

A National Workforce Analysis of Physiotherapy Practice in Australian Emergency Departments

Tina Joanne Vickery

B.Physio



Department of Health Sciences

Macquarie University

Thesis presented for the degree of

Master of Research

Submitted JULY 2022

Table of Contents

List of Figures.....	iv
List of Tables.....	v
Abstract / Summary	vi
Candidates Statement.....	vii
Supervisor's Statement	viii
Acknowledgements	ix
Abbreviations	x
Chapter 1 Introduction	1
Australian Emergency Departments	1
1.1 The role and delineation of emergency departments in Australia.....	1
1.2 A typical patient journey	1
1.3 Increasing demand for emergency services.....	3
1.4 Access block and overcrowding	3
Emergency Department Physiotherapy	5
1.5 Evolution of physiotherapy in Australia	5
1.6 Physiotherapy standards and representative organisations in Australia	5
1.7 Physiotherapy scope of practice in Australia	6
1.8 International physiotherapist integration into ED.....	7
1.9 Integration of physiotherapy into Australian EDs	7
1.10 Expanding the scope of ED physiotherapy practice	9
1.11 Impact of physiotherapy on Australian ED performance	9
1.12 Emergency staff and patient perspectives of ED physiotherapy.....	14
1.13 Inconsistency in Australian ED physiotherapy.....	16
Research Aims	19
Chapter 2 Methods.....	20
2.1 Study Design	20
2.2 Participants & Recruitment.....	20
2.3 Survey Development.....	21
2.4 Outcomes.....	24
2.5 Data collection	25
2.6 Data Analysis.....	25

Chapter 3	Results.....	27
3.1	Participant Information	27
3.2	Participant demographics	27
3.3	Training, education, and professional development.....	28
3.4	Nature and classification of participants role.....	32
3.5	Emergency department service provision and funding sources	36
3.6	Participants identified workload priorities	38
3.7	Participant involvement and perceptions of ED stakeholders	39
3.8	Scope of practice.....	45
3.9	Barriers and Facilitators	50
3.10	The future of ED physiotherapists.....	53
Chapter 4	Discussion.....	59
4.1	Key Findings	59
4.2	Alignment of the ED physiotherapy role with current and future health system needs.....	67
4.3	Emergency Department physiotherapy must embrace the complex adaptive system in which it exists to optimise its potential	73
	Conclusion	76
	References.....	78
	Appendix 1: Macquarie University Ethics Approval Letter	94
	Appendix 2: Participant information and recruitment material	95
	Appendix 3: Expert consensus panel correspondence	98
	Appendix 4: Survey Questions.....	101
	Appendix 5: Pilot panel correspondence	120
	Appendix 6: Participant Comments	122
	Appendix 7: Enterprise award classification level	165

List of Figures

Figure 1.1 Patient Journey: Models of care and pathways through ED, including emergency department wait time and length of stay counters.....	2
Figure 1.2 Primary versus secondary contact physiotherapists. Describing various models of care and pathways within which ED physiotherapists operate.....	8
Figure 1.3 Terminology describing scope of practice boundaries in Australia, and inconsistent and conflicting terminology in Australian and international research when referring to ED physiotherapists.....	17
Figure 3.1 Participant flow and inclusion.....	27
Figure 3.2 Combined stacking bar graph representing participants ratings of professional development opportunities from 'No Value' to 'Very Valuable'	30
Figure 3.3 Delineation of participants employment with the classification of participants role while providing emergency department physiotherapy service coverage	35
Figure 3.4 Heat map representing percentage of physiotherapists present within emergency department across a 24 hour, 7 day period.	37
Figure 3.5 Simple sociogram with size of node representing the number of participants who report interacting with agents (patients, clinicians, hospital teams, and training and education providers) and the location where the interactions occur.	40
Figure 3.6 Participants rating of various emergency department stakeholders' understanding of participants role on a 100-point scale (0 – extremely misunderstood, 100 – extremely well understood)	41
Figure 3.7 Participants rating of various emergency department stakeholders' level of respect of participants role on a 100-point scale (0 – extremely disrespected, 50 – neither respected nor disrespected, 100 – extremely well respected).	41
Figure 4.1 Factors which influence ED physiotherapy aligned with health system levels	63
Figure 4.2 Causal loop diagram of facilitators and barriers which exert influence on emergency department physiotherapists from the perspective of survey participants	64
Figure 4.3 Enablers identified as crucial to evolution of ED physiotherapy role.....	65
Figure 4.4 The percentage of patients who presented per day across a 12-month period and the percentage of participants reporting physiotherapists service on given day of the week.	69
Figure 4.5 The percentage of patients who presented during specific time periods of the day on weekdays across a 12-month period and the percentage of participants who reported physiotherapists service which provided coverage every weekday.	71
Figure 4.6 The percentage of patients who presented on Saturdays and Sundays across a 12-month period and the percentage of participants who reported physiotherapists service across a 24-hour period.	72

List of Tables

Table 1.1 Australasian Triage Scale.....	2
Table 1.2 Names and roles of professional physiotherapy organisations in Australia.....	5
Table 1.3 Description of Australian physiotherapy services in various research publications.....	11
Table 1.4 Patient satisfaction with ED physiotherapists.....	15
Table 2.1 Survey design recommendations.....	22
Table 2.2 Experience of expert panel members.....	23
Table 2.3 Expert Panel feedback categories.....	23
Table 3.1 Participant demographical data.....	28
Table 3.2 Participant's physiotherapy entry level training program and participation in formal study after entering the profession.....	29
Table 3.3 Number of participants who discussed each theme within their comments regarding their motivation to engage with further formal university qualifications or an advanced musculoskeletal training program	31
Table 3.4 The nature of employment of emergency department physiotherapists.....	33
Table 3.5 Classification of participants' (n=78) role in relation to level of autonomy while working as a physiotherapist in emergency department.....	34
Table 3.6 Participant's classification of their principal scope of practice and clinical stream of physiotherapy of physiotherapy practice.....	35
Table 3.7 Physiotherapy presence in Emergency departments per 24-hour period as reported by participants	36
Table 3.8 Workload priorities as identified by participants	38
Table 3.9 Emergency Department multidisciplinary team members with whom participants (n=87) identify to have a close working relationship with.....	39
Table 3.10 Number of participants who discussed each theme and sub-theme within their comments regarding the impact of stakeholders understanding of, and respect for, the participants role in ED.	42
Table 3.11 Autonomy of participants and involvement with specific patient populations when completing designated tasks within the emergency department setting.....	46
Table 3.12 Number of participants who discussed each theme within their comments on the factors which act as current barriers and facilitators at a local and national level.	52
Table 3.13 Number of participants who discussed each theme within their comments on how emergency department physiotherapists could contribute further in the future.....	53
Table 3.14 Participants perceptions on training requirements when considering the introduction of extended scope emergency department physiotherapy roles and appropriate governing body.....	54
Table 3.15 Participants (n=84) agreeance with the inclusion of specific tasks when considering the scope of practice in context of possible introduction of extended scope emergency department physiotherapy roles.	55
Table 3.16 Number of participants who discussed each theme within their comments on facilitators to aid, and barriers to overcome emergency department physiotherapists increased contribution in the future.	56

Abstract / Summary

Emergency Department (ED) physiotherapy in Australia has evolved over the past decade from in-reach aged care coordination and secondary contact roles to larger, more autonomous roles. This evolution has been influenced by societal, economic and political pressure with research predominantly focused on specific aspects of an ED physiotherapist's role within a limited number of EDs rather than a holistic, national level evaluation of the role and scope of practice. Despite the introduction of national registration for physiotherapists and specialist clinical streams, little is known regarding the ED physiotherapy workforce nationally. To fully understand the current breadth of practice and benefits of ED physiotherapy there is an obvious need to provide a well-defined and detailed description of ED physiotherapy practice in Australia. In order to address this, this thesis details the results of a nation-wide survey of 94 ED physiotherapists and provides detailed workforce data, evaluates current scope of practice, and explores perceptions of factors influencing the current and future role of ED physiotherapy.

Despite the lack of a national framework, ED physiotherapy practice in Australian has evolved to that with autonomous responsibility for identifying suitable patients, providing the necessary care and facilitating appropriate discharge. ED physiotherapists were found to be experienced and highly trained clinicians with a generalist scope, often working as primary contact clinicians with seven day a week coverage that was mainly provided during daytime hours. Despite being predominantly in primary contact roles, they continue to provide care in a secondary contact capacity when required. They were found to be integrated and valued members of the ED team who interact with a variety of ED stakeholders, with the role influenced and impacted by levers at all levels of the health system. However, there is scope to improve the contribution of ED physiotherapy and the alignment with the demands of ED and the health system by adopting a change approach that embraces ED physiotherapists as existing within a complex adaptive system.

Candidates Statement

I, Tina Vickery, certify that the work in this thesis entitled “A National Workforce Analysis of Physiotherapy Practice in Australian Emergency Departments” has not been previously submitted for a degree nor has it been submitted as part of the requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research, and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself has been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis was approved by Macquarie University Human Research Ethics Committee, reference number:

Reference Number: 52020909821827

Date Approved: 23/10/2020

Tina Vickery ()

Date: 26 July 2022

Supervisor's Statement

As the supervisor of Tina Vickery's Master of Research work, I certify that I consider her thesis "A National Workforce Analysis of Physiotherapy Practice in Australian Emergency Departments" to be suitable for examination.

Associate Professor Taryn Jones

Department of Health Sciences

Faculty of Medicine, Health and Human Sciences

Macquarie University

Acknowledgements

I am immensely grateful for the continuous support, guidance and feedback provided by my supervisors, Taryn and Lindsey. Without their patience and encouragement this research and thesis would not have been possible. What I have learnt from them throughout this process extends far beyond the ability to conduct research.

I would also like to extend my sincere thanks to the expert panel members, who generously provided invaluable feedback and advice on the preliminary survey. I am thankful to my Macquarie University and Central Coast Health colleagues for their words of advice and encouragement throughout this process.

A very special thanks to my family and friends for their support, encouragement, and endless patience while I derailed our conversations into research talk to help untangle complicated ideas, and also for the wine.

This endeavour would not have been possible without my husband Michael's love, support, and encouragement. His unwavering belief in my ability to complete this research was instrumental in maintaining my focus and motivation, despite a pandemic, lockdowns and all the other things life has thrown at us since this project began. I would be remiss in not mentioning my four-legged study buddy, Thor. Who diligently laid next to my desk, kept me company, reminded me to go outside and definitely didn't eat any of my post-it notes.

Lastly, I would like to acknowledge my great grandfather, who moved his family to Australia for the opportunity to learn, grow and thrive. His enthusiasm and pride in my university endeavours continues to inspire me long after his passing.

Abbreviations

ACEM	Australasian College of Emergency Medicine
ACT	Australian Capital Territory
AHPRA	Australian Health Practitioner Regulation Agency
AIHW	Australian Institute of Health and Welfare
AIN	Assistant in Nursing
AMP	Advanced Musculoskeletal Physiotherapist
AMT	Advanced Musculoskeletal Training
APA	Australian Physiotherapy Association
APC	Australian Physiotherapy Council
ATS	Australasian Triage Scale
CAS	Complex Adaptive System
CT	Computerised Tomography
ED	Emergency Department
EN	Enrolled Nurse
LB	Lindsey Brett
LoS	Length of Stay
Metro	Metropolitan
MOC	Model of Care
MVA	Motor Vehicle Accident
NEAT	National Emergency Access Targets
OT	Occupational Therapist
PCP	Primary Contact Physiotherapist
PICF	Participant information and consent form
POP	Plaster of Paris
SA	South Australia
SCP	Secondary Contact Physiotherapist
SNA	Social Network Analysis
SSU	Short Stay Units
TJ	Taryn Jones
TV	Tina Vickery
UK	United Kingdom
USA	United States of America

Chapter 1 Introduction

Australian Emergency Departments

1.1 The role and delineation of emergency departments in Australia

Emergency Departments (EDs) are an essential, constantly evolving component of health provision in Australia and worldwide.^{1,2} When community members (patients) present to hospital, following an accident or an acute deterioration in their health, ED is the first place patients are assessed, treated and their immediate ongoing management decided. The Australasian College of Emergency Medicine (ACEM) defines an ED as a “...dedicated hospital-based facility specifically designed and staffed to provide 24-hour emergency care. An Emergency Department cannot operate in isolation and must be part of an integrated health delivery system within a hospital both operationally and structurally”.³ This definition highlights the role of an ED as an integrated component of a larger healthcare system, specifically the hospital in which it is situated.

Australia has over 1,300 hospitals ranging from large 1,000-bed metropolitan facilities to small, 17-bed remote hospitals.⁴ To enable accurate performance comparisons, explain variability in resource utilisation, and facilitate funding allocation, hospitals that share similar characteristics are grouped into “hospital peer groups”.⁴ In addition, Australian EDs are specifically classified into levels in accordance with ACEM ED delineation classifications which stipulate the EDs physical configuration, 24-hour allocation of suitably trained medical and nursing personnel, availability of speciality units within the hospital, for example ICU, and accessibility to medical specialists and multi-disciplinary team (MDT) members.⁵ Access to medical specialists, such as neurologists and orthopaedic surgeons, influence the classification and service scope of an ED, thus are comprehensively detailed in delineation guides. In contrast, information regarding allied health professions, such as physiotherapists and occupational therapists, is vague, making it difficult to determine their role within ED.⁴⁻⁶ Notwithstanding the scarcity detailing ED allied health staff, the depth and breadth of the delineation guide aids in the provision of standardised care for the community and work environment for staff.^{5,7}

1.2 A typical patient journey

Patients may present to ED at any time and for various reasons. A typical patient journey through ED (Figure 1.1) involves the assignment of a triage category from 1-5 as described in the Australasian Triage Scale (ATS) (Table 1.1).^{8,9} Once allocated an ATS category, the metrics of patient wait time and length of stay (LoS) begins.^{3,10} The wait time counter stops once a patient is assigned a primary clinician, usually a doctor, and enters a ‘model of care’ where they are assessed, undergo investigations and receive appropriate management.^{10,11} Models of care guidelines outline structured processes, ensuring patient care is supported by optimum staff, facilities, and resource allocation.^{10,11}

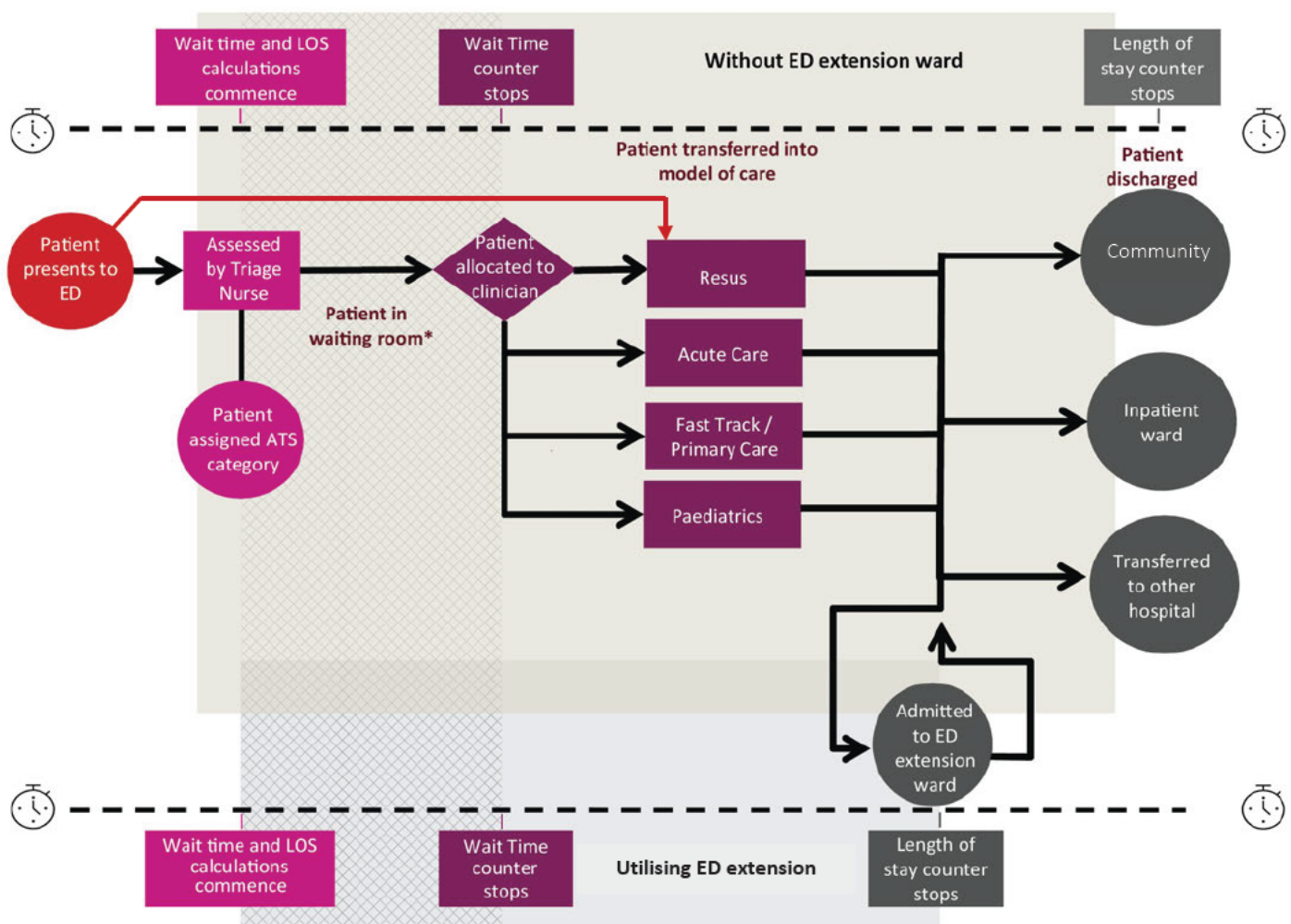


Figure 1.1 Patient Journey: Models of care and pathways through ED, including emergency department wait time and length of stay counters.

Abbreviations; ATS, Australasian Triage Scale; ED, Emergency Department; LOS, Length of Stay. *Patients with significant immediate medical needs may bypass wait room and directly enter a model of care. ^{3,7-12}

Table 1.1 Australasian Triage Scale

ATS Category	Triage Category	Max wait time	Summary of category
1	Resuscitation	Immediate	Immediately life-threatening
2	Emergency	10 minutes	Imminently life-threatening or time-critical treatment or severe pain
3	Urgent	30 minutes	Potentially life-threatening, situational urgency, or moderate severe pain
4	Semi-urgent	60 minutes	Potentially serious, situational urgency or significant complexity of severity
5	Non-urgent	120 minutes	Less urgent or clinic-administrative problems

Abbreviations; ATS, Australasian Triage Scale. ^{8,9}

Regardless of the model of care a patient enters, they may undergo investigations, such as medical imaging and/or blood pathology, and/or be referred to a MDT member for assessment.^{4,12} Ongoing patient care needs determine a patient's destination following departure from the ED, whether this be to another location within the hospital, an alternate facility or into the community, with the LoS counter stopping when a patient physically leaves the ED.¹² The various ED models of care, and integration of the ED within a larger hospital network enable continuity of care between the ED and the wider health network.

1.3 Increasing demand for emergency services

Demand for emergency services has been consistently increasing in Australia. Compared to a 15.2% per year annual estimated resident population growth rate between June 2011 and June 2021,¹³ there has been a 34.5% increase in ED presentations across the same period;¹⁴ suggesting demand for ED care is attributed to more than just population growth. Despite a short downward trend during initial phase the COVID-19 pandemic, demand for emergency services internationally has mirrored the same upward trend as Australia.^{15,16}

In Australia, a rise in specific presentation types, namely urgent and complex needs, lower acuity patients (ATS Category 4 and 5) and presentations by older people, has contributed to increase demand.^{14,17,18} Hospital data reported by the Australian Institute of Health and Welfare (AIHW) indicated that of the 8.8 million ED presentations in the 2020-2021 reporting period, children 14 years and younger accounted for 19.6% of all presentations, despite only representing 16% of the population, and people 65 years and over accounted for 21.5% during the 2020-21 period.^{17,18} Concerningly, an older person attending ED has been classified as a trigger event that can lead to a substantial functional decline, reduced quality of life, and other adverse outcomes, including death.^{19,20} Older patients often present to ED with complex needs and multiple comorbidities; undergo more diagnostic tests and procedures and have higher admission rates compared to younger patients.²¹ Providing care to older Australians requires the identification of risk factors²² and provision of holistic management,²³ which is time-consuming and challenging in an ED environment.^{24,25} There is an obvious need for experienced clinicians with a diverse skill set capable of providing care to people of all ages to be present in Australian EDs.

1.4 Access block and overcrowding

Across Australia and the world, health services have been unable to control the variables contributing to increased demand for emergency services. Innovative approaches to service delivery and various models of care are unable to stop EDs from becoming overwhelmed by presentation rates, a phenomena described as "over-crowding".^{3(p9)} In an ED context, overcrowding refers to: "a situation where ED function is impeded because the number of patients exceeds either the physical and/or staffing capacity of the ED, whether they are waiting to be seen, undergoing assessment and treatment, or waiting for departure."^{3(p9)} There is no consistent metric used in the assessment of ED overcrowding, however the most commonly used are LOS, counting hours of access block, adherence to nationally mandated targets and patient satisfaction.^{3,26-28} Additionally, there is no guarantee that the wider hospital will have

empty beds for patients needing admission, resulting in an “access block”.³ Access block is measured as the percentage of patients who were planned for admission but whose total ED time exceeded eight hours, or who left the ED or died within the ED before receiving a bed.³ The International Federation for Emergency Medicine reported access block to be the predominant contributor to ED overcrowding internationally.²⁹ The consequences of ED overcrowding and access block are substantial and well documented. Morely et al.(2018)²⁶ examined consequences and contributing factors of ED overcrowding from 102 published studies from around the world and concluded that overcrowding leads to poorer patient outcomes including increased mortality. During periods of overcrowding, ED staff are subjected to increased stress and violence and are less likely to adhere to guidelines.²⁶

National Emergency Access Targets (NEAT) have attempted to standardise assessment of ED performance and overcrowding across Australia; patient ATS categories, wait time and LoS were measured against defined targets and hospitals compared across peer groups.³⁰ To increase focus on ED performance, national government spending was linked to an EDs compliance with NEAT. National funding has since transformed into an activity-based model; however, state and territory governments continue to distribute funding according to performance-based measures such as Western Australia Emergency Targets and New South Wales Emergency Treatment Performance.³¹⁻³⁴ The AIHW continues to use LoS and waiting time as components of annual ED performance reports.^{14,18,30,35}

Emergency departments have implemented a variety of strategies to improve performance and patient outcomes. ED delineation guides and nationally implemented triage categories have attempted to provide a consistent care provision structure, and a nationally accredited training program for emergency physicians to facilitate workforce mobility and sustainability.^{5,36} Although evidence supporting their effectiveness is limited, physician-assisted triage, expanded scope nurses, and the introduction of medical assessment units are all attempts to improve patient flow through EDs.³⁷ Allied health in-reach teams have been implemented to coordinate care for older patient populations within ED with a focus on identifying functional problems, and providing holistic management and coordinating care for older patients, however the benefits of such teams requires further investigation.^{22,38,39} Another model of care implemented to combat prolonged LoS has been the introduction of ED extension units, also known as Short Stay Units (SSU).⁴⁰ Evidence supporting SSU’s positive impact on ED performance is limited, however, SSU does afford the ED team the option to maintain continuity of care without compromising patient care or admitting patients to inpatient wards for brief periods (Figure 1.1).⁴¹ A multitude of interventions have been implemented to alleviate ED overcrowding and access blocks, irrespective of the weak evidence supporting the impact of such interventions;⁴² unfortunately these issues persist within Australian EDs.

Emergency Department Physiotherapy

1.5 Evolution of physiotherapy in Australia

Over the last 100 years, physiotherapy within Australia has advanced from a state-based diploma in massage to a nationally accredited and registered physiotherapy profession, with defined minimum practice thresholds,⁴³ a robust code of conduct,⁴⁴ internationally renowned research programs,⁴⁵ and specialisation pathways.⁴⁶ The National Registration and Accreditation Scheme commenced on the 1st of July 2010 and provided, for the first time, consistent legislation for health professionals across Australia.⁴⁷ Between 2010 and 2018, 15 profession-specific national boards, including the Physiotherapy Board of Australia, were established with the primary mission to ensure public safety and inspire community members with trust and confidence in regulated health practitioners.^{48,49} Prior to the introduction of Australian Health Practitioner Regulation Agency (AHPRA) physiotherapists required separate registration in each state in order to practice, now only one national registration is required.⁵⁰ National physiotherapy registration has allowed for improved workforce mobility, reassurance for patients regarding the expertise of registered professions, consistency of care for community members, and appropriate processes for the management of complaints, practitioner audits and review of national standards.^{48,50}

1.6 Physiotherapy standards and representative organisations in Australia

Physiotherapy practice in Australia has evolved significantly with the support and moderation of the Physiotherapy Board of Australia, the Australian Physiotherapy Association (APA), the Australian Physiotherapy Council, and the Australian College of Physiotherapists. Each organisation with its own focus and role in the improvement, governance, and advocacy for the profession. (Table 1.2).

Table 1.2 Names and roles of professional physiotherapy organisations in Australia

Organisation	Role or focus
Physiotherapy Board of Australian	Develops standards, codes, and guidelines for the physiotherapy profession. Registers physiotherapists and physiotherapy students. Handles notifications, complaints, investigations, and disciplinary hearings. ⁵¹
Australian College of Physiotherapists	Training of clinical specialists and advancing physiotherapy excellence. Develop and govern career pathways to physiotherapy specialisation. ⁵²
Australian Physiotherapy Association	Peak national body representing the interests of physiotherapists and their patients. ⁵³
Australian Physiotherapy Council	Accreditation of Australian university entry-level physiotherapy programs and assessment of overseas practitioners who wish to gain registration to work as physiotherapists in Australia. ⁵⁴

To safeguard consistent assessment of competence and ensure compliance with national standards, the Physiotherapy Board of Australia and Physiotherapy Board of Aoteroa New Zealand published the “Physiotherapy practice thresholds in Australia and Aoteroa New Zealand”.⁴³ Within the document physiotherapists are described as having the ability to “*Integrate knowledge of pathology, anatomy, physiology and other core biomedical sciences*

relevant to human health and function, encompassing cardiorespiratory, musculoskeletal, neurological and other body systems, within the context of physiotherapy and the client's needs." ^{43(p7)} and physiotherapy practice as "...any role, whether remunerated or not, in which the individual uses their skills and knowledge as a physiotherapist ... practice is not restricted to the provision of direct clinical care. It also includes using professional knowledge in a direct non-clinical relationship with patients or clients, working in management, administration, education, research, advisory, regulatory or policy development roles and any other roles that have an impact on safe, effective delivery of health services in physiotherapy". ^{43(p9)} In essence, physiotherapists possess generalist skills applicable across all body systems and across a broad range of clinical settings.

1.7 Physiotherapy scope of practice in Australia

Despite nationally accredited courses and registration, comprehensive professional standards, and a robust code of conduct; physiotherapy scope of practice remains relatively undefined and has been dramatically moulded by societal, political, and economic pressures, and influenced by international and local events.^{55,56} The Health Practitioner Regulation Law Act 2009⁴⁷ regulates the protection of title and expects practitioners to operate within the limits of their capacity, but does not explicitly set the boundary; thus, has allowed for the profession to adapt to the needs of the health system. However, vague scope of practice definitions, unclear practice boundaries, and competing interests have contributed to the evolution of physiotherapy that at times has occurred without the support of robust and credible evidence.^{49,57,58}

The public recognise Australian physiotherapists have the clinical knowledge and skills to independently manage a large variety of musculoskeletal and connective tissue disorders.⁵⁹ Their musculoskeletal diagnostic abilities and management decisions are on par with those of their medically trained colleagues.⁶⁰ Physiotherapists and orthopaedic surgeons have been found to make similar diagnostic and management decisions for common musculoskeletal conditions,⁶¹ such as common knee injuries.⁶² However, physiotherapists have skills beyond musculoskeletal assessment and provide care across every stage of life; from chest therapy for neonates in intensive care⁶³ to pain management strategies and exercise therapy for older Australians living in residential aged care facilities;⁶⁴ from supporting women during pregnancy⁶⁵ to symptom control for people with palliative or neurodegenerative conditions.⁶⁶ They provide this care through various funding schemes, in public and private hospitals, people's homes, private clinics, and via electronic models of care, such as telehealth and virtual care.⁶⁷

The roles performed by physiotherapists are extremely diverse. To recognise highly developed clinicians in specific clinical areas the Australian College of Physiotherapy provides physiotherapists the opportunity to formally recognise their experience and qualifications through titling and clinical specialisation pathways.⁴⁶ Following the completion of a titling or specialisation pathway some may consider these physiotherapists as having an advanced scope of practice, in that they have undertaken additional training, are recognised by their peers for their expertise, or may perform tasks typically associated with other professions.^{46,68} However, the completion of a specialty pathway does not automatically afford physiotherapists in Australia extended scope of practice privileges. As detailed in Figure 1.3,

extended scope of practice is one which is outside the recognised scope of practice, whilst advanced practice sits beneath current practice thresholds.^{53,68} Whilst literature may suggest a benefit to advanced or extended physiotherapy practice roles, restrictive legislations and regulations, the competitive and limited financial landscape, availability of suitably skilled clinicians, duty of care considerations, training availability, and cultural barriers limit the introduction of such roles.^{2,53,58,59,69-73}

1.8 International physiotherapist integration into ED

The first literature to detail physiotherapy being integration into the ED was published in 1996 and examined the role of a full-time physiotherapy service in a United Kingdom (UK) ED.⁷⁴ Patients were referred by medical staff to the physiotherapy service embedded within ED. Operational since 1991, the service reviewed patients between five and seven days post discharge following their initial ED presentation and reviewed simple injuries, such as sprains, fractures, minor burns limiting joint function and mobility limitations.⁷⁴ Most patients (94%, n=77) reported their understanding of how to manage their injury improved following their interaction with the service and 99% reported being clearer on how their injury should progress.⁷⁴

Physiotherapy services based in UK EDs increased over the subsequent decade, varying in service provision and focus. Musculoskeletal clinics based in ED became increasingly prevalent,⁷⁵ and physiotherapists with additional in-hospital training led acute knee screening services.⁷⁶ Physiotherapists were further integrated into UK EDs by partaking in the assessment and management of musculoskeletal injuries during the initial ED presentation which was well received by patients.^{77,78} The early research, despite limitations in quantity and methodological quality, revealed increased patient satisfaction, reduced wait times, as well as similarities in patient assessment and no significant differences in long term health outcomes for patients managed by UK ED physiotherapists compared to traditional ED management.^{79,80}

ED physiotherapy services also expanded beyond the UK. A single centre study in China showed ED patients with acute back pain who received physiotherapy intervention were discharged from ED with less pain and were more satisfied compared to standard care.⁸¹ In the United States of America (USA), Lebec et al. (2009)⁸² proposed ED physiotherapy as a valuable option to enhance musculoskeletal management in ED; a notion supported by interviews with Arizona hospital emergency physicians (n=11)⁸³ and surveys completed by USA based acute care physiotherapists (n=120).⁸⁴ For all the emerging international research supporting ED physiotherapists, the quality of the studies was generally poor and introduced bias; consequently, the benefits of ED physiotherapists in improving patient outcomes required cautious interpretation.⁸⁵

1.9 Integration of physiotherapy into Australian EDs

As a result of the successful integration of physiotherapists into UK EDs, similar services emerged in Australia. The earliest documentation of physiotherapists in Australian EDs was published in the early 2000's^{86,87} and describes physiotherapists as members of ED care coordination teams - teams responsible for the management and

coordination of care of older patients within the ED. Anaf et al. (2007)⁸⁸ later described an ED physiotherapist's role within an Aged Care Coordination Team to be that of aiding discharge planning and addressing a variety of symptoms and conditions. Anaf and Sheppard (2007)⁸⁸ noted the complex and multifaceted nature of ED physiotherapy, however the data was representative of a single ED in Victoria limiting generalisation to physiotherapy practice across all Australian EDs. In 2010 an online survey of Australian ED physiotherapists (n=28) found that most were working in EDs in secondary contact roles (Figure 1.2) meaning physiotherapists acted only upon referral from a medical practitioner, and not in primary contact roles that could autonomously manage patients directly from an ED triage list. Within this study Kilner and colleagues (2010)⁸⁹ described the ED physiotherapy role to include discharge planning, musculoskeletal and mobility assessments, ordering of x-rays (54%) and application of casts (57%).⁸⁹ A majority of respondents of the survey (71%, 20/28) reported they perceived ED staff to lack awareness of the ED physiotherapy role, identifying this as the main barrier to their role at that time. At the time of the study, ED physiotherapy was a relatively new service in Australia and supported by limited international research; a lack of awareness was not surprising and indicated the need for a larger body of literature to support and describe the service.

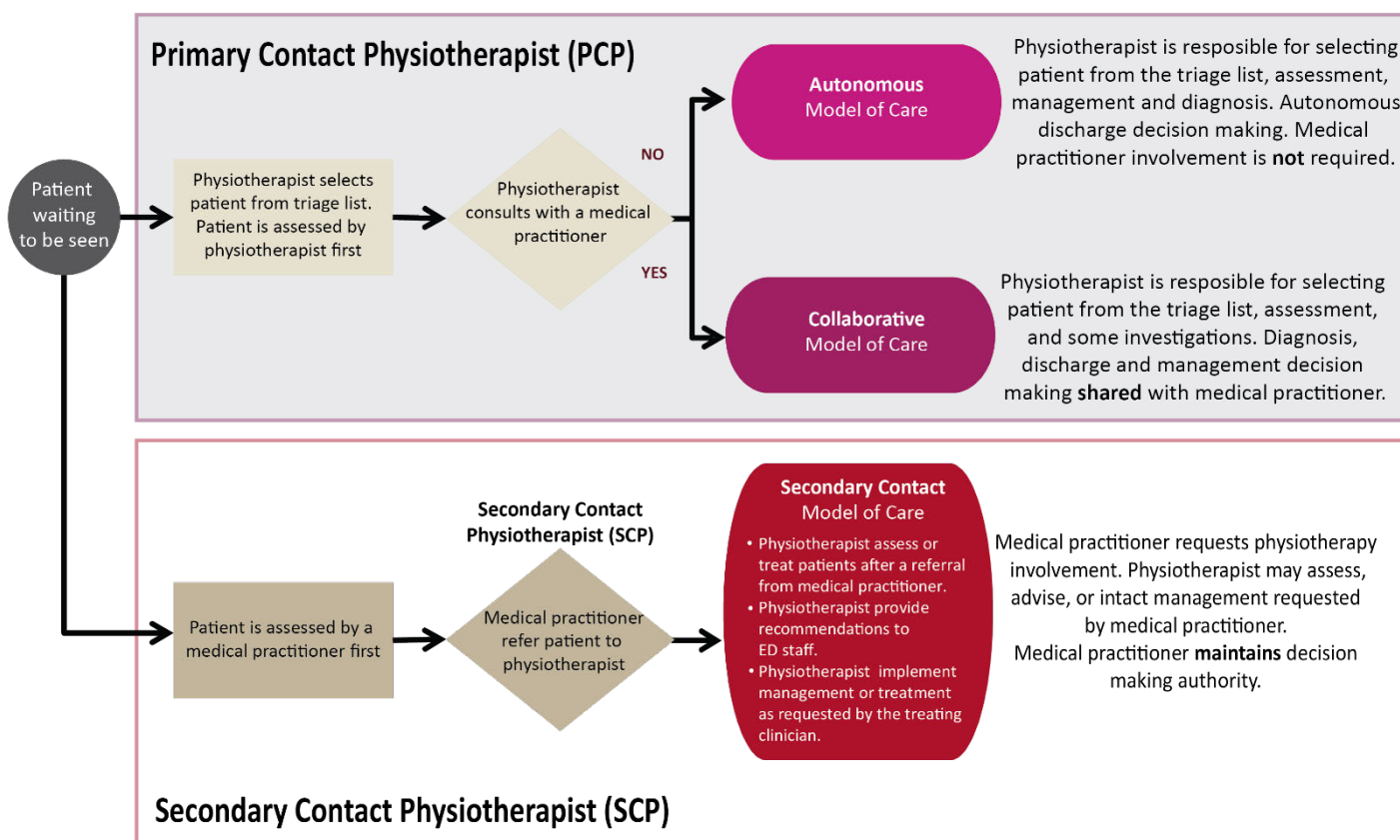


Figure 1.2 Primary versus secondary contact physiotherapists. Describing various models of care and pathways within which ED physiotherapists operate.

Abbreviations: PCP, Primary Contact Physiotherapist; SCP Secondary Contact Physiotherapist. ^{80,89-93}

1.10 Expanding the scope of ED physiotherapy practice

In 2011 the Australian Standing Council on Health approved a 'National Health Workforce Innovation and Reform Strategic Framework for Action 2011-2015' (The Framework) to ensure Australia could meet the increasing demand for health services and address projected workforce shortages across all facets of healthcare.^{94,95} Policy and regulation changes, combined with improved health leadership programs, were proposed to aid in planning a sustainable and innovative health system.⁹⁴ As part of The Framework, Health Workforce Australia funded a series of implementation projects to improve productivity in response to perceived needs at the frontline. One such project investigated expanding workforce scope to boost productivity and improve workforce retention, within which expanding the scope of practice for ED physiotherapists was highlighted as a priority.⁹⁴

Eleven sites, including two lead sites, were chosen to implement and evaluate an expanded scope of practice for ED Primary Contact Physiotherapists (PCPs) targeting musculoskeletal patients within the ED.⁹¹ Five sites in Victoria and one in the Northern Territory implemented PCP services modelled on pre-existing PCP roles at the lead Victorian site. The remaining 3 sites, one in South Australia (SA) and two in Queensland, were modelled from a pre-existing PCP role at the Australian Capital Territory (ACT) lead site.⁹¹ To aid implementation and facilitate upskilling of existing Secondary Contact Physiotherapists and those newly recruited into ED, two training programs were developed; one competency-based training pathway and the other a post-graduate course delivered by a university in the ACT.⁹¹ Common to both programs were periods of supervised practice and competency assessments, performed by ED medical staff.⁹¹

Communication and stakeholder management, interprofessional competition, and legislative and policy issues were identified as barriers to ED PCP implementation. Furthermore, variation in state legislation, the local culture, and acceptance of the PCP role significantly impacted the service hours and scope of practice implemented across the sites; however, the final PCP project report published in 2014 demonstrated positive outcomes. Patients treated by a PCP had a LoS of less than 4 hours (92.7%), experienced no adverse events, and, of those surveyed (n=477), the vast majority (90.8%) were satisfied or very satisfied with care provided.⁹¹ The ability of organisations to secure funding was the primary factor determining the extent to which the model was adopted.⁹¹ Six sites adopted the ED PCP model into business as usual and two were partially able adopt the model following the cessation of the Health Workforce Australia project funding.

1.11 Impact of physiotherapy on Australian ED performance

Since its introduction in Australia, implementation of ED physiotherapy has been driven primarily by increased ED presentation rates and challenges in meeting ED performance targets. Similar to the Health Workforce Australia ED PCP project, research has focused predominantly on ED physiotherapy's ability to improve patient wait time and LoS.⁹¹ Gill and Stella (2013),⁹⁶ Guengerich et al. (2013),⁹⁷ de Gruchy et al. (2015),⁹⁸ Bird et al. (2016),⁹⁰ and Goodman et al. (2018)⁹⁹ all demonstrated that musculoskeletal patients treated by ED physiotherapists had shorter wait times and LoS compared to medical staff. Kinsella et al. (2018)¹⁰⁰ examined ED patients presenting to ED by ambulance and

seen by a PCP, finding again shorter LoS and wait times compared to medical practitioners, although this may be explained by medical staff managing more complex presentations. Research has also shown patients who presented to ED with low back pain were more likely to be discharged home if reviewed by a physiotherapist.¹⁰¹ Despite the inability to prescribe medications, physiotherapists were also found to manage a patient's pain at least as well as other ED staff. Upon discharge, Coombes et al.(2020)¹⁰² and Schulz et al. (2016)¹⁰³ both found no significant differences in patient-reported pain levels compared to patients managed by other ED staff.

As ED PCPs settled into their roles, the efficiency of their practice improved. Gill et al. (2013)⁹⁶ observed PCPs increased the average number of patients under their care per shift by 23% (n=6) in the second year of a new PCP service, with a further increase of 28% (n=8) in the third year, and did so whilst maintaining LoS targets or the proportion of their patients seen within designated wait times. However, Jesudason et al.(2012)¹⁰⁴ found secondary contact physiotherapists involvement in ED extended care units did not influence hospital admission, patient re-presentation rates, or the time it took for patients to return to their usual activities after discharge. Although it should be noted that of the patients admitted to hospital post interaction with a physiotherapist in the extended care unit, 79% (n=23) of patients were deemed appropriate for discharge from a mobility perspective but required admission for medical reasons. Whilst no significant differences were noted between the physiotherapy intervention group and control group, other important patient outcomes or hospital wide impacts, such as patient inpatient length of stay, impact on inpatient physiotherapy workloads, or rates of inpatient falls were not measured or reported by the study.¹⁰⁴

Within the literature, patient safety has been monitored by reporting adverse patient outcomes and unplanned re-presentations to ED. Despite variability in study design, physiotherapists had no significant adverse patient outcomes and equivalent or lower rates of unplanned patient re-presentations compared to medical staff.^{80,90,92,98-103,105-107} Furthermore, incidence of misdiagnosis by ED physiotherapists, despite requesting fewer X-rays, Computerized Tomography (CT) scans and ultrasounds, was not higher than that by medical staff.^{103,108}

The outcome measures used in the Health Workforce Australia project report appear to have been widely adopted by ED physiotherapy literature. It could be deduced that following the successful adoption of the Health Workforce Australia PCP models of care, subsequent studies were structured similarly secure funding and justify the implementation of PCP roles. However, as demonstrated in Table 1.3, much of the research investigating ED physiotherapists focused solely on the PCP component of the role, and often uses secondary contact physiotherapists as a comparison, or excludes the care provided in a secondary contact capacity. Consequently, the minimal diversity in study design and narrow focus may have produced a narrow view of Australian ED physiotherapists, the roles they perform, and the impact on the ED and wider health system.

Table 1.3 Description of Australian physiotherapy services in various research publications

Author	State	PCP / SCP (MOC) - Role Title	Experience or training of physiotherapists	Patient conditions within physiotherapy remit, or criteria of patients for inclusion in the study, if detailed	Exclusion criteria (patients presenting with)	Patient age restriction (if any)
Alkahouri et al. (2020) ¹⁰⁶	New South Wales	PCP (MOC*) - Primary Contact Physiotherapist	Average 9 years' experience	PCP - assess and soft-tissue injury, isolated peripheral fracture without gross deformity, isolated peripheral dislocations, mechanical spinal pain.	Red Flags. Non-mechanical pain, ATS Category 1 and 2, injury that involved a loss of consciousness, fracture with gross deformity, open wounds, multi-trauma.	≥16
		SCP		Not specified	Not specified	
Anaf and Sheppard (2007) ⁸⁸	Victoria	SCP – Aged care coordination team member	Not specified	Musculoskeletal, general medical, neurological, orthopaedic	Not specified	≥18
de Gruchy et al. (2015) ⁹⁸	Victoria	PCP (Autonomous MOC) - Advanced practice physical therapist	>5 years' experience in musculoskeletal, post graduate certificate and completion of work-based competency.	Assess and treat patients autonomously. Assist medical staff with closed reduction of fractures and joint relocations	High risk trauma, multi-trauma, open fracture, multiple co-morbidities, high suspicion of drug-seeking behaviour or recent history of altered consciousness.	Not specified
Goodman et al. (2018) ⁹⁹	Queensland	PCP (Autonomous MOC) - Expanded-scope physiotherapy role	Undertaking post-graduate diploma and on the job training	Select, assess and provide management for musculoskeletal presentations. Discharge decision making. Management of simple closed fracture manipulation and POP application.	Not specified	Not specified
Gill and Stella (2013) ⁹⁶	Victoria	PCP (MOC*) - Primary Practitioner Physiotherapist	Not specified	Assess, treat and organise ongoing care for patients with musculoskeletal, limb or spine injuries. Sprains, strains and uncomplicated fractures. Coordinated follow-up care.	Multi-trauma, open fractures, significant medical comorbidities, loss of consciousness, seizures.	<6‡
		SCP	Not specified	Not specified	Not specified	Not specified
Guengerich et al. (2013) ⁹⁷	Victoria	PCP (MOC*) - Primary Contact Physiotherapist	Not specified	Assess and treat appropriate musculoskeletal patients in accordance w local policy including soft tissue injuries, mechanical spine pain and simple closed fractures.	Red flags, infection, cancer, open or complex fractures, dislocations, significant trauma or high speed MVA.	≥18
Harding et al. (2015) ⁹³	Victoria and Central Australia (state unknown)	PCP (Autonomous MOC) - Expanded Scope of Practice Physiotherapy	Not specified	Appropriate patients from the ED triage list. Assess, diagnose and comprehensively manage patients.	Not specified	Not specified

Author	State	PCP / SCP (MOC) - Role Title	Experience or training of physiotherapists	Patient conditions within physiotherapy remit, or criteria of patients for inclusion in the study, if detailed	Exclusion criteria (patients presenting with)	Patient age restriction (if any)
Henderson et al. (2020) ⁹²	New South Wales	PCP (Collaborative MOC) - Primary Contact Physiotherapist SCP	"Senior clinician" with >3 years experience	PCP: Isolated soft tissue injuries involving a joint, ligament, tendon or muscle pain. Simple closed, single-limb injuries without gross deformity or neurovascular compromise Spontaneously reduced peripheral joint dislocation without evidence of fracture, POP, orthosis or brace. SCP: Musculoskeletal injury that did not meet PCP criteria initially. Patient advice, education, provision of splint or POP as requested by ED medical practitioner.	Gross deformity requiring reduction. Neurovascular compromise, open fractures, coexisting acute medical conditions, contaminated or infected wound, Non-mechanical pain, lacerations or significant abrasions, high-speed mechanism of injuries, peripheral dislocation. Lower back, thoracic or cervical pain	>16
Kinsella et al. (2018) ¹⁰⁰	Victoria	PCP (Autonomous MOC) - Advanced musculoskeletal physiotherapist	Not specified	Attended ED via ambulance category 3 to 5	Not specified	≥18
Maka et al. (2022) ¹⁰⁹	New South Wales	PCP and SCP -ED physiotherapist	Average of 9 years' experience	Fractures, musculoskeletal, Mobility assessments, respiratory condition, "other"	Not specified	No age restriction
Morris et al.(2015) ¹¹⁰	Australian Capital Territory	PCP (Autonomous MOC)- Advanced scope of practice physiotherapist PCP (Collaborative MOC) - Primary Contact Physiotherapist and SCP	Trained as Extended Scope of Practice but not recognised.	ASOP: Assess and treat ATS category 4 and 5 patients autonomously PCP and SCP: Not specified	Not specified Not specified	1-88 Not specified

Author	State	PCP / SCP (MOC) - Role Title	Experience or training of physiotherapists	Patient conditions within physiotherapy remit, or criteria of patients for inclusion in the study, if detailed	Exclusion criteria (patients presenting with)	Patient age restriction (if any)
Sayer et al. (2018) ¹⁰¹	Not specified	PCP (MOC Not specified) - Advanced musculoskeletal physiotherapist	Competency based training program	Presented with Low back pain	Not specified	18-65
Sheppard et al. (2010) ¹¹¹	Victoria	SCP - Allied health team member	Not specified	Individuals at risk of deteriorating with discharge from the ED, by considering his or her social environment, home set- up and level of mobility.	Not specified	≥18 “adult”
Schulz et al. (2016) ¹⁰³	Victoria	PCP (MOC Not specified) - Advanced musculoskeletal physiotherapists	Not specified	Acute musculoskeletal low back pain less than three months in duration (with or without associated leg symptoms), a knee soft tissue injury or an ankle soft tissue injury.	Multiple injuries, chronic condition of greater than three months duration, required an inpatient unit review. Non-musculoskeletal soft tissue conditions - fracture, tumour, infection, cauda equina syndrome, rheumatological conditions or back pain of visceral origin	18-65
Sutton et al.(2015) ¹⁰⁸	Victoria	PCP (MOC not specified) -Primary Contact Physiotherapist	Post-graduate masters in musculoskeletal or Sports with 10 years’ experience in musculoskeletal	Musculoskeletal focus – closed limb injury, soft tissue condition, non-traumatic spinal pain.	Not specified	Adult and Paediatric (age range unknown)
Taylor et al. (2011) ¹⁰⁵	Victoria	PCP (Collaborative MOC) - Primary Contact Physiotherapist	Post graduate qualification in musculoskeletal physiotherapy or PCP experience	Peripheral musculoskeletal injury.	Red flags, unexplained weight loss, disabling or progressing focal neurological deficit, infection or severe night pain. Significant trauma, MVA, open fractures, unreduced dislocations, open wounds, loss of consciousness, or low back or neck pain.	≥18
Victoria Department of Health and Human Services (2010) ¹¹²	Victoria	SCP PCP (MOC Not specified) - Primary Contact Physiotherapist SCP	Not specified Varied across sites greatly	PCP and SCP: Site specific.(n=9) POP and splint application and removal, education, exercise prescription (n=9). Dressing (n=4) Vestibular assessments (n=3). Supervised joint reductions, mobility or respiratory assessments (n=2)	Not specified	Not specified

‡ were to be discussed with senior emergency department medical practitioner first. Abbreviations: ATS, Australasian Triage Scale; ED, Emergency Department; MOC, Model of Care; MVA, Motor Vehicle Accident; PCP, Primary contact Physiotherapist; POP, Plaster of Paris; SCP, Secondary Contact Physiotherapist.

1.12 Emergency staff and patient perspectives of ED physiotherapy

Research suggests ED staff did not have a good understanding of SCP role, physiotherapy scope of practice or which patient presentations were appropriate for a PCP to manage.¹¹³ Emergency staff expressed concerns that ED physiotherapists would negatively impact musculoskeletal training opportunities for junior doctors,⁹⁹ and nurses.¹¹⁴ Medical and nursing staff held impressions that an ED physiotherapists' role was predominantly musculoskeletal; as opposed to ED physiotherapists' who reported a role reflective of their diverse generalist knowledge.¹¹⁵ If ED staff continue to have a limited understanding ED physiotherapy practice, optimal utilisation of the role may be questionable.

Emergency physicians, nurses and patients report satisfaction with ED physiotherapy; however, opinions were often related to services provided by only one or two ED physiotherapists, and may be reflective of specific individuals, as opposed to ED physiotherapy more generally.^{99,110,115} Patients and ED staff members appreciate and value ED physiotherapists' bedside manner and communication skills,^{71,93,110,111,114,115} with physiotherapy integration and acceptance into an ED team highly dependent on the personality, communication and time management skills of the physiotherapist in the role.¹¹⁵ Furthermore, the more often a physiotherapist was present in ED, the sooner their abilities were trusted by staff,¹¹⁴ with the need to constantly prove one's abilities noted in the experiences of other advanced scope practitioners.¹¹⁶

From a consumer's perspective, patients who interacted with a physiotherapist during their ED admission were satisfied with their care.¹¹⁷⁻¹¹⁹ Feedback from patients has shown they valued the quality of the advice the physiotherapist provided and being given additional time to ask questions.^{97,111} Patients reported feeling confident the physiotherapist would refer them to other staff if needed and being less worried about their condition after speaking with an ED physiotherapist.¹¹¹ Research shows that adult patients' understand the role of ED physiotherapists to varying degrees^{57,111,120} however, the perspectives of children, adolescents, and their guardians are relatively unknown.

Table 1.4 Patient satisfaction with ED physiotherapists

Study	Patient/participant demographics	Data collection - Single Point/Follow up timeframe	Number of physiotherapists providing service	Patient Satisfaction
Alkhouri et al. (2020)¹⁰⁶	Age: ≥ 16 Diagnosis: Soft tissue injuries	Upon completion of treatment (at discharge)	Not specified	Ninety-six-point eight percent (912/942) of patients seen by any ED staff member were either satisfied or highly satisfied with treatment provided.
Goodman et al. (2018)⁹⁹	Age: Not specified Diagnosis: Any patient seen by ED physiotherapist	Upon completion of treatment (at discharge)	2	82% of patients who saw ED physiotherapist reported treatment prescribed was effective, and 82% felt less worried about their problem.
Guengerich et al. (2013)⁹⁷	Age: “Adult” ≥ 18 Diagnosis: Musculoskeletal injury/issue	Mailed out 1 week post discharge	Not specified	Patients seen by physiotherapists and ED medical practitioners had no statistically significant differences when responding to the question "If I was advising a friend, I would recommend the physiotherapist".
Harding et al. (2015)⁹³	Age: Not specified Diagnosis: Isolated musculoskeletal injury/issue	Phone call a few days post discharge	Metro: 10 Remote: 4	Patients were satisfied with the efficiency and level of service and provided by the physiotherapist. Patients valued physiotherapists communication and professionalism.
Morris et al. (2015)¹¹⁰	Age: Any Diagnosis: Any patient seen by ED physiotherapist	Phone call a few days post discharge	1	10 of the 11 patients were satisfied with the quality and speed of the service delivery. Approximately half of the patients were not aware they were initially consulting a physiotherapist.
Sheppard et al. (2010)¹¹¹	Age: “Adult” Diagnosis: Any patient seen by ED physiotherapist	Upon completion of treatment (at discharge) and 2-3 weeks post discharge(follow-up)	1	Patients who saw the ED physiotherapist were satisfied with the service provided. Physiotherapist' bedside manner shaped patient perceptions.
Schulz et al. (2016)¹⁰³	Age: 18 - 65 Diagnosis: Lower limb soft tissue injury, acute back pain	Upon completion of treatment (at discharge)	Not specified	Patients with acute low back pain or lower limb soft tissue injuries had no statistically significant differences ($p>0.05$) in patient satisfaction between ED physiotherapists and other staff.
Taylor et al. (2011)¹⁰⁵	Age: ≥ 18 Diagnosis: Peripheral musculoskeletal injury/issue	Upon completion of treatment (at discharge)	19	Ninety nine percent (314/315) of patients managed by primary or secondary contact physiotherapists agreed or strongly agreed that they were satisfied with the overall management of their condition.

1.13 Inconsistency in Australian ED physiotherapy

Across Australia the uptake of physiotherapy services into ED has been noticeably varied.¹⁰⁹ As displayed in Table 1.3, patient inclusion and exclusion criteria, age range of patients and the name given to ED physiotherapists differs between studies, as does the ED physiotherapist model of care. Research investigating physiotherapy caseloads in ED has been heavily focused on musculoskeletal presentations,^{92,93,96-98,103,105,106} and adult patients with ATS categorisation 4 and 5.^{90,97,98,100,110} However, more recently Lloyd et al. (2020)¹²¹ found specially trained vestibular ED physiotherapists to be a safe and feasible option to improve adherence with evidence based practice for ED patients with dizziness. Furthermore, Maka et al. 2022¹⁰⁹ described ED physiotherapist in NSW involvement with patients of all ages and a variety of conditions, including dizzy patients.

Throughout the literature, terminology regarding physiotherapists working in ED has lacked consistency. Anaf and Sheppard (2007)^{79,(p7)} developed the definition “*a physiotherapy clinician dedicated to working as a member of the emergency department team to manage patients either autonomously or in conjunction with other attending medical and nursing staff*”, however this terminology has not been widely adopted in the literature. As seen in Figure 1.3, the role and job title of ED physiotherapists has varied which has brought into question their true scope within ED and contributed to confusion regarding the role. Research which has investigated the nature of ED physiotherapy in Australia states that the scope falls beneath existing practice thresholds, however the environment of the ED provides physiotherapists the opportunity to work close to practice boundaries.^{2,72,89,122}

In Victoria, ED physiotherapists must complete competency-based assessments in accordance with the Advanced Musculoskeletal Physiotherapy (AMP) Clinical Education Framework¹²³ however, this is not specific to ED physiotherapists nor recognised in other states. Furthermore, emergency physiotherapy is not recognised by the Australian College of Physiotherapy as a specialty sub-stream, and no standardised national training program exists. Inconsistent naming conventions and training may contribute to staff lack of understanding of the ED physiotherapy role beyond musculoskeletal conditions^{99,106} therefore contributing to ED physiotherapists being underutilised for conditions such as rib fractures, hand injuries and vertigo conditions.^{106,113,124}

A systematic review published in 2019 found service implementation, including terminology and scope of ED physiotherapy practice is highly variable and dependent on the setting and country where it is implemented.¹²⁵ Furthermore, ED physiotherapists in the United Kingdom are now employed in extended scope roles.^{72,126} The roles contain several interventions that currently sit beyond Australian physiotherapy practice thresholds. Whilst Australian ED physiotherapy roles have been modelled from the success of UK roles, until Australian physiotherapists can provide the equivalent service, future comparisons between Australian and UK ED physiotherapists are unlikely to be entirely relevant.¹²⁵ Furthermore, as displayed in Table 1.3, research conducted in Australia has been predominantly based in Victoria (11 of 17 studies). Consequently, the generalisation of international and Australian-based research to a national context is limited.

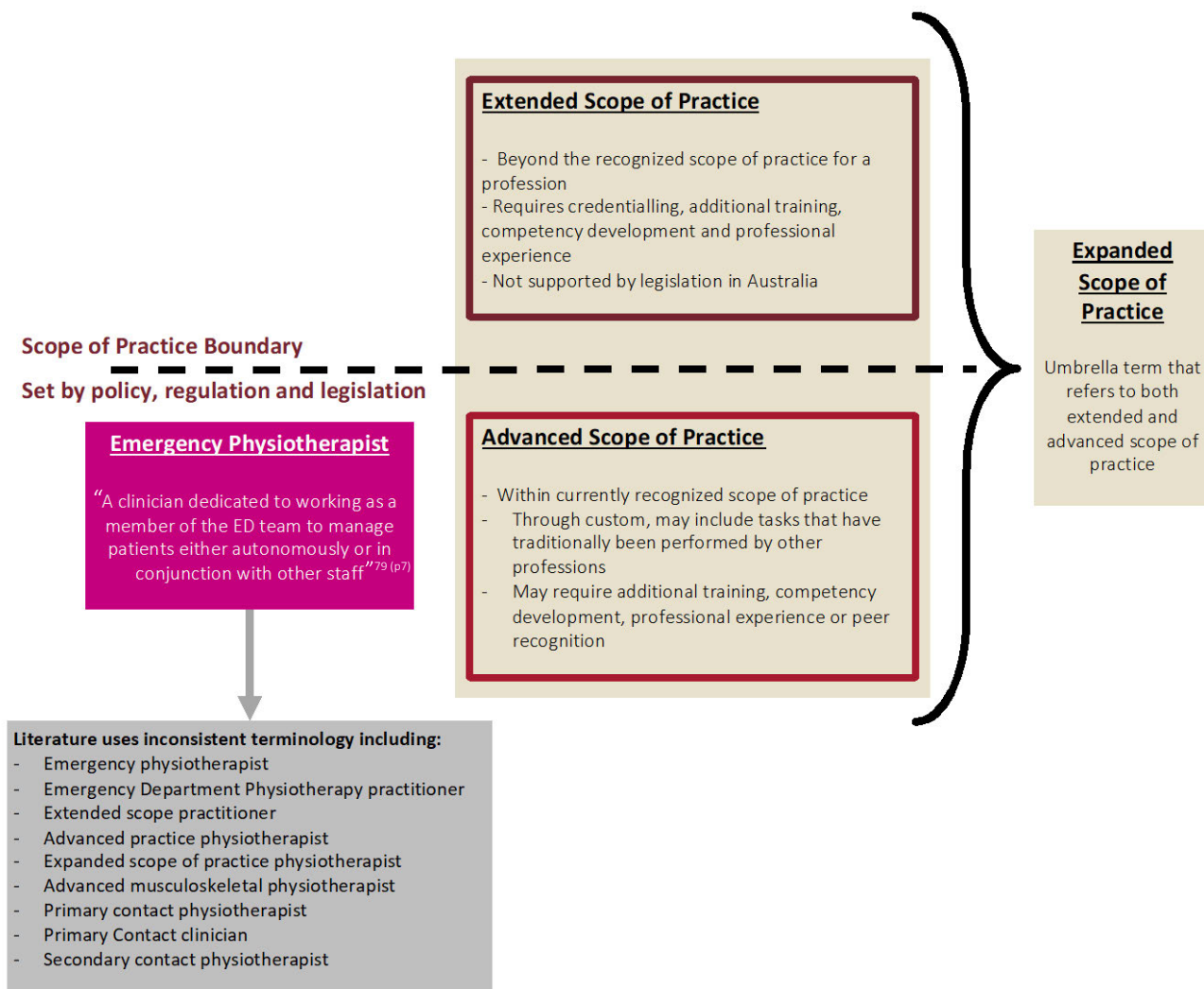


Figure 1.3 Terminology describing scope of practice boundaries in Australia, and inconsistent and conflicting terminology in Australian and international research when referring to ED physiotherapists.^{2,43,44,53,55,57-59,68,71,72,74,75,78-80,85,88-93,96,98-101,103,105-108,110,112-115,120,122,123,125,127-134}

A lack of clarity on the ED physiotherapist naming conventions, distribution of clinical tasks, overlapping roles, boundaries of practice, and training requirements may result in conflict arising between clinicians, stakeholders, and physiotherapists, and may lead to ongoing confusion in ED patients.^{2,135,136} The lack of clarity surrounding professional boundaries and standards exposes ED physiotherapists to an increased liability risk.^{2,136} Although “umbrella laws”^{135,(p6)} provide a level of legal coverage for all health professionals, no literature exists regarding clinicians perceptions or knowledge of the legal structure governing interprofessional collaboration or associated liability.¹³⁵

The importance of the perspectives and experiences of staff delivering care cannot be understated, evidenced by the widely researched and adopted quadruple aim of healthcare improvement.¹³⁷ In 2014, the triple aim – improving population health, enhancing the care experience and reducing costs, was expanded to include ‘the experience of delivering care’.¹³⁸ Bodenheimer and Sinsky (2014)¹³⁸ reflected that without recognition and attention paid to the experiences of staff, clinician burn out (exhaustion, cynicism, dissatisfaction) may impact availability of adequately trained staff and the quality of care remaining staff deliver. Whilst the quadruple aim may expand in the future,¹³⁷ a gap is already present in the literature which seeks to evaluate and describe ED physiotherapy. The experiences of

physiotherapists delivering care in EDs as they have evolved into PCP roles across Australia has not been well monitored since Kilner and Sheppard's (2010)⁸⁹ investigation over a decade ago.

To provide greater clarity to the role and direction of ED physiotherapy currently and in the future, research of high methodological quality that incorporates a national perspective is needed.^{128,139} To fully understand the current breadth of practice and benefits of ED physiotherapy there is an obvious need to provide a well-defined and detailed description of ED physiotherapy practice in Australia. This should include a holistic and comprehensive picture of the ED physiotherapy workforce in Australia including scope of practice, workload priorities and responsibilities. Furthermore, gaining greater insight into the current understanding of the role of ED physiotherapists, their experiences in delivering care, the utilisation of ED physiotherapy services, and identification of opportunities for growth may facilitate the development of strategies which enable Australian ED physiotherapy expansion and improved ED physiotherapists contribution.

Research Aims

The research presented within this thesis aims to:

- Provide comprehensive workforce data on the current status of Australian ED physiotherapy practice, including physiotherapist demographic data, staffing levels and funding sources.
- Evaluate the scope of practice currently undertaken by ED physiotherapists across a range of Australian EDs.
- Investigate the perceptions held by current ED physiotherapists on their current scope of practice and how they believe their role may be optimised within the ED context.

Chapter 2 Methods

2.1 Study Design

A cross-sectional survey was conducted using the REDCap online survey platform utilising a Macquarie University licence to describe workforce characteristics, demographics, and perceptions of ED physiotherapists.¹⁴⁰⁻¹⁴⁴ The online nature of the survey allowed for an expansive, efficient, and cost-effective distribution and data collection process that encompassed a vast geographical region across all states and territories of Australia.¹⁴⁵⁻¹⁴⁷ Ethical approval was granted by Macquarie University Human Research Ethics Committee Reference No: 5202090921827, Project ID: 9098.(Appendix 1: Macquarie University Ethics Approval Letter)

2.2 Participants & Recruitment

Australian Health Practitioner Regulation Agency (AHPRA) registered physiotherapists currently providing services to patients within an Australian ED were invited to participate. Physiotherapy students were excluded from the study.

The exact number of ED physiotherapists in Australia is unknown. Estimates based on hospital data and ACEM guidelines would infer approximately 100 to 204 full-time equivalent ED physiotherapists nationwide.^{4,7} Australia has 292 public hospital EDs with 99 EDs requiring onsite access to a physiotherapist.^{5,35} Therefore it can be estimated that there is at least 99 ED physiotherapists in Australia. The APA has approximately 28,000 members, with 171 belonging to the since disbanded ED national group, representing 0.61% of all APA members.¹⁴⁸ Extrapolating this percentage data to all registered and working physiotherapists (33,299), 0.61% would suggest there are 204 ED Physiotherapists (rounding up to the closest whole number).^{149,150} Due to the inability to determine accurate population size, the absence of a database containing contact details of the population and inaccurate estimates on response preferences, the ability to conduct power analysis or probability sampling is not possible.^{140,141,151} Thus, non-probability sampling methods, specifically snowball sampling, was used in participant recruitment.^{140,141,151}

Survey invitations were emailed through established networks including ED physiotherapists, health service managers, clinical and academic physiotherapists and emergency department staff (Appendix 2: Participant information and recruitment material). Furthermore, advertisements were posted onto social media sites: Twitter, LinkedIn, Facebook, Instagram and the APA ED physiotherapy Facebook group that APA ED national group members are invited to join. An article was published in the APA national magazine, InMotion, on the 2nd of June 2021.¹⁵² All invitations, advertisements and the InMotion article included a link to the survey platform, and the selection criteria to enable participants to self-identify, and encouraged electronic sharing of the invitation. Posts contained text and images to attract attention on social media sites.^{146,153}

Prospective participants were asked to review the Participant Information and Consent Form (PICF) (Appendix 2: Participant information and recruitment material) hosted on the first page of the survey. Participants were required to check a box to indicate their consent to participate in the survey, before being able to proceed further. The survey

did not request or contain any participant data relating to name, date of birth or contact details therefore, participants were unable to withdraw consent after submitting the survey.

2.3 Survey Development

2.3.1 Preliminary survey creation

The preliminary survey was created according to expert and literature recommendations on survey design, implementation, recruiting and reporting as detailed in Table 2.1. Response options were intermixed to improve attention and decrease satisficing during the longer sections.¹⁵⁴ The type, style and arrangement of preliminary survey questions were formulated based on examination of previous research as outlined above, in conjunction with the clinical experience of the research team.

The survey utilised adaptive questioning in the form of REDCap^{143,144} “display if” logic rules to improve useability and remove irrelevant questions from participants view, making the questions displayed participant-specific to minimise satisficing.¹⁵⁴ A combination of open and closed-answer questions were used throughout.¹⁵¹ In open-answer questions when a number or year was requested, the “forced integer/number” option was utilised to reduce entry errors.

Closed-answer questions were predominantly displayed as radio buttons or drop-down lists. Where appropriate a choice option ‘other, not listed’ was provided that prompted participants to provide additional detail.^{146,153} Context-specific questioning and responses were utilised to decrease acquiescence bias, including the creation and use of context-specific Likert and attitude scales.^{146,154,155} Response options were intermixed to improve attention and decrease satisficing during the longer sections.¹⁵⁴

Table 2.1 Survey design recommendations

Design element	Recommendation
Question and response option	Easy to understand ^{140,146,151}
	Open and Closed questions ¹⁵¹
	Non-biased questions ¹⁵¹
	Not guiding / leading questions ¹⁴⁰
	Include operational definitions ¹⁵¹
	Provide explicit instructions ^{140,146}
	One idea per question ¹⁴⁰
	Avoid double negatives ^{140,141}
	Use conventional format (radio buttons) wherever possible ¹⁴⁶
Order	Grouped together based on content and question structure ^{141,151}
	General precedes specific ¹⁵⁶
Software Functionality	Do not force a response ¹⁴⁶
	Multiple screens as opposed to scrolling ¹⁴⁶
	Use branching logic, adaptive questioning “display if” logic ^{146,153}
	Ease of useability across different devices ¹⁵⁷

2.3.2 Expert consensus panel

An expert consensus panel was utilised to increase survey relevance and accuracy through expert insight. Individuals (n=4) from the established networks of the research team were invited to be members of the study expert consensus panel (Appendix 3: Expert consensus panel correspondence). Panel members had various expertise as detailed in Table 2.2. They were requested to rank the preliminary questions based on relevance to achieve the study’s aims, as well as offer feedback on changes, additions and removal of questions, and provide feedback on the overall clarity, relevance, objectivity, flow, and structure of the survey.¹⁵¹

Panel members did not correspond with or review feedback from other panel members. Feedback from the expert panel was coded into key concepts relating to the change or concern expressed by the panel member, and then grouped into categories as displayed in Table 2.3. A second version of the survey was then produced accordingly and reviewed by the research team prior to re-dissemination to the expert panel. The same process was then repeated until panel consensus was reached which occurred on the third version with all panel members asserting they had no further feedback.

Table 2.2 Experience of expert panel members

Expert Panel member	Years of experience	Experience managing an ED	Experience working as physiotherapist in ED	Experience working as physiotherapist outside ED	Experience in health service policy, governance and/or planning	Participation in higher degree research or extensive research experience
Health service planner and physiotherapist	>10	N	N	Y	Y	N
Consultant in emergency medicine	>10	Y	N	N	Y	N
Research Fellow – Health and welfare statistics agency	>5	N	N	N	Y	Y
UK advanced practice physiotherapist and academic	>10	N	Y	Y	Y	Y

Abbreviations: ED, Emergency Department; UK, United Kingdom;

Table 2.3 Expert Panel feedback categories

Feedback category
Spelling and grammatical errors
Clarity
Addition of indeterminate response option. For example, unsure, don't know
Accuracy
Additional question added
Direct expert panel conflict (keep/remove question)
Conflicts with survey research best practice recommendations
Adaptive questioning /Software branching / display logic
No change

2.3.3 The final survey

The final survey contained the participant information and consent form, inclusion screening questions and the survey questions. The survey contained eight sections, each with a distinct focus. The survey displayed a minimum of 58, to a maximum of 69 closed-answer questions; 12 closed-answer questions presented as one question on a 5-point Likert matrix table, and 14 to 19 open-answer questions. The survey is available in full in Appendix 4: Survey Questions.

2.3.4 Pilot survey

A convenience sample of physiotherapists not currently working in ED (to avoid reducing the potential study sample size) within the co-investigator's (TV) established network in New South Wales and Victoria were invited to participate in the online pilot test of the survey (n=10) (Appendix 5: Pilot panel correspondence). The pilot test aimed to verify understanding, accuracy and acceptability of survey questions and detect any potential software or access issues within the survey platform.^{141,146,151,157} The time taken to complete the survey by the pilot cohort was monitored and compared to research recommendations on survey length.¹⁴⁶

In order to test usability in the pilot, participants role-played hypothetical self-generated scenarios to check survey pathways, branching and display logic.¹⁵⁷ No pilot participants reported concerns with the length of the survey, flow, ease of use, readability or completion time. No software or hardware issues were encountered. Minor spelling errors were corrected prior to progression to data collection phase.

2.4 **Outcomes**

Comprehensive workforce data and the state of ED physiotherapy practice

To provide comprehensive workforce data on the current status of ED physiotherapy practice questions covered three distinct workforce constructs: (1) a comprehensive description of the individuals providing the service, (2) the style and structure of service delivery, and (3) the level of integration of ED physiotherapy into EDs and the wider health system.

Minimum demographic data established age, gender, geographical location of current workplace and length of time spent working in ED. Questions related to educational history included year of entry into the profession, type of university program for initial professional entry and any formal training undertaken by participants to date. An open-text question was used to establish motivational drivers which led to participant engagement with formal post-entry level study. Participant involvement and perceived value of professional development opportunities delivered by various providers was ascertained on a 5-point Likert scale from 0-*No value* to 4-*Very valuable*, with a N/A response for participants who had not engaged with the opportunity listed. An open-text box was provided for participants to detail and rate unlisted professional development opportunities on the same 5-point scale.

Questions related to the structure and models of ED physiotherapy service delivery included the health district/network in which participants provided ED physiotherapy services, the number of hours worked in ED per fortnight, employment classification, and the ED physiotherapy model of care within which participants delivered care. An overall picture of service provision was formed from questions relating to days of ED physiotherapy provision, start and finish times, funding sources, workload priorities and responsibilities outside of ED. ED physiotherapists' integration into the ED team was established, including

professions with whom ED physiotherapists share close working relationships, and the impact and level of various ED stakeholders' understanding of and respect for the ED physiotherapy role.

Scope of practice

Participants' perceptions regarding their current scope of practice were ascertained on a 3-point context-specific attitude scale from 1-*Happy*, 2-*Frustrated by limitations*, 3-*Concerned that some elements are not appropriate for physiotherapists to perform*. Two questions established participant perceptions regarding the alignment of ED physiotherapy primary scope of practice and clinical stream with national health workforce data classifications.¹⁵⁸ A comprehensive description of the current scope of ED physiotherapy practice was established, including engagement and level of autonomy in providing care for which ED physiotherapists are not well known.

Factors which impact and influence ED physiotherapy practice

Open text questions generated an in-depth and comprehensive description of the barriers and facilitators that impact and influence ED physiotherapists and ED physiotherapy practice locally and nationally.

The future of ED physiotherapy

The future of ED physiotherapy practice was established, including the length of time the participant intends to continue to work in ED, perceptions regarding the introduction of extended scope roles for ED physiotherapists, tasks that should be included, and the governing body which is best placed to oversee such a role. Open-text questions established how ED physiotherapy might increase its contribution in the future and generated the barriers and facilitators which may inhibit or support the increased contribution.

2.5 Data collection

Data collection occurred from March 4, 2021 to July 10, 2021. Reminders by email and social media posts were sent at four, eight and 11 weeks to allow participants to respond at their own pace and maximise response rates.^{146,147,151,156} Participants completed all components of the survey on REDCap,^{143,144} which automatically collected data, therefore, decreasing inputting errors, cost and difficulty of data collection.^{145,147} REDCap was monitored regularly to ensure software or platform issues were resolved as they occurred. One question regarding the delivery mode of training for extended scope of practice roles was detected to not display for participants. This issue was not corrected as 35 participants had already completed the survey to some degree at the time this was detected, and therefore this question was not included within the analysis.¹⁵⁷ Once the survey was closed, data was downloaded as a csv file.

2.6 Data Analysis

Analysis of quantitative data was performed using SPSS statistics version 26,¹⁵⁹ and Microsoft excel.¹⁶⁰ Descriptive statistics were used to analyse all quantitative variables, with presentation of categorical variables given as frequency

and proportion, and continuous variables as mean and standard deviation.¹⁶¹ Where appropriate continuous or nominal variables were grouped into class variables and presented in tables as frequency and proportion.¹⁶¹ Univariate analysis using Absolute Risk Reduction (ARR) analysis was performed using PEDro online confidence interval calculator¹⁶² to determine any significant differences in the reported workload priorities between participants with different levels of experience in ED with 95% confidence intervals presented.

Open text responses were analysed using reflexive thematic analysis.¹⁶³ A flexible approach was taken to the thematic analysis, which was focused on being more inductive than deductive due to the need for exploratory research on experiences and perceptions.¹⁶³ Open text data was exported to Microsoft excel, collated, and duplicated (in accordance with ethics requirements). Two researchers (TV and LB) completed separate systematic data coding, then independently generated initial themes from the coded data. The two researchers (TV and LB) came together to review, discuss, and further develop themes that were identified. In most cases, the researchers had generated the same themes from the data. On only a few occasions had the two researchers differing interpretations in which case discussion regarding how or why each researcher had interpreted the comment and if there was a possible bias was undertaken. There were no occasions where a consensus could not be made. Themes were then further discussed, refined, defined, and considered across the data. The raw data, combined coding analysis and agreed themes were then sent to researcher TJ for a third review. TJ reviewed the comments, coding, and themes. TJ agreed with the coding and themes generated with further discussion between TJ and TV utilised to refine the labelling and definition of themes.

To aid data visualisation, horizontal stacked bar chart, clustered bar chart, heatmap, horizontal box-plots and combined box-line graphs were used. Social network analysis (SNA) and causal loop diagrams were developed for the purpose of data visualization and representation. A basic SNA was undertaken to provide a visual diagram of the network of people, roles and organisations with whom ED physiotherapists were identified to interact.^{164,165} Cytoscape¹⁶⁶ an open source software platform was utilized for visualization of the network. A causal loop diagram was created to further explore and interpret the data and was developed from the interpretation of the comments from participants and reviewing of themes across the data.^{167 168,169} Causal loop diagram was created using Venism PLE software.¹⁷⁰

Chapter 3 Results

3.1 Participant Information

3.1.1 Participant recruitment and drop-out

The survey had an overall completion rate of 83.0% (78/94). One hundred and thirty individuals viewed the participant information page of the survey. As presented in Figure 3.1, 28 participants did not meet inclusion criteria and therefore did not progress to the questionnaire. Eight participants did not provide minimum demographic data and were removed from data analysis. Ninety-four physiotherapists currently working in Australian EDs were included in data analysis. Of these there were 16 surveys submitted with some data missing.

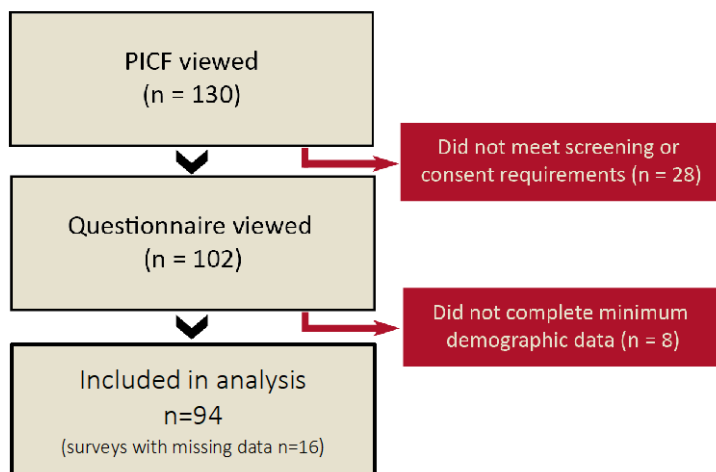


Figure 3.1 Participant flow and inclusion

The number of participants who provided responses to each of the open-text questions are outlined in Appendix 6: Participant Comments, as well as participant responses to open-text questions in full.

3.2 Participant demographics

As presented in Table 3.1, participants were diverse in age, with the largest proportion between 30 and 39 years of age (42.7%, 38/89). Slightly more than half of the participants were female (57.4%, 54/94). Just over a quarter of participants had been working as a physiotherapist for over 20 years (26.6%, 25/94), with the average length of time being 17.1 years (SD 8.9). The majority of participants (84.9%, 79/93) were working in NSW, Victoria or Queensland, with smaller representation from remaining states and territories, with the exception of the Northern Territory with no participant representation. In total, 37 different health district/network EDs across Australia were represented. The majority of participants worked within health districts/networks which contained one or more EDs classified as 'major cities', only 9 participants (10.1%, 9/89) reported as working within a district/network which had an ED classified as outer regional or remote.⁴ The majority of participants (81.1%, 76/92) worked in one ED, less than 20% worked in more than one ED.

Table 3.1 Participant demographical data

Categorical variable (n)		Percentage of participants (n)
Gender (n=94)	Male	41.5 (39)
	Female	57.4 (54)
	Prefer not to say	<5 (less than 5)
	Other	0 (0)
Age (n=89)	25-29	9.0 (8)
	30-34	25.8 (23)
	35-39	16.9 (15)
	40-44	16.9 (15)
	45-49	12.4 (11)
	50-54	12.4 (11)
	≥55	6.7 (6)
Graduation Year (n=94)	1970-1979	2.1 (2)
	1980-1989	5.3 (5)
	1990-1999	19.1 (18)
	2000-2009	44.7 (42)
	2010-2019	28.7 (27)
State of Work (n=93)	Australian Capital Territory	3.2 (3)
	New South Wales	35.5 (33)
	Northern Territory	0 (0)
	Queensland	21.5 (20)
	South Australia	2.2 (2)
	Tasmania	3.2 (3)
	Victoria	28.0 (26)
	Western Australia	6.5 (6)

3.3 Training, education, and professional development

3.3.1 Training, education, and professional development engagement and perceived values

As presented in Table 3.2, participants predominantly entered the physiotherapy profession via a Bachelor degree (79.8%, 75/94). Following entry to the profession participants reported engaging with a variety of university and other formal training programs and assorted professional development opportunities, with the perceived value of training opportunities outlined in Figure 3.2.

Table 3.2 Participant's physiotherapy entry level training program and participation in formal study after entering the profession

Categorical variable (n)		Percentage of participants (n)
Entry Level Program (n=94)	Bachelor degree	79.8(75)
	Masters degree	11.7 (11)
	Masters (Extended) degree	4.3 (4)
	Other	4.3 (4)
Formal study after entering the physiotherapy profession		
Participation in further university study (n=93)	Nil engagement in formal university qualification	46.2 (43)
	Currently completing a further university qualification	9.7 (9)
	Completed a further university qualification	41.9 (39)
	Currently completing a qualification having previously completed a further university qualification	2.2 (2)
Further university qualification or award (n=50)	Clinical Graduate Certificate	12.0 (6)
	Clinical Masters	58.0 (29)
	Higher Degree Research	10.0 (5)
	Public Health and/or Administration	12.0 (6)
	Other	8 (4.0)
Formal Advanced training program (n=92)	Advanced musculoskeletal training program	44.6 (41)
	Nil engagement	53.3 (49)
	Other	2.2 (2)

Fifty participants (53.8%, 50/93) had engaged in formal university education beyond their initial entry degree, with many reporting this to be clinical in nature (70.0%, 35/50). The majority of these participants (33/47, 70.2%) rated participation in further university training to be moderately or very valuable.

Most participants had engaged in hospital-based mentoring (89.9%, 80/89), with the majority rating this as moderately or very valuable (86.4%, 70/81). A similar number of participants (88.9%, 80/90) also reported engaging with hospital-based supervision, with this also found to be moderately or very valuable by many of these participants (77.5%, 62/80). Courses provided by private providers were undertaken by 77 participants (85.5%) and were also rated to be moderately or very valuable by many (83.5%, 66/77).

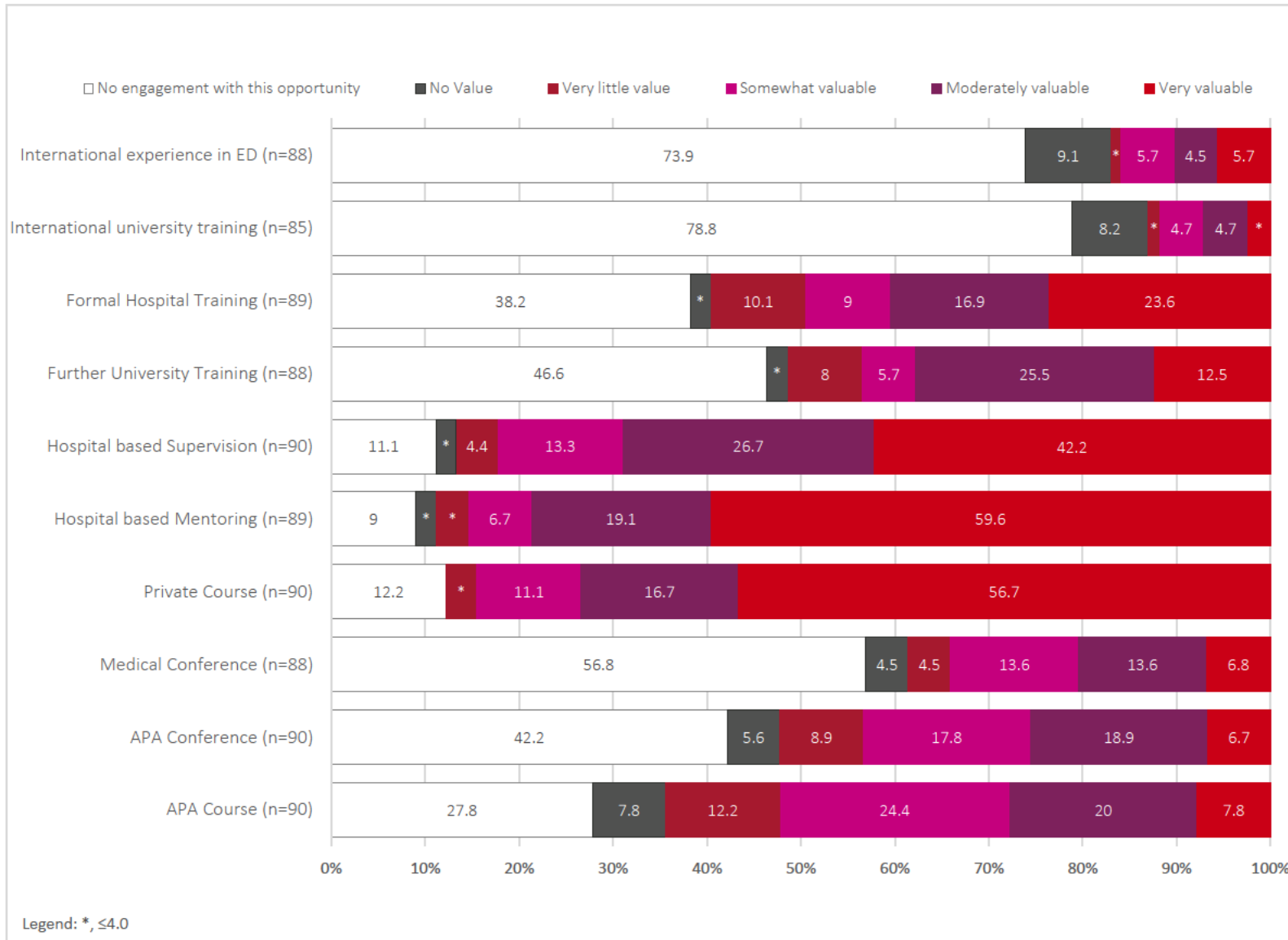


Figure 3.2 Combined stacking bar graph representing participants ratings of professional development opportunities from 'No Value' to 'Very Valuable'

3.3.2 Motivating factors to engagement in further formal study

Four major themes were generated from participant comments on their motivation to participate in further formal study (Table 3.3). Three internal motivational themes were derived - self-improvement, career progression, and to contribute to the health service; and one external motivational theme - organisational pressure. The majority of participants discussed a single theme driving engagement in university study (71.4%, 35/49) and/or advanced musculoskeletal training (84.6%, 33/39). Just over half of participants reported external motivation in the form of organisational pressure for engaging in advanced musculoskeletal training programs (51.3%, 20/39), whilst external motivation was discussed by a smaller proportion of those undertaking university study (16.3%, 8/49).

Table 3.3 Number of participants who discussed each theme within their comments regarding their motivation to engage with further formal university qualifications or an advanced musculoskeletal training program

Classification	Theme	University qualification (n=49)	Advanced musculoskeletal training (n=39)	Demonstrative quotes
		Percentage (n)		
Internal	Self-Improvement	59.2 (29)	38.5 (15)	<i>Committed to being a life long learner and to undertake my role in ED with confidence</i> ^{Participant 51}
	Career Progression	46.9 (23)	20.5 (8)	<i>...Hopes of being eligible for Advanced Scope physio role in ED</i> ^{Participant 9}
	Contribute to Health System	12.2 (6)	5.1 (2)	<i>Limited research on physiotherapy within EDs</i> ^{Participant 65}
External	Organisational pressure	16.3 (8)	51.3 (20)	<i>Condition of employment that I complete this program.</i> ^{Participant 47}

Self-Improvement

Participants described self-improvement as a key motivator for engaging in formal study. There was a desire to further develop clinical skills specifically for work in ED and a general desire to improve as a clinician, learn, expand their knowledge and to engage in a new challenge.

Career Progression

Career progression was an incentive to engage in further formal study, participants also utilised further study to facilitate and explore their career prospects. Participants expressed multiple directions for career progression including pursuing a promotion or permanent employment opportunity, or extending employment to beyond the ED context to within sporting or private practice roles. Participants also sought university qualifications with the hope of guiding the direction of their career when they were unsure of their specific clinical interests.

Contribute to health system

Some participants discussed their ambition to contribute to health system improvement. Participants were motivated to engage in further study to be better positioned to contribute to health system improvement through such means as improving the quality and efficiency of care delivery, or by conducting and/or contributing to research.

Organisational Pressure

Participants were motivated to adhere to employer mandated training requirements or to justify their capabilities. This included mandatory minimum education requirements, or pressure to complete further training to demonstrate their competency.

3.4 Nature and classification of participants role

3.4.1 Nature of employment of participants

The nature of employment of participants is shown in Table 3.4. The majority of participants (78.7%, 74/94) had spent less than 10 years in ED, the average length of time was 7.3 years (SD 5.8), the maximum was 40 years (n=1). The average length of experience participants had before starting work in ED was 10 years (SD 6.9). Nearly half of participants (46.7%, 43/92) were employed as senior clinicians in accordance with relevant state- or territory-based award designation classifications (Appendix 7: Enterprise award classification level) with the majority of participants having no additional managerial or leadership responsibilities as part of their role (93.5%, 87/94).

Participants were predominantly employed in permanent roles in ED (77.4% 72/93). Just over a third of participants worked in ED in a full-time capacity (37.6%, 35/93), nearly half (48.4%, 45/93) worked in ED less than 0.6 full time equivalent per fortnight, with the average being 46.1 hours per fortnight (SD 23.1). Furthermore, over half of participants reported holding additional positions external to their role in ED (55.8%, 48/86), with these external roles predominantly in a clinical physiotherapy capacity (70.8%, 34/48). Almost two-thirds of participants (64.3%, 54/84) reported intending on spending a further 6 years or more working in ED, with the average length of time being 11.4 years (SD 8.4).

Table 3.4 The nature of employment of emergency department physiotherapists

Categorical Variable (n)		Percentage of participants (n)
Years working in ED (n=94)	5 years or less	42.6 (40)
	6 to 10 years	36.2 (34)
	11 to 15 years	16 (15)
	16 or more years	5.3 (5)
Years experience when entering ED (n=93)	5 years or less	29.0 (27)
	6 to 10 years	35.5 (33)
	11 to 15 years	17.2 (16)
	16 or more years	18.3 (17)
Classification of employment in ED (n=93)	Permanent Full Time	33.3 (31)
	Permanent Part Time	44.1 (41)
	Temporary Full Time	<5 (<5)
	Temporary Part Time	12.9 (12)
	Casual	5.4 (5)
Average time per fortnight spent working in ED in full time equivalent* (n=93)	≤0.19	17.2 (16)
	0.20 - 0.39	14.0 (13)
	0.40 - 0.59	17.2 (16)
	0.60 - 0.79	6.5 (6)
	0.80 - 0.99	7.5 (7)
	1.0	37.6 (35)
Designation of employment † (n=92)	Junior clinician	6.5 (6)
	Senior clinician	46.7 (43)
	Advanced clinician	23.9 (22)
	Specialist/consultant clinician	22.8 (21)
Additional Responsibilities (n=93)	Nil	93.5 (87)
	Management or Leadership roles within physiotherapy organisational structure	6.5 (6)
Clinical areas that participants are responsible for physiotherapy service provision outside of ED setting (within the requirements of ED physiotherapist role) (n=94)	ED setting only	54.3 (51)
	Acute Inpatients	15.9 (15)
	Outpatient physiotherapy	21.3 (20)
	Trauma Clinics	6.4 (6)
	Other	2.1 (2)
Employment external to ED (n=86)	ED is only paid position	44.2 (38)
	Physiotherapist outside ED	39.5 (34)
	Health Administration, University employee or Health service management role	16.3 (14)

Categorical Variable (n)		Percentage of participants (n)
Years intended on continuing to work in ED (n=84)	5 years or less	35.7 (30)
	6 to 10 years	31.0 (26)
	11 to 15 years	14.3 (11)
	16 to 20 years	11.9 (10)
	21 to 25 years	2.4 (2)
	26 to 30 years	2.4 (2)
	31 or more years	2.4 (2)

*FTE is classified as 75 hours per fortnight; ‡Appendix 7: Enterprise award classification level. Abbreviations; ED, Emergency Department; SSU, Short Stay Unit

3.4.2 Classification of participants role in ED

Table 3.5 displays the model of care (Figure 1.2) in which participants are employed within ED. Participants were predominantly working in ED as primary contact clinicians (PCP) (76.9%, 60/78) in an autonomous capacity (55.1%, 43/78). Figure 3.3 demonstrates the heterogeneity of participants providing ED physiotherapy coverage, the most common clinician being a primary contact, senior physiotherapist (38.4%, 28/73).

Table 3.5 Classification of participants' (n=78) role in relation to level of autonomy while working as a physiotherapist in emergency department

Classification of role*	Percentage of participants (n)	Classification of PCP role	Percentage of participants (n)
Primary Contact Clinician	76.9 (60)	Autonomous	71.1 (43)
		Collaborative	28.3 (17)
Secondary Contact Clinical	21.8 (17)		
Assessment of older patients only or combination of PCP and ACAT shifts	1.3 (1)		

Abbreviations: PCP, Primary contact clinician; ACAT, aged care assessment team. * Classification definitions can be found in Figure 1.2

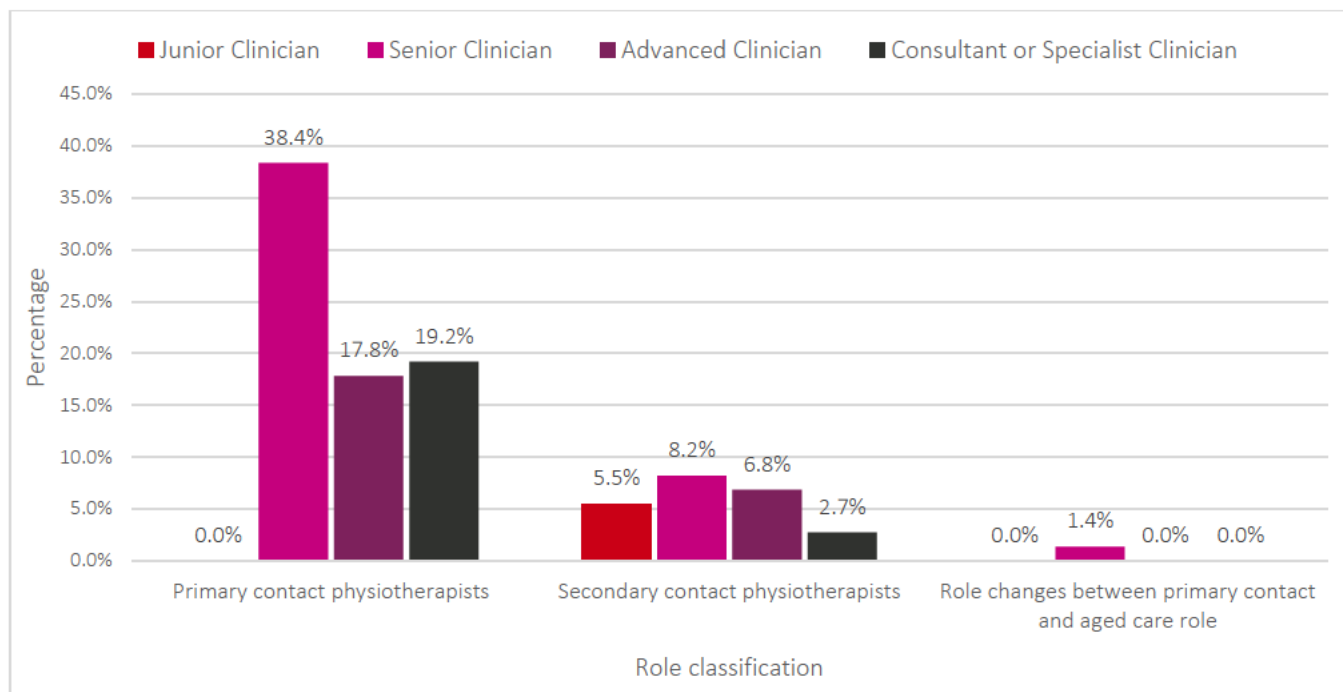


Figure 3.3 Delineation of participants employment with the classification of participants role while providing emergency department physiotherapy service coverage

3.4.3 Classification of principle scope of practice and clinical stream

As outlined in Table 3.6, most participants classified their principal scope of practice as musculoskeletal (90.0%, 81/90), with over half reporting their clinical stream as acute care (53.3%, 48/90).

Table 3.6 Participant's classification of their principal scope of practice and clinical stream of physiotherapy of physiotherapy practice.

Categorical Variable (n)	Practice classifications	Percentage of participants (n)
Classification of principal scope of practice (n=90)	Aged Care	7.8 (7)
	Cardio-Respiratory	0 (0)
	Neurological	0 (0)
	Musculoskeletal	90.0 (81)
	Paediatric	0 (0)
	Sports	0 (0)
	Women's Health	0 (0)
	Other, not listed	0 (0)
	Mixed	2.2 (2)
	Acute Care	53.3 (48)
Classification of clinical stream (n=90)	Aged Care	5.6 (5)
	Primary Care	32.2 (29)
	Rehabilitation	4.4 (4)
	Other	4.4 (4)

3.5 Emergency department service provision and funding sources

3.5.1 Emergency department physiotherapy funding sources

Just over half of the participants (56.3%, 49/87) reported their roles were funded by the physiotherapy department, while a smaller number reported the ED funded their role (16.1%, 14/87) or funding was from a combination of physiotherapy and ED and/or SSU (18.4%, 16/87). The remaining participants (9.2%, 8/87) reported the funding source as unknown to them or from a different source from those listed.

3.5.2 Emergency department physiotherapy service provision

Table 3.7 outlines the number of hours of physiotherapy service provision within ED across a week as reported by participants, with Figure 3.4 displaying the pattern of service provision across a 24-hour period. Most participants (86.2%, 75/87) reported working within a service model that provided seven-day per week physiotherapy coverage to ED, as opposed to weekdays only (13.8% 12/87). Daily service coverage hours were higher on weekdays with a mean of 9.8 hours (SD 2.6-2.7) compared with weekends with a mean of 8.0 hours (SD 4.0). Nearly all participants (97.4%, 76/78) reported there to be physiotherapy service coverage Monday to Friday, between the hours of midday (12:00pm) and 4:00pm. Less than 25% of participants reported physiotherapists being present in ED after 7:00pm on weekends, and there was no physiotherapy service coverage reported by any participant overnight between 10:30pm and 7:00am on any day of the week.

Table 3.7 Physiotherapy presence in Emergency departments per 24-hour period as reported by participants

Day of the week	Number of hour's physiotherapy present in 24-hour period			
	Minimum	Maximum	Mean	SD
Weekdays n=78; Weekends n=75				
Monday	0	15	9.8	2.6
Tuesday	0	15	9.8	2.7
Wednesday	0	15	9.8	2.7
Thursday	0	15	9.8	2.7
Friday	0	15	9.8	2.7
Saturday	0	15	8.0	4.0
Sunday	0	15	8.0	4.0

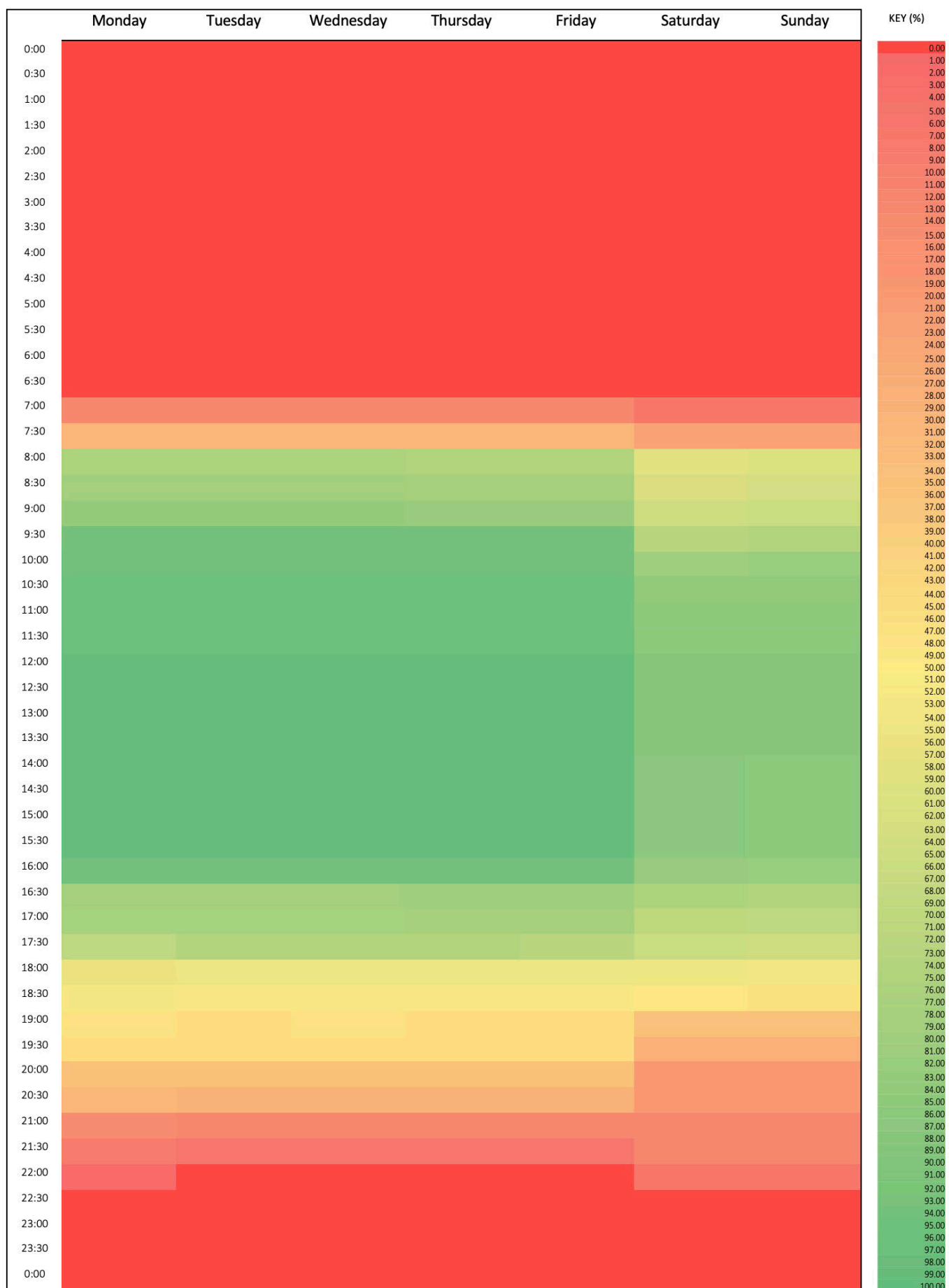


Figure 3.4 Heat map representing percentage of physiotherapists present within emergency department across a 24 hour, 7 day period.

3.6 Participants identified workload priorities

Participant's perceived workload priorities are shown in Table 3.8. Participants identified their highest workload priorities as clearing the triage list (51.2%, 44/86) and stopping inpatient admissions (26.7%, 23/86). Seventy-five percent of participants (63/84) reported helping other wards as their lowest priority.

There was a significant difference in agreeance on the highest workload priority between participants who had spent 5 or less years working in ED compared to those with 6 years or more of experience in ED (ARR -0.31; 95% CI -0.49 to -0.10) with those with greater experience more likely to agree on their highest workload priority (70.8%, 95% CI 56.8% to 81.8%) compared to those with less experience (26.3%, 95% CI 15.0% to 42.0%). The lowest priority identified was more variable with no significant difference noted between the two aforementioned groups (ARR -0.15; 95% CI -0.33 to 0.04).

Table 3.8 Workload priorities as identified by participants

Priority	Categorical Variable Options	5 years or less experience in ED	6 years or more experience in ED	Overall
		Percentage of participants (n)		
Top priority		(n=38)	(n=48)	(n=86)
	Clearing the triage list	26.3 (10)	70.8 (34)	51.2 (44)
	Stopping inpatient admissions	39.5 (15)	16.7 (8)	26.7 (23)
	Performing assessments on older patients, including mobility assessments	13.2 (5)	2.1 (1)	7.0 (6)
	Application of POP	13.2 (5)	2.1 (1)	7.0 (6)
	Whatever the medical officer in charge determines most important at the time	5.3 (2)	8.3 (4)	7.0 (6)
	Other*	2.6 (1)	0.0 (0)	1.2 (1)
Lowest priority		(n=36)	(n=48)	(n=84)
	Helping other wards	66.7 (24)	81.3 (39)	75.0 (63)
	Respiratory assessment/management	8.3 (3)	4.2 (2)	6.0 (5)
	Application of POP	19.4 (7)	12.5 (6)	15.5 (13)
	Other†	5.6 (2)	2.1 (1)	3.6 (3)

*Respiratory assessment/management; ‡ Clearing the triage list, performing assessments on older patients – including mobility assessments, whatever the medical officer in charge determines as most important. Abbreviations: ED, Emergency Department

3.7 Participant involvement and perceptions of ED stakeholders

3.7.1 Participant relationships internal and external to the ED

Participants reported close working relationships with many members of the ED MDT, as outlined in Table 3.9. The most commonly identified close working relationship was with ED staff specialists with this reported by 82.2% of participants (n=72/87).

While completing their role as ED physiotherapists participants reported interacting with a variety of individuals and groups within various spheres of healthcare. As displayed in Figure 3.5, participant interactions included education providers, clinicians, patients, and specific clinical teams. The sociogram represents the number of participants who reported an interaction with or relationship to the individual or group by the size of the corresponding agent node. The structure of individual participant relationship networks varied; the only common relationship demonstrated was that with patients (100%, 94/94). As seen in the figure, the location where participants interacted with mentors, supervisors and patients crossed ED and hospital boundaries, representing interactions occurring in multiple environments and systems.

Table 3.9 Emergency Department multidisciplinary team members with whom participants (n=87) identify to have a close working relationship with.

Multidisciplinary team member – ‘roles’	Percentage of participants (n)
ED Staff Specialist	82.2 (72)
Nurse Practitioner	64.4 (56)
Nurse – Registered Nurse	57.7 (50)
Orthopaedic Practitioner	57.5 (50)
Medical Practitioner working in the Emergency department	57.5 (50)
Occupational Therapist	33.3 (29)
Social Worker	28.7 (25)
Emergency department Navigator	19.5 (17)
Clinical Nurse Unit Manager	18.4 (16)
Nurse – Assistant in Nursing or Enrolled Nurse	16.1 (14)
Discharge Planner	14.9 (13)
Specialist Medical Practitioner (not listed)	12.6 (11)
Paediatric Practitioner	11.5 (10)

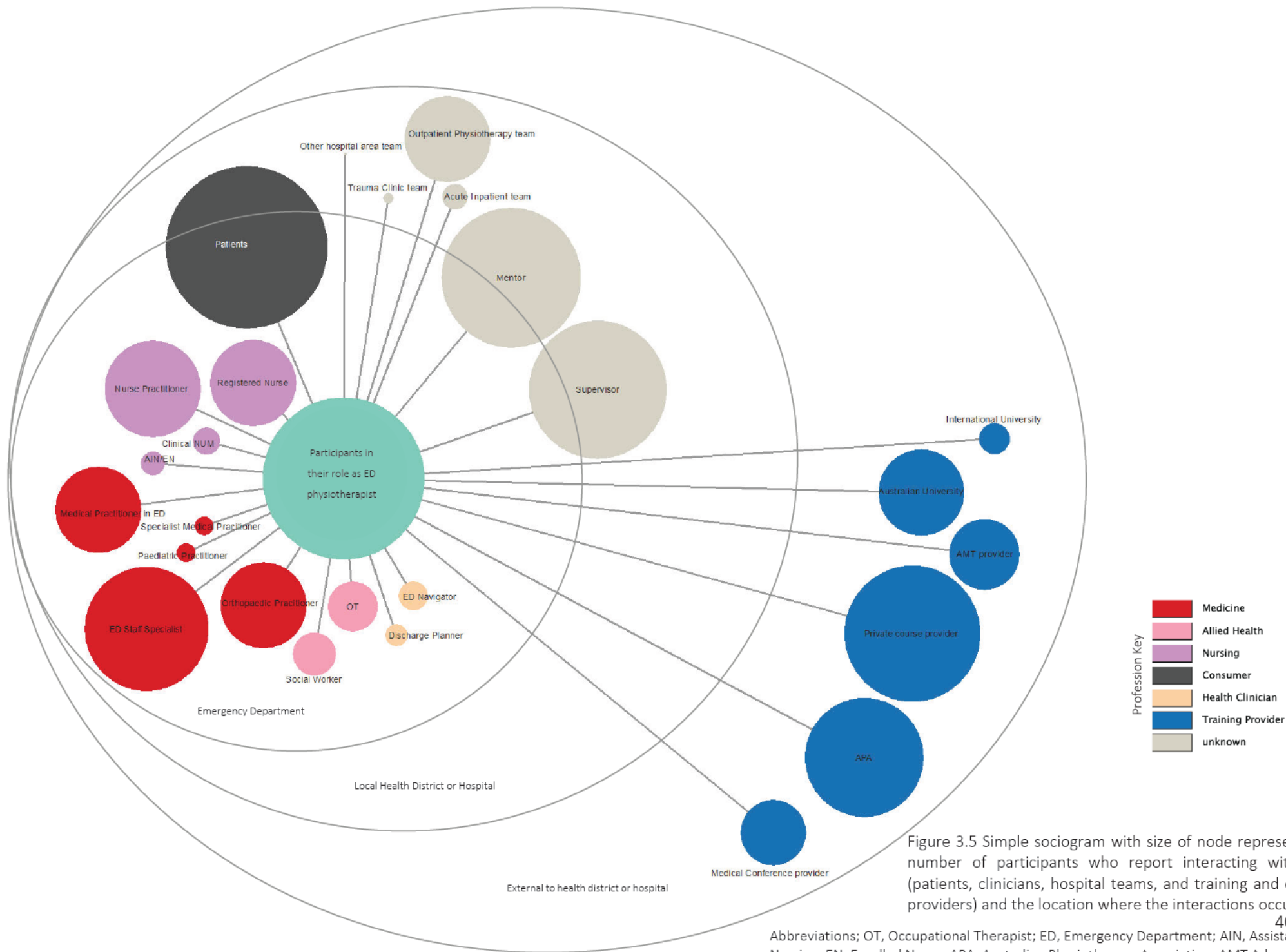


Figure 3.5 Simple sociogram with size of node representing the number of participants who report interacting with agents (patients, clinicians, hospital teams, and training and education providers) and the location where the interactions occur.

3.7.2 Perceived impact of respect and understanding

Overall, ED stakeholders were perceived to have a good understanding (Figure 3.6) and a high level of respect (Figure 3.7) of the physiotherapy role. ED medical specialists were considered to have the highest level of understanding (mean 75.0, SD 18.4) and respect (mean 84.3, SD 14.7). Despite ED patients rated as the lowest for understanding (mean 56.1, SD 17.0), participants reported being well respected by patients (mean 73.6 SD 14.7).

As displayed in Table 3.10, five major themes were generated that related to the impact of stakeholder respect and understanding: ED performance and functioning, effectiveness of ED physiotherapist, ED physiotherapist feelings, ED MDT collaboration, and no or minimal impact. The majority of participant comments discussed a single theme on the impact of stakeholder understanding (79.4%, 54/68) and/or the impact of stakeholder respect (77.6%, 38/49).

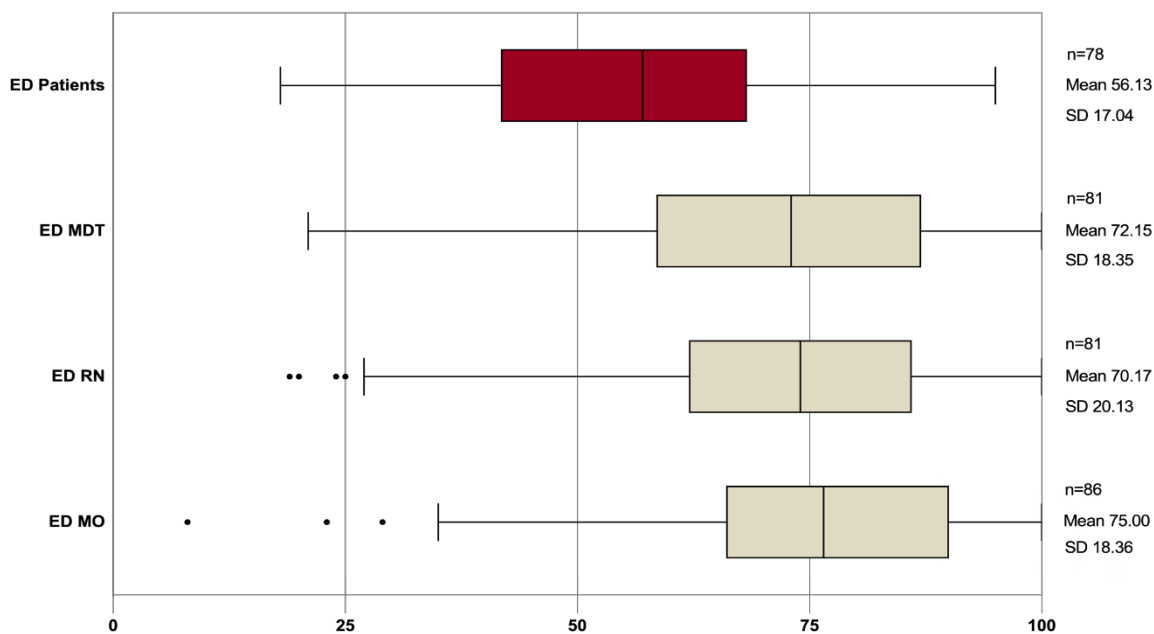


Figure 3.6 Participants rating of various emergency department stakeholders' understanding of participants role on a 100-point scale (0 – extremely misunderstood, 100 – extremely well understood)

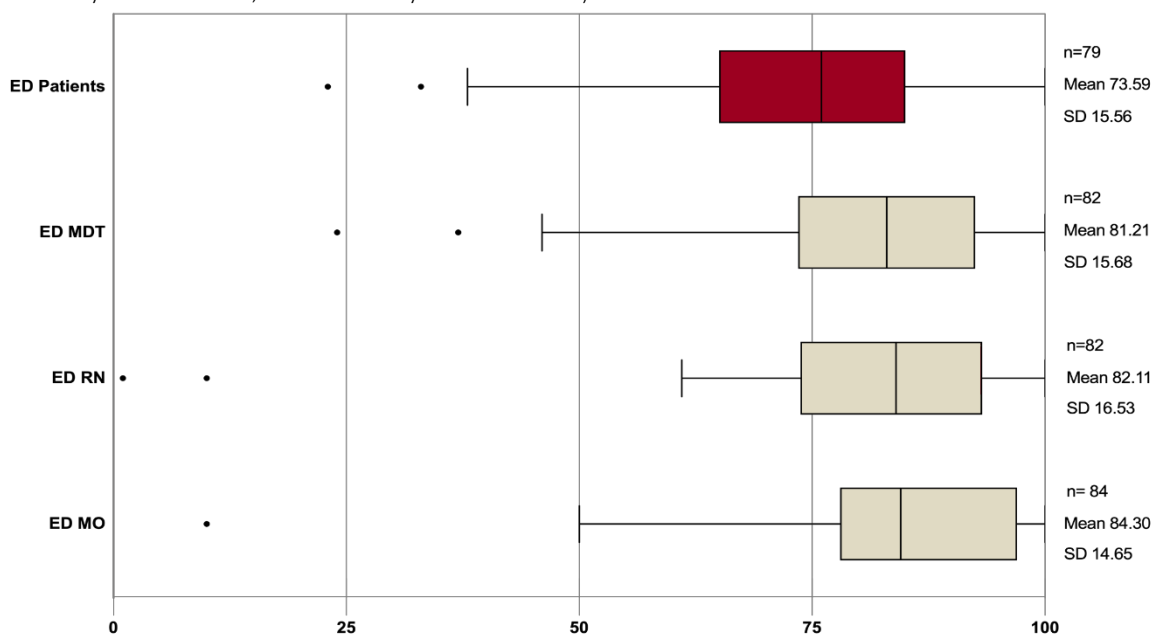


Figure 3.7 Participants rating of various emergency department stakeholders' level of respect of participants role on a 100-point scale (0 – extremely disrespected, 50 – neither respected nor disrespected, 100 – extremely well respected).

Table 3.10 Number of participants who discussed each theme and sub-theme within their comments regarding the impact of stakeholders understanding of, and respect for, the participants role in ED.

	Understanding (n=68)	Respect (n=49)		
Theme	Percentage (n)		Sub-theme	Demonstrative Quotes
Effectiveness of ED physiotherapist	58.8 (40)	32.7 (16)	Time of ED physiotherapist	Spend a lot of time explaining to people how and why the role works. <i>Participant 30</i>
			Appropriateness of referrals	Impacts appropriateness of referrals and timing of referrals- sometimes too late. Patients already in a difficult scenarios can be frustrated with repeating their history or seeing us as "unnecessary", or preferring a doctor. <i>Participant 41</i>
			ED physiotherapists contribution	When new medical officers are on shift who don't fully understand my role or scope, it can slow my work down/slow discharge of patients. <i>Participant 93</i>
			ED physiotherapists autonomy and decision-making capacity	If they lack understanding of the physiotherapy role then they are less likely to engage us in patient management. There have also been times where I have had primary contact with a patient and a doctor has taken over the patient's care without my knowledge as they either don't understand my role or feel that all patients who presented to ED need to see a doctor. <i>Participant 88</i>
			Evolution of ED physiotherapist role	The role has been established for many years and has the support of the senior medical group due to a proven track record in safety and effective, high level clinical care. This allows any expansion of scope to occur without push back. We currently work as a team with nurse practitioners providing care within Fast Track with minimal medical support / supervision <i>Participant 10</i>
ED MDT collaboration	32.4 (22)	53.1 (26)	Inaccurate or conflicting expectations regarding ED physiotherapist	The biggest impact of not understanding our role is unrealistic expectations of what we can provide and achieve. <i>Participant 77</i>
			MDT function in ED	EDMOs and nurses - high level of mutual respect enables us to work well and support each other as needed, to provide a high standard of care, makes the role highly satisfying <i>Participant 60</i>

Theme	Understanding (n=68)	Respect (n=49)	Sub-theme	Demonstrative Quotes
	Percentage (n)			
ED physiotherapists feelings	17.6 (12)	42.9 (21)	Feels valued and respected by stakeholders	I have never felt more valued as a physiotherapist than when I started working in ED. The positive response I receive from colleagues really motivates me in my role. I am really just in the beginning of my ED practice, but I am very keen to progress in this clinical area. <i>Participant 93</i>
			Feels frustrated	For some cases, people do not respect what we say which can be frustrating <i>Participant 13</i>
			Gives job satisfaction	EDMOs and nurses - high level of mutual respect enables us to work well to provide a high standard of care and support each other as needed, makes the role highly satisfying. <i>Participant 61</i>
ED performance and functioning	7.4 (5)	0 (0)	Patient Flow	MOs will prioritise leaving patients in our Fast Track area for me to see during working hours to improve work flow for other patients. Excellent shared working of MDT with ASET and OT in SSU sharing responsibilities. Limitations with RNS sometimes expecting simple jobs (CAM boot fittings, initial mobility assessment etc) to be completed by physio without justification. Falls risk referrals that are inappropriate are a particular challenge. <i>Participant 107</i>

Abbreviations: ED, Emergency Department; MDT, Multidisciplinary team.

Effectiveness of ED physiotherapist

Participants discussed how stakeholder understanding and/or respect influenced the amount of time ED physiotherapists spend justifying and/or explaining their role, the appropriateness of the referrals received, and the level of autonomy of their decision-making. It was identified that stakeholder understanding and/or respect could facilitate or impede the evolution of ED physiotherapy autonomy, scope of practice and involvement with specific patient cohorts or conditions, thereby impacting their overall ability to help ED clear triage lists and reduce hospital admissions.

Emergency department MDT collaboration

Collaboration within the MDT was impacted by stakeholder understanding and respect for the ED physiotherapy role. Participants described a lack of understanding created inaccurate or conflicting expectations placed upon their role with a resulting decrease in cohesion and collaboration amongst MDT members. In contrast, participants noted that where there were good levels of understanding and respect for the ED physiotherapy role this aided teamwork and promoted a multidisciplinary care approach in the ED.

Emergency department physiotherapist feelings

Stakeholder understanding and/or respect impacted participant emotions. Participants expressed feeling valued and well respected by stakeholders and felt supported by the ED MDT. They were motivated in their role, enjoyed their workplace, and were satisfied with their job which was attributed in part to stakeholders' respect of their role. Three participants reported feeling frustrated at a lack of respect, however only one provided further detail: orthopaedic registrars not respecting or valuing their prior experience and expertise.

Emergency department performance and functioning

Five participants felt stakeholder understanding of the ED physiotherapy role directly impacted patient flow and ED performance. Details were limited as to how this was achieved, though it was perceived to be related to optimisation of workload allocation and decreasing unnecessary imaging and admissions.

3.8 Scope of practice

3.8.1 Tasks within current scope of practice

Tasks determined as being within the current scope of practice of the ED physiotherapist by participants are detailed in Table 3.11. All participants (100%, 89/89) reported involvement in the assessment of mobility of patients in ED, 91.1% (81/89) in the assessment of older patients and 89.9% (78/87) in the assessment of paediatric patients. The majority of participants were involved in the assessment of patients with suspected rib fractures (84.2%, 75/89) and/or management of patients with rib fractures (89.9%, 80/89), although the majority of participants reported they assessed and/or managed these individuals within a secondary contact role (74.7%, 56/75 and 77.5%, 62/80 respectively). Just over half of the participants who were involved in joint relocations (58.5%, 31/53) performed the task under the supervision of an ED medical officer. Similarly, most participants who performed fracture reductions (74.0%, 37/50) did so under the supervision of an ED medical officer. Over two-thirds of participants (68.5%, 61/89) were involved in the assessment and/or management of patients presenting with dizziness, the majority (98.4%, 60/61) of which performed the task in a secondary contact role. Less than half of participants were involved with the assessment of wounds (40.4%, 36/89), with a smaller proportion involved in management of wounds (32.6%, 29/89), and just two participants (2.2%) involved in suturing of wounds.

Just over half of participants could independently order x-rays for adults (57.3%, 51/89) and paediatric (52.2%, 46/88) patients, with a larger proportion able to independently interpret the images for each respective cohort (adults: 74.2%, 66/89; paediatrics: 60.9%, 53/89). Some participants were able to order (28.4%, 25/88) and/or independently interpret (21.3%, 19/89) peripheral CT scans. Only a small number of participants were involved in ordering blood tests (9.0%, 8/89), and only four of these participants (50%) were able to interpret blood results within the scope of their role. A small number of participants were involved in the administration of medications (10.1%, 9/89). Over half of participants reported having independent discharge decision making capacity (60.7%, 54/89), with another 27.0% of participants (24/89) able to discharge in consultation with an ED medical officer.

3.8.2 Participant satisfaction with current scope of practice

Half (50.5%, 45/89) of the participants reported being happy with the current scope of their role overall. However, 42 participants (47.2%) reported being frustrated by the limitations of the current scope of their role. Two participants (2.2%) reported being concerned that some elements (not specified) that are within scope were not perceived by them to be appropriate tasks for physiotherapists and therefore, they did not participate in the full scope available to them.

Table 3.11 Autonomy of participants and involvement with specific patient populations when completing designated tasks within the emergency department setting.

Task and patient population (n=89 unless otherwise stated)	Percentage of participants involved in activity (n)	Role that activity is undertaken within and/or level of autonomy in completing task	Percentage of participants (n)
Assessment			
Patients in SSU or ED Extension wards	91.0 (81)	-	-
Elderly/ Older patients [‡]	91.1 (81)	-	-
Paediatric patients* (n=87)	89.7 (78)	In a primary contact role	70.1 (61)
		In a secondary contact role	19.5 (17)
		Not involved as is outside of scope	9.2 (8)
		Not involved as not confident to do so	1.1 (1)
Mobility – Any age	100.0 (89)	In a primary contact role	36.0 (32)
		In a secondary contact role	64.0 (57)
		Not involved as is outside of scope	0 (0)
		Not involved as not confident to do so	0 (0)
Decision making autonomy when discharging a patient from ED	-	Independent - <i>Without supervision or the need to consult with others.</i>	60.7 (54)
	-	In consultation - <i>An ED Medical officer must be consulted prior.</i>	27.0 (24)
	-	Dependent - <i>Patients must be assessed by an ED medical officer prior.</i>	12.4 (11)
Neurological			
Assessment of patients presenting with suspected concussion.	31.5(28)	In a primary contact role	10.1 (9)
		In a secondary contact role	21.3 (19)
		Not involved as is outside of scope	55.1 (49)
		Not involved as not confident to do so	13.5 (12)
Treatment or management of patients with a concussion	30.3(27)	In a primary contact role	4.5 (4)
		In a secondary contact role	25.8 (23)
		Not involved as is outside of scope	56.2 (50)
		Not involved as not confident to do so	13.5 (12)

Task and patient population (n=89 unless otherwise stated)	Percentage of participants involved in activity (n)	Role that activity is undertaken within and/or level of autonomy in completing task	Percentage of participants (n)
Assessment of patients presenting with dizziness of unknown origin	68.5(61)	In a primary contact role	1.1(1)
		In a secondary contact role	67.4(60)
		Not involved as is outside of scope	21.3(19)
		Not involved as not confident to do so	10.1(9)
Management/treatment provision for patients with dizziness	68.5(61)	In a primary contact role	1.1(1)
		In a secondary contact role	67.4(60)
		Not involved as is outside of scope	12.4(11)
		Not involved as not confident to do so	19.1(17)
RESPIRATORY			
Assessment of patients presenting with suspected rib fractures.	84.3(75)	In a primary contact role	21.3 (19)
		In a secondary contact role	62.9 (56)
		Not involved as is outside of scope	14.6 (13)
		Not involved as not confident to do so	1.1 (1)
Delivery of management/treatment for patients with rib fractures in ED.	89.9(80)	In a primary contact role	20.2 (18)
		In a secondary contact role	69.7 (62)
		Not involved as is outside of scope	9.0 (8)
		Not involved as not confident to do so	1.1 (1)
Wounds			
Assessment of wounds	40.4 (36)	In a primary contact role	19.1 (17)
		In a secondary contact role	21.3(19)
		Not involved as is outside of scope	55.1 (49)
		Not involved as not confident to do so	4.5 (4)

Task and patient population (n=89 unless otherwise stated)		Percentage of participants involved in activity (n)	Role that activity is undertaken within and/or level of autonomy in completing task	Percentage of participants (n)
Management/treatment for patients with a wound		32.6 (29)	In a primary contact role	13.5 (12)
			In a secondary contact role	19.1 (17)
			Not involved as is outside of scope	58.4 (52)
			Not involved as not confident to do so	9.0 (8)
Suturing of wounds		2.2 (2)	Independently	0.0 (0)
			Under the supervision or guidance of an ED medical officer	2.2 (2)
			Not involved as is outside of scope	95.5 (85)
			Not involved as not confident to do so	2.2 (2)
Medications				
Administration of medications		10.1 (9)	-	-
Prescription of (n=89) and mechanism (n=6) by which medications are prescribed.		6.7 (6)	Protocol based prescription	50.0 (3)
			Autonomous*	50.0 (3)
Imaging and Investigations				
Ordering X-Rays for patients	Adults	85.4 (76)	Independently	57.3 (51)
			Via local protocol	28.1 (25)
	Paediatrics* (n=88)	75.0 (66)	Independently	52.2 (46)
			Via local protocol	22.7 (20)
Ordering Computerized Tomography (CT) scans	Peripheral (n=88)	28.4 (25)	Independently	11.4 (10)
			Via local protocol	17.0 (15)
	Spinal	12.4 (11)	Independently	1.1 (1)
			Via local protocol	11.2 (10)
Ordering Magnetic Resonance Imaging (MRI)	Peripheral	7.9 (7)	Independently	1.1 (1)
			Via local protocol	6.7 (6)

Task and patient population (n=89 unless otherwise stated)		Percentage of participants involved in activity (n)	Role that activity is undertaken within and/or level of autonomy in completing task	Percentage of participants (n)
Ordering Magnetic Resonance Imaging (MRI)	Spinal	4.5 (4)	Independently	0.0 (0)
			Via local protocol	4.3 (4)
Independent interpretation of imaging	X-Rays: Adults	74.2 (66)	-	-
	X-Rays: Paediatrics‡	60.9 (53)	-	-
	Peripheral CTs	21.3 (19)	-	-
	Spinal MRIs	9.0 (8)	-	-
Ordering of blood tests		9.0 (8)	Independently	3.4 (3)
			Via local protocol	5.6 (5)
Interpretation of blood results (n=8)		50.0(4)	Independently	21.5 (1)
			Via local protocol	37.5 (3)
Orthopaedic Interventions				
Joint relocations / reductions		59.6(53)	Independently	24.7 (22)
			Under the supervision or guidance of an ED medical officer	34.8 (31)
			Not involved as is outside of scope	29.2 (26)
			Not involved as not confident to do so	11.2 (10)
Closed reduction of fractures (n=88)		56.8(50)	Independently	14.8 (13)
			Under the supervision or guidance of an ED medical officer	42.0 (37)
			Not involved as is outside of scope	35.2 (31)
			Not involved as not confident to do so	8.0 (7)

‡This may include specific shifts dedicated to the assessments of older people in ED OR mobility assessment of elderly patients; ¥ Paediatric patient is classified as being under 18 years of age; *either within or external to ethically approved research study protocol.

3.9 Barriers and Facilitators

Five major themes were generated from participant comments on existing facilitators and barriers to their role and the role of ED physiotherapists nationally: Organisational culture, training and credentialling, governance, legislation, and policy, funding, and advocacy and research. The majority of participant discussed one theme within each of the discrete questions: local barriers (70.0%, 42/60), national barriers (63.3%, 31/49), local facilitators (77.8%, 49/63) and national facilitators (80.0%, 20/25). The total number of participants whose comment were within each theme is displayed in Table 3.12.

Organisational culture

Organisational culture was identified as a prominent local and national barrier to the role of the ED physiotherapist. However, organisational culture was also noted by participants as a local and/or national facilitator in their role. Participants discussed the sub-culture within ED; comprising of the relationships between MDT members, collaboration and competition between team members, and stakeholder attitudes towards ED physiotherapists as being crucial to the way the ED role was structured and/or perceived. Participants described supportive hospital executives and clinical managers as positively contributing to organisational culture and a facilitator in their role. Conversely, a lack of support, or executive and managerial staff undervaluing the contribution of ED physiotherapists, were reported as barriers. Attitudes of leaders that were not supportive of the role or where leaders did not have a good understanding of the value of the role were noted by participants to impact the design of the ED physiotherapy service. Participants regarded the individual and personal behaviour of the ED physiotherapists as contributing positively to overall organisational culture.

Training and credentialling

Participants reported a lack of formal training and credentialing as a barrier to their role locally, and to the role of ED physiotherapists nationally. Participants noted the lack of standardised training and credentialling pathways and a lack of specific ED physiotherapy development opportunities as limiting their ability to expand and more clearly define their role. In contrast, participants reported local supervision and training opportunities aid their role.

Governance, legislation, and policies

Participants reported governance, legislation, and/or policies to be a barrier at a local and/or national level, whilst a small number of participants commented on the theme as being a facilitator. Governance structures, national legislation, and local hospital policies which provide rules and boundaries for physiotherapists and specifically ED physiotherapists, were noted more often by participants as a barrier than a facilitator. Participants noted national legislation currently restricts the scope of practice of ED physiotherapists and their access to government schemes, such as Medicare funded investigations. Local hospital policies and

governance structures were also discussed as factors that limit the scope of practice and create hard boundaries which restrict the scope of practice of ED physiotherapists.

Funding

Participants identified funding as a barrier to their role at a local or national level. Participants noted that a lack of adequate funding resulted in a scarcity of permanent ED positions, and the apparent inability of current ED physiotherapy positions to meet ED coverage demands. In contrast, some participants reported funding to be a facilitator with these participants highlighting and commending recent increases in funding to recruit to physiotherapists to primary contact roles.

Advocacy and research

Advocacy and research supporting ED physiotherapy was identified as a facilitator at a local and national level. Advocacy was described as promoting the role of ED physiotherapists to the community and ED stakeholders, which included advocacy conducted by individuals and organisations, and the publication of research which seeks to validate the benefits of the role. Participants noted support from local hospital and external networks, commented on advocacy initiatives promoting ED physiotherapists by the APA, and the general benefit of literature and research in promoting the role.

Table 3.12 Number of participants who discussed each theme within their comments on the factors which act as current barriers and facilitators at a local and national level.

Theme	Barriers		Facilitators		Demonstrative Quote
	Local	National	Local	National	
	(n=60)	(n=49)	(n=63)	(n=25)	
	Percentage (n)				
Organisational culture	38.3 (23)	34.7 (17)	87.3 (55)	20.0 (5)	<i>Initial and continuing support from the executive levels within the organisation and the directors of ED. Also a very support head of physiotherapy over the years has helped. I think in the early phase putting the 'right' staff into ED was a big bonus as it established early confidence.</i> ^{Participant 47}
Training and credentialling	38.3 (23)	50.0 (24)	14.3 (9)	20.0 (5)	<i>availability of training programs for extended scope prescribing and real time ultra sound that provide accreditation for a competency and secondarily having support from district level governance to allow the application of those skills. Limited ability and exposure for junior staff to learn/develop skills required to work in ED e.g. radiography interpretation, plastering, splinting</i> – ^{Participant 48}
Governance, legislation, and policies	35.0 (21)	42.9 (21)	9.5 (6)	12.0 (3)	<i>Limited governance and agreement across states as to what the scope should be, and how to govern this. APA vs APC vs Reg board - given each state award is different, requirements are different to work across different levels eg Grade 3 in Vic requires post grad quals, none required in NSW</i> ^{Participant 54}
Funding	26.7 (16)	16.3 (8)	7.9 (5)	8.0 (2)	<i>Demand and lack of funding maeans innovation is supported.</i> ^{Participant 53}
Advocacy and research	0.0 (0)	0.0 (0)	9.5 (3)	60.0 (15)	<i>Research showing the benefits in patient care and LOS for ED patients seen by physios vs traditional medical model</i> ^{Participant 121}

3.10 The future of ED physiotherapists

3.10.1 Possible contributions ED physiotherapists could make in the future

As displayed in Table 3.13, three themes were generated in participant comments regarding how ED physiotherapists could increase their contribution in the future: expanding scope of practice to increase the depth and breadth of patient management, to improve patient care, and to train health professionals. The majority of participants (83.1%, 54/65) focused their comments on one theme.

Table 3.13 Number of participants who discussed each theme within their comments on how emergency department physiotherapists could contribute further in the future

Theme (n=65)	Percentage (n)	Demonstrative Quote
Expand scope of practice to increase the depth and breadth of patient management	61.5 (40)	I think it should continue to focus on improving our current skills to improve the quality of care in EDs for elderly patients, dizzy patients and those presenting with MSK conditions. <i>Participant 48</i>
Improve patient care	35.4 (23)	Development of pathways with community for chronic pain, aged care and respiratory patients, work with Orthopaedics for pathways for management of simple fractures <i>Participant 42</i>
Training of health professionals	13.8 (9)	Expanding our role so it is universal across all sites. We can be involved more in teaching reading of MSK imaging to medical staff from registrars down as mostly they aren't very confident nor competent in reading imaging. We have a huge role in teaching MSK assessment. <i>Participant 47</i>

Expand scope of practice to increase the depth and breadth of patient management

Participants reported that ED physiotherapists could potentially provide a greater contribution to the ED in the future by expanding the breadth and depth of their scope of practice to increase the number of patients an ED physiotherapist can independently manage. They made specific note of increasing ED physiotherapists involvement in and contribution to patients presenting with dizziness, vestibular conditions, and musculoskeletal conditions. Participants noted ED physiotherapists could further contribute to age specific cohorts of patients, namely senior and paediatric presentations.

Improve patient care

Participants reported that ED physiotherapists could further improve ED performance measures through preventing readmissions, decreasing wait-times, reducing length of stay and

limiting the number of unnecessary imaging investigations. Participants noted that ED physiotherapists could contribute to a greater provision of integrated care by improving the continuity of care for patients between the ED and broader health service.

Training of health professionals

Participants noted that there may be capacity and benefits to expand the indirect contributions of increasing the contribution ED physiotherapists make to the training and skill development of other physiotherapists and ED MDT members. The contribution of ED physiotherapists was also perceived as an important requirement in the creation of a formal and consistent national training pathway to ED physiotherapy specialisation.

3.10.2 Participants perceptions of introducing extended scope of ED practice.

Participants were asked to detail their agreeance with the introduction of extended scope of practice for ED physiotherapy in the future, and governing body they believe to be most appropriate to manage this process (Table 3.14). The majority (87.1%, 74/85) of participants agreed with the notion of introducing extended scope roles within a formalised training pathway. Some participants identified that extended scope should be governed by the Australian Physiotherapy Council (APC) (42.0%, 34/81), while 26 (32.1%) believed extended scope physiotherapy should be governed by Australasian College of Emergency Medicine (ACEM). The majority (84.7%, 71/84) of participants indicated an increase in Medicare coverage of physiotherapist requested medical imaging and limited prescribing rights (86.9%, 73/84) be included in the extended scope role. (Table 3.15)

Table 3.14 Participants perceptions on training requirements when considering the introduction of extended scope emergency department physiotherapy roles and appropriate governing body.

Categorical option	Percentage of participants (n)
Introduction and training requirement	n=85
Agree - without formal training beyond current standardised pre-registration training.	11.8 (10)
Agree - with a formal training specialisation pathway	87.1 (74)
Disagree – Emergency Department physiotherapists should stay within their current scope	1.2 (1)
Governing Organisation	n=81
Australian Physiotherapy Council	42.0 (34)
Australian Physiotherapy Association	14.8 (12)
Australian College of Physiotherapists	6.2 (5)
Australasian College of Emergency Medicine	32.1 (26)
Combination of the above or Other	4.8 (4)

Table 3.15 Participants (n=84) agreeance with the inclusion of specific tasks when considering the scope of practice in context of possible introduction of extended scope emergency department physiotherapy roles.

Tasks that should be included in extended scope of practice roles	Percentage of participants (n)
Limited medication prescription rights of analgesia and anti-inflammatories	86.9 (73)
Referral and ordering of medical imaging (MRI and CT) covered by Medicare (all musculoskeletal)	84.5 (71)
Independent joint relocations/reductions	84.5 (71)
Limited medication administration rights of analgesia and anti-inflammatories	79.8 (67)
Independent interpretation of medical imaging (all musculoskeletal imaging)	79.8 (67)
Independent fracture reductions	72.6 (61)
Independently manage a wound in ED (glue or stitch)	60.7 (51)
Local anaesthetic administration	59.5 (50)
Administer Nitros Oxide	52.4 (44)
Independent assessment and management of dizziness of unknown origin	38.1 (32)
Limited medication prescription of antibiotics	29.8 (25)
Independently debride a wound	29.8 (25)
Joint Aspirations	28.6 (24)
Lead/Perform Beirs Block	27.4 (23)
Other	4.8 (4)

3.10.3 Increased contribution of ED physiotherapists in the future: Strategies to enable and barriers to overcome

As displayed in Table 3.16, six themes were generated from participant comments regarding the strategies to enable and barriers to overcome in order to facilitate an increased contribution by ED physiotherapists in the future. Participant comments were spread across themes, displaying a diversity of perceived barriers and enabling strategies.

Table 3.16 Number of participants who discussed each theme within their comments on facilitators to aid, and barriers to overcome emergency department physiotherapists increased contribution in the future.

	Enablers (n=58)	Barriers (n=45)	
Theme	Percentage (n)		Demonstrative Quote
Training opportunities and specialisation pathways	55.2 (32)	11.1 (5)	Clear Standardisation & education or training schedule to benchmark Physiotherapy skillset & establish clear Physiotherapy capacity to contribute to the environment. <small>Participant 29</small>
Organisational culture	25.9 (15)	48.9 (22)	Professional perception change - I have seen that Physiotherapy under-values itself and often unnecessarily boxes itself in, and the main barrier to extending scope of practice is physiotherapists themselves - managers and clinicians: "ohhh . . . We can't do that. That's not what physiotherapists do". <small>Participant 91</small>
Governance, legislation and policies	24.1 (14)	35.6 (16)	Standardised education/competency assessment <small>Participant 10</small> Legislative change for prescribing and injecting <small>Participant 1</small>
Funding	15.5 (9)	28.9 (13)	Medicare rebates for imaging and consults <small>Participant 11</small>
Advocacy	20.7 (12)	0.0 (0)	Advocacy <small>Participant 11</small> Increased public awareness of the primary contact role <small>Participant 95</small>
Medicolegal Risks	0.0 (0)	15.6 (7)	If there is no safety net or support system to help manage the increased or perceived increase in personal risk/ liability in the Emergent environment (including appropriate training/ benchmarking) it will likely impact on the willingness of Physiotherapists to expand and actively contribute. Especially extended scope practice. <small>Participant 29</small>

Training opportunities and specialisation

Participants reported training opportunities, including the development of a nationally standardised training and specialisation pathway, as a facilitator to ED physiotherapists being able to further contribute to the health system. They noted the need for educational opportunities that were accessible in respect to time, financial expenditure, and the logistics of working and studying concurrently. They reported the need for a clear national benchmark of entrustable professional activities and noted that any titling or specialisation would require a specific ED pathway.

Participants reported current training pathways to be a barrier to any future enhancement of ED physiotherapy contribution to EDs. They reported the absence of clinical supervision from ED and orthopaedic consultants, in addition to a shortage of specific or relevant ED physiotherapy professional education opportunities as limiting ED physiotherapist's ability to advance as clinicians.

Organisational culture

Participants felt a change in ED stakeholder perceptions would enable an increased contribution by ED physiotherapists. They reported a need for specific clinicians within ED to change their approach to workload allocations and scope of practice, including ED physiotherapists themselves. Sponsorship from various levels of hospital management including physiotherapy managers, ED directors, and hospital executives was perceived as necessary to enact any change or increased contribution.

Participants reported a scarcity in suitably skilled clinicians as a barrier to increasing ED physiotherapists contribution to EDs. They questioned physiotherapists' willingness to work outside usual business hours and assume the risks associated with working in an ED. Participants reported that physiotherapists held preconceived ideas that ED is an intimidating, highly demanding, and difficult area to work in. Participants stated that these perceptions needed to be challenged and that introducing physiotherapists to the reality of working in ED in a supported and structured manner would facilitate change.

Participants reported ED stakeholder perceptions, including the competitive environment between nurse practitioners, medical officers, and physiotherapists as a barrier for the evolution of ED physiotherapy. Participants reported stakeholders' unwillingness to challenge traditional professional roles, fixed mindsets, and a lack of acceptance of new roles as barriers to increasing ED physiotherapists contribution. They surmised that a change in focus towards a collaborative, multidisciplinary, person-centred approach to care in ED would be required to allow ED physiotherapists to take a larger, more autonomous role in ED.

Governance, legislation, and policies

Participants reported a need to pursue legislative change to allow physiotherapists' prescribing and injecting rights, alongside financial reimbursement for physiotherapy services for patients under the PBS. Participants reported the need to provide consistent ED physiotherapy coverage, facilitated by the introduction of policies which dictate minimum ED physiotherapy staffing across a seven-day period as a national standard.

Maintaining the current governance structure and legislative restrictions on scope of practice into the future would act as a barrier to ED physiotherapy increasing their contribution. They noted the reporting structure of ED physiotherapists and the discrepancy between reporting lines and funding advocacy and that ED directors, the AMA and the ACEM would continue to favour a traditional medical model in ED as opposed to advocating for increased ED physiotherapy service provision and scope.

Funding

Participants noted a need for increased local funding to allow for teaching time within the role and to expand physiotherapy coverage hours. Participants reported a need for national funding reforms, including Medicare rebates for imaging requests ordered by physiotherapists. Some participants were not specific to the origin or distribution of any increased financial support, simply that an increase was required.

Participants stated limited funding for physiotherapists will act as a barrier to ED physiotherapists increasing their contribution in the future. Participants noted a disparity in funding for allied health, including physiotherapy, compared to nursing and medical staff during planning for clinical service development, and that funding disparities would continue to be a barrier for ED physiotherapists.

Advocacy

Participants noted the need for further advocacy for ED physiotherapists both through continued publication of high-quality research, demonstrating the clinical and economic benefits of the role, and from national bodies such as the APA and ACEM. Participants reported increased efforts to educate ED stakeholders and public awareness campaigns promoting ED physiotherapy would be required for any evolution in ED physiotherapy to occur.

Medicolegal risks

Medicolegal risks were felt to be a barrier to physiotherapists willingness to increase their contribution in the future. Participants reported there being no safety net, no legally pre-defined roles, safety concerns, and questions surrounding professional indemnity as posing a substantial risk to ED physiotherapists should they increase their contribution to the ED.

Chapter 4 Discussion

This thesis has provided a detailed snapshot of the current Australian ED physiotherapy workforce, tasks which ED physiotherapists perform within their current scope of practice, the structure of ED physiotherapy service provision, and ED physiotherapists' perceptions regarding present and future ED physiotherapy practice. This final chapter explores the key findings of this research in the context of the existing understanding of ED physiotherapy and the Australian health system within which ED physiotherapy exists.

4.1 Key Findings

1. Emergency department physiotherapists are experienced and highly trained clinicians
2. Emergency department physiotherapists are predominantly primary contact clinicians with a generalist scope of practice, providing seven-day coverage to EDs across mainly daytime hours
3. Emergency Department physiotherapists interact with a variety of ED stakeholders who respect and understand their role.
4. Several key levers at an individual, local health system and national level were identified that were perceived to negatively or positively impact the contribution of ED physiotherapy.
5. Emergency department physiotherapists perceive several key enablers to support the evolution of the ED physiotherapy role to increase future contribution to the health service.

4.1.1 Emergency Department physiotherapists are experienced and highly trained clinicians

The current ED physiotherapy workforce has an average of 17 years of experience working as a physiotherapist, four years more than the general population of physiotherapists working in Australia.¹⁷¹ This study has found that the majority of ED physiotherapists began working in ED at least 5 years after entering the profession (71.0%, 66/93), which is consistent with previous research.^{93,96,98,106,108,109} Over half of the participants (57.5%, 54/94) reported working in ED for six years or more, and almost two thirds of participants (64.3%, 54/84) intend to spend at least a further 6 years working in ED. This suggests ED attracts and retains experienced physiotherapists, with experience levels having the potential to increase in the coming years as the current workforce gains more experience.

ED physiotherapists engage in various formal and informal learning opportunities. Just over half (53.7%, 50/93) had participated in post-entry university education, most of which is clinically focused (70.9%, 35/50), and just under half (44.6%, 41/92) had participated in an advanced musculoskeletal training program. The popularity of the advanced musculoskeletal program and external pressure felt by participants to partake is likely contributed to by Victoria's advanced musculoskeletal physiotherapy clinical education framework, which stipulates completion of the framework competency pathway to maintain employment in Victorian advanced practice musculoskeletal roles.^{123,172} In addition to organisational pressure, participants shared common motivations with

international physiotherapists and nurses in completing post-entry level study; the desire for self-improvement, to learn and develop as clinical skills, to progress their career, and improve the care delivered to patients.¹⁷³⁻¹⁷⁷

Participants reported engaging in an array of training courses and conferences offered by a variety of providers and gained personalised support via mentoring and supervision, building upon evidence showing ED physiotherapists to be highly trained clinicians.^{91,93,99,105,108} Consistent with previous findings, the lack of an ED specific specialisation pathway or training program is seen as a barrier.^{2,178} Nonetheless, professional development opportunities are identified as facilitators to the ED physiotherapy role and were valued by participants. Supervision and mentoring were also found to be highly valued by participants, a perspective shared by doctors, nurses and other physiotherapists alike.¹⁷⁹⁻¹⁸⁴

4.1.2 Emergency department physiotherapists are predominantly primary contact clinicians with a generalist scope of practice, providing seven-day coverage to EDs across mainly daytime hours.

This study showed ED physiotherapists are predominantly classified as primary contact physiotherapists (PCP) who view their principle area of practice as musculoskeletal and who have involvement with patients of all ages, including paediatrics. Despite ED physiotherapists describing their main focus to be musculoskeletal conditions, this study showed they are involved in assessing and treating conditions across almost all body systems including concussion, dizziness, rib fractures, wounds and functional decline. This finding is in keeping with previous Australian research, which demonstrated ED physiotherapists to be similarly involved with a wide range of patient cohorts.^{88,89,109,111,112,121,129,131} Furthermore, just over half of the participants who identified as PCP were classified as autonomous clinicians. Investigating the activities and the autonomy with which they perform these tasks further, it is apparent they operate in both autonomous and collaborative capacities dependent on the care required and do so with a wide range of patients.

Participants in this study reported predominantly holding permanent ED positions as senior or advanced clinicians, however they did tend to work less than full-time in these roles. This demonstrates a shift in Australian ED physiotherapist employment from a previous study which reported ED physiotherapists to be predominantly employed in ED full-time.⁸⁹ The increased size and percentage of part-time arrangements in the ED physiotherapy workforce aligns with national workforce trends of allied health, nurses, midwives and dental staff since 2013,¹⁸⁵ and with the overall growth of the hospital workforce¹⁸⁶. Since previous investigations into the ED physiotherapy workforce there has been an increase in evidence to support the benefits of flexible work arrangements on increasing productivity, engagement, performance, and sustainability.¹⁸⁷ The increase in part-time employment in ED may reflect an increased uptake in flexible employment options, which aligns with recommendations to improve equality and sustainability, and decrease attrition rates within the medical workforce and businesses generally.¹⁸⁷⁻¹⁹¹

Participants in this study indicate ED physiotherapy services typically provide seven-day coverage to ED (86.2%, 75/87), with this service predominantly funded by the physiotherapy department (56.3%, 49/87). Services ranged from 'referral only' to providing 15 hours of coverage per day, starting and finishing anywhere between 7:00am and 10:30pm. For physiotherapists working in newly developed or growing services that provide less than 75 hours of ED coverage per fortnight, it may be that there is not yet adequate funding to support a full-time position. This may contribute to the increased percentage of part-time ED physiotherapy roles, ED physiotherapists with clinical responsibilities in other areas, and/or participants with separate employment outside of ED. Furthermore, providing a seven-day service which spans 15 hours or more does not align with a typical work structure for physiotherapists and would require a greater number of staff with the requisite skillset to work in ED.¹⁹² Consequently, novel staffing employment profiles may have need to be implemented to provide a more extended service, build redundancy and capacity into the staffing profile, and maintain safe working conditions for staff.¹⁹³

4.1.3 Emergency Department physiotherapists interact with a variety of ED stakeholders who respect and understand their role.

Participants in this study indicate that ED physiotherapists are generally well integrated into the ED team, have close working relationships with medical staff, nurses and allied health staff, feel valued and respected by the team, and share common priorities in addressing ED performance targets. ED physiotherapists' perceptions of being well respected and understood led them to feel like valued members of the team, an improvement from earlier studies.^{89,114,115} Correlating with previous research this sense of belonging continues to contribute to job satisfaction, increases motivation at work and improves interprofessional collaboration.^{194,195} However, where inaccurate or conflicting expectations regarding the role exist, ED team collaboration diminished.^{178,194,196}

In comparison to previous research, understanding of the ED physiotherapy role by ED medical officers, nurses and the wider ED team appears to have improved as they were reported to have a good understanding by participants in this study.^{57,113,178} The shared understanding and improved integration of ED physiotherapists was found to positively influence ED physiotherapist's experience of working in ED and their ability to contribute. Improvements in the integration, respect, and understanding of the ED physiotherapist role within ED teams is significant for the ongoing evolution of ED physiotherapy as interdisciplinary and multidisciplinary teams have been shown to decrease clinical errors, reduce LoS, improve patient outcomes, and increase job satisfaction and staff wellbeing.^{38,86,194-202}

There is recognition that patients continue to have a more limited understanding of the ED physiotherapy role, which is consistent with Anaf and Sheppard's (2010) conclusion that the ED physiotherapy role appeared 'lost in translation'.^{120,127} Consequently, improvements are needed as ED physiotherapists continue to spend time explaining their role and/or receive inappropriate referrals which causes frustration and feelings of restricted productivity, which is consistent with previous investigations despite the increasing maturity of the ED physiotherapy roles.^{57,89,113,114,178}

4.1.4 Several key levers at an individual, local health system and national level were identified that can negatively or positively impact the contribution of ED physiotherapy.

This present study shows ED physiotherapy practice to be influenced and impacted upon by a variety of levers at an individual, local health system and national level (Figure 4.1). Furthermore, as demonstrated by Figure 4.2, overall contribution of ED physiotherapy is susceptible to influence from non-linear interactions of these various levers across all system levels. The complexity and non-linear feedback loops which influence and interact with ED physiotherapy practice, correlates with the complexity of healthcare delivery and health systems internationally.²⁰³⁻²⁰⁶

At an individual level, the characteristics, skills and behaviours of ED physiotherapists influence were perceived to ED physiotherapy contribution, integration into the ED team and consequently organisational culture. This finding correlates with existing literature which details the positive effect that capable clinicians with good communication skills can have on the adoption and acceptance of ED physiotherapists,^{57,114,115,130,207} advanced and extended scope roles,^{70,178} and interdisciplinary models of care in the community.^{208,209}

Training and local supervision availability was found to support ED physiotherapists to increase their capabilities however, similarly to the experiences of occupational therapists expanding their scope within the intensive care unit,²¹⁰ the lack of a formalised and specific training program, pathway, or supervision structure was thought to inhibit the ability of staff to perform the tasks required. The absence of an ED training pathway was also seen as an issue which impacts the local health systems ability to recruit appropriately skilled clinicians and to clearly define or expand the ED physiotherapy role. A lack of formal training pathways has previously been identified to limit role clarity, and workforce depth and sustainability in ED physiotherapy^{57,99,113,130,211} and extended scope physiotherapy.^{72,178} The same issue has been reported to also effect nurse practitioners,^{212,213} pharmacists,²¹⁴ and paramedics.⁷³

Organisational culture was unsurprisingly found to be a key factor influencing ED physiotherapy practice. Studies which have investigated factors which influence the successful adoption of interprofessional models of care, and advanced and extended scope of practice roles found similar hospital level barriers to those identified by participants in this study. Rural health professionals, nurse practitioners, allied health clinicians and medical staff similarly reported limited resources^{194,197,215} and funding provision,^{70,72,73,209,211,215} the attitudes of medical and nursing staff,^{70,194 213,216} and conflicting views between clinicians,^{194,215,216} to hinder the uptake of new roles and new models of care. Conversely, trust,^{114,115,217,218} clear professional roles,^{70,71,194} and interprofessional collaboration^{70,71,115,208,211,217} enhance ED physiotherapists' contribution, positively contribute to organisational culture, facilitate interprofessional communication in emergency situations and enable the adoption of advanced practice roles. Hospital leadership roles and managers who understand and support ED physiotherapy and

advanced practice roles^{70,211} were viewed as facilitators however, a lack of support combined with local hospital policies restricted the evolution of ED physiotherapists⁵⁷ and nurse practitioner^{213,219} roles alike.

Legislation which restricts physiotherapists from prescribing or administering medications was identified by participants as a national barrier to the role of the ED physiotherapist, which correlates with the views of general Australian physiotherapists and physiotherapy students.^{69,126} The inability to refer patients for imaging using Medicare subsidised schemes was also identified as a barrier which restricted ED physiotherapists contribution to the ED. Local and national policy which restrict physiotherapist imaging requests is a common barrier experienced by other advanced practice physiotherapists.⁷⁰ Research demonstrating the value of ED physiotherapy alongside advocacy campaigns from national bodies was established as a facilitator to the role, building upon evidence showing professional bodies to be vital in advocating for advancing clinical roles.^{2,71,72,125,129,131,220}

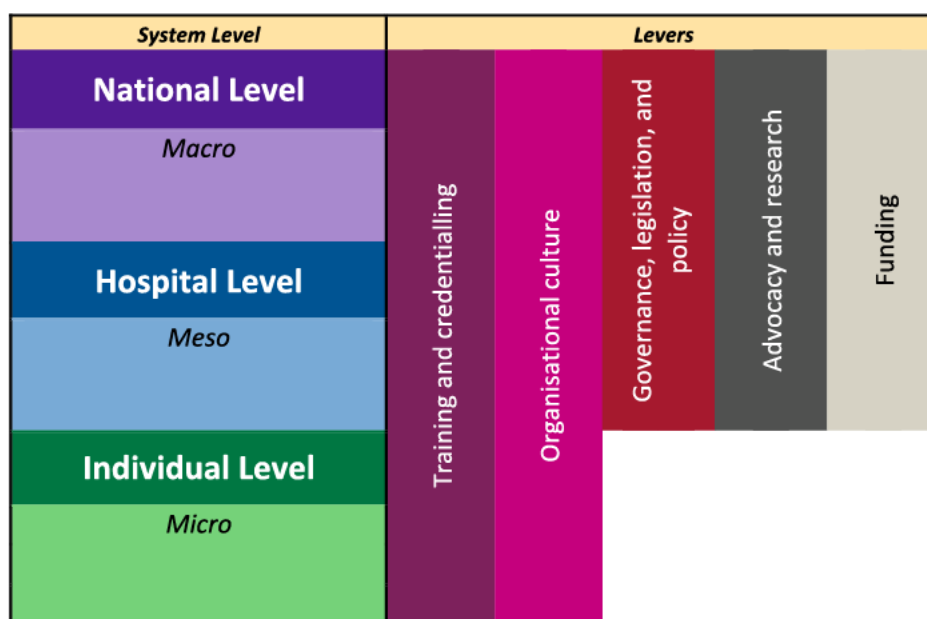
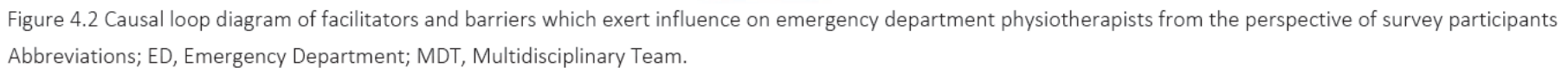


Figure 4.1 Factors which influence ED physiotherapy aligned with health system levels



4.1.5 Emergency department physiotherapists perceive several key enablers to support the evolution of the ED physiotherapy role to increase future contribution to the health service.

The present study has shown a divide in ED physiotherapists' feelings regarding their current scope of practice. Just over half (50.5%, 45/89) were happy with the current scope, however many (47.2%, 42/89) were frustrated by the limitations. Interestingly, despite these differences, almost all participants (98.8%, 84/85) were in support of introducing an extended scope of practice role for ED physiotherapists, which correlates with the findings from Kilner and Sheppard (2010)⁸⁹ over a decade prior. Despite the Australian College of Physiotherapists being the professional body responsible for developing and governing career pathways to physiotherapy specialisation,⁵² only five participants (6.2%, 5/81) felt the college should govern ED extended scope roles. Irrespective of a greater implementation of extended scope roles, participants felt ED physiotherapists could increase their contribution in the future by fully leveraging the established benefits of ED physiotherapy to improve the care provided to patients, increasing the depth and breadth of patient management, and increasing their contribution to the training of health professionals. As demonstrated in Figure 4.3 the key enablers required to support the evolution of ED physiotherapy span all levels of healthcare. Much like the factors which impact ED physiotherapy practice currently, the evolution of ED physiotherapy is integrated, intertwined and dependant on the local ED stakeholder attitudes, local health system culture, local and national health system policies and legislations, and the professional bodies which represent and govern medicine and physiotherapy.

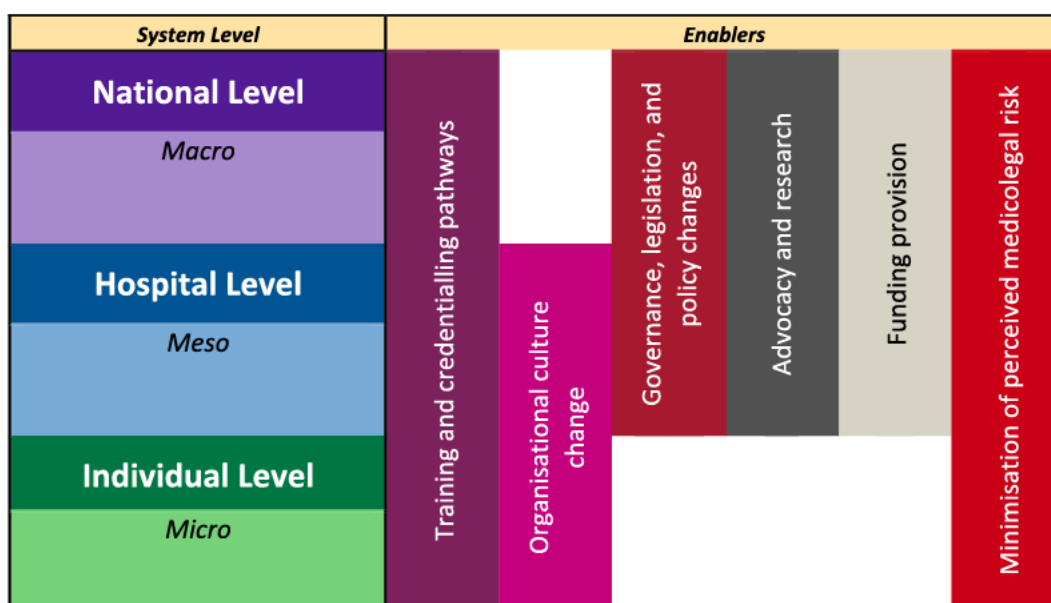


Figure 4.3 Enablers identified as crucial to evolution of ED physiotherapy role

Participants considered ED physiotherapists to have the capacity to more fully utilise, and build upon, the established benefits of ED physiotherapy to support a decrease in ED patient wait times and LoS,^{90-92,96-101,105,106,108} and increasing the quality of musculoskeletal care provided.²²¹ Patient groups, such as paediatrics, older adults, patients experiencing dizziness, and patients with wounds were considered to be examples of patients that would benefit from an expansion of the breadth and depth of ED physiotherapy involvement in their management. Allowing the involvement of physiotherapists in the interdisciplinary care of a broader range of patients in ED could lead to improved patient outcomes, which has been found to be associated with this type of care approach.^{38,121,199} Participants from this study also believed ED physiotherapists to have the ability to improve the

continuity of care for patients by increasing communication and collaboration between ED and clinicians working in the community which correlates with previously reported patient and clinician perceptions.¹²⁷

In alignment with existing research, participants viewed physiotherapists' ability to autonomously order various imaging investigations, perform orthopaedic procedures,⁸⁹ and prescribe and administer medications^{69,89} as integral to the evolution of physiotherapy. Many of the same tasks were identified by participants as relevant to include within an ED physiotherapy extended scope of practice role. Changes to existing legislation and local policies regarding physiotherapist prescribing and imaging rights have previously been identified as strong enablers to the advancement of physiotherapy.^{71,178,222}

The creation of a nationally standardised ED training and specialisation pathway and increased availability of workplace training and supervision were noted by participants to be vital in supporting the progression of ED physiotherapy. This finding correlates with previous literature which has identified the importance of an accessible and coordinated national training pathway with locally available supervision for ED physiotherapy practice,^{93,99,122,131} in line with those for medical specialisation,^{191,223-225} and advanced practice roles generally.⁷³ The current study has also shown that ED physiotherapists believe they can increase their contribution to the creation of an ED specialisation pathway and to the training of local health professionals, which is supported by existing research showing the value of interprofessional education on professional relationships, appreciation, trust and person-centred care delivery.²²⁶⁻²³⁰ Furthermore, an ED specialisation pathway was identified as one enabling solution to decrease trepidation of physiotherapists commencing ED roles and the perceived medicolegal risks associated with ED physiotherapy. However, the lack of agreement observed between ED physiotherapists regarding the most appropriate professional body to govern extended scope roles suggests strategies to improve and align ED physiotherapist's perceptions of regulatory structures and the roles of professional bodies are required to mitigate any potential conflict during the introduction of an extended scope of practice pathways.¹³⁵

Improving ED physiotherapy role clarity, professional indemnity insurance and medicolegal risk management were also identified as necessary to support ED physiotherapy progression and attract physiotherapists into these roles. Existing literature has shown that clearly defined roles may facilitate the successful adoption of expanded or advanced practice roles, integration of interprofessional models of care and a greater level of collaborative practice.^{2,57,70,71,113,194,211,214,226,230} Participants from this study identified a collaborative approach to be key to ED physiotherapists' increasing their contribution and overcoming obstructive organisational culture. Furthermore, research that incorporates the broad generalist role of the ED physiotherapist in conjunction with advocacy and public awareness campaigns promoted and supported by national bodies, such as ACEM, the AMA and the APA, were identified as vital to generating local support,^{73,207,211} challenging the existing status quo and increasing an interdisciplinary approach to care.^{222,228,231}

Beyond increasing local support and acceptance of the ED physiotherapy role, changes to ED physiotherapy governance structure and accountability at a local and national level were identified as necessary to facilitate the evolution of ED physiotherapy. This finding correlates with existing literature which has recognised the need for health systems to adopt a complex systems, non-hierarchical approach to direct and indirect reporting lines,^{203,232} with manager and executive support crucial to enacting such changes.^{70,211,233} National bodies, hospital executives, ED directors and physiotherapy managers were also identified as part of the solution to introduce necessary increases in ED physiotherapy funding and the hours of ED physiotherapy service provision across a seven-day period. Various ED stakeholders have also identified an increase to ED physiotherapy hours of coverage and availability as necessary.^{73,109,114,130,228,234}

4.2 Alignment of the ED physiotherapy role with current and future health system needs

This study has found ED physiotherapists with a high level of experience utilise a wide and varied skills set to perform a generalist clinical role which is beneficial as this mirrors the variable caseload of an ED.^{14,18,35} However, the generalist nature of an ED physiotherapists caseload is not reflected in literature investigating the value of ED physiotherapy, with many studies focusing on adult, musculoskeletal populations or the PCP aspect of the ED physiotherapy role.^{92,93,96-98,101,103,105,106,108} Whilst valuable in evaluating specific aspects of the ED physiotherapy role this relatively limited focus observed within the literature may have contributed to creating a narrow view of the role of ED physiotherapy and limits the demonstration of alignment of ED physiotherapy with the needs of the health system. Furthermore, the varied naming conventions used when referring to physiotherapists working in ED, such as 'advanced musculoskeletal physiotherapists', may contribute to the conflicting expectations held by stakeholders regarding the role. In reality, ED physiotherapists must consider the performance needs of the ED, the prioritisation of patients within the waiting room based upon both urgency of care needs and waiting times, and the needs of patients requiring secondary contact physiotherapy review to expedite discharge. These role requirements not only differ to other more conventional musculoskeletal physiotherapy roles, but also include consideration and engagement with non-musculoskeletal patient cohorts, and a working knowledge of the complex ED system, as well as how the ED fits within the wider hospital and community health systems. This study has shown ED physiotherapists have the skills required to meet the unpredictable and diverse caseload of an ED. However, to align more fully with the needs of the healthcare system the full breadth of the ED physiotherapy role, as well as greater role clarity, needs to be considered in research and in practice.

Emergency departments hold an important and specific role in health provision in Australia. The focus of an ED is to provide high quality immediate short-term management, noting that while it is beyond the scope of EDs to provide ongoing or long-term care, they do have a role in facilitating appropriate and efficient care referrals.¹² Consequently, ED clinicians must be able to accurately determine and expedite ongoing care requirements, either within the ED or upon a patients departure from the ED.²²⁴ If an ED patient requires specialist review, a clinician in ED must be able to identify the correct speciality, determine the urgency of review and ensure a follow-up is plan is in place.²³⁵ The ability to escalate that care effectively and efficiently appears to be lacking in an ED

physiotherapist's repertoire as referral to medial or surgical specialists is restricted by health legislation and thus limits ED physiotherapist's ability to provide patient access to direct and appropriate post-ED review.²³⁶ The cost and impact of such restrictions could potentially be contributing to increased LoS and waiting times, decreased efficiency in allocation of ED resources, increased burden on primary health care and general practitioners, or delays in post-ED care. Therefore, changes to legislation and policies which currently impose restrictions on ED physiotherapists may facilitate an improvement in ED physiotherapists' capacity to escalate care and improve the health systems ability to deliver high quality and efficient care.

This study has shown ED physiotherapists provide care to people of all ages, including children and older adults presenting to ED. The ability to provide care to people under 15 or over 64 years of age is crucial for ED clinicians as these two cohorts accounted for 41.0% of total ED presentations in 2020-21.¹⁸ Physiotherapist involvement with older adults in ED may be provided in a primary contact capacity or a secondary contact capacity and may involve musculoskeletal injury assessment and management, mobility assessments and/or care coordination.⁸⁶⁻⁸⁹ Physiotherapist presence in ED facilitates holistic, interdisciplinary assessment and management which has been identified as an important measure to decrease the known adverse outcomes experienced by older patients who present to ED.^{19,20,22,23} Within the existing literature, very little is known regarding paediatric patient outcomes, or the perspectives of children and their carers who received care from an ED physiotherapist. Investigation of the outcomes and perspectives of older people, children, and carers after receiving care from an ED physiotherapist is required to accurately determine if ED physiotherapists are meeting the needs and expectations of these cohorts.

Physiotherapy service provision in ED remains variable across Australia. This study has shown ED physiotherapists to predominantly be present in ED seven days per week, however there are some EDs still only receiving week-day provision or that only have a secondary contact physiotherapy service via specific referral. These inconsistencies are similar to those reported by Thompson et al.(2014)⁹¹ and Maka et al.(2022)¹⁰⁹. As demonstrated by Figure 4.4, the difference in the percentage of patients presenting per day is less than 2% with Monday having the highest presentation rate at 15.4%, and Thursday and Fridays the lowest both with a rate of 13.8%. ED physiotherapy service provision does not appear to align with this presentation pattern. There is a drop in the percentage of ED physiotherapists working in services which provide coverage on Saturday and Sunday, despite the percentage of patients being higher, at 14% and 14.5 % respectively, than the preceding two days when a greater proportion of EDs have physiotherapy coverage present. This suggests the service structure of ED physiotherapy may not align with the demands of EDs across Australia when reviewed across the week. It is important to note that Figure 4.4 is reflective of national presentation and service provision patterns, and a more accurate analysis of the alignment of coverage would involve local reviews to determine the alignment of specific ED physiotherapy services and local ED presentation rates per day. Nonetheless, Figure 4.4 suggests that there is likely to be scope to improve the alignment of physiotherapy coverage with ED needs. It may be that where a seven-day service is not possible a five-day ED physiotherapy service which spans Saturday through to Wednesday

may be more beneficial to meet patient presentation demand than a traditional Monday to Friday coverage pattern.

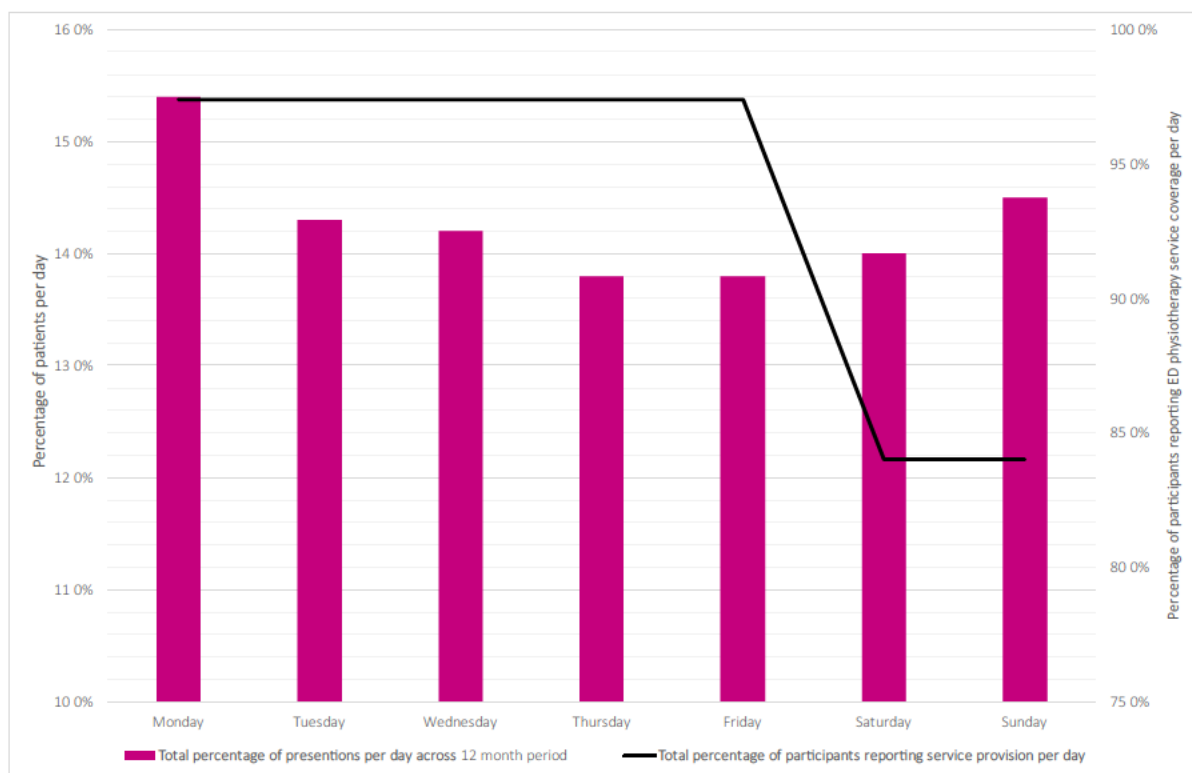


Figure 4.4 The percentage of patients who presented per day across a 12-month period and the percentage of participants reporting physiotherapists service on given day of the week.¹⁸

As well as days of coverage, the alignment of the timing of ED physiotherapy service provision across a day with national data on ED patient presentation times can also be evaluated, with this presented for weekdays in Figure 4.5 and weekends in Figure 4.6.¹⁸ Overall, ED physiotherapy service provision covered national ED peak presentation times across the morning and early afternoon. From a 24-hour perspective, over half (56.5%) of all patients presenting to ED in 2020-21 present between 9:00am and 5:59pm, with the peak on any given day of the week between 10:00am and 2:00pm. ED physiotherapy service coverage generally aligned with the peak times of patient presentations during weekday mornings however, improvements could be made by extending the number of EDs with physiotherapists present after 4:00pm to meet the evening demand. Less than 60% of participants reported a physiotherapist to be present in ED after 4:00pm, despite over a third of presentations occurring after 4:00pm on any given weekday. On the weekends the misalignment between ED physiotherapy service provision and ED presentations was more prominent. Almost half (Saturday, 49.8%; Sunday, 49.9%) of all weekend presentations occurred between 6:00pm and 9:59am however, ED service provision during this time frame is minimal with less than a quarter of participants (17.3%) reporting physiotherapy coverage for more than 2 hours within this 16-hour period. Whilst, similarly to days of coverage, the timing of local ED physiotherapy service provision should be compared with local service needs to fully understand the overall alignment, or misalignment, of ED physiotherapy with overall healthcare system needs. Furthermore, AIHW data does not provide details on the periods of access block across times of day nor days of the week. Consequently, it is difficult

to establish the alignment of ED physiotherapy service provision with key periods of access block and diminished patient flow through ED. This warrants further investigation to ensure optimal alignment of ED physiotherapy services with healthcare system needs.

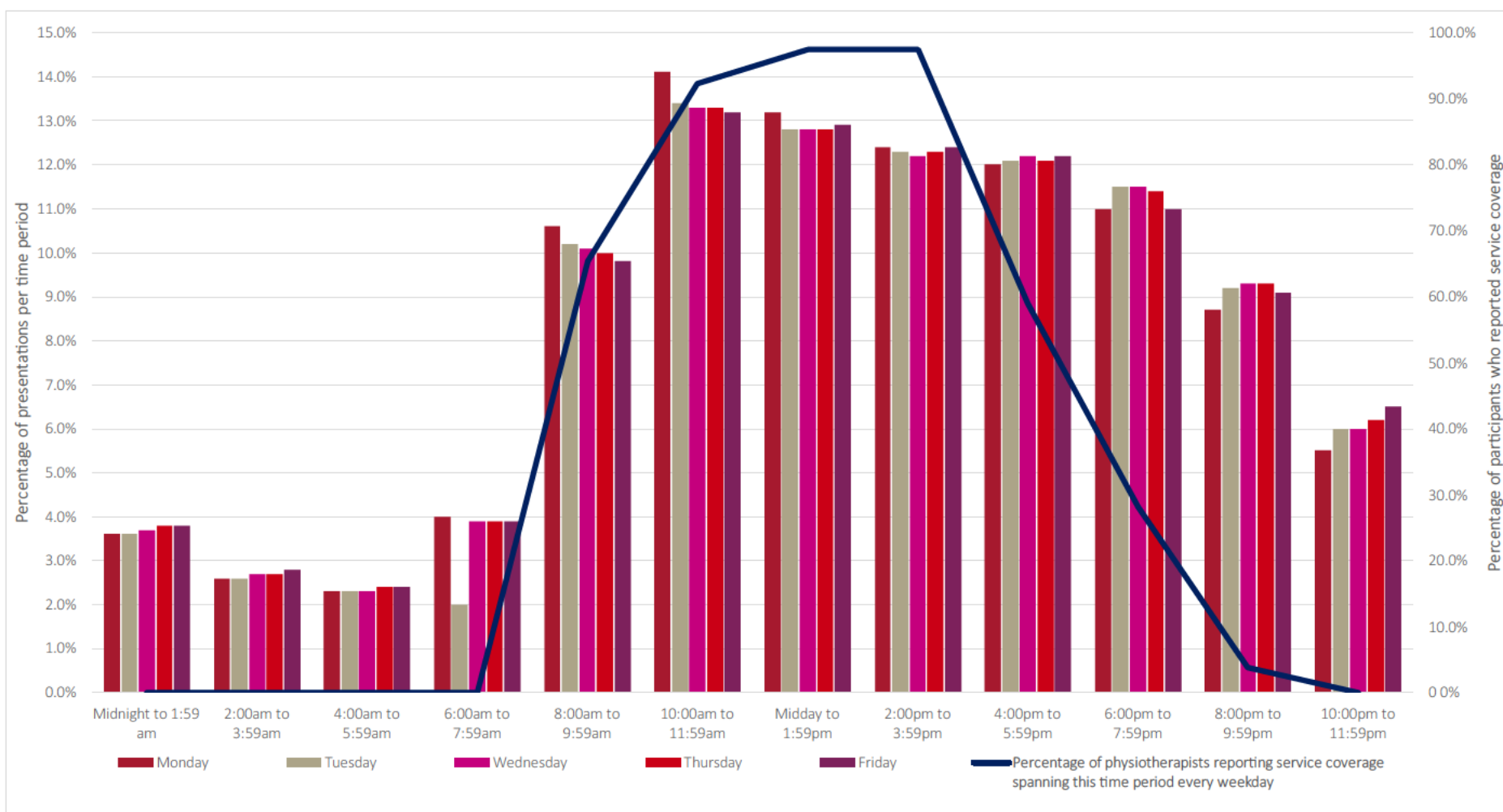


Figure 4.5 The percentage of patients who presented during specific time periods of the day on weekdays across a 12-month period and the percentage of participants who reported physiotherapists service which provided coverage every weekday.¹⁸

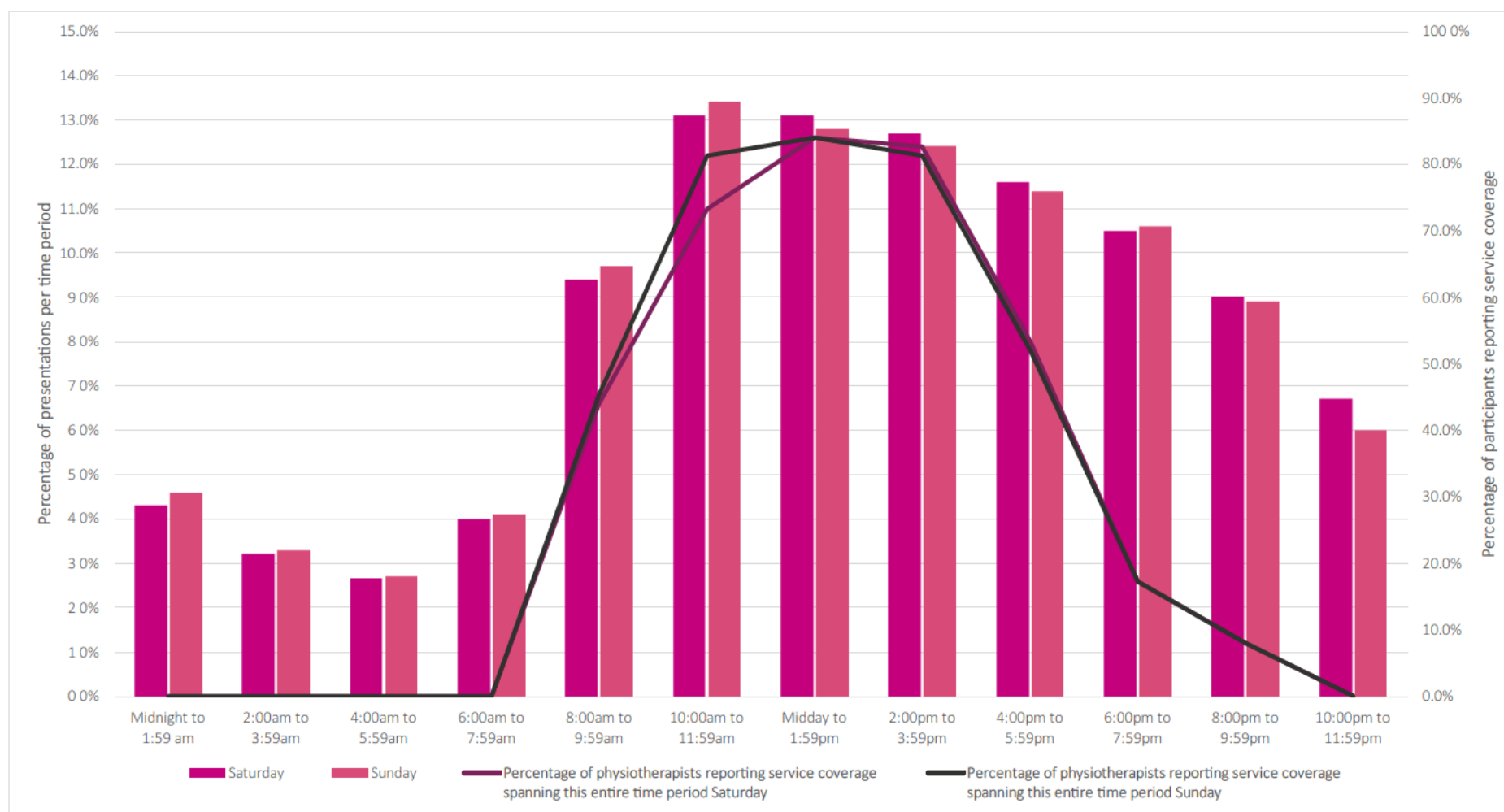


Figure 4.6 The percentage of patients who presented on Saturdays and Sundays across a 12-month period and the percentage of participants who reported physiotherapists service across a 24-hour period.¹⁸

4.3 Emergency Department physiotherapy must embrace the complex adaptive system in which it exists to optimise its potential

Emergency department physiotherapy has changed over the past decade however physiotherapists working in ED roles are eager for further growth in the form of a nationally recognised specialisation and training pathway, greater clinical autonomy and increased recognition and support from key stakeholders, policy makers and legislators. This study has added to literature which has shown emergency physiotherapy to be intertwined and influenced by the unstable and constantly changing environment that is contemporary healthcare.^{127,203} For ED physiotherapy to optimise its potential, those seeking to drive change must not only accept but embrace the notion that the structures and function of healthcare are dynamic, with physiotherapy, emergency medicine, and all those working within and connecting to the health system continuing to change in response to internal and external perturbations.^{203,237,238}

This research has shown that although similar patterns in ED physiotherapy service design and provision have emerged, there is a desire and necessity for a national ED physiotherapy framework, particularly regarding terminology, training, and medicolegal liability. However, a framework of this nature needs to be flexible and adaptable to the needs of both the local health context and the ever-changing national healthcare environment.^{203,239} Education and specialisation pathways should support and promote advanced generalist skills which allow for physiotherapists to extend their scope of practice and adapt to meet the needs of their local health system. ED physiotherapy must be opportunistic and be ready to act swiftly to rapid change, similar to that seen in the uptake of virtual care modalities during the COVID-19 pandemic.^{240,241} Whilst the lack of clarity regarding the ED physiotherapy role has been identified as a barrier to ED physiotherapy utilisation,¹¹³ care must be taken to not overly restrict the role and lose the flexibility a generalist role affords. For example, ED physiotherapists that are able to quickly step up and operate as the vestibular clinical lead in an ED seeking to improve adherence to evidence-based practice, who can undertake wound management and order appropriate imaging during peak times, or who can facilitate more in-depth care-coordination prior to patient departure from the ED, will be of most benefit to a dynamic and, at times unpredictable, ED context. The importance of having appropriately skilled and flexible physiotherapists in emergency roles is well established in the literature.^{57,114,115,130,207} Furthermore, the lack of clarity regarding the ED physiotherapy role can negatively impact stakeholder understanding, and thereby potentially inhibit the agency of local hospital systems to expand ED physiotherapy roles to best meet local system needs.^{237,239} Whilst this study did show there has been an improvement in ED clinicians understanding of the ED physiotherapy role, manager, health system leaders and patients understanding requires much improvement. By clarifying and increasing trust in the abilities of ED physiotherapists nationally, local health systems may have more agency to expand ED physiotherapy roles with confidence. This could then increase ED physiotherapy resilience against an unstable and unpredictable health system and empowering local hospital systems to respond to change with innovative ED physiotherapy and interprofessional models of care.

As is observed in complex adaptive systems (CAS), the past influences the current and future state of the health system, in other words the health system has memory.^{203,237} The competence and personal attributes of physiotherapists heavily influences their integration and acceptance into the ED team.^{114,115} To enable ED physiotherapy continued growth, the right clinicians must be recruited into these roles, and once there be provided interprofessional supervision and support. Physiotherapists are not seen as adding to the burden of training provided by ED clinicians but as contributing to the overall learning and performance of the team.²⁴² To ignore the element of the ED physiotherapy role that benefits and contributes to ED clinician learning is to risk deterioration of the interprofessional trust and allegiance built by ED physiotherapists to date. Thus, ED physiotherapy must be supported by a national workforce of considerable depth, which is constantly attracting and upskilling new clinicians. The findings from this research suggests that a national ED physiotherapist specialisation and training pathway will be most beneficial if it defines a broad set of entrustable professional activities with requirements for locally embedded supervision and support. Furthermore, this pathway needs to allow for ED physiotherapists to adapt and expand to meet the needs of the local health district, similar to that within medical training programs and rural health roles.^{224,225,243}

Physiotherapists no longer view themselves as clinicians who visit the ED occasionally. They hold a valuable place in the ED team, have close working relationships which span various professions, and feel respected and valued by the ED team with whom they share common objectives. To optimise the role of ED physiotherapists, their existence within these netlike structures and cross discipline hierarchies must be considered in all pursuits of ED physiotherapy progression.^{205,239,244} This research has shown ED stakeholders influence and impact ED physiotherapists evolution, autonomy, efficiency and effectiveness. Furthermore, ED stakeholders were also perceived by participants to be crucial levers in the expansion and evolution of the ED physiotherapy role. Those seeking to progress ED physiotherapy will need to foster collaboration across all stakeholder networks, at all levels of healthcare, from local ED nursing and medical clinicians to national representatives. Participants in this study expressed concerns that current healthcare leaders do not always understand or value the ED physiotherapy role and they were concerned this would result in ED physiotherapy not being comprehensively considered for funding provision or scaling during hospital and health system planning. These concerns demonstrate the need to adapt existing straight line reporting structures to a governance structure which is shared across professions. For example, ED physiotherapists and nurse practitioners who have dual reporting links on formal organisation charts to both nursing and allied health hierarchies and emergency department directors, thus reflecting the complex needs of clinicians operating within the healthcare system.^{203,245} Recommendations for healthcare planners may be provided by ED physiotherapist inclusion within existing national frameworks such a ED delineation guides,^{3,5,7} ED models of care, fellowship training of emergency medicine specialists,^{224,243} and Medicare funding policies.²³⁶ If physiotherapy is not specifically included in national and state level guidelines and policies then existing legislation and regulations, local policies, and organisational culture will continue to act as barriers to progressing the role of ED physiotherapy.

The ability of physiotherapy to contribute to the ED has been found to be acted upon by non-linear influences across all health system levels. However, further investigation is required to better understand the local and national causal loops which impact ED physiotherapy contribution and evolution.^{203,239} Whilst the causal loop presented in this study (Figure 4.2) reflects ED physiotherapists perspectives nationally, little is known regarding the perspectives of the national bodies, national legislators, hospital level executives, ED directors, physiotherapy managers, or universities, identified within this study as the decision makers within the causal feedback loops. A comprehensive understanding of the factors which influence ED physiotherapy contribution and evolution at a local and state level will enable a more targeted change management approach and more accurate identification of specific individuals who may act as sponsors and agents for change with the various system levels.²³⁹

In addition to causal loop analysis, future research should increase utilisation of system tools such as social network analysis, system diagrams and simulation modelling.^{203,239} Such tools embrace the non-linear nature of healthcare interactions and, if conducted longitudinally, may demonstrate the dynamic nature of the health system and physiotherapists within ED.^{203,206,237,239} Furthermore, those seeking to expand and optimise the role of ED physiotherapy must also embrace the multiple functions which an ED and hospital system fulfils, and accept that these functions may change.^{203,237,238} This will require those who wish to promote ED physiotherapy progression within local health systems to identify and monitor for patterns where change has naturally occurred. For example, if there is a positive shift in medical clinicians' attitudes towards ED physiotherapy, change agents may utilise this increased allegiance to drive an increase in ED physiotherapy autonomy, request increase funding to expand ED physiotherapy service hours to better align with system needs, or utilise ED physiotherapy to help address national performance indicators.

To improve the likelihood of successfully enhancing ED physiotherapy progress, those seeking to drive change will need to identify leaders or 'central agents', and 'brokers' within the various professional groups. In healthcare, several agents hold key roles within the system. Central agents are those viewed as experts or opinion leaders from whom others seek advice, with brokers or 'boundary spanners' acting as go-betweens or liaisons whom cross professional, geographical or cultural boundaries.^{203,244-246} Identifying who is a central agent and gaining their support will aid in convincing others to accept any expansion of the ED physiotherapy role and facilitate changes in behaviour required for the successful adoption of said expansion.^{206,239} As is seen with other CAS, healthcare is radically open.^{204,237} Even if system leaders are in support of change, ED physiotherapists will require the support of system brokers to facilitate collaboration and cooperation and bridge the gaps between professional, cultural and hierarchical boundaries. An example of where brokers have not been sufficiently engaged is evidenced by patient's general lack of understanding of ED physiotherapists,¹²⁰ which demonstrates the need to bridge the gap between healthcare providers and consumers. Fortunately, this study has identified the ACEM, the APA, and the AMA as important brokers with the power to promote understanding and acceptance of ED physiotherapy in consumer and professional groups alike.

Emergency department physiotherapists are well placed to fulfil the role of boundary spanners within their local health system. Participants in this study identified ED physiotherapists not only to be well placed to support the needs of the immediate ED environment but who are also well placed to improve connectivity and collaboration between ED and the community setting. A comprehensive assessment must be undertaken to identify the needs of the entire healthcare system, rather than examining the ED within an isolated context, and identify which gaps ED physiotherapy may be able to fill. Whilst current research may promote ED physiotherapists as focused on adult musculoskeletal cohorts; this study has shown that in reality they are working in ED as generalist clinicians with a broad set of advanced skills. Future research which aims to evaluate physiotherapy must expand beyond the narrow focus of musculoskeletal physiotherapy and ED performance outcomes. Research will hold the most value if it describes and displays the true contribution ED physiotherapists make to holistic person-centred care provision and their wide-ranging contributions to the healthcare system in Australia. The development of an ED physiotherapy specialisation pathway is needed for ED physiotherapy to optimise its potential. However, this needs to be created through the lens of ED physiotherapy existing within a complex adaptive system, not in isolation from this system. For ED physiotherapists to overcome the barriers that restrict their contribution and evolution, research must not seek to isolate ED physiotherapy but embrace the Australian health system as the complex adaptive system in which ED physiotherapists exist.

Conclusion

This thesis has provided a description of the ED physiotherapy workforce, the manner in which ED physiotherapists practice, and their perceptions regarding ED physiotherapy both currently and for the future. It has demonstrated ED physiotherapists to be experienced and highly trained clinicians, with most employed as primary contact clinicians but either by local restrictions or choice provide care in an autonomous and/or collaborative manner. They work as generalist clinicians in ED although do report having a musculoskeletal focus. They provide care to people of all ages who present to ED including paediatric and elderly patient cohorts. ED physiotherapists have a variety of skills, perform assessments, and provide management which spans musculoskeletal, neurological, respiratory, and orthopaedic related conditions. Emergency departments have a highly variable caseload, with the generalist skills possessed by ED physiotherapists well placed to meet the unpredictable patient caseload. The alignment between national ED demand generally aligns with ED physiotherapy service provision, with most physiotherapists working in a service which covers the peak presentation times across the 24-hour period. However, there is room to improve service provision in the evenings and weekends.

Integral to the role of ED physiotherapy is the relationships which they build and maintain with ED clinicians, patients, and stakeholders across all levels of healthcare. This thesis has described a landscape in which ED physiotherapists are integrated, well respected and valued members of the ED team who work collaboratively to achieve the ED teams common objectives. However, the lack of patient and health system leadership understanding of the ED physiotherapy role, combined with a lack of role clarity, restrictive policies and legislation, are perceived to impede physiotherapists' in their ability to contribute to the ED team and the wider healthcare system.

Holistic research which encompasses and establishes the diverse value of ED physiotherapy is needed to facilitate local health systems to determine the specific needs and most suitable service provision structure of ED physiotherapy services, implement new or updated ED physiotherapy models, and improve the generalisability of research across health networks and state lines. Furthermore, holistic research may better inform advocacy initiatives to change regulations, legislation and policies, increase role clarity, and improve understanding amongst all ED stakeholders. Future efforts should focus on establishing a national ED physiotherapy framework which includes a national specialisation and training pathway which enables physiotherapists to adapt to the needs of the local health system in which they work. Furthermore, this thesis has identified the potential benefits to acknowledging health care provision in Australia as the complex adaptive system in which ED physiotherapy exists, and the importance of incorporating this concept into future ED physiotherapy research, implementation, evolution, and evaluation.

References

1. Chung C. The evolution of emergency medicine. *Hong Kong Journal of Emergency Medicine*. 2001;8(2):84-89.
2. Crane J, Delany C. Physiotherapists in emergency departments: Responsibilities, accountability and education. *Physiotherapy*. 2013;99(2):95-100.
3. Australasian College of Emergency Medicine. *Policy of standard terminology P02*. 2019.
4. Australian Institute of Health and Welfare. *Australian hospital peer groups. Health services series no.66 Cat no. HSE 170* (AIHW). 2015.
5. Australasian College of Emergency Medicine. *Statement on the delineation of emergency departments*. 2012.
6. Australasian College of Emergency Medicine. *Extended role of nursing and allied health practitioners working in Emergency Departments*. 2019.
7. Australasian College of Emergency Medicine. *Emergency department design guidelines*. 2014.
8. Australasian College of Emergency Medicine. *Guidelines for the implementation of the Australasian Triage Scale (ATS) in Emergency Departments*. 2000.
9. Australasian College of Emergency Medicine. *Policy on the Australasian Triage Scale P06*. 2013.
10. NSW Ministry of Health. *Emergency department Models of Care*. 2012.
11. Victorian Government Department of Human Services (Metropolitan Health and Aged Care Services Division). *Discussion paper. Streaming care: Fast track services in hospital emergency departments*. 2008.
12. Australasian College of Emergency Medicine. *Definition of an admission*. 2020.
13. Australian Bureau of Statistics (ABS). *Australian Demographic Statistics, Time series workbook, ABS cat. no. 3101.0 National, state and territory population*. Released March 17 2022.
14. Emergency department care multilevel data, Data as of June 1, 2022. Australian Institute of Health and Welfare Web site. <https://www.aihw.gov.au/reports-data/myhospitals/sectors/emergency-department-care>. Accessed July 07, 2022.
15. How COVID-19 affected emergency departments. Canadian Institute for Health Information web site. <https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/how-covid-19-affected>. Accessed May 26, 2021.
16. Hospital Accident and Emergency Activity 2019-2020. NHS Digital and NHS England web site. <https://digital.nhs.uk/data-and-information/publications/statistical/hospital-accident--emergency-activity/2019-20>. Accessed May 26, 2021.
17. Emergency Department Care. Australian Institute of Health Welfare Web site. <https://www.aihw.gov.au/reports-data/myhospitals/sectors/emergency-department-care>. Accessed July 01, 2022.
18. Emergency department care 2020–21: Australian hospital statistics Australian Institute of Health and Welfare. <https://www.aihw.gov.au/reports-data/myhospitals/sectors/emergency-department-care>. Accessed July 07, 2022.

19. Dwyer R, Gabbe B, Stoelwinder JU, Lowthian J. A systematic review of outcomes following emergency transfer to hospital for residents of aged care facilities. *Age and Ageing*. 2014;43(6):759-766.
20. Aminzadeh F, Dalziel WB. Older adults in the emergency department: a systematic review of patterns of use, adverse outcomes, and effectiveness of interventions. *Annals of Emergency Medicine*. 2002;39(3):238-247.
21. Lowthian J, Curtis A, Stoelwinder J, McNeil J, Cameron P. Emergency demand and repeat attendances by older patients. *Internal Medicine Journal*. 2013;43(5):554-560.
22. McCusker J, Healey E, Bellavance F, Connolly B. Predictors of repeat emergency department visits by elders. *Academic Emergency Medicine*. 1997;4(6):581-588.
23. Hastings SN, Heflin MT. A systematic review of interventions to improve outcomes for elders discharged from the emergency department. *Academic Emergency Medicine*. 2005;12(10):978-986.
doi:<http://dx.doi.org/10.1197/j.aem.2005.05.032>
24. Lennox A, Braaf S, Smit DV, Cameron P, Lowthian JA. Caring for older patients in the emergency department: health professionals' perspectives from Australia—The Safe Elderly Emergency Discharge project. *Emergency Medicine Australasia*. 2019;31(1):83-89.
25. Lowthian JA, Straney LD, Brand CA, et al. Predicting functional decline in older emergency patients—the Safe Elderly Emergency Discharge (SEED) project. *Age and Ageing*. 2017;46(2):219-225.
26. Morley C, Unwin M, Peterson GM, Stankovich J, Kinsman L. Emergency department crowding: A systematic review of causes, consequences and solutions. *PLOS ONE*. 2018;13(8):e0203316.
doi:10.1371/journal.pone.0203316
27. Hwang U, McCarthy ML, Aronsky D, et al. Measures of crowding in the emergency department: a systematic review. *Academic Emergency Medicine*. 2011;18(5):527-538.
28. ETP - The Basics. Emergency Care Institute Web site.
<https://aci.health.nsw.gov.au/networks/eci/administration/neat/neat-the-basics>. Accessed May 13, 2021.
29. Javidan A, Hansen K, I. H, et al. *Report from the Emergency Department Crowding and Access Block Task Force [Internet]*. 2020. <https://www.ifem.cc/resource-library/>. Accessed June 12, 2022
30. Australian Institute of Health and Welfare (AIHW). *Emergency Department care 2017-2018: Australian Hospital Statistics. Health Services Series no. 89, HSE 216* (AIHW). 2018.
31. Health Policy Analysis 2019. *Independent Hospital Pricing Authority, Australian Emergency Care Classification: Definitions manual*. 2019.
32. Health Policy Analysis 2019. *Australian Emergency Care Classification Final report, Independent Hospital Pricing Authority*. 2019.
33. NSW Ministry of Health. *NSW Health Performance Framework NSW Health services and support organisations*. 2017.
34. Western Australian Department of Health (System Performance Directorate). *Guide to interpreting Emergency Department Dashboards*. 2019.

35. Australian Institute of Health and Welfare (AIHW). Data from: Emergency Department Care 2019-2020 Data 2021. <https://www.aihw.gov.au/reports-data/myhospitals/sectors/emergency-department-care>. Accessed July 15, 2022
36. Health Policy Priorities Principle Committee - report. *Australian triage process review*. 2011.
37. Elder E, Johnston AN, Crilly J. Systematic review of three key strategies designed to improve patient flow through the emergency department. *Emergency Medicine Australasia*. 2015;27(5):394-404.
38. Cassarino M, Robinson K, Quinn R, et al. Impact of early assessment and intervention by teams involving health and social care professionals in the emergency department: A systematic review. *PLoS one*. 2019;14(7):e0220709.
39. Lowthian J, Brand C, Barker A, et al. Managing older patients safely in the time critical environment of an emergency department. *Hong Kong Journal of Emergency Medicine*. 2012;19(4):264-271.
40. Daly S, Campbell DA, Cameron PA. Short-stay units and observation medicine: a systematic review. *Medical Journal of Australia*. 2003;178(11):559-563.
41. Shetty AL, Teh C, Vukasovic M, Joyce S, Vaghasiya MR, Forero R. Impact of emergency department discharge stream short stay unit performance and hospital bed occupancy rates on access and patient flow measures: a single site study. *Emergency Medicine Australasia*. 2017;29(4):407-414.
42. De Freitas L, Goodacre S, O'Hara R, Thokala P, Hariharan S. Interventions to improve patient flow in emergency departments: an umbrella review. *Emergency Medicine Journal*. 2018;35(10):626-637.
43. Physiotherapy Board of Australia, Physiotherapy Board of New Zealand. *Physiotherapy practice thresholds in Australia and Aotearoa New Zealand*. 2015.
44. Physiotherapy Board of Australia. *Code of Conduct for registered health practitioners*. 2014.
45. Chipchase LS, Galley P, Jull G, et al. Looking back at 100 years of physiotherapy education in Australia. *Australian Journal of Physiotherapy*. 2006;52(1):3-7. doi:10.1016/S0004-9514(06)70055-1
46. Clinical Specialist. Australian College of Physiotherapists web site. <https://australian.physio/pd/australian-college-physiotherapy-information#clinical-specialist>. Accessed May 10, 2022.
47. Health Practitioner Regulation National Law Act 2009. Queensland Legislation website, <https://www.legislation.qld.gov.au>. Accessed May 03, 2021.
48. Australian Health Practitioner Regulation Agency. *Media Release 1 July 2014: Regulatory principles endorsed for National Scheme*. 2014.
49. Australian Health Practitioner Regulation Agency. *A unique and substantial achievement: Ten years of national health practitioner regulation in Australia*. 2020.
50. Australian Health Practitioner Regulation Agency, National Boards, Health Professions Accreditation Collaborative Forum. *Accreditation in the national registration and accreditation scheme (NRAS): A snapshot 2018/19*. 2020.
51. About. Physiotherapy Board of Australia web site. <https://www.physiotherapyboard.gov.au/About.aspx>. Accessed June 06, 2022.

52. About the college. Australian College of Physiotherapists website. <https://australian.physio/pd/australian-college-physiotherapy-information#about-college>. Accessed June 06, 2022.
53. Australian Physiotherapy Association. *Scope of Practice - Position Statement*. 2009.
54. Who is the Australian physiotherapy council and why do we exist? Australian Physiotherapy Council website. <https://physiocouncil.com.au/about-us/the-council/>. Accessed November 11, 2021.
55. Nall C. Primary care physiotherapy in the Emergency Department. *Australian Journal of Physiotherapy*. 2009;55(1):70-70. doi:[http://dx.doi.org/10.1016/S0004-9514\(09\)70072-8](http://dx.doi.org/10.1016/S0004-9514(09)70072-8)
56. Pretorius A, Karunaratne N, Fehring S. Australian physiotherapy workforce at a glance: a narrative review. *Australian Health Review*. 2016;40(4):438-442. doi:<https://doi.org/10.1071/AH15114>
57. Barrett R, Terry L. Patients' and healthcare professionals' experiences and perceptions of physiotherapy services in the emergency department: a qualitative systematic review. *International Journal of Emergency Medicine*. 2018;11(1):1-1. doi:10.1186/s12245-018-0201-z
58. Queensland Government (Queensland Health). *Ministerial Taskforce on health practitioner expanded scope of practice: final report*. 2014.
59. Gill SD, Stella J, McManus L. Consumer preferences regarding physiotherapy practitioners and nurse practitioners in emergency departments - a qualitative investigation. *Journal of Interprofessional Care*. 2019;33(2):209-215. doi:10.1080/13561820.2018.1538104
60. Vedanayagam M, Buzak M, Reid D, Saywell N. Advanced practice physiotherapists are effective in the management of musculoskeletal disorders: a systematic review of systematic reviews. *Physiotherapy*. 2021;113:116-130.
61. Marks D, Comans T, Bisset L, Scuffham PA. Substitution of doctors with physiotherapists in the management of common musculoskeletal disorders: a systematic review. *Physiotherapy*. 2017;103(4):341-351. doi:10.1016/j.physio.2016.11.006
62. Decary S, Fallaha M, Pelletier B, et al. Diagnostic validity and triage concordance of a physiotherapist compared to physicians' diagnoses for common knee disorders. *BMC Musculoskeletal Disorders*. 2017;18(1):445. doi:<http://dx.doi.org/10.1186/s12891-017-1799-3>
63. Ganglani HH, Tavadia BN. Immediate Effect of Chest Physiotherapy in Neonates with Respiratory Problems. *Indian Journal of Physiotherapy & Occupational Therapy*. 2016;10(3):157-161. doi:10.5958/0973-5674.2016.00101.5
64. Brett L, Noblet T, Jorgensen M, Georgiou A. The use of physiotherapy in nursing homes internationally: A systematic review. *PLOS ONE*. 2019;14(7):e0219488. doi:10.1371/journal.pone.0219488
65. Van Kampen M, Devoogdt N, De Groef A, Gielen A, Geraerts I. The efficacy of physiotherapy for the prevention and treatment of prenatal symptoms: a systematic review. *International Urogynecology Journal*. 2015;26(11):1575-1586.
66. Laakso L. The role of physiotherapy in palliative care. *Australian family physician*. 2006;35(10):781.
67. Australian Physiotherapy Association. *InPractice 2025: Final Report*. 2013.

68. Western Australia (Department of Health). *WA Health physiotherapy expanded practice project - Consultation summary report - Final*. 2015.
69. Noblet TD, Marriott JF, Jones T, Dean C, Rushton AB. Perceptions about the implementation of physiotherapist prescribing in Australia: a national survey of Australian physiotherapists. *BMJ Open*. 2019;9(5):e024991. doi:10.1136/bmjopen-2018-024991
70. Shaw BR, Heywood SE, Page CJ, et al. Advanced musculoskeletal physiotherapy: Barriers and enablers to multi-site implementation. *Musculoskeletal care*. 2018;16(4):440-449. doi:<http://dx.doi.org/10.1002/msc.1358>
71. Morris J, Grimmer K, Gilmore L, et al. Principles to guide sustainable implementation of extended-scope-of-practice physiotherapy workforce redesign initiatives in Australia: stakeholder perspectives, barriers, supports, and incentives. *Journal Multidisciplinary Healthcare*. 2014;7:249-58. doi:10.2147/JMDH.S59473
72. Saxon RL, Gray MA, Oprescu FI. Extended roles for allied health professionals: an updated systematic review of the evidence. *Journal Multidisciplinary Healthcare*. 2014;7:479-88. doi:10.2147/JMDH.S66746
73. Masso M, Thompson C. Attributes of innovations and approaches to scalability—lessons from a national program to extend the scope of practice of health professionals. *Journal of Multidisciplinary Healthcare*. 2016;9:401.
74. Kempson SM. Physiotherapy in an accident and emergency department. *Accident and Emergency Nursing*. 1996/10/01/ 1996;4(4):198-202. doi:[https://doi.org/10.1016/S0965-2302\(96\)90081-8](https://doi.org/10.1016/S0965-2302(96)90081-8)
75. Morris CD, Hawes SJ. The value of accident and emergency based physiotherapy services. *Journal of Accident & Emergency Medicine*. 1996;13(2):111-113. doi:10.1136/emj.13.2.111
76. Jibuike OO, Paul-Taylor G, Maulvi S, et al. Management of soft tissue knee injuries in an accident and emergency department: the effect of the introduction of a physiotherapy practitioner. *Emergency Medicine Journal*. 2003:37-39.
77. Richardson B, Shepstone L, Poland F, Mugford M, Finlayson B, Clemence N. Randomised controlled trial and cost consequences study comparing initial physiotherapy assessment and management with routine practice for selected patients in an accident and emergency department of an acute hospital. *Emerg Med J*. Feb 2005;22(2):87-92. doi:10.1136/emj.2003.012294
78. McClellan C, Greenwood R, Bengner JR. Effect of an extended scope physiotherapy service on patient satisfaction and the outcome of soft tissue injuries in an adult emergency department. *Emergency Medicine Journal*. 2006;23(5):384-387.
79. Anaf S, Sheppard LA. Physiotherapy as a clinical service in emergency departments: a narrative review. *Physiotherapy*. 2007;93(4):243-252.
80. Ball STE, Walton K, Hawes S. Do emergency department physiotherapy practitioner's, emergency nurse practitioners and doctors investigate, treat and refer patients with closed musculoskeletal injuries differently? *Emergency Medicine Journal*. 2007;24(3):185-188. doi:10.1136/emj.2006.039537
81. Mo-Yee Lau P, Hung-Kay Chow D, Pope MH. Early physiotherapy intervention in an Accident and Emergency Department reduces pain and improves satisfaction for patients with acute low back pain: a randomised trial. *Australian Journal of Physiotherapy*. 2008;54(4):243-9.

82. Lebec MT, Jogodka CA. The physical therapist as a musculoskeletal specialist in the emergency department. *Journal of Orthopaedic and Sports Physical Therapy*. 2009;39(3):221-9.
83. Lebec MT, Cernohous S, Tenbarge L, Gest C, Severson K, Howard S. Emergency department physical therapist service: a pilot study examining physician perceptions. *Internet Journal of Allied Health Sciences & Practice*. 2010;8(1):1-12.
84. Weisend MJ, Marulli TA, Paz JC. Physical Therapists' Perceptions of Physical Therapy in the Emergency Department. *Journal of Acute Care Physical Therapy*. 2011;2(3):90-101.
85. Kilner E. What evidence is there that a physiotherapy service in the emergency department improves health outcomes? A systematic review. *Journal of Health Services Research & Policy*. 2011;16(1):51-58. doi:10.1258/jhsrp.2010.009129
86. Moss JE, Houghton LM, Flower CL, Moss DL, Nielsen DA, Taylor DM. A multidisciplinary Care Coordination Team improves emergency department discharge planning practice. *Medical Journal of Australia*. 2002;177(8):427-439.
87. Taylor DM, Bennett D, Cameron PA. A paradigm shift in the nature of care provision in emergency departments. *Emergency Medicine Journal*. 2004;21(6):681-684.
88. Anaf S, Sheppard LA. Describing physiotherapy interventions in an emergency department setting: an observational pilot study. *Accident & Emergency Nursing*. 2007;15(1):34-39. doi:10.1016/j.aaen.2006.09.005
89. Kilner E, Sheppard L. The 'lone ranger': a descriptive study of physiotherapy practice in Australian emergency departments. *Physiotherapy*. 2010;96(3):248-256. doi:10.1016/j.physio.2010.01.002
90. Bird S, Thompson C, Williams KE. Primary contact physiotherapy services reduce waiting and treatment times for patients presenting with musculoskeletal conditions in Australian emergency departments: an observational study. *Journal of Physiotherapy (Elsevier)*. 2016;62(4):209-214. doi:10.1016/j.jphys.2016.08.005
91. Thompson C, Williams K, Morris D, et al. *HWA Expanded Scopes of Practice program evaluation: Physiotherapists in the Emergency Department sub-project final report*. 2014.
92. Henderson J, Gallagher R, Brown P, Smith D, Tang K. Emergency department after-hours primary contact physiotherapy service reduces analgesia and orthopaedic referrals while improving treatment times. *Australian Health Review*. 2020;44(3):485-492. doi:10.1071/AH18259
93. Harding P, Prescott J, Block L, O'Flynn AM, Burge AT. Patient experience of expanded-scope-of-practice musculoskeletal physiotherapy in the emergency department: a qualitative study. *Australian Health Review*. 2015;39(3):283-289. doi:10.1071/AH14207
94. Health Workforce Australia. *National health workforce innovation and reform strategic framework for action 2011–2015: implementation progress report 30 June 2012*. 2012.
95. Health Workforce Australia. *Health Workforce 2025 – Doctors, Nurses and Midwives – Volume 1*. 2012.
96. Gill SD, Stella J. Implementation and performance evaluation of an emergency department primary practitioner physiotherapy service for patients with musculoskeletal conditions. *Emergency Medicine Australasia*. 2013;25(6):558-564. doi:10.1111/1742-6723.12134

97. Guengerich M, Brock K, Cotton S, Mancuso S. Emergency department primary contact physiotherapists improve patient flow for musculoskeletal patients. *International Journal of Therapy and Rehabilitation*. 2013;20(8):396-402.
98. de Gruchy A, Granger C, Gorelik A. Physical therapists as primary practitioners in the emergency department: Six-month prospective practice analysis. *Physical Therapy*. 2015;95(9):1207-16.
99. Goodman D, Harvey D, Cavanagh T, Nieman R. Implementation of an expanded-scope-of-practice physiotherapist role in a regional hospital emergency department. *Rural & Remote Health*. 2018;18(2):122-128. doi:10.22605/RRH4212
100. Kinsella R, Collins T, Shaw B, et al. Management of patients brought in by ambulance to the emergency department: role of the Advanced Musculoskeletal Physiotherapist. *Australian Health Review*. 2018;42(3):309-315. doi:10.1071/AH16094
101. Sayer JM, Kinsella RM, Cary BA, Burge AT, Kimmel LA, Harding P. Advanced musculoskeletal physiotherapists are effective and safe in managing patients with acute low back pain presenting to emergency departments. *Australian Health Review*. 2018;42(3):321-326. doi:10.1071/AH16211
102. Coombes F, Strudwick L, Bell A, Martin-Khan M, Russell T, Martin R. Evaluating the quality of primary contact physiotherapist's pain management practice for musculoskeletal patients in the emergency department. *Emergency Medicine Australasia*. 2020;32(Supplement 1):37-39. 36th Australasian College of Emergency Medicine Annual Scientific Meeting, ACEM-ASM 2019. Australia. doi:<http://dx.doi.org/10.1111/1742-6723.13475>
103. Schulz P, Prescott J, Shifman J, Jr.Fiore J, Holland A, Harding P. Comparing patient outcomes for care delivered by advanced musculoskeletal physiotherapists with other health professionals in the emergency department—A pilot study. *Australasian Emergency Nursing Journal*. 2016;19(4):198-202. doi:10.1016/j.aenj.2016.06.001
104. Jesudason C, Stiller K, McInnes M, Sullivan T. A physiotherapy service to an emergency extended care unit does not decrease admission rates to hospital: a randomised trial. *Emergency Medicine Journal*. 2012;29(8):664-669. doi:10.1136/emered-2011-200157
105. Taylor NF, Norman E, Roddy L, Tang C, Pagram A, Hearn K. Primary contact physiotherapy in emergency departments can reduce length of stay for patients with peripheral musculoskeletal injuries compared with secondary contact physiotherapy: A prospective non-randomised controlled trial. *Physiotherapy*. 2011;97(2):107-14.
106. Alkhouri H, Maka K, Murray M, McCarthy S. The impact of the emergency physiotherapy practitioner on emergency department care for patients with musculoskeletal injuries. *EMA - Emergency Medicine Australasia*. 2020;27(SUPPL. 1):1. 31st Annual Scientific Meeting of the Australasian College for Emergency Medicine. Melbourne, VIC Australia. doi:<http://dx.doi.org/10.1111/17426723.12415>
107. Souter B, Jones A, Sheppard L, Crowe M. Extended Scope Physiotherapists are Effective and Safe in the Emergency Department: A Systematic Review and Meta-Analysis. *Internet Journal of Allied Health Sciences and Practice*. 2022;20(3):7.

108. Sutton M, Govier A, Prince S, Morphett M. Primary-contact physiotherapists manage a minor trauma caseload in the emergency department without misdiagnoses or adverse events: an observational study. *Journal of Physiotherapy*. 2015;61(2):77-80. doi:10.1016/j.jphys.2015.02.012
109. Maka K, Alkhouri H, Wong L, George L, Walton A, McCarthy S. Identifying the activities of physiotherapy practitioners through primary and secondary models of care provided in New South Wales emergency departments. *Australasian Emergency Care*. 2022;25(1):30-36.
110. Morris J, Vine K, Grimmer K. Evaluation of performance quality of an advanced scope physiotherapy role in a hospital emergency department. *Patient related outcome measures*. 2015;6:191-203.
doi:<https://dx.doi.org/10.2147/PROM.S75173>
111. Sheppard LA, Anaf S, Gordon J. Patient satisfaction with physiotherapy in the emergency department. *International Emergency Nursing*. 2010;18(4):196-202. doi:10.1016/j.ienj.2009.11.008
112. Victorian Government (Department of Health and Human Services). *Review of primary contact physiotherapy services final report*. 2010.
113. Ashley BM, Pain T, Clark H, O'Connor E, Schnierer L. A Survey to Guide the Emerging Role of Allied Health Teams in a Regional Tertiary Hospital Emergency Department. *Internet Journal of Allied Health Sciences & Practice*. 2020;18(2):1-8.
114. Coyle J, Gill SD. Acceptance of primary practitioner physiotherapists in an emergency department: A qualitative study of interprofessional collaboration within workforce reform. *Journal of Interprofessional Care*. 2017;31(2):226-232. doi:10.1080/13561820.2016.1233394
115. Lefmann SA, Sheppard LA. Perceptions of emergency department staff of the role of physiotherapists in the system: A qualitative investigation. *Physiotherapy*. 2014;100(1):86-91.
116. Stevenson K, Ryan S, Masterson A. Nurse and allied health professional consultants: perceptions and experiences of the role. *Journal of Clinical Nursing*. 2011;20(3-4):537-544. doi:10.1111/j.1365-2702.2010.03506.x
117. Person-centred care. Australian commission on Safety and Quality in Health Care website.
<https://www.safetyandquality.gov.au/our-work/partnering-consumers/person-centred-care>. Accessed June 06 2022.
118. Australian Commission on Safety and Quality in Health Care. *Patient centred care: Improving quality and safety through partnerships with patients and consumers*. 2011.
119. Santana M-J, Ahmed S, Lorenzetti D, et al. Measuring patient-centred system performance: a scoping review of patient-centred care quality indicators. *BMJ Open*. 2019;9(1):e023596. doi:10.1136/bmjopen-2018-023596
120. Anaf S, Sheppard LA. Lost in translation? How patients perceive the extended scope of physiotherapy in the emergency department. *Physiotherapy*. 2010;96(2):160-8.
121. Lloyd M, Luscombe A, Grant C, et al. Specialised vestibular physiotherapy in the emergency department: A pilot safety and feasibility study. *Emergency Medicine Australasia*. 2020;32(5):860-863. doi:10.1111/1742-6723.13569

122. McClellan CM, Cramp F, Powell J, Benger JR. Extended scope physiotherapists in the emergency department: a literature review. *Physical Therapy Reviews*. 2010;15(2):106-11.
123. Victorian Government (Department of Health). *Advanced musculoskeletal physiotherapy clinical education framework*. 2014.
124. Lloyd M, Mackintosh A, Grant C, et al. Evidence-based management of patients with vertigo, dizziness, and imbalance at an Australian metropolitan health service: an observational study of clinical practice. *Physiotherapy Theory and Practice*. 2020;36(7):818-825.
125. Matifat E, Méquignon M, Cunningham C, Blake C, Fennelly O, Desmeules F. Benefits of Musculoskeletal Physical Therapy in Emergency Departments: A Systematic Review. *Physical Therapy*. 2019;99(9):1150-1166. doi:10.1093/ptj/pzz082
126. Noblet TD, Marriott JF, Rushton AB. Independent prescribing by advanced physiotherapists for patients with low back pain in primary care: Protocol for a feasibility trial with an embedded qualitative component. *BMJ Open*. 2019;9(4):e027745. doi:<http://dx.doi.org/10.1136/bmjopen-2018-027745>
127. Anaf S. *Physiotherapy's role in emergency department settings: a qualitative investigation of emergency stakeholders' perceptions [PhD Thesis]*. James Cook University; 2008.
128. Farrell SF. Can physiotherapists contribute to care in the emergency department? *Australasian Medical Journal*. 2014;7(7):315-317. doi:<http://dx.doi.org/10.4066/AMJ.2014.2183>
129. Ferreira GE, Traeger AC, Maher CG. Review article: A scoping review of physiotherapists in the adult emergency department. *Emergency Medicine Australasia*. 2019;31(1):43-57. doi:10.1111/1742-6723.12987
130. Ferreira GE, Traeger AC, O'Keeffe M, Maher CG. Staff and patients have mostly positive perceptions of physiotherapists working in emergency departments: a systematic review. *Journal of Physiotherapy*. 2018;64(4):229-236. doi:10.1016/j.jphys.2018.08.001
131. Lefmann SA, Crane JL. Establishing the diverse value of the emergency department physiotherapist. *Journal of Physiotherapy*. 2016;62(1):1-3. doi:10.1016/j.jphys.2015.11.001
132. McClellan CM, Cramp F, Powell J, Benger JR. A randomised trial comparing the clinical effectiveness of different emergency department healthcare professionals in soft tissue injury management. *BMJ Open*. 2012;2(6)doi:10.1136/bmjopen-2012-001092
133. Seal R. Can advanced musculoskeletal physiotherapy practitioners help to relieve some of the pressures on the emergency department? *International Emergency Nursing*. 2017;35:59-61. doi:10.1016/j.ienj.2017.05.006
134. Thompson J, Yoward S, Dawson P. The Role of Physiotherapy Extended Scope Practitioners in Musculoskeletal care with Focus on Decision Making and Clinical Outcomes: A Systematic Review of Quantitative and Qualitative Research. *Musculoskeletal Care*. Jun 2017;15(2):91-103. doi:10.1002/msc.1152
135. Girard M-A. Interprofessional collaborative practice and law: a reflective analysis of 14 regulation structures. *Journal of Research in Interprofessional Practice and Education*. 2019;9(2)
136. Lahey W, Currie R. Regulatory and medico-legal barriers to interprofessional practice. *Journal of Interprofessional Care*. 2005;19(sup1):197-223.

137. Rathert C, Williams ES, Linhart H. Evidence for the Quadruple Aim: A Systematic Review of the Literature on Physician Burnout and Patient Outcomes. *Medical Care*. 2018;56(12):976-984.
doi:10.1097/mlr.0000000000000999
138. Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *The Annals of Family Medicine*. 2014;12(6):573-576.
139. Melder A, Robinson T, McLoughlin I, Iedema R, Teede H. An overview of healthcare improvement: unpacking the complexity for clinicians and managers in a learning health system. *Internal Medicine Journal*. 2020;50(10):1174-1184.
140. Hicks CM. *Research Methods for Clinical Therapists E-Book : Applied Project Design and Analysis*. Elsevier Health Sciences; 2009.
141. Kelley K, Clark B, Brown V, Sitzia J. Good practice in the conduct and reporting of survey research. *Int J Qual Health Care*. Jun 2003;15(3):261-6. doi:10.1093/intqhc/mzg031
142. Braun V, Clarke V, Boulton E, Davey L, McEvoy C. The online survey as a qualitative research tool. *International Journal of Social Research Methodology*. 2021/11/02 2021;24(6):641-654.
doi:10.1080/13645579.2020.1805550
143. Harris PA, Taylor R, Minor BL, et al. The REDCap consortium: Building an international community of software platform partners. *Journal of Biomedical Informatics*. 2019/07/01 2019;95:103208.
doi:<https://doi.org/10.1016/j.jbi.2019.103208>
144. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics*. 2009/04/01/ 2009;42(2):377-381. doi:<https://doi.org/10.1016/j.jbi.2008.08.010>
145. Wyatt JC. When to use web-based surveys. BMJ Group BMA House, Tavistock Square, London, WC1H 9JR; 2000.
146. Parsons C. Web-based surveys: Best practices based on the research literature. *Visitor Studies*. 2007;10(1):13-33.
147. Braithwaite D, Emery J, De Lusignan S, Sutton S. Using the Internet to conduct surveys of health professionals: a valid alternative? *Family practice*. 2003;20(5):545-551.
148. Garnett C. ED Special Interest Group - Email. In: Vickery T, editor. Email exchange between Casey Garnett and Tina Vickery ed2020.
149. Physiotherapy Board of Australia. *Registrant Data Table - March 2020*. 2020.
150. Australian Government Department of Health. Data from: Health Workforce Data. 2017.
<https://hwd.health.gov.au/summary.html#part-3>.
151. Burns KE, Duffett M, Kho ME, et al. A guide for the design and conduct of self-administered surveys of clinicians. *Cmaj*. Jul 29 2008;179(3):245-52. doi:10.1503/cmaj.080372
152. Vickery T. Seeking help to get the full ED picture. *InMotion*, 53. <https://australian.physio/inmotion>
153. Eysenbach G. Improving the quality of Web surveys: the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). *J Med Internet Res*. 2004;6(3):e34-e34. doi:10.2196/jmir.6.3.e34

154. Vannette DL, Krosnick JA. A comparison of survey satisficing and mindlessness. *The Wiley Blackwell handbook of mindfulness*. 2014;1:312.
155. Likert R. A technique for the measurement of attitudes. *Archives of psychology*. 1932.
156. McColl E, Jacoby A, Thomas L, et al. Design and use of questionnaires: a review of best practice applicable to surveys of health service staff and patients. 2001.
157. Schleyer TK, Forrest JL. Methods for the design and administration of web-based surveys. *Journal of the American Medical Informatics Association*. 2000;7(4):416-425.
158. Commonwealth of Australia (Department of Health). *2019 Physiotherapists Factsheet*. 2020.
159. *Released 2019. IBM SPSS Statistics for Macintosh, Version 26.0. Armonk, NY: IBM Corp.*
160. *Microsoft Excel. Retrieved from <https://office.microsoft.com/excel>*. 2018.
161. Field A. *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications; 2018.
162. Herbert R. Confidence Interval Calculator. Available from: <https://pedro.org.au/english/resources/confidence-interval-calculator/>. Accessed April 08, 2022.
163. Braun V, Clarke V. One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*. 2021/07/03 2021;18(3):328-352. doi:10.1080/14780887.2020.1769238
164. Scott J. *Social network analysis*. 4th edition. ed. SAGE Publications Ltd; 2017.
165. Kazienko P. Process of Social Network Analysis. In: Alhajj R, Rokne J, eds. *Encyclopedia of Social Network Analysis and Mining*. Springer New York; 2018:1927-1942.
166. Shannon P, Markiel A, Ozier O, et al. Cytoscape: a software environment for integrated models of biomolecular interaction networks. *Genome Res*. Nov 2003;13(11):2498-504. doi:10.1101/gr.1239303
167. Dhirasasna N, Sahin O. A Multi-Methodology Approach to Creating a Causal Loop Diagram. *Systems*. 2019;7(3):42.
168. Haraldsson H. *Introduction to system thinking and causal loop diagrams*. 2004.
169. Cavana RY, Mares ED. Integrating critical thinking and systems thinking: from premises to causal loops. *System Dynamics Review: The Journal of the System Dynamics Society*. 2004;20(3):223-235.
170. Veneta Systems Inc. *Venism PLE Software Version 9.1.1*, Accessed February 24, 2022.
171. Australian Government (Department of Health). *National Health Workforce Dataset*. 2020.
172. Victorian Government (Department of Health). *Advanced musculoskeletal physiotherapy operational framework*. 2014.
173. Cobbing S, Maddocks S, Govender S, et al. Physiotherapy postgraduate studies in South Africa: Facilitators and barriers. Postgraduate; physiotherapy; barriers; facilitators. 2017. 2017-02-15 2017;73(1)doi:10.4102/sajp.v73i1.335
174. Comley-White N, Potterton J. The perceived barriers and facilitators in completing a Masters degree in Physiotherapy. *South African Journal of Physiotherapy*. 2018;74(1):1-5. doi:doi:10.4102/sajp.v74i1.445
175. Pool IA, Poell RF, Berings MGMC, Ten Cate O. Motives and activities for continuing professional development: An exploration of their relationships by integrating literature and interview data. *Nurse Education Today*. 2016/03/01/ 2016;38:22-28. doi:<https://doi.org/10.1016/j.nedt.2016.01.004>

176. Ng L, Eley R, Tuckett A. Exploring factors affecting registered nurses' pursuit of postgraduate education in Australia. *Nursing & health sciences*. 2016;18(4):435-441.
177. Kinsella D, Fry M, Zecchin A. Motivational factors influencing nurses to undertake postgraduate hospital-based education. *Nurse education in practice*. 2018;31:54-60. doi:10.1016/j.nepr.2018.04.011
178. Wiles L, Milanese S. Stakeholder perspectives of the Extended Scope Physiotherapy Practitioner (ESPP) role in Australia – a qualitative study. *Physical Therapy Reviews*. 2016;21(3-6):228-235. doi:10.1080/10833196.2016.1256118
179. Snowdon DA, Cooke S, Lawler K, Scroggie G, Williams K, Taylor NF. Physiotherapists prefer clinical supervision to focus on professional skill development: a qualitative study. *Physiotherapy Canada*. 2020;72(3):249-257.
180. Arkwright L, Edgar S, Debenham J. Exploring the job satisfaction and career progression of musculoskeletal physiotherapists working in private practice in Western Australia. *Musculoskeletal Science and Practice*. 2018/06/01/ 2018;35:67-72. doi:<https://doi.org/10.1016/j.msksp.2018.03.004>
181. Lao A, Wilesmith S, Forbes R. Exploring the workplace mentorship needs of new-graduate physiotherapists: a qualitative study. *Physiotherapy Theory and Practice*. 2021:1-10. doi:10.1080/09593985.2021.1917023
182. Marie Block L, Claffey C, Korow MK, McCaffrey R. The Value of Mentorship Within Nursing Organizations. *Nursing Forum*. 2005;40(4):134-140. doi:<https://doi.org/10.1111/j.1744-6198.2005.00026.x>
183. Sambunjak D, Straus SE, Marušić A. Mentoring in academic medicine: a systematic review. *JAMA*. 2006;296(9):1103-1115.
184. Ramanan RA, Taylor WC, Davis RB, Phillips RS. Mentoring Matters. *Journal of General Internal Medicine*. 2006;21(4):340-345. doi:<https://doi.org/10.1111/j.1525-1497.2006.00346.x>
185. Health workforce. Australian Institute of Health Welfare web site. <https://www.aihw.gov.au/reports/australias-health/health-workforce>. Accessed May 19, 2022
186. Heath Care and Social Assistance. National Skills Commission web site. <https://labourmarketinsights.gov.au/industries/industry-details?industryCode=Q#4>. Accessed May 19, 2022.
187. Australian Government (Workplace Gender Equality Agency). *The business case for flexibility*. 2019.
188. Productivity Commission 2005. *Australia's Health Workforce, Research Report*. 2005.
189. Flexible Work. Australian Government Workplace Gender Equality Agency Web site. https://www.wgea.gov.au/sites/default/files/documents/business_case_for_flexibility_0.pdf. Accessed May 20, 2022
190. Australian Government (Department of Education Skills and Employment). *National Workforce Strategy 2022-27*. 2022.
191. Commonwealth of Australia (Department of Health). *National medical workforce strategy 2021-2031*. 2021.
192. The Fair Work Commission. *Health Professionals and Support Services Award 2020*. 2020.
193. Industrial Relations Commission of New South Wales. Public Hospitals (Professional and associated staff) Conditions of employment (STATE) award 2021. 2021

194. Wei H, Horns P, Sears SF, Huang K, Smith CM, Wei TL. A systematic meta-review of systematic reviews about interprofessional collaboration: facilitators, barriers, and outcomes. *Journal of Interprofessional Care*. 2022;1-15.
195. Bollen A, Harrison R, Aslani P, van Haastregt JC. Factors influencing interprofessional collaboration between community pharmacists and general practitioners—A systematic review. *Health & Social Care in the Community*. 2019;27(4):e189-e212.
196. Bekkink MO, Farrell SE, Takayesu JK. Interprofessional communication in the emergency department: residents' perceptions and implications for medical education. *International Journal of Medical Education*. 2018;9:262.
197. Kilner E, Sheppard LA. The role of teamwork and communication in the emergency department: a systematic review. *International Emergency Nursing*. 2010;18(3):127-137. doi:10.1016/j.ienj.2009.05.006
198. Cassarino M, Robinson K, O'Shaughnessy Í, et al. A randomised controlled trial exploring the impact of a dedicated health and social care professionals team in the emergency department on the quality, safety, clinical and cost-effectiveness of care for older adults: a study protocol. *Trials*. 2019;20(1):N.PAG-N.PAG. doi:10.1186/s13063-019-3697-5.
199. Cassarino M, Robinson K, Trépel D, et al. Impact of assessment and intervention by a health and social care professional team in the emergency department on the quality, safety, and clinical effectiveness of care for older adults: A randomised controlled trial. *PLoS Medicine*. 2021;18(7):e1003711.
200. Körner M, Bütof S, Müller C, Zimmermann L, Becker S, Bengel J. Interprofessional teamwork and team interventions in chronic care: A systematic review. *Journal of Interprofessional Care*. 2016;30(1):15-28.
201. Kiesewetter J, Fischer F, Fischer MR. Collaborative clinical reasoning—a systematic review of empirical studies. *Journal of Continuing Education in the Health Professions*. 2017;37(2):123-128.
202. Cronin J, Wright J. Rapid assessment and initial patient treatment team—a way forward for emergency care. *Accident and Emergency Nursing*. 2005;13(2):87-92.
203. Braithwaite J, Churrua K, Ellis LA, et al. Complexity science in healthcare. *Sydney: Australian Institute of Health Innovation, Macquarie University*. 2017.
204. Carroll A. Integrated Care Through the Lens of a Complex Adaptive System. In: Amelung V, Stein V, Suter E, Goodwin N, Nolte E, Balicer R, eds. *Handbook Integrated Care*. Springer International Publishing; 2021:595-609.
205. Plsek PE, Greenhalgh T. The challenge of complexity in health care. *BMJ*. 2001;323(7313):625-628.
206. Pype P, Mertens F, Helewaut F, Krystallidou D. Healthcare teams as complex adaptive systems: understanding team behaviour through team members' perception of interpersonal interaction. *BMC Health Services Research*. 2018;18(1):1-13.
207. Matifat E, Lavoie-Côté P, Kounda N, Charrier L, Perreault K, Desmeules F. The Acceptability of Physiotherapy Care in Emergency Departments: An Exploratory Survey of Emergency Department Physicians. *Journal of Research in Interprofessional Practice and Education*. 2021;11(1):1-19.

208. Nic Giolla Easpaig B, Tran Y, Winata T, et al. The complexities, coordination, culture and capacities that characterise the delivery of oncology services in the common areas of ambulatory settings. *BMC Health Services Research*. 2022;22(1):1-15.
209. Montano AR, Cornell PY, Gravenstein S. Barriers and facilitators to interprofessional collaborative practice for community-dwelling older adults: An integrative review. *Journal of Clinical Nursing*. 2021.
210. Rapolthy-Beck A, Fleming J, Turpin M. Occupational therapy service provision in adult intensive care units in Australia: A survey of workload practices, interventions and barriers. *Australian Occupational Therapy Journal*. 2022.
211. Ip K, Lloyd M, Luscombe A, Hitch D. Implementing specialized vestibular physiotherapy in an emergency department: A process evaluation. 2021.
212. Thompson W, McNamara M. Revealing how language builds the identity of the advanced nurse practitioner. *Journal of Clinical Nursing*. 2021.
213. Birks M, Davis J, Smithson J, Lindsay D. Enablers and barriers to registered nurses expanding their scope of practice in Australia: a cross-sectional study. *Policy, Politics, & Nursing Practice*. 2019;20(3):145-152.
214. Taylor S, Cairns A, Glass B. Health professional perspectives of expanded practice in rural community pharmacy in Australia. *International Journal of Pharmacy Practice*. 2020;28(5):458-465.
215. Taylor SM, Culic A, Harris S, Senini R, Stephenson R, Glass BD. Bridging Allied Health Professional Roles to Improve Patient Outcomes in Rural and Remote Australia: A Descriptive Qualitative Study. *Journal of Multidisciplinary Healthcare*. 2022;15:541-551.
216. Li J, Westbrook J, Callen J, Georgiou A, Braithwaite J. The impact of nurse practitioners on care delivery in the emergency department: a multiple perspectives qualitative study. *BMC Health Services Research*. 2013;13(1):1-8.
217. Redshaw S, Ingham V, Loftus S. Emergency decision making: an exploration of tensions between communities of practice. *International Journal of Emergency Management*. 2015;11(1):62-75.
218. Anderson BJ, Carroll ME, Taylor SE, Chow A. Perceptions of hospital pharmacists and pharmacy technicians towards expanding roles for hospital pharmacy technicians: a cross-sectional survey. *Journal of Pharmacy Practice and Research*. 2021;51(3):216-224.
219. Leidel S, Hauck Y, McGough S. "It's about fitting in with the organisation": A qualitative study of employers of nurse practitioners. *Journal of Clinical Nursing*. 2018;27(7-8):e1529-e1536.
220. Williams AH, Stotter G, Hefford C, Warren J, Darlow B. Impacts of advanced physiotherapy: A narrative literature review. *New Zealand Journal of Physiotherapy*. 2019;47(3):150-159. doi:10.15619/NZJP/47.3.03
221. Strudwick K, Martin R, Bell A, Martin-Khan M, Russell T, Coombes F. Quality of care provided by primary contact physiotherapists for musculoskeletal patients in the ED. *Emergency Medicine Australasia*. 2020;32(Supplement 1):46-48. 36th Australasian College of Emergency Medicine Annual Scientific Meeting, ACEM-ASM 2019. Australia. doi:<http://dx.doi.org/10.1111/1742-6723.13475>
222. Noblet T, Marriott J, Graham-Clarke E, Rushton A. Barriers to and facilitators of independent non-medical prescribing in clinical practice: a mixed-methods systematic review. *Journal of physiotherapy*. 2017;63(4):221-234.

223. Wearne SM. Remote supervision in postgraduate training: a personal view. *Med J Australia*. 2013;198(1):633.
224. Australasian College of Emergency Medicine. *Fellowship of the Australasian College for Emergency Medicine Curriculum*. 2021.
225. National Rural Generalist Pathway. Australian Government (Department of Health) website. 2022. <https://www.health.gov.au/initiatives-and-programs/national-rural-generalist-pathway#why-it-is-important>. Accessed May 30, 2022.
226. Ebert L, Hoffman K, Levett-Jones T, Gilligan C. "They have no idea of what we do or what we know": Australian graduates' perceptions of working in a health care team. *Nurse education in practice*. 2014;14(5):544-550.
227. Jacob A, Merrigan R, Roe D, Brown T. The Casey Allied Health Model of Interdisciplinary Care (CAHMIC): development and implementation. *International Journal of Therapy and Rehabilitation*. 2013;20(8):387-395.
228. Janes TL, Rees J-L, Zupan B. Is interprofessional education a valued contributor to interprofessional practice and collaboration within allied health in Australia and New Zealand: A scoping review. *Journal of Interprofessional Care*. 2022:1-11. doi:10.1080/13561820.2021.1975666.
229. Kent F, Nankervis K, Johnson C, Hodgkinson M, Baulch J, Haines T. 'More effort and more time.' Considerations in the establishment of interprofessional education programs in the workplace. *Journal of Interprofessional Care*. 2018;32(1):89-94.
230. Spencer J, Woodroffe J, Cross M, Allen P. "A golden opportunity": Exploring interprofessional learning and practice in rural clinical settings. *Journal of Interprofessional Care*. 2015;29(4):389-391.
231. Young G, Hulcombe J, Hurwood A, Nancarrow S. The Queensland Health Ministerial Taskforce on health practitioners' expanded scope of practice: consultation findings. *Australian Health Review*. Jun 2015;39(3):249-254. doi:10.1071/ah14141.
232. Greenfield D, Braithwaite J, Pawsey M, Johnson B, Robinson M. Distributed leadership to mobilise capacity for accreditation research. *Journal of health organization and management*. 2009.
233. Le-Dao H, Chauhan A, Walpola R, et al. Managing complex healthcare change: A qualitative exploration of current practice in New South Wales, Australia. *Journal of healthcare leadership*. 2020;12:143.
234. Davidson SR, Bolsewicz K, Kamper SJ, et al. Perspectives of emergency department clinicians on the challenges of addressing low back pain in the emergency setting: A qualitative study. *Emergency Medicine Australasia*. 2022;34(2):199-208.
235. Australasian College of Emergency Medicine. *Responsibility for care in emergency departments*. 2020.
236. Health Insurance Regulations 2018 made under the Health Insurance Act 1973, F2021L01812. Accessed June 14 2022.
237. Preiser R. Identifying general trends and patterns in complex systems research: An overview of theoretical and practical implications. *Systems Research and Behavioral Science*. 2019;36(5):706-714.

238. Austin E, Blakely B, Salmon P, Braithwaite J, Clay-Williams R. The scope for adaptive capacity in emergency departments: modelling performance constraints using control task analysis and social organisational cooperation analysis. *Ergonomics*. 2022;65(3):467-484.
239. Braithwaite J, Churrua K, Long JC, Ellis LA, Herkes J. When complexity science meets implementation science: a theoretical and empirical analysis of systems change. *BMC medicine*. 2018;16(1):1-14.
240. Thomas EE, Haydon HM, Mehrotra A, et al. Building on the momentum: Sustaining telehealth beyond COVID-19. *Journal of Telemedicine and Telecare*. 2022;28(4):301-308. doi:10.1177/1357633x20960638.
241. Taylor A, Caffery LJ, Gesesew HA, et al. How Australian Health Care Services Adapted to Telehealth During the COVID-19 Pandemic: A Survey of Telehealth Professionals. *Front Public Health*. 2021;9:648009. doi:10.3389/fpubh.2021.648009.
242. Strudwick K, Martin R, Coombes F, Bell A, Martin-Khan M, Russell T. Higher quality of care in emergency departments with physiotherapy service models. *Emergency Medicine Australasia*. 2022;34(2):209-222.
243. Australasian College of Emergency Medicine. *FACEM Training Program Handbook*. 2022.
244. Creswick N, Westbrook JI, Braithwaite J. Understanding communication networks in the emergency department. *BMC Health Services Research*. 2009;9(1):1-9.
245. Plsek PE, Wilson T. Complexity, leadership, and management in healthcare organisations. *BMJ*. 2001;323(7315):746-749.
246. Long JC, Cunningham FC, Braithwaite J. Bridges, brokers and boundary spanners in collaborative networks: a systematic review. *BMC health services research*. 2013;13(1):1-13.

Appendix 1: Macquarie University Ethics Approval Letter

Medicine & Health Sciences Subcommittee
Macquarie University, North Ryde
NSW 2109, Australia



23/10/2020

Dear Dr Mc Caffrey,

Reference No: 52020909821827

Project ID: 9098

Title: A workforce survey investigating scope of practice and demographics of Australian Emergency Department Physiotherapists

Thank you for submitting the above application for ethical review. The Medicine & Health Sciences Subcommittee has considered your application.

I am pleased to advise that ethical approval has been granted for this project to be conducted by Mrs Tina Vickery, and other personnel: Associate Professor Taryn Jones, Mrs Tina Vickery.

This research meets the requirements set out in the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018).

Standard Conditions of Approval:

1. Continuing compliance with the requirements of the National Statement, available from the following website:
<https://nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018>.
2. This approval is valid for five (5) years, subject to the submission of annual reports. Please submit your reports on the anniversary of the approval for this protocol - 23 October. You will be sent an automatic reminder email one week from the due date to remind you of your reporting responsibilities.
3. All adverse events, including unforeseen events, which might affect the continued ethical acceptability of the project, must be reported to the subcommittee within 72 hours.
4. All proposed changes to the project and associated documents must be submitted to the subcommittee for review and approval before implementation. Changes can be made via the [Human Research Ethics Management System](#).

The HREC Terms of Reference and Standard Operating Procedures are available from the Research Services website:
<https://www.mq.edu.au/research/ethics-integrity-and-policies/ethics/human-ethics>.

It is the responsibility of the Chief Investigator to retain a copy of all documentation related to this project and to forward a copy of this approval letter to all personnel listed on the project.

Should you have any queries regarding your project, please contact the [Faculty Ethics Officer](#).

The Medicine & Health Sciences Subcommittee wishes you every success in your research.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Mark Butlin".

Dr Mark Butlin

Chair, Medicine & Health Sciences Subcommittee

The Faculty Ethics Subcommittees at Macquarie University operate in accordance with the National Statement on Ethical Conduct in Human Research 2007, (updated July 2018), [Section 5.2.22].

Appendix 2: Participant information and recruitment material

Participant information and consent form

A workforce survey investigating the scope of practice and demographics of Australian Emergency Department physiotherapists.

What is the research about?

A research survey investigating the scope of practice, workforce demographics and experiences of Emergency Department (ED) physiotherapists. The purpose of the study is to establish an accurate picture of ED physiotherapists; investigating the scope of practice, workload priorities and the self-perceived optimisation of their role, both currently and into the future.

Who is conducting the research?

The research is being carried out by co-investigator Tina Vickery as part of a Master of Research award; Lindsey Brett, Chief investigator and student supervisor, and Associate Professor Taryn Jones, Associate supervisor and co-investigator. The research team is affiliated with the Department of Health Professions, Macquarie University. The research is not supported by a funding grant, scholarship or commercial sponsorship.

Who can participate in the research?

To be eligible to participate in this research, you must meet the following inclusion criteria:

- AHPRA Registered physiotherapist
- Currently working in an Australian ED and ED extension wards such as Short Stay Units

Participants who meet the following criteria will be excluded from the study:

- Physiotherapy students.

What does participating in the research require, and are there any risks involved?

If you decide to participate survey, you will be asked to:

- Read the information provided carefully
- Agree to participate
- Complete the online survey hosted by REDCap

The survey will comprise of a series of questions being a combination of multiple-choice and short answer format. It is anticipated you will need up to 15 minutes to complete the survey. While there is no clear benefit or risk to individuals participating in this survey, participants have the opportunity to contribute to the body of research which aims to better understand ED physiotherapy. There will be no further obligations to participate after the completion of the survey. If you feel some of the questions asked are stressful or upsetting, or you do not wish to answer a question, you may skip it and go to the next question, or you may abort the survey entirely.

What will happen to the information I provide?

Throughout the survey, no personal identifiable data will be collected, and no individual will be identified in any publication of the results. You will not be asked for your name, email, DOB or other personally identifiable data. Any information or details gathered in the course of the study are confidential, except as required by law. Only members of the research team, listed here, will have access to the survey data. The data will be collected using online survey tool, REDCap. Any data downloaded from the platform will be stored in password protected files on a restricted drive hosted by Macquarie University and deleted 5 years after any publications related to the research.

How and when will I find out what the results of the study are?

Through the course of the study, no personal contact details (email, address or phone numbers) will be collected, this means the research team will be unable to contact you for further data collection or to provide you with the results of the research. A summary of the results and findings of the research may be published in academic publications, professional associations or presented at conferences. A summary of the results of the research can be made available to you on request by emailing co-investigator, Tina Vickery (tina.vickery@mq.edu.au). There is no anticipated use of the data collected beyond what is described here.

What if I want to withdraw from the research study?

Participation in this study is entirely voluntary: you are not obliged to participate. If you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

What should I do if I have further questions about the research or my involvement in the study?

If you would like further information regarding the study or have questions relating to your participation in the study, you may contact the following members of the research team:

Mrs Tina Vickery

Physiotherapist
Student and co-investigator
Department of Health Professions
MACQUARIE UNIVERSITY NSW 2109
(02) 9850 9007
tina.vickery@mq.edu.au

Dr Lindsey Brett

Post-doctoral Research Fellow
Student supervisor and Chief investigator
Department of Health Professions
MACQUARIE UNIVERSITY NSW 2109
lindsey.brett@mq.edu.au

Participant invitation to participate – email

Dear Physiotherapist,

We would like to invite you to participate in a research survey being conducted by the Department of Health Professions, Macquarie University, investigating the scope of practice, workforce demographics and experiences of Emergency Department (ED) physiotherapists. The purpose of the study is to establish an accurate picture of ED physiotherapists; investigating the scope of practice, workload priorities and the self-perceived optimisation of their role, both currently and into the future.

Who is conducting the research?

The study is being carried out by Tina Vickery, co-investigator and Master of Research student, Dr Lindsey Brett, Chief investigator and student supervisor, and Associate Professor Taryn Jones, Associate student supervisor and co-investigator. All of which are associated with the Department of Health Professions, Macquarie University. This research has been granted ethics approval by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098

Who can participate in the research?

AHPRA Registered Physiotherapist

Working in ED as a physiotherapist

For the purpose of this study, physiotherapy students are excluded.

What does participating in the research require?

If you decide to participate, you will be asked to:

Read the participant information and consent form (PICF) provided.

Consent to participate

Complete the online survey hosted by RedCap

Questions are a combination of multiple choice and short answer format. It is anticipated participants will need up to 15minutes to complete the survey. If you believe you meet the criteria described above and would like to participate in the research, please follow the link below to complete the survey. The PICF is attached to the survey and details all ethical considerations in addition to providing further details regarding the research.

Click here to participate - <https://redcap.link/edphysiosurvey>

Please feel free to forward this invitation to participate email to physiotherapists you believe may be interested in participating or meet the criteria listed above. If you have any questions you may contact the research team members via phone or email detailed below.

Thank you for your consideration

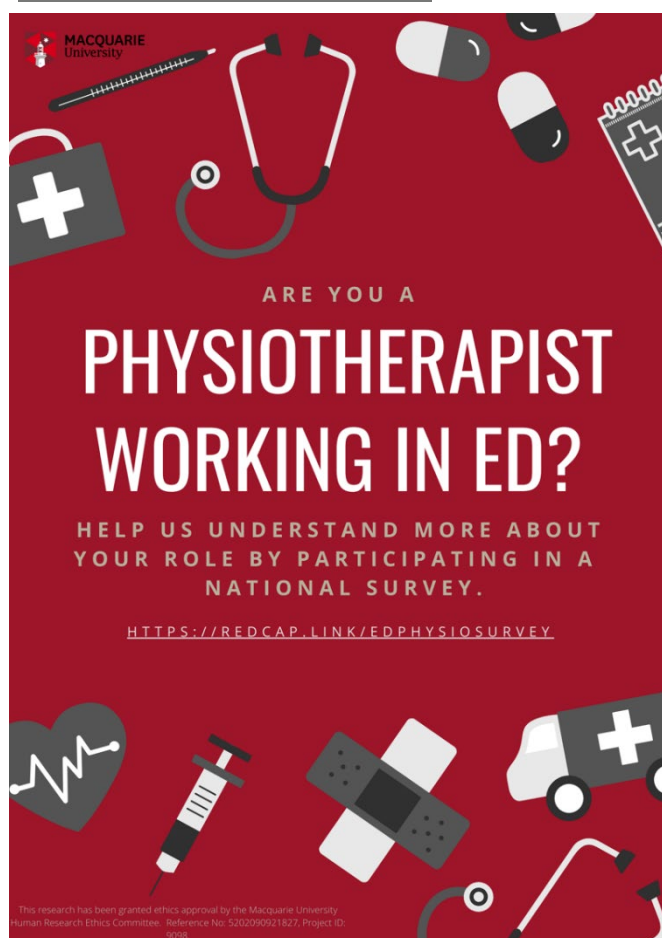
Social Media recruitment and survey promotional material

Social Media Post – Text:

Help us understand more about physiotherapists working in ED by participating in a short online research survey. The research being conducted by Macquarie University, aims to investigate the scope of practice and workforce demographics of Australian ED physiotherapists. The research also aims to gain valuable insight into the perceptions of physiotherapists on how the role could be optimised, both now and into the future.

Interested? Follow the link below to learn more and participate in the survey.

<https://redcap.link/edphysiosurvey>



Social Media Post – Image accompanying Text 1



Seeking help to get the full ED picture

australian.physio • 5 min read

Social Media Post – APA Article Image accompanying Text 2

Appendix 3: Expert consensus panel correspondence

Invitation to participate – Expert Panel

Dear *expert panel member's name*

We would like to invite you to participate as a member of the expert panel in the development of the survey for the study titled:

A workforce survey investigating the scope of practice and demographics of Australian Emergency Department physiotherapists.

The purpose of the study is to establish an accurate picture of ED physiotherapists; investigating the scope of practice, workload priorities and the self-perceived optimisation of their role, both currently and into the future.

The research is being carried out by Tina Vickery, co-investigator and Master of Research student, Dr Lindsey Brett, Chief investigator and student supervisor, and Associate Professor Taryn Jones, Associate student supervisor and co-investigator. The research is supported by the Department of Health Professions, Faculty of Medicine, Health and Human Sciences, Macquarie University. This research has been granted ethics approval by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098

Attached to this email is a document with the research aims, proposed questions and response options for the survey questions. Please review the proposed questions and provide any feedback you believe may be valuable in improving the quality of the survey. Feedback may include comments on question content, clarity, structure, phrasing and question relevance in addressing the research aims. The survey will be updated based on the feedback and redistributed to the panel for further comments.

Your theoretical and practical expertise is highly valued, and we appreciate the time you are committing to participating as a member of our expert panel. To minimise the burden on our expert panel, you may provide feedback on the preliminary survey questions in a format which suits you best. Feedback may be in the form of written comments, reply via email with the addition of comments in the word doc attached; or verbally. If you would like to provide verbal feedback on the preliminary survey, please contact Tina Vickery, who will organise an online teleconference meeting at a time that suits you.

Whilst you will not be asked to complete the survey and therefore, your data will not be collected in the research study, the expert panel will be described and discussed in the final thesis manuscript. The panel may also be referred to within publications of the survey results, within academic journals, professional publications (I.e. APA In motion

magazine) and conference presentations. You will not be individually identified, however may be referred to by your qualification or as “expert panel member” (eg. Panel Member A, Panel Member B - Emergency Medicine Specialist).

For further details on the ethical aspects of the research, attached to this email is a copy of the participant information and consent form (PICF); alternatively, if you have any concerns or complaint you can contact the ethics department directly via the details listed below.

Mrs Tina Vickery

Co-Investigator

Masters of Research Student

Department of Health Professions

Faculty of Medicine, Health and Human Sciences

Macquarie University

(02) 9850 9007

This study has been approved by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098 If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Expert Panel feedback form

Dear *Insert expert panel name*

Thank you participating as an expert panel member for the research study “A workforce survey investigating the scope of practice and demographics of Australian Emergency Department physiotherapists.”

Attached to this email, as a separate document, is version 1 of the questionnaire, including response options. Below is a rating system for you to provide feedback on the survey. Once complete please return this feedback form to Tina Vickery (tina.vickery@mq.edu.au).

We are hoping to have received feedback from all panel members by the DATE-updated each round. If providing the feedback in this timeframe will be difficult, please contact Tina Vickery to discuss alternate options.

The study aims are:

To provide comprehensive workforce data on the current status of Australian ED physiotherapy practice, including physiotherapist demographical data, staffing levels and funding sources.

To evaluate the scope of practice currently undertaken by ED physiotherapists across a range of Australian EDs.

To investigate the beliefs of current ED physiotherapists on their current scope of practice and how they believe their role may be optimised within the ED context.

Panel member name: _____

Panel Member Professional Title: _____

(such as Emergency Department Specialists, Research associate, Physiotherapist, etc)

Ranking and comments of potential survey questions:

Please rate each question with a value of *importance of inclusion* in the survey in order to achieve the study aims:

Scoring: 1=definitely include, 2=Include with changes described, 3=exclude

Question	Scoring	Comments
1		
2		
3		
4		

Additional comments / questions:

This study has been approved by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098 If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix 4: Survey Questions

Screening Questions

Do you currently work or provide services in an Australian Emergency Department (ED) in the role of a physiotherapist?

- ☐ Yes
☐ No

- Please note for the purpose of this study, Short Stay Units and ED extension wards are included within the overarching term of ED

Are you currently a physiotherapy student

- ☐ Yes
☐ No

A workforce survey investigating the scope of practice and demographics of Australian Emergency Department physiotherapists.

What is your age (in years)

Please select your gender

- ☐ Male ☐ Female ☐ non-binary/gender diverse ☐ Prefer not to say ☐ My gender is not listed

My gender is not listed, I identify as:

What type of entry level training program did you graduate from to become a physiotherapist?

- ☐ Undergraduate Bachelor degree (4 years) (with or without honours)
☐ Post graduate master of physiotherapy (2 years)
☐ Post graduate extended masters or Doctor of physiotherapy (3 years)
☐ Other

You listed your entry level program as "other"
Please provide the name or type of your entry level program:

What year did you graduate from
[entry_level_program]?

- | | | |
|----------------------------|----------------------------|----------------------------|
| <input type="radio"/> 1950 | <input type="radio"/> 1981 | <input type="radio"/> 2011 |
| <input type="radio"/> 1951 | <input type="radio"/> 1982 | <input type="radio"/> 2012 |
| <input type="radio"/> 1952 | <input type="radio"/> 1983 | <input type="radio"/> 2013 |
| <input type="radio"/> 1953 | <input type="radio"/> 1984 | <input type="radio"/> 2014 |
| <input type="radio"/> 1954 | <input type="radio"/> 1985 | <input type="radio"/> 2015 |
| <input type="radio"/> 1955 | <input type="radio"/> 1986 | <input type="radio"/> 2016 |
| <input type="radio"/> 1956 | <input type="radio"/> 1987 | <input type="radio"/> 2017 |
| <input type="radio"/> 1957 | <input type="radio"/> 1988 | <input type="radio"/> 2018 |
| <input type="radio"/> 1958 | <input type="radio"/> 1989 | <input type="radio"/> 2019 |
| <input type="radio"/> 1959 | <input type="radio"/> 1990 | <input type="radio"/> 2020 |
| <input type="radio"/> 1960 | <input type="radio"/> 1991 | |
| <input type="radio"/> 1961 | <input type="radio"/> 1992 | |
| <input type="radio"/> 1962 | <input type="radio"/> 1993 | |
| <input type="radio"/> 1963 | <input type="radio"/> 1994 | |
| <input type="radio"/> 1964 | <input type="radio"/> 1995 | |
| <input type="radio"/> 1965 | <input type="radio"/> 1996 | |
| <input type="radio"/> 1966 | <input type="radio"/> 1997 | |
| <input type="radio"/> 1967 | <input type="radio"/> 1998 | |
| <input type="radio"/> 1968 | <input type="radio"/> 1999 | |
| <input type="radio"/> 1969 | <input type="radio"/> 2000 | |
| <input type="radio"/> 1970 | <input type="radio"/> 2001 | |
| <input type="radio"/> 1971 | <input type="radio"/> 2002 | |
| <input type="radio"/> 1972 | <input type="radio"/> 2003 | |
| <input type="radio"/> 1973 | <input type="radio"/> 2004 | |
| <input type="radio"/> 1974 | <input type="radio"/> 2005 | |
| <input type="radio"/> 1975 | <input type="radio"/> 2006 | |
| <input type="radio"/> 1976 | <input type="radio"/> 2007 | |
| <input type="radio"/> 1977 | <input type="radio"/> 2008 | |
| <input type="radio"/> 1978 | <input type="radio"/> 2009 | |
| <input type="radio"/> 1979 | <input type="radio"/> 2010 | |
| <input type="radio"/> 1980 | | |

How many years have you been working in ED?

In which state are you currently working as an ED
physiotherapist?

- ☐ ACT
- ☐ VIC
- ☐ NSW
- ☐ QLD
- ☐ SA
- ☐ NT
- ☐ WA
- ☐ TAS

Do you work in more than one health district/service
as an ED physiotherapist?

- ☐ Yes
- ☐ No

If you work in more than one health district, please answer the following questions in relation to the district in which
you work the most hours.

Which Hospital or Health District do you work in as
an ED physiotherapist?

- ☐ Canberra Health
- ☐ Other

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ The Queen Elizabeth Centre
- ☐ The Women's
- ☐ Timboon and District Healthcare Service
- ☐ Tweddle Child and Family Health Service
- ☐ Upper Murray Health and Community Services
- ☐ West Gippsland Healthcare Group
- ☐ West Wimmera Health Service
- ☐ Western District Health Service
- ☐ Western Health
- ☐ Wimmera Health Care Group
- ☐ Yarram and District Health Service
- ☐ Yarram and District Health Service
- ☐ Yarrawonga District Health
- ☐ Yea and District Memorial Hospital
- ☐ Other, not listed

- ☐ Albury Wodonga Health
- ☐ Alexandra District Health
- ☐ Alfred Health
- ☐ Alpine Health
- ☐ Austin Health
- ☐ Bairnsdale Regional Health
- ☐ Ballarat Health
- ☐ Barwon Health
- ☐ Bass Coast Health
- ☐ Beaufort & Skipton Health
- ☐ Beechworth Health Service
- ☐ Benalla Health
- ☐ Boort District Health
- ☐ Calvary Health Care Bethlehem
- ☐ Castlemaine Health
- ☐ Central Gippsland Health Service
- ☐ Cohuna District Health
- ☐ Colac Area Health
- ☐ Djerriwarrh Health
- ☐ Dunmunkle Health Service
- ☐ East Grampians Health Service
- ☐ East Wimmera Health Service
- ☐ Eastern Health
- ☐ Echuca Regional Health
- ☐ Edenhope and District Memorial Hospital
- ☐ Gippsland Souther Health Service
- ☐ Goulburn Valley Health
- ☐ Great Ocean Road Health
- ☐ Heathcote Health
- ☐ Hepburn Health Service
- ☐ Hesse Rural Health
- ☐ Heywood Rural Health
- ☐ Inglewood and District Health
- ☐ Kerang District Health
- ☐ Kilmore and District Health
- ☐ Kooweerup Regional Health Service
- ☐ Kyabram and District Health Service
- ☐ Kyneton District Health Service
- ☐ Latrobe Regional Hospital
- ☐ Maldon Hospital
- ☐ Mallee Track Health and Community Service
- ☐ Mansfield District Hospital
- ☐ Maryborough District Health Service
- ☐ Melbourne Health
- ☐ Mercy Health
- ☐ Mildura Hospital
- ☐ Monash Health
- ☐ Moyne Health Services
- ☐ NCN Health
- ☐ Northeast Health Wangaratta
- ☐ Northern Health
- ☐ Omeo District Health
- ☐ Orbost Regional Health
- ☐ Peninsula Health
- ☐ Peter MacCallum Cancer Institute
- ☐ Portland District Health
- ☐ Robinvale District Health Services
- ☐ Rochester and Elmore District Health Services
- ☐ Royal Children's Hospital
- ☐ Royal Victorian Eye and Ear Hospital
- ☐ Rural North West Health
- ☐ Seymour Health
- ☐ South Gippsland Health
- ☐ South West Healthcare
- ☐ St Vincent's Health
- ☐ Stawell Regional Health
- ☐ Swan Hill District Health
- ☐ Tallangatta Health Service

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ Central Coast Local Health District
- ☐ Northern Sydney Local Health District
- ☐ Sydney Local Health District
- ☐ South Eastern Sydney Local Health District
- ☐ Illawarra Shoalhaven Local Health District
- ☐ South West Sydney Local Health District
- ☐ Western Sydney Local Health District
- ☐ Nepean Blue Mountains Local Health District
- ☐ Northern NSW Local Health District
- ☐ Mid North Coast Local Health District
- ☐ Hunter New England Local Health District
- ☐ Western NSW Local Health District
- ☐ Far West Local Health District
- ☐ Murrumbidgee Local Health District
- ☐ Southern NSW Local Health District
- ☐ Sydney Children's Hospitals Network (Randwick and Westmead)
- ☐ Other, not listed

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ Cairns and Hinterland Health Service
- ☐ Central Queensland Health Service
- ☐ Central West Health Service
- ☐ Children's Health Queensland Health Service
- ☐ Darling Downs Health Service
- ☐ Gold Coast Health Service
- ☐ Mackay Health Service
- ☐ Metro North Health Service
- ☐ Metro South Health Service
- ☐ North West Health Service
- ☐ South West Health Service
- ☐ Sunshine Coast Health Service
- ☐ Torres and Cape Health Service
- ☐ Townsville Health Service
- ☐ West Moreton Health Service
- ☐ Wide Bay Health Service
- ☐ Other, not listed

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ Barossa Hills Fleurieu Local Health Network
- ☐ Central Adelaide Local Health Network
- ☐ Eyre and Far North Local Health Network
- ☐ Flinders and Upper North Local Health Network
- ☐ Limestone Coast Local Health Network
- ☐ Northern Adelaide Local Health Network
- ☐ Riverland Mallee Coorong Local Health Network
- ☐ Southern Adelaide Local Health Network
- ☐ Women's and Children's Local Health Network
- ☐ Yorke and Northern Local Health Network
- ☐ Other, Not listed

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ Alice Spring Hospital
- ☐ Darwin Hospital
- ☐ Katherine District Hospital
- ☐ Palmerston Health
- ☐ Tennant Creek Hospital
- ☐ Grove District Hospital
- ☐ Not listed

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ East Metropolitan Health Service
- ☐ North Metropolitan Health Service
- ☐ South Metropolitan Health Service
- ☐ Kimberly Health Service
- ☐ Pilbara Health Service
- ☐ Midwest Health Service
- ☐ The Wheatbelt Health Service
- ☐ The Goldfields Health Service
- ☐ South West Health Service
- ☐ The Great Southern Health Service
- ☐ Other, Not listed

Which Hospital or Health District do you work in as an ED physiotherapist?

- ☐ North-West Health Service
- ☐ North Health Service
- ☐ South Health Service
- ☐ Other, Not listed

What classification is your ED physiotherapy position?
If you also hold a an additional responsibility, please tick both options.

- ☐ Level 1
- ☐ Level 2
- ☐ Level 3
- ☐ Level 4
- ☐ Level 5
- ☐ Level 6
- ☐ Deputy Department Head (in addition to maintaining clinical load)
- ☐ Department Head (in addition to maintaining clinical load)
- ☐ ED Unit Head or Team Leader (in addition to maintaining clinical load)
- ☐ Unsure

<p>What classification is your ED physiotherapy position?</p> <p>If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2 <input type="checkbox"/> Grade 3A <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4 <input type="checkbox"/> Grade 5 <input type="checkbox"/> Grade 6 <input type="checkbox"/> Grade 7 <input type="checkbox"/> Assistant Physiotherapy Manager (in addition to maintaining clinical load) <input type="checkbox"/> Physiotherapy Manager (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What classification is your ED physiotherapy position?</p> <p>If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/> Level 5 <input type="checkbox"/> Level 6 - Clinical Specialist <input type="checkbox"/> Level 7 <input type="checkbox"/> Level 8 - Discipline Specific Director / Advisor <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What classification is your ED physiotherapy position?</p> <p>If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Health Practitioner one (HP1) <input type="checkbox"/> Health Practitioner two (HP2) <input type="checkbox"/> Health Practitioner three (HP3) <input type="checkbox"/> Health Practitioner four (HP4) <input type="checkbox"/> Health Practitioner five (HP5) <input type="checkbox"/> Health Practitioner six (HP6) <input type="checkbox"/> Health Practitioner seven (HP7) <input type="checkbox"/> Health Practitioner eight (HP8) <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What classification is your ED physiotherapy position?</p> <p>If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Allied Health Professional one (AHP-1) <input type="checkbox"/> Allied Health Professional two (AHP-2) <input type="checkbox"/> Allied Health Professional three (AHP-3) <input type="checkbox"/> Allied Health Professional four (AHP-4) <input type="checkbox"/> Allied Health Professional five (AHP-5) <input type="checkbox"/> Allied Health Professional six (AHP-6) <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure

<p>What classification is your ED physiotherapy position? If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Professional Stream one (P1) <input type="checkbox"/> Professional Stream two (P2) <input type="checkbox"/> Professional Stream three (P3) <input type="checkbox"/> Senior Professional Stream one (SP1) <input type="checkbox"/> Senior Professional Stream two (SP2) <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What classification is your ED physiotherapy position? If you also hold a an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Health Professional - Level 1 <input type="checkbox"/> Health Professional - Level 2 <input type="checkbox"/> Health Professional - Level 3 <input type="checkbox"/> Health Professional - Level 4 <input type="checkbox"/> Health Professional - Level 5 <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What classification is your ED physiotherapy position? If you also hold an additional responsibility, please tick both options.</p>	<input type="checkbox"/> Allied Health Professional Level 1 <input type="checkbox"/> Allied Health Professional Level 2 <input type="checkbox"/> Allied Health Professional Level 3 <input type="checkbox"/> Allied Health Professional Level 4 <input type="checkbox"/> Allied Health Professional Level 5 <input type="checkbox"/> Allied Health Professional Manager Level 5 <input type="checkbox"/> Allied Health Professional Specialist level 5 <input type="checkbox"/> Deputy Department Head (in addition to maintaining clinical load) <input type="checkbox"/> Department Head (in addition to maintaining clinical load) <input type="checkbox"/> ED Unit Head or Team Leader (in addition to maintaining clinical load) <input type="checkbox"/> Unsure
<p>What is the nature of your current employment as an ED physiotherapist</p>	<input type="radio"/> Permanent - Full Time <input type="radio"/> Permanent - Part Time <input type="radio"/> Temporary - Full Time <input type="radio"/> Temporary - Part Time <input type="radio"/> Casual
<p>On average, how many hours do you work in ED per fortnight ?</p>	<hr/>
<p>In your position, do you cover a clinical caseload outside of the ED? If so, please select the most appropriate response or provide further details</p>	<input type="checkbox"/> No, I only work in ED or an ED extension ward (Short Stay Unit etc) <input type="checkbox"/> Yes, Acute Inpatients <input type="checkbox"/> Yes, Medical Assessment Ward <input type="checkbox"/> Yes, Geriatric Ward <input type="checkbox"/> Yes, Rehabilitation or Geriatric Rehabilitation ward/s <input type="checkbox"/> Yes, Outpatient Setting <input type="checkbox"/> Other - Please describe below

Please list the other wards or areas you work in as part of your role

Seperate to your role as an ED physiotherapist, do you hold any other paid positions?

- ☐ No, ED is my only paid position
 - ☐ Physiotherapist - Acute Inpatients
 - ☐ Physiotherapist - Rehabilitation Inpatients
 - ☐ Physiotherapist - Outpatients (hospital)
 - ☐ Physiotherapist - Private Practice
 - ☐ Physiotherapist - Aged Care
 - ☐ Physiotherapist - Rotating position
 - ☐ Health Service Manager - planning, operations, clinical governance, projects, etc.
 - ☐ University Employee - Academic, lecturer, tutor, professional role, researcher
 - ☐ Committee Member, APA, APC, Health Governing Body (ACI, Vic Health etc)
 - ☐ Other - Please describe
-

Other paid work, not listed above:

Education and Training

Have you completed or are you currently completing a further university qualification other than your entry level physiotherapy program?

If you have completed one qualification and are currently completing another, please select both options

- ☐ Yes - Currently completing
- ☐ Yes - Completed
- ☐ No

Please select which of the following university qualifications you are currently completing

- ☐ Graduate Certificate - Sports
- ☐ Graduate Certificate - Musculoskeletal
- ☐ Clinical Masters - Sports
- ☐ Clinical Masters - Musculoskeletal
- ☐ Masters of Research
- ☐ Doctor of Philosophy (PhD)
- ☐ Other, please list below

Other:

What motivated you to engage in a [fuq_currently_comp]

Please select which of the following university qualifications you have completed

- ☐ Graduate Certificate - Sports
- ☐ Graduate Certificate - Musculoskeletal
- ☐ Clinical Masters - Sports
- ☐ Clinical Masters - Musculoskeletal
- ☐ Masters of Research
- ☐ Doctor of Philosophy (PhD)
- ☐ Other, please list below

What motivated you to engage in a [fuq_completed]

Have you participated in a formal ED physiotherapy or Advanced Practice competency and capability training program?

Such as the Victorian "Advanced Musculoskeletal Physiotherapy Clinical Education Framework"

- ☐ Yes - I am currently completing "Advanced musculoskeletal physiotherapy services in emergency departments" program.
- ☐ Yes - I have completed the "Advanced musculoskeletal physiotherapy services in emergency departments" program.
- ☐ No
- ☐ Other, please list below

Other:

What motivated you to engage in a [formal_train_prog]

Training - Preparedness for ED

Please select the most appropriate answer for the following questions.

Please rate the following training and education opportunities in relation to how valuable they have been in your development as an ED physiotherapist.

0 - of no value, 4 - Very valuable

If you have not participated in one of the options please provide an N/A

APA affiliated course _____

APA affiliated conference _____

Conference affiliated with medical training provider

(ACEM, directed at medical officers) _____

ED based mentoring by medical staff _____

Hospital/district based mentoring by physiotherapist/s _____

Hospital/district based supervision (physiotherapy) _____

Hospital/Health District formal training program _____

International - Experience working as a physiotherapist in ED _____

Entry level training program _____

Formal University training beyond entry level program _____

International - Formal training or education _____

Other, please provide details:

Your role in ED

How would you classify your role as a physiotherapist in ED?

(Primary Contact Clinician - Independently assesses and/or manages triaged patients in ED (has the ability to remove someone from the wait list/wait room and transition them into a model of care.). Secondary Contact Clinical - Assesses and/or manages patients at the request/post referral from medical professional (Does not have the ability to remove someone from the waitlist and move patient into a model of care). Aged Care Assessment Team - Does not assess or manage patients beyond the scope of assessing elderly or geriatric patients in ED. Dedicated shifts such as ASET, SWAT, TREAT etc.)

- ☐ Primary Contact Clinician - Independently assesses and/or manages triaged patients in ED. (Can select patient from triage list) ☐ Secondary Contact Clinical - Assesses and/or manages patients at the request/post referral from medical professional (Can not remove a patient from the triage list) ☐ Aged Care / Assessment of elderly- Does not assess or manage patients beyond the scope of assessing elderly or geriatric patients in ED.
☐ Some shifts are Primary Contact, others are designated as Aged Assessment Team

How would you classify the model of care, under which you operate in ED?

- ☐ Autonomous - I do not need to consult with a medical officer during a patient's ED presentation, assessment, management or prior to patient discharge. ☐ Collaborative - I must consult with a medical officer at some stage of a patient's ED presentation, assessment, prior to discharge.

How would you classify your principle scope of practice?

- ☐ Aged Care
☐ Cardio-Respiratory
☐ Neurological
☐ Musculoskeletal
☐ Paediatric
☐ Sports
☐ Women's Health
☐ Other, not listed

Please classify your principle scope of practice

Please classify your clinical stream of practice

- ☐ Acute Care
☐ Aged Care
☐ Primary Care
☐ Rehabilitation
☐ Other, not listed

Please classify your clinical stream of practice

The next series of questions is related to your current scope of practice and the activities you perform in ED.

"Independently" refers to your ability to complete the listed task without needing to gain approval or consult with another professional within ED prior to doing so. Response option "via local ED protocol" is referring to a task which you perform or complete based entirely on an ED protocol. If more than one response is applicable, please select the most appropriate

Do you perform assessments of elderly patients in ED.

- ☐ Yes
- ☐ No

This may include specific shifts dedicated to the assessment of older people in ED (such as ASET, SWAT, TREAT etc) OR mobility assessment of elderly patients

Do you assess patients presenting with suspected concussion?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you provide management/treatment for patients in ED with a concussion?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you assess patients presenting with dizziness of unknown origin?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you provide management/treatment for patients in ED with dizziness?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you assess paediatric patients?

- ☐ Yes - in a primary contact role
 - ☐ Yes - In a secondary contact role only
 - ☐ No - This is outside my scope
 - ☐ No - I am not confident to do so
- (Paediatric for the purpose of this study refers to patients under 18 years of age.)

Do you perform mobility assessments?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you perform assessments in SSU or ED Extension wards?

- ☐ Yes
- ☐ No

Do you assess patients presenting with suspected rib fractures?

- ☐ Yes - in a primary contact role
- ☐ Yes - In a secondary contact role only
- ☐ No - This is outside my scope
- ☐ No - I am not confident to do so

Do you provide management/treatment for patients with rib fractures in ED?	<input type="radio"/> Yes - in a primary contact role <input type="radio"/> Yes - In a secondary contact role only <input type="radio"/> No - This is outside my scope <input type="radio"/> No - I am not confident to do so
Do you assess patients presenting with a wound?	<input type="radio"/> Yes - in a primary contact role <input type="radio"/> Yes - In a secondary contact role only <input type="radio"/> No - This is outside my scope <input type="radio"/> No - I am not confident to do so
Do you provide management/treatment for patients with a wound?	<input type="radio"/> Yes - in a primary contact role <input type="radio"/> Yes - In a secondary contact role only <input type="radio"/> No - This is outside my scope <input type="radio"/> No - I am not confident to do so
Do you suture wounds in ED?	<input type="radio"/> Independently (without supervision or approval) <input type="radio"/> Under the supervision or guidance of a ED medical officer <input type="radio"/> I do not perform any suturing as it is beyond my scope of practice <input type="radio"/> I do not perform any suturing as I am not confident to do so despite it being within my scope of practice
Do you administer medications in ED	<input type="radio"/> Yes <input type="radio"/> No
Do you prescribe medications in ED?	<input type="radio"/> Yes <input type="radio"/> No
By what mechanism do you prescribe medications in ED?	
<input type="radio"/> Protocol Based prescription <input type="radio"/> Autonomous based on my clinical decision making process	
What medications do you predominantly prescribe in ED?	
Do you independently order x-rays for adults (≥18years of age)	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No
Do you independently order x-rays for children (≤17 years of age)	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No
Do you independently order peripheral CT scans	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No (peripheral = upper or lower limb)
Do you independently order Spinal CT scans	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No

Do you independently order peripheral MRI scans	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No (peripheral = upper or lower limb)
Do you independently order Spinal MRI scans	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No
Do you independently order blood tests	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No
Do you independently interpret blood test results	<input type="radio"/> Yes <input type="radio"/> Yes - via local ED protocol <input type="radio"/> No
Does your role allow you to independently interpret adult x-rays?	<input type="radio"/> Yes <input type="radio"/> No
Does your role allow you to independently interpret paediatric x-rays?	<input type="radio"/> Yes <input type="radio"/> No
Does your role allow you to independently interpret peripheral CT Scans?	<input type="radio"/> Yes <input type="radio"/> No
Does your role allow you to independently interpret spinal MRI Scans?	<input type="radio"/> Yes <input type="radio"/> No
Do you perform joint relocations/reductions?	<input type="radio"/> Independently (without supervision or approval) <input type="radio"/> Under the supervision or guidance of a ED medical officer <input type="radio"/> I do not perform joint relocations/reductions as it is beyond my scope of practice <input type="radio"/> I do not perform joint relocations/reductions as I am not confident to do so despite it being within my scope of practice
Do you perform closed reductions of fractures?	<input type="radio"/> Independently (without supervision or approval) <input type="radio"/> Under the supervision or guidance of a ED medical officer <input type="radio"/> I do not perform closed fracture reductions as it is beyond my scope of practice <input type="radio"/> I do not perform closed fracture reduction as I am not confident to do so, despite it being within my scope of practice
Does your role allow you to discharge patients from ED?	<input type="radio"/> Independently (without supervision or requiring to consult with others prior) <input type="radio"/> Under supervision - I must consult with ED medical officer prior <input type="radio"/> No - Patients must be assessed by an ED medical officer prior to discharge
Choose which of the following best represents your feelings regarding your current scope of practice in ED	<input type="radio"/> I am happy with my scope in this role <input type="radio"/> I am frustrated by the limitations of my scope in this role <input type="radio"/> I am concerned by elements within the scope of this role and hence, do not perform all tasks as I do not feel it is appropriate for physiotherapy to do so.

The following questions are related to the physiotherapy service provision and prioritisation in the ED you work in

Which funding body or department funds your role within ED.

If more than one body funds your role, select all that apply.

☐ Emergency Department ☐ Short Stay Unit ☐ Geriatrics ☐ Physiotherapy ☐ Unknown to me
☐ not listed _____

How many Full Time Equivalent (FTE) ED physiotherapy positions are funded in your health district?

(If you are unsure, please state "unknown")

Select which option best reflects weekly ED physiotherapy service coverage:

☐ Weekdays only
☐ 7-day service

Is ED physiotherapy coverage consistent between weekends and weekdays?

☐ Yes - Always same hours covered
☐ No - Hours vary
☐ Unsure

What time period does physiotherapy provide coverage to ED on weekdays?

(For example: 8am - 8pm)

What time period does ED physiotherapy provide coverage to ED on weekends

(eg.Sat: 8am - 8pm, Sun:7am-2pm)

What time period does physiotherapy provide coverage to ED?

(eg. 8am - 8pm)

Please rank the following from tasks most important (1), to least important (7) in relation to the role of a physiotherapist in ED

Clearing patients from the triage list _____
Stopping patients from being admitted to inpatient wards _____
Performing assessments of older or geriatric patients
(this may include mobility assessments)

Application of plasters and/or splints _____
Respiratory Assessment / Management _____
Whatever the ED Medical officer in charge determines as most important at the time _____
Helping on other wards / units _____

Who in the multidisciplinary team do you commonly work closely with in ED
(select all that apply)

☐ Occupational Therapist ☐ Social Worker ☐ Discharge Planner ☐ Nurse - RN ☐ Nurse - AIN or EM
☐ Nurse Practitioner ☐ ED Navigator ☐ Clinical NUM ☐ Emergency Medicine Specialist (ED SS or ED
Consultant) ☐ Medical Practitioner working in ED (Accredited or non accredited registra, intern, Career
medical officer) ☐ Orthopaedic Medical Practitioner (Registra or consultant) ☐ Paediatric Medical
Practitioner (Registra or consultant) ☐ Specialist Medical Practitioner not listed above

Change the slider to show how well understood your role is by the following stakeholders

How well do staff and patients understand your role?

ED Medical officers _____

Nursing staff in ED _____

Other MDT members _____

Patients presenting to ED _____

How does the above mentioned stakeholders
understanding of ED physiotherapy impact your role?

(For example, how does a patients understanding of
ED physiotherapy impact your role?)

Change the slider to show how well respected your role is by the following stakeholders

ED Medical officers _____

Nursing staff in ED _____

Other MDT members _____

Patients presenting to ED _____

How does the above mentioned stakeholders level of
respect for ED physiotherapy impact your role?

(For example, how does a patients respect of the
role of ED physiotherapy impact your role)

The following series of questions relate to the future of ED physiotherapists and your beliefs surrounding the notion of advanced skills, clinical reasoning and extended practice physiotherapists.

Please remember the survey is anonymous and these responses will not be individually identified

How many more years do you intend on working as an ED physiotherapist?

Do you believe that ED physiotherapists should have an extended scope role in the future?

☐ Yes - Without formal training beyond current standardised pre-registration training

☐ Yes - With a formal training specialisation pathway ☐ No - ED physiotherapist should stay within their current scope

Extended scope relates to a scope beyond the current legislative and AHPRA mandated scope.

Please select which of the following you believe should be included in the scope of practice for extended scope physiotherapist.
(should it be developed in the future)

- ☐ Joint Aspirations ☐ Limited medication prescription rights (analgesia and anti-inflammatories)
☐ Limited medication administration rights (analgesia and anti-inflammatories) ☐ Limited medication prescription rights (antibiotics) ☐ Referral and ordering of medical imaging (MRI and CT) covered by Medicare ☐ Independent interpretation of medical imaging (all musculoskeletal imaging)
☐ Local anaesthetic administration ☐ Independent joint relocations/reductions ☐ Independent fracture reductions ☐ Lead/Perform Beirs Block ☐ Administer Nitros Oxide ☐ Independently debride a wound in ED ☐ Independently manage a wound in ED (glue or stitch) ☐ Independent assessment and management of dizziness of unknown origin ☐ Other, please list

Please list other tasks or responsibilities you believe should be included in the scope of an Extended Scope physiotherapist

What do you believe should be the formal training program for extended scope physiotherapists

- ☐ Formal University Training - Master of Emergency Physiotherapy
☐ Formal University Training - Graduate Certificate of Emergency Physiotherapy
☐ Australian Physiotherapy College Training Program ☐ Each state health system determine and provide training program
☐ Each health district determine and provide specific training program
☐ Other, _____

Which governing body should Emergency Department Extended Scope physiotherapists be overseen by?

- ☐ Australian Physiotherapy Council (APC) on behalf of the Physiotherapy Board of Australia ☐ Australian Physiotherapy Association (APA) ☐ Australian Physiotherapy College ☐ Australian College of Emergency Medicine (ACEM)
☐ Nil, Unnecessary ☐ Other:
 (Note: The APC are authorised accreditors on behalf of the Physiotherapy Board of Australia. The Physiotherapy Board of Australia is one of fifteen boards that work in partnership with AHPRA)

Please detail which governing body should oversee Extended Scope Physiotherapists

The following questions are related to what factors are currently impacting the optimisation of physiotherapy in ED.

Please provide written responses in the spaces provided.

What, if any are currently barriers impacting on the optimisation of your role in ED?

Please provide details on the barriers and how they impact your role.
(Consider factors in your local context, hospital or ED.)

What, if any are current barriers which impact the optimisation of ED physiotherapists across Australia?

Please provide details on barriers and how they impact ED physiotherapy
(Consider factors which impact the role nationally.)

What local factors help you to optimise your role in ED?

Please provide details the what helps and how these factors impact your role
(Consider factors in your local context, hospital or ED.)

What factors help in optimising the role of ED Physiotherapists across Australia?

Please provide details the what helps and how these factors impact the role
(Consider factors which impact the role nationally.)

The future of ED physiotherapy

How do you think physiotherapy can further contribute to ED in the future?

What strategies or changes do you think need to occur to allow for the increased contribution of ED physiotherapist in the future?

What are some of the barriers you think may impact the increased contribution of ED physiotherapist in the future?

Thank you for participating in the survey investigating the scope of practice, workforce demographics, experiences and perceptions of Emergency Department (ED) physiotherapists.

If you have additional comments not covered in the survey please feel free to use the comments section below.

Additional comments not covered in the survey:

Appendix 5: Pilot panel correspondence

Invitation to participate – Pilot panel

Dear *Insert pilot survey member's name*

We would like to invite you to participate as a member of the pilot survey group to test the pilot version of the study titled:

A workforce survey investigating the scope of practice and demographics of Australian Emergency Department physiotherapists.

The purpose of the study is to establish an accurate picture of ED physiotherapists; investigating the scope of practice, workload priorities and the self-perceived optimisation of their role, both currently and into the future.

The research is being carried out by Tina Vickery, co-investigator and Master of Research student, Dr Lindsey Brett, Chief investigator and student supervisor, and Associate Professor Taryn Jones, Associate student supervisor and co-investigator. The research is supported by the Department of Health Professions, Faculty of Medicine, Health and Human Sciences, Macquarie University. This research has been granted ethics approval by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098

Below is a link to a pilot survey for you to complete. Although you may not meet the criteria for inclusion in the survey (a physiotherapists working in ED), for the purpose of the pilot survey we encourage you to answer questions with a hypothetical participant in mind. Your preliminary trial of the survey will assist us in ensuring any potential access or software issues are corrected prior to data collection.

To minimise the burden on the pilot members, you may provide feedback on the pilot survey questions in a format which suits you best. Feedback may be in the form of written comments, reply via email; or verbally. If you would like to provide verbal feedback on the pilot survey, please contact Tina Vickery, who will organise an online teleconference meeting at a time that suits you.

Whilst you are being asked to complete a pilot version of the survey, your data will not be collected in the research study, the pilot survey participants will be described and discussed in the final thesis manuscript. The pilot may also be referred to within publications of the survey results, within academic journals, professional publications (Ie. APA In motion magazine, etc) and conference presentations. You will not be individually identified, however may be referred to by your qualification or as “pilot panel member” (eg. physiotherapist pilot survey participants, half of the pilot participants).

For further details on the ethical aspects of the research, attached to this email is a copy of the participant information and consent form (PICF); alternatively, if you have any concerns or complaint you can contact the ethics department directly via the details listed below.

<https://redcap.link/k8lh29r1>

Thank you for your consideration

Mrs Tina Vickery

Co-Investigator

Masters of Research Student

Department of Health Professions

Faculty of Medicine, Health and Human Sciences

Macquarie University

(02) 9850 9007

This study has been approved by the Macquarie University Human Research Ethics Committee. Reference No: 5202090921827, Project ID: 9098. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

Appendix 6: Participant Comments

Raw comments

Question topic: Motivation to engage in currently completing or completed further university qualification

Participant	Comments
6	Further my learning and clinical skills and help advance in primary contact physiotherapist roles
28	Extend and update myself clinically. Career progression to permanent HP5.
33	Expected clinical specialty knowledge for ED Desire for post graduate learning relevant to position in ED
34	Encouraged as a requirement of the role. Interested in in further study but limited courses applicable to extended scope ED practice.
41	Conduct clinical research in area of interest informed by clinical experience, learn research process.
48	improve clinical reasoning skills and to justify my position in an advanced/extended scope role
70	Expand scope of professional practice
103	MPH addresses non-clinical responsibilities aligned with G3+ roles
107	Improve diagnostic reasoning. Improve level of clinical expertise.
123	Health service change
129	Private practice future learning work with sporting teams
1	Caterer progression
2	Interest in Musc- Private Practice
4	Career development, intellectual stimulation, requirement for more senior roles, optimise patient treatment
5	ED primary practice Advice that the only way to get this role was to do a masters
9	Gain further qualifications to improve myself as a clinician
10	To further my clinical skills and knowledge to work in advanced practice
15	Further learning

Question topic: Motivation to engage in currently completing or completed further university qualification

Participant	Comments
19	Improved clinical reasoning and communication skills Hopes of being eligible for Advanced Scope physio role in ED
21	Furthering career and knowledge. Development of ED Physio role
22	Work in pro sport
23	Professional relevance
25	Masters of public health Wasn't sure of clinical direction at the time
26	personal commitment to learning
30	Improved clinical reasoning
31	These qualifications are desirable when applying for ED physiotherapy practitioner positions.
32	Wasn't sure of clinical interest at that stage
43	further my knowledge in musculoskeletal physiotherapy and progress by career into emergency physiotherapy practitioner role
44	Job required
47	Study undertaken prior to moving into Ed primary contact role. Working in geriatrics prior to ED.
53	Increased knowledge on assessment and management of sporting/orthopaedic injuries.
60	Engagement in research. Ability to develop new knowledge and understanding of physiotherapy.
63	Mentorship and to advance my clinical skills and clinical reasoning
65	Limited research on physiotherapy within EDs
74	Enhanced clinical reasoning skills
80	To obtain my current position
91	Personal challenge to become a better clinician. Not job/career advancement focused.
97	Improve knowledgs

Question topic: Motivation to engage in currently completing or completed further university qualification

Participant	Comments
99	Improve assessment and management skills of musculoskeletal conditions, especially low back pain
101	Career progression and the need to improve my clinical reasoning skills
109	To specialise in Musculoskeletal
110	I loved MSK since uni. Used to work at private practise and decided after 3 years to do further study when my thumbs began to ache.
111	Job requirement/ expectation for AMP role
115	Interest in health management / service improvement
116	Advance my career
117	Personal development
120	I wanted to work in pro sports
122	Because I had to remain employed Interesting that it was YEARS ago Now with Grad entry Masters and Doctorates - Physio's graduate with a big title and no experience
123	Upskilling
126	Interest in health systems
127	To get more advanced Physio roles
128	career progression/opportunities

Question topic: Motivation to engage with formal advanced training program

Participant	Comments
1	Improve skills and get a permanent AMP job
2	I like the differential diagnosis aspect of the job and acute management
4	Required by employer
5	Test myself again It's gets pretty frustrating that it isn't recognised in different states though
10	It is one of the few programs designed for ED specific education. Relevant PD is very difficult to find
15	Workplace requirement
21	Requirement for role
22	Work in the ED
25	It was mandatory for my role
29	Clinical upskilling
30	ED physio specific training
31	Completing the advanced musculoskeletal physiotherapy clinical education framework was highly desirable in my role as ED physiotherapy practitioner
32	It was mandatory for my role
33	Keen to streamline service in the ED. I feel physios have the skills to work independently with radiology interpretation. I have completed radiology post grad learning, local assessment and safety log assessment + independent learning modules outlined in HWA
34	Extra training - hospital based learning modules / HWS learning modules. Specific single subjects as detailed above Hospital based training - plastering, joint reduction, pharmacology, wound mgt
43	Felt it was a standard I had to achieve to ensure that I was a suitable physiotherapist to work in ED.
44	Job required
47	Condition of employment that I complete this program.

Question topic: Motivation to engage with formal advanced training program

Participant	Comments
48	I enjoyed working in ED and was fascinated by the EPP role, I thoroughly enjoy diagnostics and my goal was to learn the skills to work in that position.
50	To provide a level of achieved competency to demonstrate effectiveness in the role
51	Committed to being a life long learner and to undertake my role in ED with confidence
58	I only cover ED sporadically, therefore I do not have time to fully complete the Adv MSK framework. Therefore I have completed some shorter course that I feel are relevant.
63	Organisational requirement and provides a robust process to assess the 'advanced practice' skill capability specific to ED that is not included in Musc or Sports Masters
69	Succession planning and encouragement from team leader
74	New challenge
77	opportunity to progress my career and provide high level clinical services to patients independently
80	Need to complete to do current position
83	Enhance knowledge base specific to ED.
91	Three reasons: 1. Firstly, to improve my clinical capabilities, specific to the ED. 2. To demonstrate my clinical capabilities in a transparent and widely understood and transferable way 3. Half-way through completing, it became a state-wide project, to have clinicians complete, so I was rolled into this (in 2016). To be honest, I feel the HWA Clinical education framework, which is based on the Victorian pathway, (which I completed) is very confusing and difficult to navigate and needs completely re-building from the ground up. This needs to be a nationally coordinated project, pulling together material and strategies from all states, hopefully in collaboration with the APA career pathway framework. hopefully this will use updated and enhanced learning resources relevant to the ED (such as the fracture management modules developed by the QEDPN - Queensland Emergency Department Physiotherapy Network), and result in a clear and attainable pathway with national transferability. The state-based fragmentation remains an issue. The pathway from mid-career MSK physio to advanced practice Physio in ED still remains muddy.
95	Very interested in working in ED in the future and thought the course matched my current level of skill
97	Mandatory
98	Because I did the first one run which is quite different from the current one
99	Introductory course covering all aspects of Physiotherapy in the ED department
101	It was a requirement to work as an ED clinician at my workplace

Question topic: Motivation to engage with formal advanced training program

Participant	Comments
109	Expand my knowledge and work capacity
110	I love working in ED and would like to perform the EPP role rather than just seeing the patients that doctors refer.
111	Job requirement/ expectation for AMP role
116	Requirement of new position at the time
117	Competency demonstration
120	To be comoetent to do work and teach others
122	Had to I'd done a Project to get the ASP ED into WA for 6/12 - so got the ball rolling for WA (2010) When potential ED ASP roles were advertised we had many hoops on top of our Post grad/experience etc that had to be completed. Scrutiny from ED staff/Nurse practitioners - we were under the microscope (and not in a good way) - so if there is to be a career for next generations we cannot afford to (insert word) up!
123	Work requirement

Question topic: How does the above mentioned stakeholders understanding of ED physiotherapy impact your role?

Participant	Comments
1	Better understanding by team especially medical and nursing leads to better patient flow
2	Their understanding is improving with time as this is a fairly new role at our hospital
3	Under referred and time frames underestimated
4	Our role is generally well received / well supported by other ED staff
5	It makes the process to develop and progress service pain stakingly slow
6	Can cause confusion on scope of practice and what physiotherapy can achieve in ED. Could potentially cause confusion for patients however once explained the role and service most patients are happy
9	Need to explain our role to patients
10	The role has been established for many years and has the support of the senior medical group due to a proven track record in safety and effective, high level clinical care. This allows any expansion of scope to occur without push back. We currently work as a team with nurse practitioners providing care within Fast Track with minimal medical support / supervision
13	Sometime patients don't understand the level of experience or knowledge we have as ED physiotherapists and will request to see a doctor despite being seen by myself (a physio practitioner)
15	Stakeholders external to ED occasionally cause issues
16	Excellent support from medical officers means physio is valued in ED. Our discharge planning team is a very cohesive group and physio is well repected
19	Lack of understanding means we sometimes get asked to see patients inappropriately. Often get asked to see people for appropriateness for dc rather than diagnosis when I think sometimes my skill set is better fit to actual do the diagnosis that, for example- the junior doctor asking me
22	They respect your skills and autonomy and let you crack on whilst also supporting you with things beyond scope such as medication, wound care, pathology test ordering etc
26	Assists greatly in getting the right level of support/supervision from each of the different groups. I find patients generally have a high regard for physiotherapy scope within the musculoskeletal field which makes it easier as well.
28	Occasional 'on the fly' education of what input and service the ED physiotherapy team can provide.
29	At times appropriateness of referrals can be fluctuant.

Question topic: How does the above mentioned stakeholders understanding of ED physiotherapy impact your role?

Participant	Comments
30	Spend a lot of time explaining to people how and why the role works.
31	Most stakeholders understand the capabilities of the role and the benefits to the department. Staff turnover leads to frustrations in reminding scope of practice. Increasing independence is slow and progressive but it is happening (e.g. prescribing).
32	It just means you need to spend time educating staff but you always need to do this with high turnover particularly medical staff
34	Neither here no there. We are clear to present our self as Physiotherapists but we are often considered doctors by the nature of the work we do.
35	Less referrals. And when referred, often referred late in work-up
36	Need to ask nursing staff to try mobilizing patients before we see them
40	Better understanding of role = appropriate referrals where physio will add most value and vice versa
41	Impacts appropriateness of referrals and timing of referrals- sometimes too late. Patients already in a difficult scenarios can be frustrated with repeateing their history or seeing us as "unnecessary", or preferring a doctor.
42	having to explain our triaging process given the limited coverage during the week and the demand placed on us by ED who expect us to prioritise their requests
43	Most are positive towards physiotherapy being present in ED.
47	Physio has been embedded for a long time so there is over all a very good understanding of what we do. Certainly helps as cuts down the requests for things unrelated to our role. We are lucky as we have a secondary contact physio which frees us up to do the primary contact role.
48	Staff often overestimate our capability e.g. wound or medication management. They often request unnecessary clinical input which is not a beneficial use of our time e.g. providing 'exercises' for someone with a wrist fracture. Patients are often surprised to be treated by a physiotherapist.
50	Understanding roles, differences between primary and secondary roles helps to streamline referrals/appropriateness of referrals
51	Poor patient knowledge induces an additional layer of stress as they often expect to be assessed and managed by a MO and feel "cheated" by assessed and managed by a physiotherapist
53	Occasionally get referrals where we will not add value (eg patient already indep. mobile following a fall).
54	Appropriate referrals and discussions re: patient care, appropriate discharge planning and education for patients, early referrals/consultation
55	Sometimes get in appropriate referrals
57	Lots of reassurance and discussing what I can provide for team and patients
60	The ED PT role is seen as an essential part of the ED MDT.

Question topic: How does the above mentioned stakeholders understanding of ED physiotherapy impact your role?

Participant	Comments
61	EDMOs and nurses - assists us to work collaboratively and seamlessly in providing patient care.
65	Need to continually communicate the role.
68	If staff are able to understand the impact of my role in ED they are able to use my skills most effectively. For example if MO's do not understand my primary contact role they may pick up peripheral limb injuries rather than patients presenting with medical concerns, limiting the patients I can see.
69	Reduced understanding can lead to reduction in referrals -@ Confusion re: scope of practice and primary vs secondary contact Improved understanding can lead to Reduced admission and reduction in unnecessary imaging
70	Allows us to work effectively as a team on the most useful info
73	Inappropriate referrals would be the main impact of other disciplines not understanding the role of Physiotherapy Not understanding why and when Physio is required
74	Lack of understanding of what our scope and knowledge is and therefore patients sometimes question our ability
75	Limits the scope, Poor referrals
77	The biggest impact of not understanding our role is unrealistic expectations of what we can provide and achieve.
80	Sometimes patients prefer to be seen by a doctor. Happens less frequently nowadays
81	Tell patients my job is to expediate single isolated injuries in ED
82	With only 1 FTE physio there are often situations where Physio and stakeholders have conflicting ideas regarding what the priority for Physio should be during busy periods
84	Occasionally inappropriate referrals are generated i.e. r/v of a patient for mobility who is (I) mobile or asked to do a simple cast when you have multiple jobs on the go because you are the physio. Often seeing patient with MSK injuries they are very thankful to be seeing a PT rather than medical officer.
85	very Valued member of the ED team Expertise is often sought
88	If the doctors/nursing staff working do not have a good understanding of our role then we receive less secondary referrals and it reduces our ability to clear triage and reduce hospital admissions. If patients don't understand our role then we often need to seek further patient r/v by the doctor to meet patient expectations, which increases the doctor's workload and the patient's time spent in ED.
90	inappropriate referrals, unrealistic expectation to always be in ED
91	A lot of staff do not understand the difference between: 1. Primary Contact Advanced Practice Physiotherapy and 2. Secondary contact referral-based physiotherapy in the context of: 1. The differences in the operational duties of the role 2. The difference in training and required skill-mix 3. the difference in responsibility
92	Occasionally medical officers (more inexperienced) will take patients off me unknowingly

Question topic: How does the above mentioned stakeholders understanding of ED physiotherapy impact your role?

Participant	Comments
93	When new medical officers are on shift who don't fully understand my role or scope, it can slow my work down/slow discharge of patients. Sometimes, I feel like patients expect to see a doctor, and when it comes time for discharge I can see they are hesitant (or at least surprised) to leave without having seen one. Sometimes I suspect patients with back pain expect a massage or other therapeutic treatment when I attend to review them.
94	Education needed with most junior med officers, some senior med officers and some nurses as to Primary Prac role eg unaware of imaging requests and other primary prac duties
95	ASET - sometimes confused as to why we as physio's talk to them
97	Increase load and also additional mentor junior doctors and NP candidate
98	Makes it easier but it is also up to us e to educate and perform at a high level to show our worth
99	Patients lack of understanding on the odd occasion leads to patient initially feeling they may not be assessed properly as not a medical doctor
101	It can create confusion with other health professions as they don't have a good understanding of your scope of practice.
103	I spend a certain amount of time educating patients regarding my role in their care and management; especially the vestibular patient.
107	MOs will prioritise leaving patients in our Fast Track area for me to see during working hours to improve work flow for other patients. Excellent shared working of MDT with ASET and OT in SSU sharing responsibilities. Limitations with RNS sometimes expecting simple jobs (CAM boot fittings, initial mobility assessment etc) to be completed by physio without justification. Falls risk referrals that are inappropriate are a particular challenge
110	We work in a supportive environment where the doctors and nursing staff respect our role.
113	Affects work flow , referrals are sometime inappropriate
115	Efficient workflow - doctors and nurses know clinical presentations and procedures within my scope of practice and can assign appropriate patients to my caseload as needed
116	Need to explain clearly to patients
117	Amount of explanation required on what I do prior to launching into why I am consulting/ talking to them
120	They give me the autonomy and assistance I need
121	Somewhat limited but appreciative
122	New staff - need to be informed. Some staff have good understanding of our scope and roles. Most are confused that we don't have prescribing rights for simple analgesia.Educate, educate, educate
123	Have to educate MOs at rotation time

Question topic: How does the above mentioned stakeholders understanding of ED physiotherapy impact your role?

Participant	Comments
125	Well respected team member assisting ED fliw
126	I feel I could be involved with more patients
127	It's frustrating when ED staff don't understand that I'm an independent practitioner, with my own patient load/list, and expect me to do tasks in a sec contact capacity, esp when it impacts on my patients' LOS. For some reason, they can understand the role of a nurse practitioner, however, their understanding of Physio seems to be: mobility Ax for discharge, POP applications or back pain management.
128	patient flow scope of practice
129	Good knowledge in fast track at Barwon . Not so much is ssu

Question topic: How does the above mentioned stakeholders level of respect for ED physiotherapy impact your role?

Participant	Comments
1	The more confident staff are in our skills the more respected we are
2	they impact the referrals we receive and the triage caseload they leave for us
4	Generally well respected by patients/staff
5	Tasmania is a long way behind the rest of the country in this regard Advanced practice physiotherapy is not well accepted here
9	Good to be respected for your skillset in the role
10	Level of respect is directly proportional to job satisfaction
13	For some cases, people do not respect what we say which can be frustrating
16	Very positively. Doctors refer patients and respect your assessment and plan for the patient, with no questions asked
19	Patients sometimes not interested in my opinion of what they have or what can help it because I'm not a doctor
22	Being a valued team member is always good, getting asked for consults is encouraging
26	Again generally very supportive and appreciative of my role.
28	Having high levels of respect from colleagues fosters a trusting and collaborative team response to patient care.
29	Well supported and good environment to work in.
30	It is lovely to be valued by stakeholders
31	ED Physiotherapist in our hospital are valued for the expertise and involvement in team care management of pts.
32	There are a few here and there that lack respect for us which is frustrating but it doesn't impact our role.
34	No major barriers to completing work and contributing to patient care.
35	Minimal impact
41	Good working relationships with ED staff, other staff supportive of us when dealing with patients, we try to assist ED staff in general ways considering the whole service
	differs depending on the staff and clinician, also the circumstances surrounding the referral e.g. if we are able to see a patient soon after the request is made and are able to
42	DC the patient then we are very well respected. If we can't see the patient, and/or are unable to clear the patient for DC then we are treated differently at times
43	Gives you satisfaction when they respect your skills and knowledge

Question topic: How does the above mentioned stakeholders level of respect for ED physiotherapy impact your role?

Participant	Comments
47	Sometimes people don't expect us to be doing all we do. 'Oh, I don't need a physio yet, I need to see an orthopaedic surgeon as I have broken my'. On the other hand I've only had one person refuse to see me as I'm a physio. Two have requested medical review after me seeing them and both times the EDSS has backed up everything I have said by saying something like 'the physio is right...'. Having respect of the team is critical in performing our role. It just wouldn't function without their support and support.
50	Makes for good team working practices. Confidence in being able to practice independently and safely
51	Always enjoyed working with MO and nursing staff. Also professional satisfaction is gained when patients acknowledge you are capable of assessing and managing their MSK injuries / conditions
53	Well respected and utilised in the ED
54	Valued as a team member and treated equally as part of the MDT
55	Nil
57	depends on decisions needed and what the consumer is expecting with their presentation
60	The level of respect makes the position much easier as a valued member of the team.
61	EDMOs and nurses - high level of mutual respect enables us to work well to provide a high standard of care and support each other as needed, makes the role highly satisfying.
68	Increased respect for physiotherapy services in ED enhances the service we can provide. It increases referrals for patient review and education. It also has allowed us to participate in nursing and medical teaching which can enhance the service to patients provided outside of staff physiotherapy hours.
69	Increased respect allows for more involvement in clinical decision making and open communication re patient's
70	Widely respected. Only occasional issues
73	Recommendations will be taken seriously by nursing staff and other MDT. Some recommendations are not always taken seriously by ED medical officers (i.e further investigation due to red flags in LBP)
75	Justifies the scope
77	The respect impacts our role by making it more valuable and enhances our ability to work to our scope.
80	Feel appreciated in role
81	Acknowledgement of my expertise in the field of MS conditions
85	Well respected and often asked for advice

Question topic: How does the above mentioned stakeholders level of respect for ED physiotherapy impact your role?

Participant	Comments
88	If they lack understanding of the physiotherapy role then they are less likely to engage us in patient management. There have also been times where I have had primary contact with a patient and a doctor has taken over the patient's care without my knowledge as they either don't understand my role or feel that all patients who presented to ED need to see a doctor.
90	feel valued
91	Enjoyment of workplace. Support for business cases for increased staff
92	I'm indifferent to it
93	I have never felt more valued as a physiotherapist than when I started working in ED. The positive response I receive from colleagues really motivates me in my role. I am really just in the beginning of my ED practice, but I am very keen to progress in this clinical area.
94	Having a higher level of respect from co-workers makes work satisfaction significantly higher!
97	More job satisfaction
98	Mutual respect increases efficiency and effectiveness for all
107	I think the PCP role has been working very well since going to a 7 day service 12 months ago. Some patients does always understand the role of physio however with adequate education and explanation plus demonstration of high level of clinical skill they are nearly always happy with the service provided.
110	Similar to above
115	Positive workplace culture that fosters supporting one another and understanding of team members' roles Patients trust clinical skills of physio, higher satisfaction rates
120	It recognises your skills and role and allows you to contribute effectively to team
121	Limited impact but very appreciative
122	We continue to seek the comprehension of the pts on what our role is. Mostly they're happy; some regardless want a doctor. We comply and then they often realise that they were getting so much more education, information, management from us - or they have to wait because medicine is seeing genuinely sick people
125	Feel contribution to Ed Caseload making a difference
126	Patients are generally surprised but happy to see physio
127	ED Consultants understand the role well. JMOs need constant education which can be tiresome. Orthopaedic Registrars in NSW seem to be less trusting of the PCP role compared to my experience in Vic where I did all ED reductions of fractures and dislocations. This is frustrating as I feel I don't work to the full capacity of my scope and experience. Patients seem to be very happy to be treated by a PCP as long as it's explained to them and you reassure you liaise with the medical team.

Question topic: How does the above mentioned stakeholders level of respect for ED physiotherapy impact your role?

Participant	Comments
-------------	----------

128	i feel well supported/respected by the ED team at the hospital i work at
-----	--------------------------------------------------------------------------

Question topic: Current local barriers impacting on the optimisation of participants role in ED

Participant	Comments
1	Funding for adequate staffing, lack of standardised training and credentialing in Australia.
2	Funding . As the ED Physiotherapist is funded by ED, once the Physio completes their training, there is not a lot of growth. Our ED has funding for only one Physio at any given time.
3	Funding. Experience.
4	Relatively small number of team members compared with medical / nursing for training and collaboration.
5	Lack of understanding by allied health leadership of what it is Mixed caseloads with secondary practice diluting the impact of primary
6	Barriers include access to analgesia, requiring supervision for some basic tasks but also unavailability of medical officers to oversee tasks that require supervision which can cause delays
8	Physiotherapy management not allowing progression in scope of practice. I feel ED understand our role and value and happy to allow us to learn other skills which are traditionally medical or nursing skills but Physio management are too conservative.
9	There are at least 2 nurse practitioners working each day to 1 physiotherapist, so we are competing for work all the time
10	Inability to prescribe, takes time to get a nurse practitioner or Dr to complete scripts. Inability to administer medication - additional staff required for joint reductions and Biers blocks Inability to independently complete work safe initial certificates of capacity, takes time to get a Dr to complete certificate. Lack of funded leave cover and limited EFT contribute to significant burn out
13	The level of knowledge of the scope and role of Physio in ED
15	Funding
16	Funding and historical roles. Nurse practitioners have a significant say and manage musculoskeletal patients. We are trying to get funding for primary contact physio (not extended scope) but are fighting these barriers.
19	Lack of knowledge/ respect
22	Nil other than restriction on administration of simple analgesia, completion of initial tac and workcover certification and referral to external specialists
26	Some legislative barriers prescribing, however we are working towards limited prescribing in Qld Funding barriers: Lack of provider number for Medicare rebates limits inter-hospital referrals, referrals to external specialists eg Orthopaedics, referral for OPD imaging eg suspected internal derangement of knee doesn't need an MR in ED, but would

Question topic: Current local barriers impacting on the optimisation of participants role in ED

Participant	Comments
	save the patient time and money to be able to leave the ED a referral for an MRI to have done before re-representing to downstream clinical services eg fracture or soft tissue injury clinics.
28	Lack of dedicated non-clinical time to commence ED learning packages to advance skills and knowledge.
29	Funding- only limited hours available to perform role/ provide service. Strong foundation for upskilling/ career progression. Currently predominantly adhoc on the job training & self directed learning. Clear & strong support system to help manage potential adverse events- As Physiotherapy practicing in higher 'risk' area but still under hospital Physiotherapy team- nil clear support pathway/mechanism which is much more evident in the Medical stream.
30	Formal recognized training program similar to Nurse practitioners
31	Current barriers include inability to prescribe appropriate pain relief medications for patients (No prescriber number for PBS). inability to directly refer to specialists (Orthopaedic surgeons). Inability to independently interpret medical imaging. Poor succession planning on behalf of management.
32	Unable to independently reduce fractures. Can't inject local anaesthetic. Can't suture, can't prescribe analgesia. Can't manage wounds.
34	Legislative Historical stigma Lack of available training pathways
35	Multiple barriers but confident they can be overcome. Time and consistency of the current service which is relatively new, will really help
36	Lack of pathways and training
40	Lack of formal ED training, competencies
41	We are a new service with temporary funding, and need to tailor our work to those patients which provide best value for the hospital. We are still establishing our role, formal supervision and competencies. We are best suited to an interdisciplinary or transdisciplinary approach, incorporating OT/SW skills, as well as advanced practice MSK skills. As a new service there have been some issues with other staff misunderstanding our role (primary vs secondary PT) or wanting to dictate who we are able to see in the ED, when we currently have flexible referral methods including verbal and screening from the ED bedboard.
42	Our hospital does not have consistent funding for ED role during the week. Our presence and scope changes based on where the temporary funding comes from or the project being funded (i.e. just secondary, both primary and secondary etc part time vs full time) is frustrating for ED staff. It doesn't allow staff who cover ED adequate time and exposure to develop ED related skills, embed ourselves in the ED, build relationships within the ED, or establish a training pathway for Physiotherapists
43	Legislation (medications and imaging), funding opportunities like Medicare for imaging and lack of extended scope of practice training by independent accredited education institutions.
47	Legislation in terms of prescribing and suturing.

Question topic: Current local barriers impacting on the optimisation of participants role in ED

Participant	Comments
48	availability of training programs for extended scope prescribing and real time ultra sound that provide accreditation for a competency and secondarily having support from district level governance to allow the application of those skills. Limited ability and exposure for junior staff to learn/develop skills required to work in ED e.g. radiography interpretation, plastering, splinting
50	Lack of understanding of the clinical role in the ED from more senior physiotherapy positions. These senior positions make the over arching decisions locally/district and do not necessarily grasp the different demands of the ED. Having experienced senior ED physiotherapists more involved in decision making would assist in optimising the role of physiotherapy in the ED.
51	Patients of the ACT have high expectations and are demanding which increases stress / anxiety for clinicians. This is especially augmented when the CHS executive does not provide support the clinician as they always appease the patients.
53	Governance to allow increased scope. Time for training.
54	Currently our role in ED is governed by local protocols and guidelines; there is significant variation amongst practices in all EDs within NSW and then across Australia. Locally we have great processes and great buy in from medical and nursing staff.
55	Not sure
57	Formal training options Workloads Establishing learning pathways - Needs non-clinical time - Hard Establishing mentoring/Networks with other clinicians - need to look off site
60	Training programs and formal recognition as advanced practitioners.
61	Paucity of structured training and ED specific courses in extended physiotherapy skills Lack of funding to provide 24/7 physiotherapy staff coverage in ED
63	Funding. Inconsistent service profile across the 3 ED's within our network not optimizing service molds. Very high risk of burnout - we have a number of advanced practice Physio's who have been working an adv prac AVP in ED roles for more than 10+yrs with symptoms of burnout Ability to work across areas of advanced practice in Musc and maintain skill capability across a number of areas in Physio
64	Lack of externally run courses
68	Budget - there is currently no budget for physiotherapy services outside of standard weekday hours for physiotherapy. Knowledge of physiotherapy services from staff specialists - some SS are more reluctant than others to allow for extended scope practices in ED Prioritisation of ED within the rest of the hospital physiotherapy services - often can get pulled to cover the ward due to the competing demands
69	Reduced understanding around Vestibular presentations and role of physio in this population particularly with junior medical staff

Question topic: Current local barriers impacting on the optimisation of participants role in ED

Participant	Comments
74	Medication prescription Ordering outpatient MRIs
75	Politics
77	Legislation including radiation safety act for ordering CT's and medicines and poisons
80	High clinical caseload, limited non clinical time
81	SESAHS primary roles are only a level 3 whereas NSLHD and WSLHD are level 4 for exactly the same job. WHY ?????
82	1 FTE in a busy ED with ED Physio coverage of external ward. Continued expansion of department including increasing presentations, ASET team, EDSSU etc with nil increase in Physio service for 18 years
84	For the treatment of back pain - administering analgesia For very simple #s - having to r/v with a staff specialist (often wait around) Unable to order further imaging in ED setting i.e. CT scan
85	none
88	Stakeholder understanding of the role Limited funding - only able to provide physio services 5 days per week and during limited hours. This reduces the consistency of our presence and therefore staff are less likely to engage us to care for patient. Lack of ED specific training for physiotherapists.
90	nil
91	Training: Lack of training pathways for injection training Lack of state-wide or nation-wide widely accepted training pathway for others to move from mid-career MSK to specialised practice in ED. Lack of MSK OPD and screening clinic physiotherapy space, to train up developing clinicians. Legislation: -legislation of medications and lack of prescriber number - independent prescribing. -Legislation of work cover, prevents us from completing Queensland Work Capacity Certificates (only by medical officer), when we are perfectly capable of completing these based on our scope of practice, and the MOs often consult us for advice when completing Work Capacity certificates for musculoskeletal injuries. Radiation safety laws - We are unable to refer for CT, and often complete the imaging form, for a medical officer to review and sign, thereby duplicating work. Understand of Clinical governance: -robust clinical governance processes are necessary to ensure safety and transparency of practice and that all parties are happy with the scope of practice of a service, and clinicians. This includes an agreed upon Model of care. -Navigating the expanded scope of practice credentialing pathways (this was a learning experience in navigating the pathways and dealing with the committees and governance bodies to expand practice) Local cultural barrier: -
92	Local Hospital Culture plays a large part, but locally, resistance has been low, compared to other sites in Queensland.
93	Very interested to see extended scope being introduced
93	Nil. Our service is evolving, we are establishing a Local Operating Procedure and the meical team are supportive. So it is a work in progress, but I don't find there are any barriers.

Question topic: Current local barriers impacting on the optimisation of participants role in ED

Participant	Comments
94	Varied scope of practice and differences in local policy between LHD and States. Very unclear role, however this is also exciting
95	Current hospital protocols - Have a specialist hands unit who see most hands cases directly - Orthopaedics perform all jt reductions and more
97	Formal training. It iis all done adhoc by myself.
98	Nursing staff wanting to take on more of physio role. In a teaching hospital the newer medical staff want to treat the MSK patients as they are easier than chest pain and other medical issues so we compete for patients
99	Traditional beliefs from ward medical staff who still believe physio's primary role is deep breathing exercises and mobility assessments
101	Inability to prescribe and administer medication and the inability to order CT scans
103	VESTIBULAR physiotherapy: Knowledge and understanding of medical staff regarding clinical capabilities of physiotherapists. Clinical risks of differential diagnoses for the dizzy patient, limiting extended scope of practice within this area.
107	Personal time to study and develop (I have two children aged 2yrs and 5 months!). I am quiet new to the role. A specific specialisation pathway would also really help. I'll return to my grad cert sports next year but I would like something more ED focused.
110	Legislation and too firm a grip by medical field. Also relevant training and upskilling opportunities with formalized pathways.
111	training APA &@ local management advocacy
113	No formal pathway to specialisation
115	Limited access to supervision, usually work as a solo primary contact physiotherapist in ED
117	Our model relies on a team of physios providing our ED service. We are only as good as our most junior member
120	Providing simple analgesia
121	Very traditional medical led model
122	Inability to prescribe; inability to inject LA Some supervisory organisations Physiotherapy administration - still don't know what we actually do anyhow an ED is run
125	Limited staffing as EDs are very busy
126	In my ED there is not a specific person associated with the EFT - so the ED physio is constantly changing. I think if the same person was in ED consistently, communication between the staff would greatly improve and we would likely receive many more referrals.
128	lack of funding for more hours
129	Learning the role

Question topic: Current barriers which impact the optimisation of ED physiotherapists across Australia

Participant	Comments
1	A/a
3	Training and scope of practice
4	Legislative including prescription /administration of medication.
5	Governance Transferability of clinical competence Clinical development pathways for staff
6	Other practitioners not aware of scope
8	No national body to consult to give approval for extending scope
9	Competing for space in ED to see patients
10	Legislative limitation to prescribing and injecting- particularly in Victoria
13	Not enough understanding of the impact of physios in ED and not enough funding
15	Funding models Medical hierarchy
16	Historical roles are still being governed by doctors and nurses meaning physio get very minimal say and very hard to break into that mind set for primary and extended scope roles
19	Hospitals across Australia not sharing resources and training programs
22	Inconsistent training, inconsistent level of expertise, varying scope of practice in many depts, blurring of primary and secondary contact roles.
26	The lack of a training pathway that is supported by AHPRA and our Professional Association is probably the biggest barrier to the sustainability of the Advanced/Extended Scope ED Physiotherapy concept. The HWA/Victorian framework is an excellent resource, but its application is limited by a lack of standardised assessment of candidates against competency criteria. In Qld it is still up to a local facility to determine that someone is appropriately satisfying the framework, in the setting of pressure on local facilities to expand these services there is a risk of 'pushing' people into these roles prematurely. There is also resistance from other professions, I feel that where EDs have well established nurse practitioner roles, there is often resistance to Physiotherapists expanding into primary contact roles.
28	In-consistent models of care / scope of practice between hospitals & health services. Lack of funding to adequately staff the ED physiotherapy service, despite data backed need to expand the ED Physio service.
29	Standardisation- nil clear entry level skill set & nil clear career progression skillset. Correlated to differing roles at different health services.
30	Formal recognized training program similar to Nurse practitioners.

Question topic: Current barriers which impact the optimisation of ED physiotherapists across Australia

Participant	Comments
31	As per previous question. These limitations are often universal.
32	As above
34	Training Available positions
35	Understanding of the role and its' potential.
36	Lack of knowledge of the role by medical staff
40	Lack of formal ED training, competencies
41	Current inequity of hospital based physiotherapy staffing between and within states of Australia is an issue that also affects ED staff. This is linked to funding as well as staff retention. Unclear requirements for training/mentoring between sites and lack of recognition as a specialty within current APA frameworks are unhelpful, and do not distinguish between the MSK primary care specialist and the interdisciplinary discharge planning specialist.
42	Lack of formalised specialised training pathway e.g. like Nurse Practitioners Relies on local politics and ED staff (e.g. Dr who is supportive of Physio and upskilling in advanced scope vs another who isn't)
43	Legislation funding and education opportunities as above
47	As above Some EDs have cultural barriers around practice I.e. having to have some with less experience (but a Dr none the same) review imaging, limiting reductions post training.
48	availability of training programs that provide realistic and necessary skills required in ED
51	Lack of knowledge of the role and responsibilities of ED physiotherapists by GPs and the general public who are negative to their or their patients' management
53	Recognised training pathway.
54	Limited governance and agreement across states as to what the scope should be, and how to govern this. APA vs APC vs Reg board - given each state award is different, requirements are different to work across different levels eg Grade 3 in Vic requires post grad quals, none required in NSW
55	Not sure
57	How slow the training and frameworks are for new/novice therapist in ED Lack of leadership from APA - more vested in private specialties like sports - but ED could be a good test case given structure/supervision Whats law versus skill No uniform pathway unlike msk/neuro/paeds/wh etc
60	Training programs and formal recognition as advanced practitioners.
61	Paucity of structured training and ED specific courses in extended physiotherapy skills Lack of funding to provide 24/7 physiotherapy staff coverage in ED

Question topic: Current barriers which impact the optimisation of ED physiotherapists across Australia

Participant	Comments
63	Physiotherapy Act - restrictions in managing analgesic requirements for patients and for injecting/suturing
65	standardised and recognised training formal pathways to become an advanced scope ED physio
68	Budget ED Physiotherapy scope between states state and federal legislation
69	Limited scope - I think optimisation of ED Physiotherapy would be increased if additional scope was added
75	AMA
77	As above
80	Lack of formal training pathway. Limited ability to gain experience in ED
81	Funding provided by the ED. all funding at the moment is from the Physiotherapy department.
82	Different hospitals, Health District and States utilisation of ED physio services vary. Lack of consistent training program/pathway for competencies
90	unsure
91	Basically as above
92	Similar to the scope of practice barriers mentioned previously
93	Inconsistent pathway for upskilling or demonstrating competency. Unclear definition of what it is to be a Physiotherapy Primary Practitioner in ED.
94	As above
95	Prescription rights for analgesia
97	High profile of nurse practitioners
98	Traditional roles
99	Lack of consistent, formal recognised training
107	Lack of prescribing rights slows down management in Fast Track for simple analgesia. I only work in a Private hospital providing a public ED so unsure of other barriers yet.
110	Similar to above.
111	training -@ APA advocacy
113	Differences across states
115	Opportunities for expanded scope of practice with adequate governance
116	Big leap from private practice to ED roles

Question topic: Current barriers which impact the optimisation of ED physiotherapists across Australia

Participant	Comments
117	Understanding of role, scope of practice
120	Inconsistent roles, expectations, level of education and competency.
121	Differing roles/required specialisation across states
122	Need for standardisation of qualifications and pathway to develop
125	Further course in WA for secondary scope, Post grad specific to ED primary PTs
129	Service specific

Question topic: Local factors help to optimise the ED physiotherapy role

Participant	Comments
1	Education to staff, ensuring good clinical governance of AMP staff, a lot of time and effort in relationship building
2	It would be great to have the Allied Health Managers of the hospital advocating for our role and increase Physiotherapy presence
3	Smaller network with a simpler (medically) caseload
4	Support from senior medical staff.
5	Supportive ED FACEMs
6	Well respected role & good relationships with stakeholders within the ED
9	Good understanding from medical consultants around our role and scope of practice
	Having a clinical champion within the senior medical group has led to greater understanding and support for our role which has greatly enhanced our development over time
10	Having funding directly from ED removes competing priorities from physio dept ie not being taking away from ED to cover other areas
13	More funding for more staff
15	Stakeholder support
16	Supportive manager and medical staff for secondary contact only.
19	Doctors with an understanding and appreciation of our role
	Relationships with consultants in ED and Ortho, support from board and senior hospital management who value allied health, reduced layers of bureaucracy. And well trained, competent staff in PT role
22	
	Support from ED Management and Medical staff value our role and rely on our presence. Support from Orthopaedics where Registrars are happy to discuss cases with us and collaborate, we have some clinical meetings with Registrars from time to time.
26	
	Well established ED physio service which is well understood by the ED medical team. Great working relationship between ED Physiotherapists and ED medical, nursing and allied health teams. Supportive ED Physio colleagues.
28	
	Good team support, Consultant pool & ED seniors are all approachable & supportive. Routine/regular roster pattern. Queensland Emergency Department group proactive & working towards improving statewide collaboration & education.
29	
31	Long established role in ED. Minimal staff turn over of ED physiotherapy practitioner roles. Has helped built trust in role and expand the scope of practice.
32	Physio and medical champions Good relationship with specialists departments particularly orthopaedics.

Question topic: Local factors help to optimise the ED physiotherapy role

Participant	Comments
34	Good leadership Well supported by Physiotherapy and medical faculty
35	Support from ED management
36	In-house training
40	Mentorship and training from more senior ED physio staff
41	Being friendly and approachable, being willing to assist wherever necessary within my scope of practice, good clinical assessment skills in MSK and beyond, a close-knit allied health team to discuss D/C planning before liaising with clinical NUMs/ED MO, easy referrals to Hospital in the Home allied health services.
42	Support for Physio in ED
43	Local agreements and procedures to order imaging and medications
47	Initial and continuing support from the executive levels within the organisation and the directors of ED. Also a very support head of physiotherapy over the years has helped. I think in the early phase putting the 'right' staff into ED was a big bonus as it established early confidence.
48	highly supportive colleagues and local governance which embrace the value of our role and promote its application
50	Having the ED medical and nursing teams on board to support the role
51	Often I ask the shift consultant to discuss with the patient or their family of their confidence in the services provided by the ED physiotherapist which often de-escalates their concerns.
53	Relationships in department.
54	Buy in from key stakeholders, set up local processes
57	Shared care of patients to learn how other specialties work - NP/Dr/Specialists Supervised with advanced scope Direction with training - NP/Dr
60	Local workplace culture is essential. Good understanding of role across MDT members.
61	Supportive physiotherapy management and allied health management, also supportive ED medical director Supportive and respectful working relationships within the ED Funding
63	Funding grants Stakeholder engagement and having a champion
65	Supportive management (physio and FACEM) Succession planning (local training pathway) for juniors
68	increased budget and the prioritisation of ED physiotherapy services

Question topic: Local factors help to optimise the ED physiotherapy role

Participant	Comments
69	Education of junior medical staff and nursing staff regarding the role of ED physio allows for more understanding of role and what we can actually do and increased referrals Senior ED staff advocating for physio involvement -Proactively seeking out referrals post medical review
75	Collaboration
77	Support and respect from our medical (particularly director and staff specialist group) and nursing colleagues.
80	Supportive medical and nursing management
81	Excellent staff specialist support in ED
82	Acceptance from our ED Consultants
88	Upskilling and training with more experienced physio colleagues and with medical staff, when able.
90	Good relationship with ED Doctors and other MDT staff
91	Local cultural barrier: -Local Hospital Culture plays a large part, but locally, resistance has been low, compared to other sites in Queensland. Internal drive. Motivation as an individual clinician to work to full capacity was the primary driver in expanding the scope of practice of the service beyond the traditional model. 'if you want to get something done, do it yourself'.
93	Strong support from senior ED PT and PT manager as well as FACEMs.
94	Collaboration with other ED Physios, Physio manager and ED staff (ie nurse prac, FACEM's, ED Director and nursing staff)
97	Support by medical staff
98	MDT teamwork
99	Sound working relationship with ED consultants
101	#NAME?
103	Strong musculoskeletal focus at my current acute hospital site; strong focus on physiotherapy input for these patients.
107	Access to training at Royal North Shore Hospital. Easy communication and referral to orthopaedic registrar.
110	?
111	training courses local & formal grad courses APA advocacy
113	Collaborative practice, clinical supervision, in servicing programmes
115	See above

Question topic: Local factors help to optimise the ED physiotherapy role

Participant	Comments
116	Support from Physio and ED management
117	Quality and accurate clinical care and diagnosis
120	Am known by everyone and respected for skills and knowledge. This personal relationship breaks down many barriers and obstacles
121	Appreciation and acknowledgement from medical team members
122	Because we are very good at what we do; we've been very good for 6 years. We've been open to scrutiny; we've "done the numbers/satisfaction surveys/audits/shone the bright light onto our performance. Smiled, nodded and kept working even when we were not well treated. Head above the parapet - we're useful, get your ED scores down; we don't overstep our scope, we take advice, we learn, we are open to constructive criticism; we don't "go rogue". Head below the parapet, we "know our place/our role" and we contribute to the fabric of the ED
125	Well respected
126	Getting to know staff and gaining their respect
128	ongoing support for PD and staying credentialled opportunity for skill progression
129	Staff supervision . Hospital knowledge and advocating of role

Question topic: Factors help in optimising the role of ED Physiotherapists across Australia

Participant	Comments
1	A/a credentialing standards
4	Strong professional networks, ongoing educational opportunities relevant to the role.
5	The people doing these roles That is all
9	Increasing scope of practice
10	We need a standardised education and competency pathway. There is significant differences in education and skills in ED physios between health services and between states
13	Ongoing advocacy for and evidence to support the impact of Physio in ED
15	Networks
16	No comment
22	ED networks collaborating
26	Support from ACEM where the skills of physiotherapists are highly regarded as a useful part of the ED environment. They have also had some vision in setting guidelines for governance of advanced and extended scope roles for NPs and Physiotherapists.
28	Advocacy+++ of Physiotherapy roles & functions within ED. Increasing exposure of role of EDP to medical world via education in conferences etc?
29	Education. Clear communication of standards & progressing advanced scope.
31	appoint experienced and qualified staff members. Increase scope of practice based on skill sets of staff members. Formalise pathways of training/credentially appropriate to local context. Increase scope once qualification milestones are acheived.
32	As above
34	Medical profession accepting of extending scope of Physiotherapy Medical profession supportive legislative change
35	Strong state EDP networks
40	AMP competency framework
41	APA advocacy for our role, clear specialisation pathways for advanced practice roles/personnel, Networking opportunities
42	Increased recognition for the value that Physio role can play in the ED

Question topic: Factors help in optimising the role of ED Physiotherapists across Australia

Participant	Comments
43	Advocacy by Governing bodies and further research into effectiveness and efficiency of primary and secondary contact roles would help optimise role in ED and likely reduce use of locum doctors in regional and rural areas.
47	Advocating role physio actually can do. We have many skills and some of these are under valued. This needs to be understood at Exec levels within the organisation and also at a political level.
51	A campaign to increase public awareness and knowledge of the role and responsibilities of ED physiotherapists
53	Demand and lack of funding means innovation is supported.
54	Need a key governing body which has support and respect within all health districts/ government/ medical bodies - very difficult to find this to then help drive training programs/ specialisation pathways
57	State based networks help to advocate and network
60	Unsure
61	Supportive physiotherapy management and allied health management, also supportive ED medical director Supportive and respectful working relationships within the ED Funding
63	Need to leverage off the finding from the HealthWorkforce Australia project
68	advocacy from APA, physio council and other groups Education of physiotherapy services/benefits
69	Advanced Physio Practitioners advocating at statewide meetings Statewide working parties
77	NA
81	A national board recognising primary care physiotherapist as a specialist field of physiotherapy of very experienced MS clinicians
82	National APA ED Group
90	standardised training and defining scope
91	We need a nationally facilitated alignment of service, as there is great things happening in ED Physio across this great nation, but they are largely siloed. Learned experience and service projects are rarely shared beyond the barrier of the hospital / state.
92	More well established extended scope training

Question topic: Factors help in optimising the role of ED Physiotherapists across Australia

Participant	Comments
93	What WOULD help: Being supported to attend more formal training. Being allowed to shadow more experienced therapists around the state. I think there should be a compulsory training program and qualification to obtain in order to say you are a bona fide primary practitioner. (I would not suggest this would be required for therapists of many years experience, but they would likely be consulted in putting this program together.)
94	As above
97	Support by senior medical staff
98	MDT teamwork
107	Unsure. I feel too new to the position to comment.
110	?
111	training courses local & formal grad courses APA advocacy
113	Formalised training
115	See above
116	Evidence of the safety, quality and benefit of our presence
117	As above
120	Recognition of consistent skills within expected scope of practice. Define what an ED physio is and what it is they are expected to be able to do
121	Research showing the benefits in patient care and LOS for ED patients seen by physios vs traditional medical model
122	Gradual acceptance of medical substitution. Old physio's actually know their ##t. Young physio's can learn from them A shiny degree/post grad may mean nothing in a work environment
125	More local support within the state, not interstate
126	Promotion of physio role in ED
129	Same rules Better external training

Question topic: How physiotherapist can further contribute to ED in the future

Participant	Comments
1	Significant contributions with a primary practice type role similar to the UK - potentially based in an adjacent superclinic
3	More primary practices roles
4	Expand scope of practice to increase the depth and breadth of patient management.
5	Yes - contribute to the ED Also contribute other care pathways via the skills developed by the group with ED skills
6	Continue to increase access and quality of care for patients presenting with musculoskeletal conditions. Improve care of elderly people attending ED post falls and helping prevent readmission and injury
8	Physio is a relatively cheap staffing resource that can provide high quality care for many ED presentations. We should be seeing the bulk of soft tissue injuries, fractures, simple back pain independently.
9	Reduce the need for patients to see a medical practitioner for MSK injuries
10	Expanding scope can lead to More patients being effectively treated within shorter timeframes
13	Continue to improve patient outcomes, reduce wait times and admission rates. Particularly if there continues to be an increased scope of practice for us
15	Low back pain management Pathways through the hospital system for acute patients
16	No comment
19	Faster discharge Hospital admission prevention Better treatment and education and acute management!!
22	Be the expert in msk injury management, esp for non op interventions. This includes fractures and joint dislocations.
26	I think as small extension of scope would reap a great reward in efficiencies, and quality.
28	Locally - provide a soft tissue injury clinic.
29	Expanding scope. Injections, use of diagnostic US, ordering & interpreting imaging & extending capacity/service hours.
31	Physiotherapist can help in ED by independently assessing and treating pt's who present with MSK injuries. They can provide consultation and advise for pt's seen by MO and NP if it is of a complex nature. Can provide early rehab intervention for most injuries and organise appropriate follow up. This should prevent delays in recovery and appropriate Rx being given to pt.
32	Fraction reduction of joint relocation suturing and wound management nail bed injuries
34	Extended scope as described by this quiz

Question topic: How physiotherapist can further contribute to ED in the future

Participant	Comments
35	As already discussed/selected
41	Transdisciplinary approaches to care
42	Development of pathways with community for chronic pain, aged care and respiratory patients, work with Orthopaedics for pathways for management of simple fractures
43	Advocate and assist in mentor/supervision of physiotherapist wanting to work in ED.
47	Expanding our role so it is universal across all sites. We can be involved more in teaching reading of MSK imaging to medical staff from registrars down as mostly they aren't very confident nor competent in reading imaging. We have a huge role in teaching MSK assessment.
48	I think it should continue to focus on improving our current skills to improve the quality of care in EDs for elderly patients, dizzy patients and those presenting with MSK conditions.
50	The role could develop further in scope - with more independence in practice e.g joint/fracture reductions, injections, medication administration/prescription
51	Increase their role by having extended scope physiotherapists lead the non acute (stream B) section of an emergency department where the majority of presentations are MSK or sports injuries. This would allow medical officers to focus on more acute medical presentations and hence improve the potential to meet the KPI for ED of the 4 hour rule
53	Early assessment and management of back pain and falls. Training of ambulance officers in early assessment of above to avoid hospitalisation.
54	Strong contribution in chronic disease management, understanding of community services and linking patients in/referring on for ongoing follow up. Need to look into alternative pathways for minor injuries and illness as ED avoidance
57	Show more value than just Msk - Falls, neuro - esp dizziness, Aged care, Paeds. Most staff not aware based prev experiences - personal or ward. We are good at linking in with community services or discharge plan options for patients. Good educators
60	Increased scope of practice
61	Expand hours / shifts covered to include 24/7 physiotherapy coverage in busy EDs / where demand exists. Extended scope roles and training pathways
63	Team based work in FastTrack but need greater skill capability for wound and fracture management
65	Work with whoever (?APA, FACEM) to develop formal qualifications/recognition for the roles.
68	Can improve patient care and wait times in ED with better funding and resources.
69	Extension of scope of practice
70	Increased independence - consider primary practice and role of training in advanced/extended scope

Question topic: How physiotherapist can further contribute to ED in the future

Participant	Comments
73	By becoming the main musculoskeletal experts within the emergency department
77	Provide effective, timely and evidence based treatment (particularly for MSK and ortho injuries where significant variability exists currently).
80	There will be increasing demand on EDs. Increasing scope will help increase number of patients that can be seen by ED physios and therefore help flow
81	Extending SOP to medications / reductions / CT / MRI ordering
82	Extended Scope to allow procedures outside our current scope
84	Management of more complex ortho patients
88	Increased hours, increased presence in ED, increased skills will reduced hospital admissions and reduce load on other ED staff.
91	As discussed earlier. Beyond MSK, there is a large gap in assessment of dizzy patients, which can be met by appropriately trained and skilled vestibular physiotherapists.
92	Joint reductions Analgesic/NSAID prescription Wound dressings
93	I think with a formalised training program which enables experienced physiotherapists to obtain qualifications in an extended scope of practice, patients would not only receive more efficient, but better quality care in ED.
94	Ongoing training pathway for ED Physios to allow the scope and role to become more recognised
95	Help reduce the time taken for acute musculoskeletal injuries to be seen in ED
97	Reduce representations with confident advice regarding prognosis
98	Not forget about physio treatment techniques, most primary physios want to diagnoses and get the patient out rather than e.g. ice, treat, give exercises etc. Juge role in management of back pain to prevent admission and avoid establishment of chronic back pain issues
101	Increase scope of practice
103	Assessment, triage and management of the vestibular patient
107	Take the lead in developing clinical pathways that draw on specific Physiotherapy skills, particular in MSK diagnosis.
110	As mentioned - joint relocations, fracture reductions etc.
111	support for extended scope
113	Opportunities for further study
115	Shift patients out of ED quickly and provide services at home or in another clinic (such as back pain management, simple fracture management / virtual fracture clinic)
116	Increased role in management of paediatric patients

Question topic: How physiotherapist can further contribute to ED in the future

Participant	Comments
120	Become go to speciality for MSK conditions /injury that done ned surgical or medical intervention
121	Early best practice management of musculoskeletal, orthopaedic and vestibular presentations Prevention of unnecessary imaging Prevention of admission
122	Consolidate Standardise scope of practice Prescribing rights
125	Local courses in state
126	Contribute to management pathways of different presentations as well as follow up. Identification of patients at high risk of chronic pain and management of this via appropriate follow up.
129	Prevent admission s is community work educate people they don't need Ed for back pain unless IE public health

Question topic: Strategies or changes that need to occur to allow for the increased contribution of ED physiotherapist in the future

Participant	Comments
1	Medicare rebates for imaging and consults
2	A clear pathway towards training, better ED courses.
3	Further education - of PT staff and colleagues
4	Advocacy, opportunities for upskilling /education that is accessible to clinicians(with respect to time, cost, logistics) information -sharing across networks
5	Formal training pathways Formal specialisation pathways
6	Further clear training pathways and education
8	Physio management to support Physio in increasing scope of practice as the Physio develops skills eg venepuncture
9	Improved access of physiotherapists working in ED to formal training
10	Standardised education/competency assessment Legislative change for prescribing and injecting
13	Ongoing education of other team members on the ED. I also think a formalised training and accreditation program would be great to improve the acceptance of PT in the ED
15	Funding
16	Nurse practitioners need to hand over musculoskeletal patients to physio and work better together. General medical and nursing mindset around what physios can offer needs to change.
19	Knowledge/ respect of our specialist skills
22	Some of previously mentioned scope of practice issues. All EDsof certain size to have 7 day service with extended hours
26	Ideally the APA and the College of Physiotherapy would spend a bit more time on exploring how to support this role. There has been a proposed model of advanced practice put forward by the APA (looks a lot like the HWA/Victorian Framework), again no clear way of how to assess against criteria. I am a "Titled" Physiotherapist and had a go a Specialisation a decade ago (pre ED role), I don't see how the College is looking to integrate the "Advanced Scope / Extended Scope" into the College Pathway. This would be a great vehicle for more standardisation across the country.
28	Further funding required.
29	Clear Standardisation & education or training schedule to benchmark Physiotherapy skillset & establish clear Physiotherapy capacity to contribute to the environment.

Question topic: Strategies or changes that need to occur to allow for the increased contribution of ED physiotherapist in the future

Participant	Comments
31	Change of legislation at national level to allow prescribing under PBS (like Nurse practitioners and podiatrist and dentist). Change of legislation at national level for rights to refer to specialist (orthopaedics, sport physicians etc). Change of legislation to recognise additional scope of practice and reflect this in registration with AHPRA which will hopefully mean (see next point). Standardise role and scope of practice so physios can work across different jurisdictions (inter-state)
32	Strong leads/champions
34	Support Funding Training
35	Transition to primary contact.
36	Formal training pathways
40	more formal training to extend scope of practice with medical governance
41	Research to demonstrate they provide safe, high value care to patients and hospitals, formal career pathways for primary care physiotherapists with hierarchy of skills provision, continued exploration of extended scope physiotherapists in other areas eg orthopaedic and fracture clinics, neurosurgery outpatients, ENT/neurology, respiratory and sleep, geriatrics, continued exploration of transdisciplinary care in various contexts eg chronic pain, geriatrics, union support for this and accommodations within award grading/pay.
42	Formal training and recognised education pathway for therapists that is understood by other ED staff and nationally recognised
43	Legislation of prescribing medications (limited to pain relief analgesia and antibiotics)
47	Increased funding to allow for increased FTE for teaching time
48	Enhanced training pathways and frameworks which provide accreditation and qualifications to maintain a high level of clinical care required for extended scope roles
51	Increase in ED leadership roles being provided by ED physiotherapists secondary to acceptable confidence by CHS executive
53	Training pathway overseen by ED consultants similar to the high level Ambulance officer training.
54	Clear guidelines for specialisation with strong governing body (I don't think APA has enough governance/oversight into public health to be able to do this effectively) Strong focus on education and management of patients particularly around falls/mobility, exercise prescription/OA management, injury management and chronic disease management (as opposed to just managing reason for referrals) - this will put us apart from other professionals
57	Need dedicated therapist - not pager only - miss lots of opportunities Have role definition - (vague is better) to establish role that can evolve esp smaller sites APA advocacy Show can match case management and timeliness with patient's care Be used as specialists for certain conditions - to help care and discharge disposition
61	Increased funding to expand hours / shifts covered to include 24/7 physiotherapy coverage in busy EDs / where demand exists Extended scope roles and training pathways ED Physiotherapy professional networks

Question topic: Strategies or changes that need to occur to allow for the increased contribution of ED physiotherapist in the future

Participant	Comments
63	Education that supports skill capability specific to AMP in ED
68	national or state led frameworks or competencies to ensure standards are upheld and maintained Further formalised courses
69	Extra training - medications, wounds Training with ACEM
70	Formal training fitting with legislative and professional scope setting
73	Increase in scope of practice and further training to allow this
77	Legislation change as mentioned earlier
82	Consistent training /competency pathways
88	Extra funding for increased hours Increased availability of ED specific training for physios
90	More standardised training
91	-Professional perception change - I have seen that Physiotherapy under-values itself and often unnecessarily boxes itself in, and the main barrier to extending scope of practice is physiotherapists themselves - managers and clinicians: "ohhh . . . We can't do that. That's not what physiotherapists do". -Legislative change -Training pathway development and change I have mentioned more in 'Barriers to local practice;' on the page before
92	An established speciality/extended scope pathway
93	Formal training qualifications, having to complete log books on more novel procedures to prove competence. Clear definitions and expectations of primary practitioner therapists which are more generally recognised among patients, nursing and medical staff. I hope the APA can advocate for physiotherapists to take part in these training opportunities and work at an extended scope level, providing appropriate insurance and support for primary practitioners.
94	Formal training pathways, more formalised scope of practice
95	Increased public awareness of the primary contact role
97	Need greater scope so have equity with NPs. NPs readily manage back pain and musculoskeletal soft tissue injuries without strong knowledge backgrounds yet the physio profession expects physios to jump through hoops.
98	Funding for the staff and team work and discussion
103	Research; 1. Are patients presenting to ED with vestibular causes of dizziness being accurately assessed, investigated, diagnosed and provided with best care? 2. What is the economic impact to organisations and economic/ health/ QOL impact to patients who aren't satisfying the criteria above? 3. What are the risks associated with vestibular physiotherapists providing increased contributions in ED?

Question topic: Strategies or changes that need to occur to allow for the increased contribution of ED physiotherapist in the future

Participant	Comments
107	More promotion of titled / specialist physiotherapists role and extended scope.
110	Change in legislation
111	advocacy
113	Specific college
115	Highlight economic benefits to health care
120	A pathway to competence be it formal post grad studies or other. I personally see any post grad training to still leave many gaps in what is required to be a good ED clinician. You need to bring a host of prior learnings and experience into the job first.
121	Better policies to support advanced scope roles
122	Continue to demonstrate the benefit - in dollars (health economist), patient experience, outcomes all that data the bean counters like to count

Question topic: Barriers that may impact the increased contribution of ED physiotherapist in the future

Participant	Comments
1	Medicolegal risk averse ness
4	None
5	Structured governance Training pathways
9	Limited funding for physiotherapists to work in ED
10	Legislative limits to prescribing and injecting and form filling ie Worksafe
13	Not enough funding in departments
15	Finding models Legislative barriers
16	No comment
22	Skilled staff, many competencies cannot be attained at uni, on courses etc and need on site supervision and collaboration with ortho and ED
26	Getting Enough people trained up for these roles when opportunities to expand services arise.
28	Lack of funding for ED Physiotherapy / Allied Health during hospital upgrades, despite increased medical and nursing funding.
29	If there is no safety net or support system to help manage the increased or perceived increase in personal risk/ liability in the Emergent environment (including appropriate training/ benchmarking) it will likely impact on the willingness of Physiotherapists to expand and actively contribute. Especially extended scope practice.
31	Poorly defined role descriptions and scope of practice documents which expose physiotherapist working in such roles to unreasonable indemnity risks. Poor understanding by relevant stakeholders on capabilities of physio service in ED which either prevents them from introducing such roles in their respective EDs or expecting too much from such roles.
32	Legal Doctor doubters
34	People working beyond scope without training
35	Prescription rights and accompanying legalities. Defining service between physiotherapists and NPs.
41	Funding for allied health in general, dominance of medical or nursing-led lobbying at a political level, safety concerns (actual or perceived), insufficient policy/governance support at local levels that may lead to incidents
42	Beliefs of staff and senior medical officers, problems with accreditation, insurance, if there is an inability to come to a consensus on scope
43	Changing the mindset of existing ED staff - medical and nursing

Question topic: Barriers that may impact the increased contribution of ED physiotherapist in the future

Participant	Comments
47	Funding, perceived threats from other health professionals, legislative, incomplete understanding of potential scope of physio practice at management levels, perception of 'better bang for your bucks' if employ more doctors or NPs as they have a broader scope of practice.
48	the limited number of physio's who are engaged in or who have completed a clinical competency or capability package which provides the necessary skills in an extended/advanced role
51	Financial costs associated with providing ED with additional physiotherapists which will be objected by local AMA representatives or staff MO association.
53	Space. Governance- will ED Consultants be okay to be the governing body for Physio's without being line managers (if they are line managers and funders they are likely to want to keep putting on more Dr's rather than Physio.
54	Increasing/extending scope of nursing taking on roles that physiotherapists are trained to do well
57	NOT always independent practitioner - getting sign off on patients unable to prescribe etc medications Cannot sign work cover forms (Yet always asked for recommendations) all slow work flow
61	Lack of funding for positions Lack of formal training opportunities
63	Funding
68	legislation which places restrictions on scope of practices
69	Clinical safety and governance
70	Legislation
73	Unclear training pathways: We need clear pathways to allow physiotherapists to know what they need to complete in order to become competent Lack of courses/training specific to ED and primary contact
77	Narrower scope than other specialties including medical officers and nurse practitioners
81	Funding from the ED
82	Utilisation of ED Physio varies from hospital to hospital. Barriers to service expansion from management.
88	Lack of stakeholder understanding of the role Lack of funding
91	The profession needs to become less risk-averse, and more risk-accepting.
92	Limited scope of practice

Question topic: Barriers that may impact the increased contribution of ED physiotherapist in the future

Participant	Comments
93	I imagine there may be a small barrier in misguided perceptions that physiotherapists shouldn't perform tasks in the proposed extended scope model. But I'm sure these perceptions would soon be quashed after witnessing the therapist's competence and analyzing data to prove their efficacy. Therefore, the only barrier will be "red tape".
94	Varied governing boards, varied level of 'buy in' from some ED staff
97	Aa
98	Financial and not wanting to work the later hours or weekends, we are a small group compared with the large staffing pool of medical and nursing staff. Burn out from the extended hours or weekend shifts
107	AMA / orthopaedic control of referral pathways.
111	Nurse practitioners are able to see a wider range of patients / conditions
113	Emerging role takes time to become established
120	Getting enough well trained staff into many EDs
121	Medical focused model Nurse practitioners as alternative option to ED physiotherapists
122	Practitioners (insert appropriate title) that feel their fiefdom is being eroded Lack of forward thinking/change orientated facilities \$\$\$ AMA/ANA - in some sites
126	Medical protection of their role.
129	Work environment it's a scary place , many more easier physio grade 3 roles

Open text responses and inclusion

Number of participants who provided responses and percentage of participants whose responses were included in the thematic analysis reporting per open text question

Question focus	Participant responses	Responses included in thematic results
	(n)	Percentage (n)
Motivation to engage - Currently completing or completed further university qualification	51	96.1 (49)
Motivation to engage - Formal advanced training program	43	90.7 (39)
Impact of stakeholder understanding impact	76	89.5 (68)
Impact of stakeholder respect impact	57	86.0 (49)
Current Local barriers	74	81.1 (60)
Current national barriers	65	75.4 (49)
Current local facilitators	67	94.0 (63)
Current national facilitators	53	47.2 (25)
How physiotherapists could further contribute	65	95.4 (62)
Strategies to enable future contribution	58	100.0 (58)
Barriers to overcome to allow further contribution	49	91.8 (45)

Appendix 7: Enterprise award classification level

State	Delineation			
	Junior Clinician	Senior Clinician	Advanced Clinician	Specialist / Consultant clinician
South Australia ¹	Allied Health Professional Level 1 Allied Health Professional Level 2	Allied Health Professional Level 3	Allied Health Professional Level 4	Allied Health Professional Level 5 and 6
Victoria ²	Allied Health Professional 1 Allied Health Professional 2	Allied Health Professional 3	Allied Health Professional 5	
New South Wales ³	Level 1 Level 2	Level 3 Level 4		Level 6
Queensland ⁴	Health Professional 3	Health Professional 4	Health Professional 5	Health Professional 6
Tasmania ⁵	Level 1 Level 2	Level 3 Level 4		Level 5
Australian Capital Territory ⁶	Health Practitioner 1	Health Practitioner 4		
	Health Practitioner 2	Health Practitioner 5		
	Health Practitioner 3			
Western Australia ^{7,8}	Level 1 Level 2	Level 3	Level 4 Level 5	

Appendix 6 Reference List

1. South Australian Modern Public Sector Enterprise Agreement: Salaried 2017. <https://www.aeasa.com.au>. Published 2018. Accessed September 30, 2021.
2. Allied Health Professionals (Victorian Public Sector) (Single Interest Employers) Enterprise Agreement 2020-2021. <https://www.vhia.com.au/>. Published 2020. Accessed September 30, 2021.
3. Industrial Relations Commission of New South Wales. Public Hospitals (Professional and associated staff) Conditions of employment (STATE) award 2021. <https://www.health.nsw.gov.au/careers/conditions/Pages/p.aspx>. Published 2021. Accessed. September 30, 2021.
4. The Health Practitioners and Dental Officers (Queensland Health) Award – State 2015. Queensland Industrial Relations Commission. <https://www.qirc.qld.gov.au>. Published 2020. Accessed September 30, 2021.
5. Allied Health Professional Public Sector Unions Wages Agreement 2019. <https://www.tic.tas.gov.au>. Published 2019. Accessed September 30, 2021.
6. Allied Health Professional Classifications and Career Structure information. ACT Government (Health). <https://health.act.gov.au>. Accessed September 30, 2022.
7. WA Health - HSU Award 2006. https://ww2.health.wa.gov.au/Articles/A_E/Awards-and-Agreements. Published 2006. Accessed September 30, 2021.
8. WA Health System – HSUWA – PACTS Industrial Agreement 2020. https://ww2.health.wa.gov.au/Articles/A_E/Awards-and-Agreements. Published 2020. Accessed September 30, 2021.