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*Interprofessional Collaboration*

**Scope of Practice Review:  
Physiotherapy**

**Summary & selected highlights from the literature**

**August 2008**

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## Background

In June 2007, the Minister of Health and Long-Term Care requested the Health Professions Regulatory Advisory Council (HPRAC) to:

*Recommend mechanisms to facilitate and support interprofessional collaboration between health Colleges, beginning with the development of standards of practice and professional practice guidelines where regulated professions share the same or similar controlled acts, acknowledging that individual health Colleges independently govern their professions and establish the competencies for their profession.<sup>1</sup>*

In the course of preparing an interim report to the Minister, in conjunction with its review of the scope of practice of nurse practitioners, HPRAC and the Ministry determined that it was necessary to include scope of practice reviews of six professions – dietetics, midwifery, pharmacy, physiotherapy, medical laboratory technology and medical radiation technology – within the context of the advice that was requested regarding interprofessional collaboration. Advice on the first four of these professions was requested by August 31, 2008.

The scope of practice reviews have been carried out in response to the Minister's request for advice on collaboration between colleges in the context of exploring the potential to optimize professional scopes of practice for specific regulated health professionals as a mechanism to enhance quality of care and strengthen the opportunities for interprofessional collaboration at the clinical level. In Ontario, the legislative framework that defines health professions' scope of practice includes the *Regulated Health Professions Act, 1991 (RHPA)* and a series of profession-specific Acts. The *RHPA* contains provisions with respect to the duties and powers of the Minister, the role of HPRAC, a list of controlled acts and other statutory requirements. It also includes a procedural code governing the operation of regulatory colleges.

Each profession-specific Act includes a scope of practice statement. In Ontario, the practice of physiotherapy is defined as:

*The assessment of physical function and the treatment, rehabilitation and prevention of physical dysfunction, injury or pain, to develop, maintain, rehabilitate or augment function or to relieve pain.*

This definition supports the authorization granted to physiotherapists to perform two controlled acts: i) moving the joints of the spine beyond a person's normal physiological range of motion using a fast, low amplitude thrust; and ii) tracheal suctioning.

The scope of practice statement found in each health profession act provides a frame of reference (or parameters) for the performance by regulated health professionals of their authorized acts. A regulated health professional may perform his or her profession's authorized acts only in the course of practising within the profession's scope of practice. However, this statutory scope of

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<sup>1</sup>Letter from the Minister of Health and Long-Term Care to HPRAC. June 2007.  
[http://www.hprac.org/en/reports/resources/HPRACletterJune28\\_2007.pdf](http://www.hprac.org/en/reports/resources/HPRACletterJune28_2007.pdf)

practice statement is only one element of a profession's scope of practice. Each profession-specific Act also indicates any controlled acts the profession is authorized to perform, the title or titles restricted to members of the profession and other provisions.

Accordingly, as part of its review of professional scope of practice HPRAC<sup>2</sup>:

- analyzes the scope of practice statement and the controlled acts authorized to the profession;
- considers the implications of the harm clause contained in the *RHPA* (which prohibits everyone except health professionals acting within their scope of practice from treating or giving advice with respect to health where serious physical harm may result)<sup>3</sup>;
- considers regulations developed under the profession-specific Act and other legislation that may affect the profession; and
- reviews the standards of practice, guidelines, policies and bylaws developed by the regulatory college.

Collectively, these elements determine the profession's scope of practice and therefore have been considered by HPRAC in its review of the scope of practice for physiotherapy. HPRAC has established 10 criteria that it considers in reviewing a profession's scope of practice.<sup>4</sup>

The profession of physiotherapy was invited to submit recommendations articulating proposed changes required to its scope of practice to enhance interprofessional collaboration and assist members in working to the maximum of their scope of practice. The College of Physiotherapists of Ontario and the Ontario Physiotherapy Association submitted a joint response to HPRAC's *Applicant Questionnaire* respecting the scope of practice review for Physiotherapy on June 19, 2008. The submission can be found on HPRAC's website.<sup>5</sup>

The College of Physiotherapists of Ontario and the Ontario Physiotherapy Association has proposed to amend to the profession's scope of practice statement as follows:

*The practice of physiotherapy is the assessment of neuromuscular, musculoskeletal and cardiorespiratory systems to: i) diagnose, treat and prevent disorders or disease that cause or are associated with physical dysfunction, injury and/or pain; ii) develop, maintain, rehabilitate or augment function; iii) relieve pain; or iv) promote mobility and health.*

In addition, members of the College and the Association are seeking authorization to perform five new controlled acts as follows:

- i) communicating a diagnosis identifying a physical dysfunction, disease or disorder as the cause of a person's symptoms;

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<sup>2</sup> See criteria. Review of a Professional Scope of Practice under the *Regulated Health Professions Act*. Health Professions Regulatory Advisory Council. May 2007.

[http://www.hprac.org/en/reports/resources/Scope\\_of\\_Practice\\_June\\_12\\_2007.pdf](http://www.hprac.org/en/reports/resources/Scope_of_Practice_June_12_2007.pdf)

<sup>3</sup> s.30 Effective June 4, 2009, or on an earlier day to be established by proclamation, this section will be amended by striking out "physical" and substituting "bodily". See *Health System Improvements Act, 2007*, S.O. 2007, c.10, Sched. M, ss.6 and 75 (1).

<sup>4</sup> See Review of a Professional Scope of Practice under the *Regulated Health Professions Act*.

[http://www.hprac.org/en/reports/resources/Scope\\_of\\_Practice\\_June\\_12\\_2007.pdf](http://www.hprac.org/en/reports/resources/Scope_of_Practice_June_12_2007.pdf)

<sup>5</sup> [http://www.hprac.org/en/projects/Physiotherapy\\_Scope\\_of\\_Practice.asp](http://www.hprac.org/en/projects/Physiotherapy_Scope_of_Practice.asp)

- ii) treating a wound by cleansing, soaking, irrigating, probing, debriding, packing or dressing the wound;
- iii) administering by inhalation, i) oxygen or ii) a substance that has been ordered by a person who is authorized to do so by the Chiropractic Act, 1991, the Dentistry Act, 1991, the Medicine Act, 1991, the Nursing Act, 1991 or the Midwifery Act, 1991;
- iv) putting an instrument, hand or finger beyond the labia majora or the anal verge;
- v) ordering, for the purpose of assessing or diagnosing a physical dysfunction, disease or disorder, i) the application of electromagnetism for magnetic resonance imaging; ii) the application of sound waves for diagnostic ultrasound.

Supplemental to these controlled act requests, the profession is also seeking authority under related statutes to:

- i) order x-rays
- ii) order laboratory tests
- iii) register persons as hospital outpatients
- iv) refer to appropriate specialists

### **Purpose, Approach & Format of the Paper**

This paper summarizes some of the recent literature on physiotherapy practice as it relates to the changes being proposed. It is not intended to represent an exhaustive review of the literature; rather, it focuses on identifying key documents that will help inform discussions about and consideration of the changes being proposed.

As indicated above, this review is being undertaken in the context of a broader review focused on exploring opportunities to advance interprofessional collaboration across health regulatory colleges in Ontario. HPRAC's work, in response to a request for advice from the Minister of Health and Long-Term Care, includes a review of scope of practice for a number of health professions that are most directly involved in interprofessional care to ensure that there are no legislative, regulatory, structural or process barriers to members of the professions working to the maximum of their scope of practice or to working in interprofessional settings or teams.

It is recommended that this literature review be considered in conjunction with an earlier literature review<sup>6</sup> completed by HPRAC in January 2008. That review considered interprofessional collaboration with respect to the legislative, regulatory, policy and structural/organizational issues that can facilitate and support health regulatory colleges and their members in advancing collaboration.

The bulk of the sources reviewed were referenced in the submission of the College of Physiotherapists of Ontario and the Ontario Physiotherapy Association. Supplemental literature searches were conducted to identify further sources.

The literature reviewed on the issue has been organized as follows:

- Section 1 provides a high level analysis summarizing some of the key findings arising from the literature included in this review.

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<sup>6</sup> See [www.hprac.org](http://www.hprac.org) for the full copy of the literature review: HPRAC. Interprofessional Regulatory Collaboration – A summary of key reference documents and selected highlights from the literature. January 2008.

- Section 2 summarizes the documents reviewed including categories under the following broad themes: scope of practice; health system needs/ improvement; and health outcomes/patient safety/ risk of harm.

## **Section 1: Highlights & Analysis of Key Findings**

Following are some of the key findings arising from key references that were reviewed as part of this project. It is important to note that the synthesis that follows needs to be considered in the context of the limitations associated with the review namely, the paucity of literature available related specifically to the issue of scope of practice or enhanced scope of practice for physiotherapy.

- *There is a dearth of evidence-based practice in physiotherapy to guide practice and a lack of quality research supporting the clinical and cost-effectiveness of expanded roles for physiotherapists.*
- *Physiotherapists are not seen as major participants in primary health care models of service delivery. However, international examples support the role played by physiotherapists in improving health status of individuals with a variety of conditions and disabilities. In Ontario, the Expert Panel for Hip and Knee Replacement Surgery (formed as part of the Wait Times Strategy) recommended the use of physiotherapists (and other alternate care providers) to tackle the wait list crisis in orthopaedics.*
- *There is broad evidence to suggest that physiotherapy in primary health care models and in other health care delivery models (i.e., emergency triage, outpatient orthopaedic clinics) can have system, patient and provider impacts. Some studies have documented the impact and effectiveness of advanced roles for physiotherapists in general practice, rheumatology and respiratory clinics, orthopaedic triage and outpatient clinics, and emergency rooms.* For example, studies in the UK have demonstrated cost effectiveness in utilization of physiotherapists for managing musculoskeletal trauma in emergency. These studies, in conjunction with anecdotal evidence, support the advancement of expanded roles for physiotherapists to respond to system needs and address barriers to access (e.g., wait lists, physician shortages, etc.). This evidence, however, is in its early stages.
- *While data on outcomes is lacking, there is some evidence supporting the potential of expanded practice physiotherapists in reducing costs, improving management strategies for orthopaedic patients, improving patient satisfaction, and improving surgeon productivity.* The Sunnybrook Holland Orthopaedic and Arthritic Hospital has seen promising results since the implementation of the advanced physiotherapy roles.
- *There has been little (if any) studies completed related to -*
  - *formal, competency-based standardized training programs for advanced practice physiotherapy;*
  - *the link between trainee performance and patient outcomes;*
  - *impact of advanced practice roles on service delivery and patient outcomes;*
  - *cost-effectiveness of the advanced practice physiotherapist roles.*
- *Challenges and barriers to developing and implementing advanced practice roles for physiotherapists include:*
  - resistance to change and turf protection from other providers;

- limitations of current scopes of practice;
  - deficiencies in current educational and training curriculum (e.g., lack of interdisciplinary approach);
  - rigidity of regulatory bodies; and
  - perverse incentives arising from existing models of care delivery related to liability and funding mechanisms.
- ***There is a need to establish a stronger, more robust body of evidence related to process and outcome evaluation regarding advanced practice and new models of care to support the development of enhanced roles for physiotherapists.*** In particular, the literature supports the need to better understand and use scientific evidence to:
- Guide day-to-day decisions in physiotherapy practice;
  - Identify the impact of expanded roles for physiotherapists on patient outcomes in particular health care settings (i.e., primary care, emergency rooms, orthopaedic clinics, etc.);
  - Examine longer term outcomes and resource use arising from expanded roles;
  - Effect of new roles on service delivery and cost-effectiveness.

## Section 2: Summary of the Literature

### SCOPE OF PRACTICE

Authors, Title and Publication	Context/Type of Document	Main Findings/Recommendations
<p>Moore, Joseph H. et al. Clinical Diagnostic Accuracy and Magnetic Resonance Imaging of Patients Referred by Physical Therapists, Orthopaedic Surgeons, and Nonorthopaedic Providers. <i>Journal of Orthopaedic and Sports Physical Therapy</i>. February 2005; 35(2):67-71.</p>	<p>Non-experimental, retrospective design study to compare clinical diagnostic accuracy between physical therapists, orthopaedic surgeons and non-orthopaedic providers at an army hospital on patients with musculoskeletal injuries referred for MRI.</p> <p>A retrospective analysis was performed on 560 patients referred for MRI over an 18-month period. An electronic review of each patient's radiological profile was performed to assess agreement</p>	<p>There was no difference in diagnostic accuracy between physical therapists and orthopaedic surgeons; but clinical diagnostic accuracy was significantly greater by physical therapists and orthopaedic surgeons compared to non-orthopaedic providers.</p> <p>Clinical diagnostic accuracy by physical therapists was high regardless of whether patients were referred or seen directly without physician referral.</p> <p>Physical therapists working in this clinic had advanced postgraduate training that provides extensive training in advanced diagnostic techniques.</p>

	<p>between clinical diagnosis and MRI findings.</p>	<p>Limitations: Patient age and gender by provider not analyzed. Patients seen by army physical therapists are generally younger with fewer comorbidities (i.e. otherwise healthy).</p>
<p>Bethel, Jim. The Role of the Physiotherapist Practitioner in Emergency Departments: A Critical Appraisal. <i>Emergency Nurse</i> 2005; 13(2): 26-31.</p>	<p>Review and evaluation of the literature on the physiotherapist practitioner role.</p> <p>Discussion of experience of one British Hospital Emergency Department that hired two physiotherapists who, after training and supervision, would independently manage the care of a specific group of patients with musculoskeletal injuries, from assessment to referral or discharge.</p>	<p>Pilot project was seen as a way to improve the recruitment and retention of physical therapists by enhancing their traditional role.</p> <p>Staff not convinced of the benefit to the emergency department as a whole (concern over duplication of emergency nurse practitioners' role).</p> <p>Specialized role for physical therapists enhanced the ER's ability to reduce waits for those particular patients; use of physiotherapists in the expanded role was associated with higher patient satisfaction; regardless of outcomes, physical therapists were an important educational resource in the ER; physical therapists need additional skills in requesting and interpreting plain x-rays or MRI; volume of patients with minor musculoskeletal pain/conditions needs to be sufficient to warrant the role; not clear that physical therapists in ER free up other practitioners' time; wait times could also have been reduced by additional medical staff but physical therapists are more cost-effective than other medical staff.</p> <p>Too soon to advocate broad adoption of the role, but further study is warranted.</p>

<p>Daker-White, Gavin et al. A Randomized Control Trial. Shifting Boundaries of Doctors and Physiotherapists in Orthopaedic Outpatient Departments. <i>Journal of Epidemiology and Community Health</i>, Vol. 53, 643-650</p>	<p>A randomized control trial to evaluate the effectiveness and cost effectiveness of specially trained physiotherapists in the assessment and management of defined referrals to hospital orthopaedic departments.</p> <p>To investigate the potential role of specially trained physiotherapists functioning as an orthopaedic surgeon would in triaging patients with musculoskeletal problems through assessment, diagnostic tests, diagnosis and treatment/management.</p> <p>481 patients with musculoskeletal problems referred for specialist orthopaedic opinion.</p>	<p>Physiotherapists were found to be as effective as post-fellowship junior staff and clinical assistant orthopaedic surgeons in the assessment and initial management of new referrals; the use of these physiotherapists leads to lower initial direct hospital costs; patients are more satisfied with care provided by these members of staff than they are with surgeons in training providing the same service.</p> <p>These findings support those of earlier, uncontrolled studies.</p> <p>More doctors ordered radiographs or referred more patients for orthopaedic surgery; physiotherapists spent more time with their patients.</p> <p>Future studies should examine longer term outcomes and resource use. The role of specially trained physiotherapists should be evaluated to identify their effects on patient outcomes.</p> <p>Limitations: short follow-up time for the study; lack of blinding; the different selection criteria used at the two participating hospital sites.</p>
<p>Gardiner, J. and S. Wagstaff. Extended Scope Physiotherapy: The way towards consultant physiotherapists? <i>Physiotherapy</i> 2001; 87(1): 2-3.</p>		
<p>Dickens, V. et al. Assessment and Diagnosis of Knee Injuries: The value of an experienced physiotherapist. <i>Physiotherapy</i>, July 2003; 89(7): 417-422.</p>	<p>Prospective study investigating the agreement between physiotherapists' clinical diagnoses and arthroscopic diagnosis of the knee; to examine the ability of experienced physiotherapists to make correct diagnosis</p>	<p>Experienced physiotherapists are able to diagnose acute knee injuries with a high rate of accuracy, sensitivity and specificity. Physiotherapists are specifically trained in the management of musculoskeletal conditions that do not respond to surgical intervention. Experienced physiotherapists</p>

	<p>and recognize when a patient should be referred for arthroscopy.</p> <p>Fifty consecutive new patients referred to one consultant's acute knee clinic were recruited for the study. Assessment was by a consultant knee surgeon and two experienced physiotherapists in random order. Assessment results informed initial diagnosis which was then compared to final diagnosis.</p>	<p>are able to decide whether a patient needs arthroscopy or not.</p> <p>Role of experienced physiotherapists in orthopaedic triage has been expanding since first documented in 1986.</p> <p>Limitations: small sample; a number of different categories of diagnosis meant in some categories there were very small numbers; only two physiotherapists took part; did not look at accuracy of diagnosis of multiple lesions in the knee.</p>
Hattam, Paul. The effectiveness of orthopaedic triage by extended scope physiotherapists. <i>Clinical Governance: An International Journal</i> , 2004; 9 (4): 244-252.		
College of Physical Therapists of Alberta. Debridement Practice Standards. <i>College Callings</i> 2004; 6(4).	<p>Article in the College of Physical Therapists of Alberta member publication outlining the practice of wound debridement.</p>	<p>The College of Physical Therapists Committee on Restricted Activities decided to designate debridement as requiring basic authorization. Although generally the competencies required performing basic authorization activities are acquired in university physical therapy programs, this is not the case with wound debridement. The general background information is provided but specific debridement training may not be, therefore additional education, training and mentorship is required.</p> <p>Debridement may be indicated in the treatment of diabetic, venous, ischemic and pressure ulcers, malignant, pathological, surgical and traumatic wounds, and burns.</p>
Soever, L. Primary Health Care and Physical Therapists: Moving the Profession's Agenda Forward. 2006.	<p>A discussion paper prepared for the College of Physiotherapists of</p>	<p>There is broad evidence to suggest that physiotherapy in primary health care models can have system, patient and</p>

	<p>Alberta, Alberta Physiotherapy Association and Canadian Physiotherapy Association.</p> <p>Objectives of the paper: to gain a better understanding of the current status of physiotherapists' roles in primary health care in Canada; to identify barriers to evolving physiotherapy practice and primary health care in Canada; to identify opportunities for physiotherapists and promote their active participation in evolving models of care.</p> <p>These issues were explored from the perspective of education, regulation, policy and clinical practice.</p>	<p>provider impacts. This evidence, however, is in its early stages.</p> <p>At this time, physiotherapists are not seen as major participants in primary health care models of service delivery. However, international examples exist where physiotherapists can improve the health status of individuals with a variety of conditions and disabilities and have a major impact on population health.</p> <p>The paper concludes with recommendations in the area of education, regulation, policy, clinical practice and professional leadership which aim to integrate interprofessional standards, promote expanded scope, gather evidence to support physiotherapists' role in primary health care, etc.</p>
<p>Enhanced Clinical Roles-Issue Paper for Bundaberg Hospital Commission of Inquiry. Queensland Health, Australia, 2005. <a href="http://www.health.qld.gov.au/inquiry/submissions/enhancedroles.pdf">www.health.qld.gov.au/inquiry/submissions/enhancedroles.pdf</a></p>	<p>Issue paper discussing enhanced clinical roles to support workforce planning.</p> <p>Information regarding advanced practice roles gathered through key informant interviews and literature reviews from national and international jurisdictions.</p>	<p>Queensland faced with health workforce challenges given fewer people entering the health workforce, advanced technology and higher consumer expectations. Barriers to enhanced clinical roles include: resistance to change through professional demarcation; scopes of practice bound by professional interest rather than evidence; education not interdisciplinary; regulatory bodies are too rigid; funding mechanisms are a perverse incentive for existing models; educational curriculum needs to be enhanced to properly train advanced clinicians.</p> <p>There are successful examples of physiotherapists,</p>

		<p>occupational therapists, social workers and pharmacists working in enhanced roles in emergency to reduce waits and avoidable admissions. Need to further implement these roles in triage and management of certain conditions. Studies in the UK have demonstrated cost effectiveness in utilization of physiotherapists for managing musculoskeletal trauma in emergency.</p> <p>Advanced roles for physiotherapists have also been identified in general practice, rheumatology and respiratory clinics.</p>
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**HEALTH SYSTEM NEEDS & IMPROVEMENT**

<b>Authors, Title and Publication</b>	<b>Context/Type of Document</b>	<b>Main Findings/Recommendations</b>
<p>Aiken, Alice B. and M.A. McColl. Diagnostic and treatment concordance between a physiotherapist and an orthopaedic surgeon – A pilot study. <i>Journal of Interprofessional Care</i> 2008; 22(3): 253-261.</p>	<p>Pilot study using 25 patients of an outpatient orthopaedic clinic, one physiotherapist and two orthopaedic surgeons.</p> <p>To determine diagnostic concordance and accuracy between a physiotherapist and two orthopaedic surgeons on the same cohort of patients, and to determine if these patients would be offered similar treatment advice.</p>	<p>The physiotherapist and orthopaedic surgeon made similar diagnoses and had similar levels of accuracy in making a clinical diagnosis of non-complex musculoskeletal impairments of the knee and shoulder.</p> <p>Primary recommendations were similar among the physiotherapist and orthopaedic surgeon, but in almost every case, the physiotherapist made recommendations for education and exercise, two hallmarks of conservative management in physiotherapy practice.</p> <p>The results of this study, though limited, should alleviate concerns that patients receive inferior or inaccurate care from non-physician providers in collaborative practice models. Also, it addresses fears that a diagnosis might</p>

		<p>be missed by a non-physician provider because in all cases the physiotherapist appropriately referred cases for medical intervention.</p> <p>The results of this study have resulted in the implementation of a collaborative model of care where a physiotherapist with extra training in the ordering of diagnostic tests, assesses and triages all patients referred to orthopaedics for hip or knee arthroplasty surgery.</p> <p>Limitations: small sample size. The physiotherapist had worked with the orthopaedic surgeons for four months prior to the start of the study so may have been familiar with practice style and may have been aware of the additional diagnostic criteria that surgeons use, possibly affecting their respective decisions. The patients were non-complex and the study involved musculoskeletal triage; there may still be concerns over physiotherapists involved in triage of more complex cases.</p>
<p>Aiken, A.B., et al. Reducing hip and knee replacement wait times: an expanded role for physiotherapists in orthopaedic surgery clinics. <i>Healthcare Quarterly</i> 2007; 10(2).</p>	<p>Article discussing interdisciplinary collaborative practice models implemented at Hotel Dieu Hospital in Kingston, Ontario in the context of hip and knee replacement surgeries.</p> <p>This pilot examined the effectiveness of expanding the role of physiotherapists in outpatient orthopaedic clinics to provide pre- and post-operative consultation to patients with hip and knee complaints; to save surgeons' time, improve patient throughput and reduce wait times.</p>	<p>Physiotherapists and orthopaedic surgeons make similar conclusions about the functional status of patients post-operatively. The majority of patients can be managed post-operatively by the physiotherapist alone. Patients receive more options for conservative management from physiotherapists. Patients are equally satisfied with care provided by both physiotherapists and orthopaedic surgeons. This model saves surgeons time, allowing them to spend more time in the operating room or assessing new patients, thereby possibly reducing wait times.</p>
<p>Aiken A.B., et al. Easing the burden for joint replacement wait times: the role of the expanded practice physiotherapist. <i>Healthcare Quarterly</i> 2008; 11(2).</p>	<p>Article discussing the Hotel Dieu Hospital pilot utilizing physiotherapists in orthopaedic surgery and outpatient care.</p>	<p>The use of expanded practice physiotherapists has the potential to result in reduced costs, improved management strategies for orthopaedic patients, improved patient satisfaction, improved surgeon productivity and improved surgeon satisfaction.</p> <p>Physiotherapists have the musculoskeletal knowledge to make the same determination as the surgeon with respect to the need for surgery and there is value added for the patients in terms of the increased likelihood of referral to conservative management whether they require</p>

		<p>surgery or not.</p> <p>Possible solution to the looming crisis in orthopaedics in Canada.</p>
<p>Davis, A.M. et al. Access to Care for People with Arthritis – Enhancing Care Across the Continuum Using Advanced Practitioners/Extended Role Practitioners. Arthritis Community Research and Evaluation Unit, 2008.</p>	<p>A research paper discussing the use of extended scope practitioners (including physiotherapists) for the assessment, treatment and management of arthritis and other musculoskeletal disorders.</p>	<p>Canadian data indicate that musculoskeletal disorders, which include arthritis, are the second most costly group of diseases after cardiovascular disease.</p> <p>There is a deficiency in the primary care management of arthritis; models of care that incorporate extended scope practitioners have the potential to increase timely access to care.</p> <p>There are challenges to developing and implementing advanced practice roles: patients will need to be educated about who can deliver what care; health professions need to address turf protection, liability and funding mechanisms; there will be practitioners who resist expanded practice and those who will have to be supported as they gain additional competencies; academic centres will need to find ways to train to the new roles; regulators will need to clarify scopes; educators will need to evolve the curriculum to meet emerging needs; employers will need to address compensation for advanced practitioners, etc.</p> <p>Establishing a body of evidence related to process and outcome evaluation around expanded roles and new models of care is critical to supporting their development (data on outcomes is lacking).</p>
<p>Lundon, K. et al. Leading change in the transformation of arthritis care: development of an interprofessional academic-clinical education physiotherapy training model. Healthcare Quarterly 2008; 11(3): 59-65.</p>	<p>Article describing the Advance Clinician Practitioner in Arthritis Care Program hosted by St. Michael's Hospital and Sick Children's Hospital in Toronto, Ontario.</p>	<p>The ACPAC program is the first formally accredited university/hospital-based postgraduate academic and clinical training program offered on an extended basis to physical and occupational therapists in Canada.</p> <p>It is a novel, competency-based, rigorously evaluated advanced academic and clinical education program; delivered to selected experienced physical and occupational therapists to prepare them for expanded scope of practice roles for the treatment of arthritis patients in academic, non-academic and remote community healthcare settings.</p> <p>There is no literature on formal, competency-based standardized training programs for these expanded roles and no data that links trainee performance to patient outcomes.</p>

		The authors envision this program as a model for broader implementation, beyond the arthritis care programs that have emerged to respond to particular local needs.
Jibuike, O.O. et al. Management of soft tissue knee injuries in an accident and emergency department: the effect of the introduction of a physiotherapy practitioner. <i>Emergency Medicine Journal</i> , 2004; 20: 37-39.	A study of 100 consecutive patients seen over a three month period by the Acute Knee Screening Service (AKSS) of an emergency department, after the introduction of a physiotherapy practitioner to run this service. Comparisons were made with patients seen over a similar period before the introduction of the physiotherapist practitioner.	The physiotherapist was a valuable addition to the accident and emergency department: quality of care of acute knee injuries was improved, physicians' time was saved and cooperation among providers was fostered.  39 AKSS patients were referred to the trauma clinic. Of these, 19 had MRI requested by the physiotherapist but only 17 completed the MRI. Of those 17, 15 showed significant abnormality. 95% of patients were seen at AKSS within a week and 49% were treated and discharged without further review.  When people are trained to perform a specific role in a well organized set of protocols, there is both an increase in diagnostic efficiency and a reduction in management and clinic time.  Limitation: need a prospective randomized control trial to properly evaluate acute knee screening service against conventional methods for clinical and cost efficiency.
Pearse. E.O. et al. The extended scope physiotherapist in orthopaedic out-patients: an audit. <i>Annals of the Royal College of Surgeons of England</i> , 2006; 88: 653-655.	An audit of the activities of extended scope physiotherapists at Princess Royal Hospital.  All new patients (150) referred to the extended scope physiotherapist between July and December 2002 was included in the audit. Medical records were examined retroactively and a follow-up telephone survey was conducted to assess patient satisfaction.	Physiotherapists independently assessed 99 patients (66%), 82 were then managed independently while 17 were referred to a consultant's office for further management; consultant review was required for the remaining 51 cases, with most of those dealing with shoulder cases. General practitioners re-referred four cases to the clinic. Patient satisfaction rates were high; of those who were not satisfied, the majority had not seen a consultant.  This clinic had higher expectations with respect to the number of cases that could be independently managed by physiotherapists. The study concludes that even with a carefully designed triage protocol, it is unlikely that extended scope physiotherapists can function completely independently.

**HEALTH OUTCOMES, PATIENT SAFETY/ RISK OF HARM**

Authors, Title and Publication	Context/Type of Document	Main Findings/Recommendations
Robarts, S. et al. A	An article proposing a nine-	The model reconfigures traditional roles,

<p>framework for the development and implementation of an advanced practice role for physiotherapists that improves access and quality of care for patients. <i>Healthcare Quarterly</i> 2008; 11(2): 67-75.</p>	<p>step template for implementing advanced practice physiotherapy roles, based on the experience of the Sunnybrook Holland Orthopaedic and Arthritic Centre in Toronto, Ontario.</p>	<p>emphasizes team approaches to care; it has resulted in timely access, better assessment, better education of patients across the continuum and improved coordination and delivery of care.</p> <p>The Expert Panel for Hip and Knee Replacement Surgery, formed as part of the Ontario Wait Times Strategy, recommended the use of alternate care providers and new models of care to tackle the wait list crisis in orthopaedics.</p> <p>The Sunnybrook Holland Orthopaedic and Arthritic Hospital has seen promising results since the implementation of the advanced physiotherapy roles; enabling legislation is required but should not be a barrier to implementing such roles in hospitals.</p> <p>Cost-effectiveness of the advanced practice physiotherapist role has not been studied.</p>
<p>Ball, S.T.E. et al. Do emergency department physiotherapy practitioners, emergency nurse practitioners and doctors investigate, treat and refer patients with closed musculoskeletal injuries differently? <i>Emergency Medicine Journal</i>, 2007; 24(3): 185-188.</p>	<p>A retrospective case-note review to compare the investigation and management of patients with closed musculoskeletal conditions by emergency nurse practitioners, emergency department physiotherapy practitioners and physicians.</p>	<p>Overall investigation, monitoring and referral of patients with fractures or dislocations was similar in all clinician groups; no significant difference between the number of x-rays ordered by each type of clinician.</p> <p>With respect to soft tissue injuries, physiotherapists recorded giving the most detailed advice but this could be a function of the level of detail in documentation; also, prescribed or applied analgesia the least. Emergency department physiotherapy practitioners most likely to refer to follow-up physiotherapy.</p> <p>Lack of evidence on what effect these new roles have on service delivery or patient outcomes. Also in the future need to look more closely at cost-effectiveness.</p> <p>Limitations: a retrospective rather than a prospective study.</p>
<p>National Health Service (NHS) Service Delivery and Organization Programme, 2005.</p>	<p>Briefing paper summarizing a review of the literature evaluating extended practice in five allied health professions (occupational therapists, paramedics, physiotherapists, radiographers and speech language pathologists).</p> <p>Of 7000 possible sources, 355 contained information relevant to the topic and 22 were of</p>	<p>There is an urgent need to standardize training for extended practitioners and to carry out research evaluating health costs and effectiveness of extended practice.</p> <p>The lack of a common language to describe extended practice is a barrier to research in this area.</p> <p>There is concern on the part of medical practitioners regarding allied health professionals undertaking invasive tests and diagnosis.</p>

	<p>sufficient quality to be considered for data extraction.</p>	<p>Extended practice is being implemented haphazardly and in response to political need to reduce waiting lists rather than the need to improve health outcomes.</p> <p>With respect to physiotherapy: Trained physiotherapists are as competent at assessing orthopaedic outpatients as post-fellowship junior orthopaedic surgeons; patients seen by physiotherapists experienced higher satisfaction; costs were maintained because fewer x-rays and surgery referrals were ordered; physiotherapists' satisfaction working in orthopaedic clinics was dependent on the relationship they had with the physician consultant and medical team; their concerns focus on litigation, lack of confidence when using injection skills and the fact that advanced practice is only as good as the practitioner you hire.</p>
<p>Forster, A. and J. Young. The clinical and cost effectiveness of physiotherapy in the management of elderly people following a stroke. Chartered Society of Physiotherapy, UK, 2002.</p>	<p>A resource to assist physiotherapists in maximizing the opportunities to improve care that are part of the National Service Framework for Older People (England).</p> <p>The National Service Framework (NSF) sets national standards and designs service models for stroke.</p>	<p>Rehabilitation remains a cornerstone of treatment for patients after stroke; physiotherapy plays a big role; it is difficult to quantify the "value added" of a particular physiotherapy intervention.</p> <p>Early commencement of rehabilitation is recommended (within 24 hours), although evidence of the effectiveness of this is sparse; there is a positive link between intensity of therapy and improved outcome, though most patients get limited physiotherapy; physiotherapists also have a role in managing post-stroke complications and risks, i.e., shoulder pain and falls.</p> <p>The paper discusses the role of physiotherapy at all stages of stroke recovery well into long-term recovery, and includes the psychosocial aspect of treating patients recovering from stroke.</p>
<p>Childs, J.D. et al. A description of physiotherapists' knowledge in managing musculoskeletal conditions. Musculoskeletal Disorders, 2005; 6:32.</p>	<p>A research paper to determine physiotherapist' knowledge in managing musculoskeletal conditions.</p> <p>Study used a cross-sectional design in which 174 PT students from randomly selected programs and 182 experienced PTs completed an examination assessing knowledge in managing musculoskeletal conditions; the same exam previously used to assess the same knowledge among medical students, interns and residents across a</p>	

	variety of specialties.	
Schreiber, J. and P. Stern. A review of the literature on evidence-based practice in physical therapy. The Internet Journal of Allied Health Sciences and Practice, 2004.		Lack of literature on evidence-based practice in physiotherapy to guide practice; most physiotherapists rely on entry to practice education and many base clinical decisions on sources other than scientific evidence; there is a profound need to enhance all physiotherapists' understanding and use of scientific evidence to guide day-to-day decisions in their practice so as to improve patient outcomes.