

**Priority Criteria
for Hip and Knee Replacement:
*Addressing Health Service Wait Times***

**Report II *Inventory of Initiatives*
Joint Replacement: International
Approaches to Meeting the Needs**

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Joint Replacement : International Approaches to Meeting the Needs

Inventory of Initiatives

Executive Summary

Sustainable reductions (in waiting times), as opposed to ad hoc reductions, must rest on the indefinite continuation of policies designed to respond to a range of forces—that is, to meet a level of demand that rises in response to technical change, demography, rising user expectations, and changes in clinical behaviour.¹

This report continues our investigation of reducing wait times for joint replacement surgery in Canada. The first part of this three-part project, sponsored along with similar initiatives by the Canadian Institute of Health Research, reviewed the development of potential tools to manage waiting lists in health care. We examined the most ubiquitous approaches being assayed in various parts of the world, including prioritization schemes for specialist procedures, including surgery, and benchmarks or so-called “maximum acceptable wait times.” The first report also examined the vital need to reduce wait times for hip and knee replacements, as demonstrated by the following evidence-based facts concerning undue delays before provision of a major joint replacement:

- the prolonged suffering and lessened quality of life are significant.
- the condition of the patient may worsen, even to the point where surgery is no longer viable.
- the resulting outcomes of any surgery may be inferior to those obtained with timely operations.
- the costs can be higher, and thus the direct cost-effectiveness lower.
- the productivity loss while disabled may be considerable, further worsening the economic equation for a country.

Building on these acknowledged consequences of waiting, and reflecting the urgency to improve the situation, the second report comprises two main sections: analyzing the pattern of actual waits for hip and knee replacements in different countries, and evaluating the interventions employed to reduce those waits. Some of the initiatives occupy the realm of private health care, necessitating a brief excursus to review the

¹ Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King’s Fund; 2004.

nature of the debate concerning private and public sector responses to health care challenges.

Before tackling the main themes, some introductory matters had to be addressed.

First, our report clarifies that the basic mechanisms of waiting for health care are quite simple, a matter of demand and supply. Management of waiting lists, and wait times, thus focuses on demand-side and supply-side policies. We note that this kind of targeted management, with a clear objective of providing timely joint replacements, must not lose sight of broader health care goals. These goals include offering an absolutely larger number of health-enhancing procedures, improving the cost-effectiveness of operations, and expanding prevention efforts. What this means is that, quite independent of waiting list management, there can be good arguments to increase surgery rates and also enhance the utility and reduce the costs related to hip and knee replacements. Likewise, there is separate value in pursuing demand management through prevention of obesity, osteoporosis and accidental falls, regardless of the impact on wait times. Finally, regardless of its potential for reducing wait times, private health care options may be ruled out on other grounds.

In short, reducing wait times needs to be centred in the midst of broader health care concerns.

The most challenging preliminary topic involves definitions and issues to do with measurement. What precisely is the wait time being tracked? As is well known, there are many possible waits leading up to (and even extending beyond) joint surgery per se. The most commonly measured wait is that between referral for surgery and actual admission to surgery. Some planners have begun pressing for a more comprehensive assessment of a patient's experience with waiting, with the clock running from the point of first presenting with arthritis or other joint problems in a primary care setting to the point of receiving post-surgery rehabilitation.

But the definition of the waiting list and time in question does not solve important measurement challenges. In fact, there are a number of ways of approaching the quantification of patient experiences on a waiting list. Apart from the complexity that multiple metrics create when comparing jurisdictions, it is also apparent that different measurements demonstrate different utilities. The way this works out in practice is subtle, confusing to lay people and professionals alike. For instance, there is a big difference between calculating the mean or median wait times to date for all patients on a list at a particular point or period in time and doing the same for all patients *admitted to surgery* during a set period. Two things are vital about this distinction:

- The latter metric is arguably a more accurate and relevant reflection of actual patient experience; in particular, dealing with patients at the point of admission eliminates the impact of the confounding factors normally caught in a waiting list audit (such as patients who ought not to be on the list) and the somewhat deceptive effect of, for example, targeting “long waiters”.
- The two types of mean or median wait time can behave quite differently in response to policies; we provide evidence showing that it is possible for the wait times based on measurements taken of individuals on the list to drop, while the wait time experienced by admitted patients remains static.

Such counterintuitive results underline that no matter how simple the basic mechanisms of a wait list may be, there can be unexpected complexities in how it behaves at a detailed level in response to interventions. This reveals the importance of what we have called the *policy conditions* to reduce wait times. These involve the approaches to conceiving of and measuring waiting lists that ought to be in place before mounting particular interventions. While the conditions will not *by themselves* reduce wait times, they make the initiatives that are finally chosen function better. In the report, we conclude that the following selected recommendations² suggest vital foundational steps that should be taken by policy-setters seeking to reduce wait times for hip and knee replacements:

Standardization: Every provincial and regional jurisdiction in Canada needs to use the same metrics to report on the state of a particular wait list. This would clear up a lot of the problems seen in comparing data and allowing changes to be monitored.

Relevance: The metrics need to relate more to wait time than the length of lists, they need to reflect real patient experience as much as possible, and be easily understood by the general public (and by physicians).

Definition #1: A wait time should measure the total wait, from presenting with a problem in primary care to being admitted to a rehabilitation program after surgery.

Definition #2: Whatever its limitations, the wait time should be established for each patient at the point they are admitted to surgery (or to rehabilitation). This best reflects true patient experience and avoids the confounding factors when lists are reduced through audits and other means that have nothing to do with actually providing surgery for the typical patient in a timely way.

Primary Data: There are many summary measurements that can be used, but the median wait time seems to be the most common. For simplicity, the median wait time (in weeks) experienced by *admitted patients* during a specified time period should be the standard statistic reported.

Urgency: The urgency categories should be kept simple to allow modest administrative costs, understandable public reporting, and some room for clinical flexibility as individual cases progress. The most important distinction from a public perspective is between urgent (booked) surgery and scheduled surgery (general time frame known, but exact date not established).

Centralization: One of the most ambitious changes that could be envisioned is establishing a central joint replacement wait list rather than a series of lists kept by individual surgeons.

Targets: The maximum acceptable wait time should be reoriented towards “best practices” and renamed the clinically optimal wait limit (COWL). We should continue to establish what delays still permit optimal (rather than merely safe) outcomes for each urgency category, deciding such limits primarily on clinical grounds rather than by what is achievable financially and politically.

² A slightly longer list can be found in the Conclusions of the report, but these ten points highlight the most critical factors.

Auditing: There should be regular (preferably semi-annual) auditing of wait lists to ensure accuracy, though measuring waits at the point of admission helps to reduce the importance of this discipline for evaluating patient experience. One of the best outcomes of auditing would be to ensure that patients have been placed in the right urgency category.

Projections: Much more effort should be put into making good estimates of future needs / demands for hip and knee replacement so solutions requiring long-term investment can be pursued “ahead of the curve.”

The preceding, while vital, represent “soft” initiatives; if they are the main things occupying planners, then the “hard” interventions needed to really see changes in wait times are probably being neglected.

To identify potentially effective interventions, we looked at two bodies of evidence: explanations for why variations in wait times exist between countries and between Canadian provinces, and evaluations of the way policies to address wait times have worked in practice.

First, we abstracted the determinants to the inflow (demand) and outflow (supply) affecting the pool of waiting patients. The following factors play some role on one or both sides of the equation:

<i>Inflow to Waiting List (Demand)</i>	<i>Outflow from Waiting List (Supply)</i>
Health status of the population	Public surgical capacity (staffed operating rooms, equipment & beds)
Technology (prostheses, surgical techniques, alternate therapies)	Private surgical capacity
Patient expectation / preference	Productivity
Range of treatable conditions	Unscheduled (emergency) surgeries
Thresholds	Waiting time
Gate-keeping behaviour	
Public cost-sharing by patient	
Cost of private surgery	
Role of private insurance	
Systemic bottlenecks (access to family physicians, diagnostic tests)	
Waiting time	

One of the most thorough analyses of how these determinants work to produce wait time variations was provided in a 2003 report sponsored by the Organisation for Economic Cooperation and Development. While acknowledging anomalies in the results, the general indication was that countries with no-to-very-low wait times exhibited:

- Higher per capita health spending.
- Higher capacity, as measured by acute care beds and practising specialists.
- Higher levels of surgical activity.
- Higher levels of productivity.
- Funding / remuneration tied to activity.

It is important to realize that these factors do not necessarily work in isolation from one another; for example, because of the influence of other determinants, the rate of surgical activity alone cannot predict that wait times will be low or high. Canada is a case in point. While the country offers a low rate of hip replacements by global standards, it does *not* demonstrate the highest wait times in the world. A comparison of wait time variations between Canadian provinces also demonstrates the point: Saskatchewan has the longest wait times for joint replacements, but offers them at the highest rate in the country.

Looking at variations between international jurisdictions experiencing significant waits allows for additional insight. Notably, regression analysis performed on some of the more reliable factors allows the relationships to be quantified. For example, a marginal increase of 0.1 practicing specialists per 1000 population in a country reduces median wait times across all procedures by almost 9 days.

Understanding variations within Canada, e.g., Saskatchewan's long waits for hip and knee replacements, is challenging. One possible determinant in the case of Saskatchewan is population health, specifically the high obesity rate in that province.

We developed a grid to apply in evaluating interventions to reduce waiting times. The primary test was whether wait times were in fact reduced, though, as we noted earlier, there are more ultimate goods that need to be kept in mind, e.g., overall population health improvement. A short list of secondary benefits can be monitored as well, including a well-functioning urgency scheme, good public information and cost-effectiveness of the initiative.

Part of the evaluation grid relates to private versus public sector approaches. We waded in on this admittedly complex topic, discovering that both private funding and private delivery of services have problematic consequences for the health care system as a whole. We concluded that, unless more convincing evidence emerges about the benefits of private health care in terms of waiting times, there is good reason for caution about such approaches. At the very least, private sector solutions should be exhausted first.

There are about a half a dozen categories of public supply-side interventions that have been employed in the attempt to reduce waiting lists. These comprise:

- Increased hospital funding to expand surgical activity
- Increased productivity through activity-based hospital payments
- Increased productivity through patient choice
- Increased productivity related to remuneration of surgeons
- Increased capacity
- Increased productivity through surgical management.

The demand-side policies are smaller in number and, for the most part, less of a focus. They include demand management through prioritization (i.e., increasing the threshold of appropriateness for hip and knee replacement) and prevention related to arthritis rates.

Plans, theories and simulations are one thing; actual results are another. Based on what actually happened when these interventions were employed in various

international settings and different Canadian provinces, the following initiatives stand out as the most effective:

Supply-side Policy

- Increased hospital funding to increase activity and / or capacity, preferably with a long-term strategy reflecting demand projections.
- Tie physician remuneration to actual reductions in wait times, combined with efficiency improvements at the level of surgical management (though we may be reaching the upper limit on productivity-based activity increases).

Demand-side Policy

- Decreasing the cohort of eligible patients by tightening the threshold requirements indicating joint replacement.
- Decreasing the revision surgery rate through optimal prosthesis selection, as monitored by joint replacement registries.

Demand management through prevention or diversion to non-surgical care receives comparatively little attention in the literature, possibly because these solutions can require a longer time frame than that involved with simply increasing the surgery rate.

Summing up all of the evidence, we offer the following series of recommendations to tackle excessive waiting times for hip and knee replacements in Canada:

1. Fund additional surgical activity to reduce wait list backlogs. To simply establish clinically optimal wait limits while not increasing funding and activity will only lead to thresholds for the appropriateness of surgery being tightened, possibly compromising the health and quality of life of patients suffering from arthritis.
2. Employ incentive programs among hospitals and physicians to increase productivity, and monitor and adjust for any adverse consequences.
3. Create and use demand projections, such as those estimated by certain health authorities in British Columbia, to rationally plan for capacity enhancement (including human resources and facilities).
4. Implement and resource programs of prevention and alternate medical care to reduce demand. Studies in other areas of public health consistently show that these often-neglected approaches are very cost-effective.
5. There is enough evidence that quality and costs can be well-controlled in the non-profit sphere to inspire us towards exhausting all public options first.
6. Ensure that an emphasis on wait times does not skew overall health care priorities both inside and outside orthopaedic surgery. In the case of hip and knee replacements, an overarching perspective offering some balance would be to help as many suffering patients as possible as much as possible.

7. Establish a long-term view and long-term policies so that a wait list backlog does not redevelop.

Background and Introduction

This document continues the investigation of reducing wait times for joint replacement surgery in Canada. It is the second in a series of three reports assembled in British Columbia; together they represent one part of a multi-team, cross-country research project on waiting lists sponsored by the Canadian Institute of Health Research.

Part one of our work consisted mainly of a literature review looking at waiting lists and their consequences, and at the potential management of waiting for health services through measures such as priority criteria and benchmarks. The discussion began broadly, narrowed to scheduled surgery in general, and then focused on our mandate, hip and knee replacements. The question relating to the consequences of waiting for joint replacements is of key importance, and was thoroughly addressed in Report I.

In the end, we acknowledged that there were some key areas left unaddressed, topics that by design were meant to be covered in the remaining phases of the project. In particular, Report II will analyze and answer the following inter-related questions:

- What are the patterns of waiting for scheduled surgery in Canada and other parts of the world, and what might account for any variations?
- What Canadian and international interventions have been employed in the past to reduce waiting lists and times, and to what effect?

A backdrop for many of the interventions proposed or tried in various parts of the world is that of private health care. This inevitably engages us in the keen Canadian debate over public versus private approaches to health care financing and delivery. We will offer some perspectives relevant to this debate in order to provide a context for deciding on waiting list initiatives in the future.

Part three of the project will feature British Columbia as a case study of needs and potential solutions, while at the same time offering a paradigm for other jurisdictions. Finally, the third report will sum up the discussion in terms of recommended strategies, pilot projects, future research agendas, and monitoring protocols, all aimed at enhancing the delivery of hip and knee replacement procedures across the country.

Conceptualizing Waiting Lists

The Mechanisms of Waiting

What are the key forces that shape joint replacement waiting lists? In a 2003 report, Hurst and Siciliani devised a simplified model of how patients flow through a typical health care system.³ The following description has been contextualized for an operation like joint replacement.

First, patients with conditions that might benefit from an operation present to a surgeon (usually through referral from a general practitioner in the public system or, in the parts of the world where a private sector is functioning, through self-referral). Those whose conditions are not deemed severe enough to require operative treatment may be referred back to the general practitioner with recommendations for medical management, or to a rheumatologist or a rehabilitation specialist if their condition demonstrates complexity from the medical point of view. If a condition is deemed urgent, as in the case of cancer, fracture, dislocation or infection, patients will be treated with minimal or no delay. By necessity, it is inappropriate for these patients to be placed on a waiting list. This type of procedure may be referred to as “unscheduled” or simply “booked.”

A final group of patients may be asked to wait for surgery; as we explained in the first report from this project, “scheduled” is a superior term to the traditional name “elective” for this category. The term implies that, while a precise booking may not be established, there is confidence about the general date for an essential operation that needs to happen in a timely way. This last group of patients, which is the most problematic from a management point of view, represents the “positive” inflow to the waiting pool. At the other end of the story, three main types of outflow from a public waiting list are possible (in descending order of importance, according to the current Canadian context):

- Joint replacement surgery within the confines of the publicly funded health care system.
- “Leakage” from the system due to patients moving away, improving to the point that surgery is no longer required, or dying during an extended waiting period.
- Diversion to private treatment, for patients who can afford it, or who are privately insured.⁴ In Canada, a true parallel private system south of the border can be accessed.

Based on this model, it is easy to see how the pool of waiting patients can expand if the inflow (or demand) exceeds the outflow, or the rate at which patients are removed from the list by receiving treatment (often referred to in terms of “supply”). Demand may fluctuate up and down over the short term, for example, depending on the number of “unscheduled” or emergency patients using the resources, or it may be steadily high and even increasing. The key issue is that, whenever demand exceeds

³ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

⁴ Although described here as an outflow from the public waiting “pool,” patients may in practice seek private treatment before even being placed on a list.

supply, the waiting list will grow. Further, unless the reverse is true at some point, i.e., supply exceeds demand, the list will never be cleared.

It is important to remember that the bare existence of a list is not the critical concern. As we noted in our first report, there is in fact a certain “utility” to waiting lists which make them attractive to health care managers. For example, a waiting list helps a surgical unit keep its beds and operating theatres optimally loaded. Thus, the issue for providers and patients really only emerges when the waiting list is long and / or steadily growing. Even then, it is not the list per se that is the problem. Notionally, even a thousand-person list would never make the nightly news if the necessary operations were all booked within a few weeks. In reality, though, excessive wait times for surgery tend to result from being part of a long list.

The lag time necessary to treat listed patients through the current and future supply of surgical procedures is the true issue for the health care system. The cause for concern is quite simple: as detailed in our first report, the wait time experienced by patients can lead to different kinds of unwanted consequences.⁵ These include increased morbidity, potentially poorer outcomes with delayed surgery, and productivity loss while incapacitated by underlying diseases such as arthritis. As suggested already, the most serious consequence may include death while waiting, though it is rare for death to be directly related to joint replacement (as compared with, for instance, patients awaiting cardiac care). However, apart from the mortality related to any comorbidities, the direct consequences of delayed joint replacement are clearly serious enough to warrant significant health care investment.

The Management of Waiting

Based on the preceding analysis, the determinants of waiting lists (and times) can be identified as those affecting demand and those affecting supply. We will itemize these factors below, in the context of identifying reasons for variations in the length of waiting lists from country to country and selecting potential levers to influence waiting lists.

For now, our agenda will be broader, namely, to address the question: what is the goal or philosophy behind the management of waiting lists? In short, it cannot simply be a matter that the lists are kept short! Of course, long waiting lists are a political lightning rod, but many would suggest that “the clinical” ought to trump “the political.” Physicians and other providers may well argue that the true goal of health care is maximized quality of life for the maximum number of people. In the context of joint replacement, both of these “maximums” relate less to waiting lists per se and more to:

- Timely surgery
- Total numbers of operations and / or the surgery rate.
- Cost-effective operations (which allows for more positive outcomes within certain resource limits).

⁵ Masri, BA, Cochrane N, Dunbar M et al. *Priority Criteria for Hip and Knee Replacement: Addressing Health Service Wait Times. Report I.* 2005. See the section called Consequences of Delayed Surgery.

- Enhanced joint health in a population *without* the need for surgery (i.e., prevention or alternate care); in other words, reduced demand.
- Operations being done in a manner that minimizes the need for revision surgery, thus reducing the future burden of disease. This relates not only to better techniques but also to tracking the measured outcomes at various delivery sites.

To illustrate the point of identifying the *ultimate* goals of management, one need only ask this question: if over the course of a year the wait list for hip replacements in a certain jurisdiction went up by 500 people, but at the same time 500 more operations were performed compared to the previous year, would we evaluate that the health care system in question was making progress?

How can planners and providers make sure that modifying the size of a wait list or the length of waiting time really does the job that ultimately is desired? The perspective suggested in this discussion is that the best approach will consider waiting list management as a proxy for more profound outcomes such as enhanced population health and quality of life.

The Measures of Waiting

Management is inextricably bound to measurement. In our previous report, we acknowledged that defining the waiting period of interest is an important task. Two main waits that are usually identified are the period between a primary care referral and seeing the specialist and the period between the decision to provide treatment and actual admission for the procedure in question. These are sometimes referred to as wait #1 and wait #2, and together as “total wait time.” However, there are “waits within and beyond” these periods that can be significant, including waiting for tests, for test results, and for rehabilitation after surgery. A full assessment of waiting, which rarely occurs, would need to take into account all of these time delays.

Beyond the wait definition per se, there are other measurement challenges central to our purpose. First, it is important to note the distinction between saying how long an individual on a waiting list has waited and establishing an aggregate reading of the experience over the whole list. For example, a mean or median waiting time for a particular list can involve the set of experiences of all patients *on the list* at a particular point or period in time, or the set of experiences of all patients who have *been admitted* and received their procedures within a certain time frame. As we will illustrate below, *these two datasets behave quite differently*.

In short, we must deal with, and choose among, a number of ways to quantify the actual or projected status of a waiting list before evaluating whether it is improving over time. The range of measures available through hospital data, government registries and patient or provider surveys includes:

- The number of patients on the waiting list at a particular point in time.
- The percentage change in the number of patients waiting, year to year.
- Prospective: the median or mean wait projected for a particular point in time.
- Retrospective: the median or mean wait experienced over a period of time (year, quarter, month etc.).

- The clearance time for a list, i.e., the number on the list divided by the surgery rate. (The Fraser Institute calls this the “expected wait.”)
- Distribution: the proportion of patients who received their operation within certain time frames, e.g., <3 weeks, 3-6 weeks, 6-12 weeks, 3-6 months, 6-12 months, 12-18 months, >18 months.
- A variation on the preceding approach is the proportion of patients receiving their surgery before or after a certain waiting time, typically a time of significance (e.g., the “maximum acceptable” or “clinically reasonable” waiting time for the procedure in question).
- The actual number of patients who have waited more than a set period at a particular point in time.

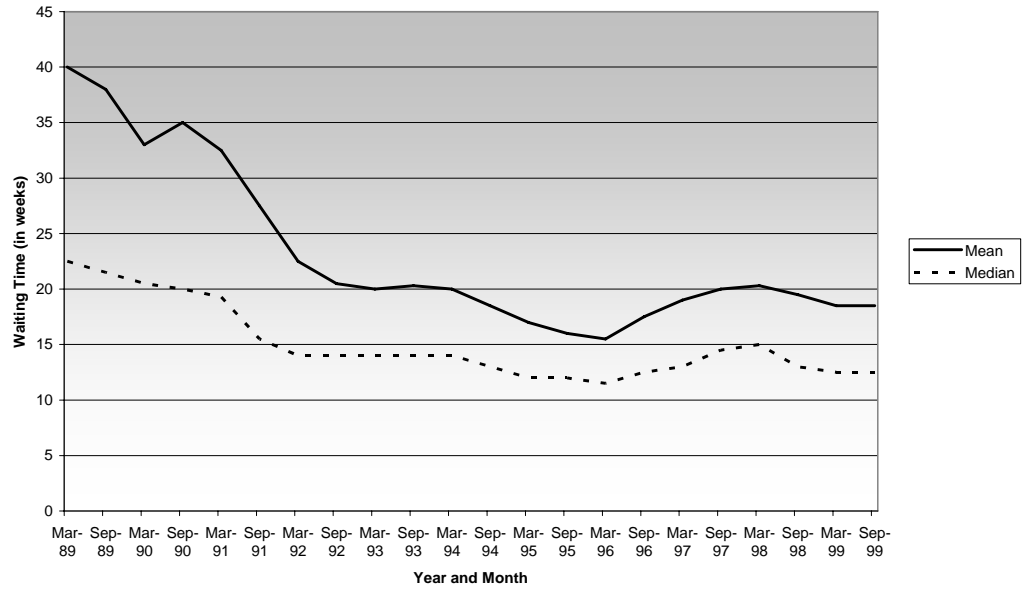
Not all of these metrics are equally useful. As DeCoster et al. noted: “Whether a list contains 100 or 1000 names tells us little about the wait or the patients’ experience during the wait.”⁶ The patients’ experience is affected by their perception of health care treatment, knowledge of their condition and ways to manage it, perceived pain intensity, quality of life based on their expectations, mobility needs for activity of daily living, work efficiency in the labour force, and support systems within their family and culture. The challenge is to find a relatively simple and reproducible metric that captures some of this qualitative complexity.

An illustration of the varying behaviour and utility of different waiting list measurements is provided by the experience in England in the 1990s. Extra hospital funding allowed for sharp reductions in the mean waiting time of patients *on the list*, perhaps by targeting patients waiting a long time; but at the same time, increased surgical activity only just kept pace with rising demand, so the mean and median waiting time of patients *admitted for surgery* remained largely unchanged over the decade.⁷ These results are illustrated in the following two graphs.

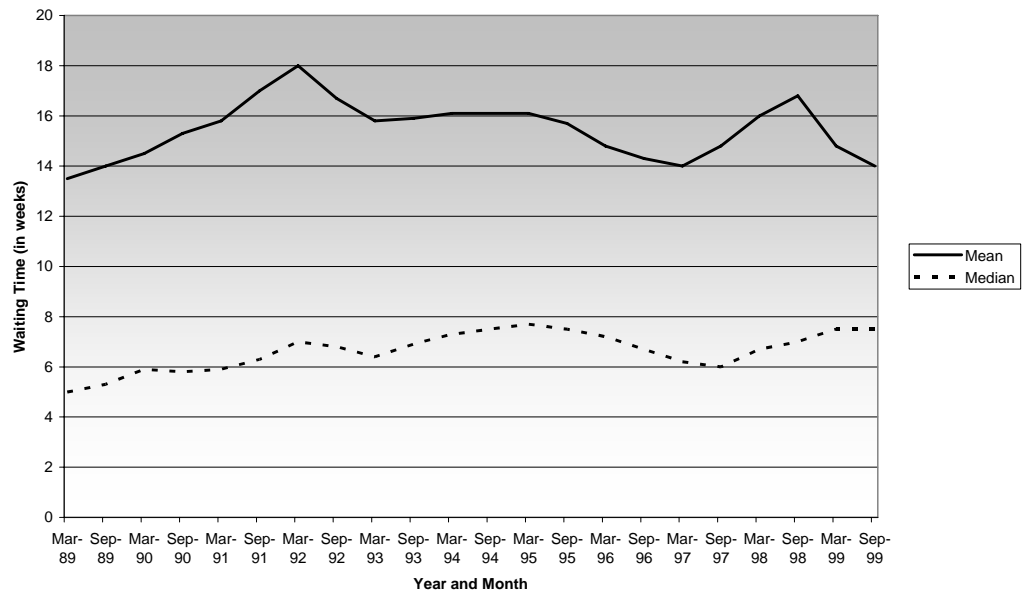
⁶ DeCoster C, Carriere KC, Peterson S et al. Waiting times for surgical procedures. *Medical Care*. 1999; 37(6 Suppl): JS187-205.

⁷ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

Mean and Median Waiting Time
Of Patients On The Wait List



Mean and Median Waiting Time
Of Patients Admitted



Thus, one type of metric, relating to everyone on the waiting list, behaved quite differently than an aggregate measurement of what the wait was for people who actually received their surgery each month. One wait number went down, the other remained relatively flat. Which data are more useful? In the end, it is arguable that the most telltale and potent measurement of mean or median wait times would be the latter one, assessed at the point where patients are *actually admitted* for hip and knee replacement. This certainly reflects the experience *most relevant to individual patients*. Unfortunately, it is often not clear which statistic is in view in any particular report. The reader is left wondering, “What does the mean number actually *mean*?”

The distribution of waits experienced by a cohort of patients over a certain period can also provide a useful picture, especially of the “shape” of a waiting list, which takes into account whether patients are being admitted according to urgency. For example, one 2003 analysis of health authorities (called “trusts”) in the UK noted that the experience of waiting for hip replacements over the whole list varied greatly. One trust showed that half the patients admitted for surgery waited less than 4.5 months, but 1 in 7 had waited for more than a year. Another trust showed a smaller percentage of short waits (i.e., less than 6 months), but on the other hand *nobody* had to wait for a hip replacement for more than a year.⁸ There has been some attempt to devise a single summary indicator that could capture the profile of a waiting list and the degree of progress in ensuring that patients are admitted in order of urgency.

The variety of measuring and reporting methods certainly does underline the complexity involved with understanding waiting lists, especially when attempting to compare different jurisdictions. We now turn in more detail to the very topic of comparisons among the joint replacement waiting lists in different jurisdictions of the world.

⁸ Audit Commission. *Waiting for Elective Admission*. 2003. Available at <http://www.audit-commission.gov.uk/Products/NATIONAL-REPORT/C98CB150-9FF3-11d7-B304-0060085F8572/WaitingAHP.pdf> Accessed September 2005.

Patterns of Waiting for Hip & Knee Replacement

The Challenge of Comparisons

It is increasingly popular to draw comparisons of health service provision between countries and between regions within a country. Comparisons allow planners and providers to gauge how they are doing relative to other jurisdictions, which is one factor in the process of priority-setting. This is not just a matter of preserving reputation or managing political pressure. Sometimes sustained inequities can cause system-wide damage, such as the cost borne in transporting patients to areas where service can be provided in a more timely way. Within a country or province, regional bottlenecks can be identified and addressed through comparative studies, again allowing for responsive planning.

While the usefulness of comparative studies may be acknowledged, a number of challenges must be faced when aligning data on wait times.

- *Diverse methods of collecting the information, each yielding different kinds of bias.* The methods vary from the direct (such as the surgical and specific wait time registries maintained in various Canadian provinces) to the indirect (surveys of patients or, as in the case of the Fraser Institute, of surgeons).
- *Different protocols for auditing the waiting list information.* As noted earlier, auditing, or checking whether every name on a list should be on it, is vital for accuracy.
- *Various definitions of waiting times and different metrics to summarize the information.* The definition of waiting varies depending on when the start of waiting begins and when it ends; the earliest possible point in the period is the first visit with a general practitioner, and the final point would be the initiation of rehabilitation. We have already identified the range of measurements employed (see the preceding section). Fortunately, there is some consensus around tracking the wait between a commitment to surgery and admittance to surgery, and this frequently is reported in terms of the median time experienced on a particular list. The fact that results are offered in days, weeks or months in different situations still requires some minor reconciliation (dividing the number of days by 7 to get the number of weeks, estimating the number of days or weeks in a month, etc.).
- *Different reporting periods.* Information can be collected and reported based on calendar years, various fiscal years, quarters, etc.
- *Aggregate information for multiple procedures.* There are instances where wait times for both hip and knee replacements are reported in a combined way, or for arthroplasty in general, or even for orthopaedic surgery as a whole. Data for arthroplasty is still a good approximation for our purposes, as hip and knee replacements dominate over all other types of joint surgery (shoulder, ankle, etc.). Aggregate orthopaedic surgery statistics are far less helpful. For example, the Fraser Institute survey from 2004 reported a 32 week median wait after referral for *all* orthopaedic procedures in B.C., but focusing on hip and knee replacement in particular increases the figure to 52

weeks.⁹ Finally, global data for all scheduled operations, though commonly reported in the literature, are simply too far removed from the specific experience with joint replacement.

- *Information simply not available.* Even provinces that have begun to provide wait time information to the public do not necessarily cover the areas of interest to researchers. For example, the data on the government of Manitoba's website as of September, 2005, only pertained to some key diagnostic procedures and cardiac surgery; there is no information on hip and knee replacements. These gaps in data underscore the need for reliable provincial registries that are consistent with federal data base criteria, use the same points of data entry (such as time of referral for surgery), and so on.

International Comparisons with Canada

Scheduled Surgery

The foundation for recent international comparisons on waiting times was well established in the 2003 report prepared by Siciliani and Hurst on behalf of the Organisation for Economic Cooperation and Development. They began by noting that there is only "a small amount of comparative waiting-time data from international surveys."¹⁰ Time trend information seems even scarcer. The following table summarizes the data available *prior* to the work of Siciliani and Hurst, specifically the percentage of patients waiting at least 3 months for surgery:¹¹

Proportion of Patients Waiting At Least Three Months					
Country	1990 All Surgeries	1993 Coronary bypass	1993 Coronary angiography	1998 ¹² All Surgeries	2001 ¹³ All Surgeries
Netherlands	16%				
Switzerland	16%				
Spain	19%				
Germany	19%				
Norway	28%				
Italy	36%				
Portugal	58%				
Sweden		18%	15%		
United Kingdom	42%	89%	23%	33%	38%
Canada		47%	16%	12%	27%
United States		0%	0%	1%	5%
Australia				17%	23%
New Zealand				22%	26%

⁹ *Waiting Your Turn* (14th edition). Fraser Institute Critical Issues Bulletin; 2004.

¹⁰ Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005.

¹¹ Adapted from data summarized in Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005.

¹² Percentage of patients waiting more than 4 months.

¹³ Percentage of patients waiting more than 4 months.

Although the data are limited, several observations about the situation in the 1990s can be made:

- A group of European countries and the US had a dramatically lower number of patients that endured excessive wait times for surgery.
- While the UK seems to have generally improved over the course of the decade, it along with other countries tended to see a growing proportion of their populations with excessive waits in the latter 1990s.
- Canada performed somewhat better than the UK in terms of wait times, but was basically comparable to Australia and New Zealand.
- The waiting situation can vary widely for closely related areas of health care (such as for different procedures within cardiac care).

Anecdotal reports support some of these conclusions. For example, one review noted that Germany is a country where “formal waiting lists and explicit rationing decisions are virtually unknown.”¹⁴ The same reputation is enjoyed by France¹⁵ and Belgium.¹⁶

The Siciliani and Hurst 2003 report (based on 2000 data) provides a significant addition to the data base allowing international comparisons.¹⁷ They collected information on 10 procedures in 12 countries. The most frequently used definition of waiting time was the elapsed time from the date the patient was added to the list to the date of admission to the surgical unit, with the usual reported measure being mean and / or median waiting time. Unfortunately, this does not allow an easy comparison with the percentage of patients waiting longer than 3 (or 4) months, which was the metric of choice in the preceding table. Nevertheless, some of the features seen in the data were consistent with the observations offered above:

- A subset of countries performed well in terms of wait times; for example, Denmark and Norway consistently were at or near the lowest waiting time for several procedures.
- At the other end of the spectrum, the UK consistently demonstrated the longest wait times.
- Canada’s median wait times were generally of a similar order of magnitude to the Australian statistics; this was confirmed by a physician survey in 2003, which rated Canada and Australia ahead of New Zealand and the UK in terms of waiting for scheduled surgery (with the US again being a class by itself, with less than 1% of physicians reporting that patients often had to wait more than 6 months for surgery).¹⁸
- The specific information on coronary bypass in the UK adds to the story of growing wait times; in 1993, 89% of patients had to wait more than 3 months for the procedure, whereas in 2000 half of them waited more than 6 months.

¹⁴ Busse R, Riesberg A. *Health Care Systems in Transition: Germany*. European Observatory on Health Systems and Policies; 2004.

¹⁵ Imai, Jacobzone S, Lenain P. *The Changing Health System in France*. OECD Economics Department Working Papers No. 269; 2000.

¹⁶ *Health Care Systems in Transition: Belgium*. European Observatory on Health Systems and Policies; 2000.

¹⁷ Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005.

¹⁸ Blendon RJ, Schoen C, DesRoches CM et al. Confronting competing demands to improve quality: a five-country hospital survey. *Health Affairs*. 2004; 23(3): 119-35.

- There is a wide variation in wait times between different surgical procedures. In Australia, for example, the median wait time for a knee replacement was almost 6 times that for a coronary bypass.

Hip & Knee Replacement

One of the few comparative studies focusing on joint replacements was produced by Coyte et al.; the patients surveyed reported a median wait time in Canada of 8 weeks for a knee replacement (between 1985 and 1989), compared to 3 weeks in the US.¹⁹ The differential was even greater in a 1998 comparison of knee replacement median wait times: 3.6 weeks in the US and 23.6 weeks in Canada.²⁰

Again, Siciliani and Hurst have augmented the international data considerably. Several countries provided mean wait times for hip and knee replacement, but for our purposes we will highlight the group reporting median wait times, as this set of respondents included three Canadian provinces. The following table summarizes year 2000 data on the median wait time (in weeks).²¹

<i>Country / Province</i>	<i>Hip replacements</i>	<i>Knee replacements</i>
Denmark	12.4	12.9
Norway	14.1	18.9
Australia	14.0	17.1
Manitoba	15.0	15.0
British Columbia	16.0	19.4
Saskatchewan	23.1	41.6
Finland	21.1	28.9
United Kingdom	30.1	37.4

Assessed in general terms, Canada seems to occupy an intermediate position on the international spectrum of waiting for joint replacements.

The work of comparing international experiences continues. In 2004, hospitals in four other European countries not covered by Siciliani and Hurst were assessed. The *mean* wait times (in weeks) found for hip replacements over different hospitals are reported in the following table:²²

<i>Country</i>	<i>Wait Time</i>
Finland	20
Ireland	12 to 40
Spain	13 to 16
Sweden	10 to 27

¹⁹ Coyte PC, Wright JG, Hawker GA et al. Waiting times for knee-replacement surgery in the United States and Ontario. *New England Journal of Medicine*. 1994; 331(16): 1068-71.

²⁰ Bell CM, Crystal M, Detsky AS et al. Shopping around for hospital services: a comparison of the United States and Canada. *Journal of the American Medical Association*. 1998; 279(13): 1015-7.

²¹ Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005.

²² Standing Committee of the Hospitals of the European Union. *Measuring and Comparing Waiting Lists: A Study of Four European Countries*. 2004. Available at <http://www.hope.be/07publi/WAITINGLISTS/HOPE%20WAITING%20LIST%20WORKING%20PARTY%20REPORT.pdf>. Accessed September 2005. The data have been translated into days, in order to better compare with the previous table.

The data demonstrate the great variability between countries, and between hospitals in the same country.

Recent Canadian Experience

Data Sources

There is great interest in Canada in the topic of waiting for hip and knee replacements, a featured procedure in both current studies²³ and recent conferences²⁴ in this country. Proof enough of the importance of such procedures is found in the existence of the very project we are working on, which directly resulted from the First Ministers of this country identifying joint replacements as one of 5 priorities for wait time reductions by March 31, 2007 (as the first phase of a 10-year plan).²⁵ As further evidence of this focus, it is significant that 2 of the 70 health performance indicators being tracked nationally cover wait times for hip and knee replacements.²⁶ Unfortunately, only data from four provinces (British Columbia, Saskatchewan, Manitoba and Prince Edward Island) have been made available so far. Likewise, the repeated promises by the Canadian Joint Replacement Registry to generate national data on wait times for hip and knee replacements, though clearly necessary, remain unfulfilled.²⁷

Balancing these gaps, it is potentially very helpful that half the provinces are currently offering wait time information regarding joint replacements on-line; this includes the British Columbia website, which was re-launched in September, 2005, after a comprehensive audit.²⁸ The good news of publicly available information is mitigated by the fact that, as noted earlier, there is variety in the way waiting lists are tracked. Thus, Saskatchewan reports the proportion of patients who received their surgery within certain time frames; while Alberta also follows this pattern, they also provide the median wait time for hip and knee replacements and other surgeries. Ontario gives median wait time information as well, though it is not as up-to-date as other websites. Finally, Quebec offers patients a different approach, namely, the total number of patients waiting for a joint replacement in each hospital, and the number who wait 3 months or more; means and medians for each region are not calculated.

In addition to websites generated by physician-based registries, there is a unique resource available in Canada, namely, the annual survey of specialist physicians conducted by the Fraser Institute. Their annual report on the survey, called *Waiting Your Turn*, illustrates the problem with different methods of assembling data, as the results often differ greatly from those derived through administrative records kept by hospitals and governments. Nevertheless, the Fraser Institute defends the approach of a national opinion poll, especially in light of the lack of administrative data from many areas of the country (a reality which is borne out by the patchwork of sources we have used to assemble the tables in the immediately following sections of our report). Nonetheless, as was pointed out by the Canadian Health Services Research

²³ For example, the Western Canada Waiting List Project. See the website at <http://www.wcwl.org/>.

²⁴ For example, Taming the Queue. See the website at <http://www.cpm.com/en/doc.cfm?doc=1274>.

²⁵ *Wait Times*. Health Canada Background. September 2004. Available at http://pm.gc.ca/grfx/features/09-fimm_e.pdf. Accessed September 2005.

²⁶ *Plan for Reporting Comparable Health Indicators in November 2004*. Available at http://secure.cihi.ca/cihiweb/en/downloads/ACGA_CBN_TO_CDM_ENG.pdf. Accessed September 2005.

²⁷ *2005 CJRR Report: Total Hip and Total Knee Replacements in Canada*. Canadian Institute for Health Information.

²⁸ Available at <http://www.hlth.gov.bc.ca/waitlist/>. Accessed September 2005.

Foundation in 1998, the “use of administrative data systems is generally considered a better measure of actual experience, whereas physician opinion is a better measure of satisfaction of providers with access times.”²⁹

Hip Replacement

The following table provides *median* wait time in weeks, except where noted (for comparison purposes, the year 2000 Siciliani & Hurst data is presented in weeks).

<i>Jurisdiction</i>	<i>2000 Siciliani & Hurst</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004</i>	<i>2004 Fraser Institute³⁰</i>
British Columbia ³¹	16.0	19.4 ³²	18.7 ³³		22.0	52
Alberta ³⁴			19.3 ³⁵	19.0 ³⁶		37
Saskatchewan ³⁷	23.1		26.4		39.4 ³⁸	104
Manitoba ³⁹	15.0		19.0			27
Ontario ⁴⁰		20.0	22.0	24.0		24
Quebec ⁴¹						24
New Brunswick						30
Nova Scotia						50
Prince Edward Island ⁴²			10.9			50
Newfoundland						28

Several observations can be made concerning this table. First, it is apparent that much more progress needs to be made on establishing registries and communicating provincial-level information; generally, the western provinces seem somewhat ahead of the game in terms of tracking wait times, which may reflect the same energy behind initiatives such as the Western Canada Waiting List Project. Second, for the

²⁹ Canadian Health Services Research Foundation. *Quid Novi?* 1998; 1(4). Available at http://www.chsrf.ca/other_documents/newsletter/qnv1n4p4_e.php. Accessed October 2005.

³⁰ Data for arthroplasty, with hip and knee replacement being the majority of the procedures. *Waiting Your Turn* (14th edition). Fraser Institute Critical Issues Bulletin; 2004.

³¹ *How Healthy Are We? British Columbia's Report on Nationally Comparable Performance Indicators* (2002); Canadian Institute for Health Information (CIHI) website; Ministry of Health Services website (2004 figure captured by Fraser Institute).

³² For comparison, the Fraser Institute report *Waiting Your Turn* (12th edition) noted that the June 30, 2002 figure was 19.0.

³³ For comparison, the Fraser Institute report *Waiting Your Turn* (13th edition) noted that the March 31, 2003 figure was 18.6.

³⁴ Data sources: Alberta Government Waitlist Registry website; Ministry of Health and Wellness Annual Report.

³⁵ Mean time for both hip and knee replacement; quarterly figures averaged. Reported by CIHI as 20.4.

³⁶ Mean time for both hip and knee replacement; quarterly figures averaged.

³⁷ Canadian Institute for Health Information (CIHI) website; the Saskatchewan *Comparable Health Indicators Report 2002* recorded 23.2 weeks for 2000-01. Available at http://www.health.gov.sk.ca/comp_health_indicators_rep/Section%204%20-%20%20Chapter%205,%20Appendices,%20References.pdf. Accessed September 2005.

³⁸ Mean wait time calculated by the Fraser Institute from Saskatchewan Surgical Care Network data; urgent cases omitted.

³⁹ Canadian Institute for Health Information (CIHI) website.

⁴⁰ Data sources: Institute for Clinical Evaluative Sciences. *Access to Health Services in Ontario*. April 2005; Ontario Ministry of Health and Long-term Care website.

⁴¹ Median wait times not available on health ministry website.

⁴² Canadian Institute for Health Information (CIHI) website.

most part the waits for hip replacements in different jurisdictions are a similar “order of magnitude.” The one exception seems to be Saskatchewan, which is borne out by the estimates of the Fraser Institute (which describes the wait times in Saskatchewan as “abnormally high compared to other Canadian provinces”). Third, and most tellingly, the wait times have generally increased since 2000. This upward trend is reinforced by the limited data available on wait times for hip replacements in the 1990s; for example, the median wait time in Ontario for hip replacements in 1993/94 was 16 weeks, significantly better than anything reported since the year 2000.⁴³ Similarly, the *average* wait in Nova Scotia between 1992 and 1996 varied from 14 to 17 weeks.⁴⁴ Other provinces suggest a more stable experience; one Manitoba hospital reported a 19.3 week wait for hip replacements in 1994/95 and 1995/96, very similar to the province-wide level in 2002/03.⁴⁵

As noted earlier, the Fraser Institute results are significantly different, generally suggesting wait times more than twice as long as those reported by governments (the one exception to this rule being Ontario, where for some reason the results perfectly coincide in 2004). The authors of *Waiting Your Turn* have regularly acknowledged the discrepancies in recent editions of the report, and sought to provide an explanation. They note the following possible factors:⁴⁶

- Whereas provinces sometimes measure wait times between when the treatment is scheduled and the actual date of treatment, the Institute consistently assesses wait times from the time the specialist decides that treatment is required.⁴⁷ The Institute maintains that this approach, as practiced in B.C., for instance, “understates the patient’s actual waiting time between seeing a specialist and receiving treatment.” The authors acknowledge that the Ministry of Health Services in B.C. has doubts about whether the degree of understatement is very significant. However, they also insist that simply comparing the reported total number of people waiting to typical surgery rates bears out their longer estimates of waiting time.
- Further, the B.C. government results, as with all administrative data, are retrospective, whereas the Institute is committed to *projecting* the waiting that is currently to be experienced in a jurisdiction. The specific survey question presented to physicians reads: “From today, how long would a new patient have to wait for the following types of elective surgery....?”
- The Institute’s survey attempts to reflect the whole province in each case, compared to, for example, the Saskatchewan website, which only covers Regina and Saskatoon. In fact, the Institute’s survey approach is also seriously limited by the variable pattern and rate of response across regions.
- Another distinction involves the inclusion of urgent cases by the Saskatchewan government; these patients tend to receive their surgeries

⁴³ Institute for Clinical and Evaluative Sciences. *Arthritis and related conditions in Ontario*. 2004.

⁴⁴ Nova Scotia Department of Health. *Reporting Health Performance: Elective Procedure Waiting Times in Nova Scotia 1992-1996*. 1996.

⁴⁵ Manitoba Centre for Health Policy and Evaluation. *Surgical Wait Times in Manitoba*. 1998.

⁴⁶ *Waiting Your Turn* (14th edition). Fraser Institute Critical Issues Bulletin; 2004.

⁴⁷ In fact, *Waiting Your Turn* seems imprecise at this point. Later in the same part of the report, it suggests that the measurement of interest is the time between when a new patient is seen by a specialist and when the procedure is performed; in other words, the Institute by this definition would include any time ordering, waiting for, and analyzing test results, presumably *before* a decision to treat is made.

sooner, skewing results downward from the Institute estimates (which only cover what it calls “elective” procedures). In fact, hip and knee replacement is one of the few operations where the Institute’s median waiting time actually exceeds the Saskatchewan government figures. This contrasts with the general conclusion in the Institute report, namely, that its estimates tend to be *conservative* compared against other data in the literature.

Knee Replacement

The following table provides *median* wait time in weeks, except where noted (for comparison purposes, the year 2000 Siciliani & Hurst data is presented in weeks).

<i>Jurisdiction</i>	<i>2000 Siciliani & Hurst</i>	<i>2001-02</i>	<i>2002-03</i>	<i>2003-04</i>	<i>2004</i>	<i>2004 Fraser Institute</i> ⁴⁸
British Columbia ⁴⁹	19.4	25.0 ⁵⁰	24.0 ⁵¹		30.3	52
Alberta ⁵²			19.3 ⁵³	19.0 ⁵⁴		37
Saskatchewan ⁵⁵	41.6		39.9		47.9 ⁵⁶	104
Manitoba ⁵⁷	15.0		22.0			27
Ontario ⁵⁸		27.0 ⁵⁹	29.0	33.0		24
Quebec ⁶⁰						24
New Brunswick						30
Nova Scotia						50
Prince Edward Island ⁶¹			13.0			50
Newfoundland						28

The main observation, comparing this table to the hip replacement data, is that waits for knee surgery are generally longer in each setting. Further, the waiting time has significantly increased in recent years. As indicated in the following table, the recent upward trend in most jurisdictions can be compared with the reality of *shorter* waits for knee replacement in the 1990s and earlier.

⁴⁸ Data for arthroplasty, with hip and knee replacement being the majority of the procedures. *Waiting Your Turn* (14th edition). Fraser Institute Critical Issues Bulletin; 2004.

⁴⁹ *How Healthy Are We? British Columbia’s Report on Nationally Comparable Performance Indicators* (2002); Canadian Institute for Health Information (CIHI) website; Ministry of Health Services website (2004 figure captured by Fraser Institute).

⁵⁰ For comparison, the Fraser Institute report (12th edition) noted that the June 30, 2002 figure was 27.7.

⁵¹ For comparison, the Fraser Institute report (13th edition) noted that the Mar. 31, 2003 figure was 26.7.

⁵² Data sources: Alberta Waitlist Registry website; Ministry of Health & Wellness Annual Report.

⁵³ Mean time for both hip and knee replacement; quarterly figures averaged. Reported by CIHI as 20.4.

⁵⁴ Mean time for both hip and knee replacement; quarterly figures averaged.

⁵⁵ Canadian Institute for Health Information (CIHI) website; the Saskatchewan *Comparable Health Indicators Report 2002* recorded 42.3 weeks for 2000-01. Available at http://www.health.gov.sk.ca/comp_health_indicators_rep/Section%204%20-%20%20Chapter%205,%20Appendices,%20References.pdf. Accessed September 2005.

⁵⁶ Mean wait time calculated by the Fraser Institute from Saskatchewan Surgical Care Network data; urgent cases omitted.

⁵⁷ Canadian Institute for Health Information (CIHI) website.

⁵⁸ Data sources: Institute for Clinical Evaluative Sciences. *Access to Health Services in Ontario*. April 2005; Ontario Ministry of Health and Long-term Care website.

⁵⁹ The figure quoted in *Arthritis and related conditions in Ontario* (2004) is 29.

⁶⁰ Median wait times not available on health ministry website.

⁶¹ Canadian Institute for Health Information (CIHI) website.

Province	Year	Statistic	Wait Time (weeks)
Ontario ⁶²	1985-89	Median	8
Ontario ⁶³	1993-94	Median	20
Manitoba ⁶⁴	1994-95; 1995-96	Unclear	23.6
Nova Scotia ⁶⁵	1992-1996	Mean	17.1 to 22.8
Canada ⁶⁶	1998	Median	23.6

According to available data since 2000, only Alberta and Manitoba have fared well when set against this earlier record; however, regional disparities in the north and other underserved still need to be separately assessed.

Finally, it is an interesting, though inexplicable, exception that the Fraser Institute wait time estimate in 2004 is *lower* than the Ontario government's figure. This anomaly only reinforces the need for clear, transparent and consistent definitions of wait times and methods of data collection in order to allow comparisons between jurisdictions in which we will have confidence, and which will provide a sound basis for policy analysis and adjustment.⁶⁷

⁶² Coyte PC, Wright JG, Hawker GA et al. Waiting times for knee-replacement surgery in the United States and Ontario. *New England Journal of Medicine*. 1994; 331(16): 1068-71.

⁶³ Institute for Clinical and Evaluative Sciences. *Arthritis and related conditions in Ontario*. 2004.

⁶⁴ Manitoba Centre for Health Policy and Evaluation. *Surgical Wait Times in Manitoba*. 1998.

⁶⁵ Nova Scotia Department of Health. *Reporting Health Performance: Elective Procedure Waiting Times in Nova Scotia 1992-1996*. 1996.

⁶⁶ Bell CM, Crystal M, Detsky AS et al. Shopping around for hospital services: a comparison of the United States and Canada. *Journal of the American Medical Association*. 1998; 279(13): 1015-7.

⁶⁷ Sanmartin CA. Toward standard definitions for waiting times. *Healthcare Management Forum*. 2003. Available at <http://www.cchse.org/Forum/Summer2003/Sanmartin%20final.pdf>. Accessed September 2005.

Analysis of Variations in Waiting for Care

Influences on Waiting

A number of likely determinants of demand and supply, and hence waiting times, for scheduled joint replacements can be identified. Some key possibilities are listed in the following table.⁶⁸

<i>Inflow to Waiting List (Demand)</i>	<i>Outflow from Waiting List (Supply)</i>
Health status of the population	Public surgical capacity (staffed operating rooms, equipment & beds)
Technology (prostheses, surgical techniques, alternate therapies)	Private surgical capacity
Patient expectation / preference	Productivity
Range of treatable conditions	Unscheduled (emergency) surgeries
Thresholds	Waiting time
Gate-keeping behaviour	
Public cost-sharing by patient	
Cost of private surgery	
Role of private insurance	
Systemic bottlenecks (access to family physicians, diagnostic tests)	
Waiting time	

The list of factors is rich, with complex inter-relationships; several comments are suggested by the table.

1. The wide range of influences on demand may bear more examination and employment than they have enjoyed up to now as potential strategies to influence waiting lists. For instance, the next point raises the possibility of *preventive* approaches to moderating surgical demand.

2. In some cases, there are other “determinants behind the determinants.” One example is the “health status of the population;” of particular interest here is the prevalence of arthritis, the underlying disease that precipitates most joint replacements. Arthritis is strongly associated with aging, a risk factor over which we have no control. Another risk factor for joint disease that holds out more promise for modification is obesity. Recent studies have confirmed that obesity is an important independent risk factor for arthritis, and indeed may be the main preventable cause of arthritis.⁶⁹ In 2004, Statistics Canada estimated that for both men and women who did not have the disease in 1994/95, the odds of developing it by 2000/01 were 60% higher among people who were obese, compared with those of acceptable weight.⁷⁰ By comparison, a US report published in September, 2005, indicates that up to 18%

⁶⁸ Mostly adapted from Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

⁶⁹ Mehrotra C, Naimi TS, Serdula M et al. Arthritis, body mass index, and professional advice to lose weight: implications for clinical medicine and public health. *American Journal of Preventive Medicine*. 2004; 27(1): 16-21.

⁷⁰ Wilkins K. Incident arthritis in relation to excess weight. *Health Reports*. 2004; 15(1): 39-49. Available at <http://sc.gc.ca/english/studies/82-003/archive/2004/15-1-b.pdf>. Accessed September 2005.

of arthritis cases in 2002 could be attributed to obesity.⁷¹ The implications for joint surgery demand follow accordingly. The conclusion drawn from the 2005 Canadian Joint Replacement Registry was that “after adjustment was made for the effects of age and gender, people who were obese were three times more likely to get hip or knee joint replacements, compared to people with an acceptable weight.”⁷²

3. Some background determinants affect both sides of the table, which creates further complexity. For instance, as described in an extensive literature, the schemes used to pay physicians and hospitals can affect both gate-keeping behaviour and productivity. While the evidence for this is not necessarily drawn from the world of orthopaedic surgery, it is still suggestive. On the demand side, research in the UK has shown that if general practitioners are paid through “fund holding” as opposed to salaries, i.e., if they have to pay the price of referrals and admissions, then admissions for procedures tend to decrease.^{73,74} Similarly, specialists may see patients less quickly when they are paid by salary rather than fee-for-service.⁷⁵ On the supply side, paying surgeons on a fee-for-service basis increases productivity,⁷⁶ while allowing them to work in both public and private sectors tends to lengthen public wait lists.⁷⁷ On the latter point, a well-known 1999 Manitoba study of cataract surgery concluded: “If surgeons are allowed to operate in both sectors, there is an incentive for them to encourage long waits in the public sector; the longer the wait for surgery in the public sector, the more likely is the patient to seek private care.”⁷⁸ This outcome confirmed the results of an earlier survey in Alberta.⁷⁹ These topics, private versus public health care in particular, will be explored further in a later section of this report.

4. Some of the influences listed in the table are mediated through patients (patient expectations, and out-of-pocket costs), while others are clearly within the purview of physicians (range of treatable conditions, thresholds, gate-keeping behaviour). The role of physicians is complicated by the multiple layers involved; for example, thresholds for referral, managed by general practitioners, may or may not coincide with the specialist thresholds to admit someone to a surgical waiting list. Finally, some levers, especially on the supply side, are in the hands of planners and politicians.

5. Certain determinants have a key impact on various other determinants on the list, and not always in an obvious way. A good example of this is technological change.

⁷¹ Leveille SG, Wee CC, Iezzoni LI. Trends in obesity and arthritis among baby boomers and their predecessors, 1971-2002. *American Journal of Public Health*. 2005; 95(9): 1607-13.

⁷² Summary available at http://secure.cihi.ca/cihiweb/disPage.jsp?cw_page=media_17aug2005_e. Accessed September 2005.

⁷³ Gravelle H, Dusheiko M, Sutton M. The demand for elective surgery in a public system: time and money prices in the UK National Health Service. *Journal of Health Economics*. 2002; 21(3): 423-49.

⁷⁴ Xavier A. Hospital competition, GP fundholders and waiting times in the UK internal market: the case of elective surgery. *International Journal of Health Care Finance & Economics*. 2003; 3(1): 25-51.

⁷⁵ Iversen T, Luras H. Waiting time as a competitive device: an example from general medical practice. *International Journal of Health Care Finance & Economics*. 2002; 2(3): 189-204.

⁷⁶ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

⁷⁷ Morga A, Xavier A. Hospital specialists' private practice and its impact on the number of NHS patients treated and on the delay for elective treatment. Discussion Papers in Economics. University of York; 2001. Available at <http://www.york.ac.uk/depts/econ/dp/0101.pdf>. Accessed September 2005.

⁷⁸ DeCoster C, Carriere KC, Peterson S et al. Waiting times for surgical procedures. *Medical Care*. 1999; 37(6 Suppl): JS187-205.

⁷⁹ Consumers' Association of Canada (Alberta). Current access to cataract surgery in Alberta. 1994.

When improvements in prosthetic design or durability occur, it can make joint replacement more attractive to patients as well as expand the indications for surgery, thus potentially increasing the waiting list; on the other hand, longer-lasting implants means a lower revision rate and thus decreased demand in the system. This makes the distinct assumption that newer implants with a promised longer longevity will indeed deliver on better implant survivorship. Historically, however, there are numerous examples where newer technologies have led to *less* durability.

In the current era, the phenomenon of direct-to-consumer marketing through the media and the Internet is a force that needs to be acknowledged. Patient often demand these newer technologies, even when they are not proven. This increases the cost of delivery of care and potentially reduces accessibility due to fiscal constraints. For technologies that have not been proven, it may be wise to ask the consumer to pay a fee differential to cover the increased cost of the implant and to lessen the financial burden on the health care provider. This would be consistent with the Canada Health Act, because these newer implants are not a necessity, as less expensive implants with known track records are available as an alternative.

Improvements in surgical techniques⁸⁰ also represent an ambiguous scenario; they could expand the pool of surgeons who can do the surgery and / or enhance the productivity of some surgeons, but they also could increase demand. Further, with increasing demands for procedures such as minimally invasive joint replacements, surgeons who may not possess the skills required for these more difficult operations could still attempt them simply to meet patient expectations. This can lead to earlier prosthetic failures compared with standard surgical techniques. The use of minimally invasive approaches has to be carefully monitored to ensure that complication rates and the need for early revisions are not increasing. Such unwanted consequences could potentially undo any advances made in wait list management.

More straightforward are new conservative approaches to effectively manage the care offered to arthritis sufferers; these would unequivocally create downward pressure on surgical demand, the extent of which depends on the cost-effectiveness of any new therapy.

6. “Waiting time” appears on both sides of the table. It can be a determinant of supply in an indirect sense, as long waits might expand the funding allocated for surgeries in public hospitals and / or inspire the development of private options. We have seen both trajectories in operation in Canada. Conversely, a waiting list might moderate demand in the sense that patients and physicians alike will be discouraged from pursuing a surgical option in the face of long wait times (this is in addition to the patient-mediated “leakage” from a waiting pool noted earlier, i.e., because of death, discouragement or moving out of the area). The forces just described represent “nested” feedback loops: waits reducing demand but also increasing supply, which further reduces waits but also might attract more demand. Other factors being equal, a sort of equilibrium may develop, parallel to that seen in the economic market, but with the price being paid in time rather than money.⁸¹

⁸⁰ Tang Z. Minimally invasive total hip replacement. *Issues in Emerging Health Technologies*. 2004; (60): 1-4.

⁸¹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

A critical question for public policy raised by such a system is: how sensitive will demand be to increased supply / reduced waiting. An important study in the UK determined that there is a “low elasticity” of demand with respect to waiting time, “suggesting that increased resources may reduce waiting times without stimulating utilization.”⁸² However, this outcome depended on certain initial conditions; dynamic computer modelling reveals the full story to be more complex, as we will see below.

7. Finally, as elaborate as the list of determinants may be, it is not limitless; consequently, one could conclude that ruling out private surgery at a political level *might* significantly reduce the range of strategic options available to managers of waiting lists.

Variations “on the Ground”

How do the potential influences on waiting lists work in reality? We will look first at the international scenario and then the situation within Canada.

Influences on Waiting Lists: Comparing Countries With and Without Waits

Siciliani and Hurst reviewed the inter-country variations in waiting times against a number of variables.⁸³ There are significant limitations in their research in terms of our purpose. First, the authors found it almost impossible to secure data relevant to scheduled surgery, i.e., statistics on total surgeons, surgical beds and spending on surgery. As Siciliani and Hurst readily acknowledge, the best they could do was rely on proxy data, i.e., total physicians, total acute care beds, and total health care spending. Second, the data obtained on capacity often combined public and private sectors, whereas it is the former which will most impact the waiting time experienced by public patients. Finally, some of the factors vary considerably across the provinces or regions of a country. Nonetheless, analysis which was possible still provides useful clues for how waiting times for joint replacement may be influenced. A helpful feature of their work is the inclusion of hip replacement as a category of interest when tracking most variables, though not all of the analysis was directly associated with this type of surgery.

Siciliani and Hurst examined the following factors with reference to waiting times for scheduled surgery: total health expenditure per capita; system capacity (as measured by total beds and human resources such as physicians); surgical activity (volume of patients or procedures per unit population) and productivity (volume per bed or physician); remuneration systems and gate-keeping; age and health of the population; and the role of patient co-payments. They drew the following conclusions:

1. Although there are some anomalies, countries with higher per capita spending, such as the US and Germany, generally have lower waiting times; low spending countries such as the UK and Finland have the highest waiting times. The fact that this “formula” does not always apply means that variations in expenditures cannot be the only important variable.

⁸² Martin S, Smith PC. Rationing by waiting lists: an empirical investigation. *Journal of Public Economics*. 1999; 71: 141-64.

⁸³ Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005.

2. Capacity is also important. Countries with no significant waiting times for scheduled surgery had 66% more acute care beds per 1000 population. Similarly, such countries had 23% more practising specialists.
3. In the broadest terms, countries with more capacity had both higher levels of surgical activity and lower wait times. For instance, countries with no reported wait times for hip and knee replacements showed, respectively, 57% and 84% higher inpatient surgeries per 1000 population. But it must be acknowledged that these relationships are complex. The level of activity is determined by supply and demand factors. It is certainly possible for a country with high need to demonstrate both high supply and high waiting times. We have assembled the following table to demonstrate the unreliability of surgery rates as the sole predictor of wait times. (It also shows that it is difficult to confirm data on joint replacement rates for comparable years; Canada especially yields variable results, depending on the source.)

Country	Median wait time at admission (weeks)⁸⁴	Data year	Surgery rate (per 100,000 population)
Denmark	12.4	1998 ⁸⁵	93
Australia	14.0	1998 ⁸⁶ 1999/2000 ⁸⁷	101 104
Norway	14.1	1998 ⁸⁸	110-120
Canada	17.0	1998/1999 ⁸⁹ 1999/2000 ⁹⁰ 2000 ⁹¹	61.9 59.5 47.0
Finland	21.1	1999 ⁹²	103
UK	30.1	1996 ⁹³ 2000 ⁹⁴	87 82 Male 98 Female

⁸⁴ Siciliani L, Hurst J. *Explaining Waiting Time Variations for Elective Surgery across OECD Countries*. OECD Health Working Papers 7; 2003. Available at <http://www.oecd.org/dataoecd/31/10/17256025.pdf>. Accessed September 2005. Canadian data for 3 provinces prorated by population.

⁸⁵ Lucht U. Danish Hip Arthroplasty Register. *Acta Orthopaedica Scandinavica*. 2000; 71(5): 433-9.

⁸⁶ An estimate based on data for primary hip replacement for primary osteoarthritis. Wells VM, Hearn TC, McCaul KA et al. Changing incidence of primary total hip arthroplasty and total knee arthroplasty for primary osteoarthritis. *Journal of Arthroplasty*. 2002; 17(3): 267-73.

⁸⁷ Australian Institute of Health & Welfare, 2001.

⁸⁸ Havelin LI. The Norwegian Joint Registry. *Bulletin of the Hospital for Joint Diseases*. 1999; 58(3): 139-47.

⁸⁹ An estimate based on Statistics Canada data for the population age 20+. Millar WJ. Hip and knee replacement. *Health Reports*. 2002; 14(1):

⁹⁰ Quoted in Saskatchewan *Comparable Health Indicators Report 2002* recorded 23.2 weeks for 2000-01. Available at http://www.health.gov.sk.ca/comp_health_indicators_rep/Section%204%20-%20%20%20Chapter%205,%20Appendices,%20References.pdf. Accessed September 2005.

⁹¹ Health Canada. *Arthritis in Canada. An ongoing challenge*. Ottawa: Health Canada; 2003.

⁹² An estimate based on data for primary hip replacement. Puolakka TJ, Pajamaki KJ, Halonen PJ et al. The Finnish Arthroplasty Register: report of the hip register. *Acta Orthopaedica Scandinavica*. 2001; 72(5): 433-41.

⁹³ Birrell F, Johnell O, Silman A. Projecting the need for hip replacement over the next three decades: influence of changing demography and threshold for surgery. *Annals of the Rheumatic Diseases*. 1999; 58(9): 569-72.

⁹⁴ Dixon T, Shaw M, Ebrahim S et al. Trends in hip and knee joint replacement: socioeconomic inequalities and projections of need. *Annals of the Rheumatic Diseases*. 2004; 63(7): 825-30.

While the results show that countries with lower waiting times do have high rates of surgery, the same is true for countries with longer waits for hip replacement. Canada, though only experiencing *intermediate* wait times, has the *lowest* surgery rates.

4. Productivity can be measured in terms of the number of inpatients or discharges per bed or per physician. Reflecting the many different variables at play, the results proved equivocal. The most consistent result showed low waiting times in countries where there was high admissions or discharges per practising specialist.
5. The data concerning remuneration schemes is also equivocal. Countries not reporting significant waiting times tend to reward specialists and fund hospitals according to activity performed (e.g., fee-for service schemes), but this is not always the case. However, the relationship does not work in reverse. An interesting case in point is Canada, which does use a fee-for-service approach with its surgeons, but which still reports high waiting lists for some procedures. The role of payment schemes and job descriptions in affecting the gate-keeping function is also complex; however, it does seem that, in countries with waiting lists, general practitioners often act as gate-keepers (as opposed to patients being allowed to access specialists directly). Siciliani and Hurst note that there is no easy explanation for this association.
6. Finally, there are a few variables showing no clear connection with the absence or presence of waiting lists, perhaps because of lack of data about important confounding factors. These include: age and health profile of the population, and, perhaps surprisingly, whether or not patient co-payments are required for a surgical procedure.

Many of the preceding conclusions have reflected a comparison of two broad categories, countries without waiting times and those reporting significant waits for scheduled surgery. Countries with no or low waiting times offer circumstantial evidence for contributing factors; to sum up the information reviewed above, Siciliani and Hurst characterize the strongest potential factors at work in three countries with no waits for scheduled inpatient surgery (see the following table):

<i>Country</i>	<i>High per capita health care spending</i>	<i>High capacity in hospital sector (i.e., acute beds)</i>	<i>Surgery in private hospitals paid by public insurance</i>	<i>Activity-related payments</i>
France		√	√	√
Germany	√	√		
US	√			√

Regression analysis confirmed that greater availability of acute care beds, a fee-for-service mechanism, and activity-based hospital funding all produced a higher probability of no or low waiting lists for scheduled surgery.

Influences on Waiting Lists: Comparing Countries with Waits

Siciliani and Hurst also sought to examine the influences on a variable length of wait between countries which actually have waiting lists. In such settings, it seems to be the availability of physicians rather than beds which explains most variations in waiting times. A marginal increase of 0.1 practising specialists per 1000 population is associated with a marginal reduction of median waiting time of 8.9 days.

Analogously, an increase in total health care spending of \$100 per capita is associated with a reduction of median waiting time of 6.1 days. Finally, there is a weak association between waiting times and the age profile of the population (the latter possibly serving as a rough proxy of demand). This suggests that supply-side factors may dominate the “equation” which generates waiting for specialist care.

Influences on Waiting Lists: Comparing Canadian Provinces

We observed earlier that the wait times for joint replacement in the provinces, while showing variation, were in the “same ballpark.” The one noticeable deviation is Saskatchewan, with very long wait times confirmed by both registries and physician surveys. The comprehensive analytical approach of Siciliani and Hurst has not been applied to intra-Canadian variations, partly because the data on the potentially relevant variables is not easily obtained. For example, regional variability in surgical access has not been adequately assessed in Canada.

One accessible category of interest to explain wait time variations within a country could be activity levels, as seen in the discussion of international comparisons above. Geographical variations in surgical rates within a country (or even within a city) are well attested. For example, in 1999/2000, the states in Australia performed hip replacements at rates which varied from 87 to 131 per 100,000 (omitting the Northern Territory, which revealed an “outlier” result of 36 per 100,000).⁹⁵ A question remains about whether such rates can be translated into expected waiting times. We saw in a previous section that it was possible for a country with high need for joint replacement to have both high supply *and* high waiting times. A similar scenario is borne out provincially, notably in Saskatchewan. The following table reviews the most comprehensive government wait time figures available for hip replacement (year 2002/2003) for selected provinces (see the table in the section *Recent Canadian Experience*) and compares them to data on age-adjusted surgical rates.

<i>Province</i>	<i>Median Wait Time (weeks)</i>	<i>Order (shortest to longest wait)</i>	<i>Surgical Rate (per 100,000, age-adjusted)⁹⁶</i>	<i>Order (highest to lowest rate)</i>
British Columbia	18.7	1	64.8	5
Manitoba	19.0	2	67.4	3
Alberta	19.3	3	75.1	2
Ontario	22.0	4	67.2	4
Saskatchewan	26.4	5	80.7	1

The results demonstrate the reverse of what might be “expected.” The province with the shortest wait time had the lowest surgical rate. As noted already, Saskatchewan shows the opposite pattern: the highest surgical rates *and* the longest wait times for hip replacement.

⁹⁵ Australian Institute of Health & Welfare, 2001.

⁹⁶ Source: Canadian Institute of Health Information.

The natural explanation for this phenomenon could be that demand for joint replacement is unusually high in Saskatchewan; at first, this seems to be confirmed by the fact that the province has the highest proportion of its population over age 65 of all the areas of Canada. However, since 1995 Saskatchewan has performed hip replacements at an *age-adjusted* rate above the national average (as reflected in the table above). This suggests that “factors other than age may be driving the need and/or demand for these types of surgery in Saskatchewan, or that some other factors, such as the way that wait lists are managed, is resulting in extended waits for some patients.”⁹⁷ The only other demographic factor that has been put forward to explain the long waits for joint replacement in Saskatchewan is the additional health burden of the Aboriginal population, which is growing at a fast rate and which also demonstrates a high level of accidents and medical problems compared to non-Aboriginal populations.⁹⁸

In terms of modifiable factors, obesity may play a role. The Canadian Institute for Health Information recently observed that the surgical rates in the country tend to follow obesity rates. The same could be said for waiting times; Saskatchewan has obesity rates higher than the national average, whereas B.C., with its lower waiting times for joint replacement, happens to also enjoy the lowest obesity rates in the country.⁹⁹ Activity levels, other lifestyle factors and educational levels in each population must also be considered as potential mitigating forces influencing joint morbidity and the need for surgery.

What is clear from the preceding analysis is that the supply / demand ratio must be carefully assessed for each province.

Summary: Implications for Initiatives

There appears to be a generally inverse relationship between per capita health care expenditures and wait times. Thus one would expect to see that extra operational and capital funding should reduce wait times from current levels. There is also evidence that funding that is tied to increased specialist capacity and activity is especially useful. Later, we will highlight a study by the Fraser Institute that supports this conclusion (the Institute’s research casts doubt on the utility of *general* spending increases, but does acknowledge that increased spending on *physicians* can be very effective in reducing wait times).

Increasing capacity, either by redirecting or expanding beds and operating rooms, also seems to be vital, though the resulting enhancements of surgical activity do not guarantee improvements in wait times. An important implication arising out of such complexity is the challenge to work on a number of different fronts at the same time when attempting to manage wait lists.

⁹⁷ Saskatchewan *Comparable Health Indicators Report 2002* recorded 42.3 weeks for 2000-01. Available at http://www.health.gov.sk.ca/comp_health_indicators_rep/Section%204%20-%20%20Chapter%205,%20Appendices,%20References.pdf. Accessed September 2005.

⁹⁸ Canadian Taxpayers Federation. *Health Care In Saskatchewan*. 2001. Available at <http://www.taxpayer.com/pdf/Healthcare%20Submission-Feb2001.pdf>. Accessed September 2005.

⁹⁹ Summary available at http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=media_17aug2005_e. Accessed September 2005.

There is limited support in the inter-country comparisons for introducing market-based supply-side strategies, whether they include incentives for provider activity or contracting-out to private clinics.

Finally, an analysis of the provincial experience in Canada points the way towards modifiable risk factors as an explanation for demand and wait time variation. In particular, obesity rates are a likely contributor to the need for joint replacements, suggesting that there may be an important role for preventive efforts in the future. Another factor might be the presence of high-need populations such as First Nations, underlining the potential utility of targeted preventive programs and early disease detection.

Initiatives to Address Joint Replacement Wait Times

A Typology of Interventions & Evaluation Criteria

Having tracked real world variations in wait times and possible explanations for those variations as cues and clues for how to influence waiting lists, we now turn to an inventory of initiatives that have actually been tried. Preceding sections of this report, including *Conceptualizing Waiting Lists* and *Influences on Waiting*, already provided the framework for classifying approaches to waiting lists. The basic paradigm involves two types: the initiatives affecting surgical supply and those affecting demand for surgery. In addition to so-called **supply-side** and **demand-side** policies which act “at a distance” on waiting lists, Hurst and Siciliani recognize a third category, namely, policies that **act directly on wait times**, and affect the supply and demand sides of the equation at the same time.¹⁰⁰

One of the challenges in comparing different interventions is the fact that they often are introduced in combination, making it difficult to assign outcomes to a particular policy lever. In each case, we will attempt to categorize waiting list policies according to the dominant strategy employed.

A grid to evaluate the success of an initiative is also important, albeit engendering more complexity. Following the main agenda of this project, we will focus on how successful interventions have been in reducing actual wait times for hip and knee replacement. In other words, alternate objectives, such as encouraging patients to be happier with long wait times or otherwise changing perceptions about wait times, are excluded.

When possible, we will report results in terms of *median wait times between specialist referral and admission for surgery*. While other measurements will be employed in evaluating improvements (e.g., total wait time, proportion of patients waiting beyond a certain designated time), by focusing on a key metric (such as the one which seems to be most often reported in studies) we increase the opportunity for comparability between interventions. Another measure which bears a close relationship to wait time is the length of the waiting list; thus, reducing the length of a waiting list will be used as a proxy for shorter patient waits.

In passing, we will note any other collateral benefits attached to a particular waiting list policy, e.g., admitting patients in order of urgency or by medical priority screening, better public information, and increased patient choice. However, our main evaluative focus will be reducing wait times rather than “managing” waiting lists. Similarly, the spotlight will be on establishing and accomplishing key objectives, rather than evaluating the success of any process used to set objectives or the role of any intermediate targets.

Along the way, it will also be important to acknowledge any unintended and undesired policy consequences.

As we noted in the beginning of this report, the ultimate goal of wait list initiatives is not lower wait times per se but rather maximally improved patient health for an

¹⁰⁰ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

increased number of patients; another ultimate goal would be more equitable regional access. Thus, while reporting reductions in wait times, we will keep such wider perspectives in view as well. This means realizing, for example, that the prioritization schemes outlined in our first report may have at best a subtle effect on wait times, but they may have a much greater impact on individual and population-level patient health as it reflects the natural history of osteoarthritis. Conversely, auditing protocols may have a great effect on waiting list length, with negligible improvement in population health. In short, there are a number of possible objectives in waiting list management, and collateral benefits attached to key determinants. For example, Hurst and Siciliani suggest that, in addition to optimum wait times, there is such a thing as an optimum surgery rate.

The goal of enhancing joint health and function clearly rests within a values context. For example, principles such as meeting needs or equitable access inevitably come into play. In the case of equity, we might ask whether any generally successful wait list initiative also serves or detracts from the cause of improved access to joint replacements for currently underserved areas or groups. It is not clear whether such measurements should be gradual or categorical; in other words, is there a category of success (for example, where *equitable* access is defined as *equal* access), or does any improvement count?

A large, complex and timely aspect of the “values arena” that will need to be addressed is that of private versus public health care. Following the lead of other countries, the results of some theoretical research, and the dictates of personal / political philosophy, those advocating private solutions to long waiting lists are very enthusiastic. Equally keen are those who are not in favour of such solutions for either pragmatic or ideological reasons. Of necessity we will need to begin this part of our report with an excursus on the topic of private health care in Canada, so as to provide a way forward for those evaluating private approaches to influencing long waiting lists. In the end, driven by the evidence, we will adopt a sceptical stance with respect to any movement towards private solutions to delivering hip and knee replacements in a timely way.

One area of evaluation which is beyond the scope of this report is how wait time initiatives related to joint replacement might affect other priorities in health care. This naturally is part of a larger discussion about the potential disproportionate interest in waiting lists as a whole.

Finally, though cost-benefit and cost-effectiveness analyses related to wait list initiatives tend to be scarce, we will report any health economic results that are available. The issue of sustainability for any initiative and / or positive outcomes is important in the long-run.

To sum up, then, the quantitative and qualitative evaluation criteria to be applied to wait list initiatives include the following:

Positive Criteria	
Ultimate	<i>Population health improvement More equitable access according to age, race and region</i>
Primary	<i>Degree of reduction of median or mean wait time Reduction expressed by some other time-based measure Reduction in wait time roughly reflected in a shortened list</i>
Secondary	<i>Admissions by urgency More public choice More public information Other collateral benefits Cost-effective¹⁰¹</i>
Negative Criteria	
Ultimate	<i>Increased inequity?</i>
Primary	<i>Private health care?</i>
Secondary	<i>Unsustainable? Other undesired consequences</i>

¹⁰¹ To clarify, this refers to the cost-effectiveness of the wait list initiative per se, not necessarily an initiative which has, as one feature, enhancing the cost-effectiveness of joint replacement procedures. For the most part, improved cost-effectiveness of the procedure itself would be a *collateral* benefit. The one exception is where the efficiency of the procedure is increased, i.e., the cost per procedure is lowered through cost containment of one sort or another; this would allow an increased activity level within a fixed budget, possibly with a salutary effect on wait times.

The Context of Public and Private Health Care

This debate is not about the logic of different proposals. It's about philosophy.
David Peterson, former Premier of Ontario¹⁰²

*To say that there is much confusion in the public / private debate in Canada today is an understatement.*¹⁰³

*There certainly is not yet a consensus in Canada on what should be the appropriate mix between public and private involvement in the healthcare system.*¹⁰⁴

*Some aspects of life are too precious, intimate or corruptible to entrust to the market.*¹⁰⁵

An Intensifying Debate

Private health care, when proposed as a solution to the perceived problems of universal health care in countries such as Canada, is a topic that is vast and complex and sometimes tending towards ideologically-charged debate. When it comes to this topic, the political context cannot be overestimated. While in Canada the pendulum swings towards evaluating how private care might erode the public system, in the US one finds cautionary studies of exactly the opposite movement, i.e., how the availability of public health care “crowds out” interest in private insurance.¹⁰⁶

Another qualification is the fact that neither the debate nor the context is static. New Zealand, for example, underwent a major restructuring of its health care system after each general election in the 1990s; at least one of the models involved a parallel for-profit approach.^{107,108}

The shape of the discussion in the Canadian context has dramatically changed in recent months because of two (related) seismic shifts: (1) the victory in the Supreme Court for a Quebec doctor (J. Chaoulli) and his patient who were seeking the right to buy private insurance, which could effectively mean buying faster health services;¹⁰⁹ and (2) two-thirds of the delegates at the Canadian Medical Association (CMA) annual meeting agreeing that patients without recourse to *timely* public care should have access to such care through private health insurance and private-sector service delivery. In an interview, the outgoing president of the CMA explicitly referred to the

¹⁰² Gray C. Public versus private care: philosophy, not economics, is shaping the debate. *Canadian Medical Association Journal*. 1995; 153(4): 453-5.

¹⁰³ Marchildon GP. The public/private debate in the funding, administration and delivery of healthcare in Canada. *Healthcare Papers*. 2004; 4(4): 61-8; discussion 80-4.

¹⁰⁴ Chodos H, MacLeod JJ. Examining the public/private divide in healthcare: demystifying the debate. 2005. Available at <http://www.cpsa-acsp.ca/papers-2005/MacLeod.pdf>. Accessed October 2005.

¹⁰⁵ Woolhandler S, Himmelstein DU. The high costs of for-profit care. *Canadian Medical Association Journal*. 2004; 170(12): 1814-5.

¹⁰⁶ Rask KJ, Rask KN. Delivering public health care services: substitutes, complements, or both? *Contemporary Economic Policy*. 2005; 23(1): 28-39.

¹⁰⁷ Gauld R. One country, four systems: comparing changing health policies in New Zealand. *International Political Science Review*. 2003; 24(2): 199-218.

¹⁰⁸ Kent H. New Zealand embraces a parallel private system – and a growing gap between rich and poor. *Canadian Medical Association Journal*. 1999; 161(5): 569-71.

¹⁰⁹ Private medical care comes to Canada. *Canadian Medical Association Journal*. 2005; 173(3): 225.

Supreme Court decision as an impetus and rationale for what amounts to a new position for his organization.¹¹⁰

For the purpose of this report, it is telling that the Supreme Court argument was initiated by a year-long wait for a hip replacement in 1997. Interestingly, by today's standards, there would be no one arguing that such a wait was anything but excessive even for the least severe case. The question remains: is a private sector approach to reducing such waits the only or best way to go, or at least an option that should be available if all public means fail?

Demythologizing and Defining the Debate

Any dialogue about private versus public health care immediately encounters “myths” which make the conversation even more complicated. For example, there is the fiction that purely private or purely public health care systems exist that provide litmus tests of their respective values and outcomes—tests which can then inform the social debate in other jurisdictions trying to find their way through the maze of options. In reality, everywhere in the world we find a *mixture* of these two broad approaches to health care. At the very least, there is no country in the world, however socialistic, where pharmaceutical companies are not making money for their shareholders. Further, the lines of demarcation are not clear-cut. In countries where health care is perceived to operate mostly under a private model (e.g., the US), there inevitably exists a strong cry for, if not a movement towards, expanded public strategies.¹¹¹ The reverse is also true: jurisdictions with a national health service (e.g., the UK) have recently incorporated a growing number of private sector elements.¹¹²

Canada, a staunch proponent of a public approach to health care, also has many private or quasi-private components which could be seen as compromising the principle of “uniform access” to care. For instance, out-of-pocket expenses are very much part of the Canadian health care experience, at an average annual rate of over \$1,000 per person.¹¹³ A more telling example is the practice of workers’ compensation boards (WCBs) across the country, which gather payments from employers to buy, among other things, expedited care for employees injured on the job.^{114,115} In short, Canada already has, at least partially, the infamous “two-tier”

¹¹⁰ Sibbald B. CMA okays private health care for waiting patients. *Canadian Medical Association Journal*. 2005; 173(6): 585.

¹¹¹ Deber RB. Health care reform: lessons from Canada. *American Journal of Public Health*. 2003; 93(1): 20-4.

¹¹² Smith R. The private sector in the English NHS: from pariah to saviour in under a decade. *Canadian Medical Association Journal*. 2005; 173(3): 273-4.

¹¹³ Martin S. Out-of-pocket health care costs. *Canadian Medical Association Journal*. 2001; 164(2): 252.

¹¹⁴ LeBourdais E. Preferential treatment for WCB patients angers some MDs. *Canadian Medical Association Journal*. 1999; 161(7): 859.

¹¹⁵ BC hospital reopens as public / private hybrid.

health care system warned against in so many editorials.¹¹⁶ Today, there already are numerous private surgical centres in Canada that offer expedited care for those requiring outpatient operations and, in some instances, patients requiring surgery with an overnight stay. Uni-compartmental knee replacements fall within this domain; so far, with the exception of Quebec, total hip and knee replacements are not being performed at private surgical centres.

Another very important challenge is to understand exactly what is meant by private health care. First, “health care” in this phrase usually refers to medical care, i.e., curative interventions, and most often for acute conditions.¹¹⁷ It is rare to find practitioners or business people lobbying for permission to deliver privately-financed long-term chronic care, preventive care or palliative care; those private operators aiming to provide such expensive or “open-ended” services usually want access to public funds to help pay for them, or some legal limit on customer expectations of what their company must offer.

The latter example underlines the next definitional complexity, namely, the range of application of the term “private.” The most common distinction is between delivery and funding; it is possible to establish both elements as public or private, or to have public delivery combined with private funding, etc. The story becomes more complex when the delivery or funding is mixed, e.g., when hospitals and diagnostic equipment are publicly funded but physician or pharmaceutical services are not, or when users make indirect (i.e., insurance) or direct co-payments to augment public resources. As well, private delivery comes in two major flavours: not-for-profit and profit-driven. Finally, some studies distinguish delivery from administrative infrastructure; this especially makes sense in Canada, where one of the criteria of the national health act is *public administration*, or the requirement that health care insurance and benefits be operated on a non-profit basis by a public authority subject to public audit.¹¹⁸

¹¹⁶ Defenders of the WCB system, whether politicians, health care providers or end users, may say that it does not contravene the spirit of the “reasonable access” provision of the Canada Health Act, as any differential in care is only one of timing and is not rooted in ability to pay. However, it is true that the expedited access to care is based on economic factors, not medical necessity. At the individual level, it may not be the ability to pay, but it certainly is the ability to be paid (i.e., employed) that creates access. At the social level, there is the productivity argument, i.e., that it is advantageous to return the injured to work as soon as possible. As well, an alternate source of health care revenue both saves costs in the universal funding system and, in certain cases, may allow marginally-operating facilities contracted by the WCB to remain open and efficient; interestingly, the latter forces, which might ultimately help public waiting lists to be cleared faster, are precisely part of the argument in support of privately funded health care.

¹¹⁷ Uplekar MW. Private health care. *Social Science & Medicine*. 2000; 51(6): 897-904.

¹¹⁸ Marchildon GP. The public/private debate in the funding, administration and delivery of healthcare in Canada. *Healthcare Papers*. 2004; 4(4): 61-8; discussion 80-4.

Different reviewers have tried to formulate a typology or grid to summarize the various ways of understanding “private” health care.¹¹⁹ Their ideas are summarized in the following table, which also incorporates our own unique elaborations.

	<i>Delivery & Administration:</i>		
<i>Funding Models:</i>	I: Public facilities & services	II: Private services (not-for-profit or for-profit) - public or private facilities - public regulation	III: Private ownership & control
A: Public taxation (perhaps including a modest version of B1a - see below)			
B1: Public insurance premium B1a: Individual / family B1b: Employer-supported B2: Not-for-profit insurance			
C: Co-payment (A plus private insurance, direct payment such as user fees or other major out-of-pocket, or some combination of same)			
D: Private, for-profit insurance D1: Employer-supported D2: Other group plans D3: Individual plans			
E: D plus direct payment			
F: Direct, private payment alone			

If fully elucidated,¹²⁰ the preceding analysis suggests that for any single patient pursuing any single service, there are theoretically some 100 different formulas to fund, deliver and administer the desired care! Furthermore, some services may cross boundaries; for example, even a fully privatized procedure will often be subject to some federal regulation at the level of pharmaceutical delivery. This means that it is practically impossible to talk in absolute terms of a public or private system; the best one can say is that moving one or more services downward and / or rightward in the grid, e.g., from cell CI to cell DII, represents “some form of privatisation.”¹²¹ In other words, contemporary debates about privatization are always about whether or not some *subset* of the Canadian health care system should become more private in character.

¹¹⁹ Uplekar MW. Private health care. *Social Science & Medicine*. 2000; 51(6): 897-904.

¹²⁰ For simplicity of presentation, the table has collapsed some of the options into one row or column. The options under row **C** could be delineated as C1, C2, C3 and C4; under column **II** there also are four combinations; and **III** may be defined as not-for-profit or for-profit. For the sake of this grid, providers located in another jurisdiction are included under **III**, a private option not subject to the control of the country of origin.

¹²¹ Uplekar MW. Private health care. *Social Science & Medicine*. 2000; 51(6): 897-904.

Some might say the preceding typology is unnecessarily complicated, especially in a Canadian context; in our country, it is believed, care is basically delivered in a single payer (via public taxation) / public delivery system. However, the reality is that the services occupying “cell A1” above, i.e., publicly funded, delivered and administered, represent *less than half* of all health care spending in Canada. It might surprise some defenders of our system to know that only 42% of such expenditures constitute pure Canada Health Act services, a further 5% involves First Nations, the armed forces and the RCMP, and 53% involves one of the mixed formulas found in the above table.¹²²

Despite the complexity in real life, we must moderate the picture to fit the scope of our project. As such, we will “boil down” the main options for discussion to the classic broad categories: private payment (whether by insurance or directly) of private services and public payment for services outside the public sphere (so-called “contracting out”). This is the distinction drawn, for instance, in Senator Kirby’s 2002 report on health care in Canada; it was in favour of more private delivery, but sought to protect against any financing plan other than public funding combined with modest, income-based premiums.¹²³

The implications of this definitional overview for hip and knee replacement surgery are fourfold:

- If researching, and possibly experimenting with, health care options beyond the public sphere, it is useful to know where the model being considered fits within the existing grid; in other words, it is important to ask: just what kind of privatization are we talking about?
- The wide spectrum of possibilities may inspire policy-makers to create unique approaches. An example of an unusual combination may be seen in South Africa, where public patients are allowed to “jump the queue” by paying for their own prosthesis, which may cost up to CDN\$3000.¹²⁴
- Evidence for or against the *general* effectiveness of private approaches in health care may provide guidance to policy-makers in the area of waiting lists.
- Before getting lost in the debate or the data, real-world attempts to address surgical (and especially hip and knee replacement) wait times through private means ought to be a key focus of evaluation.

While evidence for the general effectiveness of private sector strategies cannot be fully elaborated under the scope of this report, a few comments will be made below. As for evidence on private approaches that various countries have employed to reduce wait times, that will be found under the relevant headings in the next major section of the report.

¹²² Marchildon GP. The public/private debate in the funding, administration and delivery of healthcare in Canada. *Healthcare Papers*. 2004; 4(4): 61-8; discussion 80-4.

¹²³ Kondro W. Income-based health premium centrepiece of Kirby report. *Canadian Medical Association Journal*. 2002; 167(11): 1279.

¹²⁴ Personal communication from Lou van Wyk, President, South Africa Orthopaedic Association. August 8, 2005.

Informing the Debate: Consequences of Privatized Health Care

Given the breadth of the discussion on private health care in recent decades, we will necessarily have to be selective. The first issue is to decide the values against which an evaluation will be made. In short, how do we know when a version of privatization has been helpful? This raises the thorny question of the objectives of a health care system in the first place, which in turn leads very quickly to the issue of stakeholders. For the majority of patients and their families, and for many health care providers, the medical model will dominate any list of objectives, i.e., a focus on achieving symptomatic relief through curative care. Those with a bent towards population health will be aiming more broadly, to reduce the prevalence of disease and disability. Finally, public and private insurers and policy-makers will be seeking to cure and / or prevent disease in the most cost-effective way for the most people. (Here we gloss over goals related to the election cycle, avoiding negative media reports, and the like.) It is easy to see how the perspectives of different stakeholders accessing the same scarce resources may clash.

The tension around objectives is partly related to the “macro” and the “micro” aspects of health care. A single patient can trump the whole system, especially if the media gets involved. A famous example was provided in the recent campaign to reform the Oregon public health care program, where the planners sought to exclude the least cost-effective therapies. One of the expensive procedures dropped from the insured list was bone marrow transplantation for childhood leukemia, that is, until one child actually was refused treatment. In the face of intense public reaction, the new policy was rapidly reversed.¹²⁵

The fundamental question is whether or not privatization is a potential asset for any or all of the health care objectives noted above. At the level of the individual patient or physician, private insurance and / or delivery, and even direct co-payments, seemingly could be a great boon in terms of the timeliness and quality of care received by the patient and the level of professional satisfaction and compensation enjoyed by the provider. This is not to say that general cost-effectiveness and other “public goods” do not influence personal decisions, but it will probably not dominate the agenda for those who have the means and willingness to access private approaches to care.

Things get more complicated at the level of the whole health care system. If the practice of an individual, or a series of individuals, could be shown to be counterproductive in terms of the effectiveness and cost-effectiveness of care enjoyed by a significant subset of people, then there is a strong argument to establish social limits on such activities. In Canada, the ruling argument has traditionally moved in exactly this direction: it is posited that allowing private insurance (and private delivery, which some say must logically follow) for core (i.e., Canada Health Act) services would reduce the level of care enjoyed by, for instance, those of lesser economic means. *The Canada Health Act thus seeks to protect those who would lose at the expense of another's gain.*

The econometric theory and modeling around such phenomena are complex; as well, there are limitations in using classical economic tools to predict the impact of introducing private mechanisms into a public context. As Flood and Lewis note, for example, “it is impossible to run a randomized, controlled trial to show irrefutably

¹²⁵ Genomics and economics. *Canadian Medical Association Journal*. 2005; 173(4): 329.

the effects of two-tier insurance.”¹²⁶ A more fruitful approach may be to ask: Is there any real-world or experimental evidence to support social limitations (even prohibitions) of private health care? In fact, such evidence does exist for both categories of concern: private funding of care and private delivery of services paid for with public funds.

Public Effect of Private Insurance

A famous study, the Rand Health Insurance Experiment, demonstrated that supplemental insurance, purchased by employers or individuals in order to offset out-of-pocket expenses, tends to multiply the number of physician visits sought by a patient.¹²⁷ This randomly-controlled study has been confirmed by research in many populations, including the US, Ireland and France.

It is important to note that enjoying more visits to the doctor does not automatically imply queue-jumping. In France, for example, patients with and without private coverage see the same physicians; there is no explicit constraint on access. In this case, the “cost” to the general health care system is subtler. The first challenge, on the assumption that increased visits might account for the better health outcomes among those who can afford supplemental insurance, becomes one of maintaining equity. If the system does not provide coverage to enable all patients to afford a reasonable number of physician consultations and the resulting treatments, but only allows those of a certain economic status to so benefit, then the system might reasonably be deemed unfair. The first negative impact, then, of supplemental insurance is an indirect one: it perpetuates an inherently inequitable system. The other impact is more direct, related to the fact that user fees and other out-of-pocket expenses tend to limit health care utilization. If supplemental insurance removes this rationing effect and utilization increases unnecessarily, then efficiency decreases and the overall system suffers.

A Canadian empirical analysis in 2001 showed that employer-supported private insurance is doubly problematic. Not only does private insurance have a significantly positive effect on the use of health care (such that individuals with such insurance use 10% more publicly funded physician services than those without), but the employer subsidy results in an increased demand for such insurance.¹²⁸

A further burden on the public system is created by any public subsidies of private insurance which may be engendered by any dependence on the private sector. As highlighted later in this report, such subsidization may be called for in situations where the uptake of private plans is not deemed to be sufficient.¹²⁹

Finally, there is evidence that governments or physicians sometimes reduce the public delivery of surgical services in areas where the uptake of private insurance is high. This is why, paradoxically, regions in the UK with high levels of private

¹²⁶ Flood C, Lewis S. Courting trouble: the Supreme Court’s embrace of private health insurance. *Healthcare Policy*. 2005; 1(1): 26-35.

¹²⁷ Buchmueller TC, Couffinhal A, Grignon M et al. Access to physician services: does supplemental insurance matter? evidence from France. *Health Economics*. 2004; 13(7): 669-87.

¹²⁸ Stabile M. Private insurance subsidies and public health care markets: evidence from Canada. *Canadian Journal of Economics*. 2001; 34(4): 921-42.

¹²⁹ Gordon M, Mintz J, Chen D. Funding Canada’s health care system: a tax-based alternative to privatization. *Canadian Medical Association Journal*. 1998; 159(5): 493-6.

insurance can still have large waiting lists.¹³⁰ Canada provided its own evidence on this phenomenon in a study of cataract surgery in Manitoba, where waiting times were found to be over twice as long for the public patients of physicians working in both the public and private sectors.¹³¹

Private Delivery of Public Services

The other major pillar of a private sector approach to health care involves the delivery of services. Here the distinction has increasingly been made between for-profit and not-for-profit private delivery of care. The issue seems to be the profit structure rather than the mode of administration. A systematic review and meta-analysis by Canadian researchers revealed that private for-profit hospitals demonstrate a higher risk of death for patients compared with non-profits.¹³² The same group looked at payments for care and discovered that services at private for-profit institutions cost more. The results indicate that public funding of operations and the like in private, for-profit hospitals may be less efficient than public delivery systems, thus affecting the “common good.” The authors conclude that the “evidence strongly supports a policy of not-for-profit health care delivery at the hospital level.”¹³³

Summary: Implications for Health Care

The preceding general assessment of the impact of private sector “solutions” to public health “problems” (such as long wait times) suggests that great caution should be exercised before moving in such directions. While there are positive reports from other jurisdictions using a mixed public-private system for services such as joint replacements,¹³⁴ there appear to be enough adverse consequences to cause Canada to pause before embracing further privatization. It also explains why many developed countries establish strong policies to suppress the development of a private health sector.¹³⁵

A good summary of the situation with hospitals is offered by Rosenau and Linder; they found that non-profit institutions were judged superior against a number of performance indicators almost 60% of the time, 5 times the rates seen for profit-based institutions. This analysis is all the more remarkable as it was conducted in the United States. The conclusion of the authors was that “caution is warranted on

¹³⁰ Besley T, Hall J, Preston I. Private and public health insurance in the UK. *European Economic Review*. 1998; 42: 491-7.

¹³¹ DeCoster C, Carriere KC, Peterson S et al. Waiting times for surgical procedures. *Medical Care*. 1999; 37(6 Suppl): JS187-205.

¹³² Devereaux PJ, Choi PTL, Lacchetti C et al. A systematic review and meta-analysis of studies comparing mortality rates of private for-profit and private not-for-profit hospitals. *Canadian Medical Association Journal*. 2002; 166(11): 1399-406.

¹³³ Devereaux PJ, Heels-Ansdell D, Lacchetti C et al. Payments for care at private for-profit and private not-for-profit hospitals: a systematic review and meta-analysis. *Canadian Medical Association Journal*. 2004; 170(12): 1817-24.

¹³⁴ Cunningham F. Medicare: diagnosis and prognosis. *Medical Journal of Australia*. 2000; 173(1): 52-5.

¹³⁵ Colombo F, Tapay N. Private health insurance in OECD countries: the benefits and costs for individuals and health systems. Working paper no. 15. Available at <http://www.oecd.org/dataoecd/34/56/33698043.pdf>. Accessed October 2005.

policies that encourage private for-profit entities to replace private non-profit providers of health care services.”¹³⁶

Likewise, Deber et al. summed up the evidence related to private insurance: “Voluntary insurance plans that shift costs to the private sector would damage the publicly funded system and would be unable to cover costs for all services required.”¹³⁷ The same researchers discovered through a series of interviews in 1999 that there may not be much interest anyway among insurers to introduce private insurance for core services “as long as a well-functioning and relatively comprehensive public system continues to exist.”¹³⁸

Of course, much has happened since 1999, and there may be more appetite to question the qualifier “well-functioning.” Some suggest that we now live in a “post-Chaoulli” universe, where the addition of private insurance for core services such as orthopaedic surgery, and the expansion of private delivery of such services, is virtually inevitable. Commentators such as Flood and colleagues are reluctant to concede such a conclusion, seeking to reiterate the downside of private financing in particular.¹³⁹ They also lay out a comprehensive list of recommendations that would limit the reach and damage of an encroaching private sector, as follows:¹⁴⁰

- Restore confidence in the timely delivery of core health services (using some of the same interventions that are reviewed in our report).
- Implement consolidated, standardized waiting lists, rather than allowing them to be managed in physicians’ offices.
- Establish provincial tribunals to which patients experiencing long waits could appeal.
- Develop and marshal high-quality evidence on the comparative effects of privatization in health care measured against the present system.
- Providers of health care should not be able to “double-dip” but rather need to choose to work in either the public or private sector. Likewise, there should be no public subsidy of the private system.
- Reorganize our approach to health human resources on a national level.
- Regulate strictly how private insurance would operate, e.g., no “cream-skimming” the least complex treatments or paying physicians more for services than they would receive in the public system.

¹³⁶ Roseanu PV, Linder SH. Two decades of research comparing for-profit and nonprofit health provider performance in the United States. *Social Science Quarterly*. 2003; 84(2): 219-41.

¹³⁷ Deber R, Gildiner A, Baranek P. Why not private health insurance? 1. Insurance made easy. *Canadian Medical Association Journal*. 1999; 161(5): 539-42.

¹³⁸ Deber R, Gildiner A, Baranek P. Why not private health insurance? 2. Actuarial principles meet provider dreams. *Canadian Medical Association Journal*. 1999; 161(5): 545-7.

¹³⁹ Flood CM, Sullivan T. Supreme disagreement: The highest court affirms an empty right. *Canadian Medical Association Journal*. 2005; 173(2): 142-3.

¹⁴⁰ Flood C, Lewis S. Courting trouble: the Supreme Court’s embrace of private health insurance. *Healthcare Policy*. 2005; 1(1): 26-35.

A Survey of Approaches in Other Countries

A word is required on the scope of the inventory to follow. Policy initiatives with regard to waiting lists have abounded across the developed world in recent years. The volume of case studies makes it prohibitive to cover the initiatives pursued for all types of waiting lists. To maintain a necessary focus, we will primarily examine initiatives related directly to hip and knee replacement; the only exceptions to the narrow focus will be selected lessons related to scheduled surgery as a whole or to orthopaedic surgery in particular. For the sake of completeness, most types of initiatives will be noted at least in passing, but only those with a reported effect on joint replacement will be highlighted. Further, we will not attempt to distinguish at this stage those approaches with greater applicability in Canada; this partly reflects the dynamic nature of the Canadian health care context, where the utility of a particular waiting list intervention may change in the future anyway. Finally, we focus on real-world, objective results rather than theory and anecdote.

Sources

Just as Hurst and Siciliani's work for the OECD formed the foundation for our consideration of international variations in wait times, another 2003 report for the OECD by the same researchers will be important as we turn to the interventions tried in different countries to manage waiting lists.¹⁴¹ Building on that platform, we will draw in the qualitative story told by colleagues from the King's Fund about one of the more long-term and comprehensive waiting list initiatives in the world, namely, that seen in the National Health Service in the UK.¹⁴²

Enhancing Supply

Increased Hospital Funding to Expand Activity

The evidence on the effectiveness of providing extra funding to public hospitals is "ambiguous and may differ according to the specific financial arrangement."¹⁴³

As we explained above (see under the Measures of Waiting), extra funding in the UK and the Netherlands to increase the supply of scheduled surgery in the 1990s did result in decreased median and / or mean waiting times. In the case of the UK, though, there was no improvement in wait times as measured at the point where the patient was actually admitted to surgery. The specific wait time metric in view in the Netherlands was not clear; what is known is that the length of the list did not decrease in the Netherlands.¹⁴⁴

A combination of initiatives in Spain in the 1990s seems to have been very successful in increasing supply and reducing mean waiting times for joint replacements (unfortunately, though, the metrics were once again calculated according to patients

¹⁴¹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁴² Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King's Fund; 2004.

¹⁴³ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁴⁴ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

on the list rather than for patients actually admitted). The following table chronicles the change in mean wait times (in weeks) over the decade.¹⁴⁵

Year	Hip replacement	Knee replacement
1994	81.53	88.88
1995	97.24	104.91
1996	80.65	79.94
1997	70.02	74.70
1998	72.29	71.86
1999	63.71	60.11
2000	59.77	63.38

The annual change rate over this period was -5.0% for hip replacement and -5.5% for knee replacement. The package of initiative employed included:

- extra funding for additional surgical activity
- maximum wait time targets
- use of the private sector
- tying financial incentives for staff to actual reductions in mean wait times (see the section highlighting this strategy below).

The latter feature, targeting extra activity *and* reduced wait times, is important in counteracting two unintended disincentives that can lead to “gaming the system.” First, if extra resources are tied simply to the length of a list, hospitals and physicians may not be inclined to reduce their lists for fear of losing their special funding. Second, if funding is only tied to offering extra services, then “ordinary” services may simply be reclassified as extra ones, with the result that there is no net increase in activity.¹⁴⁶

A final example is provided over a short period in one Australian state. Extra funding was extended, conditional on reducing wait times. The policy was applied within a prioritised system. The proportion of “category 1” surgical patients waiting longer than the recommended maximum (i.e., 30 days) dropped dramatically; “category 2” patients waiting longer than 90 days were also much fewer in number. It is not clear how this policy specifically affected patients waiting for joint replacements. Where it did, it would have the collateral benefit of targeting health enhancement among the most urgent cases.¹⁴⁷

One limitation we face in assessing all policies involving extra funding and increased activity is not knowing exactly how the money is spent, i.e., on expanded capacity (e.g., opening up or reassigning existing beds), expanded productivity (e.g., reduced average length of stay), or both.

¹⁴⁵ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁴⁶ These are referred to as “perverse incentives” in Gonzalez-Busto B, Garcia R. Waiting lists in Spanish public hospitals: a system dynamics approach. *System Dynamics Review*. 1999; 15(3): 201-24.

¹⁴⁷ Street A, Duckett S. Are waiting lists inevitable? *Health Policy*. 1996; 36(1): 1-15.

An additional challenge with special funding is its short-term nature; as Hurst and Siciliani note, “temporary policies have temporary effects.”¹⁴⁸

Another problem is the lack of real-world data to help solve one of the conundrums of increased activity, namely, the impact of feedback. In other words, will more surgical activity and consequently shorter waits lead to increased demand due to the new attractiveness of the procedure? Some econometric analyses have suggested that this concern is unfounded, but simulations have provided contrary results. Thus, seeking to improve on the static model of Martin and Smith,¹⁴⁹ one of the authors and a colleague developed a more dynamic system, which sought to model the “elasticity of demand” with rising resources over time.¹⁵⁰ The simulation results depended on initial conditions. When the mean wait time on the list was 3 months, demand did not change much as resources were added to the system (similar to the earlier prediction derived by Martin and Smith). However, if the mean waiting time was set as 4.5 months at the start, then demand increased much more sharply with increasing supply. This means that, after a year, significantly more people were being treated than initially, but their wait time was longer; after two years, the situation with waits has eased somewhat, but the waiting list is still longer (despite increased resources). Again, it would be good to experiment with, and track, these patterns under real-world conditions.

Increased Productivity through Activity-Based Hospital Payments

A more systematic and sustained approach to increasing surgical activity would be to structure the routine hospital remuneration for a procedure around activity-based payments. By contrast, with fixed budgets “greater effort, or ingenuity, to raise productivity goes unrewarded.”¹⁵¹ There are two limitations with the approach of activity-based remuneration. First, there usually will be some kind of macro-budget within which the productivity increases must exist, suggesting that funding might run out before a hospital reaches its production “frontier” (the same issue applies to remunerating surgeon productivity—see the next section). Second, as with most supply-side policies, an increase in activity does not offer a guarantee of reduced wait times; the final effect depends on what happens on the demand side of the equation. In fact, though Hurst and Siciliani found countries where this funding structure had led to a progressive increase in surgical activity,¹⁵² there was no data available concerning the impact on wait times for any health care service.

Increased Productivity through Patient Choice

Traditionally, patients in universal health systems have had little choice of provider. The UK and several Scandinavian countries have recently introduced more choice, driven by two assumptions: patients will tend to travel to areas of low waiting times

¹⁴⁸ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁴⁹ Martin S, Smith PC. Rationing by waiting lists: an empirical investigation. *Journal of Public Economics*. 1999; 71: 141-64.

¹⁵⁰ Smith PC, van Ackere A. A note on the integration of system dynamics and economic models. *Journal of Economic Dynamics & Control*. 2002; 26: 1-10.

¹⁵¹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁵² For example, regarding Norway, see Biorn E, Hagen TP, Iversen T et al. *The Effect of Activity-based Financing on Hospital Efficiency*. 2002. Available at http://www.hero.uio.no/publicat/2002/HERO2002_8.pdf. Accessed September 2005.

(thereby balancing out the distribution of wait times across the country), and hospitals will begin to compete for patients and the revenue they bring with them. A prerequisite for this type of approach is useful public dissemination of wait times, but to pursue this goal is more complex than it may seem upon first consideration.^{153,154} A co-requisite is activity-based payments, where hospitals will tend to increase the number of treatments within the available capacity. However, wait times may still not drop if there continues to be pervasive excess demand. There is no evidence to allow a clear evaluation of such policies where they have been tried, e.g., Sweden.¹⁵⁵

Increased Productivity Related to Remuneration of Surgeons

There are a number of approaches in reference to surgeon productivity that have been tried, including:

- rewards or penalties related to activity targets
- rewards or penalties related to wait time targets
- limiting the extent that specialists can work in both the public and private sectors (so-called “dual practice”), thus eliminating the conflict of interest which might lead to long public waiting lists being maintained as a mechanism to increase demand for private care.¹⁵⁶

The main evidence for the impact of rewards for wait time reductions comes from the Netherlands—and it is of the negative variety. In the mid-1990s, fee-for-service arrangements with surgeons were replaced with fixed budgets; in almost every case, admissions went down and wait times increased.¹⁵⁷

An unintended consequence may arise from one manner in which surgeons achieve wait time targets, namely, increasing the threshold of appropriateness for surgery (which in effect is a demand-side strategy). Preventing inappropriate patients from being added to the list is a positive move (reversing the tendency, for example, to maintain a long list as a matter of prestige or book patients prematurely in light of potentially long waiting times). However, such gate-keeping can become a problem if patients who truly could benefit from, for example, joint replacement are being categorically denied the service. The trade-offs are challenging: stop practices that make managing waiting lists difficult and determining accurate prospective waiting times virtually impossible, while at the same time protecting and expanding patient care.

As for the other main approach, the data showing the negative effect on wait times of physicians working in private and public sectors was noted in an earlier section. No

¹⁵³ Cromwell DA, Griffiths DA, Kreis IA. Surgery dot.com: the quality of information disseminated by Web-based waiting time information services. *Medical Journal of Australia*. 2002; 177(5): 253-5.

¹⁵⁴ Cromwell DA, Griffiths DA. Waiting time information services: how well do different statistics forecast a patient's wait? *Australian Health Review*. 2002; 25(6): 75-85.

¹⁵⁵ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁵⁶ Morga A, Xavier A. Hospital specialists' private practice and its impact on the number of NHS patients treated and on the delay for elective treatment. Discussion Papers in Economics. University of York; 2001. Available at <http://www.york.ac.uk/depts/econ/dp/0101.pdf>. Accessed September 2005.

¹⁵⁷ Mot ES. *Paying the Medical Specialist: The Eternal Puzzle. Experiments in the Netherlands*. 2002. Available at http://www.cpb.nl/nl/general/org/afdelingen/zrg/paying_the_medical_specialist.pdf. Accessed September 2005.

positive evidence of impact on wait lists was discovered by Hurst and Siciliani in reference to the many efforts to limit dual practice in OECD countries.

Funding Extra Capacity

The “downside” of increasing capacity, whether building new surgical units or training / hiring staff, is that it is a long-run policy. It takes time. On the other hand, such an approach may also represent a sustained solution for unmet demand. Theoretically, the same anomaly can emerge as seen with increased operational funding, namely, demand (and wait times) actually increasing—at least temporarily—as capacity is enhanced. This will likely be the case in jurisdictions with initially low supply and high waiting times.¹⁵⁸

Although no real-world scenario is available in reference to joint replacement, cardiac surgery in two countries in the 1990s does provide an apt illustration. Denmark, with initially high staff capacity, managed to make great strides by increasing capacity even further; it brought down wait times in a sustained way. In contrast, England was a low supply / high wait time country, so that even increased capacity could not keep up with existing and new demand, and wait times consequently rose steeply.¹⁵⁹

Increased Productivity through Surgical Management

Reducing inefficiencies in the operation of surgical units, even in the absence of new funding, could increase productivity and lower wait times. This was one of the goals of Australia’s National Demonstration Hospitals Program. The initiatives of the program, which ran from 1995 to 1997, included:

- the introduction of pre-admission and admission services
- optimizing the patient’s health prior to admission
- optimizing the operating room schedule (by reducing cancellations)
- using computer-based patient data.

While several intermediate outcomes were positive, the effects on waiting times per se were not reported.¹⁶⁰

Using Capacity outside of the Public System

An alternate to increasing capacity or productivity in the public sector is the use of existing capacity in the private sector or in health systems outside of the jurisdiction in question. This approach of course is subject to regulations derived from prevailing political opinion and / or legal rulings, as noted in the earlier related section of this report. Intense attention is being paid to such topics in Canada, especially when the options expand beyond contracting out to private purchase of insurance and / or services (which, technically, moves into the arena of reducing demand—see below).

¹⁵⁸ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁵⁹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁶⁰ *A Review of the National Demonstration Hospitals Program. Phase 1: 1995-1997*. September 1997. Available at http://www.archi.net.au/content/item.phtml?itemId=120333&nodeId=file419d34ddb5d06&fn=NDHP1_Review_95_97.pdf. Accessed October 2005.

As for international experience with going outside the public health care system in a country, four main observations emerge:

- While the data are very limited, contracting out services to private hospitals may have helped achieve reductions in wait times in countries such as the UK and Spain; there is also evidence, though, that countries such as New Zealand with so-called “two-tier” health care systems can actually experience longer wait times than Canada.¹⁶¹
- There are examples where very few patients have opted for private treatment even when it is available. This was true in the 1990s in Sweden, even after patients had waited as long as 3 months, though there is evidence that the situation may have changed recently, at least in Stockholm.¹⁶² This illustrates the unpredictable category of ‘patient choice,’ which may profoundly affect the uptake rate of alternate care offered in the private sector.
- It is tempting for a country to send patients to other settings, especially when currency exchange rates are favourable and surgeons at home are in short supply; however, it seems that acceptance of such schemes by patients can remain as a trickle rather than a flood.
- Treatments being provided abroad, e.g., orthopaedic patients travelling from Norway, are too recent a practice to estimate the effect on wait times, though early results have not been compelling.¹⁶³

An interesting sidebar on the use of health services outside of a country has been the recent media attention in Canada on the topic. For example, the Ontario Health Services Appeal and Review Board recently ordered the provincial government to reimburse a patient who opted to have a hip replacement in the US. The resulting headline was “Ruling Opens the Door for Hip Operations in the US.”¹⁶⁴ One of the controversial aspects of securing care in the US is that it can cost much more than providing the equivalent procedure in Canada. Furthermore, when complications occur and the treatment is no longer profitable in the US, the patient is referred back to Canada. While there are no data on this topic, the experience has been anecdotally described by some of the authors of this report.

Reducing Demand

Hurst and Siciliani make the point that, if supply is considered adequate or the resources are simply not available, and if waiting times are above the “optimum” (i.e., where unused surgical capacity is being avoided), then demand side policies are the next obvious levers to pursue. The two main means of demand management discussed in the OECD report are prioritization and subsidizing private insurance. Completely missing from the discussion is the concept of reducing demand through

¹⁶¹ Tuohy CH, Flood CM, Stabile M. How does private finance affect public health care systems? Marshaling the evidence from OECD nations. *Journal of Health Politics, Policy & Law*. 2004; 29(3): 359-96.

¹⁶² *Turning to the Private Sector in Health Care: the Swedish Example*. Montreal Economic Institute. October 2003. Available at <http://www.iedm.org/uploaded/pdf/sweden.pdf>. Accessed October 2005.

¹⁶³ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁶⁴ *The Globe and Mail*. October 3, 2005.

prevention of underlying disease—arthritis and obesity, in the case of hip and knee replacements.

Demand Management through Prioritization

In a sense, prioritizing is not a new phenomenon in scheduled health care services. Whenever a clinician makes a judgment about whether a patient is eligible (is appropriate, meets the threshold criteria, demonstrates the indications, etc.) for a scarce and / or expensive treatment or not, there often is a priority being established. Such decisions are not always categorical, i.e., as if there was clearly a superior alternate therapy to pursue and there were no conditions under which that patient could benefit from surgery or the like; the hard fact is that the treatment under demand is often simply being “saved” for a more needy set of patients. What are now known as prioritization schemes are an extension of this approach; thus even among the patients deemed to be eligible for a procedure like joint replacement, gradations of urgency and timeliness are recognized, from “right now” to “very soon” to “as soon as possible, but best before 6 months.” The first two categories of patients simply get booked as soon as possible; the last category of patients have certainty that they will receive treatment within a very few months. As described in our first report, prioritization tools are a means to standardize the criteria for such decisions and make the ordering of patients in the waiting list as consistent as possible from region to region and physician to physician.¹⁶⁵

The “bottom line,” however, is that the new-style prioritization schemes do not limit demand, they only organize it. Hurst and Siciliani acknowledge that prioritization schemes are more a matter of equity rather than efficiency in health care. It is really the old-style prioritization according to thresholds of appropriateness that moderate demand. In effect, to make wait lists (and wait times shorter), people ultimately *must be kept off the list*. How acceptable a policy of “raising the bar” for getting access to surgery will be to patients, their families and their physicians remains an open and volatile question, though one that is nevertheless worth raising. The only alternate to this direct formula for demand management is the role that explicitly prioritizing patients near the end of a list can play in terms of list “leakage,” i.e., people dropping out through discouragement, improvement in their condition, deterioration in their condition (so that surgery is no longer safe or effective), moving away, “going private” for their care, or death. Such dropping out can be recognized and tabulated through regular waiting list audits or tracking patients on wait registries; but this sort of statistical housekeeping does little to address the underlying situation, i.e., the overall delivery of services or the waits experienced by needy patients.

Most agree that thresholds should not be raised to the point that patients who would genuinely benefit from surgery are kept off the list. The purpose of “raising the bar” should be to keep patients with disease on the list, but those who are not quite ready for surgery off the list. To keep the latter group on a waiting list just in case they deteriorate over a number of months or years represents dysfunctional management, and a recipe for creating artificially long lists.

Prioritization in terms of decisions about appropriateness is, as noted, commonplace and well-established. The only novel aspect of this type of demand management is the introduction of explicit assessment criteria schemes, as described in our first report. These often go hand-in-hand with programs to adopt urgency criteria to

¹⁶⁵ Edwards RT, Boland A, Wilkinson C et al. Clinical and lay preferences for the explicit prioritisation of elective waiting lists: survey evidence from Wales. *Health Policy*. 2003; 63(3): 229-37.

organize waiting patients. This may be the most evidence-based and scientific approach possible today, one that can be evaluated more consistently over time.

While it did not introduce the concept, New Zealand has pioneered comprehensive implementation of prioritization in its core health services. The main evidence produced by Hurst and Siciliani for New Zealand related not to wait times but the number on the list; the “residual” waiting list (patients neither booked nor confirmed as eligible) dropped dramatically over two years. This was primarily because many patients had been explicitly reclassified as not eligible for specialist treatment.¹⁶⁶

A final way that prioritization and waiting lists bear on one another is the concept of determining priority scores based in part on how long a patient has waited. As we noted in our first report, there is resistance among many authorities to adopt this approach, “on the ground that it may negate the objective of treating the most urgent cases first.”¹⁶⁷

Private Payments for Private Delivery of Services

When private services are paid for by patients directly or indirectly via private insurance premiums, it represents a demand-side mechanism in the sense that patient demand for publicly-funded services is decreased. The causal relationship, though, between private financing and wait times is a complex one. For example, there is evidence that, as wait times are reduced, so too the attractiveness of private insurance may decrease. Also, just because certain patients hold private insurance does not mean that private capacity is available to serve them; thus, personnel and hospital bed shortages can affect all sectors.

The results of private financing and delivery have been mixed in terms of wait times. As we mentioned in an earlier section, the areas of the UK with high private insurance coverage have sometimes exhibited long waiting lists and times. Likewise, the Republic of Ireland, where patients with private health insurance are even allowed to secure treatment at public facilities, recorded that 38% of patients waiting for scheduled treatments in March, 2002, had been on the list more than 12 months. Australia, which has strongly embraced a parallel system of privately-funded delivery, has had a better experience, with median wait times for public patients dropping significantly from 1999/2000 to 2000/2001. At the same time, the growth rate for overall surgical activity (private and public) actually was less than in previous years, and the percentage and absolute volume of publicly funded procedures decreased. One way to interpret these conflicting facts (shorter waits / less activity) is that “the demand from public patients fell more rapidly than the supply.”¹⁶⁸ The data from individual Australian states is mixed; much shorter lists and reduced median wait times have been reported, but in the case of Victoria the total waiting list remained virtually unchanged between 1998/99 and 2000/01.

¹⁶⁶ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁶⁷ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁶⁸ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

Subsidizing Private Health Insurance

The rationale for lowering private health insurance with public funds is that it might make substituting private for public care more attractive, allowing waiting lists (and times) to be reduced. While we have followed Hurst and Siciliani in categorizing this approach here, it is arguably a disguised version of “contracting out” services to the private sector (i.e., really a supply-side policy); though mediated through insurance plans, it ultimately represents public funds being used to make private delivery of services accessible. As we discussed under an earlier section, *The Context of Public and Private Health Care*, the more dramatic policy decisions relate to allowing private payments for or private delivery of core services in the first place.

As noted earlier, Australia has been very active in experimenting with private sector approaches to providing procedures such as hip and knee replacement. Concerned about dropping rates of private health coverage, the country introduced different subsidization schemes; as a result, the percentage of the population covered by private health insurance rose from 30.5 to 44.1% between 1999 and 2002. Consistent with this, the proportion of privately-funded hip and knee replacements also increased.¹⁶⁹ In the end, the practice of subsidizing private insurance and increasing private delivery leads back to evaluating the impact of a functioning private sector on wait times; this topic has already been reviewed in previous sections of our report.

Policies Acting Directly on Wait Times

There is a third category of interventions often recognized, namely, policies that do not work directly on supply or demand, but only indirectly by targeting wait times per se. However, in practice, the wait time targets imposed on hospitals or physicians are not really an intervention, but a way of translating the political pressure exerted by a dissatisfied public or frustrated medical staff into motivations designed to influence the behaviour of health care providers. And the targets are not that effective by themselves as motivators; they must be linked to incentives for compliance or disincentives for non-compliance. For our purposes, it is important to realize that the “behaviours” that are available to newly motivated providers are *the same ones we have evaluated above*. In other words, as Hurst and Siciliani admit, the on-the-ground interventions still come down to increasing supply (through spending new funds, changing priorities within existing budgets, or enhancing productivity) or decreasing demand (primarily through increasing appropriateness thresholds). Thus a consideration of motivators really devolves to a discussion of the effectiveness of the levers chosen by the motivated parties in order to accomplish wait times reductions. Putting it differently, it is not easy to evaluate the impact of a target / incentive scheme in isolation.

Maximum Acceptable Wait Times

The preceding qualifications do not mean to imply that motivators are unimportant. One of the most commonly introduced policies that refer directly to wait times is the maximum acceptable wait time (MAWT); when legislated, it is usually referred to as a waiting time guarantee. The term “waiting time target” is sometimes applied to MAWTs, but this is best reserved for the intermediate goals established as the health care system moves towards the maximum wait time that is ultimately desired.

¹⁶⁹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

Waiting time guarantees are formulated in various ways across different countries. An unconditional guarantee applies to all patients waiting for a procedure. A conditional guarantee is restricted to patients with a certain level of need / severity, or to a certain proportion of the waiting cohort (e.g., such and such a percentage will be treated within 6 months). In the latter case, any intermediate targets may gradually reduce the wait time, increase the percentage of patients covered, or both.

We noted the tension between prioritization and MAWTs in the conclusion of our previous report; the clash arises from the fact that these two approaches to wait lists may lead to opposing results. The precise formulation of the MAWT plays a role in how the dilemma works out in practice. Unconditional guarantees may induce the provider to give higher priority to less severe patients who are approaching the maximum waiting time. Thus the policy becomes effectively a guarantee for low-priority patients. Conditional guarantees based on a percentage of the waiting cohort may avoid some of the prioritization problems. Likewise, restricting the guarantee to a class of high-need priority patients may work better, but such policies are subject to at least two limitations:

- how consistently physicians apply eligibility criteria.
- how much providers manipulate criteria to ensure that the only patients admitted are those they can treat in an adequate time.

Have MAWTs contributed to reducing wait times? The short answer is “yes.” However, the best evidence, which comes from Sweden and the UK, needs to be unpacked. First, in the case of a 3-month unconditional guarantee for all procedures in Sweden, median waits dropped from 12 to 8 weeks before rising again. As noted earlier, it may be more crucial to understand the actual levers employed. In this case, it was a combination of increased activity funding, enhanced productivity, and freeing up capacity through changes elsewhere in the health care system. The mechanisms which led to the later rise in wait times are less clear.¹⁷⁰

The longer answer in the case of the UK includes admitting that it depends on what wait is being measured. Thus, while unconditional guarantees in the 1990s succeeded in reducing median waiting times for all surgeries as measured by patients *on the list* from 22.2 to 15.7 weeks, the median waiting time of patients admitted for surgery rose from 5.7 to 6.4 weeks. Hurst and Siciliani conclude that these two measures of waiting “can behave very differently under a maximum waiting-times policy.”¹⁷¹

The issue of clinical distortion remains the prevailing concern with respect to MAWTs. Researchers working for the King’s Fund in the UK have dedicated a major strand of their recent report to this very topic; for our purposes, it is especially helpful that their detailed analysis focused on orthopaedic surgery. The general results from a survey of specialists suggested that clinical priorities may well be distorted by

¹⁷⁰ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁷¹ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

MAWTs: “urgent cases were displaced by less urgent patients in danger of breaching the then-18-month waiting times target.”¹⁷²

In the King’s Fund report, Appleby and colleagues note that the literature on this topic is scarce. The experience in Scandinavian countries in the 1990s may be most pertinent. Swedish physicians were concerned about the way MAWTs intruded into their clinical freedom.¹⁷³ Despite some success in motivating changes that produced shorter waits,¹⁷⁴ the program was abandoned in 1996. Similarly, Norway gave up on MAWTs after a couple of attempts (1990, 1997).¹⁷⁵ Finally, in Denmark, several versions of MAWTs have been adopted and later abandoned; “since then the political approach has been to encourage a reduction in waiting time by allowing increases in health care funding but to avoid general legislative guarantees.”¹⁷⁶

Appleby et al. observed, though, that none of the preceding experiments with MAWTs had been evaluated against hard evidence of clinical distortions. They sought to rectify this gap. Based on an analysis of aggregate national data for 2002 in the UK, they in fact concluded that any clinical distortions (e.g., short-wait patients being bumped by long-wait ones) created in their country by a MAWT of 15 months for scheduled surgery “are likely to have been fairly limited.”¹⁷⁷ Their results suggest that the application of MAWTs, at least those involving a longer time frame (such as 15 months), may have a less detrimental effect than some have assumed.

Incentives for Reducing Wait Times

As noted above, to be most effective MAWTs must be linked to incentive policies. The “rewards” and “penalties” may be financial or non-financial. As with MAWTs, we must recognize that the response of providers to incentives depends on the same interventions with which we are now very familiar, that is, increasing supply or lowering demand. Which lever is preferred depends on the structure of the incentive. For example, if reduced wait times are rewarded with more funding in terms of fee-for-service, then the volume of activity will tend to increase to accomplish the desired impact on the wait list. If, on the other hand, the extra funding comes in the form of a fixed grant, then increased activity does not have the same direct influence on revenue; thus the preferred lever might be to decrease demand by tightening the criteria for admittance to the list.

¹⁷² Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King’s Fund; 2004.

¹⁷³ Hanning M, Spangberg UW. Maximum waiting time - a threat to clinical freedom? Implementation of a policy to reduce waiting times. *Health Policy*. 2000; 52(1): 15-32.

¹⁷⁴ Hanning M. Maximum waiting-time guarantee--an attempt to reduce waiting lists in Sweden. *Health Policy*. 1996; 36(1): 17-35.

¹⁷⁵ Lian OS, Kristiansen IS. [Waiting list guarantee between medicine and bureaucracy]. *Tidsskrift for Den Norske Laegeforening*. 1998; 118(25): 3921-6.

¹⁷⁶ Vallgarda S, Krasnik A, Vranbaek K. *Health Care Systems in Transition: Denmark*. European Observatory on Health Systems and Policies; 2001.

¹⁷⁷ Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King’s Fund; 2004.

As policies employing incentives have usually been launched in association with other actions, it is not possible to isolate wait time outcomes related to rewarding institutions or physicians that manage to reduce patient waits.¹⁷⁸

The Case of the UK

The work of Hurst and Siciliani tells the story of international approaches to wait times up to 2003. We noted that several countries have actively engaged in moderating wait times; the UK in particular has cycled through different policy phases since the 1990s.¹⁷⁹ An update in the case of the UK was made available through the researchers at the King's Fund. The foundation of their 2004 study was an examination of what characterized regional authorities (called "trusts") that had managed to reduce waiting times in recent years. They observed the following factors that had contributed to what everyone hoped would be *sustainable* improvements:¹⁸⁰

- Understanding whole systems, i.e., how waiting time performance depended on policies in other parts of the hospital and also in the wider health economy.
- Recognizing the importance of concerted action over time from all players, and especially surgeons.
- Realizing that the interventions for reducing a wait list backlog (such as dedicated operating rooms which protect against cancellations, targeted funding, and incentives) may be different than those needed to maintain a reasonable scenario once wait times have been brought within benchmarks.
- Pursuing accurate and detailed forecasting and planning for demand.
- Collecting and monitoring relevant wait time statistics.
- Enhancing the efficiency of the "production process."
- Developing appropriate surgical capacity.

One of the key points made in their report is that managing wait lists had to involve more than temporary initiatives to remove a backlog. The authors further noted that the following categories were inevitable and / or vital in meeting the ambitious new 2008 benchmark, i.e., only *18-weeks* total wait between primary care appointment and surgery:¹⁸¹

- The growing availability of private sector capacity, especially in the area of diagnostics.

¹⁷⁸ Hurst J, Siciliani L. *Tackling Excessive Waiting Times for Elective Surgery: A Comparison of Policies in Twelve OECD Countries*. OECD Health Working Papers 6; 2003. Available at <http://www.oecd.org/dataoecd/24/36/5163944.pdf>. Accessed September 2005.

¹⁷⁹ King's Fund. *The War on Waiting for Hospital Treatment. What has Labour achieved and what challenges remain?* Summary available at http://www.kingsfund.org.uk/resources/publications/the_war_on.html. Accessed October 2005.

¹⁸⁰ Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King's Fund; 2004.

¹⁸¹ King's Fund. *The War on Waiting for Hospital Treatment. What has Labour achieved and what challenges remain?* Summary available at http://www.kingsfund.org.uk/resources/publications/the_war_on.html. Accessed October 2005.

- The continued introduction of quasi-market economies into hospitals and trusts, that is, where funding follows the patient and competition ensues.
- The need to monitor unintended consequences, such as reduced wait times creating more demand through patients moving from the private sector and general practitioners making more referrals.
- The importance of addressing key personnel shortages.
- The largely untapped potential for reducing demand through prevention or alternate management of long-term conditions such as arthritis, including increased public education, medical screening, and early intervention.
- The mandate to track and control costs along the whole course of the “patient journey,” from the point of diagnosis to treatment.

A perspective provided by the British Orthopaedic Association offers important insight on how maximum wait time benchmarks function and associated incentives operate in practice.¹⁸² Problems are generated when adequate resources do not accompany the imposition of benchmarks (which can be seen to be somewhat arbitrary in the first place, i.e., what is achievable rather than what is clinically ideal). In order to avoid penalties, institutions can “game” the system. An example from orthopaedics rests on the fact that activity statistics only count patients that have been referred from general practitioners; as a result, appointment clerks are instructed to accept those referrals preferentially, allowing tertiary referral patients (typically presenting with more complex problems) to languish on the list for up to a year.

The communication from the BOA did acknowledge that attention is being paid to the total wait time experienced by a patient. For example, physiotherapist and nurses have been employed to do “triage” assessment for patients referred to specialists. Excessive outpatient time is also avoided by transferring patients to other areas. Taking advantage of under-utilized public services in other areas does not seem to be controversial, but concern was expressed about the use of private companies to reduce outpatient and inpatient wait times. In particular, the BOA notes that joint replacements in such facilities actually cost the government more. As well, questions have been raised about the standard of care in specialist treatment centres, which are often privately-operated and staffed by personnel from outside the country.

A Survey of Canadian Approaches

While some provinces have had wait list projects or strategies for several years, all such efforts have intensified since the recent commitment of First Ministers to invest new federal funding in targeted areas. The initial objectives included reducing wait times for hip and knee replacements.

Several stakeholders and public agencies have recently “weighed in” on wait times in the Canadian context. In 2004, the Canadian Medical Association reviewed the

¹⁸² Personal communication from Ian J Leslie, Vice President, British Orthopaedic Association. July 11, 2005.

conclusions of Siciliani and Hurst as presented earlier in our report, and then offered the following suggestions for reducing wait times:¹⁸³

- expanded capacity; this is consistent with the “alarm bell” recently sounded in the Canadian Medical Association Journal concerning orthopaedic surgeon shortages and other resource gaps.¹⁸⁴
- centralized booking systems
- enhanced coordination and teamwork along the continuum of care
- priority-setting tools and clinical practice guidelines to reduce demand
- incentives to encourage productivity
- needs-based projections for sustainable, long-term resourcing.

An example of provincial strategizing from 2004 was offered by the British Columbia Medical Association and the B.C. Nurses Union.¹⁸⁵ Their main recommendation was to maximize the use of currently unused operating room capacity through targeted funding.

In 2003, the Fraser Institute reiterated the conclusion of a previous study¹⁸⁶ which compared wait times against health care spending in the 1990s; they maintain that the data do not support the concept that increased funding, even when it is targeted to problem areas, automatically results in increased activity and / or decreased wait times. The updated work confirmed through regression analysis that only spending targeted at physicians could be depended on to lead to wait time reductions in the Canadian context (\$100 more per capita in expenditures “buying” two weeks less wait).¹⁸⁷ This conclusion puts the report somewhat at odds with international data noted earlier, which found a negative correlation between general health care spending and wait time.

The Institute’s alternate three recommendations, rather than increasing general funding, are to direct funds to support medical / drug programs that would divert patients from surgery, build a competitive environment into the public system to enhance productivity, and increase income-based co-payments to moderate demand.

The Health Council of Canada issued a report in January, 2005, that included the following recommendations:¹⁸⁸

¹⁸³ *The Taming of the Queue: Toward a Cure for Health Care Wait Times*. July 2004. Available at http://www.cma.ca/multimedia/staticcontent/CMA/Content_Images/Inside_cma/Media_Releases/pdf/Taming-Queue.pdf. Accessed October 2005.

¹⁸⁴ Comeau P. Crisis in orthopedic care: surgeon and resource shortage. *Canadian Medical Association Journal*. 2004; 171(3): 223.

¹⁸⁵ *A Strategy to Reduce Orthopaedic and Ophthalmology Waits in British Columbia*. November 2004. Available at http://www.bcma.org/public/news_publications/publications/policy_papers/Ortho-Optha/Index.htm. Accessed October 2005.

¹⁸⁶ *Spend More, Wait Less? The Myth of Underfunded Medicare in Canada*. 2000. Available at [http://www.fraserinstitute.ca/admin/books/chapterfiles/Introduction-aug00ff\(v8\).pdf#4](http://www.fraserinstitute.ca/admin/books/chapterfiles/Introduction-aug00ff(v8).pdf#4). Accessed October 2005.

¹⁸⁷ Fraser Institute. *Spend and wait*. Available at <http://www.fraserinstitute.ca/admin/books/chapterfiles/Spend%20and%20Wait-pp25-26.pdf>. Accessed October 2005.

¹⁸⁸ Health Council of Canada. *Wait Times and Access*. January 2005. Available at <http://hcc-ccs.com/docs/BkgrdWaitTimesENG.pdf>. Accessed October 2005.

- paying attention across the continuum of care, not just focusing on surgical procedures
- making reliable information publicly available
- setting and reviewing thresholds for the appropriateness of surgery
- creating incentives so that all clinicians and administrators strive for reduced wait times
- expanded capacity
- defining and projecting the need for surgery.

There is some obvious overlap in the suggestions from different organizations; the common themes adopted or omitted will also be reflected in the actual provincial initiatives reviewed below. We note in passing one interesting gap in the advocated Canadian approaches, namely, maximum acceptable wait times. The omission is all the more surprising given the special focus on this approach in other quarters (such as the Wait Time Alliance).

Provincial Initiatives

National colloquiums hosted by the Canadian Policy Network in 2004 and 2005 allowed reporting on provincial wait list projects.¹⁸⁹ Several important themes emerged regarding wait list initiatives, as well as the following three limitations:

- There is an unclear connection between some of the initiatives and the potential impact on wait times.
- Sometimes very few program details have been offered.
- As it is “early days” for newly launched strategies, even short-term outcomes regarding wait times have not been available.

Among the existing and proposed solutions, the ones potentially most relevant to joint replacement wait times include:¹⁹⁰ redesigning the entire continuum of care; assessment & referral clinics using multidisciplinary teams; reduced bottlenecks such as the wait time before seeing specialist (so-called wait #1); more operations, primarily through increased operational funding; shorter stays in the hospital and other efforts to create better use of surgical capacity, existing beds, etc.; enhanced facilities and human resources; incentive systems; prioritization according to case urgency; and availability of province-wide information to enable physician and patient choice in pursuing a joint replacement according to variability in waiting lists.

¹⁸⁹ *The Taming of the Queue I and II*. Report on the second colloquium available at <http://www.cprn.com/en/doc.cfm?doc=1274>. Accessed October 2005.

¹⁹⁰ All information taken from presentations made at *The Taming of the Queue II* (March 31, 2005); supplemented by *Surgical Wait List Management: A Strategy for Saskatchewan*. January 2002. Available at http://www.health.gov.sk.ca/info_center_surgical_wait_list_management.pdf. Accessed October 2005, and by Wait List Management Project: Orthopaedic Pilot Project, Queen Elizabeth II Health Sciences Centre. January 2004. Available at <http://www.cdha.nshealth.ca/newsroom/uploads/Ortho%20Wait%20List%20Management%20Project%20Report.pdf>. Accessed October 2005.

An inventory of how these proposals are being taken up by specific provinces is provided below. The main sources of information are summaries of provincial initiatives reported to national colloquiums (indicated by a √); supplementary input regarding hip and knee replacements has been derived from a recent survey of approaches being employed at teaching hospitals in the country, or their related (urban) health authority (indicated by a *).¹⁹¹ The latter represents more localized efforts, which are not otherwise well captured in this table (for example, there have been successful initiatives in Vancouver to reduce length of stay).

Initiative	BC	AB	SK	MB	ON	NB	NS	NF
Organization / coordination of care	√	√	√	√		√	√	
Referral clinics / collaboration		√				√		
Reduced wait #1 (to see specialist)		√						
More (funding of) operations	√	√	√		√			√
Expanded / improved facilities			√	√	√		√	
Enhanced human resources			√	√	√	√	√	
Shorter hospital stays		√						
Effective scheduling and operating room allocation			√		√	√		
Expanding day surgery and out-patient diagnostics (to free up beds)				√				
Employing unused capacity (e.g., in rural hospitals)				√				
Centre of excellence				√				
Use private sector	√							
Performance contracts & rewards			√		√			
Province-wide public information that allows choice ¹⁹²	√	√	√	√	√			
Demand management: prioritization			*	*	*		*	
Demand management: prevention	√					√	√	
Forecasting / simulating demand	√				√		√	
Price management					√			
Maximum acceptable wait times		*	*		*		√	
Wait time targets		*	*		√		*	
Regional planning & resourcing					√			

It should be stated that this represents a “snapshot” of a moving target. Many provincial and regional jurisdictions are in the process of considering or developing additional initiatives. For example, the Vancouver Coastal Health Authority is testing the reliability and validity of a hip and knee replacement prioritization tool in conjunction with the B.C. Provincial Surgical Services Project. As well, creative efforts to increase efficiency are being pursued in particular centres. For example, it is possible for surgeons to work with two anaesthetic and nursing teams so that there is no down-time between procedures. This allows doubling of an individual

¹⁹¹ Association of Canadian Academic Healthcare Organizations (ACAHO). “Wait” Watchers... Weighing in on Wait Time Initiatives Across ACAHO Members. March 2005. Available at http://www.acao.org/docs/pdf_2005_wait_watchers_final.pdf. Accessed October 2005.

¹⁹² Quebec is also providing a public website with wait time information. The presentation of its work with wait times at *The Taming of the Queue II* focused on radiation oncology. Likewise, the report from PEI only looked at emergency department waiting, so the province was omitted from this table.

surgeon's daily capacity. For this to be successful, system changes are needed, such as those implemented in Vancouver and Winnipeg. The advantage of such an approach is that capacity is enhanced without the need to recruit more surgeons, and without subtracting from the ability to provide consultative services, and thus risk increasing the wait for consultation.

Whatever updates that may be required as new initiatives come on stream or move from local to provincial application, a few observations may be made on the pattern already revealed by this table.

First, funding of extra activity and / or capacity (facilities and staff) dominates the strategic landscape, closely followed by managing and communicating wait list information effectively.

Second, while there is a lot of focus on the importance of the overall continuum of care, from first presenting with arthritis to rehabilitation after surgery, few jurisdictions seem to be considering innovations such as specialized referral clinics or otherwise explicitly targeting *all* the component waits that constitute the “total wait” of a joint replacement patient.

Third, relatively little attention is being paid to classic efficiency enhancements such as reducing the length of hospital stays, perhaps because it is felt that the gains that can be squeezed from such an effort have already been largely achieved.

Fourth, it is encouraging that many provinces are paying attention to demand management through prevention. Nova Scotia in particular is stressing comprehensive prevention, focusing on causative factors such as obesity, osteoporosis and accidental falls. It is unclear, however, how many resources are actually being targeted at population health and education related to joints across the country. Demand management through prioritization schemes and their related tools are mostly at a testing stage. Joint replacement registries, which now exist nationally and in Ontario, also indirectly affect demand through identifying the best prostheses and reducing the need for expensive revision surgeries; this could be very significant as currently almost 10% of major joint replacements are revisions.¹⁹³

Finally, there seems to be a modest “appetite” so far for the following strategies (which have sometimes been touted as vital by different advocates):

- either regionalized *or* centralized surgical care.
- using the private sector, or quasi-market approaches in the public sector.
- forecasting demand to allow rational planning for needs in the future; though, admittedly, projecting need is a challenging task, it ranks as the oddest omission in the arsenal of approaches to managing joint replacements.
- maximum acceptable wait times (MAWTs), despite all the energy poured into this topic in recent months; the “slow uptake” may reflect concerns about the presumed *disutility* of MAWTs (see the relevant section of this report), though it must be admitted that there has been little explicit

¹⁹³ *Revisions of Hip and Knee Replacements in Canada*. Canadian Joint Replacement Registry Analytic Bulletin. June 2004. Available at http://secure.cihi.ca/cihiweb/en/downloads/Revisions_CJRRAnalytical_June2004_e.pdf. Accessed October 2005.

acknowledgment of this phenomenon in the Canadian context until recently.¹⁹⁴

Collateral and Confounding Factors

The inventory in the table does not include a focus on equitable access, as it offers an unclear connection to reducing wait times in *general terms* within a province. Furthermore, it is a complex task to define equitable access; we must first assess the regional disparities and causative factors that contribute to inequitable access to diagnostic and surgical services.

Likewise, an emphasis on auditing a wait list and removing those names which should not be on it (an exercise which was recently used to good effect in British Columbia), does not automatically connect to reduced wait times (measured at the point of surgical admission). At best, auditing is a collateral effort; it is part of creating the environment (specifically a context of quality wait time data) within which wait time strategies can best operate. At worst, an audited (i.e., shortened) wait list can actually increase demand because of the perception among the public of potentially faster service than used to be available.

The concern about audits as a “confounding factor” in apparent improvements in waiting time was acknowledged by the 2004 UK report alluded to earlier. The authors note other ways that wait times can look like they are falling when in reality the waiting list is simply being managed differently at the level of information or prioritization. For example, if “long waiters” are preferentially targeted, then those patients end up in a beneficial position, but only at the expense of those at the top of the queue; mean wait time may change very little. Also, “because recording systems are not complete, there is scope for improvement to appear without any change in the underlying situation.”¹⁹⁵

To their credit, the Vancouver Coastal Health Authority is attempting to take into account the confounding factors introduced by a recent audit of British Columbia’s wait list information. As noted earlier, one way for any jurisdiction to avoid the confounding effect of audits is to ensure that the primary wait time tracked is not measured in terms of everyone on the list, but only for patients who are actually admitted to surgery.

British Columbia

Having provided a national overview, we further highlight the efforts being pursued in different regions of the country via three provincial examples, beginning on the west coast.

British Columbia is committed to a leadership role in the area of major joint replacement surgery. This has recently been reflected in new targeted funding, but also in a new Provincial Surgical Services Project that has as one of its first tasks the development of a prioritization tool, based in part on the work of the Western Canada Waiting List Project. Two health authorities have been notable in efforts to improve access and reduce wait times, mainly by increasing surgical supply. We will briefly

¹⁹⁴ Sibbald B. Benchmarks for “scheduled” cases unwise, experts say. *Canadian Medical Association Journal*. 2005; 173(7): 742.

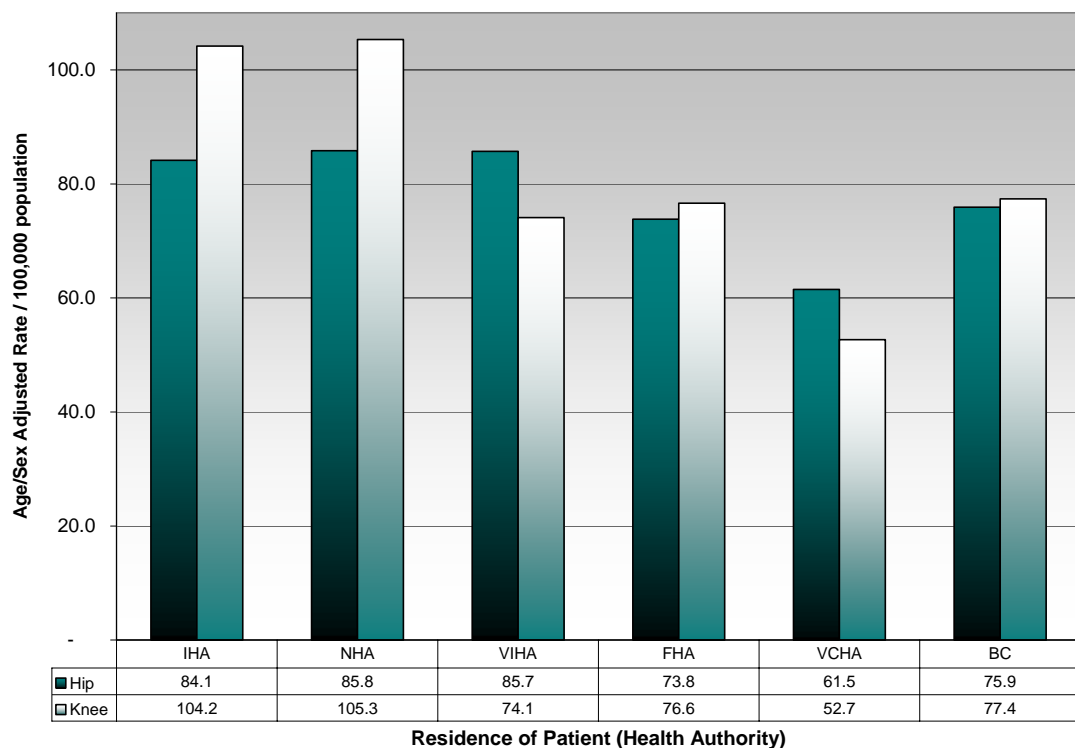
¹⁹⁵ Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King’s Fund; 2004.

examine the story provided in the Interior Health and Vancouver Coastal Health experiences.

Case Report: Interior Health Authority

The Interior Health Authority (IHA) in B.C. has recently been achieving among the highest joint replacement rates of the five health authorities in the province, as indicated on the following chart detailing the situation in fiscal year 2002/03. While the adjusted IHA rate was virtually identical to the Northern Health Authority, in absolute terms the latter region has much less activity, handling less than 20% of the number of joint replacement cases covered by the IHA.

**Hip and Knee Replacement Surgery
B.C. Health Authorities
2002/03 (Age/Sex Adjusted Rate / 100,000)**



IHA – Interior Health Authority; NHA – Northern Health Authority; VIHA – Vancouver Island Health Authority; FHA – Fraser Health Authority; VCHA – Vancouver Coastal Health Authority.

Despite this relatively positive level of access for hip and knee replacements, Interior Health residents still had to wait an estimated 10 months for a hip replacement and 17 months for a knee replacement.

Motivated to maintain superior health care to its population, especially in the face of increasing demand, the IHA already showed a commitment to go further than ever in 2003/04 to provide timely joint replacements. The challenges are clear in the following table, namely, to continue to provide a high rate of scheduled surgery in the face of more demands for expensive revisions and emergency procedures related

to fractures (the latter cases reflect an ageing population and perhaps increased reliance on home care for the frail elderly).

Population Based Analysis IHA Joint Replacement Surgeries						5 Year	% of
	1999/00	2000/01	2001/02	2002/03	2003/04	99/00 - 03/04 Total	Total
Hip Replacement							
<i>No Fracture / Revision</i>							
Elective	666	654	594	614	716	3,244	69%
Fracture *	167	142	168	212	245	934	20%
Revision	84	70	118	97	131	500	11%
Total	917	866	880	923	1,092	4,678	100%
<i>No Fracture / Revision</i>							
Elective	72.6%	75.5%	67.5%	66.5%	65.6%		
Fracture *	18.2%	16.4%	19.1%	23.0%	22.4%		
Revision	9.2%	8.1%	13.4%	10.5%	12.0%		
Total	100.0%	100.0%	100.0%	100.0%	100.0%		
Knee Replacement							
<i>No Fracture / Revision</i>							
Elective	753	762	752	827	913	4,007	94%
Fracture *	-	1	-	-	1	2	0%
Revision	41	42	41	49	75	248	6%
Total	794	805	793	876	989	4,257	100%
<i>No Fracture / Revision</i>							
Elective	94.8%	94.7%	94.8%	94.4%	92.3%		
Fracture *	0.0%	0.1%	0.0%	0.0%	0.1%		
Revision	5.2%	5.2%	5.2%	5.6%	7.6%		
Total	100.0%	100.0%	100.0%	100.0%	100.0%		

* Include (fracture and revision) cases with fractures

Despite the competing demands, the IHA managed to increase the number of scheduled primary hip replacements by 102 (16.6%) and knee replacements by 86 (10.4%) in 2003/04 compared to the previous year.

The commitment towards timely access to hip and knee replacement operations continues at both the provincial and health authority levels. Based partly on projected needs,¹⁹⁶ the B.C. government earmarked almost \$17 million in extra funding for hip and knee replacements; combined with reallocations of health authority budgets, a significant number of additional operations were performed in the province in 2004/05. According to The Arthritis Society, “residents waiting for surgery in the Interior are benefiting the most from the increased funding.”¹⁹⁷ The original projection was to provide 162 (or 9%) more hip and knee replacements in the Interior.¹⁹⁸ While the complete data is still being assembled, it is clear that at least

¹⁹⁶ See H. Krueger & Associates Inc. *Hip and Knee Replacement Surgery in British Columbia: Historical Volumes and Projected Need*. April 2004. Available at www.krueger.bc.ca.

¹⁹⁷ News Release. March 21, 2005. Available at <http://www.arthritis.ca/local%20programs/british%20columbia/media/hip%20and%20knee%20March%202005/default.asp?s=1> Accessed September 2005.

¹⁹⁸ IHA News Release. June 28, 2004. Available at <http://www.interiorhealth.ca/NR/rdonlyres/08DC60AE-9CCA-46B8-9894-B5B12624C1AA/1214/AdditionalMillionHipandKnee.pdf>. Accessed September 2005.

495 additional major joint replacements were performed for all causes in 2004/05 compared to the previous year.¹⁹⁹

The IHA is continuing its drive to maintain and enhance access to hip and knee replacement surgery and control wait times. In addition to increasing the surgery rate, the authority is committed to increasing capacity (by adding orthopaedic surgeons) and doing more procedures closer to where people live. Freeing up operating room time is being accomplished by moving day procedures to private clinics in Kelowna and Kamloops. Investing in prevention, e.g., reducing falls which produce fractures in the elderly, is also a key focus for the Authority.²⁰⁰

Case Report: Vancouver Coastal Health Authority

In 2002/03, residents of the Vancouver Coastal Health Authority (VCHA) had the poorest access to hip and knee replacements in the province, as indicated on the previous chart detailing surgery rates. Thus, regional disparities in this case do not favour residents living in urban areas where there is highest patient density.

The effort to improve hip and knee replacement rates and wait times in the Vancouver Coastal Health Authority (VCHA) has been a component of the Provincial Surgical Services Project (established in July, 2002). Early work in this vein consisted of developing a prioritization tool for major joint replacement (based on the Western Canada Waitlist Tool) and reconciling variations in efficiencies across the region (as reflected in, for example, length of stay). A major feature of the latter goal was the establishment of a new “hip and knee clinical pathway” with a target length of hospital stay of 3 days (for knees) or 4 days (for hips), considerably less than average practice elsewhere in the province or the country.

There is significant variation in hip and knee replacement rates across the region, rates that were for the most part below the provincial and national averages. Responding to this situation, the plan was to use additional 2004 federal and provincial funding to perform 656 more hip and knee replacements compared to the base amount that would have been expected for September, 2004, through March, 2005. This brings the region in line with B.C. average surgery rate and, further, it should establish a “capacity / demand balance.”

The stated objective of surgical augmentation as a whole was to reduce the number of cases on the waiting list. To accomplish this will mean a temporary increase in hip and knee replacements (beyond the capacity/demand balance rate) in order to clear the backlog; the plan is to focus on high volume / low complexity procedures.

The surgical augmentation program included the following components (though it is not clear which of these applied directly to hip and knee replacements):

- regional approach to wait list analysis to select most suitable augmentation cases.
- using capacity at alternate sites, including private clinics.

¹⁹⁹ Personal communication from Clay Barber. Director of Medical Administration, IHA, October 3, 2005.

²⁰⁰ IHA News Release. June 28, 2004. Available at <http://www.interiorhealth.ca/NR/rdonlyres/08DC60AE-9CCA-46B8-9894-B5B12624C1AA/1214/AdditionalMillionHipandKnee.pdf>. Accessed September 2005.

- an operating room allocation model.

The work on surgery as a whole extends a 2002/03 review of joint replacements in the region. The objectives and recommendations emerging from this study included:

- a 33% improvement in operating room efficiency;
- prosthesis and supply standardization;
- establishing the lowest possible cost per case;
- investing in new surgical equipment to reduce the risk of complications; and
- linkage with the new Centre for Hip Health to enhance preventive efforts.²⁰¹

As will be seen in the next section, these and other initiatives in the VCHA appear to be leading to significant progress in terms of the length of waiting lists for joint replacements.

The commitment to improve orthopaedic care in the VCHA continues, including:

- launching the VCH-Richmond Hip & Knee Pilot Project (in conjunction with the Provincial Health Services Authority).²⁰²
- developing an assessment and referral clinic (OASIS) with consistent entry of computerized patient information.
- expanding minimally invasive joint replacement surgery.
- improving fractured hip care in the elderly.

Also, it is significant that VCHA, like the IHA, is committed to demand analysis. A 2002/03 review estimated that the VCHA eventually needs to do 120 to 140 joint replacements per 100,000 population in order to keep up with the growth in demand; that projection represents approximately double the current rates, a daunting challenge.

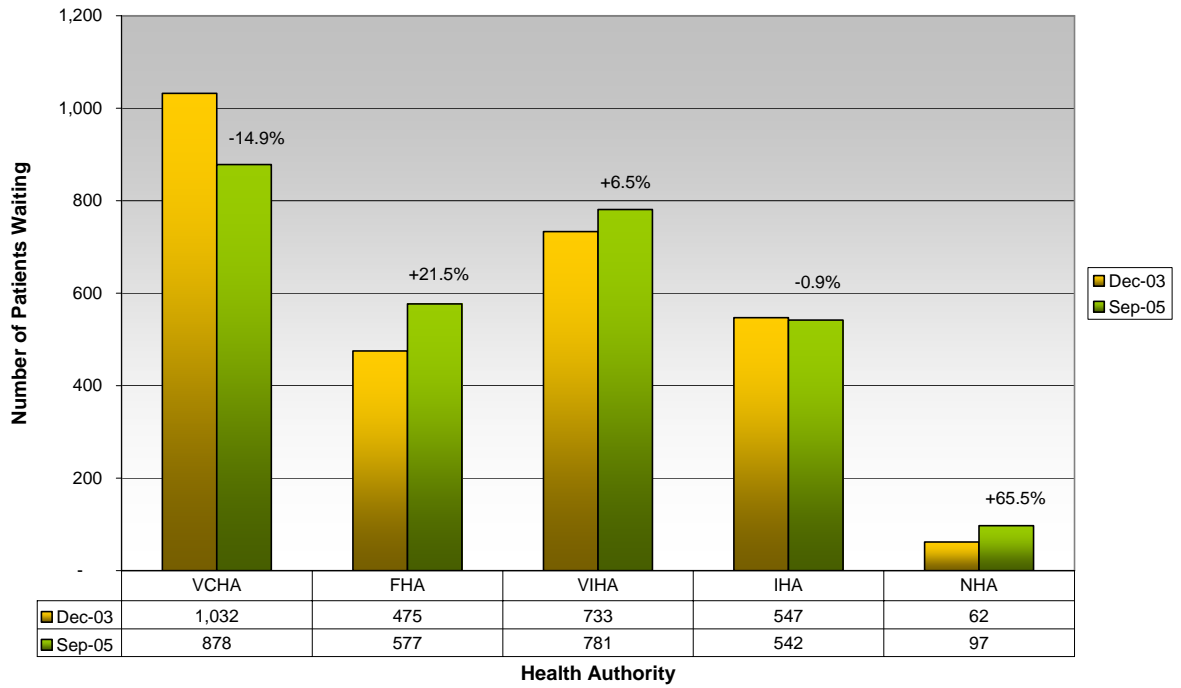
Impact on Wait Times: VCHA and IHA

The salient question for our purpose is how the recent efforts in the VCHA and IHA are translating into waiting time reductions. Tracking this story is complicated by the fact that a major source of information, the B.C. Wait Times Registry, was withdrawn for a major audit during the previous year. The people removed from the list through the audit process are a confounding factor in any comparative analysis. Nonetheless, as demonstrated in the following two charts based on Registry data, there is evidence that the initiatives in the VCHA are paying off in terms of reduced wait lists, and that the IHA is at least preventing dramatic increases in the number of patients waiting.

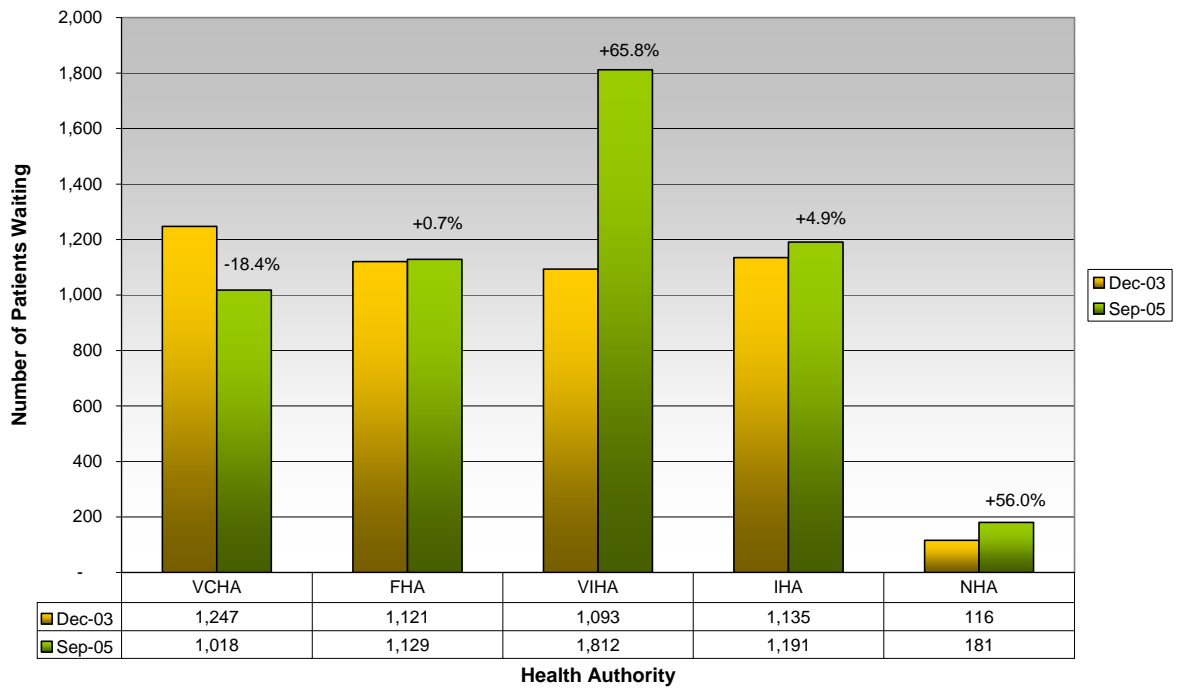
²⁰¹ See the March 8, 2004, news release at http://www.vch.ca/news/docs/2004_03_08_cfi_announcement.pdf. Accessed October 2005.

²⁰² See the March 23, 2005, news release at <http://www.phsa.ca/News/MediaCentre/March+23+2005+Health+authorities+collaborate+on+the+creation+of+innovative+hip+and+knee+reconstructi.htm>. Accessed October 2005.

Patients Waiting for Hip Replacement Surgery



Patients Waiting for Knee Replacement Surgery



Additional evidence is offered in the distribution of wait times for hip and knee replacement in the VCHA. While the percentage of patients waiting for hip replacements longer than the target time of 30 weeks was stable when comparing 2003/04 to 2005/06 (period 3 YTD), the percentage of knee replacement patients waiting greater than 30 weeks declined significantly (from 57.5 to 36.8%).²⁰³

Ontario

Reducing wait times for key health services has been identified as a key objective for the Ontario government. This resulted in the launch of the Wait Time Strategy in November, 2004. The initial focus, as in other jurisdictions, are the five services targeted by the First Ministers of the country in the *National Waiting Times Reduction Strategy*, including hip and knee replacements. The aim is to significantly reduce wait times *in a sustained way* for these and other procedures by December, 2006.²⁰⁴ The main approach of the strategy is to enhance supply through:

- funding targeted activity increases.
- creating efficiencies through standardization of best practices and other means “so that more people can be treated within the same time period.”
- making hospitals accountable for how they manage access (by linking funding to submission of quality wait time information).
- developing an information management system, including a prioritization scheme.
- paying attention to and providing adequate beds, operating rooms and human resources.

The wait time that will be tracked in the strategy is the period between the decision to proceed with surgery and delivery of the service; it does not include what is referred to as “wait #1” (from the primary provider visit to actually seeing a specialist) or “wait #3” (delays before any rehabilitation services).

One of the key early inputs of the strategy was enhanced funding to provide 1,680 additional hip and knee replacements in the province in 2004/05.²⁰⁵ An important part of this initiative was the inclusion of extra resources to cover expanded rehabilitation services, which can sometimes be an overlooked “bottleneck” in the care pathway.

An audit report indicated that the 2004/05 target was achieved.²⁰⁶ The increased supply last year is part of an ongoing commitment; thus, according to the government’s website, the increase in joint replacement surgeries in 2003/04 compared to the previous fiscal year was of a similar order (specifically 1,639).²⁰⁷ For 2005/06, funding has been put in place for even more dramatic increases, up to 6,700 additional hip and knee replacements (in two phases) compared to the previous

²⁰³ Our analysis of data provided in personal communication from Susan Scrivens. Director, Surgical Services Planning Project, VCHA, September 30, 2005.

²⁰⁴ *The Wait Time Strategy*. Background. Available at http://www.health.gov.on.ca/transformation/wait_times/strategy_summary.pdf. Accessed September 2005.

²⁰⁵ *The Wait Time Strategy*. December 8, 2004 Update. Available at http://www.health.gov.on.ca/transformation/wait_times/strategy_overview.pdf. Accessed September 2005.

²⁰⁶ *The Wait Time Strategy*. August 16, 2005 Update. Available at <http://longwoods.com/website/slides/WaitTimesUpdate.pdf>. Accessed September 2005.

²⁰⁷ Summary available at http://www.health.gov.on.ca/transformation/wait_times/wt_trends.html. Accessed September 2005.

year.²⁰⁸ The Expert Panel on Total Hip and Knee Joint Replacement noted in a draft report dated September 18, 2005, that the funding conditions required of hospitals have been increasing. The Panel also outlined the following assessments of the Ontario Wait Time Strategy to date:

- Funding additional activity has been important as a way to address backlogs of people waiting for joint replacements
- Extra case funding cannot provide the whole solution; the number of operations has nearly doubled since 1993/94, but the number of people waiting more than 26 weeks for the procedure has increased four-fold in the same period.
- Insufficient capacity must also be addressed, including too few orthopaedic surgeons and too little operating room time.
- Access improvements cannot simply focus on hospitals, but must involve enhancements along the whole continuum of care, with its various waiting periods.
- Other areas of orthopaedic surgery need to be safeguarded.
- Solutions at the level of a regional *network* of hospitals may be more useful than plans created by individual institutions, especially in rural areas.

How is the Wait Time Strategy affecting the key objective, namely, sustained reductions in wait times? By definition, given the short duration of the project, nothing yet can be said about the “sustained” side of things. As for the short-term, data unfortunately was not available to compare 2004/05 against the 2003/04 baseline information on wait times for hip and knee replacements. An update on the strategy in August, 2005, did report that “a preliminary review of data suggests that waiting times...are decreasing in Ontario.”²⁰⁹ We are keen to see how the data for hip and knee replacement waits will support this statement.

Nova Scotia

Nova Scotia has a history of paying attention to wait times; for instance, it recorded shorter waiting for joint replacements comparing data from the late to the mid 1990s.²¹⁰ The efforts have continued, reflected in the Provincial Wait Time Monitoring Project. As well as leading the way with a prevention emphasis (noted earlier), the province has introduced the idea of simulation models to help predict what level of resourcing will be required to meet hip and knee replacement needs over time. The model indicated that a certain number of beds and increased operating room time were required simply to stabilize wait times for joint replacement and other orthopaedic procedures.²¹¹

²⁰⁸ *The Wait Time Strategy*. August 16, 2005 Update. Available at <http://longwoods.com/website/slides/WaitTimesUpdate.pdf>. Accessed September 2005.

²⁰⁹ *The Wait Time Strategy*. August 16, 2005 Update. Available at <http://longwoods.com/website/slides/WaitTimesUpdate.pdf>. Accessed September 2005.

²¹⁰ Canadian Health Services Research Foundation. *Quid Novi?* 1998; 1(4). Available at http://www.chsrf.ca/other_documents/newsletter/qnv1n4p4_e.php. Accessed October 2005.

²¹¹ Chart excerpted from Wait List Management Project: Orthopaedic Pilot Project, Queen Elizabeth II Health Sciences Centre. January 2004. Available at <http://www.cdha.nshealth.ca/newsroom/uploads/Ortho%20Wait%20List%20Management%20Project%20Report.pdf>. Accessed October 2005.

Based on this analysis, the Department of Health announced 25 new beds and the addition of the equivalent of one new OR suite, the expansions to be implemented over the summer of 2004. At this point, Nova Scotia is still developing the collection and reporting of wait time data, so the impact of the initiatives in “real time” has not been assessed.

Summary: Effective Interventions

Recalling our evaluation criteria, we first must highlight wait list interventions which accomplish the primary goals: reducing wait times for joint replacements (as measured by a summary metric such as median wait time) and avoiding adverse health care consequences (such as those which may be engendered by private sector initiatives). Using these terms and assessing sometimes equivocal results as best as possible, the following interventions rise to the surface as demonstrating the most consistent evidence of usefulness:

Supply-Side

- Increased hospital funding to increase activity and / or capacity, preferably with a long-term strategy reflecting demand projections.
- Improve surgical management, allowing surgeons to operate in a more efficient manner.
- Tie physician remuneration to actual reductions in wait times (though we may be reaching the upper limit on productivity-based activity increases).

Demand-side

- Decreasing the cohort of eligible patients by tightening the threshold requirements indicating joint replacement.
- Decreasing the revision surgery rate through optimal prosthesis selection.

One overarching observation is that, on balance, demand-side approaches seem to be neglected, with a disproportionate amount of time and resources being spent on increasing supply. In particular, demand management through prevention or diversion to non-surgical care receives comparatively little attention in the literature, possibly because these solutions can require a longer time frame than that involved with simply increasing the surgery rate.

Conclusions

In this report, we set out to address two topics: the variations in waiting for scheduled surgery (and especially joint replacement) in Canada and other countries, and the interventions that have been employed to reduce waiting times. Part of our assignment involved explaining the variations and evaluating the interventions. Both tasks had one ultimate aim: to marshal recommendations on how to proceed with waiting list initiatives that will improve the provision of hip and knee replacements in every province.

Before offering those recommendations, we make the following observations.

First, the important principle of basing health care decisions on evidence is hampered in this case by the paucity and poor quality of the available data. There is such a multiplicity of measures and methods of collecting information on waiting lists that it becomes almost impossible to compare the experience of different jurisdictions or be confident about the effect that an intervention has actually created.

Second, because interventions have typically been applied in packages, it is difficult to isolate the role that any particular initiative played in changing the shape and size of a waiting list. Likewise, it is challenging to devise randomized, controlled studies, especially given the dynamic quality of waiting lists and the “lag time” before some interventions would mature.

Third, given the scarcity of data, it is tempting to depend on theory, econometric simulations and even “ideology” to drive policy choices. That temptation ought to be resisted. The way that waiting lists behave is so complex that there really is very little substitute for basing decisions on the real-world or experimental evidence that we can muster, or running pilot projects to help build that evidence base.

Fourth, in the face of proposed solutions with a focus on private health care, the preceding observations ought to make us cautious about wholly embracing interventions that move beyond the public sector. We simply do not have enough information to trump the potential negative consequences. Having said that, it is also true that we do not have enough information to categorically rule out a private sector response to long wait times.

Fifth, there are a number of the currently popular approaches used in waiting list management, including prioritization schemes, which have an undetermined and untested connection to wait times per se. Similarly, the relationship between urgency ratings and maximum acceptable wait times is complex; indeed, these two mechanisms sometimes seem to be at odds. At the least, more testing is needed to determine their efficacy and effectiveness.

Acknowledging these limitations, there are a number of recommendations that may be put forward. They fall into two groups: those that relate to interventions per se, and those that have more to do with conditions. The latter refers to the context required to allow the interventions to function. The conditions are “soft” objectives that do not by themselves do anything about shortening lists or wait times. It is important for jurisdictions to not become so enamoured with fixing the conditions surrounding waiting list management that they never move on to “hard” interventions aimed at improving real-world patient experience.

Policy Conditions to Reduce Wait Times

Given the observations made above, it is not surprising that the conditions required to do effective work on waiting lists involve making improvements in the quality of information we track.

Clarity: A jurisdiction should always be clear about what they are measuring and reporting: total wait or the wait after deciding on surgery; waiting time on the list or waiting time at the point of admission; the calendar period involved; etc.

Standardization: Every provincial and regional jurisdiction in Canada needs to use the same metrics to report on the state of a particular wait list. This would clear up a lot of the problems seen in comparing data and allowing changes to be monitored.

Relevance: The metrics need to relate more to wait time than the length of lists, they need to reflect real patient experience as much as possible, and be easily understood by the general public (and by physicians).

Definition #1: A wait time should measure the total wait, from presenting with a problem in primary care to being admitted to a rehabilitation program after surgery.

Progress: As we move towards this ideal, the component wait times that are currently available should be reported explicitly to allow comparison with other jurisdictions. For example, an administrator may only know the wait time for diagnostic tests and the wait time between decision to treat and admission; whatever the case, they need to identify each piece of the wait that is being reported.

Definition #2: A wait time should not be established for all patients on the list at a particular point in time, but rather for each patient at the point they are admitted to surgery (or to rehabilitation). This best reflects patient experience and avoids the confounding factors when lists are reduced through audits and other means that have nothing to do with actually providing surgery.

Primary Data: There are many summary measurements that can be used, but the median wait time seems to be the most common. For simplicity, the median wait time (in weeks) experienced by *admitted patients* during a specified time period should be the standard statistic reported.

Urgency: The urgency categories should be kept simple to allow modest administrative costs, understandable public reporting, and some room for clinical flexibility as individual cases progress. The most important distinction from a public perspective is between urgent (booked) surgery and scheduled surgery (general time frame known, but exact date not established).

Controversy: One of the most ambitious changes that could be envisioned is establishing a central joint replacement wait list rather than a series of lists kept by individual surgeons.

Targets: The maximum acceptable wait time should be reoriented towards “best practices” and renamed the clinically optimal wait limit (COWL). We should continue to establish what delays still permit optimal (rather than merely safe) outcomes for each urgency category, deciding such limits primarily on clinical grounds rather than by what is achievable financially and politically.

Uncertainty: In the light of incomplete evidence about the health and cost effects of delayed surgery and ongoing validation of prioritization tools, we should err on the side of shorter time frames for all scheduled patients to receive their surgery.

Supplementary Data: Additional information can be offered to the public and to providers on urgency categories. The most important sign of quality control is how the “tail” of the waiting list is being handled. Thus, we should report the percentage of scheduled patients admitted within the COWL. Other data (mean wait time, distribution of waits, length of waiting list) should be maintained for internal administrative and external research interest.

Auditing: There should be regular (preferably semi-annual) auditing of wait lists to ensure accuracy, though measuring waits at the point of admission helps to reduce the importance of this discipline for evaluating patient experience. One of the best outcomes of auditing would be to ensure that patients have been placed in the right urgency category.

Projections: Much more effort should be put into making good estimates of future needs / demands for hip and knee replacement so solutions requiring long-term investment can be pursued “ahead of the curve.”

Policy Interventions to Reduce Wait Times

Having identified the conditions, and especially the quality of information, required to pursue and evaluate the progress on wait lists, we offer the following high-leverage recommendations on how to actually see reductions in wait times. These initiatives are drawn as much as possible from the practices that have worked well in other jurisdictions.

First, we should fund additional surgical activity to reduce wait list backlogs. To establish COWLS but not increase funding will only lead to thresholds for the appropriateness of surgery being tightened, possibly compromising the health and quality of life of patients suffering from arthritis.

Second, we should judiciously employ incentive programs among hospitals and physicians to increase productivity, and monitor and adjust for any adverse consequences. Indeed, we have provided an example of how such increased productivity with the same number of surgeons may be achieved.

Third, we should use the demand projections noted earlier to rationally plan for capacity enhancement, including human resources and facilities.

Fourth, we should aggressively implement and resource programs of prevention and alternate medical care to reduce demand. Studies consistently show that these often-neglected approaches are very cost-effective.

Fifth, while not necessarily ruling out all private sector solutions to improving patient care, there is enough evidence that quality and costs can be well-controlled in the non-profit sphere to inspire us towards exhausting all public options first.

Sixth, we need to make sure that an emphasis on wait times does not skew overall health care priorities both inside and outside orthopaedic surgery. In the case of hip and knee replacements, a balancing perspective involves the following goal: to help as many suffering patients as possible as much as possible.

Seventh, we need to establish a long-term view and long-term policies so that a wait list backlog does not redevelop. As the King's Fund report concluded:²¹²

Sustainable reductions (in waiting times), as opposed to ad hoc reductions, must rest on the indefinite continuation of policies designed to respond to a range of forces—that is, to meet a level of demand that rises in response to technical change, demography, rising user expectations, and changes in clinical behaviour.

²¹² Appleby J, Boyle S, Devlin N et al. *Sustaining Reductions in Waiting Times: Identifying Successful Strategies*. London: King's Fund; 2004.

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