

# Barriers to Rehabilitation in Primary Health Care in Ontario: Funding and Wait Times for Physical Therapy Services

Cheryl A. Cott, Rachel M.A. Devitt, Laura-Beth Falter, Leslie J. Soever, and Laura A. Passalent

## ABSTRACT

**Purpose:** The purpose of this study was to examine barriers to accessing physical therapy (PT) services in Ontario primary health care with respect to funding sources and wait times.

**Methods:** A stratified random sample of 1100 registered Ontario PTs and 3000 Ontario family physicians were surveyed by mail in 2004. Relationships were examined between PT wait times, funding source, geographical region and caseload composition.

**Results:** Physicians identified the cost of private rehabilitation and long wait times as the most common barriers to referring patients to rehabilitation. Wait times for PT were longer in publicly funded settings than in privately funded practice settings ( $p < 0.001$ ) and in the North ( $p < 0.001$ ) and East ( $p = 0.010$ ) regions of Ontario compared with the most urban region of Ontario. Patients with chronic musculoskeletal conditions, cardiopulmonary conditions and general debility were at least three times more likely to receive PT services at publicly funded than privately funded practice settings. Furthermore, patients with acute musculoskeletal conditions were less likely to receive PT services in publicly funded practice settings (odds ratio = 0.11, 95% confidence interval = 0.05-0.23).

**Conclusions:** Current Ontario health-care structures may affect access to PT services for vulnerable populations such as those with chronic conditions, those lacking private health insurance and those living in less urban regions of Ontario.

**Key words:** health services accessibility, physical therapy (specialty), primary health care, rehabilitation, waiting lists

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## RÉSUMÉ

**Objectif:** L'objectif de cette étude était d'examiner les obstacles à l'accès aux services de physiothérapie dans le cadre des soins de santé primaires en Ontario, notamment les sources de financement et les périodes d'attente.

**Méthodologie:** Une enquête postale a été menée en 2004 auprès d'un échantillon stratifié choisi au hasard de 1100 physiothérapeutes enregistrés en Ontario et de 3000 médecins de famille en Ontario. La relation existant entre les périodes d'attente pour les services de physiothérapie, les sources de financement, la région géographique et la composition de l'ensemble des cas a été examinée.

**Résultats:** Les médecins ont identifié le coût de la réadaptation privée et les longues périodes d'attente comme les obstacles les plus fréquents à l'orientation des patients vers la réadaptation. Les périodes d'attente pour la physiothérapie étaient plus longues dans les

Cheryl A. Cott, PhD, PT: *Senior Scientist, Arthritis Community Research and Evaluation Unit, Toronto, Ontario; Associate Professor, Department of Physical Therapy, University of Toronto, Toronto, Ontario.*

Rachel M.A. Devitt, BA, BHSc, MSc, OT Reg (Ont): *Research Associate, Arthritis Community Research and Evaluation Unit, Toronto, Ontario.*

Laura-Beth Falter, BScPT, MSc: *Research Associate, Arthritis Community Research and Evaluation Unit, Toronto, Ontario.*

Leslie J. Soever, BScPT, MSc: *Research Associate, Arthritis Community Research and Evaluation Unit, Toronto, Ontario.*

Laura A. Passalent, BScPT, MHSc: *Research Associate, Arthritis Community Research and Evaluation Unit, Toronto, Ontario.*

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*Address for correspondence: Cheryl A. Cott, Associate Professor, Department of Physical Therapy, Faculty of Medicine, University of Toronto, 500 University Avenue, Toronto, ON M5G 1V7; Tel: 416-978-0301; Fax: 416-346-8562; E-mail: cheryl.cott@utoronto.ca.*

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établissements recevant un financement publique que dans ceux recevant un financement privé ( $p < 0,001$ ) et dans les régions du nord ( $p < 0,001$ ) et de l'est ( $p = 0,010$ ) de l'Ontario comparativement à la région la plus urbaine d'Ontario. Il était au moins trois fois plus probable que les patients souffrant d'affections musculosquelettiques chroniques, d'affections cardiopulmonaires et de débilité générale reçoivent des services de physiothérapie dans un établissement recevant des fonds publiques que dans un établissement recevant des fonds privés. De plus, il était moins probable que les patients souffrant d'affections musculosquelettiques aiguës reçoivent des services de physiothérapie dans des établissements financés par des fonds publiques (probabilité = 0,11, 95% IC = 0,05-0,23).

**Conclusions:** Les structures actuelles des services de santé en Ontario peuvent affecter l'accès aux services de physiothérapie pour les populations vulnérables telles que celles atteintes d'affections chroniques, celles n'ayant pas d'assurance de santé privée et celles vivant dans des régions moins urbaines de l'Ontario.

**Mots clés:** accessibilité aux services de santé, listes d'attente, physiothérapie (spécialité), réadaptation, soins de santé primaires

The challenge of how to organize and deliver primary health-care services is one of the key issues facing Canadian health policy.<sup>1</sup> Factors such as an aging population, an increase in the prevalence of chronic diseases, a shift in the delivery of health care from the hospital to the community and an acute shortage of family physicians are placing increased demands on the delivery of primary health-care services in Canada. Primary health care refers to the point of first contact that a patient has with the health-care system and represents an approach to providing care that emphasizes health promotion and illness prevention and includes diagnosis, treatment and linkage to specialized care.<sup>2</sup> Family physicians play a major role in the co-ordination and provision of primary health-care services, and, more recently, nurse practitioners have started to play a significant role. Rehabilitation professionals, such as physical therapists (PTs) and occupational therapists (OTs), are key members of the interdisciplinary health-care team and can be an important resource for primary health-care physicians and nurse practitioners.

Eldar argued that primary health-care teams need to integrate rehabilitation into their day-to-day work, offer rehabilitation services in the primary health-care environment and co-ordinate disability services at the community level.<sup>3</sup> Research suggests that establishing rehabilitation services in primary health-care settings could result in several positive outcomes, including lower costs than for services offered at hospitals or large health-care clinics,<sup>3-5</sup> decreased wait times for services,<sup>4-7</sup> increased levels of satisfaction with services among patients and primary health-care physicians,<sup>7-9</sup> shorter travel time for patients,<sup>3</sup> greater continuity of care for people with disabilities<sup>3</sup> and improved client-related outcomes, such as quality of life, exercise tolerance and health status.<sup>7-9</sup>

Despite the potential benefits of interdisciplinary models of primary health-care delivery and government policy aimed at investing in primary health care, relatively little has been reported regarding the role and status of

rehabilitation in primary health care in Ontario. Most evidence with respect to primary health care and rehabilitation has been produced in the United Kingdom.<sup>10-14</sup> Research suggests that physicians underuse the rehabilitation services that currently exist, particularly in the care of the elderly and those with chronic conditions.<sup>15-18</sup> Previous literature suggests that issues around accessing rehabilitation services owing to funding and wait times are of particular concern.<sup>17,19,20</sup>

This article reports on key findings of a province-wide survey of physicians, nurse practitioners, OTs and PTs that addressed rehabilitation and primary health care. The purposes of this study were to address major barriers (cost and wait times) to rehabilitation and primary health care as identified by Ontario physicians and to examine the relationships between PT caseload composition, funding source, wait times for PT and geographical region. Specifically, we addressed the following research questions: (1) What is the availability of rehabilitation services from physicians' perspectives? (2) What are the referral patterns of physicians to PTs? (3) What do Ontario physicians and PTs perceive to be the major barriers to rehabilitation and primary health care? (4) What types of clinical conditions are most commonly seen by PTs in the community? (5) Is there a relationship between PT caseload composition and funding source? (6) What are the relationships between PT wait times and funding source and PT wait times and geographical location?

## REVIEW OF THE LITERATURE

Provision of outpatient rehabilitation services has evolved rapidly over the past decade.<sup>21</sup> Many of the articles reviewed, particularly those from the United Kingdom, examined the recent trend toward shifting rehabilitation services from secondary care locations, such as hospital outpatient departments, to primary health-care sites, such as family physician practices and health centres.<sup>4-9,11,21,22</sup>

Findings from these studies indicate that establishing rehabilitation services in primary health-care settings can result in several positive outcomes, including increased levels of satisfaction with service among patients and primary health-care physicians,<sup>7-9</sup> decreased wait times for services,<sup>4-7</sup> increased cost-effectiveness when compared with hospital-based services,<sup>4,5</sup> reduced referral rates to specialists<sup>11</sup> and improved patient-related outcomes, such as quality of life, exercise tolerance and health status.<sup>7-9,22</sup>

Rehabilitation services in primary health care are particularly important for the treatment of people with chronic conditions, such as arthritis, chronic low back pain and pulmonary disease.<sup>8,9,22-24</sup> Information regarding the types of clinical populations currently being treated by rehabilitation professionals in primary health care is limited. However, available evidence suggests that most patients are elderly<sup>7</sup> and experience chronic musculoskeletal disorders, such as osteoarthritis and rheumatoid arthritis (RA).<sup>7,25</sup>

The literature suggests that primary health-care physicians underuse rehabilitation services, particularly in the care of the elderly and those with chronic conditions.<sup>15,16,18</sup> A mail survey of a random sample of family physicians in Ontario found that primary care physicians' referral rates to rehabilitation professionals were very low, with only 38.6% of the physicians surveyed referring clients with early RA to PT and only 13.6% referring to OT.<sup>16</sup> Although reported referral rates were significantly higher for persons with late RA, they were still much lower than those recommended by the panel (67.1% for PT and 44.8% for OT). In another study, 68% of the general practitioners surveyed felt that waiting lists for PT were too long.<sup>13</sup>

A potential advantage of increasing referral rates from primary health-care physicians to PT is a possible decrease in the number of inappropriate referrals to specialists, such as orthopedic surgeons and rheumatologists.<sup>11</sup> Primary health-care physicians may rely on specialists, such as rheumatologists, for subsequent referrals to OT and PT.<sup>16</sup> However, two systematic reviews concluded that accessing PT through a specialist instead of a primary health-care physician led to significant increases in wait times, greater inconvenience and higher costs for the patient and higher costs for the health-care system in terms of cost per patient.<sup>12,21</sup> In addition, patients appeared to be significantly more satisfied with PT services if they accessed these services sooner rather than later, even if early access simply involved receiving advice over the telephone.<sup>14</sup>

In summary, there is a lack of Canadian literature regarding the status of rehabilitation services in primary

health care. Second, primary health-care physicians tend to underuse the rehabilitation services that currently exist. However, there is no clear understanding of why primary health-care physicians do or do not refer their patients to rehabilitation therapists. Research is needed to examine the potential opportunities and challenges related to direct access to rehabilitation, particularly given the potential resource and cost benefits of such access.

## METHODS

The study was conducted in two phases. Phase 1 involved interviewing eight key informants who were known experts and in a position to inform our study about primary health care and rehabilitation in Ontario. The key informant interviews were used to help guide sampling strategies and development of questionnaires for phase 2, which consisted of a mailed questionnaire to a sample of physicians, nurse practitioners, PTs and OTs working in primary health-care settings in Ontario. This article focuses on the phase 2 results for the physicians and PTs. Therefore, sampling and recruitment are described only for these two groups. The results from phase 1 of the study can be found elsewhere.<sup>26</sup>

Physicians were sampled from a mailing list of 6617 Ontario members of the College of Family Physicians of Canada. Physicians were eligible if they provided primary health-care services to adults or older adults in Ontario. PTs were sampled from a mailing list from the College of Physiotherapists of Ontario (CPO) based on specific criteria available in the 2003 CPO Annual Registration Form. Eligibility criteria for PTs included providers of direct patient care or consultation, caseloads composed mainly of adults or older adults and primary place of employment in The Arthritis Society, Community Care Access Centre/home care program, Community Health Centre, consulting firm/agency, home visiting agency, hospital outpatient department or private practice/clinic. These criteria resulted in a mailing list of 1306 PTs.

A stratified random sample proportional to the number of physicians and PTs in the 16 District Health Council regions was selected from the target sample to ensure representation across Ontario. To ensure an adequate number of completed questionnaires, we surveyed 3000 physicians and 1100 PTs (assuming response rates of 20% for physicians and 40% for PTs).

Using a three-stage process, two survey instruments were developed for the study. The first stage included a review of the literature and interviews with key informants, providing data on the areas considered most important to

address. The second stage involved obtaining consensus among investigators for inclusion of items in the questionnaire. In the third stage, the questionnaires were pre-tested with five key informants for clarity and relevance of the questions. The physician version of the questionnaire consisted of questions in five areas: perceived availability of rehabilitation (OT and PT) services, physician referral patterns to PT, frequency and type of communication with PTs, perceived barriers to referring patients to rehabilitation services (OT and PT) and type of practice setting. The PT version of the questionnaire consisted of questions in nine areas, of which this article addresses six: proportion of caseload by diagnostic condition; length of wait time for patients; funding source for practice setting; type of practice setting; frequency and type of communication with physicians; and perceived barriers to primary care rehabilitation.

## Measures

### *Availability of Rehabilitation Services*

Physicians were asked to specify the availability of rehabilitation settings in their community as either available, not available or don't know.

### *Physician Referral Patterns*

Physicians were asked to indicate the percentage of their referrals to OT and PT that consisted of acute musculoskeletal, chronic musculoskeletal, neurological, cardiopulmonary, mental health, chronic medical conditions and general debility.

### *Practice Setting*

Physicians and PTs were asked to identify the type of settings or sites where they worked. Practice settings for physicians included private practice, Ontario Family Health Networks, health service organizations, community health centres, Northern Group Funding Plan/community-sponsored contract and other. Practice settings for PTs included private practice, hospital outpatient departments, The Arthritis Society Consultation and Rehabilitation Services, community care access centres, community health centres and other.

### *Barriers to Referral to Rehabilitation*

Physicians were asked to identify which of the following barriers they had experienced: wait times, availability,

proximity, satisfaction and cost. PTs were asked to identify which of the following barriers they had experienced: physician as gatekeeper, public/physician lack of awareness of rehabilitation, physician fee-for-service or lack of evidence for rehabilitation in primary health care. The lists of barriers were derived from the key informant interviews.

### *PT Caseload Composition*

PTs were asked to indicate what percentage of their practice consisted of patients with conditions categorized as acute musculoskeletal, chronic musculoskeletal, neurological, cardiopulmonary, mental health, chronic medical conditions and general debility. For analysis, the caseload composition variable was dichotomized to whether PT caseloads consisted of none or at least a few of these conditions.

### *Wait Times for PT Services*

PTs were asked to indicate the approximate time in days from when a PT receives a referral to the first patient appointment.

### *PT Funding Source*

PT employment settings were categorized as publicly funded, privately funded or a mix of both private and public funding. Analyses were conducted only for private and public funding sources because of insufficient cell sizes for mixed funding sources.

### *Geographical Region*

The 16 District Health Council regions for which the samples were stratified were collapsed to the seven Ontario Ministry of Health and Long-Term Care Planning regions (Toronto, Central East, East, North, South West, Central South and Central West).

## Data Collection

Questionnaires, information letters and prepaid-mail, return envelopes were sent to participants in March 2004 with a final return cut-off date of May 31, 2004. The study protocol was approved by the University Health Network Research Ethics Board, Toronto, Ontario.

## Data Analysis

Data from the questionnaires were summarized using descriptive statistics to address the first four research questions: (1) What is the availability of rehabilitation services from physicians' perspectives? (2) What are the referral patterns of physicians to PTs? (3) What do Ontario physicians and PTs perceive to be the major barriers to rehabilitation and primary health care? (4) What types of clinical conditions are most commonly seen by PT service providers in the community? The fifth research question, addressing the relationship of funding source to PT caseload composition, was analyzed using logistic regression. The final research question, addressing the relationship between wait times for PT and geographical region, was analyzed using multiple linear regression (adjusting for funding type) after a logarithmic transformation was applied to the original data to adjust for positively skewed wait time distribution. For this analysis, the Toronto region was chosen as the reference category as it is the most populated region in Ontario. For all analyses, an alpha level of  $p < 0.05$  was considered significant. The sample was weighted to adjust for non-response within the 16 District Health Council regions by which the sample was stratified. Weights were calculated by dividing the number of PTs in each region by the sample size obtained for that particular region. Details regarding the weighting strategy can be found elsewhere.<sup>27</sup> Data were analyzed using Statistical Analysis Systems (SAS Institute, Cary, N.C.), version 8.2. Box plots were generated using SPSS 13.0 for Windows (SPSS Inc., Chicago, Ill.).

## RESULTS

Of the 3000 questionnaires mailed to physicians, 735 returned were eligible and 283 ineligible, for a response rate of 33.9%. Of the 1100 questionnaires mailed to PTs, 574 returned were eligible and 39 ineligible (response rate of 55.7%). Ineligible respondents indicated on the questionnaire that they did not currently provide primary health-care services to adults or older adults in Ontario. Thirty-three of the 574 PT responses were removed owing to missing values and outliers. Therefore, analyses were based on responses from 735 physicians and 541 PTs.

Over 80% of all physicians who responded to the survey worked in either private practice (58.8%) or Ontario Family Health Networks (22.9%). The remaining physicians reported working in community health centres (4.3%), health-service organizations (3.1%), Northern Group Funding Plans (2.0%) or other settings (8.6%),

such as university student health clinics. Over three-quarters (76.9%) of PTs who responded worked in private practices or clinics, 15.4% in community care access centres or contracted to these centres and 3.3% in hospital outpatient departments. Of those working in private practices/clinics, most (84.5%) are privately funded. The remaining 4.5% of PTs reported working in other settings, such as The Arthritis Society Consultation and Rehabilitation Services, community health centres and nursing homes.

More than half (57.6%) of physicians reported using written notes most of the time, and 42.0% reported using the telephone some of the time to communicate with rehabilitation professionals regarding their patients. Face-to-face communication and electronic mail were much less common methods of communication. The PTs reported similar communication patterns with physicians.

### What Is the Availability of Rehabilitation Services from the Physicians' Perspectives?

The large majority of physicians reported that the following rehabilitation services were available in their community: private practices/clinics (92.4%), community care access centres (90.8%) and hospital outpatient departments (79.1%). Almost one-third (30.8%) of physicians reported that rehabilitation services were not available in community health centres in their area. A large proportion (43.4%) of physicians did not know whether The Arthritis Society Consultation and Rehabilitation Services were available in their community.

Physicians' reports of available rehabilitation services in their community were examined in relation to the Ontario Ministry of Health and Long-Term Care planning regions. Availability of private practices/clinics and day hospitals was higher in all regions compared with the North region; hospital outpatient departments were more available in the North and South West regions compared with Toronto, Central South and East regions and The Arthritis Society Consultation and Rehabilitation Services were higher in the South West and Toronto regions compared with the Central East and North regions.

### What Are the Referral Patterns of Physicians to PTs?

Physicians most commonly referred patients with acute musculoskeletal (e.g., soft-tissue injuries, fractures), chronic musculoskeletal (e.g., arthritis, low back pain) and neurological conditions. Approximately 70% reported referring some (25-74%) of their patients with acute and chronic

musculoskeletal conditions, and approximately one-third reported referring almost all (75+%) of their patients with neurological conditions to PTs. PTs reported that they received the largest proportions of their referrals from physicians and walk-ins/self-referrals. Approximately one-half of PTs received some (25-74%) of their referrals from these two sources. Less than one-quarter received some (25-74%) of their referrals from nurse practitioners and other health-care professionals (e.g., social workers, PTs, case managers).

### **What Do Ontario Physicians and PTs Perceive as the Major Barriers to Rehabilitation and Primary Health Care?**

Most physicians (92.6%) identified at least one barrier to referring patients to rehabilitation. The most frequently identified barrier was the cost of private rehabilitation (85.6%), followed by unacceptably long wait times for rehabilitation (64.0%). Approximately one-quarter (25.3%) of physicians reported difficulty in locating available rehabilitation services. Less than 10 percent (9.8%) indicated that they were not satisfied with the rehabilitation services that their patients have received, and only 6.4% indicated that there were no rehabilitation services in close proximity to their patients.

Respondents were also given the opportunity to provide written comments on other barriers to referring patients to rehabilitation. The majority of comments were related to issues surrounding access to and the quality of publicly funded rehabilitation services. For example, with regard to access, one physician commented:

As a physician, I can appreciate the effectiveness of PT/OT over meds in many situations. It saddens me the lack of availability of publicly funded PT/OT and the horrendous waits for the few locations that offer it.

Almost three-quarters (74.1%) of PTs identified at least one barrier to providing rehabilitation in primary health-care settings. The most common barrier was related to the perception that physicians are the “gatekeepers” of the health-care system. The second and third most commonly reported barriers were related to public lack of awareness and physicians’ and/or nurse practitioners’ lack of awareness of the scope of practice and/or role of rehabilitation. Few PTs identified physicians’ fee-for-service compensation or lack of evidence demonstrating the effectiveness of rehabilitation in primary health care as barriers.

To examine the two major barriers identified by Ontario physicians further, we analyzed the PT data with respect to caseload composition, funding source, geographical location and wait times to answer the following question: Are there differences in access to PT services in the community according to clinical condition, funding source and geographical location?

### **What Types of Clinical Conditions Are Most Commonly Seen by PT Service Providers in the Community?**

The most common clinical conditions for patients seen by PTs in the community were acute and chronic musculoskeletal conditions. Of the PTs surveyed, 50% reported that acute musculoskeletal conditions (e.g., soft-tissue injuries, fractures) represented most or almost all of the patients seen in their practice. Almost 40% (39.7%) reported that most or almost all of their practice is composed of patients with chronic (e.g., arthritis) musculoskeletal conditions. For each of the remaining diagnostic conditions (neurological, cardiopulmonary, mental health, chronic medical conditions and general debility), fewer than 6% of PTs reported that any of these conditions comprised most or almost all of their caseload. Caseload composition was also examined in relation to the Ontario Ministry of Health and Long-Term Care planning regions. PTs in the North were significantly more likely to have caseloads including cardiopulmonary conditions, chronic medical conditions and general debility than PTs in other regions.

### **Is There a Relationship between PT Caseload Composition and Funding Source?**

Table 1 shows the likelihood of PT caseload composition in a publicly funded clinical setting. These adjusted odds ratios have been generated using logistic regression. In other words, the table is presenting the odds of persons with a certain condition being seen in a publicly funded clinic divided by the odds of persons with that same condition being seen at a privately funded clinic, adjusting for the fact that other conditions are being seen at both of these settings. Patients with acute musculoskeletal conditions were much less likely to receive PT services in publicly funded practice settings, whereas patients with chronic musculoskeletal conditions or general debility were approximately four times more likely to receive PT services in publicly funded practice settings than in privately funded practice settings. Furthermore, patients

**Table 1.** Logistic Regression Analyses Examining the Likelihood of Physical Therapists' Caseload Composition Being Seen in a Publicly Funded Clinical Setting

<i>Caseload Composition</i>	<i>Odds Ratio*</i>	<i>95% Confidence Interval</i>
Acute musculoskeletal	<b>0.11</b>	<b>0.05-0.23</b>
Chronic musculoskeletal	<b>4.05</b>	<b>1.42-11.60</b>
Neurological	1.24	0.82-1.87
Cardiopulmonary	<b>8.87</b>	<b>5.49-14.33</b>
Mental health	0.73	0.43-1.22
Chronic medical	1.23	0.76-1.99
General debility	<b>3.78</b>	<b>2.52-5.67</b>

\*Odds ratio is presented as the odds of having the condition in a publicly funded clinical setting divided by the odds of having the condition in a privately funded clinical setting.

Odds ratios in **bold** denote significant findings based on the 95% confidence interval (i.e., the confidence interval does not include 1).

with cardiopulmonary conditions were almost nine times more likely to receive PT services in publicly funded practice settings than in privately funded practice settings.

#### **What Are the Relationships between PT Wait Times and Funding Source and PT Wait Times and Geographical Location?**

The median reported wait time for PT services was 2.5 days (minimum-maximum = 1-150 days). Eighty-four percent of PTs reported a wait time of seven days or less. However, wait times were significantly longer in publicly funded than in privately funded practice settings (Table 2).

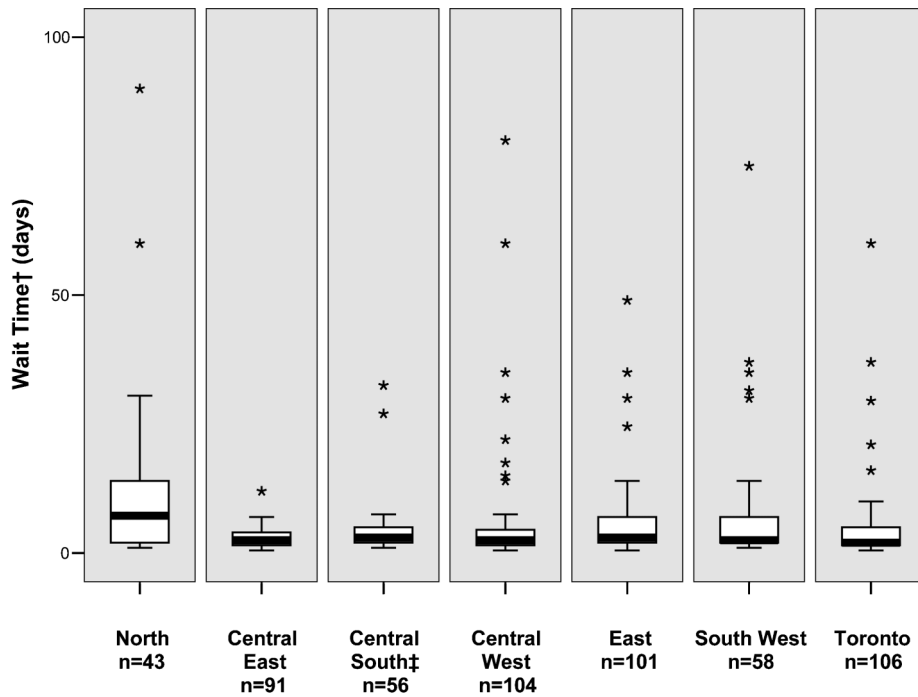
Figure 1 displays the distribution of PT wait times by Ontario Ministry of Health and Long-Term Care planning region using box and whisker plots. Box and whisker plots are a useful way of displaying data that are not normally distributed. The thick black line inside the box reflects the median wait time and indicates that half of the data fall above this line and half fall below. The lower and upper outlines of the box represent the 25th and 75th percentile wait times, respectively. The whiskers extending from both ends of the box are 1.5 times the interquartile range (75th percentile minus the 25th percentile) from the median. The asterisk denotes extreme values. Using the North region as an example, the median wait time is 7.25

days (thick black line inside the box), indicating that 50% of respondents reported a wait time up to 7.25 days. The 25th and 75th percentiles (lower and upper outlines of the box) are 2 and 14.25 days, respectively. The upper whisker represents a wait time of 26 days, and the lower whisker represents a wait time of 1 day as whiskers cannot be drawn farther than the minimum or maximum values. The most extreme wait time for the North region is 90 days.

Table 3 contains the results of the multiple linear regression analysis of regional PT wait times, adjusting for funding source (publicly or privately funded clinical settings). A positive regression coefficient represents a longer wait time for that region when compared with Toronto. A negative regression coefficient represents a shorter wait time. The actual magnitude of the difference is not discernable from the regression coefficients as the wait times were logarithmically transformed to normalize the data. Regions with regression coefficients and a corresponding  $p$  value  $< 0.05$  were considered to be significantly different from Toronto. The results indicate that the East ( $p = 0.010$ ) and North ( $p < 0.001$ ) regions of Ontario have significantly longer wait times than Toronto when adjusted for funding source. It should be noted from Figure 1 that although the South West region has a distribution of wait times similar to that of the East region, it was not significantly different from

**Table 2.** Physical Therapy Wait Times by Funding Source

<i>Funding Source</i>	<i>N</i>	<i>Mean (days)</i>	<i>95% Confidence</i>			
			<i>Interval</i>	<i>10th Percentile</i>	<i>Median</i>	<i>90th Percentile</i>
Publicly funded	143	12.58	9.37-15.79	1.5	6.0	30.5
Privately funded	354	3.48	2.85-4.11	1.0	2.0	7.0



**Figure 1.** Box plot describing physical therapy wait times by Ontario Ministry of Health and Long-Term Care planning region. The thick black line inside the box reflects the median wait time and indicates that half of the data falls above this line and half falls below. The lower and upper outlines of the box represent the 25th and 75th percentile wait times, respectively. The asterisk denotes extreme values.

**Ontario Ministry of Health and Long-Term Care Planning Regions, 2004**

†Wait time was defined as the approximate time in days from when a PT receives a referral to the first appointment the client attends.  
‡One outlier=150 days not shown

Toronto’s. This is likely due to a difference in sample size between the two regions.

**DISCUSSION**

This study provides preliminary information on two factors identified by Ontario physicians as important barriers to access to rehabilitation in primary health care:

funding and wait times for rehabilitation services. Our analyses illustrate that access to PT services in the community is related to a combination of clinical condition, funding source and geographical location. Our findings have implications for the future role of PT in primary health-care delivery in Ontario.

The large majority of community PT in Ontario is delivered in private practices/clinics (usually privately

**Table 3.** Multilinear Regression Analysis of Physical Therapy Wait Times\* and Health Planning Region, Adjusted for Funding Source

Variable	Regression Coefficient	Standard Error	p Value
<b>Region</b>			
Toronto (reference)	0.00	0.00	NA
North	<b>0.612</b>	<b>0.17</b>	< <b>0.001</b>
Central East	-0.060	0.12	0.63
Central South	-0.02	0.14	0.90
Central West	0.06	0.12	0.63
East	<b>0.31</b>	<b>0.12</b>	<b>0.010</b>
South West	0.23	0.13	0.08
<b>Funding source</b>			
Private (reference)	0.00	0.00	NA
Public	0.97	0.09	< 0.001

NA = not applicable.

\*A logarithmic transformation was applied to the original wait time data to adjust for a positively skewed distribution. Regression coefficients presented in **bold** denote significant findings.

funded), hospital outpatient departments and community care access centre settings. In contrast, the large majority of primary health-care physicians work in fee-for-service, private practices or Ontario Family Health Network settings. One of the few primary health-care settings in which PTs work directly with physicians is the Community Health Centre. However, a limited number of rehabilitation professionals are employed by such centres in Ontario. At the time of this study, only 6.4 full-time equivalent (FTE) PTs (R. Dimopoulos, personal communication, June 16, 2004) were employed by the 54 community health centres in Ontario. Further, physicians and PTs in this study reported little direct contact with one another, mainly communicating through written notes. These findings raise red flags as to the challenges of developing interprofessional teams (one of the hallmarks of primary care reform) given that doctors and PTs in the community rarely work in the same location and have little direct communication.

We found significant variability in availability of rehabilitation services across regions in Ontario. In particular, physicians reported less availability of The Arthritis Society Consultation and Rehabilitation Services and private practices/clinics in the North compared with other regions. Furthermore, a considerable number of physicians did not know if The Arthritis Society Consultation and Rehabilitation Services were available in their community. This is an important finding given that physicians are the major referral source to PTs and patients with chronic musculoskeletal conditions, such as arthritis, comprise one of the largest proportions of PTs' caseloads. These results raise concerns about the availability of primary health-care rehabilitation in Northern Ontario communities and the potential lack of referrals from physicians to The Arthritis Society Consultation and Rehabilitation Services, where available.

We found that patients with chronic musculoskeletal conditions, cardiopulmonary conditions or general debility are much more likely to receive PT services in publicly funded than privately funded practice settings. These findings are timely given recent health-care reforms and restructuring initiatives in Ontario that have resulted in an increasing proportion of rehabilitation costs being transferred to patients and private insurers.<sup>28</sup> Our study was conducted prior to the partial delisting of Schedule 5 PT clinics from the Ontario Health Insurance Plan in March 2004. One can assume that the partial delisting has further shifted the proportion of costs to private insurers and patients and may have had a

significant impact on wait times for PT services. For example, the delisting of PT services in British Columbia in 2002 resulted in "a 28% decrease in the number of patients accessing community-based care, and reports of patients ending treatment prematurely."<sup>29</sup> Other anticipated outcomes include reduced access to needed PT for vulnerable populations and for the clinical populations identified in this study who were more likely to receive PT services in publicly funded settings (e.g., those with chronic conditions).

Although Ontario physicians identified unacceptably long wait times as a major barrier to primary care and rehabilitation, the majority of Ontario PTs reported wait times of less than one week from receipt of referral to a patient's first visit. However, when wait times were examined in relation to funding source and geographical region, we found that wait times for PT were significantly longer in publicly funded than in privately funded practice settings and in the North and East regions compared with Toronto. Given that most patients with chronic conditions are seen in publicly funded settings and that PT caseloads in the North are more likely to be composed of clients with chronic conditions, these combined findings suggest that the current structure of delivery of PT services in the community in Ontario disadvantages vulnerable populations, such as those with chronic conditions, those lacking private health insurance and those living in less urban regions of Ontario. Recently, the Ontario government announced the creation of Family Health Teams (FHTs). FHTs offer co-ordinated primary health care by different health-care providers that are responsive to the needs of the community in which the FHT is located.<sup>30</sup> FHTs may provide an opportunity for greater involvement of PTs in primary health care.

One limitation of this study was the variability in non-response for some regions for which the sample was stratified. However, weighting the sample helped limit the degree to which non-response would compromise the generalizability of the results. Another limitation was the lack of more specific data on wait times for acute and non-acute conditions and the use of self-report to collect data on wait times for PT. Despite these limitations, this study provides one of the first overviews of the status of adult rehabilitation and primary health care across the province of Ontario. Our results also provide preliminary data on which to build future research examining the provision of rehabilitation in primary health care to help ensure access to quality primary health care for Ontarians needing rehabilitation services.

## KEY MESSAGES

### What Is Already Known on This Subject

To date, there is limited understanding of the opportunities and barriers to accessing rehabilitation services in primary health care within the context of the Canadian health-care system.

### What This Study Adds

Our study suggests that current health-care structures within the province of Ontario may affect access to physiotherapy services for vulnerable populations such as those with chronic conditions, those lacking private health insurance and those living in less urban regions of the province.

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## REFERENCES

- Canadian Institute for Health Information. Health care in Canada. Ottawa: Canadian Institute for Health Information; 2003.
- Ontario Ministry of Health and Long-Term Care. Primary health care transition fund project 2003. Ontario Ministry of Health and Long-Term Care 2003 [cited 2004 Mar 12]. Available at: [http://www.health.gov.on.ca/english/providers/project/phctf\\_mn.html](http://www.health.gov.on.ca/english/providers/project/phctf_mn.html).
- Eldar R. Integrated institution—community rehabilitation in developed countries: a proposal. *Disabil Rehabil*. 2000;22:266-74.
- Hackett GI, Hudson MF, Wylie JB, Jackson AD, Small KM, Harrison P, et al. Evaluation of the efficacy and acceptability to patients of a physiotherapist working in a health centre. *Br Med J (Clin Res Ed)*. 1987;294:24-6.
- Hackett GI, Bundred P, Hutton JL, O'Brien J, Stanley IM. Management of joint and soft tissue injuries in three general practices: value of on-site physiotherapy. *Br J Gen Pract*. 1993;43:61-4.
- Stanley I, Miller J, Pinnington M, Rose G, Rose M. Uptake on prompt access physiotherapy for new episodes of back pain presenting in primary care. *Physiotherapy*. 2001;87:60-7.
- Tyrrell J, Burn A. Evaluating primary care occupational therapy: results from a London primary health care center. *Br J Ther Rehabil*. 1996;3:380-5.
- Bingisser RM, Joos L, Fruhauf B, Caravatti M, Knoblauch A, Villiger PM. Pulmonary rehabilitation in outpatients with asthma or chronic obstructive lung disease. A pilot study of a "modular" rehabilitation programme. *Swiss Med Wkly*. 2001;131:407-11.
- Jones RC, Copper S, Riley O, Dobbs F. A pilot study of pulmonary rehabilitation in primary care. *Br J Gen Pract*. 2002;52:567-8.
- Hay EM, Thomas E, Paterson SM, Dziedzic K, Croft PR. A pragmatic randomised controlled trial of local corticosteroid injection and physiotherapy for the treatment of new episodes of unilateral shoulder pain in primary care. *Ann Rheum Dis*. 2003;62:394-9.
- O'Cathain A, Froggett M, Taylor MP. General practice based physiotherapy: its use and effect on referrals to hospital orthopaedics and rheumatology outpatient departments. *Br J Gen Pract*. 2006;45:352-4.
- Robert G, Stevens A. Should general practitioners refer patients directly to physical therapists? *Br J Gen Pract*. 1997;47:314-8.
- Roberts C, Adebajo AO, Long S. Improving the quality of care of musculoskeletal conditions in primary care. *Rheumatology (Oxford)*. 2002;41:503-8.
- Taylor S, Ellis I, Gallagher M. Patient satisfaction with a new physiotherapy telephone service for back pain patients. *Physiotherapy*. 2002;88:635-57.
- Chapman KR, Bourbeau J, Rance L. The burden of COPD in Canada: results from the Confronting COPD survey. *Respir Med*. 2003;97 Suppl C:S23-31.
- Glazier RH, Dalby DM, Badley EM, Hawker GA, Bell MJ, Buchbinder R, et al. Management of the early and late presentations of rheumatoid arthritis: a survey of Ontario primary care physicians. *CMAJ*. 1996;155:679-87.
- Li L, Bombardier C. Utilization of physiotherapy and occupational therapy by Ontario rheumatologists in managing rheumatoid arthritis: a survey. *Physiother Can*. 2003;55:23-30.
- Rodriguez GS, Goldberg B. Rehabilitation in the outpatient setting. *Clin Geriatr Med*. 1993;9:873-81.
- Falter L. The reality of two-tiered health care in Canada: a political economy perspective on physiotherapy in Ontario. *Physiother Can*. 2003;55:97-104.
- Power JD, Cott CA, Badley EM. Physiotherapy services for people with hip and knee arthritis in Ontario. Toronto: Arthritis Community Research and Evaluation Unit; 2003.
- Hensher M. Improving general practitioner access to physiotherapy: a review of the economic evidence. *Health Serv Manage Res*. 1997;10:225-30.
- Grahn B, Ekdahl C, Borgquist L. Motivation as a predictor of changes in quality of life and working ability in multidisciplinary rehabilitation: a two-year follow-up of prospective controlled study in patients with prolonged musculoskeletal disorders. *Disabil Rehabil*. 2000;22:639-54.
- Hillman M, Wright A, Rajaratnam G, Tennant A, Chamberlain M. Prevalence of low back pain in the community: implications for service provision in Bradford, U.K. *J Epidemiol Commun Health*. 1996;50:347-52.
- Khouzam H. Chronic pain and its management in primary care. *South Med J*. 2000;93:946-52.
- Rijken P, Dekker J. Clinical experience of rehabilitation therapists with chronic diseases: a quantitative approach. *Clin Rehabil*. 1998;12:143-50.
- Cott CA, Devitt R, Falter L, Soever L, Wong R. Adult rehabilitation and primary health care in Ontario. Arthritis Community Research and Evaluation Unit 2006 [cited 2006 Apr 11]. Available at: <http://www.acreu.ca/pdf/pub5/04-01.pdf>.
- Groves RM, Dillman DA, Etinge JL, Little RJ. Survey nonresponse. New York: Wiley; 2002.

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28. Williams AP, Rappolt S, Lum J, Deber R, Verrier M, Landry MD. A portrait of occupational therapy in Ontario: results of a 2003 survey. *Occup Ther Now*. 2004;May/June:3-7.
  29. Dales J. Delisting chiropractic and physiotherapy: false savings? *CMAJ*. 2005;172:166.
  30. Ontario Ministry of Health and Long-Term Care. Family Health Teams: your access to primary care. Ontario Ministry of Health and Long-Term Care 2006 April [cited 2006 Apr 11]. Available at: [http://www.health.gov.on.ca/transformation/fht/fht\\_understanding.html](http://www.health.gov.on.ca/transformation/fht/fht_understanding.html).