aspex consulting

Victorian Department of Health

Review of Primary Contact Physiotherapy Services

Final Report

August 2010

Version: EDPCP Final Report Dwh 260810.Doc

212 Clarendon Street | East Melbourne | Victoria | 3002 | 03 9419 0002 | aspexconsulting.com.au

Table of Contents

Index of Figures

Index of Tables

Glossary of terms

Table 1: Glossary of terms

ACEM	Australasian College of Emergency Medicine
APA	Australian Physiotherapy Association
CC	Care Co-ordination
CHC	Community Health Centre
Consultant	Qualified Specialist Medical Officer
CSP	Chartered Society of Physiotherapy
DoHA	Department of Health and Ageing
ED	Emergency Department
EFT	Effective Full Time (Staff Employed)
ESP	Extended Scope of Practice
GP	General Practitioner
HDM	Hospital Demand Management (Strategy)
HPRAC	Health Professions Regulatory Advisory Council
Intern	Provisionally Registered Medical Officer - 1st year post graduation
JHMO	Junior Hospital Medical Officer - 2nd year post graduation (previously known as Junior Resident Medical Officers)
KPI	Key Performance Indicator
PCP	Primary Contact Physiotherapy
PT	Physiotherapist
Registrar	Trainee Specialist Medical Officer
SCP	Secondary Contact Physiotherapy
SHMO	Senior Resident Medical Officer - 3rd year+ post graduation (previously known as Senior Resident Medical Officers)
SOP	Scope of Practice
UK	United Kingdom
VEMD	Victorian Emergency Minimum Dataset

Disclaimer

Please note that, in accordance with our Company's policy, we are obliged to advise that neither the Company nor any employee nor sub-contractor undertakes responsibility in any way whatsoever to any person or organisation (other than the Victorian Department of Health) in respect of information set out in this report, including any errors or omissions therein, arising through negligence or otherwise however caused.

1 Executive Summary

Primary Contact Physiotherapy (PCP) services were first introduced into some Victorian hospital Emergency Departments (ED) in 2004. PCP services allow suitably qualified and experienced physiotherapists to undertake a 'first contact' role in assessing and managing 'appropriately identified' patients after triage in the ED.

This model of care was developed to address rising demand for treatment of 'primary care type' patients in EDs across Victoria. The model was also trialled to address shortages in the availability of suitably qualified medical and nursing professionals, explore advanced scope of practice opportunities for senior physiotherapists and improve patient flow through the ED.

The Department of Human Services provided specific funding to a number of health services to implement a PCP model of care between 2006/07 and 2008/09. Other health services have commenced a PCP model of care within existing resources. Accordingly, the current review was commissioned by the department to assess the impact of PCP models of care upon the 'timeliness, quality of service delivery and patient flow' in Victorian emergency departments, and to assist the department in determining any future support for the model of care.

A literature review of the process and impacts of the ED PCP model of care in other Australian and overseas jurisdictions was undertaken. Data were collected and interviews conducted with the six funded health services providing an ED PCP model of care. Additional data and interviews were conducted with three health services that had 'self-funded' ED PCP models of care. Systems data (from the Victorian Emergency Minimum Dataset) were analysed to identify trends in presentations and length of stay for patients who would be considered eligible for PCP intervention. Reports of service outcomes were also assessed from each of the funded and self-funded services.

A number of common factors were reported to influence the successful establishment and operation of ED PCP services including (but not limited to):

- The culture of the ED, including attitudes towards service innovation, level of commitment and experience in providing multidisciplinary care;
- The capability of the PCP to demonstrate clinical competence, establish credibility and build relationships within the ED team;
- The availability of the PCP to meet demand for services and maintain relationships with ED staff; and
- Early and ongoing support from senior nursing and medical staff across the health service together with hospital management.

Differences in the model of care implemented across the sample of Victorian hospitals were influenced by:

- PCP staffing arrangements following employment of a suitably qualified physiotherapist to undertake the role and attention to ongoing development of appropriate 'succession planning' or career development opportunities with other physiotherapy staff;
- Levels of patient demand for services and the capacity of the ED PCP to be flexible in relation to other potential roles and responsibility within the ED and broader health service;
- Workforce pressure upon the ED for some health services' who expressed a preference to divert funding to maintain recruitment and retention of medical and nurse practitioner staff; and
- The capacity of existing PCP models of care to provide ongoing services to meet demand, particularly those experienced over the weekend and weekday evenings.

Notwithstanding this diversity, PCP models of care have been introduced in a relatively consistent manner across a range of different health services. PCPs and other members of the ED staff were unanimously positive in their appraisal of the operation and impact of the service. More specifically, available evidence supports the conclusion that the ED PCP model of care has led to improvements in:

- Patient access to services;
- Comprehensiveness of care provided within the ED environment;
- ED and physiotherapy staff education and training;
- Patient flow through the ED;
- Future career pathways for physiotherapists; and
- The potential cost of care delivered for some groups of patients presenting to EDs.

Based upon the findings of the current evaluation, the following characteristics were indicated for a 'best practice' PCP model of care:

- Clear delineation of PCP-type patients presenting to the ED;
- Clear understanding and ongoing monitoring of the level of service demand by PCP-type patients throughout different days of the week;
- Establishment of organisational policies outlining the scope of practice of ED PCPs and distinguishing interventions that maybe provided solely by PCPs versus those that may be provided by a range of different ED staff;
- Designation of specific funding for the provision of an ED PCP service;
- Employment of an appropriately qualified senior physiotherapist with demonstrated capacity to independently diagnose and manage PCP-type patients, in addition to the ability to establish and maintain multidisciplinary relationships with other ED staff;

- PCP staffing arrangements that promote professional development and training of more junior physiotherapists to undertake PCP activities under supervision;
- Integration of PCP services with other models of care provided in the ED or outpatient setting to maximise availability of physiotherapy staff to meet fluctuating levels of demand for ED PCP services;
- Establishment of KPIs to monitor key elements of service delivery, including (but not necessarily limited to):
  - Number of PCP-type patients treated in a 7.5 shift;
  - Time to patient treatment by PCP from triage (or registration); and
  - Time to PCP-type patient discharge (following triage or registration).
- Establishment of systems to undertake follow-up monitoring of the outcomes experienced by a random sample of PCP-type patients treated by physiotherapists, and other ED staff each year, including (at a minimum):
  - Time to symptom resolution post discharge from the ED; and
  - Time of full return to the complete range of functional activities for individual patients (including usual occupational activities, however defined for any given individual).

Further data collection and analysis is required to determine specific impacts of service delivery, particularly upon patient outcomes resulting from PCP care delivered in the ED. Accordingly a number of recommendations have been provided for consideration by the department and individual health services relating to:

- Ongoing support and recognition for the ED PCP model of care;
- The development of funding options to support ongoing service delivery;
- Monitoring of the level of demand for PCP services in Victorian health services;
- Additional research to investigate the 'downstream' outcomes and costs associated with the model of care;
- Methods of improving current models to meet fluctuating demands for service provision;
- Improvements in current data collection, analysis and reporting of activities undertaken by PCPs; and
- The development of guidelines to assist health services in establishing or maintaining ED PCP services in the future.

2 Background

This project was commissioned by the Victorian Department of Health (formerly part of the Department of Human Services) to review the impact of PCP models of care upon the "timeliness, quality of service delivery and patient flow"[1] in Victorian public hospital EDs. To achieve this goal, a range of background considerations were taken into account in order to determine the most appropriate method of undertaking the review, including:

- Key policy and program directions relating to the provision of emergency department care in Victoria;
- Strategic directions in support, development and training of the health workforce in Australia; and
- The development of models of care incorporating primary contact physiotherapy services in EDs both within Australia and other overseas jurisdictions.

2.1 Strengthening the provision of emergency department care

In 2001/02 the Department of Human Services implemented a 6-year *Hospital Demand Management (HDM) Strategy* to address growing numbers of presentations to Victorian emergency departments. In 2003/04, the Victorian Auditor General undertook a selective review of a number of key initiatives funded under the original *HDM Strategy* and tabled a report entitled *Managing Emergency Demand in Public Hospitals* to the Victorian Parliament. Key findings of the Auditor General's review identified that the department had made significant gains in managing demand for ED services. A number of ongoing 'challenges' were also identified, including (but not limited to) the need for ongoing evaluation of programs implemented in the ED to streamline patient management.

In 2006/07 the range of existing and new activities that were being implemented to "strengthen the capacity of the health system to respond to the emergency care needs of the community" were co-ordinated under a new *Better, Faster Emergency Care* policy, which established a number of major priority areas focusing upon:

- Developing of new service options;
- Improving co-ordination between ambulance and emergency services;
- Improving the experience of patients;
- *Mainstreaming new models of care;*
- *Exploring 'new ways' of working*[2];
- Enhancing care quality and safety;
- Promoting better 'systems of care'; and

[1] RFQ, p.3.

[2] Italics added to emphasis the policy support for the current project.

- Improving management of patients with particular needs (e.g., mental health, older people, and children).

The policy recognises the need to adopt a 'systems-based' approach to management of issues impacting upon the emergency department.

In accordance with these objectives, the *Emergency & Trauma Program*[3] in the Department of Health (the department) has supported the introduction of a range of new models of patient care, including (but not limited to):

- Fast track assessment and intervention;
- Short stay observation units;
- Medihotels;
- Co-located GP clinics;
- Care co-ordination services; and
- Primary contact physiotherapy services.

Primary contact physiotherapy services were identified and piloted as an innovative model of care that could be introduced to strengthen existing demand management initiatives in addition to promoting workforce flexibility and development.

2.2 Developing the health care workforce

The level of demand for health care in Australia will continue to increase over the coming years. These demand pressures will be further compounded by a relative shortfall in the number of trained health professionals available to meet the needs of those requiring health care services. Accordingly, in 2004 the Australian Government has endorsed a framework to promote a more strategic approach to future government policy and programs supporting workforce development and training.

> *"To make optimal use of workforce skills and ensure best health outcomes, it is recognised that a complementary realignment of existing workforce roles or the creation of new roles may be necessary. Any workplace redesign will address health needs, the provision of sustainable quality care and the required competencies to meet service needs." (National Health Workforce Strategic Framework, p.15)*[4]

The Victorian Government responded to this framework in June 2004, by introducing the *Better Skills Best Care* strategy to maximise the skills available within the existing health workforce and to explore options for extended scope of practice and role and workforce redesign across a variety of health professions. Extending the scope of practice for physiotherapists working in the ED was one of a number of early workforce redesign projects identified and funded by the department, given preliminary

[3] See: http://www.health.vic.gov.au/emergency/index.htm .

[4] Australian Health Ministers' Conference (2004), National Health Workforce Strategic Framework, Sydney.

indications that this model of care had achieved positive outcomes in other jurisdictions.

2.3 Rationale and focus of the current review

Following the introduction and pilot evaluation of extended scope (primary contact) physiotherapists in a selected number of EDs in Victoria, it was considered timely to undertake a more comprehensive review of this model of care to determine:

- The range of models of service delivery and supporting arrangements that have been implemented across the state;
- The impact of the model of care upon timeliness, quality of care and patient flow in emergency departments;
- Key barriers and enablers of an effective model of service delivery; and
- An appropriate direction for future emergency department primary care physiotherapy (ED PCP) services in Victoria.

Our approach to determining these impacts is outlined in the following sections of this report.

3 Methodology

In accordance with the specifications outlined by the department, the review comprised six stages, outlined in Figure 1[5].

Figure 1: Diagrammatic approach to evaluation

Key components of each stage are outlined in the following sections.

3.1 Project commencement

The purpose of this stage was to ensure that there was a common set of expectations with respect to the methodology, key deliverables, project administration and timelines amongst other things. Specifically, this stage involved:

- An initial client meeting to discuss and confirm project scope and finalise the methodology;
- Confirmation of appropriate management structures, their terms of reference and meeting schedules established for the project;
- Identification of key day-to-day contacts within the department and an appropriate method and timelines for communication about project activities and outcomes;
- Development of a bullet point list of key issues that were to be addressed throughout the course of the review;
- Finalisation of a list of key contacts in participating health services together with appropriate methods and timelines for communication about key project activities;

[5] The approach was predicated upon assumptions outlined in the proposal submitted to the department.

- Identification, where possible or known, of the reasons for individual health service development of ED PCP models of care; and
- Finalisation of an agreed work plan for the project.

Outcomes from this stage of the project comprised an agreed work plan including finalisation of the project methodology, a list of key issues to be covered during the project, the formation of project governance structures and clear expectations relating to the approach. Endorsed health service contacts (and back-up contacts) for project-related communications were also identified.

3.2 Literature overview and summary

The purpose of this stage of the project was to develop a picture of the issues and impacts associated with the introduction of ED PCP in other jurisdictions and establish an evidence base against which the findings of the current review could be compared. A high level overview of available literature relating to the introduction of extended scope physiotherapists in EDs and other health care settings (e.g., specialist units, outpatients etc.) was undertaken. Particular attention focused upon:

- The rationale for introduction of the role;
- The key steps involved in establishing the model of care;
- The nature and variations in the models of care implemented within and between different settings;
- Key factors that have influenced the development, implementation and, where relevant, modification of the model of care;
- Major impacts resulting from the introduction of the role upon patients, physiotherapists and other staff; and
- Future directions for the extended scope of practice physiotherapists.

Emphasis was placed upon studies offering empirical data to support assertions about the outcomes of the model of care. A total of 26 publications from the peer reviewed and grey literature were identified and reviewed. This stage also incorporated a review of relevant policy and program documentation to ensure that the strategic intention of the model of care was appropriately described to contextualise the evidence and subsequent recommendations arising from the review.

Outcomes from this stage of the project comprised an understanding of the policy context supporting the introduction of the ED PCP model of care, the range of models of care reported by other jurisdictions, key issues impacting upon the role, impacts achieved since implementing the model of care and likely directions for future development of the model of care. These issues were then incorporated into a discussion guide and data collection template developed for stakeholder consultation.

3.3 Stakeholder interviews and data collection

This stage of the project focused upon interrogation of systems data held by the Department of Health together with collection of data from stakeholder informants about their expectations and experience of the ED PCP model of care.

3.3.1 Department and health service provider interviews

In accordance with the project specifications, a range of interviews were conducted with stakeholder representatives from:

- The Department of Health (4 interviews), including staff within:
  - Performance Acute Services and Rural Health Branch; and
  - Workforce Leadership and Development Branch.
- Health services who have introduced ED PCP models of care (30 interviews), including:
  - ED directors;
  - ED nurse unit managers;
  - ED physiotherapists;
  - Hospital physiotherapy departments; and
  - Relevant staff in other health service specialist clinics.

A discussion guide (Appendix B) was developed to guide these interviews based upon the findings of the literature overview, policy documentation and early project evaluation reports provided by the department. The discussion guide and a checklist/data collection template to collect key information outlined above and any 'other local information' (e.g., throughput statistics, patient satisfaction/appraisals of service delivery, patient outcome data) were sent to health services prior to consultation to allow sufficient time for consideration of key issues and preparation of relevant data.

3.3.2 Request for an extract of relevant systems data

This stage of the project also involved the development and submission of a specification to examine relevant systems data held in the Victorian Emergency Minimum Dataset (VEMD).

A number of key fields, relevant to the outputs and impacts of the ED PCP model of care were examined (Appendix C). Data were requested for the health services who have implemented a ED PCP model of care with specific funding and a further (selected) number of health services (matched on key characteristics) who had not implemented a funded ED PCP model of care within their current funding allocation to allow an appropriate comparison of performance (discussed in the following section).

Outcomes from this stage of the project comprised an analysis of systems data from the Department of Health and local data from health services with) ED PCP models of care. This data, together with a range of other information relating to the establishment, operation and outcomes of the ED PCP model of care, was discussed with health service representatives who participated in the review.

3.4 Integrated analysis of findings

This stage of the project focused upon integrating the major sources of information obtained from the literature, stakeholder interviews, local service data and systems data to address the overall objectives of the review.

3.4.1 Service profile mapping

Information received from stakeholder consultation, the data collection template and other key documents was integrated to develop a service map of the ED PCP models of care, describing key elements including:

- Service types/settings, to account for any variation in ED configuration between health services and any differences in the availability of other relevant programs, such as ED care co-ordination, co-located GP clinics etc.;
- Service activities, focusing upon common and unique activities that characterise each model of ED PCP care;
- Service levels provided by ED PCP according to time of day and day of the week and, if possible, month of the year;
- Patient/client characteristics, including patient acuity (e.g., triage category), diagnostic groups, discharge disposition and key demographic factors (e.g., age);
- Patient access, such as timeliness of care or support, duration of stay and access to relevant services; and
- Network or coordination approaches between the ED PCP and other elements of the health service system (including the emergency department, inpatient services, outpatient services, other sub-acute services, primary care and community services) and their impact upon other service streams and continuity of patient care.

3.4.2 Service implementation, output and impact

Information received from stakeholder consultation, the data collection template and other key documents was integrated with the analysis of systems data to develop an understanding of:

- Service development, including the establishment of a ‘business case’/needs assessment prior to introducing the service, identification of an evidence base for the model of care and establishment of guidelines/protocols to

facilitate effective streaming, assessment, diagnosis, treatment, referral and clinical risk management;

- Clinical credentialing and scope of practice arrangements established for ED PCPs;
- Clinical and administrative governance arrangements established to support the model of care;
- Impact upon patient flow in the emergency department, including the time to treatment and length of stay in the ED for patients in the targeted diagnostic groups at the time of operation of the service, compared with times when the service was not in operation. Impacts upon broader patient flow were also examined (to the extent possible from the available systems data);
- The impact upon patient outcomes (according to available data[6]) in areas such as patient satisfaction/appraisal, access to care, longer-term outcomes identified from follow-up, etc.; and
- The impact upon quality of care experienced by patients who receive the ED PCP service. Data were assessed against key dimensions of quality, in order to estimate the impacts resulting from the model of care (i.e., equity of access, appropriateness, efficiency, effectiveness, safety and acceptability of care).

Systems data were examined to provide a comparative analysis of the impact of ED PCP models of care by focusing upon available outcome data:

- At times when the ED PCP service was available (i.e. operating hours) compared to times that the service was unavailable;
- For a period of time prior to, and following the introduction of the model of care in each of the participating health services; and
- Between (appropriately matched) EDs that had implemented ED PCP services via specific funding and those that had implemented ED PCP from general funding allocation, together with those that did not have an ED PCP service.

3.4.3 Key elements of an effective service model

Based upon the findings of the analysis, key elements of an effective ED PCP service model were identified. Attention focused upon critical components, key contextual factors influencing successful development and implementation, other factors that may promote or inhibit the successful operation of the service and indicators that may be considered for ongoing performance monitoring. Each of the current models of ED PCP care was apprised against these criteria to provide a comparative assessment of current performance and likely sustainability into the future.

[6] The capacity to identify patient outcomes was dependent upon locally available (de-identified) data.

3.4.4 Implications for future service planning

Implications of the PCP model of care upon future planning and operation of ED services were then examined with the available data. Specific attention focused upon Commonwealth and State policy directions, other models of care provided to support 'better, faster emergency care' and the likely impacts of the model upon other elements of the service system.

Outcomes from this stage of the project comprised a service mapping, assessment of operational impact, identification of key elements of an effective model of care and recommendations for future delivery of ED PCP services in Victoria.

3.5 Development of summary, draft and final reports

The findings of the project were reported in three phases. First, a bullet point summary of key findings and areas for recommendation was provided for discussion with the department prior to commencement of a draft report. A draft report was then prepared (not exceeding 60 pages), outlining the:

- Background to the review (including the overview of the available literature);
- Methodology of the review; and
- Key findings, relating to the:
  - Service mapping and patient profile;
  - Implementation and operation of the ED PCP model of care;
  - Outputs and impacts of the model of care;
  - A comparative appraisal of each model of care; and
  - An assessment of the implications for future service planning (together with appropriate recommendations).

Following feedback from the department, the draft report was finalised and submitted, concluding the project.

Outcomes from this stage of the project comprised a bullet point summary of findings for presentation to and discussion with the department, followed by the preparation of a draft and final report.

3.6 Project governance

Project governance arrangements occurred directly with nominated department staff. The findings of the project were also reported directly to the Primary Care Sub-Committee of the department's Emergency Access Reference Committee.

4 Literature review

4.1 Primary contact physiotherapy in emergency departments[7]

4.1.1 Increasing demand for Emergency Department services

In Australia, EDs have been defined as *"the dedicated area in a public hospital that is organised and administered to provide emergency care to those in the community who perceive the need for or are in need of acute or urgent care. An Emergency Department provides triage, assessment, care and/or treatment for patients suffering from medical conditions and/or injury"* (AIHW 2003).

Similarly, the Australasian College for Emergency Medicine defines EDs as *"the dedicated area in a hospital that is organised and administered to provide a high standard of emergency care to those in the community who perceive the need for or are in need of acute or urgent care including hospital admission"* (ACEM 2001).

EDs are designed to deal with medical emergencies that could be life-threatening or cause serious permanent disability (DoHA 2007), using a model of initial assessment/triage (with patients classified into levels of urgency according to the Australian Triage Scale[8]), detailed assessment and treatment and discharge from the ED.

Despite these definitions, increasing numbers of patients with low acuity problems, who might be more appropriately treated in a General Practice setting, present to EDs (Johnson & Cusick 2009). Such patients include the elderly, those from lower socio-economic backgrounds and those with complex and/or chronic medical problems (Fulde & Duffy 2006; Hunt et al. 2006). It has been suggested that one strategy to appropriately assess and treat non-urgent patients and to improve patient flow in the ED is to increase the use of allied health staff, such as physiotherapists (Phillips et al. 2006).

4.1.2 Extended scope of practice in physiotherapy

Increasingly in Australia, UK and elsewhere, physiotherapist roles are being enhanced or broadened. This increased ability to work across professional divides or adopt extra skills previously seen as the domain of medical staff (e.g. writing prescriptions, giving injections, conducting patient assessments in outpatient clinics) is known as Extended Scope of Practice (ESP).

Professional bodies such as the UK Chartered Society of Physiotherapy argue that specialties in physiotherapy benefit service delivery and provide career progression opportunities for individual physiotherapists (CSP 2001). Other drivers of ESP include attempts to improve recruitment and retention by enhancing physiotherapy roles

[7] A list of references relating to the role of Primary Contact Physiotherapy is presented in Appendix A.

[8] Developed by the Australasian College for Emergency Medicine. (2005). Guidelines on the implementation of the Australian triage Scale in Emergency Departments. ACEM.

(Bethel 2005), and local or national service demands (e.g. shortage of doctors or increased waiting lists) (Kersten et al 2007). Still others suggest that physiotherapists in settings such as EDs would "free up" medical practitioners to undertake more urgent work (Boyce and Quigley 2003; Hughes et al 2003), although this hypothesis remains untested (Bethel 2005).

Some evidence exists that physiotherapists perform comparably with doctors in assessing orthopaedic patients (Aiken & McColl 2008), musculoskeletal injuries (Moore et al. 2005) and acute knee injuries (Dickens et al. 2003). However, other authors acknowledge that many papers regarding ESP physiotherapists are descriptive and express concern regarding *"the rapid development of roles without evidence of their effectiveness, competence or safety."* (Kersten et al. 2007). The Health Professions Regulatory Advisory Council describes *"a lack of quality research supporting the clinical and cost-effectiveness of expanded roles for physiotherapists."* (HPRAC 2008). The Chartered Society of Physiotherapy also admits that *"the evidence base to support the clinical specialist role is relatively small"* (CSP 2001).

Despite these concerns, ED physiotherapy represents an example of ESP that is growing in popularity.

4.1.3 Introducing Physiotherapy into Emergency Departments

In addition to any rationale for physiotherapy ESP in general, various authors have suggested other factors supporting the introduction of physiotherapists into EDs. Some argue that, without a dedicated physiotherapist, some ED patients do not receive timely and appropriate therapy, due to factors such as lack of awareness among ED staff of the most appropriate interventions or long waiting times from ED presentation to ward admission (Sparshott et al. 2006). Others suggest, as previously stated, that ED physiotherapists can play an important and cost-effective role in dealing with non-urgent patients who are attending EDs in increasing numbers, thereby relieving the strain on hospital resources (Phillips et al. 2006). Finally, ED physiotherapy, as part of multidisciplinary management of lower triage category patients, has been described as a potential tool for reducing unnecessary hospital admissions and directing patients toward more appropriate medical, nursing and allied health care (Anaf & Sheppard 2007).

4.1.4 The key steps involved in establishing the model of care

There is minimal information in the literature regarding ED physiotherapy and how this role has been implemented.

One example has been described at Dubbo Hospital (Sparshott et al. 2006). After a needs analysis and review of interstate services, a physiotherapist was allocated to the ED and Emergency Medical Unit on weekdays. Patients were referred for early physiotherapy involvement via ward rounds with medical staff. Physiotherapists also had responsibility for liaison with other services as appropriate (e.g. Aged Care Assessment Team) and for provision of in-services and training.

4.1.5 Key characteristics of ED PCP models of care

Although there is no single definition of the physiotherapy role in the ED setting (Ball et al. 2007), some authors define it as a service that provides assessment and intervention for non-urgent patients, either autonomously or in conjunction with other ED staff (Anaf 2008).

ED physiotherapists are also described as "primary contact" (taking primary management responsibility within the ED context with or without collaboration of other ED staff).

Regarding the patient type treated by ED physiotherapists, some authors describe musculoskeletal conditions, especially soft tissue injuries, as their primary focus (Ball et al. 2007), which physiotherapists potentially treat more appropriately and quickly compared with other ED staff (Sexton 2002). ED physiotherapists have been reported as primarily attending patients with pain, decreased mobility, decreased joint range of motion or discharge planning needs (Anaf & Sheppard 2007).

Other authors suggest a wider range of conditions could be treated by ED physiotherapists, including:

- Respiratory conditions/chest infections;
- Sports injuries;
- Falls;
- Fractures and dislocations;
- Neurological conditions;
- Recent burns limiting joint range;
- Back injuries; and
- Upper limb injury or dysfunction (Anaf 2008).

However, in other studies, some of these conditions are expressly excluded (e.g. fractures) (Bethel 2005), while patients with acute respiratory or neurological conditions presenting to an ED may be too unstable to undergo physiotherapy treatment at that point.

The range of treatments performed by ED physiotherapists also vary according to different authors. In addition to physiotherapy treatment of musculoskeletal injuries, ED physiotherapists may undertake:

- Mobility assessments;
- Provision of and education regarding gait aids;
- Exercise prescription;
- Education regarding safe transfer techniques; and
- Plastering and strapping (Anaf 2008).

In some studies, ED physiotherapists request X-rays and prescribe limited medication (McClellan et al. 2006).

Regarding discharge planning, physiotherapists are described as fulfilling a liaison role with medical, nursing and allied health staff to meet patients' needs. For example, physiotherapists refer to occupational therapists regarding home modifications or to pharmacy for medication review (Anaf & Sheppard 2007).

The number of patients seen by an ED physiotherapist per shift varies widely in literature, ranging from one to fifteen over an eight hour period (Bethel 2005). It has been argued that numbers are constrained by the physiotherapist's other roles e.g. dealing with referrals from other staff, conducting in-service training and, in the UK, seeing patients in ED review clinics (Bethel 2005).

4.1.6 Key factors influencing the development of the model of care

The development of Primary Contact Physiotherapy roles in EDs is, along with other ESP roles for physiotherapists, susceptible to certain barriers. These may include:

- Resistance from other staff (e.g. concerns regarding duplication of roles);
- Limitations in current education and training of physiotherapy staff (e.g. insufficient training in requesting and interpreting x-rays or MRI); and
- Regulatory body restrictions (HPRAC 2008).

4.1.7 Impacts upon patients, physiotherapists and other staff

There remains little clinical evidence regarding the impact of physiotherapists working in EDs, with relatively few studies demonstrating a positive effect upon patient satisfaction or discharge planning (Anaf 2008, Anaf & Sheppard 2007, Bethel 2005).

In one randomised controlled trial, soft tissue injury patients seen by an ED physiotherapist (versus routine care) took longer to return to usual activities, which the authors suggested was due to the physiotherapists having more time with patients to provide cautionary advice. The study also found greater patient satisfaction in the physiotherapy group but the authors believed this was of questionable importance and advised routine care in EDs be continued (Richardson et al. 2005).

Several other studies comment on the positive impact of ED physiotherapists on patient satisfaction, particularly regarding provision of explanations and advice (McClellan et al 2006). However, some satisfaction surveys have low response rates, e.g. 25% of 100 patients (Walters & Phair 2004). Physiotherapists have also been reported in one retrospective study as more likely to document advice given, although the quality of advice was unknown (Ball et al. 2007:).

It has also been reported that, compared with other ED staff, ED physiotherapists:

- Are less likely to miss significant injury;
- Treat soft tissue injuries more appropriately and quickly;
- Reduce waiting time to treatment (Smith & Buckley 2004; Stainforth et al. 2003; Graham & Brown 2001; Morris & Hawes 1996); and
- Deliver service more cost-effectively e.g. compared with employing additional medical staff (Bethel 2005; Jibuike et al. 2003).

One study (Morris & Hawes 1996) also suggested that the presence of an ED physiotherapist (versus a traditional physiotherapy service) led to more referrals from ED medical staff to the ED physiotherapist and decreased waiting time for patients.

It should be noted, however, that in most studies the physiotherapist caseload is restricted to musculoskeletal and soft tissue injuries, excluding wounds and fractures (Bethel 2005). In addition, ED physiotherapists' workload is unaffected by emergency admissions (Graham & Brown 2001). It has been argued by some that the ED physiotherapist caseload is so specific that there may be too few patients to justify the role in some EDs, and that the narrow focus of clinical skills leads to fragmented care as patients are referred on to other ED staff for further treatment or procedures (Bethel 2005). Finally, some studies, such as Jibuike et al (2003) and McClellan et al. (2006), involved small patient numbers and lacked long-term outcomes or a prospective randomised control design.

4.1.8 Future directions for the extended scope of practice physiotherapists

It has been acknowledged in literature that more work is required to evaluate the nature and benefits of the ED physiotherapist role (Bethel 2005), using more rigorous research methods and larger sample sizes. Data is required regarding:

- Patient episode times;
- Patient outcomes;
- Patient satisfaction;
- Adverse events;
- Cost effectiveness; and
- The degree to which "freeing up" of medical staff occurs.

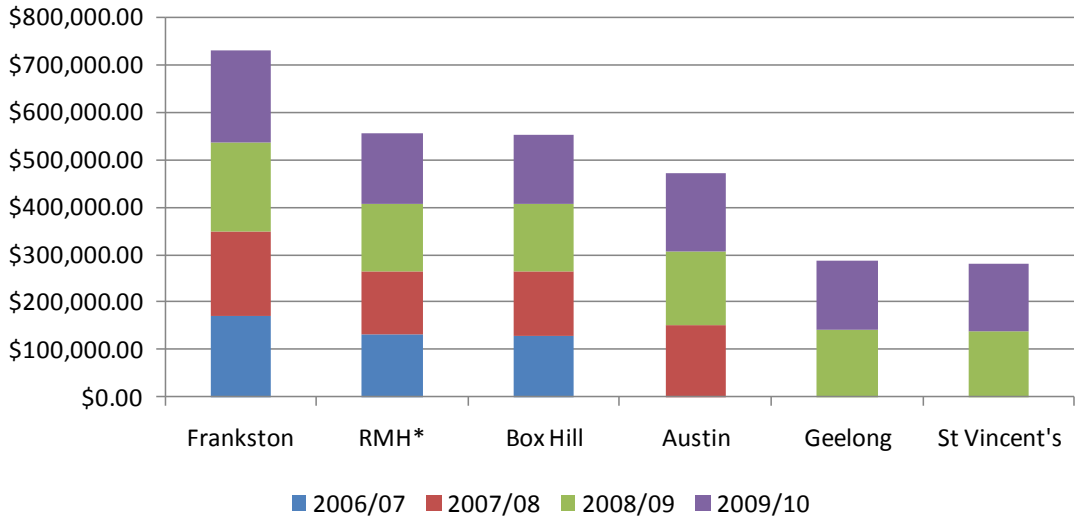
Having established a basis for comparison of the process and impacts associated with ED PCP services, the following chapters outline the findings relating to the introduction of ED PCPs in the Victorian context.

5 Service mapping, patient profile and level of demand

5.1 Specifically Funded ED PCP services

The department has allocated $2,875,677 to develop the ED PCP model of care in six EDs over the past four years. This specific funding allocation was based upon approved applications submitted by individual health services. A breakdown of this funding allocation is outlined in Figure 2.

Figure 2: Specific Funding of ED PCP Services 2006/07-2009/10[9]



Three hospitals (Frankston, Royal Melbourne Hospital and Box Hill Hospitals) have received funding over the past four years, one hospital (Austin Hospital) has received funding over the past three years and two hospitals (Geelong, St Vincent's Hospitals) have received funding over the past two financial years. In the 2009/10 funding year, an average allocation of $156,822 was provided across six health services.

5.2 Other ED PCP services

A number of additional health services who have not received specified funding have commenced operation of ED PCP services across Victoria. Three health services (Dandenong Hospital, Ballarat Hospital and The Alfred Hospital) were included in the current review. Costing level data was not obtained for these hospitals. Additional

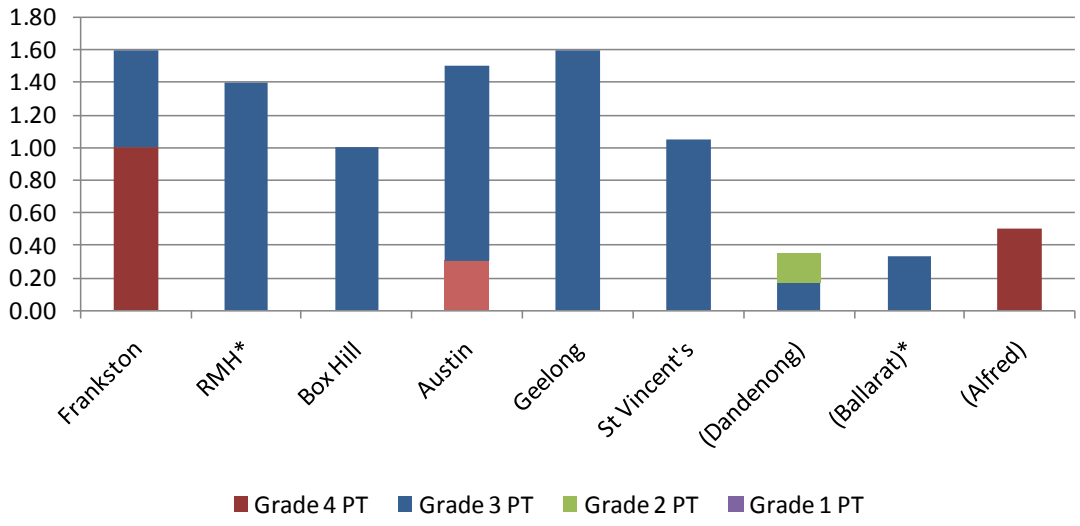
[9] Two health services denoted by an asterix ' * ', had previously received one-off funding to pilot their ED PCP models of care in 2006/05 under the *Better Skills Best Care* Workforce Redesign Initiative. Unfunded ED PCP services are denoted by hospitals in parentheses '( )'.

data (where relevant) is included for comparison with specifically funded ED PCP services throughout the report.

5.3 Staffing profile

A total of 7.85 Effective Full Time (EFT) physiotherapy staff were employed in the specifically funded PCP models of care during 2008/09, averaging 1.30 EFT per health service. The other health services employed fewer staff (average 0.40 EFT) during the same period. The majority of services were staffed by Grade 3 physiotherapists with an appropriate background in the diagnosis and management of musculoskeletal conditions. Two health services employed Grade 4 physiotherapists to staff their PCP model of care. One health service provided additional hospital-based funding to supplement their funded model of care with a Grade 4 physiotherapist (Austin Hospital). The staffing profile of ED PCP services is presented in Figure 3.

Figure 3: Staffing profile of ED PCP services (2008/09)[10]



Health services reported that a senior/experienced clinician was required to undertake the role of a PCP. Senior clinicians were able to operate in a relatively independent manner without having to wait for direction from a more experienced member of the ED staff. Over time, some health services indicated that more junior physiotherapy staff could also undertake a PCP role once the service had been established. Supervision of junior physiotherapy staff could then be provided by the senior PCP within the ED.

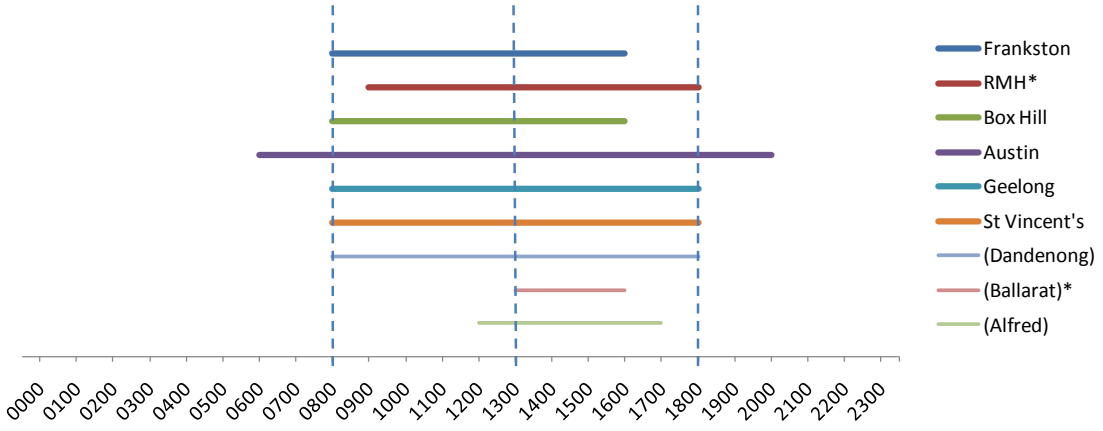
[10] Health services denoted with an asterix * throughout this report, participated in the initial *Better Skills Best Care* (BSBC) demonstration projects focusing upon PCP in Emergency Departments.

5.4 Hours of operation

The hours of ED PCP operation during the week are presented in Figure 4. The availability of ED PCPs in the specifically funded services ranged from 9 (Frankston, Box Hill) to 15 (Austin) hours per day, with an overall average of 11 hours operation. In general, PCP services were available between 8.00am to 6.00pm. One service (Austin) operated from 6.00am to 8.00pm.

Availability of ED PCPs in the other health services was more limited. However, one of these (Dandenong) also operated for 11 hours each week day.

Figure 4: Weekday ED PCP hours of operation (2008/09)[11]

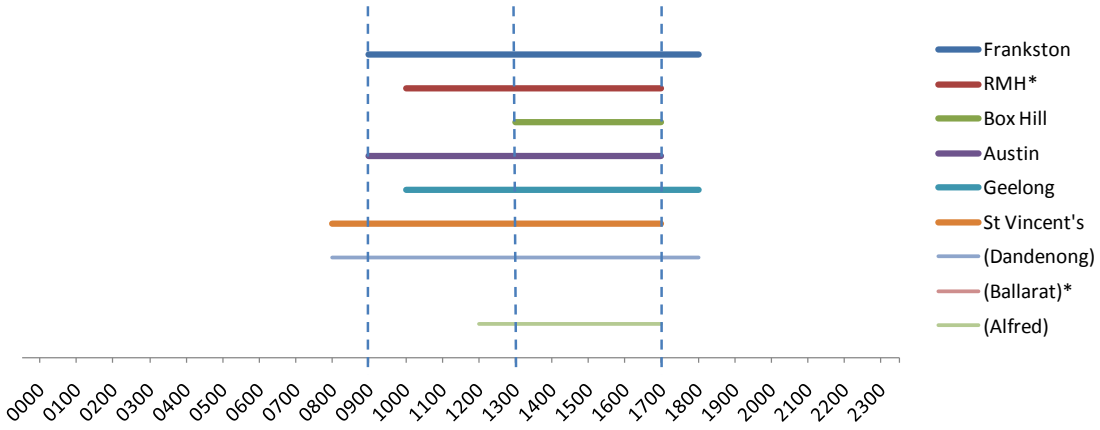


The hours of ED PCP operation during the weekend are presented in Figure 5. The availability specifically funded services over the weekend was more variable, ranging from 5 (Frankston, Box Hill) to 10 (Dandenong) hours per day, with an overall average of 8.5 hours. Weekend PCP services were generally available between 9.00/10.00am to 5.00/6.00pm.

Of the non-specifically funded models, two maintained the same hours of operation over weekends as they had during weekdays (Dandenong, Alfred), while one did not provide any weekend service (Ballarat). Health services with more limited coverage made PCP available during the afternoon periods.

[11] Note: Hours depicted for RMH (0930-1815), Austin (0600-2230), and Frankston (0800-1630), have been rounded back to the nearest hour for the purposes of graphical presentation. Services provided at Dandenong, include both PCP and Secondary Contact Physiotherapy (SCP) services.

Figure 5: Weekend ED PCP hours of operation (2008/09)[12]



Over time, the availability of PCP has been adjusted to match peak demand within individual health services[13]. Provision of weekend services was considered to be within the 'culture' of physiotherapists, who were used to working within hospitals (e.g., ICU or ward-based work) or in private practice during these periods. Sustainable rostering arrangements for weekend service delivery included rotation of a number of different ED or other hospital physiotherapists through the PCP service at some health services. Many hospitals reported a desire to extend their hours of PCP operation to assist in managing the number of patients presenting of an evening and over the weekends (up until 10.00pm).

5.5 Patient types

The range of diagnostic groups treated by ED PCP services is presented in Figure 6[14]. There was considerable consistency in the types of patients seen by PCP services. Major types of patients included those presenting with fractures, sprains/strains (or injuries to muscle/tendon). A variety of other conditions were also treated by PCPs including dislocations of the knee and shoulder and back pain. One service (Ballarat) treated a more limited range of patient types, focusing upon presentations with sprains/strains (injury to muscles/tendons), rather than other conditions.

[12] Note: Hours depicted for RMH (1030-1730), Austin (0900-1730), and Frankston (0930-1830), have been rounded back to the nearest hour for the purposes of graphical presentation. Services provided at Dandenong, include both PCP and Secondary Contact Physiotherapy (SCP) services.

[13] One health service (Dandenong) reported commencing a trial of PCP services to the ED for 9.5 hours per day (Sunday to Wednesday) in accordance with peak demand, in order to strengthen an internal business case for the ongoing provision of PCP services 7 days each week.

[14] The absence of diagnostic categories in some areas within Figure 6 was attributed to coding variations rather than differences in patient types presenting for treatment (e.g., sprain/strain of 'pelvis' coded as 'hip'; sprain/strain of 'upper arm' coded as 'shoulder').

Figure 6: Diagnostic groups seen by ED PCP services (2008/09)

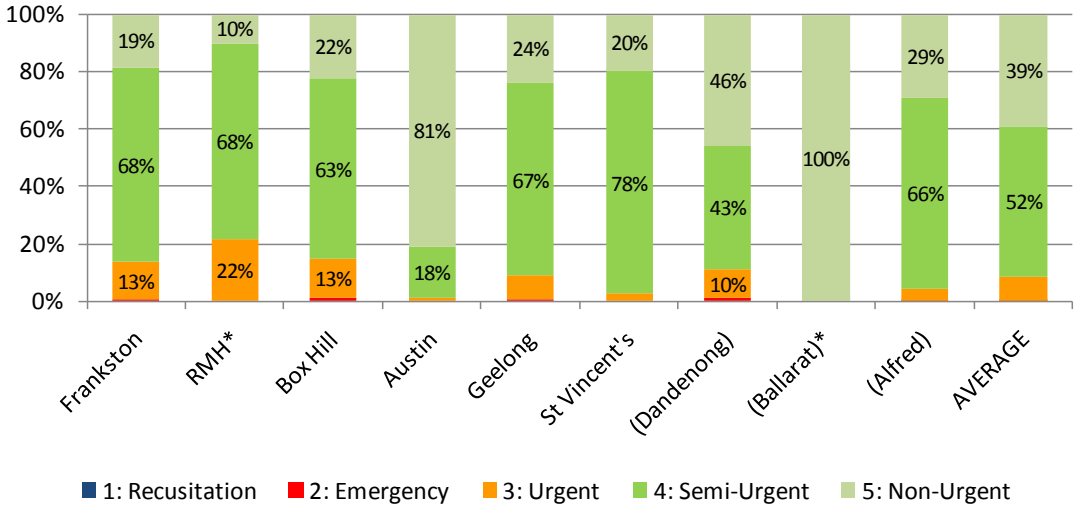
	Frankston	RMH*	Box Hill	Austin	Geelong	St Vincent's	(Dandenong)	(Ballarat)*	(Alfred)
FRACTURE of:									
ankle	X	X	X	X	X	X	X	X	X
elbow	X		X	X	X		X		X
foot (includes toes)	X	X	X	X	X	X	X		X
forearm	X	X	X		X	X	X		X
hand (includes finger)	X	X	X	X	X		X		X
knee	X	X	X	X	X	X	X		X
lower leg	X	X	X	X	X	X	X	X	X
shoulder	X	X	X	X	X	X	X		X
upperarm	X	X	X		X	X		X	X
wrist	X		X	X	X	X	X		X
clavicle	X	X	X	X	X		X		X
SPRAIN/STRAIN or injury to Muscle/Tendon of:									
neck		X	X	X	X	X	X		X
ankle	X	X	X	X	X	X	X	X	X
elbow	X	X	X	X	X	X	X	X	X
foot (includes toes)	X	X	X	X	X	X	X		X
forearm	X	X	X	X	X		X		X
hand (includes finger)	X	X	X	X	X	X	X	X	X
hip	X	X	X	X	X	X	X	X	X
knee	X	X	X	X	X	X	X	X	X
lower back	X	X	X		X		X	X	X
lower leg	X	X	X	X	X		X	X	X
pelvis	X					X	X		X
shoulder	X	X	X	X	X	X	X	X	X
thigh	X	X		X	X	X		X	X
upper arm	X			X	X	X			
wrist	X	X	X	X	X	X			X
OTHER CONDITIONS:									
dislocated knee	X	X	X	X	X	X	X		X
dislocated shoulder		X	X	X	X		X		X
backache, unspecified		X	X	X	X		X		X
LB pain/strain/lumbago		X	X	X	X	X	X		X
sciatica	X	X	X		X	X	X		X
tendonitis		X			X				
mallet finger					X				
Osgood-Schlatter						X			
other or unspecified		X	X					X	

Staff within some health services expressed a desire for PCPs to see a broader range of conditions that had not been previously considered within their scope of practice at that health service (e.g., back pain, joint injury or trauma without major injury). Some PCPs also reported that they could see a wider range of patients than originally thought (e.g., patients with particular vestibular, neurological, or respiratory conditions).

5.6 Acuity of patients seen by PCP

The acuity of ED presentations seen by PCP services is presented in Figure 7[15]. The majority (91%) of all ED PCP patients were classified as semi-urgent (Australasian Triage Scale (ATS) Category 4) or non-urgent (ATS Category 5) upon presentation to the ED. A larger proportion of non-urgent patients were seen at the Austin and Ballarat hospitals compared to other health services. Between 10 and 20 percent of patients seen by ED PCPs presented as urgent (ATS Category 3) in some health services (RMH, Frankston, Box Hill, Dandenong).

Figure 7: Percentage of ED PCP patients by ATS triage category (2008/09)



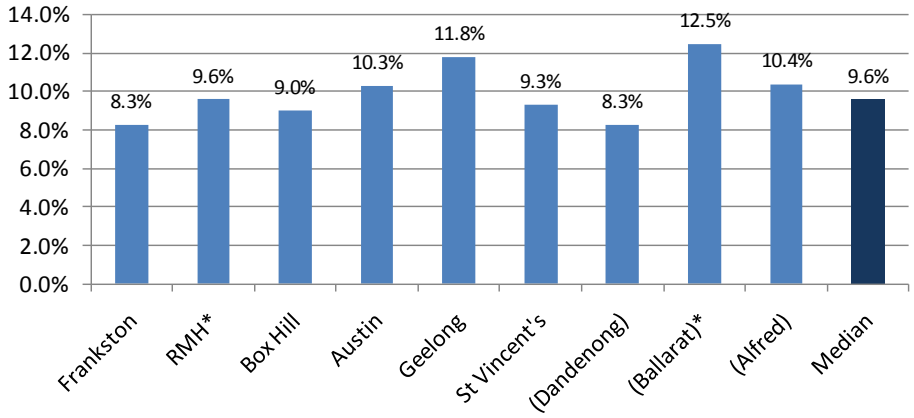
5.7 Level of service demand across hospitals

The number of patients presenting in diagnostic groups seen by PCPs (hereafter referred to as 'PCP-type' patients) within each hospital was compared with the total number of presentations to the ED to estimate overall levels of service demand. Findings are presented in Figure 8.

On average, approximately 10 percent of all presentations to the ED were PCP-type patients. The potential demand for PCP services ranged from 8 to 13 percent and was notably higher in regional centres (Geelong, Ballarat).

[15] Based upon total ED Presentations by ATS category reported by individual health services during 2008/09 financial year.

Figure 8: Percentage of ED Presentations that are PCP-type patients (2008/09)



5.8 Time of demand for services

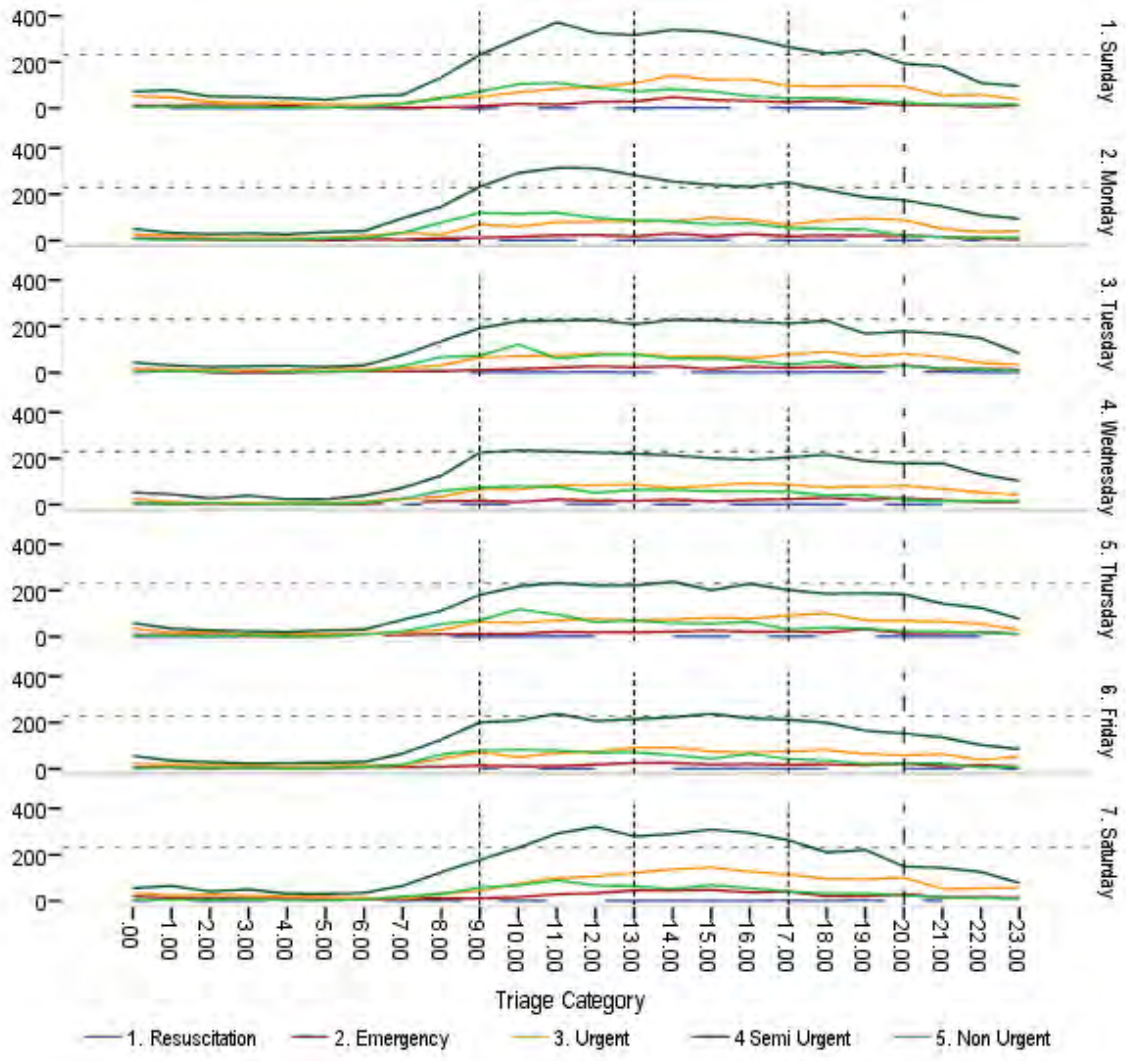
Analysis was undertaken to identify the time of presentation[17] by PCP-type patients within each triage category to estimate levels of demand throughout the day across all hospitals (Figure 9).

The pattern of daily presentations by PCP-type patients varied. Between Tuesday and Friday the number of presentations began to rise between 7.00am and 10.00am. Between 10.00am and 6.00pm the pattern of demand was at its highest point and remained consistently high throughout this period. Presentations decreased slightly after 6.00pm and then reduced further between 8.00pm and 10.00pm.

From Saturday to Monday, a different pattern of presentations was observed. The number of presentations began to rise between 7.00 and 10.00am. Presentations continued to rise (above the level observed on other days) reaching a maximum between 11.00am and 12.00pm. Presentations remained higher than weekday levels until around 6.00pm, after which they gradually declined until around 10.00pm.

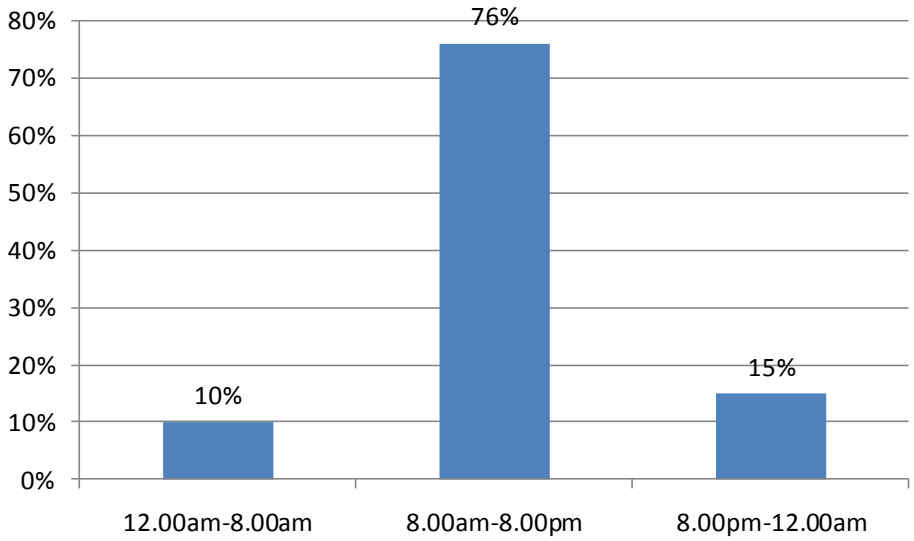
[17] Based upon VEMD 'arrival time', defined as the time the patient was first registered or triaged (whichever comes first). Data was extracted directly from the VEMD for the nine health services examined during the review over the 2008/09 financial year (not based upon self-reported data).

Figure 9: Arrival time of PCP presentations to the ED by hour of day (2008/09)



Arrival time was congruent with reports from a number of health services wishing to increase PCP coverage during week days and weekends until 10.00pm. On average, 76 percent of all PCP-type presentations arrived between the hours of 8.00am and 8.00pm (Figure 10). An additional 9 percent of PCP-type patients presented between 8.00pm and 10.00pm across all health services.

Figure 10: Percentage of PCP-type presentations by arrival time for weekdays and weekends during 2008/09



6 The ED PCP model of care in Victoria

6.1 Rationale for establishing the service

Historically, physiotherapy services were available to the ED but the level of involvement had been dependent upon individual medical and nursing staff members' understanding of the professional capabilities of physiotherapists. As PCP models emerged in the literature and were piloted in a small number of Victorian hospitals, many health services developed an interest in the emerging model of care.

Physiotherapists viewed the model as an opportunity to capitalise upon their professional scope of practice, develop further career pathways, and promote the capacity of the physiotherapy profession to ED staff. Health services identified an opportunity to expand the pool of available staff in the ED to meet the growing demand in the number of less urgent presentations.[18]

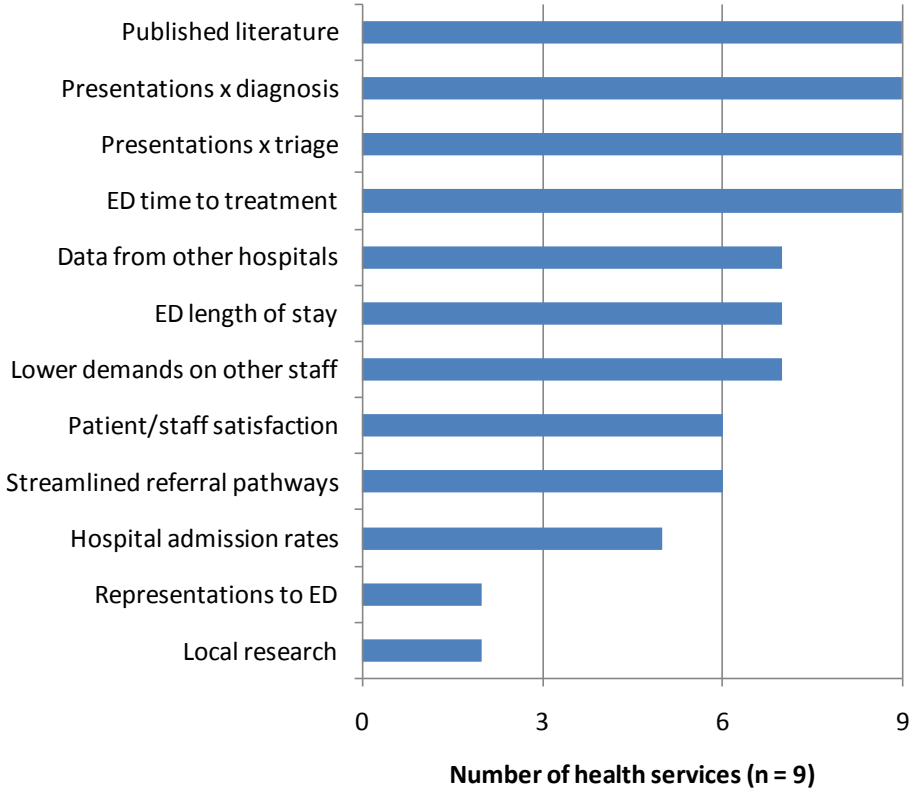
As funding became available from the Department of Health to develop the ED PCP model of care, a number of health services applied to establish a local PCP service. A number of other health services, who had not applied or did not receive this funding from the department, decided to commence a PCP service within existing funding allocations. Most health services modelled their PCP service on a range existing models of care at other hospitals and adapted these to suit their local environment. Evidence from existing models of care was also used to promote the value of a PCP to other ED staff prior to establishing a local service.

6.2 Evidence base for establishing the service

Sources of evidence used by Victorian health services as a rationale for establishing their PCP service are presented in Figure 11. The most common source of evidence used by health services related to overseas and inter-state studies promoting the effectiveness of the ED PCP model of care. Analysis of local hospital data, focusing upon appropriate types of patients that could be treated by PCPs (diagnostic type, triage category), was also used. A number of health services claimed that the introduction of the model of care would have a positive impact on key performance targets for the ED (time to treatment, length of stay) and upon staff and patient satisfaction and patient quality of care. Where pilot studies had been conducted (RMH, Ballarat, Frankston/Rosebud, Alfred), local data was used to support the ongoing implementation of the PCP model of care.

[18] Triage Category 3, 4 and/or 5 depending upon individual health services.

Figure 11: Sources of evidence for establishing ED PCP services[19]



6.3 Processes involved in service development

Major processes involved in developing the model of care across all health services included the establishment of:

- Administration, supervision and clinical governance arrangements;
- Scope of practice agreements;
- Protocols/guidelines for treatment;
- Training and credentialing activities;
- Consultation with IT departments in relation to data entry;
- Consultation with other medical units; and
- Development of research tools.

[19] 'Presentations x triage' refers to analysis of the number of patients presenting to the ED who were classified into different ATS triage categories. 'Presentations x diagnosis' refers to analysis of the number of patients presenting to the ED who were classified according to different diagnostic groups (using ICD Codes or other local classification systems).

6.3.1 Administration, supervision and clinical governance arrangements

Supervision and governance arrangements were generally negotiated between the physiotherapy and emergency departments. PCPs were directly accountable to the Director of the Emergency Department for patient care undertaken within the ED. Supervision and consultation arrangements were established with senior medical staff in the ED (together with appropriate consultants from other areas) for clinical mentoring and reviewing of X-Rays. Staff availability and rostering arrangements were also directly managed between the PCP and relevant ED management. Opportunities for staff education and training[20] were also negotiated with ED management.

A range of quality control processes were reported to be undertaken by PCPs directly, including:

- Clinical auditing of case notes;
- Peer review sessions;
- Learning needs reviews/questionnaires;
- Patient education materials;
- Patient satisfaction/appraisal of service delivery; and
- Complaints monitoring.

Professional supervision and staff management of ED PCPs remained the responsibility of the hospital physiotherapy department. PCPs were directly accountable to the Head of Department (of Physiotherapy) for employment, staff development, leave cover (in some instances), teaching and training, ongoing professional accreditation and performance appraisal.

Staff budgets were held and managed by either the physiotherapy department (e.g., Frankston, Geelong) or the ED (e.g., Box Hill, Austin) in accordance with individual hospital arrangements. A number of health services reported a level of concern about budget holding[21] within the ED. Where budgets were managed by the ED, it was considered important to develop mechanisms to promote the sustainability of the PCP service in order to reduce incentives to divert funding towards other professional staff (e.g., medical or nurse practitioners). This was considered particularly important by health services that were experiencing workforce shortages in a range of other professional areas. The development of internal policies was considered to be important but of less significance than department guidelines or funding agreements that specified the provision of PCP services as part of the broader ED model of care.

[20] Refers to training provided from the ED PCP to other ED staff, and training provided from ED staff to the PCP.

[21] 'Budget holding' refers to local health service arrangements for managing the budgetary allocation that funds ED PCP services.

6.3.2 Scope of practice agreements

Scope of practice agreements varied between health services. Some services established scope of practice agreements outlining the type of patients that would be seen by the PCP (e.g., Geelong). Others developed broader 'competency frameworks' (e.g., Alfred) or 'clinical parameters' (e.g., Dandenong).

Most considered that the work performed by PCPs was within the existing scope of practice of senior physiotherapists employed to undertake the PCP roles. Accordingly, the role was described by a number of health services as 'advanced scope of practice'. Some health services had developed policies and procedures for the advanced scope of practice arrangements (e.g., RMH).

In future, many PCPs reported that they would like to see the role develop into an 'extended scope of practice' arrangement following legislative and/or regulatory changes that would allow them to perform: limited prescribing (e.g., analgesia, non-steroidal anti-inflammatory medications); patient certification (e.g., medical and work cover certificates); and/or procedural activities (e.g., joint injections).

6.3.3 Protocols/guidelines for treatment

The development of specific protocols or guidelines for patient treatment also varied between health services. All health services had established criteria for assessment and referral of medical (red flags) and/or psychosocial (yellow flags) conditions that required medical (or other ED staff) assessment. Many health services had established protocols for treatment of major conditions seen by the PCP including (but not limited to):

- Common musculoskeletal conditions;
- Fracture management; and in some cases
- Spinal presentations.

The purpose of these guidelines was to assist in communicating the activities that could be performed by a PCP with ED and other medical and nursing staff[22]. Guidelines and protocols were also considered valuable for the education of junior physiotherapy staff.

Others indicated that protocols, whilst initially developed to clarify the roles and responsibilities of the PCP to other staff, were not strictly adhered to. The experience of the clinician was considered to be more important to the quality of care and protocols may (in certain circumstances) unnecessarily limit their scope of practice. As time had progressed and other staff developed an increased understanding and confidence in the PCP role, strict protocol based management was no longer required. Notwithstanding, it was considered important that all PCP based assessment and intervention was in accordance with evidence based practice.

[22] Either independently or in conjunction with other staff.

6.3.4 Training and credentialing activities

Training and credentialing arrangements were undertaken by all PCPs. External training arrangements were a combination of formal education (e.g., Clinical Masters Degree, Graduate Certificate, single subjects in radiological interpretation) and clinical exposure to other settings where the PCP model of care had been operating (e.g., at Royal Melbourne Hospital). Internal training opportunities had been established at several health services, involving:

- Orientation to the ED environment;
- Interpretation of radiographs;
- Plastering techniques; and
- Fracture management.

Clinical competencies were established for these (and other[23]) areas of practice. A range of different 'buddying', supervision or mentoring relationships between PCPs and ED medical and nursing staff were reported. PCPs were also involved in supervising and training junior physiotherapy staff.

6.3.5 Consultation with IT departments in relation to data entry

Consultation with the information technology departments was required in a number of health services. The purpose of this consultation was to allow PCPs to access and enter data directly into ED IT systems. Some indicated that ED data systems did not allow sufficient precision in classification of diagnostic groups for patients seen by the PCP.

6.3.6 Consultation with other medical units

All PCP services had undertaken consultation with a range of other medical units in the hospital when establishing the PCP model of care. Consultations involved participation in guideline/protocol development, establishment/clarification of referral pathways and establishment of imaging rights with radiology departments. Some also reported spending significant time establishing relationships with ED staff and other consultants around the hospital.

6.3.7 Development of research tools

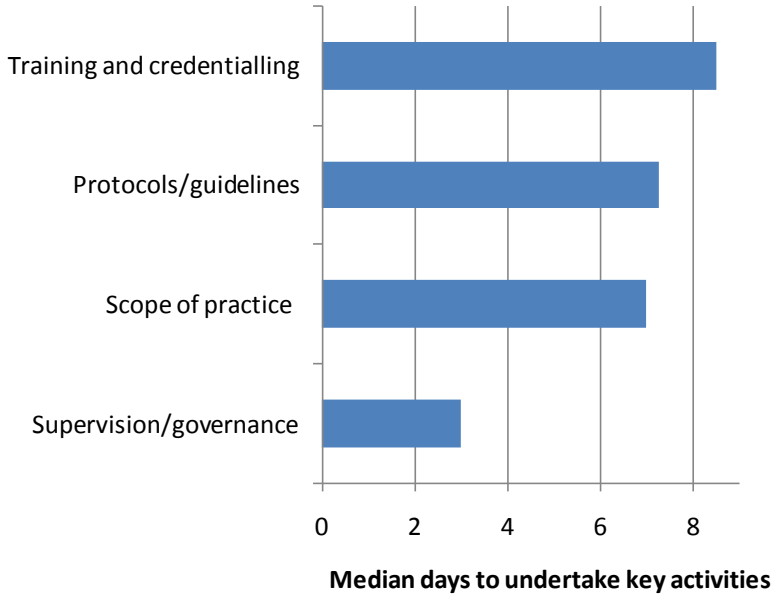
Research tools were developed at two facilities (e.g., Austin, St Vincent's) to accommodate specific projects designed to assess the impact of ED PCP services. Another health service (Geelong) participated in a university research study examining qualitative outcomes of their ED PCP model of care.

[23] Competencies were also established for identification of 'red' and 'yellow' flags and a other conditions such as musculoskeletal assessment and intervention, neurovascular examination etc.

6.3.8 Time to establish PCP services

Time taken to establish key components of the PCP model of care were not specifically recorded by health services. There was large variation in the estimated time to develop major components of the model of care (Figure 12). Time spent in 'training and credentialing' ranged from 0 to 365 days and was more dependent upon activities classified as 'training', particularly when the period of time to undertake post-graduate education or ongoing ED medical supervision was considered. Variation in development of protocols/guidelines (0 to 30 days) and scope of practice arrangements (0 to 40 days) was attributed to the length of time taken to arrange meetings, prepare/amend documents and have documents approved, which was reported to take a number of months in some services. Similarly, the time taken to confirm appropriate supervision/governance arrangements (0 to 30 days) was related to the time taken to organise meetings between heads of department and PCP staff.

Figure 12: Median days to establish key ED PCP components



6.4 The patient journey

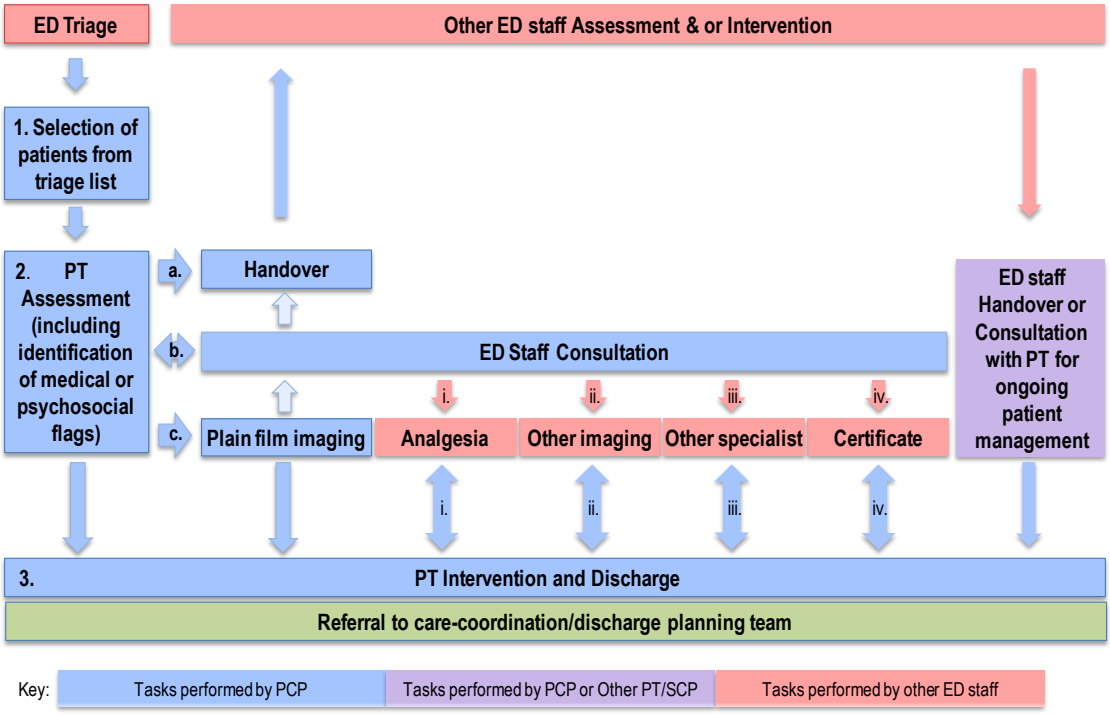
6.4.1 Key characteristics of the model of care

A diagrammatic overview of the ED PCP model of care is presented in Figure 13. There was remarkable consistency in the activities undertaken by PCPs across the health services. A key distinction in understanding the model of care relates to the defined roles of a 'primary' versus a 'secondary' contact physiotherapist:

1. Primary contact physiotherapy was defined as a service provided by an ED based physiotherapist who undertakes **primary (first) contact and assessment** of appropriate ED patients following triage; and
2. Secondary contact physiotherapy was defined as any other service provided by a physiotherapist in the ED following triage and assessment by another member of the ED staff.

In this context, a PCP may function in both a primary or secondary capacity. However, a secondary contact physiotherapist does not select patients from the triage list nor undertake a primary assessment role in the ED. Accordingly, a number of health services considered it more appropriate to refer to a dedicated 'ED Physiotherapist' rather than a PCP.

Figure 13: Diagrammatic overview of the ED PCP model of care



6.4.1.1 Primary contact intervention

The process of PCP intervention commences following patient presentation, triage and registration.

1. The PCP reviews (or in some cases is assigned patients from) the triage list and selects appropriate cases for assessment in accordance with specified criteria.
2. Assessment is undertaken by the PCP including a screening for medical (red flags) or psychosocial issues (yellow flags) that may require further attention by other ED staff.
    a. If there are clear indications for medical or other interventions, the patient is handed back for appropriate assessment and/or intervention.
    b. If the indications for medical or other interventions are unclear, a consultation takes place with a senior medical officer (or other appropriate member of staff). Based upon the outcomes of this consultation, the PCP may either handover the case, or proceeds directly with further assessment. Additional consultation may also be sought for:
        i. Patient analgesia
        ii. Other imaging
        iii. Other specialist consultation[24]
    c. If the patient requires plain film imaging (X-Ray), this is ordered as part of the assessment process by the PCP. Interpretation of plain film imaging may be discussed with members of the ED staff (and/or radiology staff).
3. The PCP proceeds to intervene within agreed physiotherapy scope of practice. Ongoing consultation with ED staff occurs if the need arises for:
        i. Patient analgesia
        ii. Other imaging
        iii. Other specialist consultation[17]
        iv. Certification (e.g., Medical/Workcover certificate)

Where it is clear that the patient may require more complex discharge planning or care coordination, the PCP may refer them to the appropriate team within the ED at any stage of the assessment or intervention process. Otherwise routine care coordination is undertaken by the PCP prior to discharge. If no further care coordination or treatment is required, the patient is discharged from the ED by the PCP together with appropriate referrals or instructions.

[24] Consultation with an appropriate specialist outside the ED (e.g., orthopaedics registrar) is undertaken following consultation and approval of an ED medical officer. In some services, PCPs may consult directly with the appropriate specialist.

6.4.1.2 Secondary contact management or consultation

PCPs or other physiotherapists working within the ED are also frequently asked for consultation on relevant conditions seen by other members of staff. In addition, patients may be referred following initial assessment and/or treatment by other ED staff to the PCP or other physiotherapists working in the ED for ongoing physiotherapy intervention and subsequent discharge.

6.4.2 The nature of interventions provided by ED PCPs

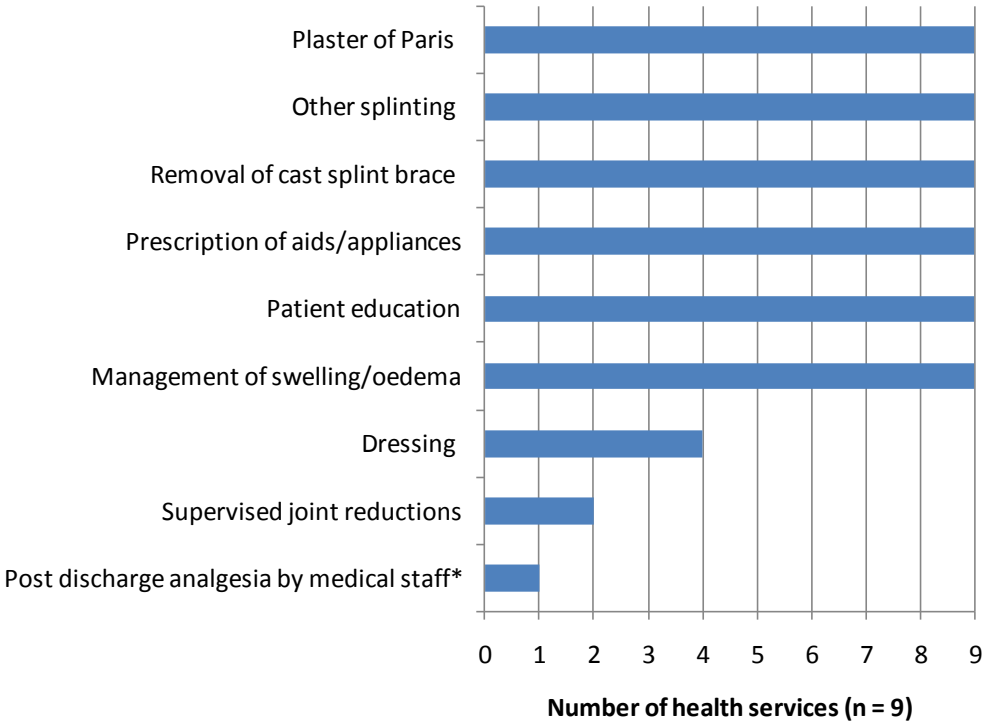
Two types of intervention are provided by ED PCPs. The first group of interventions are common interventions which can be provided by a number of different professional staff within the ED. The second group of interventions are unique to physiotherapy as a profession.

6.4.2.1 Common interventions provided across the ED team

All PCPs provided a number of interventions that could also be administered by other members of the ED staff including: application and removal of plaster of Paris, splints and braces[25]; prescription of aids and appliances; patient education about their condition, and the management or swelling/oedema. Some PCPs were involved in wound dressings, and supervised joint enlocations. One PCP reported recommending over the counter analgesia after discharge for appropriate patients. Common interventions provided by PCPs and other ED staff are presented in Figure 14.

[25] Some local issues emerged in a number of health services regarding the roles and responsibilities of the Prosthetics and Orthotics Department in application and removal of splints/braces during hours when Prosthetists/Orthotists were available to undertake these tasks.

Figure 14: Number of health services reporting common interventions provided by PCP and other ED staff

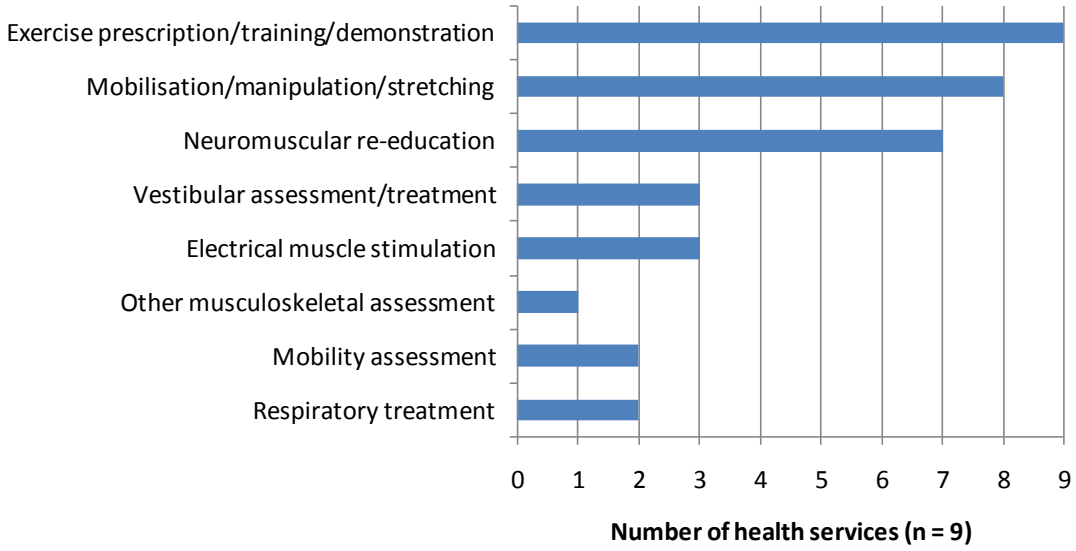


6.4.2.2 Unique interventions provided by Physiotherapy staff

A number of interventions can only be provided by an appropriately qualified physiotherapist. A number of these services were made available to ED patients by most PCPs including exercise education, mobilisation and neuromuscular re-education. A smaller number of PCPs reported providing interventions involving vestibular treatment, electrical muscle stimulation, mobility assessments or respiratory treatment.

It was estimated that approximately 80% of all patients seen by PCPs at health services participating in the review were provided with exercise prescription, training or demonstration. Mobilisation and neuromuscular re-education were only provided where appropriate (i.e., the level of pain was controlled). Unique interventions provided by PCPs in the ED are presented in Figure 15.

Figure 15: Unique interventions provided by ED PCPs at the selected health services



6.4.2.3 *Patient allocation and workload prioritisation*

Patient allocation to the PCP or other ED staff was reported to be dependent upon:

- The availability of a PCP clinician in the ED;
- Inclusion and exclusion criteria for PCP services;
- Order of patients presenting to the ED[26]; and
- Patient acuity (triage classification) at presentation.

When the PCP was available and eligible patients had not presented to the ED, the PCPs reported engaging in a range of secondary contact (assessment, consultation, management), care coordination (e.g., discharge planning and referral), research, administration, staff education, supervision or other project based activities (e.g., ED redesign, model of care projects).

6.4.2.4 *Service integration, discharge planning and patient referral*

Where relevant, mechanisms of integration between ED PCP and other hospital services were documented, including:

- Prescription and interpretation of plain film radiographs with Radiology; and

[26] After accounting for the level of patient acuity (ATS category), patients were selected according to their order of presentation (i.e., the next available presentation was seen by the PCP).

- Referral pathways to Orthopaedic, Plastics or Neurosurgery Outpatient clinics.

In two health services (Austin, St Vincent's) physiotherapists from the care coordination team would assist in primary contact activities when the PCP was 'off duty'. The capacity to substitute or divert staff between care coordination and PCP activities was considered to be a very efficient use of staffing and resources.

One health service (Ballarat) operated a model of care whereby the PCP together with two or three interns would see the same type of patients simultaneously in order to provide clinical exposure of junior medical staff to the same group of patients[27].

Patients seen by PCPs were reported to be discharged from the ED to a variety of locations including:

- Inpatient medical units;
- ED follow-up clinics;
- Physiotherapy Department outpatient clinics;
- Outpatient Specialty Clinics (e.g., Orthopaedics);
- General Practitioners;
- Private Physiotherapy Practitioners; and
- A range of other Community Service Providers (as appropriate).

Health services generally reported that the introduction of the ED PCP model of care had resulted in an increased number of referrals to outpatient physiotherapy clinics. These referrals were considered appropriate, given the relatively acute nature of injuries seen in the ED, the affordability of private physiotherapy services and the time taken to refer patients for alternative public health services. Waiting lists for access to Community Health Centres (CHC) were reported to vary between 6-8 weeks on average. This was considered too late for the majority of patients. In addition, PCPs indicated that CHCs tended to manage more complex and chronic patients rather than acute injuries. Accordingly, many hospital physiotherapy departments (e.g., Box Hill, St Vincent's, Alfred) had developed systems for prioritising access to outpatient services for follow-up of patients presenting to the ED. This system was reported to divert a number of patients from outpatient medical clinics. Other systems for reviewing patients presenting to the ED were also established to prevent unnecessary referrals to outpatient medical clinics. One service (Austin) had implemented an ED review clinic to check the progress of patients and consider whether ongoing referral was required. Another health service (Alfred) had allocated specific appointments in an existing orthopaedic fractures clinic for the same purpose. As a result of these strategies, the number of referrals from ED to outpatient medical clinics was reported to have reduced.

[27] Interns were reported to see Category 4 and 5 patients early in their rotation before progressing to manage Category 1, 2, or 3 patients at a later date.

6.4.3 Location of service delivery

6.4.3.1 Services provided in the ED

All PCP services were primarily located in a Fast Track (or similarly designated[28]) area of the ED, that attend to primary care type patients with less serious injury in order to provide a more timely assessment, management and discharge. The dedicated staffing arrangements in these areas of the ED were reported to be ideally suited to the PCP model of care, where a dedicated team can assess, provide appropriate treatment and discharge patients in a timelier manner. In order to streamline patient flow, patients were referred back to the dedicated chairs in the Fast Track area when there were delays in treatment (e.g., waiting for radiology), or the general waiting area or if they did not require monitoring.

PCPs also worked in the general treatment area and allocated cubicles in the ED. Some also reported working in short stay units, consulting or procedure rooms attached to their ED.

6.4.3.2 ED services provided in other locations

One service reported 'occasionally' taking appropriate (e.g., ambulatory and medically stable) patients to the physiotherapy department to access appropriate equipment (e.g., spinal treatment couch) for treatment. If patients were taken to the physiotherapy department specific notification was required to senior clinical staff in the ED. The majority of patients were treated in the ED. Other PCPs indicated that all PCP services were provided in the ED.

6.4.4 Other non-patient related activities

The range of non-patient related activities undertaken by PCPs is presented in Figure 16. The majority of PCPs reported undertaking non-patient related tasks including:

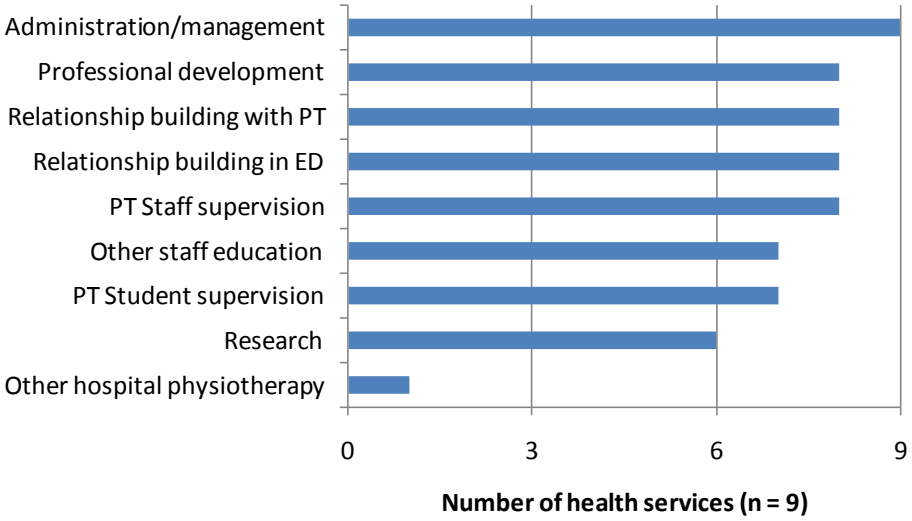
- General management and administration;
- Training and development;
- Establishment and maintenance of professional relationships; and
- Clinical supervision and support of physiotherapy and other ED staff.

Clinical research activities were reported by a number of PCPs. Provision of clinical interventions to other areas of the hospital was reported by one PCP service (Ballarat)[29].

[28] Royal Melbourne Hospital has a 'Discharge Stream'. Ballarat Hospital has a 'Rapid Assessment and Discharge Stream but is commencing a Fast Track Area - once implemented, the PCP role will reside in the Fast Track Area of the ED.

[29] It is noteworthy that this service was provided within existing funding arrangements to the hospital.

Figure 16: Number of Health Services where ED PCPs undertake non-patient related activities



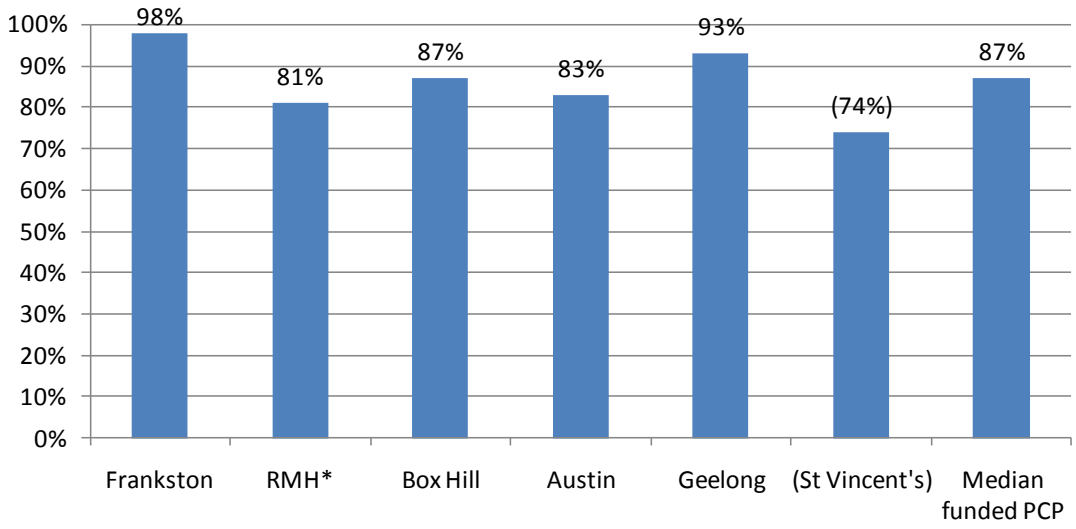
7 Service outputs and impacts

7.1 ED PCP services and demand management

7.1.1 Proportion of patients treated

The number of patients treated by the PCP was compared with the total number of PCP-type presentations to the ED during their hours of availability[30]. Results are presented in Figure 17. On average 88% (Median 87%) of all eligible PCP-type patients were seen by the PCP during their working hours, ranging from 81% (RMH) to 98% (Frankston).

Figure 17: Proportion of PCP-type presentations seen by PCP

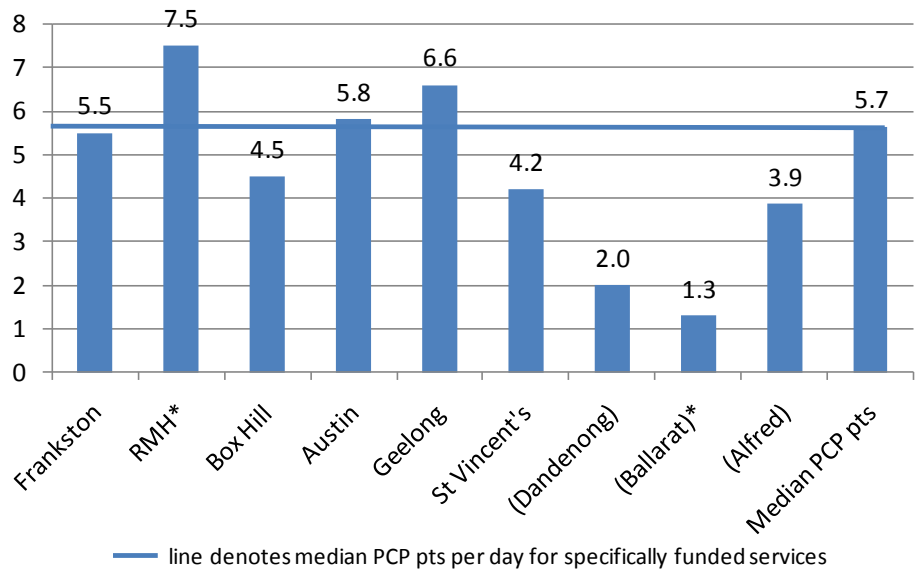


[30] Data based upon sample of cases within triage categories reportedly seen by PCPs. Triage Category 4 & 5 only were seen at Geelong and St Vincent's. Category 3, 4 & 5 were seen at Frankston, RMH, Box Hill and the Austin. Data based upon the most reliable samples obtained from individual health services. Sample characteristics for each health service are presented in Appendix E. Data from St Vincent's Hospital not included in median calculations as SCP component of PCP activity was not separately reported (and may thus be underrepresented compared to other health services).

7.1.2 Number of patients treated

The average number of patients seen by PCPs varied significantly, according to the number of hours they were available within the ED (Figure 18)[31].

Figure 18: Average number of ED PCP patients treated per day

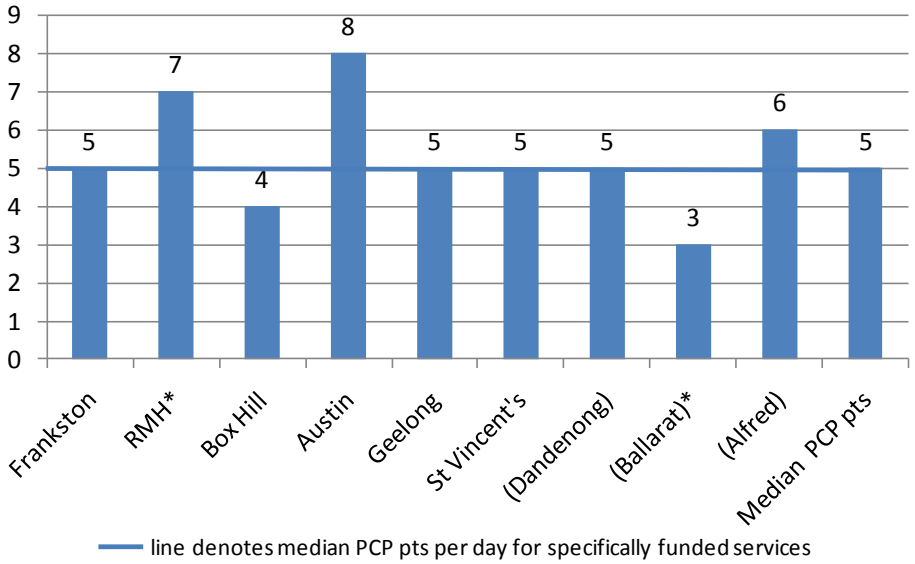


In order to standardise the comparison, the average number of patients treated per day was adjusted according to the availability of PCP personnel at each health service[33] and is presented in Figure 19.

[31] Calculations based upon reported hours of PCP availability, average numbers of patients reportedly treated per day by each PCP service. Data for Geelong, Ballarat and Alfred hospitals based upon local service evaluations within the 2008-09 periods. Data for St Vincent's based upon estimated demand in reported in research grant application for 2010. Calculations and assumptions underlying calculation are presented in Appendix F.

[33] This was calculated by dividing the number of patients treated within the sampling period, by the number of hours available per week, then multiplying by the number of weeks in the sampling period to obtain an average number of patients treated per hour. This was then multiplied by 7.5 to obtain an average number of patients per 7.5 hour day for each health service.

Figure 19: Estimated average number of ED PCP patients per 7.5 hour day



There was significant variation in the estimated average number of patients treated by PCPs across the different health services. On average (for funded services) it was estimated that 6 patients were treated per 7.5 hour day. A maximum of between 7 and 8 patients per day were estimated for two hospitals. This was identified as the frontier of efficient service delivery (given adequate demand for services). Other funded services were estimated to have treated between 4 and 5 patients per day.

Reports from PCPs indicated that the number of patients treated per day had increased over time. Services operating around 8 hours a day reported that they were currently treating 7 to 8 patients per day (e.g., RMH). Services operating longer hours (Austin) reported higher levels of patient throughput (10-14 per day).

Anecdotal comparisons were made between the volume of patients seen by PCPs and the number seen by medical staff at a number of health services. The number of patients seen by medical staff differed according to their level of experience with:

- An Intern seeing 3 to 4 patients per shift;
- A Hospital Medical Officer (HMO) seeing 5 to 6 patients per shift; and
- A Registrar seeing between 7 and 12 patients per shift in the ED.

Accordingly, comparisons were made at some health services between the volume of patients seen by PCPs and junior registrars at the same service (e.g., RMH)[34]. Key performance indicators relating to the number of patients seen by PCPs were reported

[34] It was generally acknowledged that junior registrars would see patients with PCP-type conditions in addition to a range of other patients presenting to the ED.

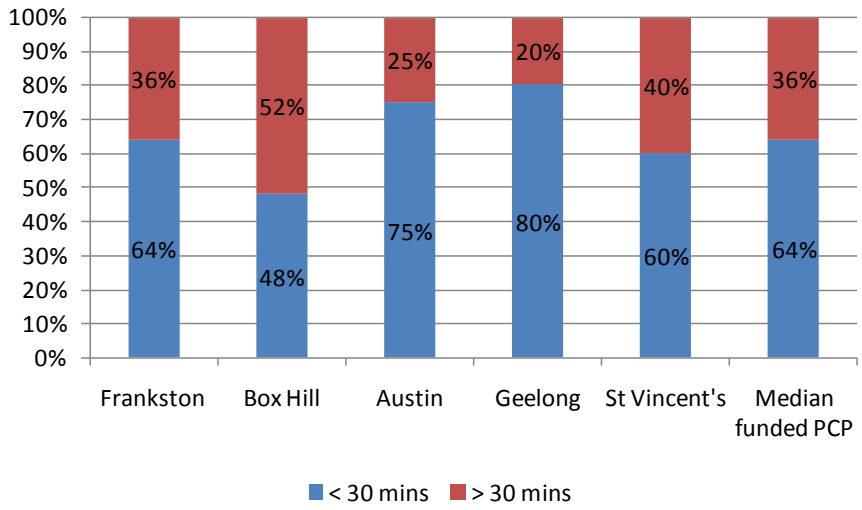
in one health service (Barwon)[35]. Others commented that PCPs spent longer with patients than medical staff and were able to prevent representations to the ED or incorrect referrals to outpatient clinics, compared with junior HMO's who were more accustomed to quickly disposing patients back to the community. It was also reported that junior doctors spent additional time seeking the opinion of senior consultants in relation to assessment and/or management of PCP-type patients compared with PCPs, slowing down the flow of patients through the ED.

7.1.3 Time to treatment by PCPs

Health services were asked to estimate the percentage of PCP-type patients seen within 30 minutes of triage (Figure 20). Some health services estimated that 75% or more of their patients were seen within 30 minutes (Geelong, Austin). Other health services estimated that between one half and two thirds of all patients seen by PCPs were discharged within 30 minutes of triage in the ED (Figure 23). One service reported introducing a KPI to improve time to treatment by PCPs in their ED (Barwon)[36].

Samples of local data collected by a number of health services also indicated that the PCP service had positively impacted upon time to treatment in the ED[37] with patients being seen on average within 30 (e.g., Alfred, Barwon) to 60 (e.g., Box Hill, St Vincent's) minutes of presentation to the ED.

Figure 20: Estimated Time to treatment of patients treated by PCP (2008/09)



[35] PCPs were set a target of seeing 6 or more patients in a 6 hour shift on 80% of all shifts undertaken in the ED.

[36] PCPs were set a target of seeing 80% of all patients within 30 minutes.

[37] Although local data indicates favourable comparisons in the time to treatment by PCP and other ED staff, there was insufficient evidence of controlled comparisons (e.g., by PCP-type patient).

7.1.4 Duration of PCP involvement in the ED episode of care

Limited data was available on the duration of time spent with patients by PCPs (excluding radiology and other processes of care). Health services reported that the time spent with each patient ranged between 30 to 45 minutes and could be up to one hour or more in some circumstances.

Clinical estimates[38] of the total time that should be allocated to patient-related tasks for a Grade 3 Physiotherapist were reported to be around 70%.[39] Thus, based upon a 37.5 hour week a Grade 3 PCP would be have approximately 5.25 clinical hours available to treat patients each day. In accordance with the number of estimated patients per day (Figure 19), the time available for treating patients[40] was estimated to range between 40-80 minutes, with the most efficient services having between 40-45 minutes of clinically available time per linear patient presentation.

7.1.5 Length of stay in the ED

Health services were asked to estimate the percentage of PCP-type patients discharged from the ED within 2 hours of triage. Some health services estimated that 80% or more of the patients treated by the PCP were discharged from the ED within 2 hours (Austin, Box Hill, St Vincent's). Other health services estimated that between one half and two thirds of all patients seen by PCPs were discharged within 2 hours of admission to the ED (Figure 21).

The percentage of patients discharged from the ED within 4 hours was examined. Comparisons were made between the last four hours of the ED PCP shift and the subsequent 4 hours of ED activity (when the PCP was unavailable) to estimate any impact of PCP availability upon the 4-hour target[41]. Results are presented in Figure 22.

In three health services, the percentage of PCP-type patient discharges within 4 hours was higher during PCP working hours than non PCP working hours. The remaining hospitals who had received specific funding for an ED PCP service demonstrated a slight increase in the percentage of PCP-type patient discharges within 4 hours when the PCP was unavailable[42]. The proportion of PCP-type patient discharges within 4 hours was higher than the percentage of all non-admitted discharges by each hospital during 2008-09.

---

[38] Obtained via interview with physiotherapists and physiotherapy management.

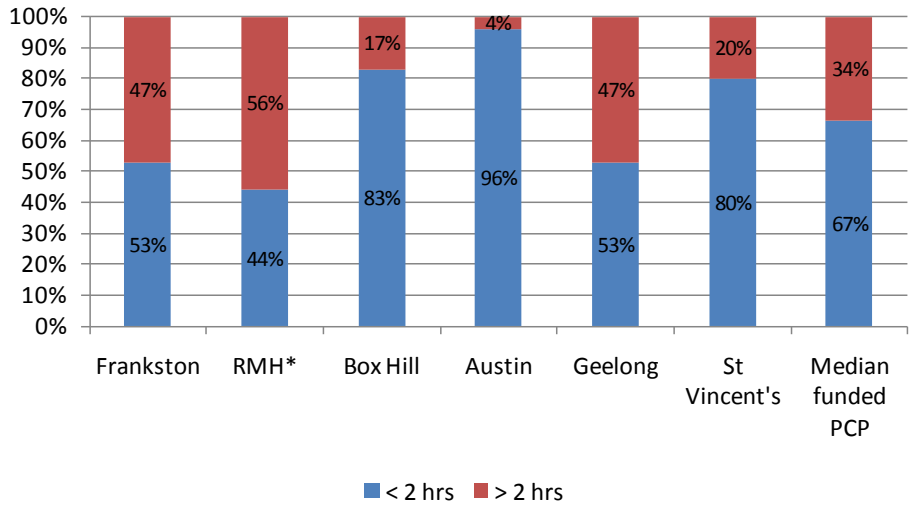
[39] Given their research, clinical leadership and supervision responsibilities within the physiotherapy department and across the broader health service.

[40] Assuming a linear sequence of patient presentations to the ED. Although this cannot be assumed to occur on all occasions, the pattern of presentation of PCP-type patients to the ED was observed to remain relatively constant throughout the day (Figure 10).

[41] Referring to the Victorian KPI for the percentage of non-admitted patients discharged within 4 hours.

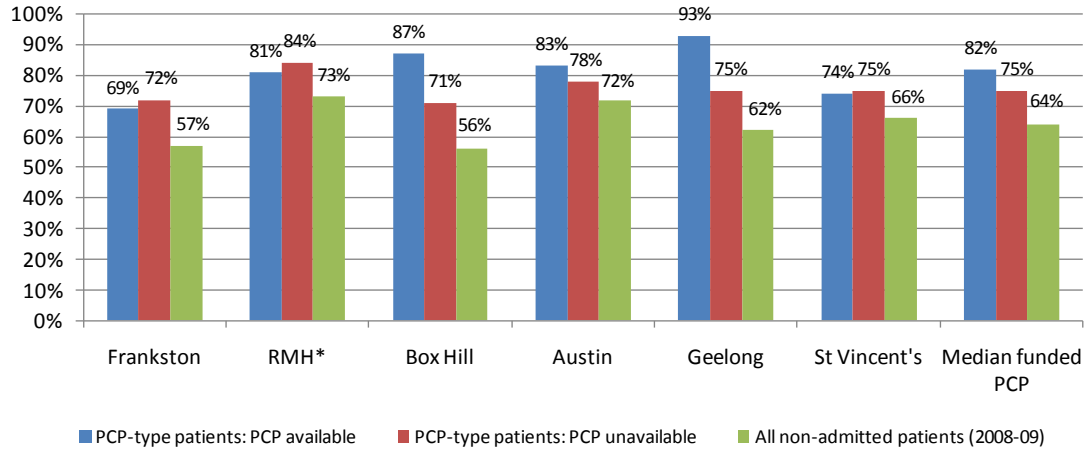
[42] Previous claims that doctors tend to spend less time with patients and be more likely to dispose them to the community may have had some influence upon this outcome. However, further data collection would be required to investigate any impact of this behaviour.

Figure 21: Estimated Length of time in ED for patients treated by PCP (2008/09)



It is noteworthy that any decrease in the percentage of PCP-type patients discharged within 4 hours may also be associated with decreases in staffing within the same shift (due to the absence of the ED PCP). However, most hospitals also experienced fewer ED PCP-type presentations during the comparison period when the ED PCP was not present. Thus the impact of lower staff numbers upon the capacity to discharge patients within the 4-hour target would appear to be unlikely[45].

Figure 22: Percent discharges within 4 hours (with and without PCP availability)



[45] Averaging 27% across all hospitals, with the exception of Geelong where presentations increased by 14% (representing one additional patient presentation per hour on average). See Appendix D for further analysis.

Others reported that the duration of care (and subsequent length of stay in the ED) for PCP-type patients tended to increase when the PCP was not available. This was attributed to a relative lack in confidence about assessment and management of these patients from more junior medical officers who would spend additional time seeking the opinion of an ED or other consultant.

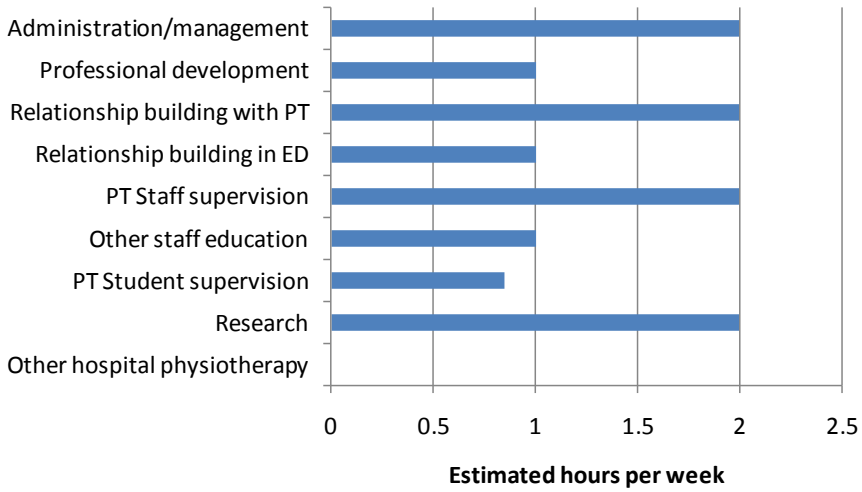
7.1.6 Simultaneous occasions of service

In general, PCPs reported treating multiple patients at the same time during most days of the week. Although there was a relatively constant flow of presentations throughout the day, presentations were also reported to 'clump' together. The maximum number of patients simultaneously treated on any one occasion varied between health services from 0 (Ballarat) to 6 (Barwon) depending upon levels of ED demand.

7.1.7 Duration of non-patient tasks

In the absence of available data, PCPs were asked to estimate the duration of (previously described) non-patient related activities undertaken on a weekly basis (Figure 23).

Figure 23: Median duration of non-patient related tasks undertaken by PCP per week (2008/09)[46]



[46] 'Relationship building with PT' refers to activities undertaken between the PCP and the PT department; 'PT staff supervision' refers to PCP supervision of other PT staff in the ED; 'Other staff education' refers to PCP activities with other ED staff; 'PT student supervision' refers to supervision of PT students in the ED.

It was estimated that approximately 8.5 hours (on average) per week was devoted to non-patient related tasks, representing around 23% of total EFT. Estimates varied between health services from as many as 15 hours per week (Geelong) to as few as 4 hours per week (Ballarat). Specific non-patient related activities associated with administration, staff supervision, research and relationship building were estimated to occupy around 2 hours per week. All other tasks were reported to take one hour or less.

It was considered important to spend dedicated time building relationships with ED and other hospital consultants (via interaction, shared consultation and participation in ED training, education and other activities) given the importance of building trust and confidence in order to introduce and sustain the role of the PCP.

A number of PCPs were dissatisfied with their capacity to undertake education and training activities with other members of the ED team within available working hours. For some, undertaking these activities required PCPs to prepare materials out of hours. For others, the time taken to see patients in the ED was considered to leave insufficient capacity to meet other training and development requests from staff.

7.2 Patient outcomes

7.2.1 Patient safety

Most PCPs reported experiencing no incidents or adverse events for patients treated through the PCP model of care. Where adverse events had been identified (e.g., Missed Diagnoses), they were reported to have been no greater than the rate observed amongst medical staff. Others indicated that PCPs tended to be more 'cautious' than medical staff (e.g., more strict adherence to Ottawa Rules in relation to radiology procedures).

7.2.2 Timely access to services

As previously reported, available data and feedback from a variety of ED staff suggested that time to treatment was improved for PCP-type patients when the PCP was available within the ED. These favourable impressions have led to number of health services expressing a desire to extend current hours of availability of the ED PCP.

7.2.3 Acceptability of model of care

Local satisfaction studies conducted by a number of health services indicated a positive appraisal of the PCP model of care by patients, with high levels of:

- Overall satisfaction with care (100% agree);[47]

[47] Local data from St Vincent's Hospital (n = 10), and Royal Melbourne Hospital (n = unknown).

- Willingness to return for assessment/treatment (100% agree);[48] and
- Recommendation of service to others (100% agree).[32]

Unfortunately, the sample sizes in these local studies are too small to permit generalisation. Anecdotal reports from PCPs and other members of the ED staff indicated that patients were very satisfied with the standard of care received by the PCP model of care. Further studies are required to determine the acceptability of the model of care to patients and to identify key components in the model that might be attributed to PCPs ability to enhance and streamline care compared with the services provided by other staff in the ED (e.g., provision of information, interpersonal style, specific interventions, capacity to engage the assistance of other staff).

7.2.4 Impact of service delivery

There have been no outcome studies to follow-up patients who were treated in the ED via the PCP model of care. Attendance at medical outpatient clinics was reported to be more appropriate, however basic measures of patient improvement had not been formally recorded (e.g., time to resolution of symptoms, time to return to usual occupation). Health services acknowledged the lack of specific research and understanding of the functional impact of ED PCP services upon patients following discharge from the ED, with the exception of those reviewed or receiving ongoing outpatient physiotherapy services.

7.3 Workforce outcomes

7.3.1 Role delineation and job satisfaction

Physiotherapists considered the PCP model of care to be a valuable addition to current job opportunities and career develop in the public sector. Increased recognition of the professional capacity of physiotherapists by health services was welcomed. Opportunities to practise as independent clinical specialists within the broader ED team were also appreciated.

It was reported that physiotherapists within other departments received a 'morale boost' from having the opportunity to work towards advanced scope of practice in the ED. Many reported that the current models of care would complement and encourage further developments and participation in post-graduate tertiary education. A network of PCP clinicians has recently formed within the Australian Physiotherapy Association to share knowledge and experience and discuss issues associated with development, implementation and sustainability of the model of care across Victorian health services.

Local training packages have also been developed in some hospitals (e.g., RMH, Frankston). Consultation and training opportunities are also being offered to interstate

[48] Local data from The Alfred Hospital (n = 28 approx.)

colleagues who are interested in establishing PCP models of care in other Australian jurisdictions.

Nurse practitioners were reported to be extremely welcoming of the PCP role and the opportunity to divert patient care and/or further develop their own skills in managing ED PCP-type patients. Positive outcomes were also reported by other nursing staff within the ED. PCPs were considered a valuable addition to the team, contributing specialised knowledge and education about patient management of certain conditions. No negative outcomes were reported about areas of overlap in professional roles and responsibilities of PCPs and nursing staff. Some considered that the availability of PCPs within the ED team had freed up their own clinical time to devote to other patients or activities.

There were some initial concerns amongst medical staff that junior doctors may not get an opportunity to see PCP-type patients if PCPs were introduced into their emergency department. These concerns have not been justified. Many services reported that 'there were more than enough patients to go around'. It was acknowledged however, that concerns about access to patients for clinical learning may be more justified by junior medical staff in smaller health services where the volume of PCP-type presentations was lower.

Medical staff reported that they appreciated the increase in skills within the ED offered by PCPs, particularly in relation to methods of assessing and treating musculoskeletal injuries. PCPs' knowledge of relevant functional anatomy, pain management and rehabilitation was considered to be generally superior to medical staff. The capacity to assist other doctors with some tasks was noted (e.g., plastering). PCP experience in care coordination, patient referral and follow-up was also appreciated. In addition, medical staff reported that PCPs were able to offer alternative methods of education for junior doctors and trainee specialists via consultation, seminars or supervised interventions with PCP-type patients. Others appreciated the availability of PCPs to see some patient groups that benefit more from physiotherapy than medical intervention in the ED setting (e.g., lower back pain). Demands upon senior medical staff by PCPs for consultation, requests for writing up medications or certificates were considered to be no different from their interactions with other members of the ED team.

7.3.2 Multidisciplinary and interdisciplinary collaboration

There was strong evidence of multidisciplinary collaboration in the ED across the health services consulted throughout the review. A team approach was considered essential to effective ED operation. PCPs were reported to be valued 'team players' who promoted interdisciplinary and multidisciplinary collaboration with and amongst their colleagues. A high degree of trust, cooperation and collaboration was reported to have resulted from these activities leading to demands for more consultation with PCPs by ED staff. Opportunities to extend originally defined scope of practice arrangements were reported by some PCPs as medical and other staff became familiar with their capabilities (e.g., supervised joint reductions).

The addition of PCPs was considered to be a relatively natural extension of multidisciplinary approaches previously introduced to EDs through nurse practitioners and care coordination teams. Amongst health services who viewed the ED as a multidisciplinary environment, there was strong support for the ongoing role of the PCP. Other services expressed a desire to use any ongoing budgetary allocation for medical staff or nurse practitioners rather than PCPs if 'given the choice'. Despite valuing the role of the PCP, the major rationale for alternative employment of medical or nurse practitioners related to their capacity to see a broader range of patients within the available EFT compared to a PCP. This was considered particularly important to health services that were experiencing current medical and/or nursing workforce limitations.

7.4 System outcomes

7.4.1 Streamlining of patient care within the ED

There was general consensus that the PCP model of care had positively impacted upon streamlining of patient management in the ED. All health services welcomed the increase in available staffing to meet the rising demand in patient presentations. Increased staff numbers were especially welcomed in services experiencing significant workforce shortages. Others reported that the availability of a PCP enabled the most appropriate patient to be seen by the most appropriate member of staff.

The increase in mix of skills and level of expertise in musculoskeletal disorders was widely acknowledged to have resulted in more comprehensive assessment and management than that offered by other staff. Moreover, the increase in skills had helped other professionals build a 'better toolkit' for managing similar patients when the PCP was unavailable. The PCP emphasis upon continuity of care and patient follow-up was also considered to improve patient flow within the ED, prevent unnecessary hospital admissions and representations to the ED from PCP-type patients.

The capacity to function as a fully integrated member of a multidisciplinary ED team was also reported to promote patient flow by reducing 'down time' and increasing the ability to see patient presentations for all ED staff. The level of PCP integration, clinical competence and accountability was reported to have 'turned around' senior medical staff in one health service that were initially sceptical of the value of the PCP model of care.

There were no apparent increases in the ordering of X-Rays or other tests from PCPs compared with other medical or nursing staff. Many reported that the PCP had lightened the workload of other staff in the ED.

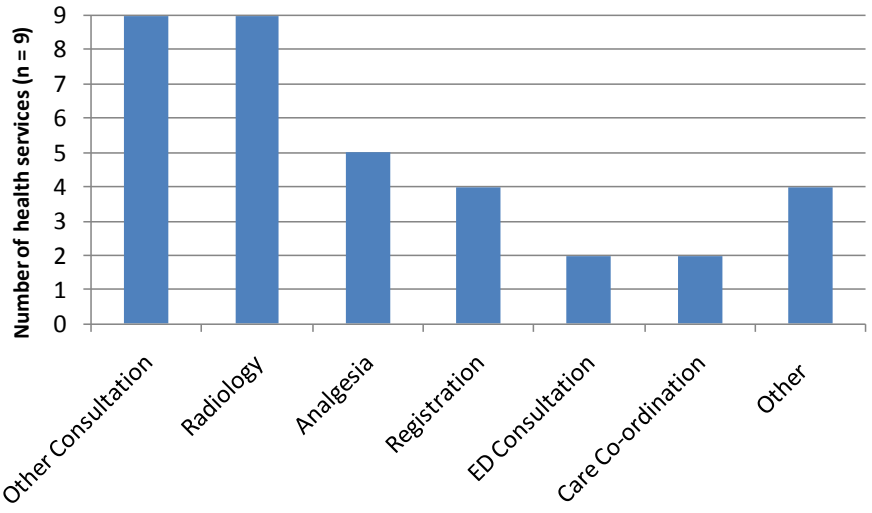
In some cases, relationships formed between the PCP and other medical specialty units (e.g., orthopaedics) were reported to have promoted better relationships between the ED and the same units. The capacity to implement more timely patient

review and follow-up arrangements was also reported to have reduced inappropriate referrals to outpatient medical clinics.

Notwithstanding reported improvements in patient flow following introduction of the PCP model of care, a number of delays in patient length of stay for PCP-type patients were attributed to existing 'blockages' in work flow within the ED and broader hospital (Figure 24). All services indicated experiencing significant delays in obtaining 'other specialist consultation' (e.g., Orthopaedic Registrar) from within the hospital when required. This was not considered to be significantly greater for PCPs than any other clinical staff within the ED. Delays in timely access to radiology were also reported by all health services. Delays were attributed to the relative priority of PCP-type patients (compared with more acute presentations), patient transport from the ED to radiology and the general availability of radiology services out of hours. Some PCPs reported that physically transporting PCP-type patients to radiology reduced the delay in medical imaging. Other services indicated that X-Rays initiated at triage had saved time and reduced length of stay for PCP-type patients.

Some health services reported experiencing minor delays associated with locating appropriate ED staff to prescribe (medical officers) and dispense (nursing staff) analgesia and to write medical certificates for PCPs. Slight delays in 'clerking' of patients following triage were also reported by some health services. Other delays impacting upon patient flow through the ED were reported to include waiting times for Prosthetics and Orthotics staff consultation, occasional limitations in physical space within the ED, and delays in pathology results required as part of patient assessment.

Figure 24: Delays in management of PCP patients within the ED (2008/09)



7.4.2 Estimated cost per occasion of service

Based upon the findings of the current evaluation, a number of key assumptions can be developed as the basis of a future funding formula for consideration by the Department of Health. Specifically, it is assumed that on average:

- 10% of ED presentations are PCP-type patients;
- 75% of PCP-type presentations occur between the hours of 8.00am and 8.00pm;
- 87% of all PCP-type presentations are seen by ED PCP when on duty[49];
- The PCP component of an ED stay is between 30 - 45 minutes duration;
- Grade 3 PTs undertake 70% of paid time in clinical-related activities; and
- 1.0 EFT PT includes 25% salary overhead charges[50].

Accordingly, an 'efficient' price for any ongoing provision of ED PCP services (as a fixed grant component) could be calculated using the following funding formula:

(6.5% of total ED presentations/1632 FTE Occasions of Service) x PT Gr3 Award Rate[51]

Example calculations based upon variations in the most efficient 'time' taken to treat an ED PCP-type patient are presented in Table 2.

Table 2: Sensitivity analysis of proposed funding formula

Scenario	PCP-type Presentations (49,000 x .065)	Time in PT treatment	Estimated Occasions of Service per year (EFT)	Annual Funding
1	3185	**45 mins**	1632 (1.95)	**$195,000**
2	3185	**40 mins**	1835 (1.74)	**$174,000**
3	3185	**37.5 mins**	1958 (1.63)	**$163,000**
4	3185	**35 mins**	2098 (1.52)	**$152,000**
5	3185	**30 mins**	2447 (1.30)	**$130,000**

[49] Median 87%.

[50] Estimation based upon 18.7% salary overheads and a weekend loading 20%.

[51] Where 10 x .75 x .87 = 6.5% of all presentations; 70% of 38 hours per week FTE = 1596 minutes per week/45 minutes per patient = 35.4 patients per week x 46 weeks available time (excluding 4 weeks annual leave, 10 days public holiday) = 1632 FTE occasions of service; Grade 3 Year 3 PT salary estimated at approximately $75,000 per annum plus $25,000 for salary overheads and weekend loading.

The formula can be adjusted based upon significant departures from any of the key variables (e.g., proportion of ED PCP-type presentations, presentations by time of day). It is anticipated that the formula will change with the advent of activity based funding[52].

- Based upon this formula a median cost (based upon anecdotal estimates of time spent per patient[53]) would approximate $83 per patient at an estimated time of 37.5 minutes of PT intervention[54].
- National data estimates an average cost for non-admitted patients of approximately $311 for category 4 presentations and $184 for category 5 presentations to the ED (Average across both category 4 and 5 is $248)[55].
- State estimates (informal) approximate $152 per non-admitted primary care type patient (non-admitted, triage category 4-5, length of stay less than 12 hours and did not arrive by ambulance)[56].
- The current VACS price for an occasion of allied health intervention is $63[57].

Thus the cost of treatment provided by ED PCPs is approximately 45% less than that estimated for treatment of category 4-5 non-admitted patients (who do not present by ambulance) in Victorian emergency departments.

[52] Activity based funding is likely to involve a fixed price (with capitation) according to the actual volume of patients treated (rather than adopting a calculation based upon the time required for staff to be 'available' to treat an 'estimated' number of patients).

[53] Anecdotal estimates vary between 30 to 45 minutes on 'average' per ED PCP-type patient.

[54] Both costing estimates do not incorporate time spent in consultation with other ED (e.g., Medical Consultant or Nurse Practitioner/Other Nursing staff).

[55] Department of Health and Ageing (2009). National Hospital Cost Data Collection: Cost Report Round 12 (2007-08). Canberra: Author. (available at: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-casemix-data-collections-about_NHCDC.

[56] Based upon Department of Health internal estimations for 'primary care type' patients (excluding overhead costs such as radiology, pathology etc.).

[57] Department of Health (2010). Victorian health services policy and funding guidelines 2010-2011 – Highlights. Available at http://www.health.vic.gov.au/pfg/downloads/pfg_p1.pdf.

8 Appraisal of performance

8.1 Key factors influencing establishment and operation of PCPs

A number of common factors were reported to influence the establishment of PCP services in the ED, including (but not limited to):

- The culture of the ED;
- The capability of the PCP;
- The availability of the PCP within the ED; and
- Early and ongoing support from hospital management.

The culture of the ED was considered to be a vital determinant of the success of a PCP model of care. Positive attitudes towards innovation, strong and supportive clinical leadership and a focus upon multidisciplinary teamwork were considered essential to support the role of a PCP. Prior exposures to multidisciplinary and interdisciplinary models of care were reported to have 'set the stage for the introduction of other roles' in the ED. The presence of nurse practitioners (interdisciplinary) and care coordination teams (multidisciplinary) had a significant role in 'breaking the ice' with ED staff who were initially sceptical of the value of other (non-medical or nursing) professionals. Concerns about professional boundaries and role overlap were also reported to have been largely assuaged through the introduction of these services to the ED.

Capacity of PCPs to develop and maintain relationships with key ED staff was also considered to be vital. Employment of senior physiotherapists who were appropriately qualified and experienced was important in establishing credibility and building relationships based upon demonstrated competence. The ability to function as an independent clinician but maintain a strong team oriented approach was also considered critical. Many acknowledged that the initial establishment and maintenance of the PCP role was dependent upon successful relationships and the capacity to engage the confidence and trust of senior and junior ED staff. This was reported to be a challenge, particularly where staff rotations (e.g., junior medical officers and trainee specialists) were frequent.

An ongoing PCP presence in the ED was considered to be essential component of the role. Availability to meet patient demand and demonstrate the value of physiotherapy intervention was required to build and maintain relationships with other ED staff. A number of health services reported frustrations by members of the ED staff when, having seen the value of PCP interventions; PCPs were not always available to be present to meet demand. This was a particular concern for health services without specific funding for the ED PCP. All health services had attempted to adjust PCP hours to meet local demand. However, ongoing frustrations were reported about the capacity to address demand for PCP-type presentations during the evening at health services.

In addition to the support required by senior medical and nursing staff within the ED and other areas of the hospital, early and ongoing support from senior hospital executive was considered essential in establishing the PCP role. A willingness to recognise the benefits and achievements of the model of care were also reported to be important in establishing the credibility of the role to other staff. The PCP model of care received a hospital award at one health service and, as a consequence, received valuable recognition which assisted in further promoting the role within the ED.

8.2 Comparative differences between health services

Comparison of the PCP models of care introduced across different health services was difficult given the number of similarities in issues and approaches to service delivery that were reported. Notwithstanding, there were four areas of relative difference between the PCP models relating to:

- Staffing arrangements;
- Levels of patient demand for services;
- Workforce pressures upon the ED; and
- The capacity to provide services to meet demand.

All health services acknowledged that it was essential to employ a senior physiotherapist to establish the PCP role within their ED. Some reported difficulties recruiting sufficiently qualified staff and having to undertake a number of rounds of employment before finding the right person for the role. However, differences emerged about ongoing staffing arrangements. Some health services considered that it was essential that only senior clinical staff continue to undertake the role of a PCP. Others reported that, once successfully implemented and pending the availability of a senior physiotherapist as PCP for supervision, other more junior staff could also be rotated through the role without damaging the credibility of the position to other ED staff. Notwithstanding it was generally acknowledged that some degree of 'succession planning' for the profession was required. In this context, many thought that it was important to be able to have (at least) a Grade 2 physiotherapist working alongside a more professionally experienced PCP to provide an opportunity for career learning and development. This exposure and supervision could then be ideally accompanied by further post-graduate education for the Grade 2 physiotherapist as they worked their way towards future employment as a PCP.

More flexible staffing arrangements were also considered to be important in order to meet fluctuating levels of demand for PCP services within the ED on any given day. As previously reported by health services, despite the continuous pattern of presentations throughout any given day the number of presentation of PCP-type patients was also observed to 'clump' at certain times and quieten at others. Some health services had integrated the PCP model of care with other services available within the ED, such as care coordination, in order to manage differential demand pressures within the ED on any one occasion. The capacity to have flexible staffing arrangements whilst maintaining a constant availability of PCP services in the ED was considered to be important. It was acknowledged that more flexible workforce

arrangements would certainly be required if demand for PCP services decreased or was lower at any given hospital. Accordingly, mechanisms for integrating the model of care with other clinical activities, such as care co-ordination, outpatient review clinics or other areas, were recognised.

General workforce demand within the ED also varied across health services. Whilst general demand for ED PCP services remained high, additional pressures associated with limited medical or nursing workforce were reported by some hospitals. In the context of specific medical or nursing workforce pressures, there appeared to be a higher demand for employing staff with the broadest range of capabilities to see the widest range of patient types. Thus, the ongoing sustainability of any PCP model of care at these facilities would be subject to competitive pressure to employ nursing and medical staff. Mechanisms to promote the sustainability of PCP services were considered to be important in these contexts either through designated funding or policy guidelines from the Department of Health.

The capacity to be available to meet demand for services varied. The strongest determinant of availability was the provision of dedicated funding to the PCP role by the department. Other services had repeatedly attempted to build an internal business case to establish, maintain or expand PCP services with some limited success. Ongoing availability of PCP services was reported to require diversion of 'already stretched' hospital resources, which restricted the capacity of these services to increase PCP availability.

8.3 Summary of performance

In summary, the PCP model of care has been introduced in a relatively consistent manner across a range of different health services. PCPs and other members of the ED staff were unanimously positive in their appraisal of the operation and impact of the service. Data relating to the impacts of service delivery indicates positive outcomes for patient flow within the ED and better streamlining of patient referrals for ongoing follow-up. The potential cost of service delivery by PCPs is lower than the cost of service delivery provided by other members of staff caring for patients with similar conditions. Further data collection and analysis is required to determine specific impacts of service delivery, particularly upon patient outcomes resulting from PCP care delivered in the ED. The following impacts may be concluded on the basis of evidence gathered through the current evaluation.

8.3.1 Patient safety

Employment of appropriately qualified and experienced staff, operating within recognised (or designated) scope of practice, has had no negative impact upon patient safety. Adverse events resulting from PCP interventions have either not been reported (to date), or have been considered to be at the same rate as those identified amongst medical staff (e.g., missed diagnoses).

8.3.2 Appropriateness of care

Care has been provided within recognised 'advanced scope of practice' for physiotherapists employed to undertake the roles of PCP. Interventions cover a range of diagnostic areas with the majority focusing upon musculoskeletal conditions. The evidence base underlying physiotherapy interventions for these conditions is considered to be strong. Notwithstanding, the need for further research in the context of interventions provided in the ED context is recognised and a number of specific project have been initiated to focus upon this area.

8.3.3 Access to services

Demand for PCP-type services in the ED is attributed to limitations in affordability or access to private providers (e.g., general practitioners or other physiotherapists) in the community. Limitations in access are compounded by the timing of many PCP-type injuries (e.g., weekend sports injuries) and service availability. The acuity of many PCP-type conditions requires effective diagnosis and treatment within a relatively short time period. Where community providers are available and affordable, delays in accessing support services to assist diagnosis and patient management (e.g., radiology) are also considered to increase demand. The ED is perceived as a 'one stop shop' where all appropriate services can be provided in a timelier manner.

The availability of a PCP within the ED has provided access to a new service for patients. Some tasks performed by PCPs may also be undertaken by other staff within the ED. However, other activities are specific to the profession of physiotherapy. In general, health services report that patients have been able to access more comprehensive assessment and management via direct intervention or staff consultation with a PCP. Evidence also suggests that PCPs are able to see the majority of appropriate patient presentations to the ED when available. The increase in staff numbers within the ED has been reported to have a positive impact upon the capacity of all staff to see patients in a timelier manner. There is some evidence to suggest that improvements in the time to discharging patients from the ED have also occurred. Current blockages in ED workflow experienced by all staff were reported to account for delays in patient discharge. Ongoing demand exists for access to PCP services into the evening at the majority of health services.

8.3.4 Efficiency of service delivery

A basis for determining the efficiency of PCP service provision is required. Differences between health services (in number of patients seen per day) have been examined. However, these differences are constrained by the relative number of presentations of PCP-type patients. Accordingly, an efficiency frontier has been identified at which PCPs might be expected to see around 7-8 patients in a 7.5 hour day.

Anecdotal comparison with other staff workloads in the ED indicates that PCPs may see the same number of patients (assuming level of demand) as a senior Hospital

Medical Officer or junior Registrar. The independence of PCPs in relation to diagnosis and management of relevant conditions was reported to decrease delays in ED treatment. By contrast, junior doctors were reported to spend additional time waiting for consultation with senior medical staff in relation to assessment or management of the same or similar conditions.

Patterns of presentation of PCP-type patients have been reported by health services to 'clump' throughout most days of the week, resulting in 'down time' for PCPs. Acknowledging that some time must be devoted to non-patient related activities expected of senior clinical staff, methods to accommodate potential inefficiencies resulting from lack of demand have been implemented. Models of PCP care that integrate with other services within the ED or hospital have been undertaken (e.g., PCPs may also operate as part of care coordination teams or in outpatient clinics). Methods of PCP staffing that promote access to services by training and supervising more junior physiotherapy staff to undertake PCP activities has also been considered. In tandem, these methods would promote greater flexibility and subsequent availability of PCP services to the ED.

Estimated costs of service delivery indicate further efficiencies through the PCP model of care. Compared with Victorian estimates of the cost of treating a 'primary care type patient', PCPs may cost up to 45% less than services provided to the same patients by other ED staff.

8.3.5 Effectiveness of model of care

There are limited data on the ultimate outcomes of care for patients who receive ED PCP services. More timely discharge and appropriate referrals for ongoing management have been reported. Lower rates of re-presentation or unnecessary hospital admission were also anecdotally reported. However, evidence on the functional impact upon patients (e.g., time to symptom resolution, time to return to usual activities) has not been reported in the Australian context. Some evidence from overseas studies has indicated that PCP (versus medical) intervention may delay return to work. Further studies specifically examining the functional impact of PCP interventions are required.

8.3.6 Acceptability of model of care

Preliminary reports and anecdotal evidence suggest that the PCP model of care is highly satisfactory to patients. Staff representatives also report significant satisfaction with the model of care and the capacity to improve diagnosis and interventions for PCP-type patients for all staff in the ED. As a result, there is strong support for PCPs across funded services. Unfunded services also support the role but their capacity to make PCPs available within the ED has been limited by constraints in internal budgetary allocations. The largest threat to current PCP models of care would appear to be the influence of specific workforce pressures in other clinical areas such as medicine and nursing. In the context of limited workforce supply and increasing patient presentations, some health services would prefer to utilise any additional

finance to support recruitment and retention of medical and nurse practitioners rather than PCPs.

Based upon the findings of the current evaluation, the following characteristics are indicated for a 'best practice' PCP model of care:

- Clear delineation of PCP-type patients presenting to the ED;[58]
- Clear understanding and ongoing monitoring of the level of service demand by PCP-type patients throughout different days of the week;
- Establishment of organisational policies outlining the scope of practice of ED PCPs and distinguishing interventions that maybe provided solely by PCPs versus those that may be provided by a range of different ED staff;
- Designation of specific funding for the provision of an ED PCP service;
- Employment of an appropriately qualified senior physiotherapist with demonstrated capacity to independently diagnose and manage PCP-type patients, in addition to the ability to establish and maintain multidisciplinary relationships with other ED staff;
- PCP staffing arrangements that promote professional development and training of more junior physiotherapists to undertake PCP activities under supervision;
- Integration of PCP services with other models of care provided in the ED or outpatient setting to maximise availability of physiotherapy staff to meet fluctuating levels of demand for ED PCP services;
- Establishment of KPIs to monitor key elements of service delivery, including (but not necessarily limited to)[59]:
  - Number of PCP-type patients treated in a 7.5 shift;
  - Time to patient treatment by PCP from triage (or registration); and
  - Time to PCP-type patient discharge (following triage or registration).
- Establishment of systems to undertake follow-up monitoring of the outcomes experienced by a random sample of PCP-type patients treated by physiotherapists, and other ED staff[60] each year, including (at a minimum):
  - Time to symptom resolution post discharge from the ED; and
  - Time of full return to the complete range of functional activities for individual patients (including usual occupational activities, however defined for any given individual).

[58] For example, using the ICD codes specified in the current evaluation.

[59] KPI's measuring the duration of PCP interventions within the ED should also be considered, particularly where current service delivery processes within the health service may impact upon delays in patient discharge (e.g., delays in access to radiology).

[60] A randomly selected sample of PCP-type patients treated by physiotherapists should be compared with a matched randomly selected sample of PCP-type patients treated by other ED staff each year.

8.4 Future directions

A number of 'future directions' were proposed by health services for the PCP model of care, including investigation of:

- Mechanisms to promote sustainability;
- Further research to determine outcomes;
- Options to extend PCP scope of practice; and
- Extending the model to other professional areas.

Mechanisms to enhance the sustainability of current PCP services were considered to be important to health services. Major threats to sustainability were considered to arise from changes to senior medical or nursing staff with the ED who may not be as supportive of the role and workforce pressures to recruit and retain medical or nursing professionals within the ED. Dedicated funding was considered to be essential to promoting the ongoing sustainability of the model of care. Additional mechanisms such as internal formulation of hospital policies about the nature of multidisciplinary interventions provided in the ED were considered to be potentially beneficial but had not been undertaken at the time of review. Many services reported that guidelines from the Department of Health would be useful in promoting the sustainability of PCP services in the ED.

Further research into the patient journey and clinical outcomes of different PCP-type patient cohorts was considered important by clinicians (e.g., lower back pain). Additional evidence supporting the nature of current interventions provided in the ED context was also noted. A lack of follow-up studies of functional outcome following PCP intervention was acknowledged as an area of weakness.

A number of areas for extended scope of practice by PCPs were reported. Many PCPs expressed a desire to increase their capacity to prescribe certain medications, perform particular procedures and certify patients as unfit for work. Others also suggested expanding scope to other areas such as wound management and joint enlocations.

Based upon the perceived success of the PCP model of care, together with other multidisciplinary models provided through the ED, some suggested that the approach could be expanded further into a range of different areas including complementary and alternative medicine, advanced skill pharmacists, respiratory technicians and physicians' assistants. It was thought that there were limited opportunities for other allied health professions to undertake a primary contact (rather than secondary consultation) role within the ED.

9 Recommendations

The findings of the current evaluation lend support to perceptions of key stakeholders that the ED PCP model of care has led to improvements in:

- Patient access to services;
- Comprehensiveness of care provided within the ED environment;
- ED and physiotherapy staff education and training;
- Patient flow through the ED;
- Future career pathways for physiotherapists; and
- The potential cost of care delivered to patients.

According the following recommendations are provided for consideration by the Department of Health and individual health services.

1. That the PCP model of care be actively considered for ongoing recognition and support by the department.
2. That a funding component be considered based upon the most efficient price for service delivery. Modelling presented in the current report may be considered as an interim measure prior to the implementation of activity based funding across EDs in Victoria.
3. That ongoing demand for PCP-type patients (defined in the current report) is actively monitored by the department and individual health services to determine any changes in funding allocation associated with an increase or decrease in PCP-type patient presentations.
4. That additional research is undertaken by health services to determine the functional impact of PCP intervention upon patient outcomes. This is considered particularly important in order to identify any 'downstream' costs associated with PCP compared with medical or nurse practitioner interventions (e.g., delayed return to work).
5. That current PCP models of care are clarified (where required) to outline integration with other services within the ED and/or hospital to accommodate 'downtime' within the ED. Whilst it is recognised that some 'downtime' is required to undertake non-patient related tasks by the PCP, other arrangements should be identified to accommodate changes in demand over time. Flexible staffing arrangements that promote career development of junior staff under the supervision of senior PCPs and maximise responsiveness of service delivery within the ED should also be considered.
6. That more rigorous data collection regarding PCP-type patients is undertaken by health services. The capacity to provide more reliable ICD coding for PCP-type patients should be developed together with a capability to identify time to treatment by PCPs compared with other ED staff.

7. Guidelines be developed to assist hospitals in establishing and/or maintaining current ED PCP services, including a description of the:
    a. Background supporting introduction of the model of care, including:
        - An overview of relevant literature;
        - The policy environment of the department and commitment to multidisciplinary care in the ED; and
        - The rationale for supporting PCP services in Victoria.
    b. Operational requirements to be specified by health services; including
        - How they have established and will continue to monitor ongoing demand for PCP-type patients;
        - Specification of the PCP Model of Care within their ED;
        - Mechanisms for service integration to other areas of the ED and broader health service and how these will be used to manage fluctuations in demand for PCP services;
        - Mechanisms for flexible PCP staffing arrangement and how these will be used to manage fluctuations in demand for PCP services;
        - Development of scope of practice policies or guidelines together with evidence of endorsement from key medical, nursing and other (relevant) hospital staff;
        - Development of governance and administrative arrangements between the ED and physiotherapy department to support employment, training and development, clinical accountability, professional accountability, supervision, performance monitoring and appraisal of PCP staff.
        - Development of minimum data requirements for ongoing collection by PCPs including (but not limited to);
            - Number of PCP-type presentations per day
            - Number of patients treated per day
            - Number of consultations provided to other staff
            - Time to treatment by PCP
            - Duration of service delivery per patient
            - Number of multiple occasions of service
            - Nature of interventions performed
        - Performance reporting and quality assurance mechanisms to support continuing improvement in service delivery.
    c. Funding arrangements to be provided by the Department of Health
        - Nature of funding provided (in the short and longer term); and
        - Reporting requirements to the Department of Health.

Appendix A: References for literature overview

1. Aiken AB & McColl MA (2008). Diagnostic and treatment concordance between a physiotherapist and an orthopaedic surgeon – a pilot study. *Journal of Interprofessional Care*, 22:253-261.
2. Anaf S. (2008). Physiotherapy's role in emergency Department settings: a qualitative investigation of emergency stakeholders' perceptions. *Thesis submitted for degree of Doctor of Philosophy*, James Cook University.
3. Anaf S & Sheppard L. (2007). Describing physiotherapy interventions in the emergency department setting: an observational pilot study. *Accident and Emergency Nursing*, 15(1): 34-39.
4. Australasian College for Emergency Medicine. (2001). Policy document: Standard terminology 2001. ACEM.
5. Australian Institute of Health and Welfare National Health Data Committee (2003). *National Health Data dictionary - version 12.* Canberra, AIHW.
6. Ball ST, Walton K, Hawes S. (2007). Do emergency department physiotherapy Practitioners, emergency nurse practitioners and doctors investigate, treat and refer patients with closed musculoskeletal injuries differently? *Emergency Medicine Journal*, 24:185-188.
7. Bethel J. (2005). The role of the physiotherapist practitioner in emergency departments: a critical appraisal*. Emergency Nurse*, 13:26-31.
8. Boyce S & Quigley M (2003). The physiotherapy practitioner: extending the role of the physiotherapist. *Emergency Medicine Journal*, emj.bmjjournals.com/cgi/eletters/20/1/37#118.
9. Chartered Society of Physiotherapy (2001) *Specialisms and Specialists: Guidance for developing the Clinical Specialist Role.* London, CSP.
10. Department of Health and Ageing (2007) *The state of our public hospitals: June 2007 report*. Canberra, Commonwealth Government of Australia.
11. Dickens V et al (2003). Assesment and diagnosis of knee injuries: the value of an experienced physiotherapist. *Physiotherapy*, 89:417-422.
12. Fulde GWO & Duffy M (2006). Emergency Department frequent flyers: unnecessary load or a lifeline? *Medical Journal of Australia*, 184:595.
13. Graham K, Brown P (2001). *The role of the Physiotherapy Extended Scope Practitioner in Accident and Emergency: a pilot study.* uk.geocities.com/aephysio/contacts/documents/WCPTchester.ppt
14. Health Professions Regulatory Advisory Council (2008). *Interprofessional Regulatory Collaboration – Scope of Practice Review: Physiotherapy. Summary & selected highlights from the literature.* Toronto, HPRAC.
15. Hughes J, Bradshaw E, MacDonald J (2003). *Report on the Introduction of a Physiotherapy Practitioner to the A&E Department during March, April and May 2003.* uk.geocities.com/aephysio/contacts/documents/uhdreport.doc

16. Hunt KA, Weber EJ, Showstack JA, Colby DC, Callaham ML (2006). Characteristics of frequent users of emergency departments. *Annals of Emergency Medicine*, 48:1-8.

17. Jibuike OO, Paul-Taylor G, Maulvi S, Richmond P, Fairclough J. (2003). Management of soft tissue knee injuries in an accident and emergency department: the effect of the introduction of a physiotherapy practitioner. *Emergency Medicine Journal*, 20: 37-39.

18. Johnson L, Cusick A (2009). Emergency departments: an emerging context of Australian allied health practice. *Journal of Allied Health*, 38 (1): E29-35.

19. McClellan C, Greenwood R, Benger J. (2006). Effect of an extended scope physiotherapy service in patient satisfaction and the outcome of soft tissue injuries in an adult emergency department. *Emergency Medicine Journal*, 23: 384-387.

20. Moore JH et al (2005). Clinical diagnostic accuracy and magnetic resonance imaging of patients referred by physical therapists, orthopaedic surgeons, and non-orthopaedic providers. *Journal of Orthopaedic and Sports Physical Therapy*, 35:67-71.

21. Phillips GA, Brophy DS, Weiland TJ, Chenhall AJ, Dent AW (2006). The effects of multidisciplinary case management on selected outcomes for frequent attenders at an emergency department. *Medical Journal of Australia*, 184: 602-606.

22. Richardson B, Shepstone L, Poland F, Mugford M, Finlayson B, Clemence N (2005). 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. *Emergency Medicine Journal*, 22:87-92.

23. Sexton J (2002). Managing soft tissue injuries. *Emergency Nurse*, 10:11-16.

24. Smith M & Buckley S (2004). Collaborative Working. *Emergency Nurse*, 12:16-18.

25. Sparshott D, Duke B, Wheeler J (2006). *Physio at the frontline: physio in a rural ED.* Presentation at National SARRAH Conference.

26. Stainforth H, McLEan S, Killey P, Hutchinson A (2003). *An audit investigating the role of an Extended Scope Physiotherapist in Accident and Emergency.* uk.geocities.com/aephysio/contacts/documents/hullreport.doc

27. Walters A, Phair I (2004). *Physiotherapy Extended Scope Practitioner (ESP) in Accident and Emergency.* uk.geocities.com/aephysio/contacts/documents/WCPTnstaffs.ppt

Appendix B: Stakeholder Discussion Guide

1. What was the policy direction supporting introduction of the model of care?
2. What was the rationale for establishing the service?
3. What evidence formed the basis for this rationale?
4. What were the key steps involved in establishing the service?
5. Where is the service located (within the ED)?
6. What are the hours of operation?
    a. Have the hours of operation changed over time?
7. What is the staffing structure?
    a. Has the staffing structure changed over time?
8. What administrative & clinical governance arrangements support the service?
9. What are the relationships between the service and other areas (How are these formalised and/or documented)?
    a. Within the ED?
    b. Within the Hospital?
    c. With other external services or organisations?
10. What is the range and frequency of services provided?
11. How is the workload prioritised and governed?
12. What criteria are used for selecting patients/clients?
13. What is the number and type of patients utilising the service?
14. What is the nature of the patient journey/experience through the service?
15. What is the number and nature of referrals to other services?
16. What is the relationship between the service and other models of care in the ED?
17. What factors have influenced the development/ongoing operation of the service?
18. What has been the impact of the model of care
    a. Upon patients?
    b. Upon physiotherapists?
    c. Upon other staff?
    d. Upon the ED?
19. What are the future directions for the ED PCP?
20. What are the implications for developing other similar models of care?

Appendix C: VEMD Data Specifications for Review

Hospitals for extract

Primary group	Comparison group
RMH	Monash Medical Centre Clayton
Frankston Hospital	Sunshine
Ballarat Base	LaTrobe Valley
Austin Hospital	Maroondah
St Vincent's	Western Hospital
Geelong	Northern Hospital
Alfred	Werribee
Box Hill	Dandenong

Dates for extraction: 2000 - 2009

Fields for extract

Activity	Sex
Nurse initiation of patient management date	Departure status
Arrival date	Triage category
Nurse initiation of patient management time	Departure time
Arrival time	Triage date
Place where injury occurred	Primary diagnosis
Body region	Triage time
Postcode	First seen by doctor date
Campus code	Type of usual accommodation
Procedures	First seen by doctor time
Compensable status	Type of visit
Referred by	Locality
Date of birth	Length of stay.
Referred to on departure	Nature of main injury
Departure date	

Format for data delivery .csv

Appendix E: Samples of specifically funded PCPs

Sample Characteristics	**Frankston**	**RMH**	**Box Hill**	**Austin**	**Geelong**	**St Vincent's**
Data source	VEMD	VEMD	VEMD	VEMD	VEMD	VEMD
ATS category included	3 to 5	3 to 5	3 to 5	3 to 5	4 & 5	4 & 5
Period of collection	2008/2009	2008/2009	2008/2009	2008/2009	26/12/2008 - 16/03/2009	1/09/2008 - 21/12/2008
Rationale for period of collection	Service fully operational and number of patient contacts per day reported for this period (data submitted during evaluation)	Service fully operational and number of patient contacts per day reported for this period (data submitted during evaluation)	Service fully operational and number of patient contacts per day reported for this period (data submitted during evaluation)	Service fully operational and number of patient contacts per day reported for this period (data submitted during evaluation)	Service fully operational and number of patient contacts per day separately reported for this period (Reported to DH March 2009, p8)	Service fully operational and number of patient contacts per day separately reported for this period (Reported to DH February 2009, p3)
Assumptions regarding patient contact and PCP hours of availability	PCPs would not take new patients in the final 30-45 mins of their shift, but may take patients waiting up to 30 mins prior to shift commencement	PCPs would not take new patients in the final 30-45 mins of their shift, but may take patients waiting up to 30 mins prior to shift commencement	PCPs would not take new patients in the final 30-45 mins of their shift, but may take patients waiting up to 30 mins prior to shift commencement	PCPs would not take new patients in the final 30-45 mins of their shift, and would not take patients untill shift commencement (given number of presentations prior to 6.00am)	PCPs would not take new patients in the final 30-45 mins of their shift, and would not take patients untill shift commencement (given number of presentations prior to 8.00am)	PCPs would not take new patients in the final 30-45 mins of their shift, but may take patients waiting up to 30 mins prior to shift commencement
Modifications to reported data	ATS category 2 PCP/SCP patients excluded from reported data.	ATS category 1 and 2 PCP/SCP patients excluded from reported data.	ATS category 2 PCP/SCP patients excluded from reported data.	ATS category 1-3 PCP/SCP patients excluded from reported data.	ATS category 1-3 PCP/SCP patients excluded from reported data.	ATS category 1-3 PCP patients excluded from reported data. **SCP contacts by PCP not reported thus total PCP-related contact data may be under under-represented**
Data extracted to indicate hours available						
Weekday						
PCP hours of availability	7.30am-4.00pm	9.00am-4.45pm	7.30am-3.30pm	6.00am-7.45pm	8.00am-5.15pm	10.30am-5.15pm
Exclusions	Nil	12.00pm-1.00pm	Nil	Nil	Nil	Nil
Non-PCP hours for comparison	6.00pm-10.00pm	6.00pm-10.00pm	6.00pm-10.00pm	8.00pm-11.00pm	6.00pm-10.00pm	6.00pm-10.00pm
Weekend						
PCP hours of availability	9.00am-6.00pm	10.00am-4.00pm	12.30pm-4.30pm	8.30am-16.45pm	9.30am-5.15pm	10.30am-5.15pm
Exclusions	Nil	Nil	Nil	Nil	Nil	Sundays + Half all Saturday shifts in sample period
Non-PCP hours for comparison	6.00pm-10.00pm	6.00pm-10.00pm	6.00pm-10.00pm	8.00pm-11.00pm	6.00pm-10.00pm	6.00pm-10.00pm
Summary						
When PCP service available						
Total PCP-type presentations	1999	2577	1480	4366	527	313
Total number seen by PCP	1965	2082	1293	3604	490	233
Total PCP-type pts discharged home	1384	2191	1178	3566	439	279
Total number discharged home < 4 hours	959	1857	853	2942	372	223
% PCP-type pts seen by PCP	**98%**	**81%**	**87%**	**83%**	**93%**	**74%**
% PCP-type pts discharged < 4 hours	**69%**	**85%**	**72%**	**83%**	**85%**	**80%**
When PCP service unavailable						
Total PCP-type presentations	751	863	767	808	245	96
Total number seen by PCP	0	0	0	0	0	0
Total PCP-type pts discharged home	528	729	618	668	211	84
Total number discharged home < 4 hours	379	614	440	520	159	63
% PCP-type pts seen by PCP	0%	0%	0%	0%	0%	0%
% PCP-type pts discharged < 4 hours	**72%**	**84%**	**71%**	**78%**	**75%**	**75%**
2008-2009 4 hour ED discharge						
% All patients discharged < 4 hours (from DH data, available on website)	**57%**	**73%**	**56%**	**72%**	**62%**	**66%**