

7-2014

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## Citation of this paper:

Churchill, Laura K. and Bryant, Dianne, "The Waiting Game: A Primary Care Intervention to Improve Access to Specialist Care to Patients with Osteoarthritis" (2014). *Health and Rehabilitation Sciences Publications*. 6.  
<https://ir.lib.uwo.ca/hrspub/6>

## The Waiting Game: A Primary Care Intervention to Improve Access to Specialist Care to Patients with Osteoarthritis

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Received date: May 23, 2014, Accepted date: June 30, 2014, Published date: July 05, 2014

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### Abstract

Osteoarthritis (OA) commonly presents in the knee, contributing to pain and impairment in those affected. Given appropriate candidacy, surgical treatment for end-stage knee OA such as total knee replacement (TKR) and high tibial osteotomy (HTO) are highly successful with negligible risk. Just as the population has aged over the past decade, so too has the demand for surgical treatment of OA increasing wait times across Canada.

Cipriano et al. identified that wait times for TKR in Ontario are longer than clinically appropriate. Several North American studies have demonstrated that general practitioner referrals to specialists do not result in subsequent surgery. Targeting increasing the proportion of referrals that result in a surgical booking has the potential to decrease the wait for initial consult, an important piece of the wait time continuum for knee OA.

**Keywords:** Osteoarthritis; Surgery; Total Knee Arthroplasty (TKA), Referral, Wait times, Specialist, Consultation

### Review

Osteoarthritis (OA) commonly presents in the major weight bearing joints such as the knee and contributes to debilitating pain as well as impairments of physical function. As of 2011, one in eight Canadians (13%) suffers from this condition [1]. Given appropriate candidacy, surgical treatment for end-stage knee OA such as total knee replacement (TKR) and high tibial osteotomy (HTO) are highly successful with negligible risk [2]. Just as the population has aged over the past decade, so too has the demand for surgical treatment of OA increasing wait times across Canada [3-6]. The 2012 Wait Time Alliance report found that the wait times for an initial surgical consult are as problematic as the wait times for the surgeries themselves [6].

Cipriano et al. [7] identified that wait times for TKR in Ontario are longer than clinically appropriate. The current federal benchmark for TKR is no longer than 6 months for low priority patients, while high and intermediate priority patients should undergo surgery 1 and 3 months respectively from the time the decision for surgery is made. Using information from the Ontario joint replacement registry (OJRR), Cipriano et al. [7] conducted a simulation study that suggests that Ontario would need to increase the number of available procedures by 12% annually over 10 years to ensure that 90% of patients underwent TKA within 6 months [7].

McHugh et al. [8] found that patient referrals to a surgeon by general practitioners are often inappropriate, reporting that only 33% of patients actually underwent surgery. Of those patients who did not, the majority were referred back to their general practitioner because they either did not wish to undergo a surgical intervention, had not yet

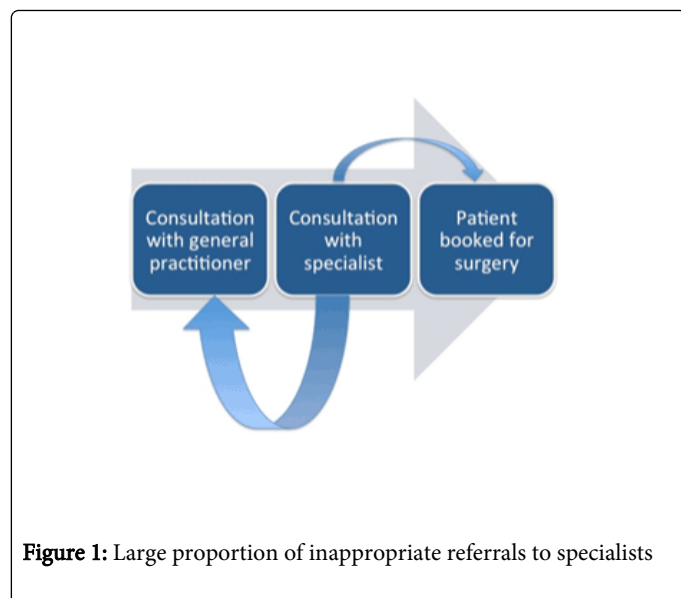
exhausted non-surgical options (physiotherapy, injections, weight loss), had been referred to the wrong type of specialist (i.e. arthroscopy), or were not in a condition severe enough to warrant a TKR [8].

A study by Klett et al. [9] implemented an intermediate surgical screening clinic and found that of the 327 patients screened by sport medicine specialists, 155 (47.4%) were referred back to their primary care practitioner (Figure 1). Moreover, patients referred to surgery by a sport medicine specialist were more likely to have tried conservative treatment such as injections to manage their condition. The authors suggest that strategies emphasizing appropriate referral may improve access to TKR. Their study also demonstrates the usefulness of sport medicine specialists in community OA management to reduce the proportion of unnecessary surgical consultations and improve the utilization of conservative treatment strategies [9].

Aiken et al. study reports inappropriate referral for TKA and emphasizes the role of the physiotherapist in mediating referral to orthopaedic surgeons. Patients were first assessed by a single physiotherapist and subsequently by a single orthopaedic surgeon to determine surgical need and urgency using a standardized prioritization tool. Of the 40 patients 38 were analyzed, including 16 hip surgical candidates, 21 knee surgical candidates and one patient referred for both hip and knee surgery. Out of 38 patients, there was perfect agreement between the physiotherapist and orthopaedic surgeon, as 13 patients were deemed non-surgical by both health care professionals. These findings demonstrate the significant proportion (34%) of inappropriate referral for surgical consult and the usefulness of a physiotherapist to correctly identify surgical suitability. Based on these findings, the authors comment that a physiotherapist is an appropriate non-physician health care professional to screen patients for TJA. The use of physiotherapists to fulfill the screening role may

subsequently decrease the burden placed on orthopaedic surgeons [10].

MacKay et al. study further supports the use of physiotherapists in this role as they also demonstrated high agreement between orthopaedic surgeons and physiotherapist's recommendations for referral to total joint replacement (TJR) surgery [11].



### Strategies to improve the quality of referrals to surgery will reduce wait time to first consultation with a surgeon

The high rate of inappropriate patient referral for TKA persists despite evidence-based guidance parameters suggesting indications for non-operative and surgical management of knee OA. The use of non-operative strategies is regarded as the first course of treatment for symptoms before surgical management is considered. General practitioners' knowledge of conservative management strategies for knee OA is imperative to ensure that less invasive treatments have been exhausted and that referral for surgery is warranted [12,13].

The Osteoarthritis Research Society International (OARSI) has developed evidence based expert consensus guidelines regarding the non-surgical treatment of OA. They recommend a set of core treatments that are appropriate for all individuals with OA, which include: land and water based exercise, weight loss, strength training, and education. Other recommended treatments are separated into sub-categories based on relevant patient factors. For patients with knee-only OA without any comorbidities the recommended treatments include: biomechanical interventions, intra-articular injections, medication (COX-2 inhibitors, capsaicin, duloxetine, acetaminophen, oral non-selective NSAIDs), and walking aids. The guidelines suggest limiting patients with knee-only OA and comorbidities to: biomechanical interventions, walking aids, intra-articular injections, and topical NSAIDs [14].

Surgical management of knee OA is utilized as a last recourse when moderate to severe pain and stiffness persists despite optimal conservative strategies, or if loss of function is severely debilitating, [15,16]. The impact of disease on the patient's lifestyle is a crucial factor in informing the decision for surgery. In general, surgical

intervention for knee OA is appropriate when there is radiographic evidence of joint-space narrowing, moderate to severe pain unrelieved by conservative treatment, and the disease negatively impacts quality of life, limits activities of daily living, or impairs ability to sleep and work [16,17].

In a Canadian study conducted by DeHann et al. [18] the authors evaluated the congruence between a physician training rheumatology-teaching clinic and current evidence-based guidelines for patients with knee OA. Of the 105 randomly selected patients the most commonly recommended non-pharmacologic treatment included: exercise (58.1%), physiotherapy (42.9%), and strengthening exercise (40.0%). Moreover, education, aerobic and range of motion exercise, social support, orthoses, assistive devices for ambulation, acupuncture, and occupational therapy/energy conservation were documented in under 30% of patient charts, implying the underutilization of conservative strategies in managing knee OA. 18 Potential reasons for this underutilization may include financial constraints, which inhibit access to conservative treatment on an individual level. Moreover, studies have shown inadequate devotion to the study of musculoskeletal disorders in medical school and family medicine residency [19,20] which may explain general practitioners lack of knowledge and skills to manage a non-surgical treatment plan, leading to inappropriate referrals to surgery for patients with OA. While the nature of this problem is multifaceted, the results of Dehann et al. suggest that better strategies to educate and encourage physician adherence to current OA recommendations are needed [18].

Although guidelines for non-surgical OA treatment exist [14], it is possible that the referring physician feels it is the role of the orthopaedic surgeon to present patients with the resources, options, and recommendations regarding surgery. The greatest improvement in efficiency may begin with improving education, such that the primary physician can feel more confident in determining the severity of knee OA, managing a non-surgical treatment plan, and introducing preliminary discussions of surgical options with their patients. The use of decision aids for total joint replacement may provide a useful resource for both patients and physicians to determine a treatment pathway while providing information on the surgery itself [21]. Guidelines for the creation and application of these decision aids could be disseminated to physicians using continuing medical education (CME) credit courses.

Another solution, which claims to address the limitations of traditional decision aids is the use of an option grid for knee OA to encourage shared decision making (SDM) between patients and practitioners. Marrin et al. [22] suggest that decision aids pose barriers such as disruption of the flow of clinic, extensive time commitment, are expensive to develop and disseminate, and require a basic level of health literacy which low socioeconomic patients may not possess. Option grids provide an alternative to traditional decision aids and offer a brief one-page summary with options and decision support that avoids medical jargon and can be accessed publically and printed at a relatively low cost. The impact of option grids for knee OA is currently being explored to determine if these resources are effective in improving outcomes for patients and are easily adopted by general practitioners into routine clinical practice [22].

While these options provide solutions to improve OA management in primary care, the responsibility should not fall solely on general practitioners. Interprofessional collaboration among health care practitioners including sports medicine specialists, physiotherapists, and nurse practitioners should be considered to help remedy the

problem. Voorn et al. [23] study highlights an innovative model of care involving a physical therapist and nurse practitioner for hip and knee OA. The intervention involved clinical assessment by a nurse practitioner in collaboration with a physical therapist and individually tailored management strategies to be followed-through in a primary care setting. Results of their study suggest that this specialist intervention improved patient pain, function, health related quality of life and satisfaction in only 10 weeks [23].

Similarly, Lineker et al. [24] study evaluates an interprofessional education intervention to improve adherence of clinical practice guidelines for arthritis in primary care. The intervention consists of an interprofessional workshop, followed by activities for 6-months to promote adherence to best practice guidelines. All health care providers showed improvements in adherence to best practices, satisfaction and confidence in managing arthritis, with rehabilitation therapists and nurses showing the most improvement. The results demonstrate the value of interprofessional education workshops for dissemination of best practice guidelines for arthritis including OA [24].

Promoting an interprofessional approach may be the most efficient way to address OA management given the increasing prevalence of the disease and demand for treatment. The expanding scope of practice for nurse practitioners [25] will serve to improve OA management as they can work in the same capacity as sport medicine specialists to perform injections and prescribe medication to their patients. Future expansions in the scope of practice for physiotherapists such as prescribing medication, ordering diagnostic imaging, and administering injections [26], will allow for these health care practitioners to provide more comprehensive OA management which will serve to minimize the burden on primary care and surgeons.

Providing a means to reduce inappropriate referrals and better informing the decision to refer to surgery for knee OA could potentially reduce wait times that currently hinder our health care system. Thus, strategies that provide a greater awareness of the guidelines for treatment of knee OA, greater accountability by a variety of health care practitioners for non-surgical options, and effective diagnostic decision-making support are needed.

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