitioners 2016/17	1.9%	1.7%	2.2%	2.2%	1.3%	1.9%	1.1%	1.2%	0.5%	1.6%

¹ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

² Total matters managed by AHPRA, OHO in Queensland and the HPCA in NSW.

Table 6: Immediate action cases by state or territory (excluding HPCA)

Year	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	No PPP ¹	Total
2017/18	0	0	0	0	0	0	3	0	0	3
2016/17	0	0	0	0	0	0	1	0	0	1

¹ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

Table 7: Outcomes of immediate actions (excluding HPCA)

	2017/1	8	2016/17			
Outcome	Osteopaths	All practitioners	Osteopaths	All practitioners		
Not take immediate action	2	173	0	76		
Accept undertaking	0	113	0	69		
Impose conditions	0	174	1	147		
Accept surrender of registration	0	1	0	1		
Suspend registration	1	126	0	103		
Decision pending	0	22	0	23		
Total	3	609	1	419		

Table 8: Notifications closed, by state or territory (including HPCA)

Osteopaths	ACT	NSW ¹	NT	QLD ²	SA	TAS	VIC	WA	No PPP ³	Subtotal	HPCA4	Total
Total 2017/18	0	0	0	2	0	0	13	1	1	17	20	37
Total 2016/17	0	0	1	2	1	0	9	0	0	13	5	18

¹ Matters managed by AHPRA about practitioners with a PPP in NSW, where the conduct occurred outside NSW.

² Matters referred to AHPRA and the National Board by OHO in Queensland.

³ No principal place of practice (No PPP) includes practitioners with an overseas or unknown address.

⁴ Matters managed by the HPCA in NSW.

Tables 4-12: (OBA, Annual Report 2017/18, 2019)

Table 9: Notifications closed, by stage at closure (excluding HPCA)

Stage at closure	2017/18	2016/17
Assessment ¹	11	8
Investigation	6	5
Total	17	13

1 Closed after initial assessment of the matter.

Table 10: Notifications closed, by outcome at closure (excluding HPCA)

Outcome	2017/18	2016/17
No further action ¹	13	9
Accept undertaking	2	0
Caution	1	2
Impose conditions	1	2
Total ²	17	13

¹ No further regulatory action is usually taken when, based on available information, the Board determines there is no risk to the public that meets the legal threshold for regulatory action. It may also be because a practitioner has taken steps to voluntarily address issues of concern.

² Excludes matters managed by the HPCA in NSW.

Table 11: Active monitoring cases at 30 June 2018, by stream (excluding HPCA)

Stream ¹	2017/18	2016/17
Conduct	0	1
Health	1	0
Performance	3	1
Prohibited practitioner/student	1	0
Suitability/eligibility	4	4
Total ²	9	6

¹ AHPRA reports on monitoring cases established rather than by individual registrants being monitored. This is because a registrant may have a set of restrictions (conditions or undertakings) in more than one stream. However, as at 30 June 2018, there were nine cases about osteopaths, which related to nine individual registrants.

² Total may include cases that are yet to be transitioned from AHPRA to the HPCA for conduct, health and performance streams. They do not include HPCA-managed monitoring cases.

Table 12: Statutory offence complaints about osteopaths, received and closed in 2017/18, by type of offence and jurisdiction

Type of offence ¹		АСТ	NSW ²	NT	QLD ³	SA	TAS	VIC	WA	No PPP4	Total 2017/18	Total 2016/17
Title protections	Received	0	1	0	0	0	0	0	0	1	2	2
(s. 113-120)	Closed	0	1	0	0	0	0	1	0	1	3	9
Advertising breach	Received	0	1	0	0	0	0	0	0	1	2	250
(s. 133)	Closed	0	2	0	0	0	0	0	0	1	3	15
Other allowed	Received	0	0	0	0	0	0	0	0		1	0
Other offence	Closed	0	0	0	0	0	0	0	0	1	1	0
T-1-1 0048/40	Received	0	2	0	0	0	0	0	0	.3	5	
10tal 2017/18	Closed	0	3	0	0	0	0	1	0	3	7	
	Received	4	66	0	30	4	5	122	9	12	/	252
Total 2016/17	Closed	0	3	0	2	1	1	4	0	13		24

¹ This table captures offence complaints by principal place of practice (PPP) and includes all offences from sections 113–116 of the National Law, not only offences about advertising, title and practice protection.

² Excludes matters managed by the HPCA in NSW.

³ Matters referred to AHPRA and the National Board by OHO in Queensland.

* No principal place of practice (No PPP) includes practitioners with an overseas or unknown address. AHPRA also receives offence complaints about unregistered persons where a PPP is not recorded.

6.11 Notifications in NSW and Queensland

Importantly, AHPRA and the Board do not manage all complaints made about health practitioners in Australia; the notification process is different in NSW and Queensland (OBA, Annual Report 2017/18, 2019). In NSW, AHPRA does not manage notifications; instead they are managed by 14 professional Councils supported by the Health Professional Councils Authority (HPCA) and the Health Care Complaints Commission (HCCC) (OBA, Annual Report 2017/18, 2019). In Queensland, the Office of the Health Ombudsman (OHO) receives all complaints about health practitioners and determines which of those complaints are referred to the Board/AHPRA to manage (OBA, Annual Report 2017/18, 2019).

NSW Health Professional Councils

Under the National Law, the Councils, supported by the HPCA, work with the HCCC in a co-regulatory partnership (OBA, Annual Report 2017/18, 2019). Together, they manage complaints about registered health practitioners and students registered to undertake health practitioner training in NSW and decide which agency should deal with each complaint (OBA, Annual Report 2017/18, 2019). The HCCC also has a wider role in complaints management covering unregistered health practitioners and health services (HPCA, 2016).

The Councils are made up of practitioner, legal and community members; most members are nominated by the NSW Minister for Health and appointed by the Governor of NSW (HPCA, 2016). Complaints that are referred to the Councils are managed through a health, performance or conduct pathway, depending on the issue (HPCA, 2016). The Councils have the power to enforce restrictions (including suspension or cancellation of registration) and monitor a practitioner's compliance with any restrictions that have been imposed on their registration (HPCA, 2016). The NSW Civil and Administrative Tribunal (NCAT) can also suspend or cancel a practitioner's registration following a finding of professional misconduct (HPCA, 2016).

Office of the Health Ombudsman

The Office of the Health Ombudsman (OHO) is Queensland's health service complaints agency (OHO, 2019). They are an independent statutory body and are the first point of call to receive and investigate complaints about health services and health service providers, including registered and unregistered health practitioners (OHO, 2019). The OHO assess the nature of the complaint and seek the input of the healthcare provider and other relevant experts in order to decide a course of action for the complaint (OHO, 2019). They may, in certain cases, take immediate action to protect the safety of the public, or alternatively refer certain cases to the Board and/or AHPRA for further action (OHO, 2019).

7 Overseas regulation of osteopaths

7.1 How does the National Scheme compare internationally?

In the Comparison of International Accreditation Systems for Registered Health Professions Report 2017, the Accreditation Liaison Group (ALG) compared the Australian accreditation arrangements with those of the United States (US), Canada, New Zealand (NZ), United Kingdom (UK) and Ireland. These countries were chosen due to similarities in the health services provided and to comparable standards of education for the health professions. The ALG concluded that there were key differences, such as (COAG, 2018):

- Legislative frameworks and objectives, noting that only the Australian legislation had an explicit focus on workforce development, innovation, and reform.
- The Australian accreditation functions include the assessment of overseas trained health practitioners and overseas authorities, whereas other countries treat these as registration functions.

In the report, the ALG notes that NZ, the UK and Ireland are most similar to Australia in that they have a co-regulatory system. Co-regulation is expressed as a system that has 'a strong partnership between industry and government; with the industry developing its own code of conduct or accreditation/ratings schemes with legislative backing from government' (COAG, 2018). The US have different regulatory systems which operate at a state/provincial level; theirs is considered to be a 'quasi regulated' system where government influences business to comply and assists with the development of codes of conduct, accreditation and/or rating schemes, but does not play a role in enforcement (COAG, 2018).

Australia and the US have federal systems of government. Australia has developed a national approach (leading to the establishment of the National Scheme), whereas the US have retained separate state/provincial approaches to regulation (COAG, 2018). As a result, there are variances in how health professions are regulated at the sub-national level. The US have also developed a system of national examinations for registered professions (except for psychology and podiatry). The review infers that the use of national examinations in these two countries is to allow for assessments of graduates against a consistent national benchmark, given the lack of a single national approach to accreditation (COAG, 2018).

While NZ has a single national Act governing the regulation of its health practitioners (the Health Practitioners Competence Assurance Act 2003), it has a 'scope of practice' approach to practitioner regulation while Australia's National Scheme is based on a 'protection of title' model (COAG, 2018). A key difference with the 'scope of practice' approach is that it enables regulatory authorities to apply restrictions on the scope of practice of individual practitioners. In Australia, restrictions on individual scopes of practice are primarily undertaken through employer credentialing and privileging processes or following a complaint or notification (COAG, 2018). The varied use of 'scope of practice' (NZ and Canada) vs 'protection of title' (Australia, Ireland, the UK and US) suggests that this is influenced by local health systems and the broader regulatory context (COAG, 2018).

7.2 Global accreditation of osteopathy

Globally, there are two recognised professional streams of osteopathic training and practice: the osteopath and the osteopathic physician. Both models have a defined set of core competencies, allowing practitioners to 'deliver patient-centred, evidence-informed care incorporating the principles of osteopathic philosophy, which includes the use of osteopathic manipulative treatment and viewing the patient using the biopsychosocial approach' (WHO, Benchmarks for training in osteopathy, 2010). The accreditation pathways and regulatory structures differ for the two professional streams; within each stream there are also varying models of accreditation and regulation in different countries (OIA, 2013).

United States (US)

The American Osteopathic Association's (AOA) Commission on Osteopathic College Accreditation (COCA) is the professional education accreditation authority as deemed by the US Department of Education, and accredits all medical schools granting the Doctor of Osteopathic Medicine (DO) degree. Accreditation signifies that a college or school of osteopathic medicine has met or exceeded the AOA standards for educational quality with respect to mission, goals, and objectives; governance, administration and finance; facilities, equipment, and resources; faculty; student admissions, performance and evaluation; preclinical and clinical curriculum; and research and scholarly activity. The AOA is also the only accrediting agency for osteopathic graduate medical education and must approve all postdoctoral training programs (OIA, 2013).

United Kingdom (UK)

In most countries where osteopathy is a regulated profession, a national system of accreditation is in place, with the professional regulator working alongside existing institutional and national educational quality assurance mechanisms. In the UK, the General Osteopathic Council (GOsC) scrutinises all courses to ensure standards of education and training are maintained, working closely with the independent Quality Assurance Agency for Higher Education (QAA) (OIA, 2013).

7.4 Global regulation of osteopaths

According to the OIA Global Report 2013, various regulatory arrangements currently exist with regard to osteopathy, shaped by each country's wider legal and medical regulatory frameworks. The profession may be i) regulated and recognised; ii) recognised but not regulated; iii) unrecognised and unregulated but free to practice, and iv) practice limited to physicians. The countries in which osteopathic practice is regulated have implemented legislation in different ways, for example 'through protection of title' or 'scope of practice'.

United States (US)

The practice of osteopathic medicine is regulated in the US at the state level. All osteopathic physicians must be licensed by the state licensing board in order to practise in that state. Those boards may be combined (DO and MD) or separate, depending on the state. US-trained osteopathic physicians are licensed to practise the unlimited scope of medicine, which includes prescribing all controlled substances as designated by the US Drug Enforcement Administration in its relevant schedules (OIA, 2013).

Europe (EU)

Osteopathic physicians trained in Europe are qualified doctors (MDs) with postgraduate training and education in osteopathic medicine. Governmental regulatory systems for osteopathic physicians exist only in the UK and France; in all other countries regulation and licensure as physicians is part of the general medical councils. In most EU countries, these medical councils recognise that MDs with postgraduate qualifications in osteopathy practise osteopathic medicine as a branch of complementary medicine (OIA, 2013).

7.4.1 Regulatory types

According to the *OIA Global Report 2013*, the following registration types are in place for osteopathy globally (OIA, 2013):

Regulated and recognised: osteopathy is regulated by law in a growing number of countries including the UK, Australia, NZ, France, Finland, Malta, Switzerland, Iceland, and South Africa. Only individuals registered with the relevant authority may use the title 'osteopath' and/or practise osteopathy in these countries. Eligibility for registration commonly includes minimum training and qualification requirements, professional indemnity insurance, and sound physical and mental health.

Regulated and unrecognised: osteopathy is formally recognised but remains unregulated in several countries. For example, Belgium and Italy have passed, but not implemented, legislation; Germany and Portugal have recognition and are considering regulation; while Brazil and Russia have recognition but are not currently regulating. Where regulation does not exist, it is common for professional associations to maintain a voluntary register of practitioners and to set standards of practice and training or to establish an independent register. Such arrangements have no legal backing and are usually viewed as a temporary measure. The holders of informal registers are usually engaged with local governments in pursuit of legal regulation to ensure public safety.

Unregulated and unrecognised, but free to practice: countries where osteopathy is not formally recognised as a profession, but where osteopaths are able to practise, include Denmark, the Netherlands, Sweden, Ireland, Austria, Cyprus, Spain, Greece, Croatia, Cyprus, Israel and Japan, among others. Again, in these jurisdictions the professional associations may operate voluntary registration lists and attempt to establish standards of training and practice, but these are voluntary and have no legal backing. In some countries, there is no statutory recognition but there are early moves towards regulation, including Norway, Ireland, and Canada.

Practice limited to physicians: in some countries, for example Bulgaria and the Baltic countries (Latvia, Lithuania and Estonia), the use of osteopathic techniques is reserved for medical doctors, even though (unlike the US) there is no tradition of osteopathic physicians.

7.5 Establishing common accreditation and regulation standards for osteopathy

According to the OIA Global Report 2013, there are several recent initiatives created with the purpose of standardising osteopathic accreditation and training. In 2010, the WHO published its Benchmarks for Training in Osteopathy 2010, one of a series of publications on selected types of Traditional Medicine and Complementary and Alternative Medicine. The benchmarks aim to reflect 'what the community of practitioners in each of these disciplines considers to be reasonable practice in training professionals to practice the respective discipline, considering consumer protection and patient safety as core to professional practice' (WHO, Benchmarks for training in osteopathy, 2010).

According to the OIA Global Report 2013, the Forum for Osteopathic Regulation in Europe (FORE) has developed and published the European Framework for Standards of Osteopathic Practice (EFSOP) and the European Framework for Codes of Osteopathic Practice (EFCOP), in addition to its voluntary standards on education and training in osteopathy. These frameworks have been ratified by the European Federation of Osteopaths (EFO). While they technically have no legal basis and are not designed to override national laws, they have been developed to create an agreed standard of practice in Europe and to help the osteopathic profession achieve recognition and regulation where this does not currently exist. The Frameworks are currently being used to inform the development of a European Committee for Standardisation (Comité Européen de Normalisation (CEN)) European Standard on Osteopathic Healthcare Provision. While this would also be a voluntary standard, it is forecasted to have greater weight than the existing frameworks, providing a benchmark for patients and the public on the minimum standards of osteopathic care they should expect in those countries currently without any regulatory mechanisms for osteopathy.

9 References

ACSQHC. (2015). Credentialing health practitioners and defining their scope of clinical practice: A guide for managers and practitioners . NSQHS.

AGDH. (2008). National eHealth Strategy. Victorian Department of Human Services for AHMAC.

AGDH. (2012, Dec 20). Specialist video consultations under Medicare. Retrieved from MBS Online: http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/connectinghealthservices-patients-QA

AHPA. (2018). Increasing access to allied health telehealth services. Allied Health Professions Australia.

AHPA. (2019). Allied Health Accreditation. AHPA.

AHPRA. (2014). Guidelines for advertising regulated health services. AHPRA.

AHPRA. (2014). Regulatory principles for the National Scheme. AHPRA.

AHPRA. (2015). The NRAS Strategy 2015-20. AHPRA.

AHPRA. (2016, June 29). *Monitoring and Compliance*. Retrieved from AHPRA: https://www.ahpra.gov.au/registration/monitoring-and-compliance.aspx

AHPRA. (2018). Guidelines for informing a National Board about where you practice . AHPRA.

AHPRA. (2019). Annual Report 2016/17. AHPRA.

AHPRA. (2019). Annual Report 2017/18. AHPRA.

AHPRA. (2019, March 29). Mandatory Reporting. Retrieved from AHPRA: https://www.ahpra.gov.au/Notifications/Raise-a-concern/Mandatory-notifications.aspx

AHPRA/OBA. (2019). Health Profession Agreement 2016-20. AHPRA.

AHRQ. (2008). Using telehealth to improve quality and safety . Rockville, MD: DHHS.

AIHW. (2018, June 20). *Australia's Health 2018*. Retrieved from Australian Institute of Health and Welfare: file://rmit. internal/USRHome/eh6/e92486/RA%20Osteo/Enviro%20Scan/AusHealth2018.pdf

AOAC. (2016). Accreditation standards for osteopathic courses in Australia. AOAC.

AOAC. (2018). Annual Report 2016-2017. AOAC.

AOAC. (2018). Stakeholder Engagement Framework. AOAC.

AOAC. (2019). Strategic Plan 2017/18. AOAC.

APA. (2018, April). *Physiotherapists embrace telehealth app to connect with patients*. Retrieved from Physitrack: https://www.physitrack.com/press/physiotherapists-embrace-telehealth-app-to-connect-with-patients

AUG. (2017). Australia's National Digital Health Strategy. AUG.

BUPA. (2018, July 1). Abpout BUPA Telehealth. Retrieved from BUPA: https://www.bupa.com.au/telehealth

COAG. (2018). Consultation on Australia's Health Workforce: strengthening the education foundation. COAG Health Council.

DelliFraine, J. D. (2008). Home-based telehealth: A review and meta-analysis. J Telemed and Telecare, 62-66.

FDA. (2016). General wellness: policy for low risk devices. DHHS.

Goodridge, D. M. (2016). Rural and remote care: Overcoming the challenges of distance. Chron Resp Dis, 192-203.

GSHM. (2018, July 1). *The Global Smart Healthcare Market Report 2018-2022*. Retrieved from Technavio: https://www.technavio.com/blog/top-5-healthcare-technologies-changing-global-smart-healthcare-market

Haghi, M. T. (2017). Wearable devices in medical internet of things: scientific research and commercially available devices. *Healthc Inform Res*, 4-15.

HCF. (2018, July 1). A GP at your fingertips. Retrieved from HCF: https://www.hcf.com.au/members/access-medical-resources/gp2u

HPCA. (2016, July). Who are we. Retrieved from Health Professional Councils Authority: https://www.hpca.nsw.gov.au/who-we-are-hpca

Insight, C. (2018). Wearables forecast worldwide 2015-2019. CCS Insight.

Kairy, D. L. (2009). A systematic review of clinical outcomes, clinical process, halthcare utilisation and costs associated with telerehabilitation. *Disability and Rehabilitation*, 427-447.

Kalis, B. &. (2018, May 5). Spotting the Big Bang in Healthcare. Retrieved from Accenture: https://www.accenture.com/us-en/insight-healthcare-bigbang-disruption

Kruse CS, K. N. (2017). Telehealth and patient satisfaction: a systematic review and narrative analysis. BMJ Open.

MBA. (2012). Guidelines: Technology-based patient consultations . AHPRA.

Medibank. (2018, July 1). About Us. Retrieved from Medibank Health Solutions: https://www.medibankhealth.com.au/about.asp

Medicare. (2012). Telehealth Program Guidelines 2012. MBSOnline.

Medicare. (2014). Telehealth: Specialist video consultations under Medicare. MBS Online.

Murphy, K. &. (2018, May 1). *Riding the Disruption Wave in Healthcare*. Retrieved from Forbes: https://www.forbes.com/sites/baininsights/2018/05/01/riding-the-disruption-wave-in-healthcare/#3a613c9c2846

NRAS. (2015). Regulatory Principles for the National Scheme. AHPRA.

NRAS. (2016, February 2). *National Registration and Accreditation Scheme*. Retrieved from Australian Government Department of Health: http://www.health.gov.au/internet/main/publishing.nsf/Content/work-nras

OA. (2014). Statement of Scope of Practice in Osteopathy . OA.

OBA. (2009). Capabilities of Osteopathic Practice. OBA.

OBA. (2014). Code of Conduct for Registered Health Practitioners. OBA.

OBA. (2015). Registration standards. OBA.

OBA. (2018, August 14). *Codes and Guidelines*. Retrieved from Osteopathy Board of Australia: https://www.osteopathyboard.gov.au/codes-guidelines.aspx

OBA. (2018). Revised professional capabilities for osteopathic practice: Public consultation. OBA.

OBA. (2019). Annual Report 2016/17. OBA.

OBA. (2019). Annual Report 2017/18. OBA.

OCNSW. (2014). Position Statement on Scope of Practice in Osteopathy. OCNSW.

OHO. (2019). Annual Report 2017/18. OHO.

OIA. (2013). OIA Global Report. OIA.

Piwek, L. E. (2016). The rise of consumer health wearables: promises and barriers. PLOS Med, e1001953.

SARRAH. (2012). Telehealth and Allied Health. Services for Australian Rural and Remote Allied Health.

TMA. (2012, July 1). About Telemedicine Australia. Retrieved from Telemedicine Australia.

Totten, A. W. (2016). Telehealth: Mapping the evidence for patient outcomes from systematic reviews. Rockville MD.

WHO. (2010). Benchmarks for training in osteopathy. WHO.

WHO. (2018). A national telehealth strategy for Australia. Australian National Consultative Committee on Electronic Health.

9.8 Environmental Scan: Research

1	Challenges for osteopathy research	117
2	Parties responsible for conducting	118
	research in osteopathy	
2.1	Individual practitioners	118
2.2	Registration bodies and	118
	professional associations	
2.3	Dedicated research networks	118
2.4	Key stakeholders	118
2.5	Academic institutions	118
3	Areas for improvement	119
	in osteopathy research	

4	Osteopathy research to-date	119
4.1	Priority areas past and present	119
4.2	Efficacy of OMT	119
4.3	Health services research (HSR)	120
4.4	Research for policy makers and funding bodies	120
5	Funding for osteopathy research	121
5.1	The National Health and Medical Research Council (NHMRC)	121
5.2	The Medical Research Future Fund (MRFF)	121
5.3	Barriers for research funding	121
6	Conclusion	122
7	References	122

A call for greater quality, safety, and efficacy in healthcare has initiated an evidence-based movement within Australia and worldwide. This movement urges healthcare professions to draw on proof of the effectiveness of their interventions in order to give patients and third-party payers informed choices for their healthcare (Orrock, 2017). In addition to consumer choice, evidence establishes a scientific foundation to influence practice and facilitates a comparison between related services (Orrock, 2017). Healthcare professions like osteopathy are ethically required to provide evidence of the benefits and risks of their practices to relevant stakeholders including patients, other health professionals, third party funding agencies, government organizations, educational institutions and members of the profession themselves (Orrock, 2017). As such, it is in the best interests of the profession to build a solid evidence base to establish a place for itself within the Australian healthcare system going forward.

Without research the profession would not have begun, and without continued research there will be threats to professional autonomy, professional development, and to the ongoing viability of our education programs.

(Lucas, 2007)

1 Challenges for osteopathy research

The major challenge facing all healthcare professions is to establish a specialised body of knowledge. Within the context of osteopathy, this relates to identifying whether there is a unique or identifiable osteopathic approach to healthcare. According to Orrock et al, (2017) 'research into osteopathy as a healthcare profession is relatively scarce' with an unbecoming reliance upon decades-long anecdotes and 'cherry picking' of other professions' research findings. Consequently, claims made by osteopathy are subject to criticism suggesting that diagnostic theories lack validity and outcomes are not clinically relevant. As such, establishing a high-quality evidence base is of paramount importance for the future of the profession. This is however a challenging process that requires mobilization of the profession as a whole. It is widely acknowledged that conducting studies to investigate clinical effectiveness is no simple task and typically requires willing, abled, and skilled personnel within the profession to design robust experimental designs, orchestrate grant writing to secure funding, gain ethical approvals, secure suitable clinical facilities, recruit practitioners and manage the enrolment of patients. Apart from securing funding, designing robust experiments with sound methodology is a major challenge for research in osteopathy. Above all however, osteopathy lacks a defined hierarchy of responsibility for conducting evidence in addition to experienced and available personnel within the profession who are willing to undertake high-quality studies (Lucas, 2006).

2 Parties responsible for conducting research in osteopathy

In the 2007 editorial 'Researching osteopathy: Who is responsible?', Lucas et al ascribe the responsibility for producing research to five major groups, including i) individual practitioners, ii) professional bodies and associations, iii) dedicated research networks, iv) key stakeholders, and v) academic institutions and student osteopaths.

2.1 Individual practitioners

Lucas et al (2007) suggest that individual practitioners are expected to participate mainly as consumers of research, drawing on evidence to inform practice and guide clinical reasoning. As continuing professional development (CPD) providers, they are also charged with demonstrating how research supports the use of their therapy via participating in research, donation of research fees, and collaborating with others to perform clinical trials.

2.2 Registration bodies and professional associations

Responsibility extends to the registration bodies to endorse CPD courses and thus inform the profession of advances in research. Professional associations also endorse CPD courses and make claims regarding the efficacy of osteopathy. To the extent that these claims imply a benefit of osteopathy, professional associations including Osteopathy Australia (OA) have a responsibility to support and fund research into the credibility of these claims.

2.3 Dedicated research networks

Established with the aim of creating and facilitating research opportunities for osteopathy, dedicated research networks including the Osteopathy Research and Innovation Network (ORION), the International Osteopathic Research Network (from Osteopathic International Alliance), and the Osteopathic Research Alliance (ORA) work with academics and universities to develop research partnerships and establish an international research database for osteopathy (ORION, 2018). The Osteopathic International Alliance (OIA) also supports global collaboration for osteopathy research (OIA, 2018).

2.4 Key stakeholders

Lucas et al (2007) suggest this group should be at the forefront of professional development and the advancement of knowledge in the field. Current best practice demonstrated by professional bodies includes facilitating access to funding, supporting research in academic institutions, and promoting a research culture amongst the profession via conferences, CPD programs and journal subscriptions.

2.5 Academic institutions

According to Lucas et al (2007), a major aim of the profession over the last 20 years has been establishing a stronger educational foundation within governmentfunded tertiary institutions. This has come with a greater obligation for tertiary academics to expand their role from teaching into actively engaging in research and grant applications. Academics are furthermore charged with engendering a research culture within students; failing to engender such skills 'starves the profession of its future researchers' (Lucas, 2006). As such, research skills are weighted heavily in the current learning outcomes of osteopathy universities. For numerous reasons and until recently, osteopathy academics have typically avoided participating in research programs within their institutions; although there is growing expertise within osteopathy in areas of research design, grant writing, and scientific publishing, this growth requires constant feeding from academics (Lucas, 2006).

According to Steel et al (2017), a majority of studies submitted for publication to the International Journal of Osteopathic Medicine (IJOM) originate from within academic institutions, most commonly as a product of student-academic collaboration. However, the extent of research engagement varies significantly between universities as evident in the Education report. Regarding osteopathy universities in Australia, there is a consistent focus on evidence-based medicine (EBM) throughout with some variation in research recruitment methods in the final years (see Education report for further details). Overall, these findings suggest that academic institutions are the primary producers of research on behalf of the profession. There are a number of limitations associated with this however, including the aforementioned lack of student engagement and appropriate supervision.

3 Areas for improvement in osteopathy research

According to Lucas et al (2007), it is widely known that students do not typically enrol in osteopathy programs to embark on a research career. Despite this, the fate of osteopathy research and furtherment of the profession weighs upon student engagement. By contrast, according to Orrock et al (2017), research conducted by other healthcare professions originates from 'groups of experienced researchers working collaboratively'. A distinct lack of such groups in the osteopathy profession is an obvious area for improvement.

The provision of adequate research supervision is another major challenge for most institutions. The limiting factor for this remains the scarcity of suitably qualified and experienced osteopathy research supervisors. Resolving this issue will likely involve attracting experienced researchers from complementary fields and forming professional research alliances, both domestic and international. Variation in global models of osteopathy (i.e. osteopathic physicians vs osteopaths) may pose a significant barrier for international research alliances in particular, however it is widely agreed that osteopathy in Australia should strive to collaborate with researchers in the UK and USA, among others, by identifying shared interests (Orrock, 2017). In addition, academic institutions must develop a more defined career pathway for students who demonstrate an interest and aptitude for research. According to Lucas et al (2007), this should involve incorporating sufficient research experience within the pre-professional degree to enable direct transfer into doctoral studies.

4 Osteopath research to-date

4.1 Priority areas past and present

According to Steele et al (2017), research within the field of osteopathy has primarily focused on i) the efficacy of osteopathic manual therapy (OMT), ii) education, iii) applied physiology, and iv) osteopathy as a health service (Table 1). The most extensively researched of these to-date is the efficacy of OMT; a notoriously difficult topic to examine (OIA, 2012; Orrock, 2017; Steel, 2017). While OMT remains a priority area for osteopathy research, some argue that health service research (HSR) may be most advantageous and more deserving of funding as it highlights the potential role of osteopathy in the wider healthcare system; an essential component for remaining relevant within the changing healthcare landscape in Australia (Steel, 2017).

4.2 Efficacy of OMT

According Gevitz et al (2001), until recent years OMT has been developed of the basis of eminence-based medicine from its foundation. Shifting this towards a scientific evidence-based approach has proved challenging due to i) the subjective nature of the measures and parameters used in the analysis of OMT techniques, ii) variability in their application by different osteopathic practitioners, and iii) difficulties associated with practitioner blinding. These factors have classically weakened the internal validity of trials on OMT. Furthermore, the representability and relevance of OMT studies has been questioned when administered in isolation, given they are typically provided as part of a 'holistic approach within the framework of osteopathic principles' (Steel, 2017). As such, research examining specific techniques which may be applied in a 'non-osteopathic or non-holistic manner' may have limited value for developing the real-world evidence-base of osteopathy in clinical practice (Steel, 2017). Furthermore, 'research which supports a treatment or intervention used by not only osteopaths but by other health professionals offers limited insights into the particular value of osteopathy' (Steel, 2017). These pitfalls in OMT research are yet to be resolved, however efficacy outcomes for OMT remains a priority of osteopathy research.

4.3 Health services research (HSR)

Beyond clinical research, efforts have been made from within the profession to identify other research priorities forecasted to strengthen the profession further (Steel, 2017). These include analyses related to the practice, workforce, and use of osteopathy in line with an HSR approach. HSR is defines as 'the critical, scientific study of health and health care issues with a focus ranging from international, national, and regional populations through to smaller localised/specialised groupings and individuals' (Adams, 2007). Some argue that this research may be most advantageous in securing the longevity of the profession in the eyes of key policymakers, health administrators and other key stakeholders (Steel, 2017). In particular, 'workforce data, public safety, economics of treatment, and the effectiveness of the broad system of osteopathic holistic care when compared to other care options available within the conventional health system' are all examples of issues that may be addressed via HSR research (Steel, 2017).

Overall, efficacy studies for OMT are critically important and may one-day foster excellence in the application of osteopathic techniques in the management of specific disorders. While such research efforts are indeed valuable, the strong emphasis on this main area of research has thus far been met with a number of pitfalls and 'generally done little to advance a broader understanding of the value and relevance of osteopathy in clinical health care' (Steel, 2017). Therefore, to highlight osteopathy within a broader context, the research agenda may require expansion and diversification into HSR. This sentiment is echoed by a number of authors who have labelled HSR as a worthwhile 'future direction of osteopathic research' (Steel, 2017; Orrock, 2017; Lucas, 2006). Furthermore, in accordance with these views, HSR is evident in the research priorities listed by Osteopathy Australia (OA, Our Research, 2018):

- Contemporary osteopathic practice: examines facets of professional, contemporary osteopathic practice in the health care systems.
- Treatment: examines clinical safety and effectiveness of osteopathic practice with approaches which respect the principles and philosophies underpinning osteopathy.
- Clinical outcomes of osteopathic practice: determines measurable changes in health, wellness or quality of life that result from osteopathic care.
- Osteopathy in the Australian health care system: examines the osteopathy workforce, its role, and place within contemporary Australian health care.
- Consumers, consumption, and utilisation: examines aspects of osteopathy use by healthcare consumers and the reasons why they attend.

4.4 Research for policy makers and funding bodies

The provision of osteopathy services is significantly influenced by groups outside of the profession such as policy makers and funding bodies. Whilst HSR approaches may provide insights to support policy makers and funding bodies in their decision-making regarding osteopathy and its role within the Australian healthcare system, there are also additional areas which are of particular interest when developing policy and funding models within the health system. These include the safety and cost effectiveness of osteopathy as a healthcare service. Regarding safety, information such as incidences of adverse events and suitability for vulnerable populations (i.e. pregnant women and children) may significantly influence policy decisions. Furthermore, a clear understanding of the health economics and cost-effectiveness of osteopathy may be pivotal not only for policy makers but also healthcare insurers and other third-party funders (Steel, 2017).

5 Funding for osteopathy research

5.1 The National Health and Medical Research Council (NHMRC)

The NHMRC is Australia's peak body for supporting health and medical research (NHMRC, 2018). Aside from funding, they advise the Australian Government and facilitate networking in the research community by 'bridging academics and industry together' (NHMRC, 2018). The NHMRC draws upon multiple resources to support and facilitate research opportunities, including governments, medical practitioners, allied health professionals, researchers, academic institutions, community health organisations and consumers (NHMRC, 2018).

According to the NHMRC, government appropriations to the NHMRC's Medical Research Endowment Account (MREA) guadrupled between 2000–01 (\$185 million) and 2010–11 (\$750 million). Since then, the Government has maintained the funding at approximately \$800 million per annum. Despite this significant injection of funds, rapid growth in grant application numbers and rising costs of research have led to funding rates for the NHMRC's major grant schemes 'falling to historical lows' (NHMRC, 2018). The real-life consequences of this include i) significant time loss for researchers preparing and reviewing grant applications that will not be funded, ii) discouragement of early and mid-career researchers from pursuing research as a career, and iii) a lack of innovative and new research ideas (NHMRC, 2018). To combat this, the NHMRC created a new grant program comprising of four main funding streams (Table 2).

Overall, funding will continue to be provided based on rigorous peer review of applications to ensure transparency, probity, and fairness. Assessment of 'Investigator grants' and 'Synergy grants' will primarily focus on track record (relative to opportunity and peer group), and assessment of 'Ideas grants' will primarily focus on the science, innovation and significance of the proposed research (NHMRC, 2018).

The extent to which these issues have been rectified by the new grant program is debatable. A 2017 report by the Australian Society for Medical Research (ASMR) identified that in 2010, the NHMRC spent \$383 million on grants and 22.8% of applications were successful. In 2016, only 15.1% of applications received some of the \$415 million on offer despite the implementation of the new grant program. Overall, this suggests that NHMRC funding has stagnated to a degree. Within the context of osteopathy, the NHMRC is called upon to provide research grants to academic institutions to fund student research projects. Grant funding is largely dependent upon facilitator track record and the innovative nature of the proposed research (NHMRC, 2018). As such, major threats including a lack of skilled supervisors with track records in osteopathy may significantly stunt NHMRC funding. In the eyes of academic institutions who look favourably on grants, this bodes poorly for the future of osteopathy education and practice.

5.2 The Medical Research Future Fund (MRFF)

The Medical Research Future Fund (MRFF) aims to support the growth of health and medical research and assist the sustainability and innovation of the Australian healthcare system (MRFF, 2018). In the 2014-15 Budget, the Australian Government created the \$20 billion MRFF. Governed by the Australian Medical Research Advisory Board, the MRFF abides by defined funding principles and allocations. To date, these allocations are not open to osteopathy research, however, there are allocations in which osteopathy could one-day participate provided we demonstrate sufficient evidence of efficacy, safety, and cost-effectiveness. These include but are not limited to the allocations shown in Table 3 (MRFF, 2018).

5.3 Barriers for research funding

A number of factors may negatively impact funding opportunities for osteopathy research. These include but are not limited to:

- A lack of evidence of safety and cost-effectiveness: policy makers and funders use this evidence to make critical decisions regarding the profession.
- A lack of skilled clinical supervisors with substantial track records: funders consider track records as favourable performance indicators when approving grant applications.
- A lack of willing student participants: poorly defined research pathways and an uncertain future may deter students from pursuing a research career.
- A bias towards OMT efficacy studies as opposed to HSR research: the potential role of osteopathy within the wider healthcare system is not well elucidated.

 The small size and lack of representation of the profession on grant-review panels: a small number of grant applications relative to other healthcare professions makes it difficult for osteopathy to distinguish itself among others.

In future, these barriers may be overcome by i) initiating a movement towards HSR research on safety and costeffectiveness of osteopathy as a healthcare modality, ii) encouraging skilled supervisor participation and the development of research alliances, and iii) creating more defined research pathways for students exhibiting an interest and aptitude for research.

6 Conclusion

In conclusion, research in osteopathy is essential for the furtherment of the profession. Acknowledgement as a unique and valuable healthcare modality is of paramount importance to the viability of the profession, however this may require a shift in focus towards HSR research. While still highly valuable, a number of pitfalls are associated with OMT research that require rectification for clinical findings to be relevant. Ultimately, this shift in focus may assist the profession to secure research funding in addition to encouraging greater supervisor and student participation in research and the formation of research alliances with others.

7 References

Adams, J. (2007). Researching complementary and alternative medicine. Oxon Rout.

Ernst, E. C. (2006). A systematic review of systematic reviews of spinal manipulation. J R Soc Med.

Licciardone, J. R. (2006). Blinding Protocols, Treatment Credibility, and Expectancy: Methodologic Issues in Clinical Trials of Osteopathic Manipulative Treatment. JAOA.

Lucas, N. M. (2006). Is osteopathy research relevant? A challenge has been made. IJOM.

Lucas, N. M. (2007). Is there a place for science in the definition of osteopathy? . IJOM.

MRFF. (2018). About the MRFF. Retrieved from MRFF: https://www.health.gov.au/initiatives-andprograms/medical-research-future-fund/about-the-mrff

NHMRC. (2018). New grant program overview. Retrieved from NHMRC: https://www.nhmrc.gov.au/funding/new-grant-program/overview

NHRA. (2019, April 23). Rural Australia needs Allied Health Professionals. Retrieved from National Rural Health Alliance: https://www.ruralhealth.org.au/media-release/rural-australia-needs-alliedhealth-professionals

OA. (2018). Our Research. Retrieved from Osteopathy Australia: https://osteopathy.org.au/aboutus/Our-research

OIA. (2012). GOsteopathy and Osteopathic Medicine: A Global View of Practice, Patients, Education and the Contribution to Healthcare Delivery. OIA.

OIA. (2018). Mission, vision and strategic initiatives. Retrieved from Osteopathic International Alliance: https://oialliance. org/about-us/mission-vision/ORION. (2018). Project aim. Retrieved from The ORION Project: http://www.orion-arccim. com/projectaim/

Orrock, P. J. (2017). Developing an evidence base for osteopathic healthcare: an exploration of osteopathic care to inform the design of an appropriate methodology to investigate its effectiveness. ePublications@SCU.

Patsopoulos, N. A. (2011). A pragmatic view on pragmatic trials. Dialogues in Clin Neuroscience . 16

Posadzki, P. E. (2011). Osteopathy for musculoskeletal pain patients: a systematic review of randomized controlled trials. J Clin Rheum.

Steel, A. B. (2017). The role of osteopathy in clinical care: Broadening the evidence-base. IJOM.

9.9 Environmental Scan: Technology and Digital Health

1	What is digital health?	124
1.1	Drivers of digital health	125
1.2	Technology	125
2	Telehealth and telemedicine	126
2.1	What is telehealth and telemedicine?	126
2.2	Telehealth capabilities	126
2.3	What are the benefits and limitations of telehealth?	127
2.4	How is telehealth being used in allied healthcare?	127
2.5	What are the key barriers for telehealth in allied healthcare?	128

3	Wearables	133
3.1	What are wearables?	133
3.2	Wearable technology	133
	& its capabilities	
3.3	What are the benefits and	133
	limitations of wearables?	
3.4	How are wearables being	133
	used in allied healthcare?	
3.5	What are the key barriers for	136
	wearables in allied healthcare?	
4	Mobile devices and applications	138
4.1	What are mobile devices	138
	and applications?	
4.2	mHealth app capabilities	138
4.3	What are the key barriers for	141
	mHealth apps in allied healthcare?	
5	Conclusion	141
6	References	142

1 What is digital health?

Technological advances have revolutionised the delivery of healthcare in response to a growing need for greater quality, safety, and efficiency. Not only have these advances changed experiences for consumers and their families, they have also radically impacted the practices of healthcare providers. While the more publicized advances commonly relate to medical intervention and treatment, technology is also working behind the scenes to improve access to patient care. The introduction of Electronic Health Records (EHRs) marked the beginning of a revolutionary digital health movement that allowed for real-time data transfer between practitioners and patients, as well as providing patient data to clinical researchers. Since then, digital health has expanded and diversified globally, emerging as a major driver in the healthcare practices of the future. According to the Australian Government Department of Health, 'digital health will enable a safer, higher quality, more equitable and sustainable health system for all Australians by transforming the way information is used to plan, manage and deliver health care services' (AGDH, National eHealth Strategy, 2008). This report details the current capabilities and future trends of technology in allied health.

'Australia has one of the best health systems in the world based on the health outcomes of its citizens. However, maintaining or improving these health outcomes will require a fundamental change in approach and delivery. The Australian health system is currently straining to deal with a large ageing population, an increasing incidence of chronic disease, increasing demand for costly procedures, and a shortage of skilled health care workers. Given this reality, we need to move to a system where every interaction between consumers and care providers achieves maximum impact on health outcomes and where scarce financial and human resources are deployed as effectively as possible. Most of all, we must draw upon the latent capacity in the system represented by consumers themselves playing a more active role in their personal health outcomes. This change will require a fundamental shift in the way information is accessed and shared across the health system. We have to move towards an environment where consumers, care providers and health care managers can reliably and securely access and share health information in real time across geographic and health sector boundaries. The only way this can be achieved is through the implementation of world class eHealth capability'.

(AGDH, National eHealth Strategy, 2008)

Digital health (otherwise known as eHealth) focuses on the use of Information and Communication Technologies (ICTs) to collect and share health information remotely and instantly, overcoming barriers of time and space (AIHW, 2018). The ICT applications and software making this possible include telehealth technology, wearables, Smart mobile devices and applications and more (AIHW, 2018). Although characteristically slow in its implementation, digital health is gaining traction within the Australian healthcare system (AIHW, 2018). According to the Australia's Health Report 2018 by the Australian Institute of Health and Wellness (AIHW), digital health is providing consumers with the ability to access and track their own health information and make informed decisions about their health. For healthcare providers, it is facilitating greater access to patient data, supporting continuity of care, improving patient-practitioner interactions, and hastening the efficacy and delivery of healthcare services (AIHW, 2018). Evidently, digital health is having a positive impact on the delivery of healthcare in Australia. As a result, many healthcare providers are exploring strategies to leverage technology and incorporate digital health into their practices. To do this successfully requires an understanding of the emerging technology and its drivers.

1.1 Drivers of digital health

As stated by Murphy et al (2018), the most significant drivers of digital health are the consumers themselves. Not only has digital health addressed a need for greater quality and efficacy in healthcare delivery, it has also provided consumers with 'greater autonomy, convenience, timeliness, value, and price transparency unlike ever before' (Murphy, 2018). Studies have shown that consumers are highly motivated to engage in the use of digital health: i) for its ability to transgress time and space to provide remote and instant care, and ii) as it provides consumers with unprecedented access and control of their health data allowing for self-monitoring and management (Murphy, 2018). As such, the use of digital health technology is trending upwards, with 88% of Australians aged 18-75 owning a digital health device in 2017, with 78% of these individuals using these devices to track their health data (AIHW, 2018). These trends are expected to grow exponentially as digital health technologies become more widespread and user-friendly (AIHW, 2018).

'There is a quiet revolution going on. It is a revolution about information access, equity of access and participatory medicine. The huge increase in the incidence of complex chronic disease means that primary care practitioners simply are unable to keep up with the latest research, new modes of treatment and, in Australia, rarely participate in team-based care provision. Our primary model is one of lone practitioners providing services in sequence.

The ability of new technologies to merge and mix health data, personal information and other types of information combined with the increasing popularity of mobile devices suggests that medical doctors, nurses, allied health professional and patients may well be pushed down innovative ways of building new health care delivery models. What is increasingly evident is that demand by patients for better access, for better tools, and to engage in the dialogue about their own care is strong and increasing'.

(WHO, 2018)

1.2 Technology

Health information can be recorded and shared on a variety of platforms and devices, the majority of which utilize Smart technology (Self-Monitoring Analysis and Reporting Technology). Smart technology is leading the way in digital health, having created its own brand of Smart healthcare (GSHM, 2018). Smart healthcare involves the use of Smart devices and applications for the diagnosis and management of health conditions (GSHM, 2018). These devices have enabled the provision of facilities such as vitals monitoring, medication reminders, electronic prescribing, remote diagnostics, telemedicine services, exercise prescription and more. According to the Global Smart Healthcare Market Report 2018-2022, Smart healthcare is expected to grow at an annual rate of 24.1% from 2018-2022, making 'steady advances in the collection, monitoring, and sharing of health data to enable fast and accurate diagnosis and treatment' (GSHM, 2018).

Given the nature of these projections, healthcare providers have allocated significant resources towards understanding the capabilities of emerging Smart healthcare technology and its clinical applications. By 2020, studies have estimated that over 70% of healthcare organizations will invest significantly in digital health platforms including telehealth technology, wearable health gadgets, and consumer-facing mobile apps (GSHM, 2018).

2 Telehealth and telemedicine

2.1 What is telehealth and telemedicine?

Telehealth is defined as the use of tele/video-conference for providing medical advice and exchanging health information remotely (WHO, 2018). Telehealth capabilities are primarily used for the provision of medical advice from healthcare provider to patient, while telemedicine involves the use of advanced telecommunication technologies to provide healthcare services remotely (WHO, 2018). The list of telehealth platforms is steadily growing to encompass both computer-based software programs and Smartphone apps (e.g. Skype, eVisit, RealTime Clinic, Doctor on Demand). Through these platforms, telehealth capabilities currently include: i) patient consultations and monitoring, ii) telerehabilitation, iii) telepharmacy, and iv) health education and promotion (Goodridge, 2016). These capabilities are forecasted to expand with the evolution of more advanced and user-friendly telehealth programs and applications (GSHM, 2018).

2.2 Telehealth capabilities

2.2.1 Patient consultations and monitoring

- Provider-to-patient: involves the patient interacting with their primary/allied healthcare provider for a medical or allied health consultation. Tele/videoconferencing can occur through telehealth facilities located within their local health facility or in their own homes. The healthcare provider can utilize telehealth facilities at their place of work, remote to the health consumer.
- Provider-to-provider with patient present: involves the patient with their primary healthcare provider interacting with a specialist or allied healthcare provider.
- Provider-to-provider without patient: involves the transmission of health information, such as results or prescriptions, from one healthcare provider to another.
- Telemonitoring: involves the use of telehealth to remotely monitor a patient's health status using: i) patient self-reporting, ii) in-home devices, iii) wearable devices, or iv) peripherals (see below). Health data from the patient (e.g. heart rate and rhythm, blood pressure, glucose levels, exercise adherence, etc.) is collected and transmitted to a healthcare provider for interpretation and analysis. This data can then be used to inform patient diagnosis and management.

2.2.2 Telerehabilitation

Telerehabilitation is defined as the provision of exercise rehabilitation via tele/videoconference. Additionally, allied healthcare programs may be delivered to rural or remote communities via onsite allied health assistants. These assistants require supervision which can be provided via tele/videoconference.

E.g. A physiotherapist administers rehabilitation exercises and conducts a falls risk assessment for a patient recovering from a hip replacement via videoconference.

2.2.3 Telepharmacy

Telepharmacy is defined as the delivery of pharmaceutical care via tele/videoconference. It includes medication monitoring, review, and authorization, patient counseling, and remote dispensing to a degree.

E.g. A pharmacist conducts a medication review via videoconference with a patient. An electronic medication list is compiled, and pharmacist recommendations are communicated to the GP.

2.2.4 Health education and promotion

Involves the distribution of educational content, such as computer-based training programs and webinars, to healthcare providers and patients via tele/ videoconferencing.

E.g. A videoconference-based risk assessments that patients can perform in their own homes to identify and remove obstacles to reduce their risk of falls.

2.3 What are the benefits and limitations of telehealth?

Researchers agree that telehealth may significantly benefit the Australian healthcare system 'as we attempt to adapt our healthcare delivery services to the socioeconomic challenges of a rapidly ageing population and a record number of chronic diseases' (WHO, 2018). This is evidenced by a breadth of studies highlighting the benefits of telehealth in translating effective healthcare delivery into improved quality of life and reduced mortality in patients suffering from chronic conditions, cardiac and respiratory illnesses, mental health conditions, spinal cord injuries, and those requiring rehabilitation following injury, illness, or surgery (DelliFraine, 2008; Kairy, 2009; AHRQ, 2008). Not only have studies highlighted the potential benefits of telehealth for consumers, but there are also benefits for providers and the healthcare system alike.

2.3.1 For the consumer

- Improves healthcare delivery for those with access barriers.
- Hastens the procurement and delivery of healthcare information for faster diagnosis and treatment.
- Facilitates ease of sharing of health information and results between providers and from provider to patient and vice-versa.
- Gives consumers greater autonomy and responsibility over their health information and encourages greater health-literacy.
- Provides online health education.

2.3.2 For the healthcare provider

- Reduces travel time for clinicians and improves access to patients.
- Improves provider access to patient health information.
- Improves health information exchange between interprofessional/multi-disciplinary teams for faster and more effective patient management.
- Provides clinical supervision and mentoring for rural and remote allied healthcare professionals.
- Provides online health education and training.

2.3.3 For the healthcare system

- Reduces travel time and costs associated with transporting patients to healthcare providers and vice versa.
- Improves the safety and security of patient healthcare data sharing.
- · Improves the continuity and coordination of care.
- Supports the development of new methods of diagnosis and specialist referral.
- Facilitates continuous improvement of the health system through effective reporting and sharing of health outcome information.
- Supports informed policy, investment and research decisions through access to timely and comprehensive reporting on Australian health system activities and outcomes.

In an allied health sense, telehealth provides an opportunity to diverge from a system where practitioners are only generating income when patients are physically being seen, and where face-to-face services are limited only to people in a certain geographical area. Several telehealth applications are being explored within the world of allied healthcare with promising results.

2.4 How is telehealth being used in allied healthcare?

According to Allied Health Professions Australia (AHPA), allied healthcare professionals in Australia come from one of 22 national allied health professions and a further 7 associations who are formally allied. The collective membership of these 22 national associations is almost 100,000 allied health practitioners, with 15,000 working in rural and remote localities in Australia. Allied health professionals represent almost 20% of the health workforce, acting within a variety of public, private and not-for-profit settings (AHPA, 2018). Australia's 175,000 allied health professionals deliver an estimated 200 million health services annually (AHPA, 2018). As such, they represent a major opportunity for the integration of telehealth in the Australian healthcare system. While allied healthcare encompasses a vast array of services, most studies have focused on the applications of telehealth in the provision of services such as occupational therapy, speech pathology, physical therapy, and exercise rehabilitation. Promising findings have been identified with the use of telehealth for the management of chronic pain and post-surgical rehabilitation.

A study lead by Prof. Kim Bennell et al, (2017), Director of the Centre for Health, Exercise and Sports Medicine in the School of Health Sciences at the University of Melbourne, showed that videoconferencing combined with physiotherapist-prescribed exercise programs and pain education provided clinically meaningful improvements in pain and function in 148 chronic knee pain sufferers. Over a 3-month period, seven sessions of physiotherapistprescribed exercises were demonstrated over Skype, in combination with 8 modules of an automated online CBT-based pain-coping program called PainCOACH. Compared to a control group that was given simple online self-help information, the intervention group reported a 28% greater improvement in physical function and a 26% greater improvement in pain, which persisted after 9 months. With patients reporting substantial improvements in pain and function, the results of this study suggest that such online programs may deliver effective care and pain management for those with reduced access to conventional treatment.

A similar study by Piqueras et al, (2013) found that a 2-week interactive virtual telerehabilitation program was at least as effective as conventional physical therapy for patients who had undergone a total knee arthroplasty. A total of 142 total knee arthroplasty patients received either conventional out-patient physiotherapy or interactive therapy via videoconferencing with a physiotherapist. The main outcome was function assessed with active range of knee movement. Other variables, such as muscle strength, walk speed, and pain were also collected. Patients in the videoconferencing group achieved improvements in functional variables that were comparable to those achieved in the conventional therapy group, suggesting that telerehabilitation may provide similarly effective outcomes as conventional therapy, with the added benefit of providing care remotely.

An earlier study by Eriksson et al, (2011) showed that interactive video-based physiotherapy at home following shoulder joint replacement significantly improved joint range of motion and pain ratings when compared to conventional post-discharge rehabilitation procedures. A total of 22 shoulder replacement patients received either conventional out-patient physical therapy or interactive therapy via videoconferencing with a physiotherapist. Participation level, joint pain, and range of motion were assessed after 2 months. Results showed that patients in the videoconferencing group had higher levels of participation in their physiotherapy sessions and showed greater reductions in pain and improvements in joint range of motion when compared to the conventional therapy group, further evidencing the potential efficacy of telerehabilitation.

A study by Bogue et al, (2018) found that digital pre-

telerehabilitation reduced length of hospital stay in patients following total knee arthroplasty (TKA). An observational, retrospective analysis was performed on a consecutive case series of 64 patients who underwent TKA by a single surgeon over a 21-month period. The experimental group received pre-rehabilitation using a mobile telerehabilitation program called Physitrack, involving progressive quadriceps and hamstring strengthening exercises, and calf and hamstring stretches. Exercises were automatically progressed after 2 weeks. Knee Osteoarthritis Outcome Score (KOOS) Patient Reported Outcome Measures (PROMs) were collected on all patients. KOOS scores were comparable between the two groups, yet total length of stay was significantly reduced in the pre-telerehabilitation group.

Despite its potential benefits, many authors agree that funding opportunities for telehealth research initiatives in allied healthcare are critically low, presenting a major barrier for government and non-government funding in Australia. Further evidence of efficacy, sustainability, quality, and safety is required to improve funding opportunities for telehealth services within the allied healthcare system in Australia. In addition to funding, other barriers such as: i) stakeholder engagement, ii) infrastructure and technology, and iii) education and training are essential to overcome in order to fully utilize the benefits of telehealth.

2.5 What are the key barriers for telehealth in allied healthcare?

2.5.1 Stakeholder engagement

Allied healthcare providers and consumers must be engaged in the design and delivery of telehealth solutions. According to the Australian Government Department of Health's National eHealth Strategy 2008, this will be driven initially by national awareness campaigns and financial incentive programs (see section 2.5.6), followed by national care provider training and accreditation, and stakeholder reference forums for continuous engagement (AGDH, National eHealth Strategy, 2008).

2.5.2 Access to the appropriate infrastructure and technology

This involves the delivery of specific computing systems and tools for consumers and allied healthcare providers. Each party require access to the National Broadband Network, in addition to inexpensive and reliable high speed cabled wireless broadband, videoconferencing hardware such as computers/laptops/wireless devices, and finally the appropriate software to record interactions. While this equipment is not Medicare-funded, according to the AHPA, *'the widespread availability of devices such as phones, tablets and computers with integrated webcams and the range of cheap, reliable video conferencing solutions means that the technological requirements for telehealth are no longer a significant barrier to entry for many consumers and providers' (AHPA, 2018). However, training is required for all parties to ensure they are familiar with the technology available.*

2.5.3 Education and training

According to the National eHealth Strategy 2008, 'a telehealth culture must be fostered within the allied healthcare organization or private practice that supports its usage and provides access to the necessary training and support for employees and consumers'. Telehealth education and training for providers and consumers currently includes a number of individual accredited courses supported by leading Australian universities and Primary Health Networks (PHN) (AHPA, 2018). Organizations such as Telemedicine Australia (TMA), The Australasian Telehealth Society (ATS), The Australian College of Rural and Remote Medicine (ACRRM), Services for Australian Rural and Remote Allied Health (SARRAH) and The American Telemedicine Association (ATA) offer non-funded courses in telehealth and telemedicine. Conversely, free telehealth training programs are currently more ubiquitous than non-funded courses and include those run by platforms such as Skype, eVisit, RealTime Clinic, and Doctor on Demand. Furthermore, several professional associations offer telehealth webinars for Continued Professional Development (CPD) purposes, including Osteopathy Australia (OA).

2.5.4 Personally controlled eHealth records (My Health Record)

The Australian Government's personally controlled eHealth record system (otherwise known as My Health Record) was launched on 1 July 2012. Consumers can now opt in or out of an eHealth record, a secure electronic summary of their health information, which can be shared with consumer consent. This system allows consumers to grant access for allied healthcare providers to view and share their eHealth records. According to the Australian Government Digital Health Agency, authorized allied healthcare providers can access a patient's record by registering themselves and downloading the appropriate conformant software (ADHA, 2019). Osteopathic inclusion in the My Health Record database is further discussed in the My Health Record report.

2.5.5 Funding

Government

In response to a growing need for improved rural and remote healthcare, and in light of the success of Nurse on Call, the Australian Government announced the *Connecting Health Services with the Future: Modernizing Medicare by Providing Rebates for Online Consultations* initiative in 2010. From July 2011, consumers in eligible areas of Australia have access to Medicare-funded telehealth video consultations with certain providers (see eligibility criteria below) (AGDH, Specialist video consultations under Medicare, 2012). Osteopaths are not currently listed as an eligible provider, suggesting that lobbying for inclusion is required.

Specific eligibility requirements for Medicare funded individuals include (Medicare, Telehealth, 2014):

- Not an admitted patient.
- Not a patient of an emergency department.
- · Located at least 15km by road from the specialist.
- Located in a telehealth eligible area; the patient needs to be located beyond the geographic boundary as defined by the Australian Standard of Classification Remoteness Area.
- Exceptions to this include if the patient is from a Residential Aged Care Facility (RACF) or Aboriginal Medical Service (AMS) in which they can be located anywhere in Australia.
- Providers are limited to GPs, nurse practitioners, midwives, psychiatrists, and specialists.

Implications of eligibility criteria (AHPA, 2018):

- There are currently no rebates available for consumers with access barriers other than distance (e.g. those who are immobile or housebound, injured or recovering from surgery, shift workers, etc.).
- There are currently no rebates available for telehealth consultations with healthcare providers other than those listed. As such, allied healthcare professionals (other than mental health) are currently ineligible for Medicare or DVA rebates for telehealth services.

Medicare telehealth incentives (Medicare, Telehealth Program Guidelines 2012, 2012):

A range of incentives linked to the telehealth Medicare Benefits Schedule (MBS) items were introduced in July 2011 to encourage and support the initial and ongoing provision of telehealth services to eligible patients by eligible providers (not currently including osteopaths).

- Telehealth on-board incentive: a telehealth incentive payment to an eligible telehealth provider which is paid after the first and tenth occasion that a valid MBS telehealth service is provided.
- Telehealth bulk billing incentive: a telehealth incentive payment to an eligible telehealth provider which is made on each occasion that an eligible provider bulk bills a telehealth MBS item.
- Telehealth service incentive: a telehealth incentive payment to an eligible telehealth provider which is made on each occasion that a Medicare benefit is paid for a telehealth MBS item billed against that provider's number.
- RACF on-board incentive: a telehealth incentive payment to an eligible RACF which is made upon confirmation of eligible status, including confirmation of service provision, by Human Services.
- Telehealth hosting service incentive: a telehealth incentive payment to an eligible RACF which is made monthly, based on the number of Hosting Services provided.

Non-government

Generally speaking, non-government funding does not currently extend to telehealth services. However, a number of private health insurers are branching out into select telehealth applications and offering consumer promotions for health-related wearables:

 Bupa currently offers telehealth support for members with chronic conditions such as heart failure, heart disease, diabetes, back pain and lung conditions. They also release regular promotions to members for rebates on the purchase of health-related wearables (BUPA, 2018).

- Medibank Health Solutions currently provides telephone and web-based health care services including telephone triage, health advice and referral, health coaching, mental health programs, chronic disease management and health call center software (Medibank, 2018).
- HCF has currently taken a 15% stake in telehealth startup GP2U, which provides a remote medical consultation and prescription service in conjunction with Priceline and Terry White Chemists (HCF, 2018).

2.5.6 Regulation

According to the Australian Health Practitioner Regulation Agency (AHPRA), there is no 'Telehealth Board of Australia' or an equivalent. Telehealth providers remain subject to regulation by AHPRA and their relevant Board, for example, a psychologist consulting a patient via telehealth remains subject to regulation by the Psychology Board of Australia. The complaints procedure in relation telehealth services is the same as that for complaints about the provision of any other health service. AHPRA does not impose registration or renewal requirements upon telehealth providers that are any different or more rigorous than those requirements for practitioners not wishing to practice via telehealth. However, if more onerous requirements were to be developed, presumably AHPRA would likely still be the body responsible for regulating these requirements (MBA, 2012).

2.5.7 Policies & strategies

Australian Government Digital Health Strategy 2017

To promote the implementation of telehealth technology into the Australian healthcare system, the Australian Government constructed a *Digital Health Strategy 2017* in which all Commonwealth, state and territory health ministers agreed to the following strategic priorities for digital health in Australia (AGDH, Australia's National Digital Health Strategy, 2017): Table 1: Australian Government Digital Health Strategy (AGDH, Australia's National Digital Health Strategy, 2017)

Number	Priority	Details
1	Health information is available whenever and wherever it is needed via the My Health Record.	By the end of 2018, every Australian will have a My Health Record, unless they choose not to. By 2022 all healthcare providers will be able to contribute to and use health information in My Health Record on behalf of their patients. Patients and consumers will be able to access their health information at any time online and through mobile apps. However, not all health information will be available to all (see My Health Record report). How can osteopathy be included in this initiative?
2	Every healthcare provider can communicate with their patients and other healthcare providers through secure digital technologies by 2022.	Patients will also be able to communicate with their healthcare providers using these digital channels. This is inclusive of allied healthcare professions. This will end dependence on paper-based correspondence and the fax machine or post. How can osteopathy take advantage of these digital health opportunities?
3	High quality data with a commonly understood meaning can be used with confidence.	By the end of 2018, a public consultation on interoperability standards will confirm an agreed vision and roadmap for implementation of interoperability between all public and private health and care services in Australia. How can osteopathy follow?
4	All prescribers and pharmacists have access to electronic prescribing and dispensing by 2022.	By the end of 2018, all patients and their providers will have access to comprehensive views of their prescribed and dispensed medications through the My Health Record system. By 2022, there will be digitally enabled paper-free options for all medication management in Australia. People will be able to request their medications online, and all prescribers and pharmacists will have access to electronic prescribing and dispensing.
5	Maximum use is made of digital technology to improve accessibility, quality, safety, and efficiency of care.	 The Strategy proposes a number of pioneering initiatives, co-produced between consumers, governments, researchers, providers and industry, to maximize the use of digital technology including: Support for the Health Care Homes trial and more integrated management of chronic illness Development of new digital services to support the health of babies and young children Improvement of digital services for advance care planning Improvement of information sharing in urgent and emergency care Widening access to telehealth services, especially in rural and remote Australia.
6	All healthcare professionals can confidently and efficiently use digital health technologies.	The Australian Digital Health Agency will collaborate with governments, care providers and partners in workforce education to develop comprehensive proposals so that by 2022, all healthcare professionals have access to resources that will support them in the confident and efficient use of digital services. In addition, the Strategy proposes rapid promotion of a network of clinician digital health leaders and promoters across Australia. What implications does this have for osteopathy?
7	The digital health industry thrives and delivers world- class innovation.	The Strategy proposes a new initiative to support an expanding set of accredited health apps as well as delivering an improved developer program to enable industry and entrepreneurs to expand existing services and create new services that meet the changing needs of both patients and providers. Government will be a platform for industry and innovators to foster an agile and self- improving health system that is sustainable.

Australian Government National eHealth Strategy 2008

In early 2008, the Australian Health Ministers' Advisory Council developed a strategic framework and plan to guide national coordination and collaboration in eHealth, including telehealth. A series of national consultations were conducted, which included Commonwealth, State and Territory Governments, general practitioners, medical specialists, nursing and allied health, pathology, radiology and pharmacy sectors, health information specialists, health service managers, researchers, academics and consumers. The Strategy reinforces the existing collaboration of Commonwealth, State and Territory Governments on the core foundations of a national eHealth system, and identifies priority areas where this can be progressively extended to support health reform in Australia (AGDH, National eHealth Strategy, 2008):

- National infrastructure: deliver core elements of enabling national eHealth infrastructure once, rather than duplicating development costs and efforts and increasing the likelihood of rework.
- Stakeholder engagement: actively engage key health care stakeholders in the design and delivery of eHealth solutions.
- Incremental approach: build long term national eHealth capability in an incremental and pragmatic manner, focusing initial investment in those areas that that deliver the greatest benefits for consumers, care providers and health care managers.
- Recognizing different starting points: balance active support for care providers with less developed capability, while not constraining the ability for more advanced participants to progress.
- Leverage: more effectively leverage and scale eHealth activity across the country.

- Balancing alignment and independence: drive alignment of national eHealth activities while not unnecessarily limiting the ability of health care participants and vendors to implement locally relevant solutions.
- Relevant skills: ensure enough skilled practitioners are available to support delivery of the national eHealth strategy.

In order to address these principles, four major strategic streams of activity have been identified (AGDH, National eHealth Strategy, 2008):

- Foundations: establishing the core foundations for electronic information exchange across the health sector. This work stream is fundamental as, without the basic ability to securely share health information there will effectively be no national eHealth capability.
- eHealth solutions: stimulating the delivery of eHealth solutions to the key users of health information.
 This work stream facilitates the delivery of specific computing systems and tools to address the high priority needs of consumers, care providers and health care managers.
- Change and adoption: fostering consumer, care provider and health care manager adoption of eHealth. The aim of this work stream is to focus effort on achieving a 'tipping point' of stakeholder adoption of eHealth solutions as quickly as possible.
- Governance: ensuring the effective leadership, coordination, and oversight of the national eHealth work program. This work stream focuses on the establishment of appropriate national eHealth governance structures and mechanisms.

3 Wearables

3.1 What are wearables?

Wearable technology is a term used to describe electronic sensing devices that can be worn on the body, either as an accessory, incorporated into clothing, or implanted into the body (Haghi, 2017). Within the healthcare industry, wearables are emerging as a popular platform for selfhealth monitoring and preventative medicine at a time where the Australian healthcare system is 'burdened with the high level of care required for mounting incidences of chronic disease and age-related conditions' (Haghi, 2017).

Wearables are forecasted to significantly improve health outcomes for those with chronic conditions particularly, as they provide a platform that allows for unprecedented access to remote, ambulatory, and longitudinal patient monitoring and data collection. For healthcare providers, this presents an opportunity to remotely monitor the short- or long-term health status of their patients to facilitate accurate and timely diagnosis and intervention (AIHW, 2018). Furthermore, wearables provide consumers with welcomed autonomy regarding their health. This is reflected in statistics presented by CCS Insight, a leading provider of wearables-related research, forecasting the health and fitness wearables market to grow drastically from 84 million units sold in 2015 to 245 million units in 2019 (Insight, 2018). This dramatic growth presents an opportunity to harness patient data from wearables for the purposes of improving care and informing health trends for research and innovation.

3.2 Wearable technology & its capabilities

Wearables are commonly categorized into consumer or medical-grade devices. As the capabilities of consumer wearables continue to expand, it is now possible for a single device to monitor a range of medical parameters. Wearable devices are currently used for a wide range of healthcare observations. Their main use is in health data collection, where sensors collect health data and pair this data with Smartphone applications or integrated telehealth systems. In this way, wearables provide consumers with the ability to monitor their own health status and take informed preventative action. Although increasing in popularity, studies have found that wearables may or may not contribute to positive behavior change with regards to lifestyle and treatment adherence (Piwek, 2016). However, this may change as their capabilities

expand.

In the context of chronic conditions, wearables are forecasted to provide detailed longitudinal data in order to monitor patients' progress without involving more sophisticated, uncomfortable, and expensive alternatives (Piwek, 2016). However, the potential applications for this (e.g. microanalysis of body movement data to detect early Parkinson disease) are 'still in the early stages of development, have not been approved for medical use, and have so far been explored predominantly within an academic research rather than a real-world context' (Piwek, 2016). As such, further investigation is required in the use of wearables for chronic disease monitoring.

3.2.1 Technology platforms

A distinction must be made between consumer devices deemed unsuitable for medical monitoring of highrisk patients, and those specifically designed to collect medical-grade data. Medical-grade wearables are a class intended for clinical use and must undergo rigorous clinical trials and independent testing to achieve Food and Drug Administration (FDA) Class II certification (FDA, 2016). In comparison, more popular consumer fitness and activity tracking wearables require no FDA clearance, but may hold promise as adjuncts to conventional monitoring (FDA, 2016).

Consumer wearables

Non-medical-grade wearables are mainly used for selfmonitoring and providing non-medical-grade health data to consumers. This data may inform healthcare decisions and encourage consumer autonomy and active participation in their own health. A select few also deliver intervention based on acupressure point therapy and electric pulses.

Accessories:

- Smart watches (e.g. Apple, Samsung, Garmin, ASUS, Google Wear OS)
- Fitness trackers (e.g. Fitbit, Garmin)
- Smart jewelry
- Chest, arm, and leg bands (e.g. Acupressure, Reliefband)
- Spinal posture sensors (e.g. Lumo back, Lumo Lift)

Smart clothing:

- Sportswear (e.g. Nadi X smart yoga pants, Ambiotex, Hexoskin, Athos, AIO)
- Infant wear (e.g. Owlen, Neopenda, Monbaby)
- Footwear (e.g. Sensoria, Siren)

Medical-grade wearables

Medical-grade accessories and implants are mainly used for self-monitoring and treatment respectively. Medicalgrade data is provided to consumers and their healthcare providers to monitor patient health status and inform clinical diagnosis. Implants commonly provide treatment and intervention based on this information either automatically or with patient action.

Accessories:

- Vital sign monitors
- Core temperature monitors
- Cardiac monitors
- Respiratory monitors
- Blood glucose monitors
- Hemodynamic parameter monitors
- · Epileptic devices
- Personal medical alert devices

Implants:

- Retinal implant
- · Cochlear implant
- Pacemaker
- Insulin pump
- Neural implants
- Dermal implants

Communications wearables

Communications wearables are an emerging field that facilitate telehealth and medical education. They enable video streaming and recording of medical appointments, live broadcasting of procedures, EHR transcribing and retrieval, and telehealth consultations.

- Smart glasses (e.g. Google Glass)
- Virtual reality (VR) headsets (e.g. Oculus Rift)

Future directions for wearables

- · Smart bandages for chronic wound monitoring
- Smart pills for targeted visceral monitoring and intervention
- Smart patches and biosensitive tattoos for monitoring conditions via skin metabolites
- Diagnostic peripherals and implants
- Wearable imaging devices

3.2.2 Current capabilities

Consumer wearables

- Vital sign monitoring: heart rate/rhythm, respiratory rate, blood pressure, core body temperature.
- Fitness and activity tracking: steps, distance travelled, heart rate and blood oxygenation, respiratory rate and VO2, activity level and calories burned.
- Personal training & education: artificial intelligence (AI) personal training and exercise program prescription, rep/ set counting, training effect ratings, advised rest times.
- Gait and movement analysis: pace, distance, cadence, stride length, power, ground contact time.
- Spinal posture monitoring: posture, vertebral motion, ergonomic adjustment advice.
- Joint range and motion: range of motion (goniometer), acceleration (accelerometer), angle (inclinometer), and angular velocity (gyroscope) of selected joint/s.
- Falls risk detection: balance and proprioceptive analysis.
- Metabolic analysis: caloric intake and calories burned, food logging, aerobic and anaerobic status, weight, BMI, lean mass index, body fat percentage.
- Sleep analysis: sleep quality and quantity.
- Exposure: UV sunlight hours and recommended shade times, surrounding air quality and pollution levels, allergen levels.
- Fertility status (via skin temperature, heat loss, and breathing rate): ovulation and cycle status.
- Alerts and reminders: sedentary reminders and alerts for medications and medical appointments.
- Acupressure and electric pulse applications: intervention for several conditions including nausea and motion sickness.

Medical-grade wearables

- Vital sign monitoring: cardiac, respiratory, and hemodynamic parameters, blood glucose levels, etc.
- Monitoring and intervention: cardiac arrest or arrhythmia, neural episodes and seizures, optical and auditory conditions, diabetes and other metabolic conditions, etc.
- Personal medical alerts: elderly and those with certain health conditions e.g. falls, accidents at home, medical episodes etc.

Communications wearables

• Telehealth & education: video streaming and recording of medical appointments, live broadcasting of procedures, EHR transcribing and retrieval, telehealth consultations.

3.3 What are the benefits and limitations of wearables?

3.3.1 For the consumer

- Allows consumers to self-monitor and assess their health status in order to take informed action regarding their health.
- Gives consumers greater autonomy and responsibility over their health information and encourages greater health-literacy.
- Provides health and fitness education.

3.3.2 For the healthcare provider

- Improves provider access to patient health information.
- Provides unprecedented access to remote, ambulant, and longitudinal patient health data for accurate and timely diagnosis and intervention.
- Provides health education and training.

3.3.3 For the healthcare system

- Wearables are forecasted to dramatically reduce the costs associated with prevention and health monitoring (Haghi, 2017).
- Data collected from medical-grade wearables may facilitate continuous improvement of the health system through effective reporting and sharing of health outcome information.
- May support informed policy, investment and research decisions through access to timely and comprehensive reporting on Australian health system activities and outcomes.

3.4 How are wearables being used in allied healthcare?

In contrast to the medical and fitness industries. wearables have made comparatively small inroads into allied healthcare, more specifically in physical therapy and exercise rehabilitation. The current capabilities of wearables in an allied health capacity include: i) rehabilitation exercise prescription, ii) spinal and joint motion analysis, iii) injury and falls risk assessment, and iv) biofeedback for posture and joint correction, balance and proprioceptive training, and exercise prescription. Wearables may also be used to monitor functional outcomes for patients following spinal or joint surgery. Data collected by wearables can be used to inform both consumers and healthcare providers via pairing with Smartphone applications or integrated telehealth systems, respectively. Additionally, wearables may also provide intervention and biofeedback as an adjunct to conventional allied healthcare.

In addition to their main use in exercise rehabilitation, many authors have identified a potential need for wearables in the continuous monitoring and correction of real-time posture and joint motion associated with the progression of many musculoskeletal disorders (Simpson, 2019). Authors including Simpson et al (2019), suggest that continuous, longitudinal, and ambulatory monitoring of spinal posture and joint motion may be a useful adjunct to conventional physical therapy by informing more accurate diagnosis and improving patient self-awareness and management. While the gold standard for postural and joint analysis remains radiographical assessment, the costs and irradiation levels limit its use (Simpson, 2019). Furthermore, analysis within a clinical setting is limited in capturing day-to-day postural and joint habits and providing continuous biofeedback and correction. By providing real-time monitoring and biofeedback, it is hypothesized that with long-term use, wearables may assist with spinal posture, joint motion, and rehabilitation in order to reduce incidences of musculoskeletal disorders (Simpson, 2019).

While there have been few studies in the applications of wearables in allied healthcare, a number of authors have focused on their potential benefit in exercise rehabilitation, postural and joint motion analysis, and injury and falls risk assessment. While studies have noted significant benefits in the use of wearables for exercise rehabilitation following surgery and injury (Mobbs, 2015), their use in postural assessment and injury risk assessment have shown mixed results (Tsuchiya, 2015; Plamondon, 2007). A systematic review conducted by Wang et al, (2017) looked at the efficacy of interactive wearable systems for upper body rehabilitation for chronic diseases (e.g. COPD and chronic pain), musculoskeletal impairments (e.g. arthritis and frozen shoulder), and neurological impairments (e.g. stroke and spinal cord injury). A total of 45 papers were included and discussed based on the sensor technology used, including their biofeedback and monitoring capabilities. This review showed that wearable systems are used mostly for the monitoring and provision of biofeedback on posture and upper extremity rehabilitation. The results indicated that wearables (accelerometers, goniometers, inclinometers, etc.) were in most cases attached to the spine or joint in question for the purpose of improving range of motion and movement performance during upper body rehabilitation. Overall validation studies for multiple systems were favorable, although clinical integration of these systems has not yet materialized on a larger scale, suggesting that wearables may have a role in exercise rehabilitation in response to several conditions.

A systematic review by Papi et al, (2017) examined the efficacy of wearable technology in spinal motion assessment for lower back pain development. A total of 22 papers were included and discussed based on the sensor technology used; 2 sensors units were mainly used and placing was commonly reported on the spine lumbar and sacral regions. The sensors were often paired with a data transmitter/logger or connected with a Smartphone application. Outcomes were reported relative to the lumbar segment and in the sagittal plane, including angles, range of motion, angular velocity, joint moments and forces. This review demonstrated the accuracy (2-6.2°) and applicability of wearable technology to assess spinal motion. However, whether these measurements were able to translate into reduced incidences of lower back pain and injury is yet to be fully elucidated.

This concept has been further explored in the field of occupational lower back injury risk assessment and prevention. In a series of trials (Tsuchiya, 2015; Plamondon, 2007; Yan, 2017; Abyarjoo, 2015), lumbar 'load' was measured using a system of wearable devices (accelerometers, goniometers, inclinometers) that measured spinal motion. Using inbuilt algorithms, these wearables provided either: i) biofeedback for selfcorrection or ii) sent a warning signal to a connected Smartphone application when a high-risk posture was being adopted by the subject. While these wearable systems could provide a relatively accurate (to 2-12.2°) and appropriate quantification of trunk postures, further investigation is required to determine whether this correlates with reduced incidences of occupational lower back injury.

What are the key barriers for wearables in allied healthcare?

3.5.1 Data reliability

3.5

Issues with the safety, reliability, and security of health data collected by consumer wearables ultimately impact the future of wearables within the healthcare industry. While medical-grade devices are designed to record uniform and medically reliable data for healthcare providers, more accessible consumer wearables collect data using trends and algorithms designed and dictated by the professional opinion of various medical, sports, and fitness professionals, making the data difficult to validate (Piwek, 2016). Furthermore, recent comparisons between various fitness wearables showed significant (25% error margin) variations in accuracy between devices, suggesting a lack of inter-device reliability (Lee, 2014; Case, 2015). Consumer wearable manufacturers commonly provide little to no empirical evidence to support the efficacy of their products in helping to improve general health and fitness (Piwek, 2016). Despite this, a number of consumer wearable technology companies are attempting to tackle the accreditation process required for medical-grade certification to support their use within the healthcare industry (Insight, 2018).

3.5.2 Data security

When considering the use of consumer wearables in allied healthcare, the privacy and security of personal data generated by consumer wearables remains problematic. Consumers who utilize wearables often do not 'own' their data (Piwek, 2016). Instead, data may be collected and stored by the manufacturer who sells the device. Manufacturers then grant consumers access to a summary of results extracted from these data. Some manufacturers charge users a monthly fee for access to their own raw data, which is regularly sold to third-party agencies (Piwek, 2016). Others share a users' location, age, sex, email, height, weight, or "anonymised" Global Positioning System (GPS)-tracked activities (Piwek, 2016). However, "anonymising" data by removing identifying features often does not provide adequate anonymity (Piwek, 2016). Sophisticated algorithms can now cross-reference wearable-generated biometric data with other 'digital traces' of users' behavior, such as time of activity and user location, to identify individuals (Piwek, 2016). This could lead to patient health data being compromised, lost, or distorted. Furthermore, certain

wearable devices may be hacked because of various communication technologies that aid the transfer of data between wearables and Smartphones. This reflects similar problems observed in wireless digital pacemakers and glucose pumps, which have been vulnerable to cyberattacks in the past (Maisel, 2010).

3.5.3 Data safety

The potential issue of harm caused by wearables is largely absent from the current literature, but it is conceivable that consumers may become over-reliant on automated systems that provide a false sense of security or fuel a self-driven misdiagnosis (Piwek, 2016). There is also the potential for consumers to suffer from negative consequences of excessive self-monitoring, as evidenced in a study by O'Kane et al (2008) showing that type 2 diabetics who self-monitored their own blood glucose concentration did not benefit from increased glycemic control but rather found their disease more intrusive. Additionally, as private health insurers begin to incentivize consumers to reduce their health insurance premiums by sharing their health and fitness data, there is a threat that this may also work against consumers who do not change their health behaviors, leading to punitive or financial consequence (see section 3.5.4). As such, the interaction between a wearable device and a consumer is likely to be complex and further research is required to better elucidate the motivators and consequences involved in the use of wearables.

3.5.4 Funding: Government and non-government

Government

Currently, Medicare funding for wearable devices is limited to medical-grade insulin pumps and continuous glucose monitoring devices (MBA, 2012). Funding do not currently exist for any consumer wearable device. Furthermore, no financial incentives have been introduced to encourage consumers or providers to use medical-grade or consumer wearable devices in the provision of healthcare in Australia. Despite the potential benefits of wearables for consumer self-management of chronic conditions, remote monitoring, and the collection of health data, Medicare funding for consumer wearables has not been made a priority in the Australian Government Department of Health's most recent National eHealth Strategy (AGDH, National eHealth Strategy, 2008).

Non-government

Private health insurers are beginning to incorporate wearable technology into their business models, with some health insurance companies offering rebates (e.g. BUPA rebate for FitBit purchases), reductions in premiums, and other enticements for those willing to purchase consumer wearables and sign over their personal data proving their involvement in fitness activities (e.g. Qantas Assure) (BUPA, 2018; Qantas, 2018). This now allows consumers the options to reduce their health insurance premiums by sharing their health and fitness data to confirm they regularly exercise. This trend in wearables rebates is expected to rise with private health fund budget constraints, driving funds to find ways to encourage consumers to self-manage as opposed to spending on their health (Insight, 2018).

3.5.5 Regulation

Regulation of medical-grade and consumer wearables is essential based on: i) the potential of using consumergenerated data from wearables to benefit society, ii) widespread consumer concerns about the privacy and security of data in wearables, and iii) the risk of exposure to liability under different regulatory frameworks (TGA, 2017). The FDA has released a guideline to provide wearable device manufacturers with clarity on the differences between medical-grade and consumer wearables. As previously mentioned, medical-grade wearables are a class of products intended for clinical use and must undergo rigorous clinical trials and independent testing to achieve FDA Class II certification (FDA, 2016). In comparison, more popular consumer fitness and activity tracking wearables require no FDA clearance (FDA, 2016). These products are categorised as 'low risk' and have an intended use that either (FDA, 2016):

- Maintains or encourages a general state of health or a healthy activity but do not make any reference to diseases or conditions.
- Promotes, tracks and encourages choices which, as part of a healthy lifestyle, may help to reduce the risk or help living well with certain chronic diseases or conditions and where healthy lifestyle choices are accepted to play an important role in health outcomes for the disease or condition (FDA, 2016).

In Australia, medical devices are regulated by the Therapeutic Goods Administration (TGA) as per the Australian Regulatory Guidelines for Medical Devices (ARGMD) (TGA, 2017). Wearables are placed onto the Australian Register of Therapeutic Goods (ARTG) using a classing system based on their level of risk, principles, quality, and evidence base. Class I (lowest risk) nonmeasuring/non-sterile wearables may be included in the ARTG based on self-assessment by the manufacturer. Class II and III wearables may be included following further risk assessment by the TGA. It must be noted that regardless of TGA classing, the TGA cannot influence which products receive government subsidy (TGA, 2017).

3.5.6 Policies & strategies

While specific policies and strategies are yet to be created with regards to the use of wearables in Australian healthcare, the Australian Government National eHealth Strategy 2008 references wearables as a 'tool to address the high priority needs of consumers, care providers, and health care managers' under the 'eHealth solutions' heading (AGDH, National eHealth Strategy, 2008).

4 Mobile devices and applications

4.1 What are mobile devices and applications?

Smartphones are a class of mobile device which include various sensors that can be leveraged by software applications (app/s). These apps can function independently or be paired with telehealth or wearable technology platforms to record consumer health data and provide self-directed intervention. Most apps can be downloaded onto Smartphones for free, while others can be purchased or require a monthly subscription fee.

Within the healthcare industry, Smartphone apps are emerging as a popular platform for self-health monitoring and preventative medicine at a time where healthcare costs are increasing and government/non-government subsidisation is decreasing (Haghi, 2017). Mobile health, otherwise known as mHealth, refers to medicine and public health services provided via mobile devices. The global mHealth market has experienced large growth over recent years, with global mHealth app downloads/ purchases expected to rise from 3.7 billion US dollars in 2017 to 100 billion in 2021 (Carroll J, 2017). Not only are these apps gaining traction amongst consumers, but healthcare providers are also beginning to harness the ability of these apps to assist in patient education, disease self-management, remote monitoring, and health data collection (Carroll J, 2017).

4.2 mHealth app capabilities

mHealth apps can function independently or be paired with telehealth or wearable technology platforms. As such, they have equivalent benefits and capabilities (sections 2.2, 2.3, 3.2, and 3.3). Perhaps the most popular and relevant mHealth apps for allied healthcare providers currently are the Physitrack and Curable apps.

4.2.1 Physitrack app

The Physitrack app, endorsed by the Australian Physiotherapy Association (APA), pairs telehealth with physical therapy. The app enables physical therapy providers (including physiotherapists, osteopaths, chiropractors, occupational therapists, and sports/ exercise physiologists) to administer secure video consultations and live exercise demonstrations to consumers. The app features exercise prescription videos, educational content, records patient adherence and pain levels, provides patient reminders, and generates outcome reports for WorkCover and TAC claims. Through the free consumer-facing app, PhysiApp, the consumer messages and conducts video consultations with their physical therapist, watches the exercise videos, reports back on their progress, and reads education articles that have been assigned to them. Physitrack also integrates with many Practice Management Systems including Cliniko for the transfer of patient data and exercise prescription. The app is gaining significant traction worldwide. Current estimates 28 state that the app is used by over 1.5 million patients and 30,000 practitioners in 102 countries, with 8,000 of these practitioners being within Australia (APA, 2018). Furthermore, authors are also looking into the efficacy of Physitrack as an adjunct to conventional physical therapy, with promising results.

Launched in 2016, the popularity of Physitrack has given rise to growing research interest. Multiple authors have investigated the efficacy of Physitrack in the provision of physiotherapy and exercise rehabilitation services, often following surgical intervention or injury. As mentioned above, a study by Bogue et al, (2018) found that digital pre-telerehabilitation using Physitrack reduced length of hospital stay in patients following total knee arthroplasty (TKA). An observational, retrospective analysis was performed on a consecutive case series of 64 patients who underwent TKA by a single surgeon over a 21-month period. The experimental group received pre-rehabilitation using Physitrack, involving progressive quadriceps and hamstring strengthening exercises, and calf and hamstring stretches. Exercises were automatically progressed after 2 weeks. Knee Osteoarthritis Outcome Score (KOOS) Patient Reported Outcome Measures (PROMs) were collected on all patients. KOOS scores were comparable between the two groups, yet total length of stay was significantly reduced in the pre-telerehabilitation group, suggesting that Physitrack and related apps may improve patient confidence and self-sufficiency in carrying out their own rehabilitation.

A study conducted by Kemp et al, (2018) found that Physitrack may be a useful way to track exercise protocol adherence in patients with femoroacetabular impingement syndrome (FAIS). A pilot double-blind randomized control trial was performed on 24 FAIS patients over 12 weeks. The experimental group received 8 FAIS-specific intervention sessions, while the control group received standardized stretching exercises. Both groups were asked to complete 2 additional unsupervised exercise sessions per week at a location of their convenience. Adherence to the exercise protocol was monitored using Physitrack. The primary outcome was feasibility, while the secondary outcomes included hip pain and function (international Hip Outcome Tool-33) and hip muscle strength. The outcome of the study demonstrated the ability of Physitrack to accurately measure exercise protocol adherence in both groups, highlighting that hip function and muscle strength was significantly increased in the FAIS-specific intervention group. These findings suggest that Physitrack and related apps may be used by providers to effectively track patient progress and compliance following injury or intervention.

A study by Wanless et al, (2017) found that Physitrack significantly improved patient adherence to their musculoskeletal exercise program when compared to paper versions. Results were collected and analysed prospectively from a random selection of 94 patients from St George University Hospital in London, UK with musculoskeletal complaints. The experimental group received musculoskeletal physiotherapy via the Physitrack app, while the control group used a paper-based program. Patient reported outcome measures (PROMS) were analysed across the groups at discharge and patient experience data was gathered via telephone interviews. While there was no significant change in PROMS between the groups, adherence to exercise was significantly increased in patients using Physitrack (36%), as opposed to the paper-based program (28%). Furthermore, patients reported more positive experiences using Physitrack as opposed to the paper version. These findings suggest that Physitrack and related apps may function as a useful adjunct to physical therapy to improve rehabilitation exercise adherence and potentially benefit clinical outcomes.

4.2.2 Curable app

Within the chronic pain sphere, the Curable app is gaining worldwide recognition for providing widespread access to evidence-based and individualised chronic pain therapy for the everyday user. Developed by a Scientific Advisory Board from the US consisting of a multidisciplinary team of nine board-certified physicians, pain specialists, physical therapists, neuroscientists, and psychologists, the Curable app is a mindset-based application aimed at treating chronic pain centrally. Boasting the 'world's largest collection of guided, evidence-based exercises for chronic pain relief', the app uses a virtual Smart coach to guide the user through a chronic pain plan, allowing chronic pain sufferers to self-manage their symptoms safely, effectively, and conveniently. Users work through their plans at their own pace, consisting of 5-20-minute exercises that utilise a Cognitive Behavioural Therapy (CBT) and educational approach. These exercises include: i) pain science education videos (see below list of topics), ii) brain training exercises including word-swapping, iv) guided meditation, and v) expressive writing. The app also provides anecdotes from other chronic pain sufferers, in addition to connecting users to a number of pain experts around the world.

Launched in 2018, the popularity of Curable is growing, however this has yet to translate into published chronic pain research. Curable distributes a Patient Global Impression of Change survey to individuals after they have been using the intervention for 30 days. This study is ongoing, but to date the analysis includes n=561 respondents. Thus far, 71% of users report physical pain relief, while 29% report no change (Curable, 2018). Additionally, 79% report improved quality of life, 69% report reduced fear avoidance, 41% report a greater sense of control over pain, and 28% report increased physical activity (Curable, 2018).

Table 2: Pain education videos and key points (Curable, 2018)

Number	Торіс	Details
1	'Basic neuroscience of pain: the biopsychosocial model'	Knowledge about pain is power
		Pain is designed to be protective
		Pain is not just a physical experience
		All pain originates in the brain
		• Pain is an opinion, not a fact
		• To resolve pain, you have to treat the brain
2	'Medical imaging mythbusters'	Medical imaging does not always pinpoint a source of pain
		Findings do not necessarily correlate with pain
		Abnormal findings are not always responsible for pain
		Treating an abnormal finding does not always resolve pain
z	(Dain is more than i ust	. Developering reactions and neural changes as band in hand
5	Pain is more than just tissue damage'	Physiological reactions and neural changes go hand-in-hand
		as stress and life experiences
4	'How pain becomes chronic'	• The transition from acute to chronic pain occurs via memory pathways in the brain
		Pain can persist beyond tissue healing
		The brain becomes sensitive to pain
		Thoughts and feelings contribute to the pain experience
5	'What does pain mean to you?'	There is no 'one size fits all' approach to chronic pain recovery
		• The keys to recovery lie in understanding what pain means to the individuals
		• Gain awareness of how the brain filters the individual experience of pain,
		including personality traits, mindset, social context
6	'What to do next'	Education is power
		• Be aware of the context of pain
		Make connections and find patterns
		Retrain your brain

4.3 What are the key barriers for mHealth apps in allied healthcare?

Due to their pairing with teleahealth and wearable technology platforms, mHealth apps incur equivalent funding and policy constraints (sections 2.5 and 3.5). Despite this, the APA argues that the success of Physitrack highlights the need for government and private health insurers to reimburse consumer costs for consultations and treatment using Physitrack and related apps (APA, 2018). As with all the digital health platforms mentioned in this report, further evidence of efficacy, sustainability, quality, and safety is required to improve funding opportunities for mHealth services within the allied healthcare system in Australia.

5 Conclusion

To conclude this report, digital health is poised to provide a safe, high quality, equitable and sustainable health system for all Australians in response to the socioeconomic challenges of a rapidly ageing population and a record number of chronic diseases. As such, healthcare consumers and providers stand to benefit from the capabilities of digital health platforms including telehealth technology, wearable health gadgets, and consumerfacing mobile apps. While further research is needed in the efficacy of digital health technologies, emerging trends are promising and show that these technologies may serve as useful adjuncts to conventional medical and allied health therapies. While the barriers for digital health are significant (including poor research funding, issues with data security and reliability, and little government funding or incentives), there is a substantial need for a greater technological presence in the Australian healthcare system to overcome the challenges of time and space. Furthermore, there are potential benefits for digital health technologies within allied healthcare in patient monitoring, self-management, education, and exercise rehabilitation and compliance.

6 References

Abyarjoo, F. O.-L. (2015). PostureMonitor: real-time IMU wearable technology to Foster poise and health. *ECED*, *FIU*, 543-552.

ADHA. (2019, Jan). *My health record* in allied health . Retrieved from My Health record: https://www.myhealthrecord.gov. au/for-healthcare-professionals/allied-health

AGDH. (2008). National eHealth Strategy. Victorian Department of Human Services for AHMAC.

AGDH. (2012, Dec 20). Specialist video consultations under Medicare. Retrieved from MBS Online: http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/connectinghealthservices-patients-QA

AGDH. (2017). Australia's National Digital Health Strategy. AUG.

AHPA. (2018). Increasing access to allied health telehealth services. Allied Health Professions Asutralia.

AHRQ. (2008). Using telehealth to improve quality and safety . Rockville, MD: DHHS.

AIHW. (2018, June 20). *Australia's Health 2018*. Retrieved from Australian Institute of Health and Welfare: file://rmit. internal/USRHome/eh6/e92486/RA%20Osteo/Enviro%20Scan/AusHealth2018.pdf

Alexander, L. (2019, March 2). These apps put a personal trainer in your pocket. The Sunday Morning Herald.

APA. (2018, April). *Physiotherapists embrace telehealth app to connect with patients*. Retrieved from Physitrack: https://www.physitrack.com/press/physiotherapists-embrace-telehealth-app-to-connect-with-patients

Bennell, K. e. (2017). Effectiveness of an Internet-Delivered Exercise and Pain-Coping Skills Training Intervention for Persons With Chronic Knee Pain: A Randomized Trial. *Ann Internal Med*, 453-462.

Bourne, A. W. (2014). The scope, funding, and publication of musculoskeletal clinical trials performed in Australia. *Med J Aust*, 88–91.

BUPA. (2018, July 1). About BUPA Telehealth. Retrieved from BUPA: https://www.bupa.com.au/telehealth

Carroll J, M. A. (2017). Who Uses Mobile Phone Health Apps and Does Use Matter? A Secondary Data Analytics Approach. J Med Internet res, 125.

Case, M. B. (2015). Accuracy of Smartphone Applications and Wearable Devices for Tracking Physical Activity Data. JAMA, 10-11.

Curable. (2018, July 1). The Science Behind Curable. Retrieved from Curable: https://www.curablehealth.com/science

DelliFraine, J. D. (2008). Home-based telehealth: A review and meta-analysis. J Telemed and Telecare, 62-66.

FDA. (2016). General wellness: policy for low risk devices. DHHS.

Goodridge, D. M. (2016). Rural and remote care: Overcoming the challenges of distance. Chron Resp Dis, 192-203.

GSHM. (2018, July 1). *The Global Smart Healthcare Market Report 2018-2022*. Retrieved from Technavio: https://www.technavio.com/blog/top-5-healthcare-technologies-changing-global-smart-healthcare-market

Haghi, M. T. (2017). Wearable devices in medical internet of things: scientific research and commercially available devices. *Healthc Inform Res*, 4-15.

HCF. (2018, July 1). A GP at your fingertips. Retrieved from HCF: https://www.hcf.com.au/members/access-medical-resources/gp2u

Insight, C. (2018). Wearables forecast worldwide 2015-2019. CCS Insight.

Kairy, D. L. (2009). A systematic review of clinical outcomes, clinical process, halthcare utilisation and costs associated with telerehabilitation. *Disability and Rehabilitation*, 427-447.
Kalis, B. &. (2018, May 5). Spotting the Big Bang in Healthcare. Retrieved from Accenture: https://www.accenture.com/us-en/insight-healthcare-bigbang-disruption

Kruse CS, K. N. (2017). Telehealth and patient satisfaction: a systematic review and narrative analysis. BMJ Open.

Lee, J. K. (2014). Validity of consumer-based physical activity monitors. Med Sci in Sport & Exc, 1840-8.

Maisel, W. K. (2010). Improving the Security and Privacy of Implantable Medical Devices. New Eng J Med, 1164-1166.

MBA. (2012). Guidelines: Technology-based patient consultations . AHPRA.

Medibank. (2018, July 1). About Us. Retrieved from Medibank Health Solutions: https://www.medibankhealth.com.au/about.asp

Medicare. (2012). Telehealth Program Guidelines 2012. MBSOnline.

Medicare. (2014). Telehealth. MBS Online.

Mobbs, R. P. (2015). Physical activity measured with accelerometer and self-rated disability in lumbar spine surgery: a prospective study. *Glob Spin J*, 459-464.

Murphy, K. &. (2018, May 1). *Riding the Disruption Wave in Healthcare*. Retrieved from Forbes: https://www.forbes.com/sites/baininsights/2018/05/01/riding-the-disruption-wave-in-healthcare/#3a613c9c2846

O'Kane, M. B. (2008). Efficacy of self monitoring of blood glucose in patients with newly diagnosed type 2 diabetes. *BMJ*, 1174-77.

Piwek, L. E. (2016). The rise of consumer health wearables: promises and barriers. PLOS Med, e1001953.

Plamondon, A. D. (2007). Evaluation of a hybrid system for three-dimensional measurement of trunk posture in motion. *J* App Erg, 697-712.

Qantas. (2018, July). *Qantas Assure*. Retrieved from Health and life insurance: https://www.qantaspoints.com/earn-points/qantas-assure

SARRAH. (2012). Telehealth and Allied Health. Services for Australian Rural and Remote Allied Health.

Simpson, L. M. (2019). The role of wearables in spinal posture analysis: a systematic review. BMC Musc Dis, 55-69.

Statista. (2017). Number of mHealth app downloads worldwide from 2013 to 2017. The Statistics Portal.

TGA. (2017). Complying with Wearable Health Device Regulation. Wearable Technologies Conference 2017 Australia.

TMA. (2012, July 1). About Telemedicine Australia. Retrieved from Telemedicine Australia.

Totten, A. W. (2016). Telehealth: Mapping the evidence for patient outcomes from systematic reviews. Rockville MD.

Tsuchiya, Y. K. (2015). Calibration method for lumbosacral dimensions in wearable sensor system of lumbar alignment. *IEEE*, 3909-12.

Wang, Q. M. (2017). Interactive wearable systems for upper body rehabilitation: a systematic review. *J Neuroeng Rehab*, 1–21.

WHO. (2018). A national telehealth strategy for Australia. Australian National Consultative Committee on Electronic Health.

Yan, X. L. (2017). Wearable IMU-based real-time motion warning system for constructionworkers' musculoskeletal disorders prevention. *J Autom Cons*, 2–11.

Copyright © 2021 RMIT. All rights reserved.



