

**Establishing Acceptable Waiting Times for Medical Services:  
A review of the evidence and proposed methods**

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## **1.0 INTRODUCTION**

The presence of waiting lists and lengthy waiting times for medical services in Canada has raised concerns regarding reasonable access to health care. Patients seeking medically necessary services in Canada are guaranteed reasonable access to care according to the Canada Health Act. Variation in waiting times and the effect of lengthy waits on patients have been particularly troublesome since they appear to threaten this guarantee. These concerns have led to calls for the establishment of standards for acceptable waiting times for a broad range of medical services. The Western Canada Waiting List (WCWL) Project is well placed to contribute to this debate given the work recently completed on the development of priority tools to manage waiting lists for selected procedures.

The primary purpose of this paper, therefore, is to explore the issues and methods related to the establishment of acceptable waiting times for selected medical services. The specific objectives of the paper are as follows:

- To review and synthesize the published and gray literature and other relevant sources of information regarding acceptable or reasonable waiting times for a broad range of procedures;
- To identify and discuss the issues and factors associated with the establishment of acceptable waiting times; and
- To propose a range of methods for the establishment of acceptable waits for a broad range of procedures.

## **2.0 LITERATURE REVIEW**

Several national and international groups have addressed the issue of acceptable waiting times for medical services. Information regarding their experiences and recommendations will serve as sound foundation for the work of this project.

### **2.1 Search and Synthesis Strategies**

Studies focussed on waiting lists and waiting times were sought in both the published and “gray” literatures. Literature searches were conducted in various medical and social science databases such as, MEDLINE, HealthSTAR, CINAHL and SOCIOFILE, to identify the published literature. The gray literature was identified through direct contact with various health research institutes, organizations and both Canadian and international government groups. The literature reviews conducted for the WCWL panels were the used as the primary source of evidence regarding the effects of waiting on patient status and outcomes for the selected procedure (see [www.wcwl.org](http://www.wcwl.org)).

Two primary types of references were identified in the area of acceptable waiting times for medical services: (1) studies and reports that identified or defined specific acceptable waits, and (2) references that focussed on factors to be considered in the establishment of acceptable waits. In the first case, this review focuses on several key constructs: the identification and definition of the waiting time, the recommended acceptable waiting times (if provided), the methods used and

factors considered in this process. These results are summarized in Table 1. The second set of references are synthesized and organized around a key set of factors.

## **2.2 Acceptable Waiting Times for Medical Services**

Based on the information and evidence reviewed, approaches to the establishment or identification of acceptable waits for medical care can be categorized as grounded in one of the following perspectives or approaches: patient, physician, or government. Examples of each approach are described in the following discussion concluding with a brief account of the contribution of each method to the process of establishing standards for acceptable waits.

### **2.2.1 Patient Perspective**

Selected studies focussed on the patient perspective regarding acceptable waits for medical care. In general, patients who had recently experienced waits for care are asked whether or not they feel their waiting times were acceptable. This was the strategy adopted by Canadian researchers investigating waiting times for knee replacement in Ontario. Following their surgery, patients were contacted and asked to comment on the level of acceptability of waits they experiences for the initial specialist consultation (i.e. “acceptable” or “not acceptable”) and surgery (i.e. “too soon”, “acceptable”, or “delayed too long”). The median waiting times for a specialist consultation and knee replacement surgery were 4.0 weeks and 9.5 weeks respectively. The majority of patients felt that their waiting time was acceptable for both the specialist consultation (93.2%) and surgery (88.1%) (Coyte et al., 1994; Ho et al., 1994).

A slightly different approach was adopted by an international team of researchers investigating waiting times for cataract surgery in Canada (Manitoba), Denmark and Spain (Barcelona). Patients were recruited prospectively from the practices of participating ophthalmologists as they presented for care and were asked to identify a maximum reasonable wait for non-emergency cataract surgery (n=550). Responses ranged from “no wait” to “more than two years” and were eventually grouped into one of the following categories: (1) 3 months or less; (2) more than 3 months; or (3) do not know. The majority of patients (60.6% in Manitoba to 81% in Denmark) felt that 3 months or less was an acceptable time to wait. Patients were also provided with an estimate of their anticipated waiting times and asked how they felt about its length: (1) “shorter than they would like”; (2) “reasonable”; (3) “longer” or (4) “much longer than they would like”. Patients selecting categories (3) or (4) were considered to have waits that were “too long”. The proportion of patients feeling their waits were too long varied across countries: 28.9% (Barcelona), 43.0% (Manitoba), and 56.8% (Denmark). Hence, the authors concluded that waits of less than 3 months appeared to be acceptable while waits longer than 6 months were not acceptable in all three sites. The evaluation of waits between 3 and 6 months varied by country (Dunn et al., 1997).

### **2.2.2 Physician Perspective**

Perhaps the most significant development in the establishment of standards for waiting time has occurred in Ontario for cardiac surgery. In 1988-1989, a panel of 11 cardiologists and five cardiac surgeons was established to address the issue of patient prioritization for patients waiting for cardiac revascularization. The Panel developed a 7 point urgency rating scale (URS) with maximum acceptable waiting times for each level (see Table 1) (Naylor et al., 1991). To determine levels of agreement regarding patient prioritization, fictitious case scenarios were

reviewed and assessed by Panel members. Results indicate that there was agreement in 60% of cases when grouped categories were considered (levels 1-4; 5-7 and 8-9) (Naylor & Baigrie, 1990; Naylor et al, 1990). These guidelines for cardiac surgery have been adopted elsewhere in Canada and abroad (Agnew et al., 1994).

A similar process was used in Ontario to determine urgency ratings and maximum waiting times for coronary angiography. An expert panel of 10 cardiologists rated 354 case scenarios exhibiting various combinations of clinical factors believed to affect urgency for angiography. A similar URS system of urgency rating with recommended waiting times was used (see Table 1). Agreement among at least half of the panel members was achieved in 84% of cases. The primary factors associated with clinical urgency included grade of angina, results of the exercise stress test and results of the imaging studies (Basinski et al., 1993).

Information regarding acceptable waiting times for a broad range of procedures and specialties has been collected through physician surveys conducted at the national level by the Fraser Institute. In their annual report on waiting times in Canada, the Institute asked physicians for their assessment of “reasonable” waits for a broad range of procedures including ophthalmology, orthopaedic surgery and general surgery (see Table 2). The median reasonable waiting time from appointment with the specialist to treatment for ophthalmology was 4.3 weeks in 1999, down from 5.6 weeks in 1995. The 1999 estimates for a reasonable waiting times for cataract removal ranged from a low of 6.0 weeks in Nova Scotia, British Columbia and Alberta to a high of 12.0 weeks in PEI and Saskatchewan (Ramsay and Walker, 1996; Zelder & Wilson, 2000).

The results for orthopaedic surgery remained fairly consistent over time and across regions. The estimated reasonable waiting time for elective surgery reported by the Fraser Institute ranged from 7.2 weeks in 1995 to 7.8 weeks in 1999. In 1999, the reasonable waiting time estimates for arthroplasty (knee and hip) varied across provinces from between 6.0 weeks (Newfoundland) to 14.0 weeks in PEI (Ramsay & Walker, 1996; Zelder & Wilson, 2000).

The physician reported reasonable waiting time for general surgery from consultation to treatment remained constant at 3 weeks between 1995 and 1999. Provincial weighted median estimates of acceptable waits are provided for 1999 across a range of procedures including hernias, cholecystectomy, colonoscopy, mastectomy and varicose veins among others. The estimates range across provinces between 2.5 weeks in Nova Scotia and 6.3 weeks in Saskatchewan (Ramsay & Walker, 1996; Zelder & Martin, 1999).

In 1998, the British Columbia Medical Association (BCMA) adopted a similar strategy for collecting information regarding waiting times in BC. Like the Fraser Institute, physicians in BC were asked to report estimates of reasonable waits for various services. Based on the results of the survey, the reasonable waiting time for cataract surgery was 8.0 weeks from consultation to cataract removal. Similarly, reports from the BCMA, indicate that orthopaedic surgeons in that province believe that the maximum reasonable waiting time for surgery is 8 weeks (BCMA, 1998).

The Canadian Medical Association addresses the issue of access to medical services through the Access to Quality Health Care Project proposing a series of goals and principles related to the

issue of waiting list management. Overall, the CMA believes that patients quality of life and health status can be maintained through effective development and management of waiting lists that is based on the best available evidence regarding clinical appropriateness, effectiveness, rational use of resources, and quality of life. One of the key principles outlined by the CMA focuses on the need to ensure that physicians in clinical practice have a leadership role in, among other things, the establishment of benchmarks for waiting times (CMA, 1999).

### **2.2.3 Government Perspective**

Government wide policies have also been adopted in various countries to address the issue of lengthy waits and lists for cataract, and other, surgeries. In 1992, the Swedish National Government along with the Federation of County Councils introduced a maximum waiting time guarantee for 12 procedures including cataract surgery, hip and knee replacement and cardiac surgery. Procedures selected for the guarantee had to meet the following criteria: (1) waiting created a problem, (2) the treatment methods were well established, (3) results are measurable, and (4) benefits were high. The agreement stated that patients were guaranteed surgery within 3 months of the physician's decision to treat/operate. Not all patients requiring surgery were covered under the guarantee since there were insufficient resources to provide all patients with surgery within 3 months. Hence, patients were given a priority rating and those patients with no priority rating were not covered by the guarantee. If the hospital could not provide services within 3 months for patients covered by the guarantee, they had the right to be treated in another hospital or by a private clinic at the county's expense. Policy-makers hoped that this would encourage counties to refer patients to other hospitals that could accommodate the surgical workload. The policy was initially introduced for one year only with a grant of 500 million SEK (\$70 million US) to help hospitals meet the targets for all 12 procedure groups. Ultimately, the decision was made to extend the policy from 1993 to 1995 but no further grants were made available (Hanning, 1996; National Board of Health and Welfare).

While details regarding the scope and nature of the guarantees is adequately reported, there is no published information regarding how government officials selected and agreed on a 3 month guarantee. Marianne Hanning, noted health service researcher in Sweden, revealed that the guarantee was primarily a political initiative, not based so much on any empirical evidence, but rather viewed as a "political promise" established by politicians who believed that 3 months was a reasonable length of time for patients to wait for care (Personal Communication with M. Hanning, November, 2000).

The effects of the policy, based on a limited number of studies, were mixed but appear to indicate that targeted funding played a primary role in the reduction of waiting times. Hanning et al. (1998) compared waiting times before and after the introduction of the policy as well as compared aggregate measures of waiting list size for patients with and without a guarantee. The policy appeared to have an effect on waiting times with the proportion of cases waiting less than 13 weeks increasing from just over 50% in April 1991 to almost 90% in April 1992. The number of patients awaiting surgery decreased by 21% between January 1992 and December 1992; however, the decline began prior to this time when the decision to adopt the policy was made but not yet enforced. The declines in waiting list size, however, were soon followed by increase by December 1993 when the subsidies were no longer available to hospitals (Hanning et al., 1998). The experience with cataract surgery was equally mixed. The proportion of cases performed

within 3 months rose from 66% in 1992 to 71% in 1993. The results, however, varied across eye clinics from 40% to 99%. By 1995, the proportion of patients treated within the 3 month guaranteed time decreased to only 59% (Lundstrom et al., 1996; Hanning et al., 1998). The effects on waiting list size and times therefore, appeared to be short lived and due in part, to other policies introduced at the same time including the targeted funding and improved waiting list management.

In an attempt to understand why the policy may have failed, Hanning et al. (2000) conducted a survey among the chief physicians within each hospital since they were considered to be primarily responsible for the implementation of the policy. The results of the survey indicated that the policy was well-received by physicians and did not conflict with their clinical judgements or values. However, many reported that they believed that the problems related to waiting lists were limited and not as serious as those reported in the media. Most physicians reported that they were able to meet the guidelines through the initiation of various plans and strategies supported by the availability of additional funding. Approximately 50% of the departments received extra funding to reduce waiting lists in 1992 when the policy was introduced. However, when additional resources were no longer available and economic restraints limited the expansion of the health care system, the policies regarding acceptable waiting times and patient prioritization were revised. These new policies conflicted with their standards of clinical practice and values and as a result, physicians soon abandoned the intentions of the guarantee (Hanning et al., 2000).

A similar policy was adopted in the UK. After years of struggling with lengthy waiting lists and waiting times, the Department of Health in the UK introduced a waiting time guarantee for all in-patient care. The *Patient Charter* was introduced in 1992 to establish patient rights and standards of care that patients could expect from the National Health Service. The Charter guaranteed all patients admission to hospital within 18 months for cataract, hip and knee replacement surgeries and admission within 2 years for all other procedures from the time they were placed on the hospital waiting list. In 1995, the Charter was revised to guarantee admission for all procedures within 18 months. Patients were also assured that surgery would not be cancelled the day prior to a scheduled surgery nor after admission to hospital (NHS, 1995). Patients could always pay the out-of-pocket costs and elect to seek care in the private sector if they believed the guarantee was not sufficient. Again limited information is available regarding how and why politicians agreed on these specific waiting time guarantees. Some believe that they felt 2 years was the maximum acceptable time and wanted to eliminate waits longer than 2 years. Once again, the decision did not appear to be based on clinical evidence but rather on political factors (Personal Communication with J. Yates, November, 2000).

In parts of Australia, various strategies have been adopted to address the issue of waiting lists and waiting times. One of the key elements of the waiting list strategy involved the development of priority criteria and the establishment of maximum waiting times for selected procedures. In 1991, the Victorian Department of Health and Community Services (DHCS) invited physicians and surgeons to participate in the Departmental Advisory Committee on Elective Surgery to develop a classification system to categorize patients waiting for elective surgery based on the specialty specific criteria for clinical urgency. Patients awaiting surgery as of January 1, 1992 were categorized as one of the following (Duckett, 1995; Street et al., 1996):

- Urgent (Category 1): patients referred to those who did not require emergency admission, but should have an early intervention with admission within 30 days;
- Semi-urgent (Category 2): patients who were experiencing pain, dysfunction or disability but are not expected to experience a rapid deterioration in their condition or become an emergency case and should be admitted within 90 days; or
- Non-urgent (Category 3): patients described as those experiencing minimal pain, dysfunction or disability; there was no maximum waiting time suggested for this group.

The acceptable waiting times for each category were established based on the expertise and views of surgeons and the likely acceptability by a wide range of groups including clinicians and the media (Personal communication with S. Duckett, October, 2000).

Priority rating and maximum acceptable waiting times were also established in New South Wales. Waiting time recommendations were established for all medical and surgical cases requiring hospital admission. Based on the guidelines, patients may be classified in one of the following groups: (1) emergency (Immediate admission); (2) Urgency 1 (Hospitalization within 1 week); (3) Urgency 2 (Hospitalization within 1 month); (4) Urgency 7 (Hospitalization within 3 months); (5) Urgency 8 (Other ready for care); and (9) Urgency 9 (Not ready for care). The latter group reflect patients that are not waiting due to resource shortages but rather for clinical or personal reasons (NSW, 1998). Information regarding how and why these standards were developed was not available.

Finally, faced with a dramatic restructuring of their health care system in the early 1990's, New Zealand adopted a management approach to address the issue of lengthy waits for care. Based on the recommendations of a national health committee, sponsored by both the National Advisory Committee on Health and the 4 regional health authorities, a process was put in place to develop criteria to assess patient need for service and prioritize those patients awaiting care. This strategy was supported by new funding provided to reduce waiting lists and times and was contingent based on the adoption of the priority criteria (Hadorn et al., 1997).

To ensure reduced waits and improved access for patients, the government introduced the following guarantee: "all patients with a level of need which can be met within the resources (funding) available are provided with surgery within 6 months of assessment" (New Zealand, 2000). The priority scoring system, similar to that developed by the WCWL Project, serves as a guide for hospitals and clinicians to determine whether patients' level of need meet the criteria for publicly funded treatment. If patients fall below the defined threshold for care, alternative paths of care are suggested. Patients for whom surgery is nonetheless considered the best option and for whom there is a realistic probability of meeting the threshold in the near future, are referred for "active care". This is a process of active case management including primary and secondary care where patients can expect to have their plan of care and priority level reviewed at least every 6 months. Alternatively, patients who are assessed well below the threshold and who are stable, are referred for "GP care" where patients receive ongoing care by their primary care

practitioner. Guarantees were also made for specialist care such that patients can expect to wait a maximum of 6 months for their first specialist assessment (New Zealand, no date).

The literature clearly points to three distinct types of approaches or perspectives in the development of standards for acceptable waits each contributing in a different way to this process. The patient approach focussed primarily on the level of acceptability of waits experienced by patients. While these strategies did not result in a define set of acceptable waits per se, they do provide valuable information regarding the likely acceptability of proposed standards. The physician and government approaches focussed more directly on the development of standards using various methods and levels of evidence. The physician approaches focussed on the use of available clinical evidence and judgement to identify acceptable levels while the government approach used the available evidence but also included the perspectives and opinions of a broader range of stakeholders.

### **2.3 Factors Associated with the Establishment of Acceptable Waiting Times**

Several studies, while not directly focussed on the establishment of waiting time standards, identify key factors that may be critical to this process. Information regarding the effects of delayed treatment on patient status and outcomes as well as resource availability serve to inform the decision-making process regarding acceptable waiting times.

#### **2.3.1 Effects of delay on patient status**

One of the critical issues regarding the establishment of acceptable or maximum waiting times is the effect of waiting on patient morbidity and functioning. Patients are personally affected by waiting periods in various ways ranging from excessive pain and disability to stress and anxiety. These experiences are vitally important since they provide information regarding possible adverse effects of waiting as well as provide evidence and guidance for the establishment of acceptable levels of waiting (Cox, 1994; Naylor & Slaughter, 1994).

A limited number of studies have been conducted in Canada and abroad to assess the physical, social and economic problems facing patients waiting care. Patients waiting for orthopaedic surgery reported suffering due to pain, reduced mobility and a sense of overall dissatisfaction with the overall quality of their lives (West et al., 1984; Rigge, 1994; Roy & Hunter, 1996; Williams et al, 1997). Rigge (1994) interviewed 50 patients prior to and following surgery. All patients reported some degree of pain and which they dealt with in a variety of ways including “toughing it out”, pain killers and alternative therapies (Rigge, 1994). Similarly, among 97 patients interviewed by Roy et al. (1996), 93% reported pain and most patients reported problems with mobility both indoors (n=46) and outdoors (n=81) and problems with stairs (n=75). In most cases (n=60), patients required assistance with activities of daily living and non-urgent cases reported a higher incidence of depression (Roy & Hunter, 1996). Williams et al. (1997) used a general health status measure, the Short-Form Health Survey (SF-36), and a disease-specific measure, the Western Ontario McMaster Osteoarthritis Index (WOMAC) to assess patient status prior to and after orthopaedic surgery. The results confirmed that patients experienced a range of adverse effects including pain, difficulty with functioning and stiffness among other effects (Williams et al., 1997).

Several comprehensive reviews of the literature were conducted by the WCWL research team, in part, to assess the level of suffering and disability associated with waiting for care. One of these, the hip and knee replacement review focussed on the effects of hip and knee arthritis and joint replacement surgery on function and pain. Approximately 14 studies were reviewed which used a range of methods to measure function and pain including the SF-36, WOMAC, the Nottingham Health Profile, the Health Assessment Questionnaire among others. Scores were standardized to a 0-100 point scale reflecting a worse (0) to best (100) case scenario. The results of the review indicate that standardized median scores for pre-operative function ranged between 30 and 84; post-operative scores ranged from 44 to 99 resulting in a positive change for all patients of between 14 and 50 points. A similar approach was taken to standardize pain measures. Pre-operative pain measures ranged from 24 to 58 and post-operative measures ranged from 56 to 92 with lower scores representing higher levels of pain. Information regarding other quality of life measures was provided by 6 studies using the SF-36. Based on the median scores (pre-operative; post-operative), it appears that patients improved in various areas including functional role (23;40), emotional role (62;71), vitality (47;56), and social function (63;78) among others (Martin et al., 2000). These findings clearly provide evidence that patients do in fact experience adverse effects prior to surgery. The question remains, however, if and to what extent patients experience deterioration in their health status while waiting for care.

Patients waiting cataract surgery in Saskatchewan were minimally bothered by symptoms prior to surgery. Patient self-reports indicated little to no difficulty with various tasks including reading, doing fine handiwork and driving at night and very little anxiety pre-operatively. Patients did report some problems with glare and blurry vision (Hadjistavropoulos et al., 1998).

The majority of studies conducted to date have focussed on the effects of waiting for cardiac surgery, specifically coronary artery bypass graft (CABG) and angiography. Patients awaiting cardiac care identified various adverse effects including anxiety, stress and depression (Mulgan, 1990; Underwood et al., 1993; Bengston et al., 1994; Petrie et al., 1996; Jonsdottir & Baldursdottir, 1998) reduced mobility (Underwood et al., 1993; Jonsdottir & Baldursdottir, 1998) as well as various social and economic problems including reduced employment, loss of income and overall deterioration in quality of life (Mulgan & Logan, 1990; Petrie et al., 1996; Teo et al., 1998).

Given the risk of death on cardiac waiting lists, several studies also investigated the rate of adverse events among patients awaiting care. The results appear to indicate that patients are not at risk for adverse events such as death or MI unless patients are made to wait for longer than acceptable periods of time (Lim et al., 1991; Maziak et al., 1996; Morgan et al., 1998; Jackson et al., 1999; Rosanio et al., 1999). In Ontario, the risk of death among patients awaiting CABG was compared to the risk among the general public and among matched cases (age and sex) living with coronary artery disease 6 months post acute myocardial infarction. There were 82 preoperative deaths among 21,200 cases awaiting care between 1991 and 1995 (SMR=2.92). While the risk of death was higher compared to the general public, the risk was similar or decreased compared to other individuals living with coronary disease (SMR=3.84) (Naylor et al., 2000).

### **2.3.2 Effects of delay on treatment outcomes**

Waiting for care may also have adverse effects on patient outcomes. Evidence regarding potential effects will also provide some guidance regarding how long patients can safely wait for care. This is a particular concern with life-threatening but treatable conditions such as cancer (Spurgeon et al., 2000).

Comprehensive reviews conducted for the WCWL panels on breast cancer and colorectal cancer care addressed the issue of the effects of delayed treatment. In the breast cancer literature, delays for care were defined as being either: (1) patient delays (time between first symptom and first physician visit) and (2) physician delays (time between first visit and treatment). The results of the review were somewhat mixed. Approximately 10 studies concluded that longer delays were associated with worse outcomes (i.e. decreased survival). A single comprehensive review conducted by Richards et al. (1999) concluded that delays of 3 to 6 months are associated with decreased survival. Several other studies, however, concluded that delays do not adversely affect survival. There are, however, other noted risks associated with delays in treatment for breast cancer including an increased risk of nodal involvement, increased tumor size and disease progress (Martin et al, 2000 See Appendix C). The review on colorectal cancer focussed primarily on established guidelines for patient care. Most of the guidelines reviewed did not address the issue of potential consequences of delayed care (Banchy et al., 2000).

The effect of delayed treatment on surgical outcomes was assessed for patients receiving cataract surgery in Saskatchewan. Multiple regression models were used to assess the effect of various factors, including demographic variables, pre-operative visual acuity, co-morbidities and waiting time. Pre-operative acuity was the most significant predictor of post-operative visual acuity. Waiting times were not related to surgical outcomes (Hadjistavropoulos et al., 1997). However, the presence of a concurrent eye disease may be a significant confounder since they may be associated with both waiting times and post-operative acuity. In many cases, patients awaiting cataract extraction may also be affected by other eye conditions such as macular degeneration which may worsen over time (i.e. during the waiting period) and limit improvements in visual acuity following surgery. Additional information is required to understand the effects of waiting time on changes in the pre-operative acuity that might then affect the final outcomes of surgery.

Studies investigating the effects of delayed treatment on surgical outcomes have focussed primarily on cardiac surgery. Carrier et al. (1993) conducted a retrospective study to investigate the effects of waiting for elective open-heart surgery at the Montreal Heart Institute (n=568). The average waiting time for elective cases was 2.8 months and 11% of cases were at an increased risk for death prior to surgery. However, when analyzed by waiting time (# 2 months and > 2 months), there were no significant differences with respect to in-hospital death rates, incidence of post-operative complications or LOS (Carrier et al., 1993). A similar retrospective study was conducted by Hartford et al. (1995) to assess the effects of waiting on survival for patients awaiting coronary artery by-pass surgery (CABS) and percutaneous transluminal coronary angioplasty (PCTA) in Manitoba using administrative health data. Approximately 50% of those awaiting CABS and two-thirds of those awaiting PCTA waited less than 30 days for treatment. The results of the study indicated that less severely ill patients appropriately waited with no increase in mortality (Hartford et al., 1995).

Koch et al. (1997) investigated the effects of delayed treatment for PCTA in the Netherlands (n=817). The majority of cases waited for less than 6 weeks (47.5%), 25% waited between 6 and 12 weeks and 27.5% waited more than 12 weeks. The overall success rate was 87.9% with success defined as less than 50% residual stenosis with no major cardiac event. Waiting times were not associated with decreased success rates for Type A and B lesions (ACC/AHA criteria). For Type C lesions, however, decreased success rates were associated with longer waits (>12 weeks) (Koch et al., 1997).

### **2.3.3 Patient acceptance of waiting times**

How long patients are willing to wait for care may be one of the key factors relevant to the establishment of acceptable waiting times. This may be particularly true in cases where the condition or disease is not life threatening but may cause varying degrees of discomfort and inconvenience. Waiting time standards must, in the end, be acceptable to patients. While the information available is limited, it provides some insight regarding the expectation of patients and methods that can be used to investigate the patient's perspective.

Several studies have been conducted regarding patient acceptance of waiting times for cataract surgery. As previously described, patients awaiting cataract surgery in Manitoba, Spain and Denmark accepted waits of less than 3 months but were not as accepting of waits that were more than 6 months (Dunn et al., 1997). A second study based on the same study population was conducted to assess patient acceptance of waits based on the use of "willingness-to-pay." Researchers sought to determine whether or not patients would be willing to pay more taxes or pay out-of-pocket costs to shorten the waiting time for cataract surgery to one month. Less than 25% of respondents in all three countries were willing to increase taxes to reduce waiting times (14.9% in Manitoba) and less than 40% were willing to pay out-of-pocket costs to reduce the waiting time. Individuals were less likely to be willing to pay as the price of surgery increased (\$500-\$2,000); however, willingness to pay increased as the length of the expected waiting time increased (Anderson et al., 1997).

### **2.3.4 Cost of delayed treatment**

Over the past several decades, researchers have begun to investigate the costs associated with waiting for medical care, costs to patients, the health care system and society. There is some level of disagreement regarding the nature of the costs. Some researchers argue, for example, that there is no cost to waiting for medical care per se. Patients do not experience a direct cost but rather an indirect cost due to the "decay rate" of the service. That is, the value of the medical service is less if provided later rather than sooner (Lindsay & Feigenbaum, 1984). Others, however, argue that there are direct costs experienced primarily by patients (Cullis & Jones, 1986).

Globerman describes potential "social costs" of waiting for care that may not result in direct contact with the health care system including suffering, disability and inconveniences associated with reduced quality of life as well costs resulting from reduced employment and productivity (Globerman, 1991(a), (b)). It has been suggested that cost savings could be experienced at the societal level if priority is given to employed patients who are forced to take sick leave while waiting for care. The resources saved by taking these people off sick leave earlier can be reinvested in the health care system to increase treatment capacity (Nord, 1990).

Waiting for medical services may also result in individual costs borne by unpaid caregivers. As discussed above, patients awaiting treatment such as orthopaedic surgery experience varying degrees of dysfunction or reduced mobility often resulting in an inability to conduct the regular activities of daily living. In some cases, patients may rely on family members and other caregivers to help them through this difficult period. There are time and emotional costs associated with the provision of this type of care (unpaid care giving) as well as possible opportunity costs if the caregiver is also responsible for other individuals such as children and other family members.

Waiting for medical services may result in increased costs for the health care system. Patients awaiting medical treatment may experience a range of discomforts including pain and disability. In order to alleviate unnecessary suffering, physicians may recommend alternative therapies, such as pharmaceutical therapy, until patients are treated. Alternatively, patients may seek medical care through other means such as emergency room visits or may require hospitalization. This can be considered an additional cost to the health care system for those services covered by the provincial medical plan that may otherwise have been avoided if treatment was provided earlier rather than later. In a recent study conducted in Alberta, researchers attempted to measure the direct costs associated with waiting for care. Costs for physician visits, home care and pharmaceutical prescriptions were reviewed for one year prior to and following five high volume surgical procedures including hip and knee replacement. Despite the expected increases, longer waits were not associated with more pre- or post-operative physician claims, home care costs or pharmaceutical costs (Quan et al., 2000). Despite the negative findings, this study represents one of the first attempts to measure the cost of waiting for care. Additional studies with perhaps more refined measures are required to more fully explore this issue.

Finally, while the evidence is still emerging regarding the effects of waits on treatment outcomes, there may be costs associated with less than successful outcomes. For example, patients' clinical status may deteriorate during the waiting period such that the full benefits of treatment are not fully realized and additional services are required post-operatively (e.g. re-admission, additional surgery, drug therapy). While there is currently little evidence regarding the specific nature and value of the costs associated with waiting for medical treatment, it is evident that these costs are borne at various levels. More specific information on the level and duration of these costs is necessary when considering the establishment of acceptable and reasonable waits. Decisions will have to be made regarding acceptable or reasonable costs associated with waiting for medical services.

### 2.3.5 Availability of Resources

Some argue that waiting lists are the result of inadequate resources within the health care system and simply represent a method of non-price rationing in the absence of real price rationing (Bloom & Fendrick, 1987; Goldacre et al., 1987; Globerman, 1991; Baker, 1994; Light, 1997). Decisions, therefore, regarding acceptable waiting times will likely have to be made within the context of finite resources. The availability of resources, according to some, should be considered when developing standards for acceptable waits for medical care services (Culyer et al., 1976; George et al., 1982; Jafna, 1994).

From an implementation point of view, it will be important to ensure that standards for acceptable waits can be sustained given existing resources. That is, health care providers and organizations must be adequately funded to meet the demand for services within the specified time periods.

### **3.0 PROPOSED METHODS TO ESTABLISH ACCEPTABLE WAITING TIMES**

Results of the literature review reveal several strategies adopted to date and identify key factors associated with the establishment of standards for acceptable waits for care. In addition, the review also serves to highlight three key components or constructs involved in the process of establishing standards for waits that are acceptable and based on evidence:

- Identification of standards: Processes and methods that lead to the identification of specific waiting time standards (e.g. clinical expert panel, government approach);
- Acceptability of standards: Processes and methods that assess the acceptability of the standards from various perspectives (i.e. patients, public, government policy); and
- Provision of evidence: Processes and methods used to generate evidence regarding the potential effects of waiting for care (i.e. health status, outcomes, costs).

Building on the existing information, a range of methods are proposed and described beginning with those that focus primarily on the establishment of standards to methods that focus primarily on generating evidence that can be used to achieve this goal. In some cases, a specific method may contribute to the process on several levels (see Table 3). A description of the method is provided for each including a discussion of the data or evidence requirements and concluding with a brief overview of their advantages and limitations. This information is summarized in Table 4.

#### **3.1 “Political Promise” Approach**

Acceptable or maximum waiting times may be established as the result of a political initiative undertaken at the national or regional level. The “political promise” approach is focussed primarily on identifying specific waiting list standards. In most international experiences, waiting time guarantees were established based on a multi-stakeholder approach that reached consensus regarding how long patients should be expected to wait. This approach represents a potential option for the Canadian context.

##### ***Method***

The “political promise” approach involves consensus building among key stakeholder groups conducted at either the national, provincial or regional levels. The first step involves the establishment of a committee or task force with representation from several key groups including: (1) politicians, (2) government officials, (3) clinicians, (4) health care managers, and (5) patients. The group may begin by considering the available evidence regarding maximum or acceptable waiting times. The decisions, however, are primarily based on the experiences,

opinions, and perceptions of those involved regarding how long they believe patients should have to wait for medical services. Policy analyses will likely be conducted to determine the feasibility and resource implications of various proposed standards.

Decisions must also be made regarding the scope of services covered by the waiting time standards. The committee may choose to include broad categories of services such as in-and out-patient surgical services, diagnostic tests, specialist consultation or GP/FP consultation.

Alternatively, standards may be established for “problem” areas, procedures commonly identified as experiencing lengthy patient waits for care including cardiac surgery, hip and knee replacement, and cataract surgery. This may simply be the result of selection bias if waiting time information is not available for other procedures that may also exhibit waiting list problems.

One of the key implications of adopting the latter is the risk that procedures not covered under the standards will be “crowded out” as institutions work to meet the guarantees and may divert resources away from other procedure or specialty groups.

### ***Data/Evidence Requirements***

The “political promise” approach may incorporate any available evidence and guidelines for acceptable waiting times to be reviewed and considered by the committee members. The process relies primarily on the expertise and opinions of various stakeholders regarding patient care and the effects of delayed treatment, the availability of resources and the general acceptance of proposed standards by key groups including the public and the media.

### ***Advantages and Limitations***

The primary advantage of the “political promise” approach is the fact that standards can be established in a timely and cost-effective manner. This is primarily due to the fact that the process is not dependent on the collection of new evidence regarding acceptable waits.

Furthermore, this approach involves a process aimed to establish consensus among various stakeholders and opinion leaders.

The primary limitation of this process is the somewhat arbitrary but pragmatic approach to the development of standards for acceptable waits. While the process may consider available evidence, it depends primarily on the opinions and views of those participating in the process. Depending on the scope of the process, the standards may not be sensitive to the differences between procedure and specialty groups. Finally, standards established based on this method are often not sensitive to differences in clinical status among patients awaiting similar treatment. Hence, it is most used to develop standards for elective patients versus emergent or urgent cases.

## **3.2 Clinical Expert Approach**

The clinical expert approach is also focussed on the identification of specific waiting time standards based on the clinical expertise and experience of clinicians. The literature review indicated two primary methods used to date including physician surveys and clinical expert panels. The following discussion will focus on the use of the latter method.

### ***Method***

The clinical expert panel approach can be used to generate procedure or specialty-specific guidelines for acceptable waiting times for specified urgency groupings. The first step involves the selection or appointment of clinical experts involved in the path to care and treatment of

patients waiting for the specific procedure or treatment in question. In the case of orthopaedic surgery, for example, the panel may include orthopaedic surgeons, rheumatologists, and primary care practitioners, since they are often the patient's first course of care. The panel may also include allied health care providers such as therapists who provide treatment and manage patient care during the waiting time.

To effectively utilize this strategy, patient prioritization and categories of patient urgency (e.g. elective, urgent, emergent; bands of priority scores) must be established before standards for acceptable waiting times can be determined since a single standard may not be applicable to all cases. Prioritization strategies or tools, such as those developed by the WCWL Project, can also be used to provide detailed clinical and social profiles of patients within each group. Several strategies may be adopted to determine acceptable waits for each urgency category:

- ***Use of "Implicit" Clinical Evidence:***  
Panel members may suggest acceptable waits based on their clinical expertise and knowledge and understanding of patient experiences while waiting care as well as other factors including the effects of delayed care and the availability of resources. Once the panel has reached consensus regarding acceptable waiting time estimates, these standards may be reviewed and modified by a larger panel of physicians currently working in the health care system as well as representatives of various governing bodies such as medical specialty associations and colleges in a Delphi-type process.
- ***Use of Urgency-specific Case Studies:***  
Acceptable waiting times can also be derived using fictitious patient case scenarios. Patient cases can be developed to illustrate various combinations of clinical and social characteristics determined to characterize elective, urgent and emergent cases. For example, elective patients waiting for orthopaedic surgery may experience mild to moderate pain and discomfort, and minimal problems in performing activities of daily living. The prioritization tools developed by the WCWL Project can be effectively used to generate these profiles based on pre-assigned bands of scores (e.g. 0-25, 26-50 etc.). Panel members could then assign a recommended acceptable waiting time for each case scenario. Ranges of acceptable waiting times could be generated for each patient category based on levels of inter-physician agreement.

### ***Data Evidence/Requirements***

The evidence required for an expert panel approach is based primarily on information currently available. Hence, the panels should begin with a comprehensive literature review of acceptable waiting time standards developed elsewhere, as well as evidence regarding the effects of waiting on both patient status and outcomes. Panel members will also rely on their own clinical judgement and expertise. Finally, information regarding patient profiles for each urgency category will provide important clinical and social information.

### ***Advantages and Limitations***

Given the time and data requirements, this process can be used to establish acceptable waiting times in a timely and cost-effective manner. It is based on available clinical evidence and the expertise of clinicians providing the services. The ability of clinical expert panels to produce

valid and reliable standards is limited to some extent by the variation in clinical practice and judgement that exists in all areas of medical practice.

### **3.3 Public/Patient Perspective Approach**

The opinion and perspectives of the public and/or patient groups can be used to assess the acceptability of standards for waiting times derived perhaps by one of the preceding methods. In the end, waiting time standards must be acceptable primarily to patients who may face waits for care. More and more, governments are seeking public participation and input to develop and implement sound and effective public policies. Public consultation is particularly sought in those areas facing complex challenges when there is an imbalance between what governments can supply and what the public demands and decisions regarding trade-offs must be made (Sterne, 1997).

Patient input and decision-making regarding the type and timing of medical care services has been studied and sought for some time. Timing of medical services is one of the key dimensions in the decision-making process regarding medical care. Public and/or patient input can be sought to clarify the specific expectations and preferences regarding waits for care. These decisions will undoubtedly be affected and influenced by both personal factors (i.e. knowledge, experiences, socio-demographic factors) as well as external factors (i.e. access to services, resource constraints). This type of information will be important to understanding expectations and preferences for waiting times (Llewellyn-Thomas, 1995).

#### ***Methods and Study Samples***

Public and/or patient perspectives can be sought using various methods including public opinion polls, public meetings, focus groups and surveys.

- ***Public Opinions Polls:***

Opinion polls can be used to gauge the feelings and opinions of the general public regarding proposed acceptable waiting times. They can, for example, be used to determine acceptance of proposed waiting time standards (e.g. 6 months, 9 months, 12 months etc.) for groups of services (e.g. surgical services, specialist consultations). Similar questions may be used to address specific procedures or specific circumstances; for example, respondents may be asked if it is acceptable for patients experiencing moderate pain and anxiety to have to wait 6 or 9 months for treatment. Public opinion polls can also be used to identify those factors (i.e. internal and external) that respondents believe are and should be critical to this decision-making process (e.g. level of pain, anxiety and inconvenience experienced by those on the list; resource availability; past experiences etc.).

Study samples for public opinion polls can be selected using a modified randomized approach to ensure accurate representation. Stratification techniques can be used to ensure, for example, that there is adequate regional representation. This approach will likely solicit views from a broad range of individuals representing the “healthy” public, who may have not yet experienced waits for care, to patients who have recently experienced waits for care or are currently on waiting lists. Since these experiences, or lack thereof, will likely affect an individual's perspective, this type of

information will be critical to identifying and assessing the differences in opinions regarding reasonable waits between different groups (e.g. healthy public, past patient, current patient, informal caregiver).

- ***Public Meetings:***

Public meetings represent another way to consult with the general public on various policy issues. They are often used to share information regarding a specific policy issue or problem requiring community consideration as well as to seek input regarding views and preferences of those attending (Sterne, 1997). A panel of representatives or consultants (e.g. clinicians, researchers, policy makers, health care managers) is charged with leading the sessions beginning with a brief formal presentation regarding the nature of the problem and other relevant information including proposed standards for waits. This is followed by a question and answer period. Depending on the number of expected participants, public meetings may be conducted as informal town-hall meetings or as more intimate small/large group sessions.

There is often little control that can be exerted over who participates in this type of public consultation. In addition to members of the general public, individuals with particular interests are likely to participate including representatives of special interest groups that may or may not represent the “general public” (e.g. medical groups, hospital groups). The specific mix of participants can radically affect the tone and nature of the discussion. The role of the panel will be critical in ensuring that all, or at least most, of the opinions are heard to ensure all valuable information and perspectives are heard.

- ***Focus Groups:***

More directed discussions with the general public and or patient groups can be conducted via focus groups. Focus groups are commonly conducted among a key number of individuals representing a cross-section of the public affected by the issue in question with a strong interest in public consultation. This approach often provides a greater opportunity to present more detailed information regarding the issues and challenges as well as gather more detailed information regarding participants’ concerns and values about the issues (Sterne, 1997).

Trained personnel can be identified to lead or moderate a focus group involving individuals representing a broad range of experiences with the health care system, as well as with waiting for care, can be invited to participate. A formal presentation can be made by the moderators to outline the problem, issues and challenges facing the development of standards for acceptable waits. Given the intimate and structured nature of this approach, a variety of methods can be used to extract more focussed opinions regarding acceptable waits. For examples, fictitious patient case reports can be presented to depict various waiting scenarios and gather more case-sensitive information regarding acceptable waits. Once again, the information generated from the WCWL prioritization tools can be used to create patient profiles. In such cases, focus groups can also be used to generate specific waiting time standards for

procedures or conditions which are not life threatening and for whom waiting may result in more minor adverse effects (e.g. decreased mobility, mild pain, limited problems with daily living). Participants can be asked directly what an acceptable waiting period is for a patient who, for example, cannot walk a far distance, requires assistance with daily chores, experiences mild pain etc.

As noted, the sample of individuals invited to participate in the focus groups can be selected to ensure all appropriate groups are represented. Depending on the scope of the project, the need to maintain a level of regional representation may require that several focus groups be conducted across the country.

- ***Patient Surveys:***

Patient surveys can be used to obtain information regarding the perspectives and opinions of patients during and following their waiting periods. As was conducted in several Canadian studies, patient survey could be used to obtain information regarding waiting experiences and overall level of satisfaction with waiting times. A range of methods can be used to determine satisfaction levels as has already been demonstrated in the literature. For example, patients may be asked to respond to satisfaction or appropriateness scales (e.g. “very satisfied” to “very unsatisfied” or “very acceptable” to “unacceptable”). More innovative approaches such as “willingness-to-pay” scenarios may be used in which patients asked to decide if they are willing to pay specific out-of-pocket costs to reduce their waits. Patient surveys may be incorporated as part of either a retrospective or prospective study (see following sections).

### ***Data/Evidence Requirements***

The nature and level of data and evidence required in the public/patient perspective approaches depends in part on the type of the method used and the scope of the process (i.e. broad range of services vs. specific procedure or specialty groups). In most cases, this approach may be used to assess the acceptability of proposed standards for acceptable waiting times; hence, these recommended waits must be made available. In select cases, as with the focus group approach, there may be a greater opportunity to present the current evidence regarding effects of waits and other national standards currently being used by participants to identify standards for acceptable waits.

### ***Advantages and Limitations***

The advantages and limitations associated with this approach vary based on the specific type of method used. First, these approaches represent opportunities to gather information regarding the views and opinions of the public/patient groups; their ability to effectively do so, vary depending on the method used. Public opinion polls and focus groups, for example, are more likely to provide this information compared to public meetings that can be hijacked by special interest groups. Second, these approaches also represent opportunities to share information regarding important and challenging policy issues with the public. This can be achieved to a greater degree with public meetings where there are greater opportunities for presentations and a dialogue with interested participants and less so with focus groups where there are only a limited number of

participants. In either case, there are clear limits to the degree of complexity with which these issues can be presented and addressed.

Furthermore, given the limitations of time and space, there is a trade-off between the level of comprehensiveness and specificity regarding the range of procedures and specialties for which the public and patients may provide input regarding acceptable waits. Finally, depending on the type of method, the process may not result in the establishment of specific waiting time standards but rather provide some guidance regarding their likely acceptance among these groups.

### **3.4 Retrospective Approach**

The retrospective method can be used to generate evidence regarding the effects of waiting for care. Specifically, health care data and information (i.e. patient health records and health administration data) can be used to provide information to address two key questions in the determination of acceptable waiting times: (1) what are the effects of waiting on patient status during the waiting period?; and (2) what are the effects of waiting on patient outcomes?. As discussed previously, patient perspectives can also be incorporated in such a study. Evidence regarding the effects of waiting can then be used to identify procedure or specialty specific acceptable waiting times for various urgency groupings since the primary purpose of establishing such standards is to reduce, if not eliminate, adverse patient effects.

#### ***Methods and Data***

A retrospective approach to the identification of key effects of waiting may include the following key steps:

- ***Selection of Study Sample:***  
Hospital separation data and/or physician claims data can be used to identify patients who received a specific treatment or surgical procedure within a defined period of time. The size of the study sample will depend in part on the expected frequency of adverse effects due to waiting.
  
- ***Data Requirements:***  
Information regarding patient status, use of health care services and treatment outcomes may be obtained for the study sample from the following data sources:
  - patient medical charts;
  - hospital separation data;
  - physician claims data;
  - pharmaceutical plan data (65+ years of age); and/or
  - ambulatory care data; or
  - mortality data

The selection of relevant services will be specific to the procedure or specialty investigated. Unique patient identifying information will be required to link the various sources of information. In most cases, a personal health number or identifier is used consistently across all sources of information. In the case of patient health records, relevant information will have to be manually extracted and added to the existing electronic data. Information pertinent to this type of study would include

procedure or specialty specific information related to contacts with the health care system during the waiting period and following the treatment or procedure for a defined period of time.

- ***Waiting Times:***

Waiting time information or estimates will be required for each study participant. This information can be obtained from various sources including:

- available waiting list data;
- patient medical records that include the date of the “decision to treat”; or
- physician claims data related to the last pre-surgical consultation or alternative

In the latter cases, waiting times can be estimated by calculating the time lapsed between the date of the “decision to treat” and the date of surgery measured as either the last pre-operative consultation or date of placement on the waiting list.

- ***Indicators/Measures of the Effects of Waiting:***

- ***Patient Status:***

In an ideal situation, detailed information regarding the patient’s clinical status at the beginning and end of the waiting period would provide an accurate assessment of the changes in clinical status and possible effects of waiting for care. This information is not always available retrospectively. Hence, patient contacts with the health care system during the waiting period may serve as proxy measures of the needs of patients during this time. The linked data can be used to chronologically track all procedure or specialty specific contacts with the health care system including services such as specialist consultations, primary care visits, prescription drug use, ambulatory care use, emergency visits etc. during the waiting period. Appropriate statistical analyses can be used to determine if there is a significant relationship between patient waiting time and the frequency of health care contacts, specifically to determine if patients require more contacts as their waiting time increases.

- ***Patient Outcomes:***

Available health information can also be used to assess the effects of waiting on selected procedure and specialty specific outcomes. Statistical analyses can be conducted to determine if waiting times is a significant factors explaining potential variation in selected outcome measures such as LOS, in-patient mortality, hospital re-admissions and post-operative clinical status (where available).

- ***Adjustments:***

Given the lack of universally accepted guidelines regarding when patients should be placed on the waiting list for care, patients will likely be at varying stages of their conditions when they are placed on the waiting list. Adjusting for the clinical status of patients at the start of the waiting time can be achieved in several ways including the use of relevant covariates in statistic models and retrospective

assessment of patient urgency (i.e. elective, urgent, emergent). In the latter case, separate analyses can be conducted for each urgency grouping provided adequate sample sizes. Adjustments must also be made for the variety of factors that may significantly affect health care use during the waiting period and treatment outcomes.

### ***Advantages and Limitations***

Overall, retrospective studies can be conducted in a timely and cost-effective manner to generate evidence regarding the effects of waiting since they are based on existing data sources and do not require lengthy follow-up periods. Studies based on information abstracted from patient records may require more resources given the time and money associated with this method of data collection. Furthermore, this type of study is not subject to losses to follow-up since it begins with all patients who had a procedure. Finally, given the developments in data linkage, several sources of health data can be used to provide more comprehensive information regarding the patient experiences during the waiting period and following treatment compared to the use of a single data source.

Despite these advantages, there are several limitations to the retrospective study of the effects of waiting for medical services. First, there is a potential selection bias since the analysis will only capture those patients who come in contact with the health care system; there may be individuals who suffer adverse effects due to waiting but choose not to seek care and as such, their experiences may not be captured. Second, the range of potential adverse effects on both patient status and outcomes are limited to those for which there is existing information. Waiting for care may affect patients in various ways including increased anxiety and stress, pain, problems with activities of daily living, loss of independence etc. These effects may not be captured if they are not represented in the existing health information or if there is no appropriate proxy measure (i.e. health care service). Third, as stated in an earlier discussion, changes in patient status and outcomes may be affected by a broad range of factors (e.g. co-morbidities, practice variation). The ability to adjust for these factors will be limited by the ability to identify potential confounders and the nature of the information available.

### **3.5 Prospective Approach**

Like the retrospective approach, a prospective approach can be adopted to answer similar questions regarding the effects of waiting on patient status and outcomes. In several studies described in previous sections patients were followed from the time of the decision to treat to surgery to identify some of the key adverse effects of waiting for care (see section 2.3). These study methods can be applied and extended to also include potential effects on patient outcomes.

### ***Methods and Data Requirements***

Prospective studies focussed on the effects of waiting for care may include the following features:

- ***Study Sample:***  
Patients may be selected for the study once their waiting experience begins (i.e. “decision to treat” or placement on waiting list). Sample sizes should be sensitive to the potential losses to follow-up

- **Data Requirements:**  
Data required to assess the effects of waiting on patient status and outcomes are collected throughout the study period at regular intervals of time (e.g. monthly) and may come from a range of sources including patient surveys and/or medical charts.
- **Waiting Times:**  
Final waiting times can be calculated as the time lapsed between when the waiting period begins (and the patient enters the study) and the date of treatment.
- **Indicators/Measures of the Effects of Waiting:**
  - **Patient Status:**  
The indicators of patient status will be specific to the nature and type of disease or condition of interest. For example, studies focussed on cataract surgery will likely include measures of visual impairment while those focussed on orthopedic surgery will likely include measures of pain, mobility and independence. Disease or condition specific assessment tools may be used to ensure that information on patient status is collected in a standard and reliable manner (e.g. SF-36, WOMAC, WCWL Prioritization Tools). Information regarding patient status will likely be required at several key points in time including at the start and end of the waiting period and at regular intervals during the waiting period. The frequency of intervals will depend on the rates of change expected in each patient group.
  - **Patient Outcomes:**  
A range of standard and specialty specific outcomes can be used to assess the effects of waiting. Indicators suggested in the retrospective design such as LOS, in-patient mortality, hospital re-admission and post-operative clinical status as well procedure or specialty specific outcomes can be used to assess potential effects of waiting.
  - **Adjustments:**  
Issues regarding adjustments for patient status at the beginning of the waiting period as well as for potential confounders raised in the previous discussion regarding retrospective methods, also apply to the prospective methods.

### ***Advantages and Limitations***

One of the primary advantages of prospective studies is the opportunity to collect valid and comprehensive information regarding the potential effects of waiting on patient status and outcomes. Unlike the retrospective design, the range of possible effects is not restricted to those resulting in direct contacts with the health care system. This is critical, since in many cases, patients may be adversely affected by waits for care but may not see any point in trying to seek help or may find relief in other areas (e.g. care giving, support groups). The information used in prospective studies also tends to be highly valid and reliable since it is often obtained via direct surveys with patients and/or patient medical charts that provide more complete information regarding that patient's status.

Despite these advantages, there are several limitations. Perhaps the most commonly noted limitation is cost, both time and direct costs, associated with following patients over a defined period of time. As the frequency of data collection points increases, so do the costs. Furthermore, prospective studies are prone to losses to follow-up which must be restricted to ensure the validity of the study. Furthermore, the length of the follow-up period following treatment and the end of the patient's waiting time may be difficult to estimate since, in many cases, there is very little known regarding the nature and timing of the effects of waiting on outcomes.

#### **4.0 ISSUES and CHALLENGES IN THE ESTABLISHMENT OF ACCEPTABLE WAITS**

The ability to establish acceptable waiting times for medical procedures depends in part on existing waiting list management policies and data standards. Specifically, standards related to the definition of waiting times and patient prioritization. Furthermore, the implications of potential uses and interpretations of standards for acceptable may serve to highlight the key challenges that lie ahead.

##### **4.1 Standard Definitions and Guidelines**

The process of establishing acceptable waits for services must begin with standard definitions of waiting times and guidelines regarding when patients should be placed on the waiting list. Ultimately, standards for acceptable waiting times will be used by patients, physicians, institutions, regional health authorities and provincial ministries of health to evaluate their own waiting time situation. Waiting times, however, are often defined and interpreted in various ways which can lead to variations in waiting time estimates (Sanmartin, 2000). Comparing existing waits to established standards will only be appropriate and valid in situations where the acceptable wait is clearly defined and compared to waits defined and interpreted in a similar manner. The WCWL Project has begun this work through the development of standard definitions of waiting times for selected procedures (WCWL, 2001).

##### **4.2 Patient Prioritization**

Standards for patient prioritization represent another key step in the implementation and interpretation of acceptable waits for medical care services. Acceptable waits for treatment will vary depending on the need for care such that a patient classified as urgent or emergent will be shorter than the acceptable wait for an elective patient. A single recommended waiting time for all patients awaiting the same procedure will not be sensitive to the variation in the need for care. Prioritization tools, such as those developed by the WCWL Project, can be used to standardize the prioritization process. Information generated from the use of these tools can be used to create patient groupings or categories that reflect different levels of need for service. Acceptable waiting time standards can then be applied to each patient grouping.

##### **4.3 Potential Uses of Acceptable Waiting Times**

Once established, acceptable waits for medical services will likely be used and interpreted by various groups in different ways. It is important to understand and discuss these and consider the consequences/implications are for patients, physicians, hospitals and governments.

### ***Patient Level***

Waiting lists and waiting times are most often interpreted within the broader context of access to health care services. Concerns about lengthy queues and waits reflect concerns about patient access to services. The primary purpose, therefore, of establishing acceptable waits is to improve patient access to health care services and ensure that it is occurring in a timely manner in an effort to reduce the risk of adverse events both pre- and post-operatively (Naylor, 1991; Fricker, 1999). In the absence of defined standards for acceptable waits, the decision regarding whether a waiting period is reasonable or not is left primarily to the individual patient. This determination is likely based on their own experiences as well the opinions and views expressed by their physicians and other groups including various sources of media reports.

The establishment of acceptable waiting times, however, will provide a clearly defined threshold beyond which a waiting time can be deemed unacceptable. In some cases, the standards may underestimate the personal views of patients and lower their expectations for acceptable waits and in other cases, may exceed their expectation. The latter may lead to increases in the number of complaints regarding access to care, possibly leading to legal action.

### ***Organization/Institution Level***

Waiting lists and waiting times are also often conceptualized as measures or indicators of inadequate resources. Scarce resources are often identified as one of the primary determinants of waiting list size and times. While waiting lists are most often used to prioritize patients, they are also used at the institutional level to allocate resources within and across departments as well as to make a case for the acquisition of new resources to increase the overall institution budget (McDonald et al., 1998). This practice will likely continue if not increase with the establishment of acceptable waiting times with resources likely allocated to physicians and departments who are not able to meet the standards.

This particular use or interpretation of acceptable waiting times may have significant implications for resource allocation and use within the health care system. While this practice may be appropriate in some cases, it may represent a significant shift in the way resources are used and allocated with an increased emphasis placed on the need to meet acceptable waits at the expense of ensuring that the appropriate rate of surgery is being provided.

### ***Health Care System***

Waiting lists and waiting times are increasingly being used as measures or indicators of the quality of access to medical services with stories of lengthy queues and waits interpreted as evidence of the deterioration of the health care system. While Canadians are guaranteed “reasonable” access to medically necessary services through the Canada Health Act, we continue to struggle with what this guarantee really means since “reasonable” access has never been explicitly defined. Recent reports on the status of the CHA use resource based indicators (e.g. level of co-insurance, extra-billing) to evaluate access to medical services (Health Canada, 2000). Acceptable waiting times may be interpreted as one of the key measures of “reasonable” access to health care services. This may have significant implications for government accountability in the provision of medical care services.

## 5.0 CONCLUSIONS and RECOMMENDATIONS

While some progress has been made regarding the establishment of acceptable waits for medical care, there is much work to be done in Canada. The experiences of selected specialty groups and nations provide some guidance regarding how these standards may be developed and the factors that should be considered in the process. Building on the available information and experiences and recognizing the need to consider key factors, a range of methods has been proposed that contribute to the process of establishing waiting times standards by either identifying specific standards, assessing their acceptability or contributing evidence regarding the effects of waits. The methods range in their time-frames and evidence requirements.

Given the range of possibilities, perhaps the first challenge is to determine where and how to begin the process of establishing standards for acceptable waiting times. Instead of thinking about these methods in an “either or” scenario, they could be considered as part of a comprehensive set of approaches or tools. This set of tools can be used at various stages to develop standards that are based on the best available evidence and seek to minimize adverse effects on patients but are sensitive to the preferences and expectations of the public and patients and to the external constraints within which they must be operationalized. To achieve this goal, each method can contribute to the process but is not sufficient on its own. Hence, a multi-prong approach that supports developments in both the long and short-term may be the most appropriate course of action.

The following recommendations may serve to guide future efforts in this area:

- The process should begin by focussing on key procedures or specialty groups for which standards currently do not exist but where there have been some developments regarding standards for waiting time definitions and patient prioritization. Developments in these areas will enhance the development and implementation of waiting time standards.
- Develop a short-term and long-term plan that works to both establish standards in a timely manner and generate evidence regarding the effects of waits.
  - Short term Plan:  
This plan should focus applying those methods that will address the issue of acceptable waits for care in a more timely manner and asses their acceptability. This might begin with the establishment of clinical panels that can take the existing information and evidence regarding waits for care and apply their expertise and clinical judgement to develop a set of proposed standards for care. These may then be considered by both the public and patients groups to determine whether or not they meet their preferences and expectations.
  - Long term Plan:  
The long-term plan should focus on the development and accumulation of information regarding the adverse effects of waiting on patient status and/or outcome. This information can be generated through specific research initiatives that are based on methods such as the recommended retrospective and prospective designs.

The development of standards for waits for medical care that are acceptable to patients and clinicians and supported by governments demands a process that strives to incorporate the best available evidence as well as a broad range of perspectives. At the same time, research must continue to generate the required evidence regarding the effects of waits to ensure that the standards are based on clinical evidence. A multi-faceted approach that addresses the issue on various fronts can help achieve these goals. We recognize, however, that this is an iterative process that will likely involve changes to any established standards to reflect new evidence and information and changes in the delivery of care.

**Table 1: Review of Acceptable Waiting Times for Medical Services (Results of a preliminary review of the literature)**

<b>Reference</b>	<b>Procedure</b>	<b>“Date-on” Waiting List</b>	<b>Acceptable WT (Priority Rating)</b>	<b>Method</b>	<b>Evidence/Factors</b>
Dunn et al., 1997	Cataract	-n/a	<6 months	Patient acceptance	-anticipated WT -visual acuity
Lundstrom et al., 1996; Hanning et al., 1998	Cataract	-placement on hospital WL	<3 months	Maximum WT Guarantee/ Government Policy	-priority rating (visual acuity)
BCMA, 1998	Cataract	-visit with specialist	<10 wks	Physician Survey	-urgency rating
Ramsay et al., 1998	Ophthalmology	-visit with specialist	6.8 wks	Physician Survey	-n/a
Naylor et al., 1991	CABG	-placement on hospital waiting list	Immediate (Emerg) <24 hrs (Extremely Urg) 24-72 hrs (Urg) 72hrs-2wks (Semi-Urg) 2-6 wks (Delayed) 3-6 months (Marked delay)	Expert Clinical Panel	-urgency rating
Agnew et al., 1994	CABG	-placement on hospital waiting list	2-6 wks (Urg) 6 wks-3 months (Priority A) 3-6 months (Priority B)	-Clinical Assessment (Based on Canadian Clinical Panel)	
BCMA, 1998	CABG	-visit with specialist	<1 wk (Urg) 5-10 wks (Elec)	Physician Survey	-urgency rating
Hanning, 1996	CABG, Angiography	-decision to treat	<3 months	Maximum WT Guarantee/ Government Policy	-priority rating
Basinski et al., 1993	Angiography	-placement on hospital waiting list	<24 hrs (Urg-1) 24-72 hrs (Urg-2) 72 hrs-7days (Urg-3) 7-14 days (Urg-4) 2-6 wks (Urg-5) 6wks-3 months (Urg-6)	Expert Clinical Panel	-urgency rating
Ramsay et al., 1998	Cardiovascular Surgery	-visit with specialist	1 wk (Urg) 5.3 wks (Elec)	Physician Survey	-n/a
Hanning, 1996	Knee and Hip Replacement	-decision to treat	<3 months	Maximum WT Guarantee	-priority rating
BCMA, 1998	Joint Replacement	-visit with specialist	<10 wks (Elec)	Physician Survey	-urgency rating
Ramsay et al., 1998	Orthopaedic Surgery	-visit with specialist	7.4 wks	Physician Survey	-n/a
Ramsay et al., 1998	General Surgery	-visit with specialist	3.4 wks	Physician Survey	-n/a
NSW Dept of Health, 1998	Range of Procedures	-placement on waiting list	Immediately (Emerg) <1 wk (Urg-1) <1 month (Urg-2) <3 months (Urg-7)	-n/a	-urgency rating
Dept. of Human Services, Australia	Range of procedures	--n/a	<30 days (Urgent) <90 days (Semi-urgent)	Expert Clinical Panel	-urgency rating
UK Patient Charter, 1995	Range of Procedures	-placement on hospital waiting list	18 months	Maximum WT Guarantee	-n/a

**Table 2: Physician estimates of acceptable/maximum waiting times for selected procedures**

<b>Procedure</b>	<b>Fraser Institute (1995)</b>	<b>Fraser Institute (1997)</b>	<b>Fraser Institute (1999)</b>	<b>BCMA Report (1998)</b>
<b>Cataract Surgery/ Ophthalmology</b>	5.6 wks*	6.8 wks*	4.3 wks*	8 weeks
<b>Orthopedic Surgery</b>	7.2 wks	7.4 wks	7.8 wks	8 weeks
<b>General Surgery</b>	3.2 wks	3.4 wks	3.1 wks	For selected procedures

**Table 3: Role of proposed methods to establish acceptable waiting time standards**

<b>Role/Method</b>	<b>“Political Promise” Approach</b>	<b>Clinical Expert Approach</b>	<b>Public/Patient Perspective Approach</b>	<b>Retrospective Approach</b>	<b>Prospective Approach</b>
Identify standards	<b>X</b>	<b>X</b>	<b>X</b>		
Acceptability of standards		<b>X</b>	<b>X</b>		
Provision of evidence				<b>X</b>	<b>X</b>

**Table 4: Proposed methods to establish acceptable waiting times for medical services**

<b>Type</b>	<b>Method</b>	<b>Data/Evidence</b>	<b>Advantages</b>	<b>Limitations</b>
“Political Promise” Approach	-political initiative to establish AWT for all medical services or groups of procedures -consensus approach involving various stakeholder groups	-established AWT standards -international AWT standards	-timely -cost-effective -multi-stakeholder approach	-not an evidence-based approach -not procedure specific
Clinical Expert Approach	-to develop standards for AWT based on the expertise and experience of clinical panels	-available empirical evidence -clinical expertise -established AWT standards	-timely -cost-effective -based on available clinical evidence -involve expert opinions	-based on limited clinical evidence -variation in clinical decision-making
Public/Patient Perspective Approach	-to seek public and patient input regarding expectations and preferences regarding the timing of services as well as factors that should be considered in this development of AWT	-limited available evidence	-timely and cost-effective (varied depending on specific type of method) -opportunity for public and patient participation -opportunity to share information with the public	-not an evidence based approach -strike a balance between comprehensiveness and specificity of procedures/specialties considered
Retrospective Approach	-to investigate the effects of waiting for medical on patient status and treatment outcomes retrospectively using available health data	- patient medical charts; -hospital separation data; -physician claims data; -pharmaceutical plan data (65+ years of age); -ambulatory care data; or -mortality data	-timely -cost-effective -no loss to follow-up -use data linkage techniques to provide comprehensive patient information	-selection bias -study of effects limited to data availability -adjustments for confounders limited to available information -no direct information on acceptable waiting times
Prospective Approach	-to investigate the effects of waiting for medical care on patient status and treatment outcomes prospectively	-patient medical charts -patient assessments/surveys	-highly valid and comprehensive data -include all patients awaiting care -consider a broader range of effects	-time and resource intensive -potential bias due to losses to follow-up -no direct information on acceptable waiting times

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