FEEDBACK FOLLOWING PRELIMINARY SEARCH

QUERY REF: PAIN-007

Received: 25.02.2011  Feedback to CSG: 11.04.2011(due), 07.04.2011(sent)

SEARCH METHODOLOGY

The content of this feedback report refers only to the most relevant material located under each of the evidence headings and is drawn predominantly from author abstracts or research recommendations within Guidelines. The question is posed in the context of controlled and uncontrolled trials exploring the effectiveness of non-GP led primary care interventions for musculoskeletal conditions. Studies are restricted to those published over the last five years (2006-March 2011 inclusive). Further details of all the studies included in this report are shown in the appendix, sorted by report section and author name.

Criteria used (PICO):

Who? (population)
Adults with musculoskeletal pain

What? (intervention/exposure/measure)
Non-GP led primary care treatment, including physiotherapy led primary care; self-referral; direct access; telephone and telehealth.

Comparison
GP led primary care

What is measured? What are the outcomes?
Clinical outcomes e.g. pain; disability; quality of life; safety; satisfaction with care; access or waiting times and cost.

Location and setting
Primary care; Community Care

Exclusion Criteria
Secondary care; Specialist Clinics; Private practice.

Non-English language guidelines, recommendations, systematic reviews, overviews and clinical opinions. However, non-English language primary research articles with English abstracts were included, see Section D: Primary Research.
Databases Searched
NHS Evidence: Health Information Resources (Bandolier, UK Database of Uncertainties about the Effects of Treatments [DUETS], National Library of Guidelines including NICE Guidance, International Guidelines, Clinical Knowledge Summaries, NHS Evidence Specialist Collections [Musculoskeletal]); TRIP database; Centre for Reviews and Dissemination (DARE, NHS EED and HTA); Cochrane Database of Systematic Reviews; EMBASE; MEDLINE; PEDro; AMED; CINAHL; OTSeeker; ISRCTN Register; Medical Research Centre: Clinical Trials Unit; UK Clinical Research Network Study Portfolio; NIH records on ClinicalTrials.gov; Nederlands Trial Register; German Clinical Trials Register; Australian New Zealand Clinical Trials Registry.

Citation tracking was also used to locate relevant articles.

Types of Study
Head-to-head, controlled or outcome trials, and case studies.

Keywords searched
Physiotherapy; Physiotherapist; Physical therapy/therapist; Chiropractic; Osteopathy; Osteopath; Occupational therapy/therapist; Podiatry; Podiatrist; Nurse; Doctor/Physician assistant; Musculoskeletal; Pain; Triage; Telemedicine; Telephone; Telehealth; Physio[]direct; NHS Direct; Direct Access; Self[-]-referral; first point/port.

Keywords and phrases were used separately or in combination; truncation was used where possible/applicable. MESH terms, expanded if appropriate, were also included.

Date limits
2006 to date i.e. previous 5 years.

Summary of available evidence

<table>
<thead>
<tr>
<th>EVIDENCE TYPE</th>
<th>INCLUDED IN FEEDBACK</th>
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<tbody>
<tr>
<td>A Evidence Summaries</td>
<td>0</td>
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<tr>
<td>B Systematic Reviews (and non-systematic reviews)</td>
<td>1</td>
</tr>
<tr>
<td>C Clinical Trial Registries (Current and Closed)</td>
<td>8</td>
</tr>
<tr>
<td>D Primary Research</td>
<td>25 studies (26 papers)</td>
</tr>
<tr>
<td>E Overviews and expert opinions</td>
<td>N/A</td>
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<tr>
<td>F Intellectual Property Office</td>
<td>N/A</td>
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</tbody>
</table>
RESULTS

A: Good Quality Evidence Summaries (including guidelines)

No relevant evidence summaries or guidelines were identified.

B: Systematic Reviews

This section includes meta-analyses, systematic reviews and evidence reviews where little specific detail of the review methodology is given (i.e. non-systematic review).

A single systematic review pertinent to this report was found: this addresses the effect of physiotherapy services within an Emergency Department, concluding that the current evidence base – which is weak – does not support such a service (Kilner, 2011).

C: Clinical Trial Registries

Eight clinical trials were identified for this report.

Five trials focus on services, including (extended-scope) physiotherapy, nurse-physician teams and emergency nursing, within Emergency Departments: two RCTs (C3, C8); two controlled trials (C1, C7) and one cross-sectional study (C6). The remaining three trials are all RCTs: two pilot studies focus on nurse- versus GP-led triage (C4) and early physiotherapy (C5); the remaining trial examines a PhysioDirect intervention (C2).

<table>
<thead>
<tr>
<th>Ref</th>
<th>Trial Details</th>
<th>Study Period</th>
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<tbody>
<tr>
<td>C1</td>
<td>Physician-nurse Team to Reduce Emergency Department (ED) Overcrowding University Hospital, Geneva</td>
<td>2010-2011</td>
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<tr>
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<td><a href="http://clinicaltrials.gov/show/NCT01219868">http://clinicaltrials.gov/show/NCT01219868</a></td>
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<tr>
<td>C2</td>
<td>A pragmatic randomised controlled trial of PhysioDirect telephone assessment and advice services for physiotherapy University of Bristol (UK)</td>
<td>2008-2011</td>
</tr>
<tr>
<td>C3</td>
<td>The Effect of an Physician-Nurse Supplementary Triage Assistance Team on Emergency Department Patient Wait Times Sunnybrook Health Sciences Centre</td>
<td>2009-2010</td>
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<tr>
<td></td>
<td><a href="http://clinicaltrials.gov/show/NCT00991471">http://clinicaltrials.gov/show/NCT00991471</a></td>
<td></td>
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<tr>
<td>C4</td>
<td>The effectiveness and cost effectiveness of telephone triage of patients requesting same day consultations in general practice: a cluster randomised controlled pilot study comparing nurse-led and GP-led management systems Devon Primary Care Trust (UK)</td>
<td>2009-2010</td>
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<tr>
<td></td>
<td><a href="http://www.controlled-trials.com/ISRCTN20687662">http://www.controlled-trials.com/ISRCTN20687662</a></td>
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</tbody>
</table>

^nb: primary research studies included in this systematic review have been excluded from Section D: Primary Research
Early physiotherapy for acute low back pain (LBP) in a working population: a pilot randomised clinical trial

*University of Southampton (UK)*

[http://www.controlled-trials.com/ISRCTN19037867](http://www.controlled-trials.com/ISRCTN19037867)

2006-2010

C6

An investigation into the effect of Physiotherapy services in Emergency Departments on patient wait, and treatment times.

*Concord Repatriation General Hospital*


2009

C7

Comparison of different models of providing physiotherapy care for people with simple musculoskeletal injuries presenting to Emergency Department

*Eastern Health Hospital; La Trobe University*


2008-?

C8

Clinical and cost effectiveness of different emergency department healthcare professionals in soft tissue management

*University of the West of England (UK)*

[http://www.controlled-trials.com/ISRCTN70891354](http://www.controlled-trials.com/ISRCTN70891354)

2006-2008

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**D: Primary Research**

A total of 25 studies (26 papers), published between 2006 and 2011, were identified which address non-GP led primary care interventions for musculoskeletal conditions\(^2\). Primary research identified between 2001 and 2005 is included at the end of the reference section.

**Randomized controlled trials**

A single RCT was identified, which may be pertinent to this report; this examines the effectiveness of early access to physical therapy compared to usual care, and reveals greater pain reduction after 6 months in the early access group. It concludes such a care model can be introduced with reorganization and no additional resources (Nordeman, Nilsson, Moller & Gunnarsson, 2006).

**Controlled trials**

A large quasi-experiment by Holdsworth and colleagues is published in a series of papers, these reveal:

- profile of patients attending physiotherapy as self-referrals or at their GP’s suggestion differs significantly to those referred by their GP (Holdsworth, Webster & McFadyen, 2008);
- self-referral to physiotherapy has a number of positive implications for service delivery which adds value for NHS Scotland *i.e.* ultimately reduces costs (Holdsworth, Webster & McFadyen, 2007);
- the introduction of a self-referral system does not lead to increased referral rates when an appropriate service already exists (Holdsworth, Webster & McFadyen, 2006a);
- whilst, embedded qualitative research shows GPs and physiotherapists strongly support physiotherapists working at first point of contact and potentially with extended roles in MSK management (Holdsworth, Webster & McFadyen, 2006b), whilst patients have positive regard for physiotherapists despite a lack of knowledge about the extent of their practice.

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\(^2\) nb: primary research articles included in the systematic review indentified in Section B are excluded from this section.
(Webster, Holdworth, McFadyen & Little, 2008). Both studies report the need to raise awareness of physiotherapy, especially self-referral, if the service is to be developed.

Five studies address the accuracy and validity of assessment, diagnosis and/or management:

- telephone versus face-to-face diagnosis and management by physiotherapists: diagnostic assessment comparable, however management of MSK conditions over phone compares less favourably especially with less experienced physiotherapists (Turner, 2009).
- remote/telephone assessment and diagnosis of non-articular lower limb MSK conditions by physical therapists: is reliable and valid (Russell, Truter, Blumke & Richardson, 2010);
- diagnoses of upper limb disorders in primary care: no significant difference in accuracy between MSK triage service and GPs (Patel, Hossain, Colaco, El-Husseiny & Lee, 2011);
- independent clinicians in a referral office using triage to occupational therapy or physiotherapy within a community rehabilitation service: exhibit moderate agreement when prioritizing patient care, agreement not affected by professional discipline (Harding, Taylor, Leggat & Wise, 2010);
- physical therapists in a direct access environment: those with an orthopaedic speciality twice as likely to make correct decisions regarding management of patients with MSK and critical conditions (Jette, Ardleigh, Chandler & McShea, 2006).

Two further controlled studies focus on emergency departments:

- Primary, compared to secondary (referred by doctor), physiotherapy contact is effective for simple, non-urgent and semi-urgent peripheral MSK injuries (Taylor, Norman, Roddy, Tang, Pagram & Hearn, in press);
- Emergency nurse triage, compared to doctors, reduces time to initiation of pain control/relief (Goh, Choo, Lee & Tham, 2007).

Other quantitative studies

Three cohort studies highlight the potential patient benefits of: direct access physiotherapy in occupational setting (Addley, Burke & McQuillan, 2010); patient self-referral to physiotherapy for WAD (Williamson, Williams, Hansen, Joseph & Lamb, 2009); and a MSK assessment service (Sephton, Hough, Roberts & Oldham, 2010). A further study reports on a pilot service, with physiotherapists as first point of contact for MSK conditions in GP practice, this shows promising patient and service benefits and is supported by GPs: notably the local Primary Care Trust agreed to fund a further year (Haworth & Whittington, 2007).

Studies reveal different profiles of patients utilizing direct-access versus referred physiotherapy services (Leemrijse, Swinkels & Veenhof, 2008) and GP versus non-GP practitioners i.e. physician assistants and nurse practitioners: the latter acting as primary care providers for underserved patient populations (Everett, Schumacher, Wright & Smith, 2009). Furthermore, many patients, whilst appreciating freedom of choice, still prefer to leave their GP to initiate referral to physiotherapy (Leemrijse, Swinkels, Pisters, de Bakker & Veenhof, 2008).

Lastly, two case reports outline: the development and implementation of a physical therapist service in an Emergency Department (Fleming-McDonnell, Czuppon, Deusinger & Deusinger, 2010); and the development of a reliable research protocol to analyze screening of risk factors concerning back pain during physiotherapy telephone consultations (Demmelmaier, Denison, Lindberg & Asenlof, 2010; 2009).

3 this is not published in a peer-review journal but is included as very pertinent to this report
Qualitative research

Two studies focusing on physiotherapy within emergency departments examined patient perceptions of (Anaf & Sheppard, 2010), and satisfaction with (Sheppard, Anaf & Gordon, 2010), physiotherapy. Whilst patients are satisfied with their experience of physiotherapy-led care in emergency and identify physiotherapy skills as enhancing service provision and outcomes, patients have limited awareness of physiotherapy scope of practice.

Finally, a study reporting patient and healthcare professionals’ perspectives on telephone consultation revealed that whilst this is seen as potentially improving access and continuity of care and reducing time and travel for patients, there remains concern regarding its use in acute triage situations (McKinstry, Watson, Pinnock, Heaney & Sheikh, 2009).

In addition to the studies included above, there are a number of studies, not detailed in the appendix, which may be of interest:

- PhysioDirect: protocol for a multicentre pragmatic RCT with nested qualitative research (Salisbury, Foster, Bishop, Calnan, Coast, Hall, Hay, Hollinghurst, Hopper, Grove, Kaur & Montgomery, 2009).
- PhysioDirect: the evidence for and against (Foster, Williams, Grove, Gamlin & Salisbury, 2011).
- Physical therapists in active combat environments (Rhon, 2010; Rhon, Gill, Teyhen, Scherer & Goffar, 2010)

E: Overviews and Expert Opinions

These are not detailed in the appendix, as higher-level evidence is available.

F: Intellectual Property Office

Not relevant to this report.

CONCLUSION

Primary research studies comprise a majority of the articles included in this report (25/26) with a further 8 clinical trials ongoing or recently completed: all apparently unpublished. The majority of studies (14/25) are uncontrolled study designs, that rate as low-level evidence. Furthermore, the single RCT included in the report focuses on early access to physiotherapy rather than direct access. Whilst the only systematic review included in the report, examining physiotherapy services in emergency departments, concludes that the current evidence base, which is weak, does not support an emergency department physiotherapy service.

The primary research describes a diversity of primary care settings and non-GP/non-doctor led interventions for managing musculoskeletal conditions. Overall, it appears that non-GP/non-doctor interventions may be beneficial in terms of clinical and/or economic outcomes: although a number of studies identify the need for further research to assess confidently the effectiveness of such interventions. It is noteworthy, with regards to telephone consultations in general, there
remain concerns regarding its safe use in acute triage situations, particularly given the lack of an
evidence base.

In summary, this report identifies the lack of high quality clinical trial evidence as a necessary
research direction in establishing the effectiveness of non-GP led primary care interventions for
musculoskeletal conditions.

**ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACS</td>
<td>Adjusted Clinical Score</td>
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<td>CSRI</td>
<td>Client Services Receipt Inventory</td>
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<td>DEPCAT</td>
<td>Deprivation Category</td>
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<td>EQ5D</td>
<td>EuroQol</td>
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<td>FABQ</td>
<td>Fear Avoidance Beliefs Questionnaire</td>
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<td>GCPS</td>
<td>Graded Chronic Pain Scale</td>
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<td>LBP</td>
<td>Lower Back Pain</td>
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<td>LEFS</td>
<td>Lower Extremity Functional Scale</td>
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<tr>
<td>NSAIDs</td>
<td>Non-steroidal anti-inflammatory drugs</td>
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<td>QALYs</td>
<td>Quality Adjusted Life Years</td>
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<td>Quick DASH</td>
<td>Quick Disabilities of the Arm, Shoulder and Hand Questionnaire</td>
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<tr>
<td>RCT</td>
<td>Randomized Controlled Trial</td>
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<td>RDQ</td>
<td>Roland-Morris Disability Questionnaire</td>
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<td>sd</td>
<td>Standard deviation</td>
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<tr>
<td>SF-12v2</td>
<td>Short Form-12 Health Survey Questionnaire, Version 2</td>
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<td>SF-36v2</td>
<td>Short Form-36 Health Survey Questionnaire, Version 2</td>
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<td>WAD</td>
<td>Whiplash Associated Disorder</td>
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<td>WFS</td>
<td>Work Function Score</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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<td>WLQ</td>
<td>Work Limitations Questionnaire</td>
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</table>
REFERENCES

2006-2011


physiotherapy: patients' knowledge and attitudes -- results of a national trial. *Physiotherapy, 94*(2), 141-150.


### 2001-2005


### SECTION B – SYSTEMATIC REVIEWS

<table>
<thead>
<tr>
<th>Title</th>
<th>Sample</th>
<th>Methodology/ Comments</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Kilner (2011). What evidence is there that a physiotherapy service in the emergency department improves health outcomes? A systematic review.</td>
<td>Primary studies investigating physiotherapy services based directly in emergency departments.</td>
<td>Computerised search of: Medline, CINAHL, Web of Knowledge, Scopus, PEDro, PubMed, Cochrane, and Academic Search Premier. Restricted to English language publications in peer-review journals.</td>
<td>11 eligible primary studies were identified. A majority showed a high or unknown (due to inadequate details) level of likelihood of bias, with only 3 studies deemed to have introduced little bias. Insufficient evidence is available regarding the benefits, at a system and provider level, of a physiotherapy service in the emergency department. However, at the patient level, high-level evidence supports the benefits of a physiotherapy service in terms of improved pain control and reduced short-term disability. Concludes that current research evidence does not support an emergency department physiotherapy service.</td>
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<td>Title</td>
<td>Sponsors and Status</td>
<td>Summary</td>
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<tr>
<td>C1 Physician-nurse Team to Reduce Emergency Department (ED) Overcrowding</td>
<td>University Hospital, Geneva 2010-2011 Ongoing</td>
<td>Non-random controlled trial (active control, (n = 8000)) to explore the impact of a physician-nurse team supervising patient's flow on Emergency Department length of stay. Patients: all patients 16 years and older presenting to the Emergency Department. Outcomes: length of stay.</td>
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<td>C2 A pragmatic randomised controlled trial of PhysioDirect telephone assessment and advice services for physiotherapy</td>
<td>University of Bristol (UK) 2008-2011 Ongoing</td>
<td>RCT ((n = 2143)) to determine the effectiveness, cost-effectiveness, patient preference and health outcomes and experiences of PhysioDirect compared to usual care models of physiotherapy. Patients: 16 years and older requiring MSK physiotherapy referred by GPs, other primary care health professionals or self-referred. Outcomes: physical component summary (PCS) measure from the 36-item SF-36v2; incremental cost-effectiveness measured according to QALYs assessed using EQ5D measure and costs.</td>
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<tr>
<td>C3 The Effect of an Physician-Nurse Supplementary Triage Assistance Team on Emergency Department Patient Wait Times</td>
<td>Sunnybrook Health Sciences Centre 2009-2010 Completed</td>
<td>RCT ((n = 1000)) to determine the effect of a Physician-Nurse Supplementary Triage Assistance Team on Emergency Department Patient Wait Times. Patients: Arriving from 8:00-14:30 on a day with triage team assigned Outcomes: wait time (Time from triage to time of discharge) and Cost-Effectiveness (over 6 months)</td>
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<tr>
<td>C4 The effectiveness and cost effectiveness of telephone triage of patients requesting same day consultations in general practice: a cluster randomised controlled pilot study comparing nurse-led and GP-led management systems</td>
<td>Devon Primary Care Trust (UK) 2009-2010 Completed</td>
<td>RCT (pilot study, (n = 1200)) to determine clinical and cost-effectiveness of nurse-led computer-supported telephone triage and GP-led telephone triage compared to usual care for patients requesting same day consultations in general practice. Patients: all patients under 12 years old or 16 years and older making a telephone request for same day consultations. Outcomes: Nos of healthcare contacts during the subsequent 4 week period; descriptive study of patient flow; Primary care NHS resource use; Patient reported outcomes; Patient experience of care; safety; health status.</td>
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<td>C5 Early physiotherapy for acute low back pain (LBP) in a working population: a pilot randomised clinical trial</td>
<td>University of Southampton (UK) 2006-2010 Completed</td>
<td>RCT (pilot study, (n = 50)) to examine the efficacy of early referral to physiotherapy in an occupational health setting for workers with acute low back pain. Patients: aged 18-65 years old with an acute episode of LBP within the last 4 weeks (without an episode in the preceding month) with or without referral to legs and a score of (\geq 4) on RDQ. Outcomes: RDQ; GCPS; WLQ; EuroQol; QALY; FABQ; Economic measure (modified CSRI); Back Beliefs Questionnaire Timepoints: 6 weeks, 3, 6 and 12 month follow-ups.</td>
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<td>An investigation into the effect of Physiotherapy services in Emergency Departments on patient wait, and treatment times.</td>
<td>Concord Repatriation General Hospital</td>
<td>Retrospective, cross-sectional study (historical control, n = 300) to investigate the effect of Physiotherapy services in Emergency Departments on patient wait, and treatment times. Patients: All patients attending the emergency department assessed as meeting triage category 3, 4 and 5, with MSK or mobility related issues. Outcomes: wait time to see physiotherapist; time spent in emergency department; type of condition.</td>
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<td>Comparison of different models of providing physiotherapy care for people with simple musculoskeletal injuries presenting to Emergency Department</td>
<td>Eastern Health Hospital; La Trobe University</td>
<td>Non-randomized controlled trial (active control, n = 320) to compare primary and secondary contact physiotherapy for patients presenting to Emergency Department with simple peripheral MSK injury with regard to patient length of stay. Patients: 18 years and older presenting to the Emergency department with simple peripheral MSK injury e.g. ankle sprain, knee injury, shoulder strain, elbow or wrist injury. Outcomes: length of stay; patient satisfaction; staff satisfaction; nos referrals to radiology; re-presentation to the emergency department; waiting time</td>
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<td></td>
<td>Clinical and cost effectiveness of different emergency department healthcare professionals in soft tissue management</td>
<td>University of the West of England (UK)</td>
<td>RCT (n = 900) to exam the clinical and cost effectiveness of a doctor, Emergency Nurse Practitioner and Extended Scope Physiotherapist in treating Emergency Department patients with soft tissue injuries. Patients: 17 years or older presenting to the Emergency Department with peripheral soft tissue injury with no immediately apparent fracture. Outcomes: LEFS; Quick DASH; SF-12v2; Nos of patients treated per hour; Referral rate; Costs Timepoints: baseline, 2 and 8 weeks.</td>
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## SECTION D – PRIMARY RESEARCH

Square brackets around the title of an article indicate that whilst the article’s abstract is available in English, the main body of the article is NOT in English.

<table>
<thead>
<tr>
<th>Title</th>
<th>Sample</th>
<th>Methodology/ Comments</th>
<th>Summary</th>
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<tbody>
<tr>
<td>Addley, Burke &amp; McQuillan (2010). Impact of a direct access occupational physiotherapy treatment service.</td>
<td>Pilot study (part of a service audit). 231 participants with MSK disorders accessing an occupational physiotherapy treatment service.</td>
<td>To determine the impact of direct access physiotherapy in an occupational setting. Outcomes: WFS; VAS pain, ACS; and Self-report sickness absence, work attendance, WHO (five) well-being index. Timepoints: pre- and post-treatment.</td>
<td>Following treatment patient improvement was report in WFS (63%), ACS (84%) and VAS pain (94%). Compared to participants receiving 1 or 2 sessions, improvement was most likely after 3-4 sessions for WFS (odds ratio = 4.5; ( p &lt; 0.05 )) and VAS pain (odds ration = 32.3; ( p &lt; 0.01 )); and 5-6 sessions for ACR (odds ratio = 6.8; ( p &lt; 0.01 )). Response rate for self-report questionnaires was low (29%), these reported the potential of the intervention to prevent sickness absence and improve mental well-being. Concludes brief physiotherapy treatment potentially improves clinical status and pain, work function, psychological well-being and sickness absence. Highlights the need for further research to confirm these findings and endorse the effectiveness of a physiotherapy intervention in an occupational setting and as a component in rehabilitation and ‘Fit for Work’ programmes.</td>
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<td>Anaf &amp; Sheppard (2010). Lost in translation? How patients perceive the extended scope of physiotherapy in the emergency department.</td>
<td>Qualitative study. Convenience sample of 80 patients attending emergency departments in a metropolitan ((n=40)) and regional ((n=40)) setting.</td>
<td>To explore the perceptions of physiotherapy practice in emergency departments by patients.</td>
<td>Participating patients had general, though limited, awareness of physiotherapists’ role in the emergency department. Thematic analysis identified six key domains which patients recognised as the role of the physiotherapist and pertinent to the emergency department setting: • Sports injury management • MSK care • Rehabilitation and mobility • Pain management • Respiratory care • Management of elderly patients Areas when physiotherapy and emergency care did not overlap. Concludes that patients have a limited awareness of the scope of practice of physiotherapists in emergency departments. Whilst there was strong emphasis on MSK-based interventions, there was less recognition of physiotherapy’s role in cardiorespiratory and rehabilitative management. The need for further research was highlighted to increase familiarity and acceptance of extended scope physiotherapy.</td>
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<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Methodology</td>
<td>Outcomes</td>
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<td>Demmelmaier, Denison, Lindberg &amp; Asenlof (2010)</td>
<td>Physiotherapists’ telephone consultations regarding back pain: a method to analyze screening of risk factors. See also Demmelmaier, Denison, Lindberg &amp; Asenlof (2009).</td>
<td>Case report 17 initial telephone consultations with 5 physiotherapists. To evaluate interrater reliability of research protocol to analyze screening for risk factors concerning back pain during physiotherapy telephone consultations. Protocol developed that covered eight evidence-based risk factors. Outcomes: consultation time on 6 predefined topics.</td>
<td>Three independent raters analysed the consultations according to the protocol developed. Interrater reliability for number of screen risk factors was 0.82 ($p&lt;0.001$, 95% CI 0.65–0.93), whilst the kappa values between raters regarding agreement on which risk factors were screened ranged from 0.61 to 0.77 ($p&lt;0.001$, all cases) indicating good agreement. Median of 2 risk factors (range 0-4) was screened in each consultation: most frequent was history/signs of spinal pathology (radiating pain), followed by sick leave, disability, coping with pain and negative beliefs. No screening for rating of pain intensity, depression, beliefs about pain and expectations of long-term pain was observed. Kappa values of risk factors examined were 0.79 Consultation time ranged from 3-21 minutes (mean=8.5) and was typically divided between description of pain (35%), administration (30%), actions (21%), risk factors (11%), general health behaviour (2%) and patient expectations (1%). Concluded that this research protocol provided a reliable method of analysis.</td>
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<tr>
<td>Everett, Schumacher, Wright &amp; Smith (2009)</td>
<td>Physician assistants and nurse practitioners as a usual source of care.</td>
<td>Cross-sectional analysis (telephone, mail survey) of the Wisconsin Longitudinal Study: high school graduates and siblings ($n=6803$). To describe characteristics and outcomes of patients using physician assistants and nurse practitioners (PA/NPs) as usual care.</td>
<td>PA/NPs were significantly greater utilized by: o Individuals in rural compared to metropolitan and micropolitan areas o Individuals without insurance or public insurance compared to those privately insured o Women o Younger individuals o Individuals with lower extroversion scores Individuals utilizing PA/NPs reported lower perceived access compared to those utilizing doctors. PA/NP utilization was associated with increased likelihood of chiropractor visits, decreased likelihood of complete health examination or mammograms. No significant differences were found in self-related health or delays/difficulties in receiving care between individuals utilizing PA/NPs or doctors Concludes there are demographic but not complexity differences between populations accessing PA/NPs and doctors. Further, whilst perceived access was lower for patients utilizing PA/NPs, few differences in utilization and no difference in delay/difficulty in care or outcomes were found. Thus, suggested PA/NPs act as primary care providers in underserved patients with wide ranging disease severity.</td>
</tr>
<tr>
<td>Fleming-McDonnell, Czuppon, Deusinger &amp; Deusinger (2010)</td>
<td>Physical therapy in the emergency department: development of a novel practice venue. Case Report. Implementation of a physical therapist service in the Emergency Department of a large urban hospital in the United States. To describe the planning and early implementation of a physical therapist practice in an Emergency Department.</td>
<td>Outcomes: o referrals increased; o length of stay decreased for patients receiving physical therapy; o high patient and practitioner satisfaction with the physical therapy service; o development of outpatient physical therapy follow-up options; o usual culture of emergency department processes challenged by educating personnel to triage patients with deficits in pain and functional mobility to physical therapy. In conclusion, it is recommended that other institutions incorporate physical therapy into their emergency departments to enhance the processes and outcomes of non-emergent care.</td>
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<td><strong>Goh, Choo, Lee &amp; Tham (2007).</strong> Emergency department triage nurse initiated pain management.</td>
<td>Cohort study 273 patients (73.3% male) presenting to the Emergency Department with isolated limb injury or inflammation, underwent a triage nurse-led pain management policy. Mean age 40.1±19.5 (sd) years.</td>
<td>To determine differences in time of pain relief given by emergency triage nurses versus doctors after consultation, and to compare frequency of adverse events.</td>
<td>Protocol involved a brief case history: chief complaint, past medical history, allergy, medication, vital signs and pain severity (scale of 0-10, and face pain scales). Intramuscular ketorolac was administered to patients with a pain score ≥ 5 unless contraindicated. At triage, the pain scores of 209 patients (76.6%) were recorded: median score = 6. 105 patients (38.5%) received analgesia: 69 by triage nurse; 36 by doctors. Mean time to analgesia was significantly shorter (p&lt;0.001) when administered by triage nurse (2.5±8.9 (sd) minutes) vs doctor (68.2±59.5 (sd) minutes). In addition no adverse drug reactions were observed in patients given ketorolac by triage nurses. Concludes that a triage nurse initiated pain management protocol reduces the time interval for pain relief in Emergency Departments for patients with painful limb conditions.</td>
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<td><strong>Harding, Taylor, Leggat &amp; Wise (2010).</strong> Prioritizing patients for Community Rehabilitation Services: do clinicians agree on triage decisions?</td>
<td>Cohort study 214 adults requiring referral to community based occupational therapy or physiotherapy. Centralized referral office run by nursing &amp; allied health staff: single point of access for ambulatory &amp; sub-acute services in a large metropolitan area.</td>
<td>To determine agreement between independent clinicians using a triage protocol to prioritize referrals to occupational therapy and physiotherapy within a community rehabilitation service.</td>
<td>The priority rating of 6 clinicians in the referral office compared to an independent occupational therapist. Overall there was moderate agreement, with disagreement occurring in 30% of cases.  - Agreement was not affected by the professional discipline of the rater.  - Agreement varied across diagnostic subgroups: significantly lower agreement following referrals for rehabilitation after elective orthopaedic surgery compared to the other categories combined  - Agreement varied across the 4 triage categories: with the lowest agreement in the most urgent category. Concludes clinicians in a centralised model of triage exhibit only moderate agreement when prioritizing patients to community rehabilitation for occupational therapy and physiotherapy</td>
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<td><strong>Haworth &amp; Whittington (2007)</strong> Self-referral to physiotherapist pays off.</td>
<td>Audit of pilot service with physiotherapist as first point of contact for patients with MSK condition in two GP practices.</td>
<td>To establish the effect of introducing a direct access physiotherapy service in primary care. Clinical outcomes: VAS symptom severity; goal attainment scale for function.</td>
<td>Summary of pilot service compared to previous service offered:  - Reduced waiting times: all patients seen within a week  - Decreased use of NSAIDs and analgesics post-treatment  - Reduced time off work  - High patient satisfaction  - GP time savings  - Reduced number of referrals to secondary care: down by 10 referrals a month  - Savings: at least 477 GP appointments annually; £16,000 prescription costs 95% GPs confident with physiotherapists’ ability to diagnose and manage MSK conditions, and supported physiotherapists as first point of contact. All GPs agree the self-referral system continue. The local primary care trust agreed to fund a further year’s service at one GP practice.</td>
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<td>Holdsworth, Webster &amp; McFadyen (2008). Physiotherapists' and general practitioners' views of self-referral and physiotherapy scope of practice: results from a national trial.</td>
<td>Quasi-experiment involving 29 general practices across Scotland; 3010 patients (over 16 years of age); and 100 physiotherapists. Self-referral was introduced at each practice.</td>
<td>To explore the profiles of patients who self-refer to physiotherapy compared with patients referred by or at the suggestion of their GP. Outcomes: demographic and clinical data of all referrals collated over a full year. Practices classified according to location and level of deprivation (DEPCAT scores).</td>
<td>Referral group i.e. self-referral, GP referral or GP-suggested referral, was not related to gender or age group. However, numerous differences were found:  • In terms of presenting condition and its severity ($p = 0.027$)  • A greater proportion of patients who self-referred and GP-suggested referred presented with low back and neck conditions (54% vs 43%, $p&lt;0.001$)  • Non-preferential treatment waiting time differed: 44% self-referrals seen within 2 weeks vs 36% of GP-suggested referrals ($p&lt;0.001$)  • Self-referrers report symptoms for &lt;14 days to a greater extent than other groups (14% vs 9% and 10%, $p=0.011$)  • Fewer self-referrers were absent from work (20% vs 28% and 28%, $p=0.48$) and were absent for fewer days (2.5 days vs 6 days)  • A greater proportion of self-referrers completed treatment (76% vs 69% and 72%, $p=0.002$)  • Mean number of physiotherapy contacts was same case all groups ($n=4$), however, GP-suggested referrals had a proportionally lower contact rate (65% ≤ 4 contacts, vs 55% self-referred and 51% GP-referred, $p&lt;0.001$)  • No differences in outcome (patient or physiotherapist reported) were observed Concluded that the profiles of patients who self-refer to physiotherapy or at the suggestion of their GP differ compared to those who are referred by their GP.</td>
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<td>Holdsworth, Webster &amp; McFadyen (2007). What are the costs to NHS Scotland of self-referral to physiotherapy? Results of a national trial.</td>
<td>Quasi experiment including cost-minimization analysis involving 26 general practices across Scotland: 3010 patients. Self-referral was introduced at each practice.</td>
<td>To determine cost implications to NHS in Scotland of different models of access to physiotherapy in primary care: self-referral; GP-referral and GP-suggested referral. Outcomes: GP and physiotherapist contact; analgesic and NSAID prescriptions; referrals to X-ray, MRI and secondary care.</td>
<td>Referral group was significantly associated with GP and physiotherapist contacts, prescribing, referrals to secondary care and for X-ray ($p&lt;0.001$ in all cases). Average cost of episode of care (costed at 2004 prices):  • Self-referral £66.31  • GP-suggested referral £79.50  • GP-referral £88.99 Extrapolated costs to national level, suggest an average annual cost of £2billion to NHS Scotland. Concluded that self-referral to physiotherapy has a number of significant positive implications which have added value for NHS Scotland and are relevant for the rest of the NHS in the UK.</td>
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<td>Holdsworth, Webster &amp; McFadyen (2006a). Are patients who refer themselves to physiotherapy different from those referred by GPs? Results of a national trial.</td>
<td>Quasi-experiment involving 29 general practices across Scotland; 3010 patients (over 16 years of age); and physiotherapists. Self-referral was introduced at each practice.</td>
<td>To determine the degree of self-referral in rural, semi-rural and urban primary care settings, compared to GP-referrals or at the suggestion of GPs. Practices classified according to location and level of deprivation (DEPCAT scores).</td>
<td>National audit showed an adult referral rate of 53.5/1000. This study showed setting was a significant predictor of referral rate ($p&lt;0.001$). • Referrals were highest in rural settings (66/1000) compared to urban (44.5/1000) and semi-rural (49/1000) settings. • Further, rural settings showed greatest self- (32%) and GP-suggested referrals (26%). The introduction of a self-referral system resulted in an increase in total referrals in less than 20% of locations: these notably reported a history of underprovision of services. Concludes that the introduction of self-referral does not lead to increased referral rates when an appropriate service level already exists.</td>
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<td>Holdsworth, Webster &amp; McFadyen (2006b). Self-referral to physiotherapy: deprivation and geographical setting: is there a relationship? Results of a national trial.</td>
<td>Cross-sectional survey (questionnaire) involving 26 general practices across Scotland: 64 physiotherapists and 97 GPs with direct experience of implementing a self-referral system to physiotherapy in primary care in Scotland.</td>
<td>To determine GP and physiotherapist views on self-referral and physiotherapist scope of practice.</td>
<td>• 73% (117/161) response rate. • 96% (67/70) GPs reported high levels of comfort and confidence in physiotherapists as first point of contact: only 6% physiotherapists reported not being comfortable. • 78% (91/117) clinicians indicated possible or definite benefits for MSK patients if physiotherapists were involved in prescribing and/or monitoring NSAIDs, sickness certification and requesting X-rays: however, GPs were significantly less likely to support this ($&gt;63%$ vs. $&gt;88%$, $p&lt;0.001$). • 78% (35/47) physiotherapists felt physiotherapists were able to accept self-referrals ably • 47% (21/47) physiotherapists felt not all physiotherapists were experienced enough to accept self-referrals • 16% (7/47) physiotherapists indicated the need for additional training before undertaking this role • Further, only 34% (16/47) physiotherapists felt that the public understood the role of physiotherapy and physiotherapists Concluded, GPs and physiotherapists strongly support the idea of physiotherapists working as first point of contact practitioners. Furthermore, extended roles with regard to MSK management may be of benefit. However, the need to raise awareness of physiotherapy especially self-referral was noted.</td>
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### Jette, Ardleigh, Chandler & McShea (2006). Decision-making ability of physical therapists: physical therapy intervention or medical referral.

**Survey including 12 hypothetical case scenarios.**
Random sample of 1000 members of the American Physical Therapy Association (Private Practice Section).

To explore the ability of physical therapists to make decisions regarding patient management in a direct-access environment.

Outcomes: correct decision choice (i.e. to provide intervention alone; intervention and refer; or refer before intervention).

394 physical therapists participated.

On average correct decisions were made in 87% of MSK, 88% non-critical and 79% of critical medical conditions. Across all participants among 50% made the correct decision for all cases within each category.

Physiotherapists with an orthopaedic specialization had odds of 2.23 (95% C.I. = 1.35-3.71) for making 100% correct decisions in MSK conditions and 1.89 (95% C.I. = 1.14-3.15) for critical medical conditions.

Concluded physical therapists with an orthopaedic specialization were almost twice as likely to make a correct decision in cases of MSK and critical conditions.

### Leemrijse, Swinkels & Veenhof (2008). Direct access to physical therapy in the Netherlands: results from the first year in community-based physical therapy.

**Retrospective, observational study.**

To determine number of patients using direct access to physiotherapy and whether their profile differs from referred patients.

28% of patients seen by physical therapists were via direct access. Patients were more likely to self-refer if they:
- had a non-further-specified back problem or non-specific neck complaint
- were higher-educated
- had a health problem lasting <1 month
- were younger patients
- had recurring complaints
- had previous experience of physical therapy treatment

On average 10% patients visited the therapist only once: this was higher for men, younger patients and those with acute conditions.

Direct access patients experienced fewer treatment sessions and other inventions were used.

Concluded that a large specific group of patients directly access physical therapy. Further research was suggested on the quality and cost-effectiveness of direct access, and to explore if direct access has replaced GP care.

### Leemrijse, Swinkels, Pisters, de Bakker & Veenhof (2008). Direct access to physiotherapy: the patients' choice

**Cross-sectional survey (questionnaire) to members of the Dutch Health Care Consumer Panel and the National Information Network of Allied Health Care as representatives of the Dutch population and users of physiotherapy respectively.**

To determine the awareness of direct access to physiotherapy amongst the Dutch population and explore the reasons for using or not using direct access.

The main reasons proffered for opting for direct access was previous experience with physiotherapy and familiarity with a health condition.

Those individuals choosing to see a GP first expressed preference for the GP to evaluate their health problem first particularly as they are aware of the patients overall health condition.

The nature of a condition determines whether an individual makes use of direct access at that point in time.

Concludes that many people prefer to leave the GP to initiate referral to physiotherapy. However, freedom to choose is appreciated by many individuals.
<table>
<thead>
<tr>
<th>Authors</th>
<th>Design/Methods</th>
<th>Objectives</th>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>McKinstry, Watson, Pinnock, Heaney &amp; Sheikh (2009)</td>
<td>Telephone consulting in primary care: a triangulated qualitative study of patients and providers. 15 focus groups (n=91) triangulated by national questionnaire. Focus groups conducted with GPs, nurses, administrative staff and patients.</td>
<td>To explore patient and healthcare professionals perspectives on telephone versus face-to-face consultation. Outcomes: content, quality, safety and incorporation into routine healthcare.</td>
<td>Development of telephone consultations evolved in urban settings primarily to manage demand, whilst in rural settings to ensure continuity of care. In general telephone consulting was considered to improve access. However, clinicians, in light of a lack of formal and informal examination, expressed strong concerns regarding safety: although less so when there was an established clinician-patient relationship. Concludes that when used appropriately telephone consultation may improve access to healthcare and maintain continuity of care, whilst reducing time and travel for patients. However, there are concerns regarding its use in acute triage. Consequently, it is suggested that its use is restricted to managing follow-ups until its safety in triage has been addressed.</td>
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<td>Nordeman, Nilsson, Moller &amp; Gunnarsson (2006)</td>
<td>Prospective RCT. 60 consecutive patients with sub-acute low back pain, randomized to early access (within 2 days of physical exam and individual physiotherapy programme) (n=32) or control group with usual 4-week wait list (n = 28).</td>
<td>To evaluate the effectiveness of early access to physical therapy compared to usual waiting list. Outcomes: Pain (Borg scale); Orebro MSK pain; Roland and Morris disability; sick leave; visits to health care and physical therapy. Time-points: at inclusion, at discharge and 6-months.</td>
<td>Pain scores did not differ significantly between the two groups at discharge, however, after 6 months pain reduction was significantly greater in the early access group (p&lt;0.025). No other significant differences in outcomes were found between the two service models. Concludes that early access to physical therapy could be introduced with reorganization and no additional resources.</td>
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<td>Patel, Hossain, Colaco, El-Husseiny &amp; Lee (2011)</td>
<td>Retrospective, observational study. Review of records of referrals to a single orthopaedic surgeon over a 1-year period.</td>
<td>To examine the accuracy of diagnoses of upper limb pathologies made by primary care practitioners referring to an orthopaedic surgeon. Outcome: agreement with orthopaedic surgeon.</td>
<td>114 eligible patient records were identified of these 35% referred by their GP, 63% by MSK triage service and 2% independent physiotherapists. 37% of patients were undiagnosed in primary care i.e. referred without diagnosis Accuracy of diagnosis was 50% when correlated against orthopaedic surgeon diagnosis. No differences in accuracy were found between MSK triage services and GPs. Concluded that there is limited knowledge of should conditions amongst primary care practitioners.</td>
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| 19 patients with existing lower limb MSK conditions assessed by physical therapist face-to-face, remote therapist. Videoed telerehabilitation sessions were reviewed after 1 month by the remote therapist (intrarater reliability) and by a second remote therapist (intrarater reliability). | To determine criterion validity and reliability of remote physical assessment and diagnosis of non-articular lower limb MSK conditions (telerehabilitation). Outcomes: patho-anatomical diagnoses, system diagnoses and physical examination findings. | ≥79% agreement of primary diagnoses (same or similar) and ≥79% exact system diagnosis agreement for validity, intra- and inter-rater reliability. Physical examination findings agreed substantially (0.61<kappa<0.8) in validation study and there was almost perfect agreement (0.81<kappa<1.00) in the intra- and inter-rater reliability testing. Concludes that telerehabilitation for MSK physical therapy assessment of non-articular lower limb conditions was reliable and valid. Further existing diagnostic reasoning can be used although the development of new patient self-examination is required to allow differential diagnosis. |


Prospective observational cohort study. 217 consecutive patients with MSK disorders referred to a primary care MSK assessment service (triage & treatment) from primary care over a 6-month period.

To assess clinical effectiveness of a primary care MSK assessment service Outcomes: SF-36, EQ-5D, VAS pain, Perceived Improvement Evaluation, Deyo and Diehl satisfaction questionnaire. Timepoints: baseline, 3 and 12 months.

There were significant improvements in pain (VAS; ≤0.002) and EQ-5D (p≤0.043) at 3 and 12 months. No significant changes in SF-36 were demonstrated (p≥0.73). Mean patient-perceived improvement was 33% and 46% at 3 and 12 months respectively. Patient satisfaction was high, with 72% indicating total satisfaction across all elements of the assessment service. Conclude that similar models have been introduced nationally to improve patient care and achieve the 18-week access goal. This model shows the potential benefits of adopting this model of care and highlights the need for further research.


Qualitative study. Interviews with patients receiving physiotherapy treatment in emergency (n=22). 19 patients >65 years old, mean age 78 years.

To explore patient satisfaction with emergency department physiotherapy. Time-points: post-treatment and 2-3 week later.

Of the 22 patients initially interviewed following treatment in emergency, 15 were also interviewed at follow up. A number of themes were identified: expectations; bedside manner, which reassured and comforted patients; management including assessment, advice, hands-on, exercise, follow up or referral, and satisfaction. Concludes that participants were satisfied with their experience of physiotherapy led care in the emergency department and referred to the physiotherapists skills enhancing service provision and patient self-reported outcomes.
**Taylor, Norman, Roddy, Tang, Pagram & Hearn (In Press). 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.**

Prospective non-randomized controlled trial.

3 metropolitan emergency departments. 315 adults presenting with peripheral MSK injury assigned to primary or secondary (assessed by doctor) physiotherapy contact: excluding spinal pain and open fractures. Single episode of physiotherapy only.

To assess the impact of primary contact physiotherapy in the emergency department.

Outcomes: length of stay; waiting time; treatment time; re-presentation to emergency department; imaging referrals; patient satisfaction; acceptance by emergency department staff.

306 (of 315) patients completed the study.

Primary physiotherapy led to reduction in length of stay of 59.5 minutes compared to secondary contact, and a concomitant reduction of waiting time of 25.0 minutes and treatment time of 34.9 minutes.

No significant differences in imaging referrals and re-presentations were found.

Patient satisfaction of their management was high and 96% of emergency department staff agreed that physiotherapists had the necessary skills and knowledge to provide emergency care.

Concludes: MSK physiotherapists in emergency departments are effective as first point of contact practitioners for patients with simple, non-urgent and semi-urgent peripheral MSK injuries.

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**Turner (2009). An exploratory study of physiotherapy telephone assessment... Including commentary by Foster NE.**

55 patients with MSK conditions assessed independently by two physiotherapists first over the telephone and then in person. Patients assigned to a physiotherapist with <2 years experience (n=33) or >4-years experience (n=22).

To determine the agreement between telephone and face-to-face management of MSK conditions and access the accuracy of diagnosis by telephone.

Outcomes: inter-examiner agreement (diagnosis and management).

There was good agreement on diagnosis for both junior (85%) and senior (91%) physiotherapists: this difference was not significant.

However, there was poor agreement for junior physiotherapists for management decisions (64% agreement; kappa = 0.27) and fair-good agreement for senior staff (91% agreement; kappa = 0.70). Concluded that diagnostic assessment over the telephone is comparable to face-to-face diagnosis. In contrast, however, management of MSK conditions over the telephone compared less favourably to face-to-face management particularly in less experienced staff.

The need for further research into providing an effective and efficient telephone assessment service for physiotherapy was highlighted.
| Webster, Holdsworth, McFadyen & Little (2008). Self-referral, access and physiotherapy: patients’ knowledge and attitudes -- results of a national trial. | Cross-sectional survey (questionnaire) involving 26 general practices across Scotland: sent to 3010 patients 4-weeks after discharge from physiotherapy. Self-referral was introduced at each practice. | To determine service user views and attitudes to physiotherapy, access and patient-autonomous health seeking behaviour. Patients categorised according to mode of access: self-referral; GP-referred and GP-suggested referral. | 72% (2177/3010) response rate. All groups (age/sex) strongly supported the effectiveness of physiotherapy. Self-referred individuals reported greater satisfaction ($P<0.001$), were more supportive of the option to self-refer (83%; c.f.69% GP-referred and 71% GP-suggested referral), and more supportive of physiotherapists’ management i.e. re: fitness to work and activities (59%; c.f. 53% GP-referred and 53% GP-suggested referral). >80% reported being confidently able to predict their need for physiotherapy, whilst <23% claimed they were knowledgeable or very knowledgeable (this was not associated to referral group, $p=0.129$). Concludes all groups have positive regard for physiotherapy, particularly self-referring patients, despite a lack of knowledge about the profession. The need to increase awareness and knowledge of physiotherapy was highlighted, if self-referral schemes are to be progressed. |
| Williamson, Williams, Hansen, Joseph & Lamb (2009). Development and delivery of a physiotherapy intervention for the early management of whiplash injuries: the Managing Injuries of Neck Trial (MINT) Intervention. | Cohort study 300 patients self-referred for treatment with WAD grades I–III within 6 weeks of injury. 55 physiotherapists (all senior grades) qualified for 2-33 years (median 6.5 years) with 1-28 years (median 4 years) experience working in outpatients. | To describe the development and implementation of a physiotherapy intervention specifically for WAD. | 11% ($n=34$) patients failed to attend; 9% ($n=26$) only attended the initial assessment; 15% ($n=45$) partly completed treatment whilst the remaining 67% ($n=201$) completed treatment. Number of treatments for those completing the therapy ranged from 0-23 sessions (exc. assessment, median = 3), with 5% ($n=14$) exceeding the recommended 6 sessions. Time allocated to: assessment sessions ranged between 40 and 60 minutes with a majority of centres (8/12) allocating 60 minutes; treatment sessions ranged between 20 and 30 minutes with a majority of centres (9/12) allocating 30 minutes. 63% patients were seen within 14 days of referral and 91% within 28 days. 62% patients completed treatment within the recommended 8 weeks and 87% within 12 weeks. Of the 259 patients who received at least one treatment session 73% received a combination of manual therapy, exercises and psychological strategies. Nb: part of a multicentre RCT – but no publication relating to these results could be found. |