

## Rehabilitative medicine and physiotherapy services in community oncology

### The Jack Ady Cancer Program experience

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#### ABSTRACT

Patient-centred cancer care requires careful attention to both quantity and quality of life. Assuring safety, comfort, and function for cancer patients requires the efforts of a multidisciplinary healthcare team.<sup>1,2,3</sup> Rehabilitation services, including physiotherapy, have long been recognized as an integral component of comprehensive cancer care.<sup>2,3,4</sup> Despite significant advances in cancer treatment and management, cancer survivors continue to experience multiple morbidities as a consequence of both the cancer itself and cancer treatment. Physical impairments in strength, range of motion, mobility, fatigue, pain, chemotherapy-induced peripheral neuropathy and lymphedema can be significantly improved with physiotherapy interventions.<sup>4,5</sup> In addition, such interventions have been shown to be cost-effective by reducing the need to access other more costly healthcare

services, as well as reducing indirect costs of cancer survivorship, such as caregiver burden, transportation costs and equipment needs.<sup>5,6</sup> While there are usually rehabilitation/physiotherapy programs present at Canadian tertiary cancer centres, such essential services may function and be structured quite differently in the community cancer care setting.<sup>7,8</sup> This paper describes how a busy community cancer program located at the Jack Ady Cancer Centre (JACC) in Lethbridge, Alberta, introduced and then optimized an on-site physiotherapy program to meet its growing cancer patient care needs.

**Keywords:** community cancer care, oncology specialist physiotherapists, physiotherapists in oncology, community physiotherapy services, community rehabilitative services, cancer rehabilitative services, oncology healthcare resources, interprofessional cancer care teams, supportive cancer care

#### INTRODUCTION

There has been a major shift in the delivery of cancer care in most parts of Canada over the past decade or two. The current emphasis on patient-centred care, coupled with the drive to provide care closer to home, means that a significant number of treatments which were previously delivered only in tertiary centres are now being administered in the periphery.<sup>1,2</sup> In some provincial jurisdictions, more than 50% of all cancer therapies are now delivered in the community setting.

When cancer patients receive their treatments in the community setting, it follows that the full spectrum of ancillary care, such as dietary, psychosocial and rehabilitative services, should also be available locally.<sup>2,7,8</sup> With regard to physiotherapy services, these must be comprehensive, so that patients receiving their radiation/chemotherapy locally do not have to travel to a major tertiary centre for specialized rehabilitation for lymphedema, help in managing fatigue, treatment of cancer-induced peripheral neuropathy, or other supportive care needs.<sup>2,5</sup>

Alberta Health Services (AHS) is a provincial health system responsible for the delivery of care to all Albertans. CancerControl Alberta is a division of AHS and includes the Community Oncology portfolio. Community Oncology provides oversight to 4 Regional Cancer Centres and 11 Community Cancer Centres across the province. A guiding principle of AHS is “Enabling the system to provide

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patients access to appropriate health services and information when they need it (i.e. provide the right service, in the right place, at the right time).”<sup>2</sup>

The Jack Ady Cancer Centre (JACC), which operates out of the Chinook Regional Hospital in Lethbridge, Alberta, is one of the 4 Regional Cancer Centres. The JACC provides service to a population of close to 100,000 in Lethbridge itself, along with another 50,000 to 60,000 Albertans in surrounding communities. The JACC provided care to roughly 2,700 patients for a total of 22,300 visits in the 2014–15 fiscal year. The clinic currently employs 4 full-time oncologists (2 radiation, 2 medical), as well as an oncology nurse practitioner.<sup>1</sup> The JACC care delivery model is both inclusive and team-based, involving dietary therapy and psychosocial support, as well as the services of nurse navigators and advanced clinical pharmacists. However, prior to May 2015, no in-house, oncology-specific rehabilitation services were available on-site.

**ORIGINAL STATUS OF REHABILITATIVE/PHYSIOTHERAPY SERVICES IN LETHBRIDGE**

Prior to the initiation of the JACC physiotherapy program, AHS Community Oncology had a “Nutrition and Rehabilitation Oncology Network,” which strove to link clinical specialists from the tertiary centres with rural rehabilitation providers to build local capacity, develop referral pathways, etc. In practice, resources were invested in individual practitioners who were not formally integrated into the cancer care team and did not see a sufficient volume of cancer patients to maintain an appropriate oncology skill set. In this model, individual patients might be referred to a hospital outpatient

**TABLE 2. Triage consultation and referral system**

- Allocated therapist time slots: 1.5 hours for new assessment and 1.0 hours for followup
- New referrals are typically slotted into the first available spot. Wait times to consultation currently fluctuate between 2 and 4 weeks.
- Three hours per week are protected as flexible time for urgent cases, such as:
  1. Impairments that might delay current cancer treatment (e.g. shoulder range of motion and positioning for breast radiotherapy)
  2. Patients with high acuity or severity of impairment
  3. Those deemed urgent by referring physician
- Consults typically arrive via fax and are triaged personally by the physiotherapist.
- Referrals are accepted only from healthcare professionals: physicians, nurse practitioners, registered nurses, occupational therapists, physical therapists, speech language pathologists, dieticians, social workers and radiation therapists.
- Referral exclusion criteria include:
  1. Impairments that are not the result of a diagnosis of cancer or cancer treatment
  2. Patients also receiving private community rehabilitation services that would simultaneously address the same impairments

department to obtain services from a generalist physical therapist practicing in a broad range of orthopaedic and pain-related disorders. Most had little formal training in oncology rehabilitation, and often lacked confidence in treating the complex needs of cancer patients. Thus, many patients were required to travel to a tertiary centre to access services such as lymphedema management, resulting in potential financial strain and disruption.<sup>5,9</sup>

The need for lymphedema-specific intervention was a major catalyst for the inception of rehabilitation services at the JACC, since Lethbridge had no specialized clinic or therapist with expertise in this chronic condition. Patients were referred to a specialized Oncology Rehabilitation Program in Calgary. Those who could not, for one reason or another, travel to Calgary received a homecare referral with the subsequent acquisition of a compression garment. There were a few massage therapists with extra lymphedema training in the private sector who could provide therapy at a cost. This situation highlighted geographically-based inequities in access to care, as patients in Lethbridge had to pay for travel or private services, while patients in larger cities had access to publicly-insured services in tertiary cancer centres. Despite the efforts and good intentions of the Chinook Hospital’s rehabilitation department, the state of cancer rehabilitation services for JACC patients was heterogeneous, costly and suffered from the lack of appropriately trained lymphedema specialists.

**NEEDS ASSESSMENT**

In 2013, the JACC submitted an Enhanced Care Grant proposal to the Alberta Cancer Foundation, in collaboration with AHS CancerControl Alberta and South Zone Allied Health, to develop an on-site cancer rehabilitation service that would be comparable to what was available in Edmonton and Calgary. A gap analysis was performed and

**TABLE 1. Rehabilitation and physiotherapy needs identified**

- Fatigue**  
Education and treatment
- Pain**  
Muscle pain (myalgia)  
Joint pain (arthralgia)  
Somatic pain
- Soft tissue impairment**  
Lymphedema  
Cording fibrosis (including lung) from radiation therapy
- Neurologic impairment**  
Neuropathy  
Proprioceptive deficit
- Mobility**  
Weakness (muscle wasting)  
Deconditioning (aerobic capacity)  
Gait/ataxia/dystonia  
Range of motion  
Return to work
- Exercise education**  
Patients and staff

# FEATURE

stakeholder meetings were held to determine what on-site services were required. Results of these efforts are presented in **Table 1** on page 11.

To verify program staffing requirements, a formula developed earlier at the Cross Cancer Institute in Edmonton was used to quantify the appropriate supportive staff complement. This formula allocates 0.2 full-time equivalent (FTE) professional rehabilitation staff and 0.1 FTE therapy assistant staff per on-site oncology physician. With 4 oncologists, the Jack Ady would require a 0.8 FTE professional and 0.4 FTE assistant. These figures were rounded up to 1 FTE and 0.6 FTE to compensate for the increased needs associated with starting a new program and service

## PROCESS DEVELOPMENT AND PROGRAM IMPLEMENTATION

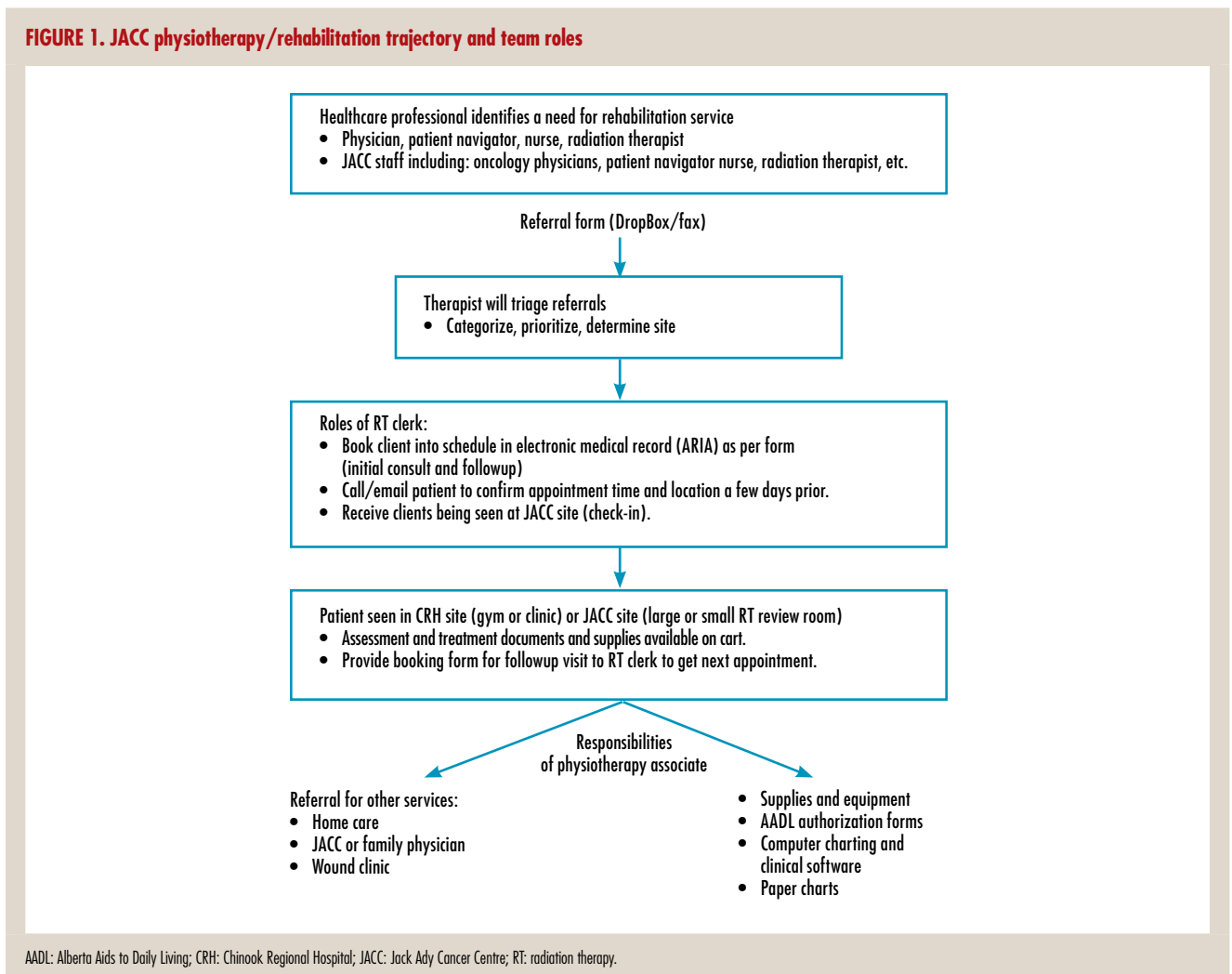
The designated physiotherapist spent the first 5 months at the JACC working in a 0.5 FTE capacity to plan and organize the service, and gain additional skills. During this time, logistics, space requirements, supplies, operational processes and treatment protocols were formulated in collaboration

with the Community Oncology Supportive Care and Rehabilitation leadership and the JACC site managers.

Simultaneously, there was energetic team- and capacity-building between the JACC physiotherapist, the Chinook Hospital Rehabilitation Department and rehabilitation medicine professionals at existing oncology programs located throughout Alberta (Cross Cancer Institute, Tom Baker Cancer Centre, and the Central Alberta Cancer Centre). This was achieved through on-site shadowing, one-to-one mentorship, consultation regarding clinical and operational practices, and attendance (in person or through videoconference) at select staff meetings or in-service presentations. The physiotherapist also used this preparation period to acquire additional postgraduate training in lymphedema management and compression therapy through the “Cancer-Associated Lymphedema Management” course at the University of Alberta, as well as the specific training in manual lymphatic drainage and decongestive therapy required to become a Certified Lymphedema Therapist.

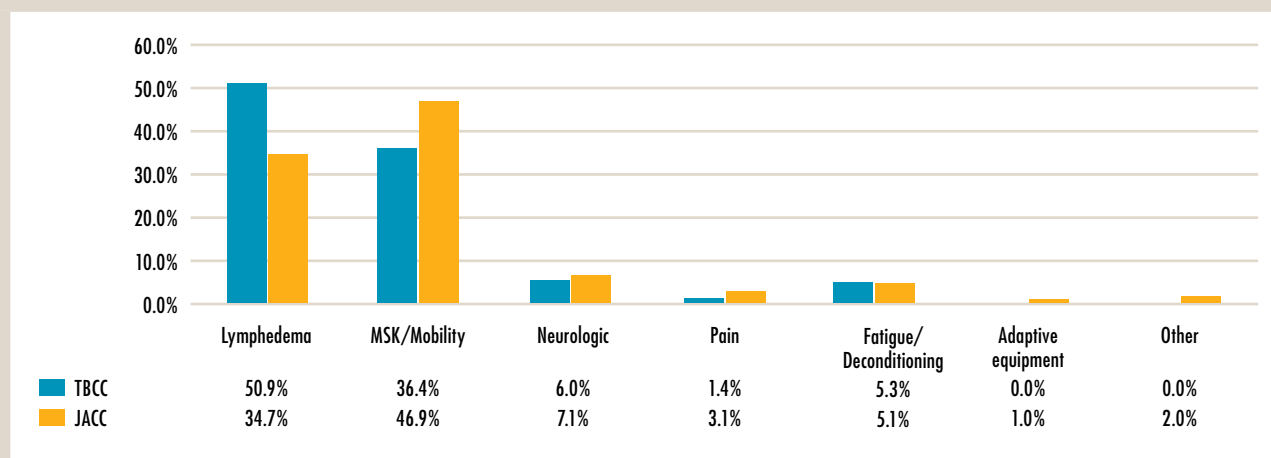
A formal in-house triage consultation and referral system was developed and implemented (**Table 2**, page 11). A trajectory

**FIGURE 1. JACC physiotherapy/rehabilitation trajectory and team roles**



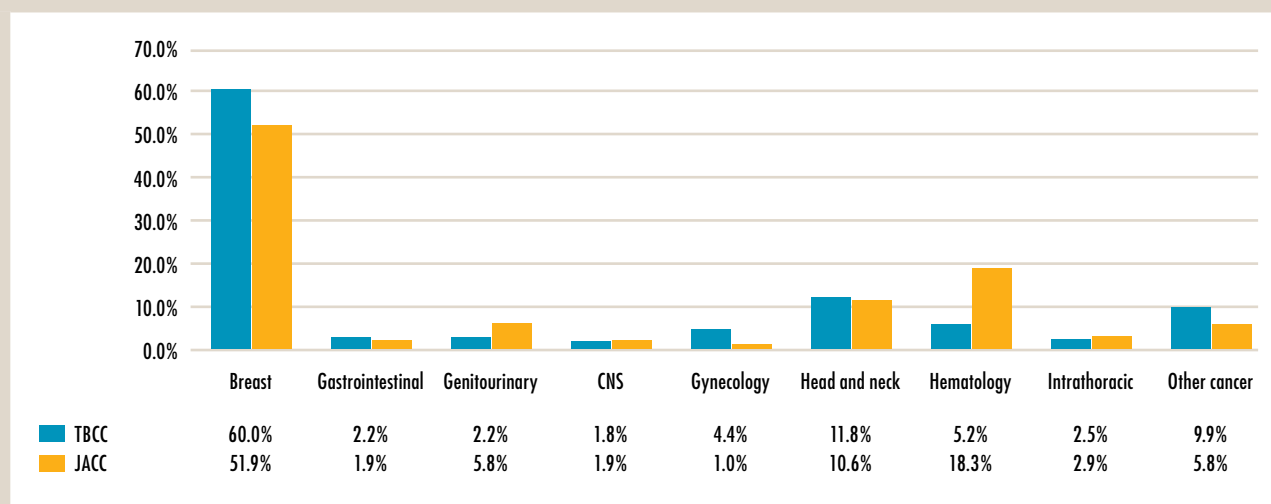
AADL: Alberta Aids to Daily Living; CRH: Chinook Regional Hospital; JACC: Jack Ady Cancer Centre; RT: radiation therapy.

**FIGURE 2. Reason for physiotherapy referral (%) — January 1, 2016, to August 31, 2016**



JACC: Jack Ady Cancer Centre, Lethbridge; MSK: musculoskeletal; PT: physical therapy; TBCC: Tom Baker Cancer Centre, Calgary.

**FIGURE 3. New physiotherapy referrals by tumour group (%) — April 1, 2016, to September 30, 2016**



CNS: central nervous system; JACC: Jack Ady Cancer Centre, Lethbridge; PT: physical therapy; TBCC: Tom Baker Cancer Centre, Calgary.

was designed outlining the roles of various team members at the JACC and in the community (Figure 1).

With the appropriate processes in place, all components of the program under the physiotherapy umbrella were implemented simultaneously:

- Fatigue management and exercise education were delivered in group classes.
- Lymphedema services represented an initial high priority due to documented unmet demand. Since lymphedema followup typically includes limb volume measurements, active treatment, and review/demonstration/education regarding self-maintenance, 45 to 60 minutes were allotted per patient.
- Musculoskeletal pain/mobility/neuropathy patients were managed with 60-minute assessments and 30- to 60-minute followup visits. For example, a patient with a

neurologic balance deficit and painful peripheral hand-and-foot neuropathy would receive a 30-minute balance exercise program, followed by a 15-minute fine motor exercise program for the hands/fingers, and 10 to 15 minutes of pain relief treatment, such as manual therapy or transcutaneous electrical nerve stimulation (TENS).

Access to the hospital outpatient rehabilitation department facilitated the treatment of complex pain, impaired flexibility, and motor skills rehabilitation. For instance, exercise equipment and physiotherapy tables could be “borrowed” from the hospital outpatient department or hand clinic. The hospital rehabilitation gym and treatment space could be used when treatment called for more specialized equipment and space than was available within the JACC’s small rehabilitation department (e.g. aerobic and resistance exercise

**TABLE 3. Community, tertiary and private physical therapy compared**

Service location	Jack Ady Cancer Centre PT	Tertiary cancer centre PT (Rehabilitation Oncology Calgary)	Private practice PT (2 PTs working at the same clinic in Lethbridge)
Remuneration model	Publicly funded, salary	Publicly funded, salary	Fee typically split between clinic and physiotherapist
Patient distribution	Mean age=62 All are cancer-related impairments	Mean age=60 All are cancer-related impairments	Mean age=41 33.9% WCB claims 21.4% MVA claims
Most common problems	34.7% lymphedema 46.9% MSK problems 7.1% neurologic 5.1% fatigue/deconditioning	50.9% lymphedema 36.4% MSK problems 6.0% neurologic 5.3% fatigue/deconditioning	95.6% MSK problems 18.9% low back pain Less than 1% cancer-related impairments
Typical assessment and treatment time per session	60–90 minutes lymphedema assessment 60 minutes other assessment 30–60 minutes all F/U appt	60–90 minutes lymphedema assessment 60 minutes other assessment 30–60 minutes all F/U appointments	30–60 minutes assessment 30–45 minutes F/U
Typical followup practices	Lymphedema: 5–10 visits over initial treatment, then F/U at 6, 12 and 24 months MSK: dependent on case Average visits per patient=6.7	Lymphedema: 6–10 visits over initial treatment, then F/U at 12 and 24 months MSK: dependent on case Average visits per patient=6.8	Typically 2–3x/week for 4–6 weeks. Highly dependent on case and on available funding Average visits per patient=7.8

PT = physical therapy; WCB = Worker's Compensation Board; MVA = motor vehicle accident; MSK = musculoskeletal; F/U = followup.

equipment, thermal and electrical modalities, dynamometers and other measurement tools, parallel bars, practice stairs, hand- and finger-splinting supplies).

### ANALYSIS OF THE PROGRAM

The majority of referrals for physical therapy services (75%) have come from Jack Ady staff, including physicians, nurses, the nurse practitioner and nurse navigators. A breakdown of the reasons for referral is provided in **Figure 2** on page 13 for the JACC and the tertiary referral centre in Calgary (Tom Baker Cancer Centre-TBCC). Predictably, there was an initial influx of lymphedema patients representing those already waiting for referral to Calgary and those already traveling to Calgary for treatment. New referrals for physical therapy services have numbered between 7 to 19 per month, with a mean of 11. **Figure 3** on page 13 breaks down referrals from both centres by tumour site. When compared to other provincial sites, the JACC appears to have a greater number of hematology referrals, probably reflecting local attitudes as well as the presence of part-time on-site hematology consultants.

### POSSIBLE NEXT STEPS

Resources and staff coverage are always problematic for small programs (limited budget, small team with no coverage for therapist or assistant when away or sick). Options for cover could involve remote cross coverage by community oncology physiotherapy (PT) or occupational therapy (OT) staff in other community clinics, or reliance on colleagues at the hospital outpatient rehabilitation department.

In future, the JACC rehabilitation program would like

to initiate regular baseline screening of rehabilitation needs for all new Jack Ady cancer patients, similar to the current Putting Patients First program. Engaging the physiotherapist at the time of diagnosis and cancer treatment is beneficial: it empowers the patient to take control of their health and wellness, and provides opportunity for “prehabilitation” in advance of cancer treatment to minimize subsequent impairment.<sup>5,8</sup> Acupuncture represents a potential additional service for cancer-related pain, nausea and/or xerostomia, and is already being provided for appropriate cases at tertiary sites in Edmonton and Calgary.

Ideally, the current program would grow to allow for increased staff specialization and the adoption of innovations. For instance, recent attention has focused on the use of electrospectroscopy to proactively identify breast cancer patients at increased risk for lymphedema.<sup>3</sup> Adding additional rehabilitation disciplines to the team would help to address remaining gaps between tertiary and regional cancer sites.

Province-wide telehealth rehabilitation rounds, based on the tumour group model, have recently been initiated on a quarterly basis. Regular participation by the JACC therapist should help increase professional satisfaction as well as allow for the presentation of challenging cases or clinical questions for group discussion.


### WHY AN ON-SITE REHABILITATIVE/PHYSIOTHERAPY SERVICE IS VITAL IN COMMUNITY ONCOLOGY PRACTICE

While there are a number of articles relating to cancer rehabilitation and physiotherapy services at large comprehensive centres, very little has been published specifically in relation to

the on-site activities of physiotherapists in the community oncology setting.<sup>2,7,8</sup> Compared to colleagues in tertiary centres, community oncology physiotherapists will typically have the same postprofessional training and enjoy a level of oncology expertise above that of private practitioners.<sup>2,10</sup> Differences in ancillary qualifications likely stem from numbers: at large centres, multiple physical therapists bring different skill sets and postgraduate training. The JACC experience shows that community oncology programs may mitigate this discrepancy in skill sets by maintaining close relationships with larger specialized rehabilitation units in the local hospital and outpatient department. **Table 3** contrasts some key additional differences between physiotherapy services in the community oncology setting versus tertiary cancer centres and private practice. In contrast to private practice, oncology clinic referrals are typically only accepted from other healthcare professionals.

Numerous studies have documented that rehabilitation services not only improve cancer-related fatigue, physical function, pain and return to work, but also that such rehabilitation is cost-effective.<sup>3,4,6,8</sup> However, a 2011 survey of Canadian facilities offering cancer treatment reported that only 30% actually had access to appropriate oncology rehabilitative services or programs.<sup>9</sup> Major reasons for these deficiencies appeared to be lack of funding, appropriately trained on-site personnel, and facilities.<sup>5,9</sup> As we illustrate in this paper, on-site programs in community cancer centres can address these deficiencies to act on the patient-centred logic of “care closer to home.”

## CONCLUSION

Rehabilitation medicine, including physiotherapy, represents a dynamic and integral part of multidisciplinary oncology care, aiming to minimize impairment and maximize ability in cancer patients. Many cancer-related problems and treatment side effects are amenable to rehabilitative interventions, which may reduce the need for other more costly healthcare services.<sup>3,6</sup> Earlier Canadian studies have documented that the lack of on-site programs and appropriately trained personnel have a significant impact on the ability of patients to access rehabilitative services in the community oncology setting.<sup>9</sup> In this article, we highlight some of the key features involved in integrating physiotherapy practice into community oncology and compare this to what takes place in tertiary centres or private physiotherapy practice. The JACC experience provides a blueprint to encourage and support the establishment of such services in other community settings across Alberta and Canada. 

## Acknowledgment:

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