Physiotherapists in the ED: Their effect on the quality of musculoskeletal care provided by the department.

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Physiotherapists in the ED

- Roles:
  - **Primary Contact Physiotherapists** (PCPs)
  - Secondary Contact **Physiotherapists** → via referral

  (Ferreira, Traeger, O'Keeffe, Maher, 2018)

- **Musculoskeletal** (MSK) conditions represent **10 - 15%** of presentations

  (Victorian Department of Health, 2010)

- Introduced to the ED to work **alongside medical teams**, aims to:
  - decrease **wait times** (Bethel, 2011)
  - improve **efficiency** (Kilner, 2011)
  - improve the **quality of care** provided (Lebec and Jogodka, 2009)

Primary Contact Physiotherapists (PCP)

- **PCP role** was introduced with extended clinical **autonomy** (Anaf & Sheppard, 2007)

- Justification:
  - musculoskeletal expertise, clinical reasoning and autonomy in other settings (Farrel, 2014; Barrett and Terry, 2018)

- Since their introduction, research has demonstrated that PCPs:
  - More time efficient than other practitioners (Thompson et al, 2014)
  - Decreased waiting times and length of stay (Gill and Stella, 2013; de Gruchy, Granger, Gorelik, 2015; Ferreira et al, 2018)
  - Practise with comparable independence and safety (de Grunchy, Granger, Gorelik, 2015; Sayer et al, 2018)
  - Achieve similar patient satisfaction (Schulz et al, 2016; Taylor et al, 2011, Sheppard, Anaf, Gordon, 2010; Harding et al, 2015)
  - Are perceived by their colleagues and patients as being
    - experts in musculoskeletal care
    - responsible for conservative and non-pharmacological pain management
    - activity resumption with a focus on exercise therapy (Ferreira, Traeger, O'Keeffe, Maher, 2018)

Secondary Contact Physiotherapists

- Physios working in the ED via a **referral system**
- **Common** in Australian EDs (Lefmann and Crane, 2016)
- Considered as **expert additional clinical support** for medical teams, for example:
  - vestibular management (Lefmann and Crane, 2016)
  - mobility reviews for falls prevention (Kilner and Sheppard, 2010; Ferreira, Traeger, O'Keefe, Maher, 2018)
  - outpatient referrals and discharge (Lefmann and Sheppard, 2014; Ferreira, Traeger, O'Keefe, Maher, 2018)

Exposure to Physios…

- Another role perceived by other ED clinicians:
  - **Teaching and training** of medical and nursing staff
  - Benefit from **interdisciplinary** engagement with experts in conservative musculoskeletal management (Coyle and Gill, 2014)

Gap in the literature

- **Individual performance** of physiotherapists has been validated
  - (Kilner, 2011; Gill and Stella, 2013, Schulz, Prescott, Shifman, Fiore, Holland, Harding, 2016)

- No research regarding the **influence of physios on the ED**
  - Outcome of interest → given the justification for their initial introduction

Aim and Hypothesis

- **Aim →**

  To investigate the **quality of care** provided by EDs **with physiotherapy services** compared to those without, using established **MSK process and outcome Quality Indicators (QIs)**

Methods – DESIGN

*Data was collected by Strudwick et al.'s study → established a suite of QIs (Strudwick et al, 2019)

- power calculations, participant groups, data collection, research staff, participant recruitment, data management

- Cohort Study → Convenience sample = 633 patients (from 8 EDs across QLD)
- Adult patients whose 'presenting complaint' was triaged as 'potential musculoskeletal origin'

Clinician Types		Frequency
Senior House Officer/Junior House Officer/Interns	SHO/JHO	209
Registrar/Principal House Officers	Reg/PHO	64
Consultants/Senior Medical Officers	Con/SMO	58
Nurse Practitioners	NP	206
Nurse Practitioner Candidates	NPCan	14
Primary Contact Physiotherapists	PCP	77

Methods – MEASURES (Quality Indicators)

- **31 Quality Indicators**
  - Established in Strudwick et al.
  - A binary scoring system, where the interaction of service delivery either satisfies all criteria required (i.e. ‘triggers’ the QI), or does not

Methods – MEASURES (Quality Indicators)

Process (n=25)

- Assessment
- Diagnostics
- Fracture Management
- Mobility
- Referrals and follow-up

Outcomes (n=6)

- Timeliness
- Representations
- Patient experience

Methods – MEASURES (Quality Indicators)

- Binary scores → “trigger rates” (i.e. percentages)
  - patients who triggered (i.e. fulfilled) the indicator event (i.e. the numerator)
  - divided by the total count of eligible patients (i.e. the denominator).
- The larger the percentage on a positive QI, the better the performance of that ED.

$$\frac{x}{y}$$

← number of interactions which meet criteria

← total number of interactions

Methods – ANALYSIS

- Comparisons of QI Scores:
    - Grouping of Binary QIs scored based on what setting then occurred in, NOT the clinician
  - EDs with **Physiotherapists** Compared To EDs **Without**
  - EDs with **PCPs** Compared to EDs **Without**

What we found – RESULTS

- EDs with Physiotherapists Compared To EDs Without
  - EDs with Physios had **9 significant findings**
  - EDs without Physios had **2 significant findings**
  - No significant findings on **20 QIs**

- EDs with PCPs Compared to EDs Without
  - EDs with PCPs had **10 significant findings**
  - EDs without PCPs had **0 significant findings**
  - No significant findings on **21 QIs**

- All findings are to be published in the paper (please contact corresponding author)

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EDs with Physiotherapists Compared To EDs Without

Significant Results	In favour of… WITH PHYSIOS	WITHOUT PHYSIOS
A basic neurological examination was undertaken (spinal injuries)	✓	
Time interval from x-ray request to x-ray achieved	✓	
Discussion with senior medical decision maker regarding post-reduction alignment on x-ray	✓	
Mobility assessed prior to discharge for mobility impaired patients	✓	
Provision of written patient information on injury documented	✓	
Discharge letter contained vital information (diagnosis, clinical findings, acute management plan)	✓	
Referral for selected soft tissue injuries requiring early rehabilitation	✓	
Overall positive patient experience	✓	
Patients felt they were given the "right amount" of information about their condition	✓	
Fracture clinic referrals from ED that state vital information for triaging purposes		✓
A neurovascular physical examination was undertaken (peripheral injuries)		✓

EDs with PCPs Compared to EDs Without

Significant Results	In favour of…	
	EDs WITH PCPs	EDs WITHOUT PCPs
Taking a social and functional history	✓	
Time interval from x-ray indicated to x-ray request	✓	
Discussion with senior medical decision maker regarding post-reduction alignment on x-ray	✓	
Mobility assessed prior to discharge for mobility impaired patients	✓	
Provision of written information regarding driving safety was documented	✓	
Provision of written patient information on injury documented	✓	
Discharge letter contained vital information (diagnosis, clinical findings, acute management plan)	✓	
Referral for selected soft tissue injuries requiring early rehabilitation	✓	
Overall positive patient experience	✓	
Patients felt they were given the “right amount” of information about their condition	✓	

Discussion – ED Physios

- QIs in favour of EDs with physios aligned closely to the **foundation skills** of physiotherapy including patient education, mobility assessments and rehabilitation referrals

  (Bethel, 2005; Kilner, 2011)

  – explained by the scope of practice of physiotherapy
    - which prioritises efforts on return to function

Discussion – Why does the DEPARTMENT improve?

- May be attributed to:
  - **Specialised MSK clinician**
    - which decreases the work load of other ED clinicians (Kilner and Sheppard, 2010)
  - **Exposure to other protocols (Teaching and Learning)**
    - Changes routine practices for MSK care in the ED (Crane and Delany, 2013)
  - **Care Coordination skills**
    - clinical reasoning required to refer and prevent unnecessary hospitalisation (e.g. including the processes mandatory for quality discharge such as mobility assessment and rehabilitation referrals) (Anaf and Sheppard, 2007)

Discussion – Qualitative Outcomes

- Presence of physiotherapists? increase number of patients who:
  - had an **overall positive experience**
  - felt that they were given the '**right amount**' of information

- Copiously replicated in the literature

  (Schulz et al, 2016, Taylor et al, 2011; Kilner and Sheppard, 2010; Sheppard et al, 2010; Harding et al, 2015)

Discussion – Limitations

- Only **eight hospitals** located within a **single state** of Australia
  - not generalisable
  - selection bias was minimised by selecting a representative sample
  - (i.e. tertiary, urban/district and regional)

- ED group with a physiotherapy service/PCPs was **not a homogenous group**
  - Inconsistent number of physiotherapists and hours of service delivery
  - potentially under-representing the impact an ED with a well-serviced physiotherapy model of care can have on the quality of care provided by the wider department

- **QIs confined** to musculoskeletal injury assessment/management
  - do not measure the other areas where physio can add value
  - (i.e. geriatric medicine, vestibular/neurological assessments)

Conclusion

- A **physiotherapy service** in the ED can result in **improved clinical performance** across the ED by **all staff** when providing care to patients with **musculoskeletal injuries**.

- These findings:
  - **support and advocate** for the roles of **physiotherapists**
  - have **implications** for future ED **staffing structures** and **models of care**

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Declaration of Interest:

The authors report no conflict of interest

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