

# Patient Education as a Strategy for Provider Education and Engagement: A Case Study Using myJointReplacement.ca

Tina Saryeddine, Charissa Levy, Aileen Davis, John Flannery, Susan Jaglal, Laurie Hurley, Rhona McGlasson and Nizar Mahomed

## Abstract

myJointReplacement.ca was initiated to integrate patient and provider perspectives with the evidence on joint replacement care into a patient education website to promote consistency in practice. The project's leadership ensured that the project fit into a larger system change initiative. The literature was reviewed and a qualitative study determined patient perspectives on what information was required. Findings were discussed with providers and integrated into the website. The site hosts nearly 1,700 one-hour sessions monthly. In a survey of 50 providers, 40 providers (80%) indicated that they would align their practice with the findings, and 45% (90%) believed that the site reflected best practice. Over 80% ( $n = 70$ ) of patients surveyed indicated that the site increased their knowledge. It was concluded that developing a patient education website is an innovative approach to provider education if supported by leadership that can integrate the initiative into a broader context.

## Background

What could make a patient education website innovative? One innovation was to use the development process as a means of promoting best practices and embedding the patient education initiative in the context of a larger system change.

Innovations in education can often be characterized by the extent to which they bring novelty, significance, transferability and effectiveness to the healthcare education process (O'Connell et al. 2003). Where education is targeted at producing a change in healthcare practice, research has shown that techniques that are didactic tend not to translate into actual practice or improved healthcare outcomes (Bloom 1956; Heffner 2001; O'Connell et al. 2003). Traditional clinical practice change initiatives often involve forums and care pathways.

myJointReplacement.ca is a patient education website for patients undergoing hip and knee replacement surgery. It is characterized by text, audio and visual components; an interactive virtual forum for patients; a contact number so that patients can ask questions; and monitoring and evaluation software. It is also characterized by a development process intended to facilitate knowledge transfer and to support practice changes.

For some time, however, the literature has been foreshadowing the potential use of patient education development processes to promote changes in provider behaviour. Allusions to the potential role of patients and families in influencing demand are documented in several prominent reports and articles (Change Foundation 2002; Cott et al. 2005; Nasmith et al. 2004). Since the development of patient education involves an idealized purpose, it brings with it unique incentives to participate in discussions, review the evidence and challenge practice.

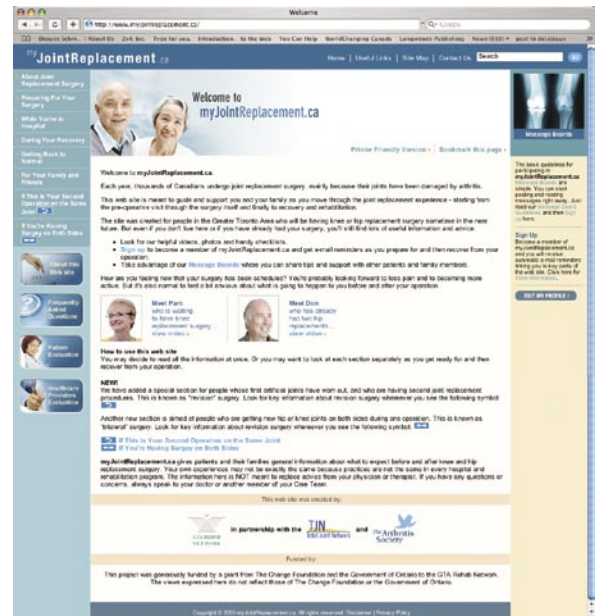
This case study describes myJointReplacement.ca, a project conceived for the purpose of using the patient education devel-

opment process as a means of promoting knowledge transfer and exchange in supporting a larger system initiative. The case study also describes how an inter-organizational leadership and collaborative approach helped to make such an innovation possible in an environment that was rapidly changing due to health policy changes and funding commitments. Finally, the case study examines the success of the approach by presenting evaluation findings as they pertain to the dissemination of best practices; the perceived quality, usability and sufficiency of the information generated; and the extent of use of the website.

The project was initiated by the GTA Rehab Network and developed in collaboration with the Arthritis Society (Ontario Division) and the Total Joint Network (TJN). The GTA Rehab Network is made up of the 33 organizations involved in the provision of publicly funded rehabilitation in the Greater Toronto Area (GTA). This includes the adult acute care teaching hospitals, the rehabilitation teaching hospitals, the community hospitals, community care access centres and, as ex officio members, the University of Toronto, the Regional Geriatric Program and the Toronto Acquired Brain Injury Network. The GTA Rehab Network received funding for this initiative through a generous grant from the Change Foundation and the government of Ontario.<sup>1</sup> The Arthritis Society is one of Canada's leaders in patient education. The mission of the Arthritis Society "is to search for the underlying causes and subsequent cures for arthritis, and to promote the best possible care and treatment for people with arthritis" (Arthritis Society website: <http://www.arthritis.ca>, mission statement). The Arthritis Society (Ontario Division) took the lead on the writing, technology and adult education aspects of this project. The TJN is a leader in joint replacement care best practices. It is made up of all publicly funded organizations providing care to patients undergoing joint replacement in the GTA. It has been instrumental in ensuring that the information on the website reflects the best practices model of care that was introduced in the GTA.

This project was initiated in 2003, prior to the current investments made by the government of Ontario to improve the care and wait times for individuals seeking hip and knee joint replacement surgery. At the time, it was designed to address two problems. First, there was a documented lack of information available to inform the expectations and reduce the burden of care for this procedure (Cott et al. 2001; Crowe and Henderson 2003; Grissom and Dunagan 2001; Kelly and Ackerman 2001; Winkleman and Choo 1993). Second, there were also thought to be diverse standards of practice, which raised questions about equity, quality and sustainability of care across the region.

The problem of inconsistent and insufficient information can be illustrated by the following vignette. Traditionally, a patient experiencing debilitating arthritic hip or knee pain would



consult a family physician or rheumatologist, who would refer the patient for a consultation with an orthopedic surgeon in order to determine if the patient was a candidate for joint replacement surgery. The consultation would last an average of 13–15 minutes; if appropriate, surgery would be booked (Levinson and Chaumetan 2000; Rudenberg et al. 2000). A few days prior to surgery, the patient would attend a pre-admission clinic to receive preoperative instructions, orientation and education. The surgery would take place a few days later, and within a few days the patient would be sent either to in-patient rehabilitation or to home care rehabilitation, often without deliberate pre-planning and most often based on whichever sector could most quickly accept the patient from the acute care hospital (Grissom and Dunagan 2001; Kane et al. 2000, Kelly and Ackerman 1999; Pett et al. 1983).

While educational resources existed for these patients, few provided information on the entire continuum of care and few sources were given in a manner or timing conducive to the effective processing of information. The information was not standardized or applicable to multiple providers. Consistently, information on rehabilitation and discharge planning was omitted from information packages, as was information for the informal caregiver.

Informal caregivers often experience a heavy burden of care and a lack of support from the system, often at the expense of their own physical and psychosocial well-being (Boon 1990; Pett et al. 1988). Unless the informal caregiver attends the pre-admission clinic with the patient, pertinent information may

1. The views expressed in this paper are not necessarily those of the Change Foundation or the Government of Ontario.

never be transferred to the caregiver. Providing better information is one way to reduce the emotional stress patients and caregivers may experience. Appropriate and timely information has been shown to have positive effects on recovery, process satisfaction, outcomes and length of stay (Crowe and Henderson 2003; Kelly and Ackerman 1999).

The problems of insufficient and inconsistent information for both the patient and informal caregiver on the continuum of care are magnified when we consider the second problem motivating this project. Joint replacement care was offered by over 20 organizations within the GTA, and practice varied substantially across the region. At the time, it was felt that developing a standardized information package for patients would, in the process, facilitate the collective identification of aspects of care that can be standardized across the region and aspects that required organization-specific approaches to care. It was felt that it might help providers to understand how their care linked with the next phase of care and what they might be able to do to improve gaps at the transitions. The process of engaging both patients and clinicians provided an opportunity for information exchange and the raising of awareness of best practices and system issues (Lindstrom 2003).

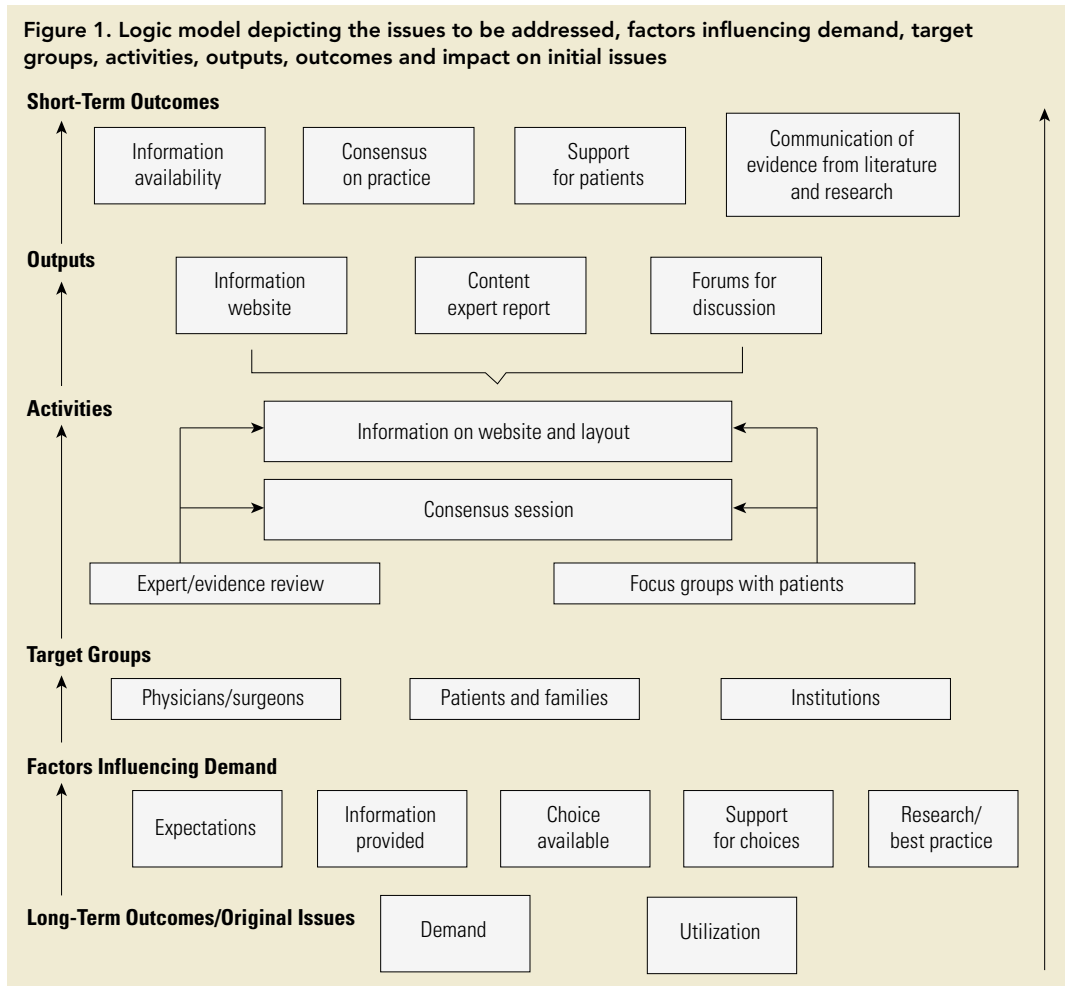
While this project was intended to address both problems, the system-wide problem became less of a concern for the project since, in 2005, the TJN was funded by the government of Ontario to introduce a new model of care for patients undergoing total hip and knee joint replacement. The leadership of the patient education initiative interlocked with the leadership of the TJN, and the literature review was used by the TJN in developing and rationalizing an evidence-based model

of care. The leadership of the TJN and the patient education initiative was then able to integrate the patient education project so that it complemented the system changes. In so doing, myJointReplacement.ca served as a patient education and knowledge transfer modality.

**The Intervention**

The development and evaluation of myJointReplacement.ca followed the logic model presented in Figure 1.

Given the lack of standardized information and varying practice patterns, the intervention involved the development of a standardized patient education website in a manner that would prompt discussions on research and on patient and provider viewpoints. Based on trends in consumerism and demand management cited in the literature (Change Foundation 2002), it was felt that information was needed to help influence the expectations of patients and providers. The patient education website was therefore used as a vehicle for communicating, in a user-friendly and consequential format, the results of a review



of the literature, a qualitative study with patients and consultations with physiatrists, nurses, allied health, surgeons and other professionals. It was felt that these activities would easily enable the short-term objectives of providing information and support for patients, gain consensus from providers on what information should be provided to patients based on the evidence and communicate evidence from the research.

**Methods**

A research study was initiated to help inform the content of the website using as a conceptual framework an adaptation of the classic clinical decision-making model (Figure 2) (Haynes et al. 2002). It included a review of the literature, interviews with patients to determine their information needs and healthcare provider (surgeons, physiatrists, nurses and allied health professionals) consultations. The research study was published in a report (Soever et al. 2005) and widely distributed with summary guides containing the key points from the research. The results were then synthesized into an outline for patient education and presented in multiple professional forums, including a breakfast session with surgeons and physiatrists. Each professional session was preceded by a discussion of the findings from the literature review and patient perspectives. The Arthritis Society (Ontario Division) oversaw the website construction and evaluation. They set up several public and provider feedback sessions through the different stages of the website development. The evaluation approach for the overall project followed the plan-do-check-act cycle, through which evaluative elements were built into each step of the project.

The overall evaluation was designed by a patient education expert in collaboration with the project team. It involved an initial evaluation of the quality, usability and sufficiency of the website using focus groups and survey. Recommendations for changes were made based on the pilot project and incorporated into the site.

Substantial capacity for online evaluation was also built onto the website This includes online surveys through which both patients and providers can reflect on the information and its implications and provide their feedback. Additionally, there is a virtual forum for patients through which they support each other by responding to each other’s questions. Finally, the website contains a web analytics software called Urchin V5.7.03 (Urchin Software Corporation), which provides a series of statistics regarding the number and source of visitors, how long each visitor stays on the site, the keywords used to link to the website, the search engines used and the visitors’ referral sources.

A communication strategy was also developed and implemented. Each publicly funded organization involved in the provision of joint replacement care was provided with material to promote the use of the site with patients. Over 200 professionals were provided with opportunities to learn about the project and to give feedback in free forums. The number of providers participating in information sessions and a knowledge acquisition survey were used to assess the extent to which the process permitted the dissemination of the research. However, the sample sizes in these surveys are small. Future research may involve a more rigorous sampling approach.

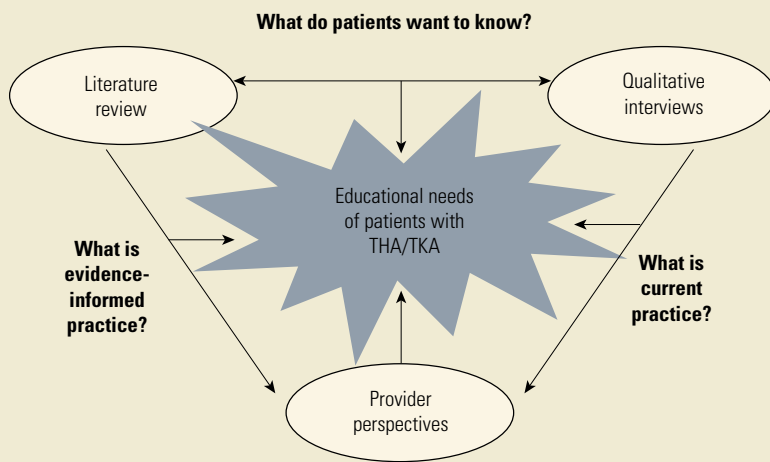
**Results**

**Provider Perspectives: Facilitate the Dissemination of Best Practices?**

As described in the methods section, three forums were designed to come to consensus on the outline and information for the website. Nearly 50 individuals representing 27 of 35 possible organizations at the time in the GTA participated in these sessions and therefore partook in the development and review of evidence process.

Once the site was up and running, an online survey asked providers using the site if they felt that the information on the website was based on best practices, if anything on the site made them uncomfortable and if they would use the site for patient education. Of a total of 50 providers who had responded at the time, 90% indicated that they felt the site was based on best practices, 94% indicated

Figure 2. Framework for identification of what material would be selected for the website (Soever et al. 2005)



THA = total hip arthroplasty; TKA = total knee arthroplasty.

that nothing on the site caused them discomfort and 96% of respondents said that they would refer their patients to the site. Examples of the verbatim comments included the following:

“Your website is a comprehensive way of delivering educational matters of a content and manner appropriate for many of our patient[s]. I like how the patient is able to determine the depth of information they wish to access.”

“I will be recommending [the website] to my patients.”

Finally, after a presentation of the finalized material to a forum of an additional 150 providers, a separate knowledge acquisition survey was administered. Of the 50 individuals who completed the survey, 90% of respondents felt that as a result of learning about this initiative and the literature review behind it, they could align their practices to reflect the evidence.

### Patient Perspectives: Quality, Usability and Sufficiency of Information on the Website?

Through the online survey, we asked patients ( $n = 70$ ) if as a result of the site they knew more about each phase of joint replacement care. Over 80% of the 70 respondents indicated that they knew more about the surgery itself and about preparing for both surgery and recovery (Figure 3). Ninety-four percent of respondents indicated that they were able to find the information they needed. Finally, of 50 individuals who answered the question, 50% indicated that reading the site would cause them to modify their behaviour. Some of the comments made by patients about how the information has affected them included the following:

“It gives me insight in terms of what to expect and advice on what to do and what I should avoid.”

“Keep on exercising (wasn't sure whether I should) and keep trying to lose weight.”

“Site is well laid out and easy to get around ... I wish someone had told me about it before my surgery.”

### Discussion

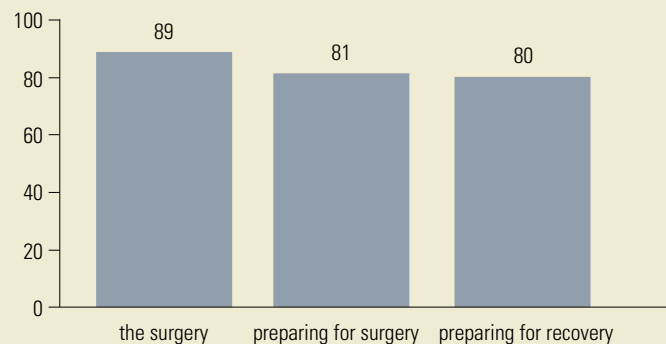
Through this case study, we have discussed how the development of patient education can serve as an innovation in the education of providers on best practices. Consistent with the definition of innovation in education (O'Connell et al. 2003), it provides a novel, significant, transferable and effective process for engendering discussions on best practices as discussed in the literature and from patient and provider perspectives.

Novelty is demonstrated in the application of the process and objectives onto the development of patient education. The significance is in the number of patients, providers and organizations this project has affected in a positive manner. The effectiveness of the project is demonstrated through a multi-dimensional evaluation strategy that was closely linked to the project logic model. The ongoing evaluation capacity is due to the web-based nature of this project, which is both an enabler and a limitation.

Transferability of the initiative is demonstrated by the possible application of this project across different population groups and jurisdictions, both conceptually and technologically. One of the strengths of Internet-based products such as myJointReplacement.ca is that they are amenable to several broader applications (Wellman 2002). For example, once the original infrastructure is developed, websites can have different functionalities added to them. The potential exists to add and change information. Furthermore, the material is easily expanded to other organizations and geographic locations eligible to utilize the product.

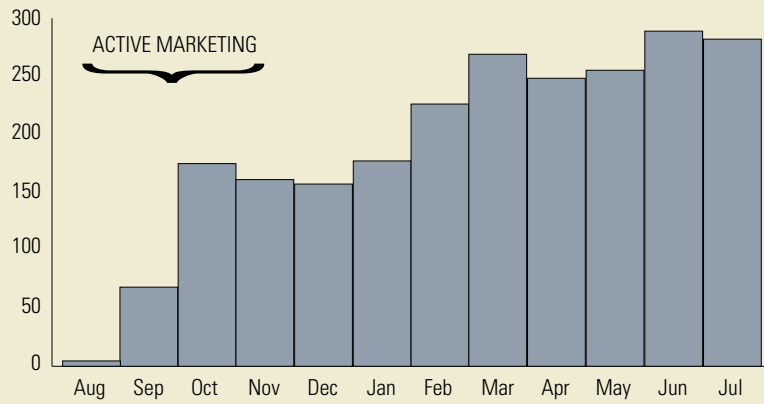
The Internet's ubiquitous nature – enabling multimedia involvement, feedback, interaction and choice for the reader in terms of when and how much information to take – was an asset, as described by many of the patient and provider comments. The electronic traffic monitoring technology has enabled a level of feedback and monitoring of data that would not otherwise be possible without significant data collection efforts. For example, the software allows for the monitoring of utilization, length of each session and keywords that patients are using to arrive at the site. The use of these keywords in conjunction with the content of the online patient discussion forum provided insight into pertinent topics from a patient perspective. Finally, the site has built-in

Figure 3. Percentage of patients ( $n = 70$ ) who replied “yes” to the question “Do you know more about ... surgery, preparing or recovery?”





**Figure 4. Number of sessions (series of hits per user) per month determined by Urchin monitoring software on www.myJointReplacement.ca**



surveys that allow a patient or a provider to give feedback.

One of the most important limitations of myJointReplacement.ca, however, is that not everyone has Internet access. To address this problem, the Arthritis Society and TJN explored alternative media such as print and digital video discs (DVD) to make the information more widely available. But, the Internet was a good place to start because Canada is a world leader in the use of the Internet for health information, and Canadians have an exceptionally high rate of Internet access in the home (Statistics Canada 2002). Finally, the notion of sustainability must be considered because the content and technology will need to be updated and sustained over time.

At a conceptual level, this initiative began with the view that we could affect a large system change by engaging patients and healthcare providers in a review and discussion of the evidence in order to develop patient education. The project has helped to achieve this, but not on its own. A much larger system change was necessary involving the commitment of the government to champion the care of patients undergoing joint replacement as a provincial priority and the leadership of TJN in managing the change required to implement new standards of practice. Funding from the patient education initiative enabled the research and development of forums through which individuals could come together. The leadership faculties of the individuals involved provided the integration capacity that facilitated the use of the patient education website in supporting a larger system change. Caution must therefore be exercised to avoid overestimating the capacity of this approach for system change. However, this methodology is a good one for the development of patient education materials. It considers the evidence, the practice context and the perspectives of both patients and providers.

The project kept as its focus the provision of a deliverable that would benefit patients directly. The incorporation of this concrete and tangible goal, combined with leadership

that was nimble in the ability to integrate the project with other work occurring across the system, kept the project robust in maintaining relevance within a rapidly changing environment. myJointReplacement.ca was therefore able to support a larger system change while meeting direct patient care needs, which ultimately achieved the very goals to which the project aspired.

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