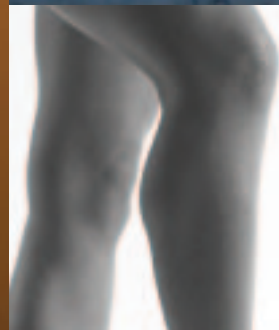
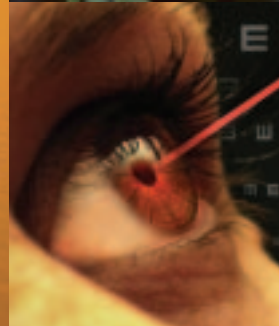
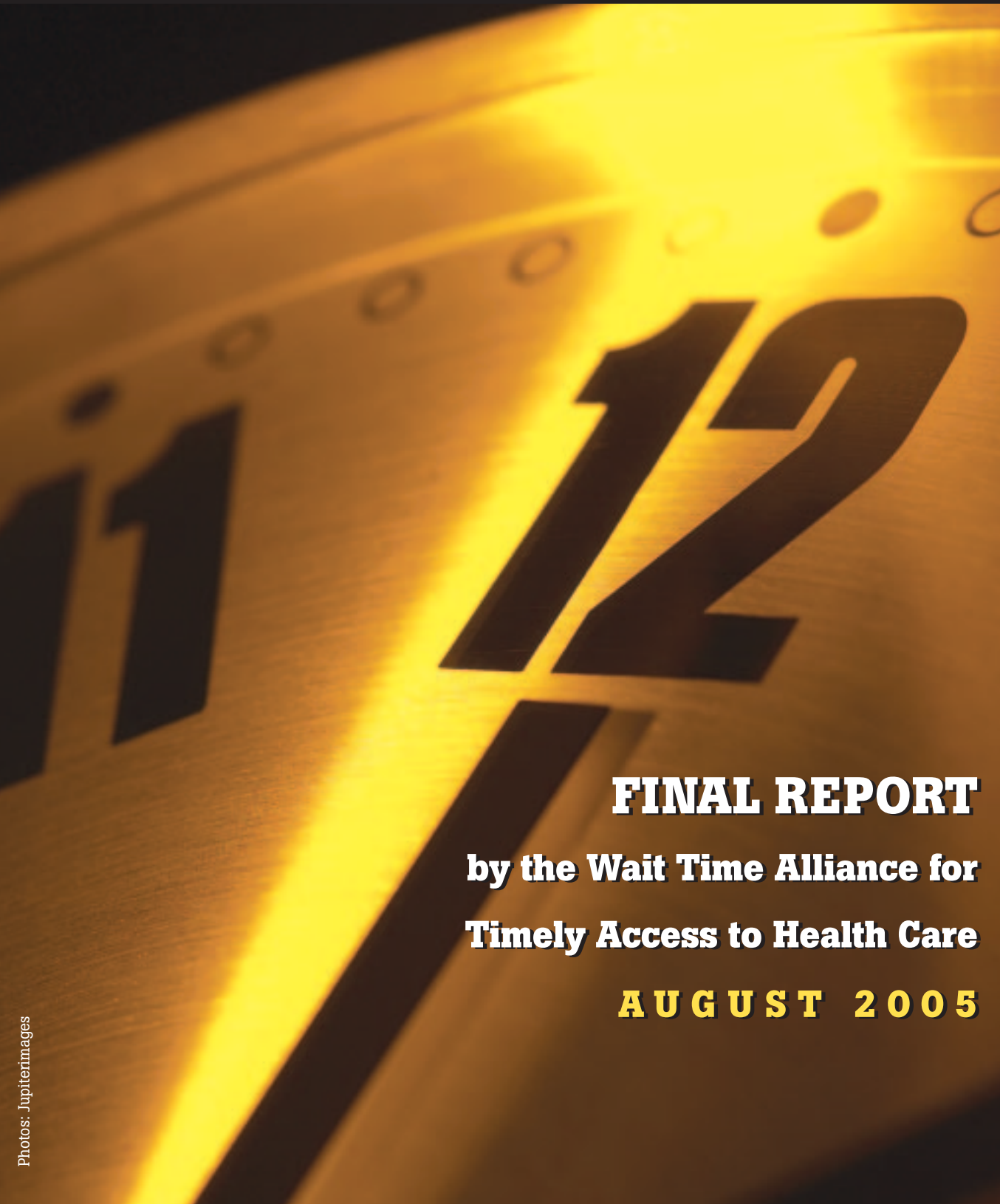


# It's about time!

Achieving benchmarks and best practices in wait time management



**FINAL REPORT**  
by the Wait Time Alliance for  
Timely Access to Health Care

**AUGUST 2005**

# **It's about time!**

**Achieving benchmarks and best practices  
in wait time management**

---

## **FINAL REPORT**

**by the Wait Time Alliance for  
Timely Access to Health Care**

**AUGUST 2005**

---

©Canadian Association of Nuclear Medicine, Canadian Association of Radiation Oncologists, Canadian Association of Radiologists, Canadian Cardiovascular Society, Canadian Medical Association, Canadian Ophthalmological Society, Canadian Orthopaedic Association, 2005

Published by the Canadian Medical Association, August 2005

Second printing October 2005

These benchmarks or performance goals have been developed by medical experts using the best evidence available at the time. They are not intended to be standards nor should they be interpreted as a line beyond which a health care provider or funder has acted without due diligence. Importantly, they do not take into account current constraints on the system's capacity to achieve these benchmarks.

### **Library and Archives Canada Cataloguing in Publication**

Wait Time Alliance for Timely Access to Health Care

It's about time!: achieving benchmarks and best practices in wait time management:  
final report by the Wait Time Alliance for Timely Access to Health Care.

Issued also in French under title: Il est grand temps d'agir! : pour une  
meilleure gestion des temps d'attente grâce aux points de repère et aux  
pratiques exemplaires.

Includes bibliographical references.

ISBN 1-894391-16-0

1. Hospitals--Waiting lists--Canada. 2. Benchmarking (Management)--Canada.  
3. Health services administration--Canada. 4. Health services accessibility--  
Standards--Canada. I. Canadian Medical Association II. Title.

RA971.85.W34 2005

362.1'068

C2005-906005-0

Additional copies are available from

Member Service Centre  
Canadian Medical Association  
1867 Alta Vista Drive  
Ottawa ON K1G 3Y6  
888 855-2555 or 613 731-8610 x2307  
msc@cma.ca  
cma.ca

# Contents

Acknowledgements .....	v
Wait Time Alliance group .....	vii
Executive summary .....	1
Introduction .....	1
Defining wait-time benchmarks.....	1
When does the clock start ticking .....	2
“First principles” to guide development of wait-time benchmarks .....	2
The WTA’s proposed wait-time benchmarks .....	2
Implementation issues .....	3
Strategies to improve timely access to care .....	4
4-M Toolbox of strategies to mitigate, measure and manage wait times .....	4
Recommendations .....	5
1. Introduction and purpose .....	7
Defining wait-time benchmarks.....	8
When does the clock start ticking? .....	8
2. Recent benchmarking efforts in Canada .....	10
The benefits of wait-time benchmarks .....	10
Review of the benchmarking process .....	10
The 2004 first ministers’ accord.....	11
Governments’ efforts to date .....	11
Other recent work on wait-time benchmarks in Canada and internationally .....	12
3. Feedback on our interim report .....	13
Response to the notion of developing wait-time benchmarks .....	13
Response to our “first principles” .....	14
Feedback on interim report benchmarks .....	14
4. The WTA’s revised benchmarks .....	16
Specialty reports .....	16
How do the proposed wait-time benchmarks relate to the current situation regarding wait times? .....	22
The need for wait-time benchmarks for other health care interventions .....	23
5. Implementation issues .....	24
Supply-side issues .....	24
Demand-side issues .....	26
Lack of wait-time related data .....	27
Ramifications of not meeting the benchmarks .....	28
6. Strategies to improve timely access to care .....	29
The wait-time code .....	29
The WTA’s 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times .....	29
7. Conclusions and recommendations .....	32
Appendix A: 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times .....	34
Appendix B: Reports from the specialty societies .....	36
Appendix C: Benchmarks of the Canadian Association of Emergency Physicians .....	88
References .....	91

**Healing is a matter of time, but  
it is sometimes also a matter of  
opportunity.**

**– Hippocrates, The Precepts**

# Acknowledgements

This report was prepared by the Canadian Medical Association (CMA) as a member of the Wait Time Alliance (WTA).

The WTA acknowledges the work of those individuals on the expert working groups for the reports that are included in this document. As well we thank CMA staff who have been intimately involved with the production of this report.

In addition the WTA thanks the following individuals and members of the Steering Committee.

Dr. Ruth Collins-Nakai  
Canadian Medical Association, President-elect  
Wait Time Alliance, chair and spokesperson

Mr. Normand Laberge  
Canadian Association of Radiologists, CEO  
Wait Time Alliance, French spokesperson

Mr. Hubert Drouin  
Canadian Ophthalmological Society, Executive Director

Mr. William Tholl  
Canadian Medical Association, Secretary General & CEO

## **Wait Time Alliance members**

Canadian Association of Nuclear Medicine  
Canadian Association of Radiation Oncologists  
Canadian Association of Radiologists  
Canadian Cardiovascular Society  
Canadian Medical Association  
Canadian Ophthalmological Society  
Canadian Orthopaedic Association

# Wait Time Alliance

## August 2005

CANM  
ACMN

Dr. Peter Hollett, President  
Canadian Association of Nuclear Medicine



Dr. Jean-Paul Bahary, President  
Canadian Association of Radiation Oncologists



Dr. Lawrence Stein, President  
Canadian Association of Radiologists



Dr. Denis Roy, President  
Canadian Cardiovascular Society



Dr. Albert J. Schumacher, President  
Canadian Medical Association



Dr. Sherif El-Defrawy, President  
Canadian Ophthalmological Society



Dr. Robert B. Bourne, President  
Canadian Orthopaedic Association

# Executive summary

## Introduction

Forty years ago, Canada decided that relative medical necessity rather than relative ability to pay should be the factor determining access to the health care system. This principle of access has been widely accepted and, indeed, is included in legislation. But while the principle of accessibility has been protected by legislation, the notion of *timely access* has never been explicitly recognized. Today, we find many Canadians worried about wait times and wondering about the sustainability of the promise of reasonable access. Not surprisingly, the number 1 public policy issue for Canadians has become “timely access to care.”

First ministers acknowledged the importance of this issue last September in their *10-Year Plan to Strengthen Health Care* and committed themselves to developing benchmarks for medically acceptable wait-times in 5 priority areas — cancer, cardiac care, diagnostic imaging, joint replacement, and sight restoration — by 31 December 2005 as part of an effort to achieve “meaningful reductions” in wait times by 31 March 2007.

The importance of reducing wait times for publicly funded health services was underscored on 9 June 2005 when the Supreme Court of Canada released its historic decision in the Chaoulli/Zeliotis case. Although the details of the court’s decision will be analyzed for some time, the decision itself points to an urgent need for governments to work collaboratively with health care providers and patients to lay out a roadmap that will provide Canadians with more timely access to high-quality health care.

This challenge to improve timely access is too great for governments or health care providers to meet on their own. Canada’s health care system is a shared enterprise and reducing wait times requires a contribution from all stakeholders. *Governments need to build health care providers into the policy process in an early, ongoing and meaningful way. For their part, providers need to practice in a more service-based system and culture.*

The Wait Time Alliance (WTA) was formed in fall 2004 as a result of physicians’ concern about Canadians’ access to health care. The formation of the alliance is significant as it represents an unprecedented effort to bring together several national medical specialty societies whose members are directly involved in providing care in the priority areas identified by the first ministers.

The WTA released its interim report, *No More Time to Wait: Toward Benchmarks and Best Practices in Wait Time Management*, on 3 April 2005. The report presented a set of provisional wait-time benchmarks or performance goals in the 5 priority areas. It was intended to raise awareness, foster discussion and ensure that the medical community contributes meaningfully toward developing wait-time benchmarks that ultimately improve access to care.

With the financial support of Health Canada, a broad-based consultation process followed involving:

- Focus groups with patients and members of the public in 6 centres across the country
- A national public opinion survey
- A key informant questionnaire
- A key stakeholder workshop in June involving participants that included patients, providers and government officials
- Briefings with federal and provincial government leaders.

The members of the WTA received a high degree of support from patients and the public for their work in setting pan-Canadian wait-time benchmarks. Patients told us that they view the benchmarks as an important step toward improving timely access to care. Providing greater certainty was another significant benefit for patients. Finally, patients see the benchmarks as an important tool to improve system transparency and accountability.

## Defining wait-time benchmarks

In keeping with the spirit of the First Ministers’ Agreement, the WTA believes it is important to maintain the commitment to “benchmark.” However, for the purposes of clarifying and simplifying what it means, the WTA operationally defines wait-time benchmarks as “*health system performance goals that reflect a broad consensus on medically reasonable wait times for health services delivered to patients.*”

These benchmarks or performance goals have been developed by medical experts using the best evidence available at the time. They are not intended to be standards nor should they be interpreted as a line beyond which a health care provider or funder has acted without due diligence. Importantly, they do not take into account current constraints on the system’s capacity to achieve these benchmarks.



## When does the clock start ticking?

The WTA heard from several patients and stakeholders. The College of Family Physicians of Canada (CFPC) suggests that “the clock starts ticking long before a patient ends up in a specialist’s office.” From the patient’s perspective, the wait may begin much sooner and at multiple points in the patient’s journey through the health care system.

For the WTA, the patient’s wait time for specialty care begins at the point where he or she receives a differential diagnosis from the family physician/general practitioner; that is, when “wants” get translated into “needs” and it is decided that the patient requires diagnostic testing or clinical intervention or both.

## “First principles” to guide development of wait-time benchmarks

Following considerable input during its consultation process, the WTA identified 10 “first principles” that will govern its work toward the development of wait-time benchmarks:

1. Canadians have a right to timely and high quality care beginning with access to a family physician or general practitioner (FP/GP). The achievement and maintenance of wait-time benchmarks should in no way compromise the quality of care provided to patients.
2. Wait-time benchmarks must be developed from the patient’s perspective. This requires monitoring of wait times from the moment the patient first contacts the health care system for his or her condition through to diagnosis, treatment and rehabilitation. Patients must also be involved in the development of wait-time benchmarks and be informed of approved wait-time benchmarks.
3. The development and setting of wait-time benchmarks should be based on a pan-Canadian approach to help ensure that Canadians receive comparable access to necessary care, avoid duplication of effort and maximize economies of scale. Although benchmarks should be pan-Canadian, targets may be set at the provincial or territorial level recognizing the different needs and capacities of provinces and territories to achieve the wait-time benchmarks.
4. Wait-time benchmarks should be based on the best available evidence along with clinical consensus (general agreement among the practising medical community) both of which are suitable to the Canadian context.
5. Wait-time benchmarks are dynamic and should be derived in an ongoing and transparent process that involves evaluation, timely updating and a refinement of benchmarks when necessary. This process should include the ongoing evaluation of new technologies and their potential impact on wait-time benchmarks.

6. Successful development, improvement and implementation of wait-time benchmarks require the early, ongoing and meaningful input of the practising community (front-line health care workers).
7. Public accountability, through the monitoring and reporting of wait-times is exceedingly important to maintain patients’ confidence in the health care system. Reducing wait times for health services in the 5 priority areas would enhance confidence in the health care system.
8. Wait-time benchmarks and any associated provincial targets to reduce wait times must be *sustainable*. This will require a commitment to ongoing targeted funding through the Wait Times Reduction Fund and strategies to promote the appropriate use of health services.
9. The development of wait-time benchmarks for the 5 priority areas must not be achieved at the expense of reduced access to other health care services. Monitoring must be in place to ensure this does not happen.
10. Wait-time benchmarks must be implemented with the use of appropriateness guidelines and prioritization tools that are fair, equitable and transparent to the patient.

## The WTA’s proposed wait-time benchmarks

Based on the feedback received during our consultation phase, several changes have been made to the WTA’s benchmark framework. For example, the “routine” category of urgency has been changed to “scheduled” to better reflect how this category is used in practice.

In terms of the benchmarks themselves, the WTA is pleased to provide a comprehensive listing of new cardiac care benchmarks that have been developed over the past several months by cardiovascular specialists and other physicians from across the country. In addition, the benchmarks for nuclear medicine (diagnostic imaging) have been modified since the release of the interim report.

Although reviews of available clinical evaluations, epidemiologic evidence and existing standards and clinical guidelines were undertaken to develop these benchmarks, the available evidence on acceptable wait times remains quite limited. As a result, in many cases consensus among practitioners was used to identify the benchmarks. However, clinical judgment based on interaction between clinicians and their patients is an equally important component. The lack of research evidence and the importance of clinical judgment is why the WTA believes the setting of benchmarks must be evidence-based but not evidence-bound.

The table below summarizes the WTA wait-time benchmarks by specialty according to 3 urgency categories: emergency, urgent and scheduled. The full report contains a more

comprehensive presentation and discussion on these benchmarks. It is noted that there is wide variation in wait times across the country relative to the benchmarks proposed by the WTA. In some regions, the benchmarks are being met while in others a significant portion of the population is not receiving the specialty care within our recommended performance goals.

The WTA acknowledges that the development and adoption of wait-time benchmarks is required for other types of care (e.g., access to mental health services) and we support

the work that other groups are doing in this regard. The Canadian Association of Emergency Physicians, for example, has produced acceptable wait times for use by hospital emergency departments and are provided in Appendix C of the full report.

## Implementation issues

Setting wait-time benchmarks is one thing; implementing

### Summary of wait-time benchmarks by priority level\*

Specialty and procedure	Wait-time benchmark		
	Emergency cases	Urgent cases	Scheduled cases
<b>Radiology</b> (diagnostic imaging) - CT scans and MRIs	Immediate to 24 h	Within 7 days	Within 30 days
<b>Nuclear medicine</b> (diagnostic imaging) - Bone scan (whole body) - FDG-PET - Cardiac nuclear imaging (perfusion; viability; LV function) (SPECT or PET)	Immediate to 24 h Immediate to 24 h Immediate to 24 h	Within 7 days Within 7 days Within 3 days	Within 30 days Within 30 days Within 14 days
<b>Joint replacement</b> - Hip and knee replacement surgery	Immediate to 24 h	Within 30 days (priority 1) Within 90 days (priority 2)	Consultation: within 3 months Treatment: within 6 months of consultation
<b>Cancer care</b> - Radiation therapy	Immediate to 24 h	Based on individual need	Consultation: within 10 working days Treatment: within 10 working days of consultation
<b>Sight restoration</b> - Cataract surgery	Not applicable	Cases are expedited proportional to relative degree of priority	Within 16 weeks of consultation
<b>Cardiac care†</b> - Initial specialist consult - Diagnostic procedures (diagnostic catheterization) - Therapeutic services and procedures  Angioplasty Bypass surgery Valvular surgery Heart failure services Pacemaker Referral to electrophysiologist Electrophysiology testing/catheter ablation ICD - Cardiac rehabilitation	Immediate to 24 h Immediate to 48 h  Immediate to 48 h Immediate to 48 h Immediate to 24 h Immediate to 24 h Within 3 days Not applicable Not applicable Within 3 days Immediate	Within 7 days Within 3 days  Within 7 days Within 14 days Within 14 days Within 14 days Within 14 days Within 30 days Within 14 days Not applicable Within 7 days	Within 6 weeks Within 6 weeks  Within 6 weeks Within 6 weeks Within 6 weeks Within 6 weeks Within 6 weeks Within 3 months Within 3 months Within 8 weeks Within 30 days

Note: CT = computed tomography; FDG = fluorodeoxyglucose; ICD= implantable cardioverter defibrillator; LV = left ventricular; MRI = magnetic resonance imaging; PET = positron emission tomography; SPECT = single photon emission computed tomography.

\* Priority or urgency levels are defined as follows: Emergency = immediate danger to life, limb or organ; Urgent = Situation that is unstable and has the potential to deteriorate quickly and result in an emergency admission; Scheduled = Situation involving minimal pain, dysfunction or disability (also called "routine" or "elective").

† Only a sample of services and procedures are shown. More comprehensive wait-time benchmarks and urgency categories are provided in the body of the report.

Note: Unless specified, time refers to calendar days between decision to treat by specialist and the day treatment is received.

them is quite another. The WTA devoted considerable time to consulting the physician community and other stakeholders about issues that need to be addressed to improve access to care for patients. There are 3 broad categories of issues affecting successful implementation of the wait-time benchmarks:

1. *Supply-side barriers* include an insufficient supply of health human resources, a lack of infrastructure and poor system coordination. Although the WTA received overwhelming support for the use of wait-time benchmarks from patients and the public, these groups remain skeptical about the system's ability to deliver on the performance goals or benchmarks unless resources are strategically increased. The shortage of health human resources was cited as the number 1 barrier to successfully implementing the proposed performance goals. For some specialties, like nuclear medicine, a lack of equipment and facilities in parts of the country is an additional factor hindering access.
2. *Demand-side issues* are equally important in reducing lengthy wait times beginning with a focus on reducing demand for services by preventing illness and properly managing existing health conditions. Appropriateness guidelines — systematically designed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances — can assist physicians and other practitioners in making appropriate decisions on utilization.
3. *The lack of data* on wait times is a known obstacle to measuring and monitoring the extent of the problem and determining whether we are making progress. Timely, accurate data are particularly necessary to ensure that any progress in reducing wait times in the 5 priority areas is not being achieved at the expense of reduced access to other types of necessary care.

One final and important implementation issue is whether action should be taken in the event that the wait-time benchmarks are not met. Given that adherence to benchmarks can vary within regions of provinces and territories and can stem from a variety of resource issues, we believe attention should be directed toward improving performance. Of greatest importance is ensuring that our patients are able to access needed care in a timely manner. As a result, the WTA proposes further development and the support of interprovincial and territorial referral networks and assistance for patients who must travel out-of-province or out-of-country to seek pre-authorized health care.

## Strategies to improve timely access to care

The need to reduce lengthy wait times should not be seen as only a “government problem.” Accordingly, the WTA

has developed both a “Wait-Time Code” and a “4-M Toolbox” of strategies to mitigate, measure, monitor and manage wait times. Both of these are highly dependent on partnerships among all stakeholders.

### Wait-Time Code

Building on an idea proposed by the 1964 Hall Commission to create a health charter, the WTA has developed a Wait-Time Code that sets out the rights and responsibilities of patients and citizens, providers and governments regarding the effective use of wait-time benchmarks. “Rights” for the purposes of the code refer to the benefits each stakeholder can expect to receive from the adoption of the performance goals.

“Responsibilities” refer to those actions that need to be taken by each stakeholder to achieve timely delivery of health care. For example, patients should have a right to expect access to timely, quality care, while at the same time they must accept prioritization tools and queuing for care based on need. Providers, on the other hand, should expect to receive the resources they need to provide timely care to their patients. At the same time, they have a responsibility to share wait list information with others to improve system efficiency and to monitor their patients’ condition while they wait for care ensuring that a worsening condition will result in faster access.

### 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times

The adoption of wait-time benchmarks will be an important step in reducing wait times and improving access to health services. However, to be successful, the adoption of wait time benchmarks must be part of a broader strategy of measures at the pan-Canadian, provincial and regional levels. The WTA has developed a 4M Toolbox of strategies (see Appendix A) that sets out a menu of initiatives that provincial governments, regional health authorities, health care institutions, and practitioners can employ to *Mitigate, Measure, Monitor* and *Manage* wait times.

These strategies operate both at the level of the individual patient and the system as a whole:

- **Mitigating the need for wait lists:**
  - For patients: prevention and health promotion reduce the likelihood that they will require specialized services and improve the likelihood of positive health outcomes if they do.
  - For the system: reduces the overall demand for health care services and ensures that access to specialized health care services is based on relative medical need.
- **Measuring wait times:**
  - For patients: provides knowledge needed to make

informed decisions about gaining access to health care services.

- For the system: standardized, comparable pan-Canadian data on wait times is the “cornerstone” for evidence-based decision-making and assessing system performance in reducing wait times.

- **Monitoring wait times:**

- For patients: regular monitoring of patients’ condition while they are waiting for care reduces anxiety for both patients and their families.

- For the system: ongoing system monitoring helps assess progress and assists in recalibrating benchmarks and wait-time management strategies.

- **Managing wait times:**

- For patients: ensures that patients will have access to the right service, through the right provider, at the right time.

- For the system: improves productivity of existing resources, increases system capacity to meet defined needs and ensures continuous improvement in system efficiency and effectiveness.

The WTA recognizes that each province and territory will want to work with appropriate health care professionals to develop their own optimal mix of possible strategies to reduce wait times.

## Recommendations

Canadians have a legitimate expectation that their publicly financed health care system provides timely access to care based on relative need. The urgency of improving timely access to health care in Canada has been made starkly clear by the Chaoulli/Zeliotis decision.

This report provides the basis for governments to accelerate their timetable for the adoption of wait-time benchmarks, the setting of targets and the implementation of strategies to meet the targets. Although we acknowledge that a “one size fits all” approach will not work, the WTA recommends the following integrated steps to realize pan-Canadian wait-time benchmarks and improve access to care for patients.

1. To respond to the Chaoulli/Zeliotis decision and the pressing need to demonstrate meaningful reductions in wait times, the WTA calls on federal, provincial and territorial leaders to accelerate the timeline on their wait-time strategy.
  - Federal, provincial and territorial governments respect their commitment to establish wait-time benchmarks for the 5 priority areas by 31 December 2005 and set targets to reduce wait times by 31 March 2006, 21 months ahead of schedule
  - Use the benchmarks prepared by the WTA and other available work to achieve consensus on an overall set of wait-time benchmarks

- Consider the WTA’s 4-M Toolbox of strategies to develop provincial and territorial implementation plans using all available resources from the \$5.5 billion Wait Times Reduction Fund
2. To address Canada’s number 1 impediment to providing timely access to care, the federal government should establish a 5-year \$1 billion Health Human Resource Reinvestment Fund. The fund will be used to implement a needs-based, pan-Canadian, integrated health human resources plan based on the principle of self-sufficiency for Canada.
    - Increase undergraduate education opportunities for health professionals and the availability of post-graduate training positions, accelerate integration of qualified international health workers
    - Create a Canadian coordinating office for health human resources that would coordinate provincial and national initiatives to recruit, retain and repatriate health providers
  3. To improve access to care and provide greater certainty for patients that they will receive care within an acceptable period of time, the federal, provincial and territorial governments should collaborate to establish a new Canada Health Access Fund (\$2 billion over 5 years).
    - Assist provinces to develop further and support a network of regional registries and referral centres to increase economies of scale for the provision of highly-specialized, low-volume procedures
    - Enhance portability of care for patients and their families by reimbursing the cost of out-of-province or out-of-country care when the services are not available provincially within the accepted wait-time benchmark (subject to prior approval by the physician normally expected to provide or oversee the care and a medical review panel)
  4. To assist in collecting and analysing the necessary data to support strategies to reduce wait times and monitor progress.
    - Provincial and territorial governments agree on common data definitions of wait times and urgency measures, and work with the Canadian Institute for Health Information and national specialty societies to develop a pan-Canadian approach to collecting wait-time data
    - Canada Health Infoway accelerate investments in information and communication systems
    - Health Council of Canada evaluate Canada’s progress in reducing wait times
  5. To build partnerships and ensure a sustained focus on wait-time reductions, a Canadian Wait-Time Consortium should be established to champion a pan-Canadian wait-time agenda for the next 3 years.
    - Review and revise benchmarks as warranted

- Hold annual forum to share information on federal, provincial and territorial progress
  - Serve as a clearinghouse of best practices
6. To build knowledge capacity and to support ongoing policy development in wait-time management, the federal government should allocate significant new resources to a comprehensive program of applied research on access and wait-time issues under the auspices of the Canadian Institutes of Health Research or another appropriate agency.

- Fund cross-provincial initiatives
- Expand research focus to include the broader impacts of waiting on patients

With the release of this final report, the WTA will focus its attention on monitoring the implementation of wait-time strategies with the support of specialty societies and provincial medical associations. The members of the WTA look forward to continuing to work with other stakeholders, including patients and governments, to undertake this work and ultimately improve access to care for Canadians.

# 1. Introduction and purpose

*“First Ministers agree that access to timely care across Canada is our biggest concern and a national priority. First Ministers have come together and agreed on an action plan.”*

— 2004 First Ministers Accord (*A 10-Year Plan to Strengthen Health Care*)<sup>1</sup>

Forty years ago, Canada decided that relative medical necessity rather than relative ability to pay should be the factor determining access to the health care system. This principle of access has been widely accepted and, indeed, is included in legislation. But while the principle of accessibility has been protected by legislation, the notion of timely access has never been explicitly recognized. Today, we find many Canadians worried about wait times and wondering about the sustainability of the promise of reasonable access. Not surprisingly, the number 1 public policy issue for Canadians has become “timely access to care.”

First ministers acknowledged the importance of this issue last September in their 10-Year Plan to Strengthen Health Care<sup>1</sup> and committed themselves to develop benchmarks for medically acceptable wait-times in 5 priority areas — cancer, cardiac care, diagnostic imaging, joint replacement, and sight restoration — by 31 December 2005 as part of an effort to achieve “meaningful reductions” in wait times by 31 March 2007.

The importance of reducing wait times for publicly

funded health services was underscored on 9 June 2005 when the Supreme Court of Canada released its historic decision in the Chaoulli/Zeliotis case.<sup>2</sup> Although the details of the court’s decision will be analysed for some time, the decision itself points to an urgent need for governments to work collaboratively with health care providers and patients to lay out a roadmap that will provide Canadians with more timely access to high-quality health care.

This challenge to improve timely access is too great for governments or health care providers to meet on their own. Canada’s health care system is a shared enterprise and reducing wait times requires a contribution from all stakeholders. *Governments need to build health care providers into the policy process in an early, ongoing and meaningful way. For their part, providers need to practise in a more service-based system and culture.*

The Wait Time Alliance (WTA) was formed in fall 2004 as a result of physicians’ concern about Canadians’ access to health care. The formation of the alliance is significant as it represents an unprecedented effort to bring together several national medical specialty societies whose members are directly involved in providing care in the priority areas identified by the first ministers (see Exhibit A).

The WTA released its interim report, *No More Time to Wait: Toward Benchmarks and Best Practices in Wait Time Management*, on 3 April 2005.<sup>3</sup> The report presented a set of provisional wait-time benchmarks in 5 areas: cancer care, cardiac care, diagnostic imaging, joint replacement and sight restoration. The report received considerable public attention both before and following the Chaoulli/Zeliotis decision.

A broad-based consultation process followed, involving patients, members of the public, representatives of other medical and health care organizations, and federal and provincial governments. Public feedback on the interim report has indicated a high level of support for the WTA’s work in setting wait-time benchmarks, both to improve access to care and to provide greater system transparency and accountability.

The interim report was based primarily on research and consensus-building among the medical specialty societies and the practising physicians who make up the members of the alliance. This final report reflects the substantive and constructive input we have received from patients, other medical organizations and health stakeholders.

## Exhibit A: The Wait Time Alliance

The Wait Time Alliance includes the following national specialty societies: the Canadian Association of Radiologists; the Canadian Association of Nuclear Medicine; the Canadian Association of Radiation Oncologists; the Canadian Cardiovascular Society; the Canadian Ophthalmological Society; and the Canadian Orthopaedic Association; as well as the CMA, which provides research and policy support. Each of the national specialty societies has involved clinical leaders in its respective specialty to help adduce the evidence on reasonable wait times.

For each of the 5 priority areas, the alliance has set out to:

- Provide a medical perspective on the development of wait-time benchmarks
- Advise on the implementation of wait-time reduction strategies
- Identify clinically acceptable indicators of access and wait times.

The final report has 5 main objectives:

- To report on the feedback received from patients, the public and other health care stakeholders on the interim report and the proposed wait-time benchmarks or performance goals
- To propose a revised set of wait-time benchmarks based on the best available medical evidence and clinical consensus and judgment
- To discuss key implementation issues that must be addressed to meet wait-time benchmarks
- To present a 4-M Toolbox (mitigate, measure, monitor and manage) of possible wait-time strategies and recommendations for action to put Canada on a path to reducing lengthy wait times
- To recommend a series of integrated steps toward meeting the objectives agreed to in the first ministers' agreement.<sup>1</sup>

### Defining wait-time benchmarks

The first ministers' referred to "medically-acceptable wait-time benchmarks" in their 10-year plan.<sup>1</sup> Subsequently, the WTA used the same term in its interim report.<sup>3</sup> Some stakeholders advised against using this or other terms such as "recommended wait-times" or "maximum wait-times" for fear that they will raise false expectations with potential legal repercussions resulting from inadequate resources in the system.

In keeping with the spirit of the first ministers' agree-

ment, the WTA believes it is important to maintain the commitment to "benchmark." However, to clarify and simplify what it means, the WTA offers an operational definition of wait-time benchmarks as *"health system performance goals that reflect a broad consensus on medically reasonable wait times for health services delivered to patients."*

Furthermore, these benchmarks or performance goals have been developed by medical experts using the best evidence available. They are not intended to be standards. Nor should they be interpreted as a line beyond which a health care provider or funder has acted without due diligence. Importantly, they do not take into account current constraints on the system's capacity to achieve these benchmarks.

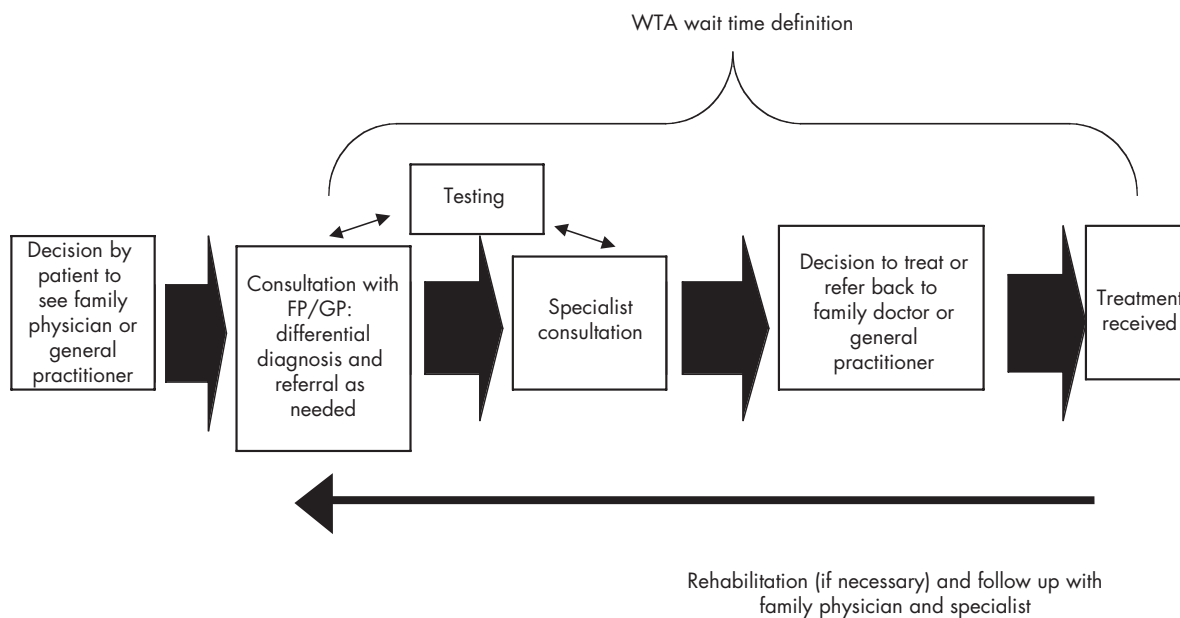
It is also important to recognize that wait-time benchmarks should never be seen as carved in stone; they must evolve with the advent of new research evidence, changes in technology and population health needs.

Although the WTA urges the adoption of pan-Canadian benchmarks or performance goals, the purpose of this report is not to prescribe a single approach to meet such benchmarks. Each jurisdiction will have to identify an appropriate mix of strategies from the 4-M Toolbox, in keeping with consultations at the provincial or regional level with providers, patients and taxpayers.

### When does the clock start ticking?

The WTA heard from a broad range of patients and stake-

**Figure 1: Wait times from the patient's perspective**



Adapted from prototype shared by the College of Family Physicians of Canada and from ICES, *Access to Health Services in Ontario*<sup>5</sup>, Fig. 1.1

holders during its consultations. The College of Family Physicians of Canada (CFPC) suggested that “the clock starts ticking long before a patient ends up in a specialist’s office.”<sup>4</sup> From the patient’s perspective, the wait may begin much sooner and at several different points in his or her journey through the health care system (Figure 1):

- Primary care (seeing the FP/GP and tests)
- Waiting to see a specialist
- Specialist consultation (wait for tests/investigations, consultation with other specialists if necessary)
- Waiting for treatment (if treatment is required, priority depends on condition and the patient waits accordingly)
- Waiting for rehabilitation services (if necessary)

For the WTA, the patient’s wait time for specialty care begins when he or she receives a differential diagnosis from the family physician or general practitioner; that is, when “wants” get translated into “needs” and it is decided that the patient requires diagnostic testing or clinical intervention. For example, an FP/GP may refer the patient directly to a specialist or may request diagnostic testing before deciding to refer the patient for specialist consultation.

In some provinces, referral to a specialist is required before certain diagnostic tests can be ordered. Although this is done to guard against inappropriate utilization, it adds unnecessarily to wait times. Access to diagnostic testing should be available to both specialists and FP/GPs relying on the use of appropriateness guidelines and care pathways.

Unfortunately, many Canadians do not have access to an FP/GP and cannot begin waiting unless they enter the system via another route, most likely a hospital emergency department. In fact, a serious problem related to the wait time issue in Canada is the lack of reasonable access to FP/GPs. A 2003 Statistics Canada survey found that 3.6 million Canadians (almost 14% of the population) had no regular family physician.<sup>6</sup> A 2004 Decima poll<sup>7</sup> found that 16% of Canadians older than 18 years tried, but were unable to find a family doctor for themselves or their families during the previous 12-month period. In 2002, the CFPC estimated that Canada was short 3000 family physicians.<sup>4</sup> Patients who have been unsuccessful in finding an FP/GP are now referred to as “orphan patients.”



## 2. Recent benchmarking efforts in Canada

*It is not waiting lists that should be of concern but waiting that nobody wants — waits that are uncertain, waits that are unfair, and waits that create greater risk for the patient.*

— Health Council of Canada (January 2005)

### The benefits of wait-time benchmarks

As Canada's physicians, we see first-hand the negative impact that undue wait times are having on our patients. A source of great frustration for physicians, the medical impact of waiting can also include

- Deterioration in the condition for which treatment is being sought, including possible threat to life, limb and organ
- Increased likelihood of complications requiring more invasive treatments and follow-up
- Decreased quality of life for patients while waiting
- Increased stress and anxiety for patients and their families.

There are, of course, wider socioeconomic ramifications of unnecessary waiting, such as a loss in productivity (e.g., income from work or providing family support, disruption to school, etc.).<sup>8</sup>

From the patient perspective, there is great concern regarding the negative impact that lengthy waits for care can have on their health. But patients are also apprehensive about the lack of certainty that often exists regarding the length of their wait. This uncertainty prevents both the patient and his or her family (as caregivers) from being able to plan properly for the treatment and recovery period and minimize the disruption to their work, studies or other responsibilities. Patients are also concerned about unfairness in waiting, particularly if they believe queue jumping is occurring that is not based on need.

Wait-time benchmarks or performance goals can help alleviate several of these concerns by:

- Focusing efforts on reducing unnecessarily long wait times
- Providing greater certainty (e.g., providing an approximate wait time)
- Ensuring fairness (transparent process for prioritizing cases)
- Improving accountability (showing performance results, and providing a recourse if the system cannot meet the benchmark).

Waiting for a medical procedure with no idea how long the wait will be is no longer acceptable to the public and our patients — and it should also be unacceptable for governments.

*“There are levels of stress, worry, not just with the patients, but with the families as well.”*

— Focus group participant

Wait-time benchmarks also benefit administrators, providers and the public by improving performance measurement and decision-making about resource allocation. The monitoring of wait times against benchmarks will allow those in the health care system to direct resources toward results and will serve as motivation to find the best ways to achieve them.

### Review of the benchmarking process

The development of wait-time benchmarks is not an exact science. Different jurisdictions have taken different approaches based on their particular needs and situation. Figure 2 provides an overview of the wait-time benchmarking process and related steps (some of which are already underway), involving input from all stakeholders. It must be clear that the establishment of benchmarks is not the end point of the work; in fact it is merely the beginning. Ultimately, the goal is timely access to care for patients.

*“The quality of health care in Canada is good once you get in.”*

— Focus group participant

Once the benchmarks are set, it will be necessary to set targets to determine what percentage of patients can be treated within the wait-time benchmark. Furthermore, clinical tools have to be developed to assist physicians in determining which patients actually need to be treated (appropriateness) and in prioritizing patients according to their clinical urgency. Finally, monitoring and measuring systems are required. The monitoring system tracks patients while they wait. A measuring system is used to track patients' wait times and outcomes. The data that are collected can then be used to determine whether the wait-time benchmarks need to be revised (i.e., the data may show patients waiting less than a certain period of time have significantly better outcomes than those waiting longer).

## The 2004 first ministers' accord

The September 2004 first ministers' *10-Year Plan to Strengthen Health Care*<sup>1</sup> identified wait times as a priority. Specifically, First Ministers agreed to the following actions:

- Establish comparable indicators of access to health care professionals and diagnostic and treatment procedures for all jurisdictions by 31 December 2005.
- Establish evidence-based benchmarks for “medically acceptable wait times” starting with cancer, cardiac care, diagnostic imaging procedures, joint replacements, and sight restoration by 31 December 2005 through a process to be developed by federal, provincial and territorial ministers of health.
- Establish multiyear targets to achieve priority benchmarks for each jurisdiction by 31 December 2007.

Their action plan is supported by a \$5.5-billion Wait Times Reduction Fund that can be drawn upon by provinces and territories as they see fit. A Territorial Health Access Fund was also announced to improve access to care for residents of Canada's three northern territories.<sup>1</sup>

First ministers committed to reporting annually to their citizens on their progress in meeting their multiyear

wait time targets. In authorizing the appropriation of funds to support the 10-year plan (Bill C-39), federal legislators also provided for a mandatory parliamentary review in 3 years to “review the progress in implementing that plan.”<sup>9</sup>

## Governments' efforts to date

To help the provinces and territories meet the 31 December 2005 deadline for setting wait-time benchmarks, governments in partnership with the Canadian Institutes for Health Research (CIHR) commissioned research on wait times in the priority clinical areas. Eight research teams were subsequently funded. Part of their research involves identifying areas where sufficient evidence exists to support benchmarks and those where benchmarks are already in use. Reports on this research are due on 15 October 2005.

Individual provinces and territories are also moving forward with their own approaches to developing wait-time targets. At the March 2005 “Taming of the Queue II” conference, all provinces gave presentations on their efforts to date to reduce wait times. There is insufficient space to

## Figure 2: The stages in developing and implementing wait-time benchmarks

1. Establish “best practices” benchmarks
    - review/reassess research evidence (if available)
    - health care provider perspective
    - patient input
    - public and government input
  2. Set targets and indicators
    - target: percent of patients (scheduled cases) to be treated within 4 months (example) of presenting problem to the system (i.e., family physician or emergency room)
    - indicator: number of patients (scheduled) treated within 4 months
  3. Ensure appropriateness guidelines are in place
    - guidelines to help physicians make decisions about necessary care based on a systematic review (experience and research) of indications for procedures
  4. Prioritize patients within the urgency categories for the benchmarks
    - e.g., if you are assessed at 80–100 points, you are priority level 1 and should receive treatment within 30 days
  5. Monitor and measure pre- and post-treatment
    - using available indicators
    - developing new indicators
    - reviewing patient outcomes (e.g., does length of wait for treatment affect outcomes?)
  6. Adjust benchmark and target as necessary
    - review of indicators and outcomes or other research evidence may suggest an adjustment to the benchmark as required.
-

summarize these, but the WTA wishes to acknowledge the work that governments are doing in this area, some of which was highlighted in the WTA's interim report.<sup>3</sup>

Recently, the federal government appointed Dr. Brian Postl as the federal advisor on wait times, reporting to the prime minister and the minister of health. Dr. Postl has extensive knowledge and experience in this area, and the WTA welcomes his efforts to ensure that wait times are reduced as quickly as possible.

### **Other recent work on wait-time benchmarks in Canada and internationally**

The WTA is not alone in working on wait-time benchmarks. Several reports, in addition to the WTA interim report,<sup>3</sup> have been released recently on the subject, including reports by the Western Canada Waiting List Project (WCWLP),<sup>10</sup> the Association of Canadian Academic Healthcare Organizations (ACAHO)<sup>11</sup> and the Institute for Clinical Evaluative Sciences (ICES),<sup>5</sup> all of which are referred to later in this report.

As discussed in the WTA's interim report, wait-time benchmarks and targets already exist in various forms in a

number of industrialized countries. These approaches have been documented in a ground-breaking study by the Organisation for Economic Co-operation and Development (OECD) on wait-time strategies in leading industrialized countries.<sup>8</sup> The WTA expert working groups incorporated this information into their consensus-building process regarding pan-Canadian wait-time benchmarks.

Several countries have adopted generalized benchmarks and targets that cut across treatment areas. Australia, Denmark, the Netherlands, New Zealand, Spain, Sweden and the United Kingdom have taken this approach, which, by definition, is more arbitrary than the evidence-based, procedure-specific benchmarking approach that Canada is adopting. Some countries, including Italy, New Zealand and the United Kingdom, have also established procedure-specific benchmarks and targets. The enforceability of benchmarks and targets varies from one country to another, with some providing an outright guarantee of service with recourse for patients if the guaranteed wait time is not achieved, while others take a more flexible approach aimed at improving system performance through changes in incentives and system design.

### 3. Feedback on our interim report

The WTA recognizes that developing wait-time benchmarks is not the sole prerogative of physicians and the specialty societies that represent them. To be credible, wait-time benchmarks require scrutiny by — and input from — other stakeholders, particularly patients and the public. Therefore, on release of its interim report, the WTA conducted a substantive consultation process — with substantial financial support from Health Canada — that included the following activities:

- Presenting the report to representatives of health care organizations and governments including participants at the “Taming of the Queue II” conference (31 March 2005)
- Distributing the WTA’s interim report and a questionnaire to over 200 stakeholders (response rate of 14%)
- Conducting 12 focus groups in May 2005 with public opinion leaders and patients in 6 centres (5 urban and 1 northern/rural): Vancouver, Calgary, Toronto, Montreal, Halifax, and Moose Factory (Ontario). In each location, one focus group was held with patients, or a member of their immediate family, with recent experience in 1 or more of the 5 priority health areas and the second group was made up of opinion leaders

- Holding a national stakeholder workshop on June 16, involving approximately 65 participants who included patients, providers and government officials
- Conducting a public opinion survey in June 2005 (by Ipsos-Reid) of 1000 Canadians on the issue of wait
- Briefing political leaders on the interim report (prime minister, federal minister of health, chair of the Council of the Federation, premiers, provincial ministers of health, etc.).

The feedback we received is summarized in Table 1.

#### Response to the notion of developing wait-time benchmarks

*“Benchmarks will make [patients] feel less angry and, they can prepare themselves better, plan better, and that will make them feel less stressed.”*

*“Benchmarks will give [patients] a sense of what to expect, in terms of results and outcomes.”*

— Focus group participants

The first question we asked in our consultation was

**Table 1: Summary of overall views on wait-time benchmarks by focus group participants<sup>12</sup>**

Positive views	Concerns
Seen as an improvement	Concern over ability of the health care system to deliver within wait-time benchmarks
Giving patients a sense of certainty	Need for more human, financial and material resources
Positive means of managing patient expectations	Distinction between the urgent and semi-urgent wait times
Good means to help the health care system manage its resources	Some confusion over the “routine” category — should be “scheduled”
Seen as increasing accountability on part of the health care system and professionals	Potential for patients and physicians to learn how to “play the system”
Standard prioritization of care means equal access and potential reduction of bias in system (patients and doctors with connections)	

whether there was any support for the concept of developing wait-time benchmarks. Although awareness of the issue of wait-time benchmarks is low among the public, there is overwhelming support for the WTA's efforts to develop wait-time benchmarks to help improve access to care and to improve system transparency and accountability. A summary of the focus group participants' overall views is presented below.

Furthermore, it is clear from the consultations that there is very strong support for Canada's physicians to play a leading role in the development of the benchmarks along with patients. Other relevant health care providers as well as government officials should also be involved.

*"You need to have the perspective of the patient and to learn from their experiences, particularly the impact that long wait times have on patients."*

— Focus group participant

## Response to our "first principles"

Early on, the WTA formulated a set of first principles to guide its work. Support for these principles was very high among both focus group participants and survey respondents. Some people suggested that a few of the principles contained more than 1 concept and should, therefore, be separated into 2 distinct statements.

Key among these first principles, set out below, is the development of pan-Canadian wait-time benchmarks or performance goals. The majority of people surveyed favoured pan-Canadian performance goals. A small minority of people from the larger provinces expressed concerns that this may lead to lower standards in their province to ensure a consistent approach across the country or that it would not allow for provincial flexibility. However, all supported the goal of Canadians having equal levels of access to services based on relative medical need.

The WTA reaffirms the principle that wait-time benchmarks should be pan-Canadian in nature, based on the best available evidence, but not evidence-bound. For example, wait-time benchmarks should be the same in British Columbia as they are in Manitoba or Ontario — because they are based on available research evidence and expert medical opinion regarding the impact that waiting has on patients' health. This won't change from province to province. That said, each province must have the flexibility to achieve these benchmarks by setting their own targets and time-frames.

A patient-centred approach to developing wait-time benchmarks was another principle that was strongly endorsed. This involves including patients in the setting of benchmarks as well as measuring wait times from the per-

spective of the patients as they journey through the various parts of the health care system.

Based on the feedback received from patients and others, the WTA has amended the first principles that will govern its work (see Exhibit B).

It is recognized that the allocation of health care resources should be based on health care needs and cost-effectiveness. However, the WTA views these considerations as separate — yet equally important — matters to the development of wait-time benchmarks, which are to be based on the best available medical evidence.

## Feedback on interim report benchmarks

Overall reaction to the WTA's proposed benchmarks has been positive, and participants in public focus groups felt they represented an improvement in access to care over current conditions.

*"A maximum wait time, with the option of earlier treatment is fine."*

— Focus group participant

On a specialty-by-specialty basis, reaction was positive regarding the proposed wait-time benchmarks for radiation oncology and cataract surgery. Although participants generally supported the benchmarks for diagnostic imaging, there was concern that they were too long given that diagnostic imaging was often required to support the other priority areas. Support for the joint replacement benchmarks was mixed. However, support increased if patients were assured that they would be monitored by their physician while they waited and would be moved into a more urgent category if necessary.

The focus groups expressed concern about the duration of the cardiac wait times provided in the interim report. They were based on existing provincial programs and did not reflect the benchmarks being proposed by the Canadian Cardiovascular Society (CCS). The new proposed CCS benchmarks are now available and are presented in this final report.

Many focus group participants identified cancer and cardiac care as life-threatening conditions that require immediate to very short wait times — in their view, there should be no routine/non-urgent cardiac or cancer situations. In that sense, the public distinguishes these conditions from other health priorities, such as joint replacements and cataracts. This suggests there may be a need for governments and providers to educate the public to improve their understanding of what is truly an emergency or urgent case and what is non-urgent or scheduled.

## Exhibit B

### WTA's first principles to guide development of wait-time benchmarks

The WTA believes that wait-time benchmarks should be developed for all essential health care services. It has identified 10 principles that will govern its work toward the development of wait-time benchmarks and ultimately more timely access to care for all Canadians:

1. Canadians have a right to timely and high-quality care, beginning with access to an FP/GP. The achievement and maintenance of wait-time benchmarks *should in no way compromise the quality of care provided to patients.*
2. Wait-time benchmarks must *be developed from the patient's perspective.* This requires monitoring of wait times from the moment the patient first contacts the health care system for his or her condition through to diagnosis, treatment and rehabilitation. Patients must also be involved in the development of wait-time benchmarks and be informed of approved wait-time benchmarks.
3. The development and setting of wait-time benchmarks should be based on a *pan-Canadian approach* to help ensure that Canadians receive comparable access to necessary care, avoid duplication of effort and maximize economies of scale. Although benchmarks should be pan-Canadian, targets may be set at the provincial or territorial level recognizing the different needs and capacities of provinces and territories to achieve the wait-time benchmarks.
4. Wait-time benchmarks should be *based on the best available evidence along with clinical consensus* (general agreement among the practising medical community) both of which are suitable to the Canadian context.
5. Wait-time benchmarks are dynamic and should be derived from *an ongoing and transparent process* that involves evaluation, timely updating and refinement of benchmarks when necessary. This process should include the ongoing evaluation of new technologies and their potential impact on wait-time benchmarks.
6. Successful development, improvement and implementation of wait-time benchmarks require the early, ongoing and *meaningful input of the practising community* (front-line health care workers).
7. *Public accountability*, through the monitoring and reporting of wait-times is exceedingly important to maintain patients' confidence in the health care system. Reducing wait times for health services in the 5 priority areas would enhance confidence in the health care system.
8. Wait-time benchmarks and any associated provincial targets to reduce wait times must be *sustainable*. This will require a commitment to ongoing targeted funding through the Wait Times Reduction Fund and strategies to promote the appropriate use of health services.
9. The development of wait-time benchmarks for the 5 priority areas *must not be achieved at the expense of reduced access to other health care services.* Monitoring must be in place to ensure this does not happen.
- 10 Wait-time benchmarks must be *implemented with the use of appropriateness guidelines and prioritization tools that are fair, equitable and transparent to the patient.*

## 4. The WTA's revised benchmarks

Since the interim report was released, each member of the WTA was asked to review their proposed benchmarks, particularly in light of the feedback received from the consultation process; and consider implementation issues that need to be addressed to enable the adoption of wait-time benchmarks, particularly for their specialty. This includes the implementation ideas generated at the 16 June key stakeholder workshop.

Although there are some variations across specialties, wait-time benchmarks for each specialty were developed by expert clinical working groups based on inputs such as:

- A review of available clinical evaluations or epidemiologic evidence of medically acceptable wait times in the literature (both national and international)
- Where available, an assessment of existing standards of access at regional, provincial and national levels as well as internationally
- A review of existing clinical guidelines in relation to appropriateness and priority tools currently in use in other jurisdictions (Appendix B contains the reports and a description of the methods used for each specialty).

In many cases, the available evidence on acceptable wait times remains quite limited. In those cases, consensus among practitioners was the approach used to identify the benchmarks until such time as further medical evidence becomes available. Clinical judgment based on interaction between clinicians and their patients is an equally important component. The lack of research evidence and the importance of clinical judgment is why the alliance believes the setting of benchmarks must be evidence-based but not evidence-bound.

As stated in our interim report, the 5 priority areas are interrelated. Diagnostic imaging, for instance, supports the other priority areas because it is one of the main inputs in the decision to treat. Efforts to date to develop priority-setting tools for diagnostic imaging have tended to view this area in the abstract, without reference to specific providers. Recognizing the shortcomings of such efforts, the WTA's approach builds on the concept of diagnostic imaging supporting the other priority procedures identified by first ministers.

Based on the feedback we received on the interim report during our consultation phase, the WTA made several changes to its benchmark framework and some revisions

to its initial benchmarks. For example, the "routine" urgency level was renamed "scheduled" to better reflect how this category is used in practice. In addition, the members of the WTA have agreed to use urgency categories that are best suited for each particular specialty rather than 1 uniform system. This was done because it was felt that each of the 5 procedures is unique and, from a medical perspective, standardizing urgency categories across the specialties does not properly reflect the conditions found with each type of care. Thus, although the overall summary of wait-time benchmarks in Table 2 lists three urgency categories (emergent, urgent and scheduled), some individual specialty reports have subcategories (e.g., urgent and semi-urgent).

Where possible, we have also included wait times starting at the point of family physician/general practitioner referral, where applicable. In most cases, patients require a physician's referral to obtain access to specialist care. A visit to a family physician or general practitioner is, therefore, an essential first step to receive care.

In terms of the proposed benchmarks, those for cardiac care are new and expanded since the interim report, and those for nuclear medicine (diagnostic imaging) have been modified. Table 2 reflects the WTA's revised benchmarks organized by medical specialty under 3 urgency categories. An overview of how the benchmarks were developed by specialty follows the table.

### Specialty reports

In this section, we provide an overview of the wait-time benchmarks from reports submitted by WTA members across the 5 specialty areas. The full reports can be found in Appendix B. The benchmarks presented in this report are for broad medical categories. Within each of the 5 priority areas, there are several procedures, each with its own benchmark. For example, the CCS has developed benchmarks for 8 components that cover the full continuum of cardiac care. The result is a complex array of benchmarks, not only for specific procedures, but also for different diagnoses within each procedure.

### Diagnostic imaging

Both the Canadian Association of Radiologists (CAR) and the Canadian Association of Nuclear Medicine (CANM)

**Table 2: Summary of wait-time benchmarks by priority level\***

Specialty and procedure	Wait-time benchmark		
	Emergency cases	Urgent cases	Scheduled cases
<b>Radiology</b> (diagnostic imaging) - CT scans and MRIs	Immediate to 24 h	Within 7 days	Within 30 days
<b>Nuclear medicine</b> (diagnostic imaging) - Bone scan (whole body) - FDG-PET - Cardiac nuclear imaging (perfusion; viability; LV function) (SPECT or PET)	Immediate to 24 h Immediate to 24 h Immediate to 24 h	Within 7 days Within 7 days Within 3 days	Within 30 days Within 30 days Within 14 days
<b>Joint replacement</b> - Hip and knee replacement surgery	Immediate to 24 h	Within 30 days (priority 1) Within 90 days (priority 2)	Consultation: within 3 months Treatment: within 6 months of consultation
<b>Cancer care</b> - Radiation therapy	Immediate to 24 h	Based on individual need	Consultation: within 10 working days Treatment: within 10 working days of consultation
<b>Sight restoration</b> - Cataract surgery	Not applicable	Cases are expedited proportional to relative degree of priority	Within 16 weeks of consultation
<b>Cardiac care<sup>†</sup></b> - Initial specialist consult - Diagnostic procedures (diagnostic catheterization) - Therapeutic services and procedures Angioplasty Bypass surgery Valvular surgery Heart failure services Pacemaker Referral to electrophysiologist Electrophysiology testing/catheter ablation ICD - Cardiac rehabilitation	Immediate to 24 h Immediate to 48 h  Immediate to 48 h Immediate to 48 h Immediate to 24 h Immediate to 24 h Within 3 days Not applicable Not applicable  Within 3 days Immediate	Within 7 days Within 3 days  Within 7 days Within 14 days Within 14 days Within 14 days Within 14 days Within 30 days Within 14 days  Not applicable Within 7 days	Within 6 weeks Within 6 weeks  Within 6 weeks Within 6 weeks Within 6 weeks Within 6 weeks Within 6 weeks Within 3 months Within 3 months  Within 8 weeks Within 30 days

CT = computed tomography; FDG = fluorodeoxyglucose; ICD= implantable cardioverter defibrillator; LV = left ventricular; MRI = magnetic resonance imaging; PET = positron emission tomography; SPECT = single photon emission computed tomography.

\* Priority or urgency levels are defined as follows: Emergency = immediate danger to life, limb or organ; Urgent = Situation that is unstable and has the potential to deteriorate quickly and result in an emergency admission; Scheduled = Situation involving minimal pain, dysfunction or disability (also called "routine" or "elective").

<sup>†</sup> Only a sample of services and procedures are shown. More comprehensive wait-time benchmarks and urgency categories are provided in the body of the report.

Note: Unless specified, time refers to calendar days between decision to treat by specialist and the day treatment is received.



provided wait-time benchmarks for their areas of diagnostic imaging. The 2 organizations have coordinated their efforts to examine wait-time benchmarks in this field. The longer a patient has to wait for a diagnostic test, the longer it will take to proceed with treatment if it is necessary. It should, therefore, not be surprising that the WTA's proposed benchmarks for diagnostic imaging are short in comparison with some of the other procedures. It is also recognized that the proposed wait times for diagnostic imaging may be considerably shorter than those that currently exist in parts of the country. We recognize this but feel it is important for the benchmarks to decree what reasonable wait times ought to be to ensure appropriate access for our patients.

*"All diagnostic imaging should be done in a timely manner so you can be slotted in for treatment and urgency assessed."*

— Focus group participant

## Radiology

CAR looked at benchmarks for computed tomography (CT) and magnetic resonance imaging (MRI) as targeted in the 2004 first ministers' 10-year plan.<sup>1</sup> In the last decade, major technical advances have occurred in CT and MRI imaging, leading to an expansion in the indications for their use and an increased number of scans. These modalities have become the first-line tests for many clinical indications and are no longer relegated to the status of specialized investigative tools.

In some provinces, a referral to a specialist is required before certain diagnostic imaging tests can be ordered. Although this is done to control access, it adds unnecessarily to wait times with no evidence of reduced costs. Access to diagnostic imaging should be available to both specialists and family physicians with the use of appropriateness guidelines and pathways.

Given the explosion in referrals for CT and MRI studies and limited financial investment and human resources, it is not surprising that lengthy wait lists for access to these procedures have become a major social issue. For example, 35 million radiology tests were done in 2004 and this number is expected to increase to 45 million by 2010. Given this reality, the need for both supply-side and

demand-side solutions to the wait-times issue will certainly increase.

To date, there have been no published wait-time benchmarks for diagnostic imaging. CAR members participated in 3 provincial expert panels on benchmarks for diagnostic imaging and examined guidelines in a number of other countries.

The proposed benchmarks for radiology (CT scans and MRIs) are: within 24 h for emergency cases; within 7 days for urgent cases; and within 30 days for scheduled cases.

These benchmarks (see Table 3) are based on sound evidence for appropriate use of these diagnostic procedures. Furthermore, clinicians believe these to be acceptable.

CAR stresses that it is essential that benchmarks be used in tandem with appropriateness guidelines to ensure that diagnostic imaging equipment is being used in the most effective and timely manner (discussed in greater detail below).

## Nuclear medicine

Nuclear medicine is a specialty that involves the use of radionuclides for the diagnosis and treatment of disease. CANM has chosen 3 procedures for the development of wait-time benchmarks. Currently, no published benchmarks exist. The procedures are:

- Radionuclide bone scanning: Except for a few limitations (multiple myeloma and histiocytosis X), radionuclide bone scanning is the primary imaging examination used to detect bone metastases. It is more sensitive than plain radiography and offers the advantage of providing a survey of the entire skeleton. The proposed benchmarks are: within 24 h for emergency cases; within 7 days for urgent cases; and within 30 days for scheduled cases.
- Fluorodeoxyglucose positron emission tomography (FDG-PET): Used to image cancers, this technology exploits the fact that many tumours hypermetabolize glucose. FDG-PET is a new technology that has emerged over the past decade and is now accepted and funded clinically in most industrialized countries for the assessment of a number of tumours. The proposed benchmarks are: within 24 h for emergency cases; within 7 days for urgent cases; and within 30 days for scheduled cases.
  - Myocardial perfusion imaging, with either single photon emission computed tomography (SPECT) or positron emission tomography (PET): This procedure is used for the diagnosis of coronary artery disease and in the assessment of patients with an established coronary artery disease. The proposed benchmarks are: within 24 h for emergency cases;

**Table 3: Summary of radiology wait-time benchmarks**

Procedure	Emergency cases	Urgent cases	Scheduled cases
CT and MRI	Immediate to 24 h	Within 7 days	Within 30 days

Note: CT = computed tomography; MRI = magnetic resonance imaging.

within 3 days for urgent cases; and within 14 days for scheduled cases. The same benchmarks apply for viability imaging (thallium-201 or FDG) and for ventricular function imaging with radionuclide angiography. These procedures are directly related to the 5 priority areas selected by the first ministers. Benchmarks have also been developed for additional procedures and therapies including determination of bone density (Table 4).

The final benchmarks for myocardial perfusion imaging have been modified from those contained in the WTA's interim report following consultation with cardiology specialists who believed that the initial benchmarks were too long to ensure that this test would be used appropriately in the evaluation of patients with chest pain syndromes.

Currently, there are substantial variations in wait times for these services, and access problems exist for general nuclear medicine procedures, such as bone scanning, cardiac nuclear medicine procedures and bone mineral density measurement.

As found with radiology, one of the means of controlling access to nuclear medicine is by allowing only specialists to order the tests. CANM believes that nuclear medicine examinations should be used by both specialists and family physicians. Appropriate utilization can best be assured if the nuclear medicine physician assumes the role of consultant, screening requests for examinations and, where appropriate, suggesting alternative diagnostic pathways to ensure that the most appropriate examination is conducted.

## Joint replacement

The National Standards Committee of the Canadian Orthopaedic Association (COA) has been overseeing its work on wait-time benchmarks. Although the committee has examined wait times in the context of several procedures, hip and knee replacements are the focus in this report.

The severity of a patient's condition is important in considering acceptable wait-time benchmarks and prioritization. Therefore, a severity rating system is required that can be applied on a universal and objective basis, particularly when arranging for patients' surgery within a long queue.

To date, the committee has focused on scheduled (elective) procedures for patients who are generally not admitted immediately after consultation (i.e., those who are discharged home but may be scheduled for surgery).

The committee also distinguished between wait times for consultation (from referral to consultation) and wait time for surgery (from the decision for surgery to the date of surgery).

The wait-time benchmarks that have been developed are as follows:

- Consultation: Within 90 days (assuming the patient has been appropriately pre-screened and is ready for surgery)
- Surgery: Within 6 months from the decision date for any scheduled orthopedic procedure (for a total of 9 months for both consultation and surgery).

Both benchmarks are consistent with existing national and international literature in this specialty including the estimate of wait times for knee and hip replacements developed by the WCWLP.<sup>10</sup>

Although these are benchmarks for scheduled cases, the committee also agreed on a prioritization system:

- Priority 1: A situation that has the potential to deteriorate quickly and result in an emergency admission should be operated on within 30 days.
- Priority 2: A situation that involves some pain and disability but is unlikely to deteriorate quickly to the point of becoming an emergency admission should be operated on within 90 days.
- Priority 3: A situation that involves minimal pain, dysfunction or disability and is unlikely to deteriorate quickly to the point of requiring emergency admission should be operated on within 6 months (Table 5).

While most people surveyed viewed these proposed benchmarks for joint replacement as a significant improve-

**Table 4: Summary of wait-time benchmarks in nuclear medicine**

Procedure	Emergency cases	Urgent cases	Scheduled cases
Bone scan (whole body survey)	Immediate to 24 h	Within 7 days	Within 30 days
FDG-PET	Immediate to 24 h	Within 7 days	Within 30 days
Myocardial perfusion (exercise stress)	Immediate to 24 h	Within 3 days	Within 14 days
Myocardial perfusion (pharmacologic stress)	Immediate to 24 h	Within 3 days	Within 14 days
Myocardial viability (FDG)	Immediate to 24 h	Within 3 days	Within 14 days
Myocardial viability (thallium)	Immediate to 24 h	Within 3 days	Within 14 days
Radionuclide angiography	Immediate to 24 h	Within 3 days	Within 14 days
Bone density	N/A	N/A	Within 30 days

Note: FDG-PET = fluorodeoxyglucose positron emission tomography.

ment over current wait times, some people found them to be too lengthy. There was particular concern that patients' health condition could change while waiting and they wanted assurances that they would be moved up on the priority list if their condition deteriorated.

*“Six months is too long to wait if you think about anyone supporting a family. How can they wait that long?”*

*“Millions are waiting for hip replacement...the majority would be pleased with 9 months.”*

— Focus group participants

### Cancer care

Of the 5 priority areas, cancer is one of the most complex due to the range of multiple diagnostic and staging tests and various treatment modalities involving many points of access and wait times for patients.<sup>13</sup> However, for the purposes of this project, it was decided to focus on radiation oncology as access to this treatment is seen by many as the greatest concern.

Little evidence currently exists on wait times for radiation oncology and their impact on patient outcomes. Accordingly, the Canadian Association of Radiation Oncologists used a consensus approach among its members, based on the principle that wait times for radiation oncology should be “as short as reasonably achievable” (ASARA). Other sources of information were considered including international practice and patients’ psychological trauma in waiting for treatment. The benchmarks presented below were originally developed in the early 1990s and were subsequently reviewed and endorsed in 2002.

**Table 5: Summary of wait-time benchmarks for joint replacement**

Procedure	Emergency cases	Scheduled cases		
		Priority 1	Priority 2	Priority 3
Hip and knee replacement surgery	Immediate to 24 h	Within 30 days	Within 90 days	Consultation: within 3 months  Treatment: within 6 months of consultation

**Table 6: Summary of wait-time benchmarks for radiation therapy**

Procedure	Emergency cases	Urgent cases	Scheduled cases
Radiation therapy	Immediate to 24 h	Based on individual need	Consultation: within 10 working days  Treatment: within 10 working days of consultation

The wait-time benchmarks for radiation oncology are as follows:

- Emergency cases should receive radiation therapy on the day of diagnosis. Urgent cases should receive therapy on the basis of individual need.
- Scheduled cases involve 2 components: consultation and radiation therapy.

Consultation relates to the interval between the date of the initial referral for radiation oncology and the date of the radiation oncology consultation. The wait time shall not exceed 10 working days.

- The wait time for radiation therapy is the interval between the radiation therapy requisition date (which takes into consideration the health status of the patient, e.g., healing from surgery, and readiness to receive radiation therapy) or consultation date, whichever is later, and the first day of therapy. The wait time for therapy shall not exceed 10 working days.

The combined wait-time benchmark for consultation and treatment is therefore 20 working days (Table 6).

- For multimodality treatments (e.g., radiation plus chemotherapy), the wait time for radiation therapy is the interval between the target radiation therapy start date and the first day of therapy.

The cancer care benchmarks were well received by patients and members of the public in our focus group discussions — they were described as very reasonable and reflected the level of urgency involved.

### Sight restoration

The Canadian Ophthalmological Society (COS) chose to

focus on wait times for cataract surgery, as this affects the greatest number of patients waiting for sight restoration surgery.

An ophthalmology working group under the COS examined available literature and evi-

dence on wait-time benchmarks, including the work of the WCWLP.<sup>10</sup> The committee recognized that there are no empiric data in the literature that define an optimum wait time, but that there are data showing significant morbidity among those waiting (increased risks of falls and hip fractures, higher risks of motor vehicle accidents while on cataract waiting lists).

The working group reached a consensus that a wait time of no more than 16 weeks is appropriate for routine cataract surgery, with a reduction in this period proportional to the relative degree of priority (Table 7). Ideally 90% of surgeries would be done within this benchmark time. This benchmark is in line with the estimated maximum wait time for cataract surgery used by the WCWLP and the ICES. It does not include the time the patient had to wait between referral by the primary care physician or optometrist and appointment with an ophthalmologist.

This wait-time benchmark is also consistent with previous Canadian physician surveys about what would be a reasonable wait time and is only slightly longer than acceptable wait times obtained from patient surveys. There was strong support for this benchmark among the public and patient focus groups, with many feeling it was a major improvement over current access conditions.

*“This is better than it is right now!”*

— Focus group participant

The COS notes that there are significant wait-times for other types of serious vision treatment, such as age-related macular degeneration (AMD) — the leading cause of severe and irreversible vision loss in patients over the age of 50 years in many western countries — and pediatric ophthalmology services.

### Cardiac care

Over the past several months, the Canadian Cardiovascular Society (CCS) and its members have been working diligently to develop wait-time benchmarks for cardiac care. The CCS Access to Care Working Group established 7 subgroups to develop wait-time benchmarks and urgency categories for the full continuum of cardiovascular services and procedures consistent with the patient’s overall experience (individual subgroup reports will be made available on the CCS Web site at [www.ccs.ca](http://www.ccs.ca)).

Although cardiac surgery has received much attention over the past 10 years or so, many cardiac indications do not require surgery, but do require other diagnostic and therapeutic procedures. The focus on cardiac surgery, although extremely important, must be expanded to include these other procedures. Comprehensive benchmarks are included in this report to ensure that every access point on the continuum has a wait-time benchmark, from consultation and diagnosis to therapeutic procedures and rehabilitation. The procedures covered in this report include cardiac catheterization, nuclear imaging, electrophysiology studies, percutaneous coronary interventions (PCI), coronary artery bypass graft (CABG) surgery, valve surgery, implantation of pacemakers and implantable car-

dioverter defibrillators (ICDs) and percutaneous ablations.

To the degree possible, each of the subgroups used the following method:

- Identified and recruited appropriate specialists to participate in the subgroup, ensuring representation from the affected medical subspecialties and respecting Canada’s geography
- Conducted a literature review on wait times and access to care
- Conducted a review (if relevant) of existing clinical practice guidelines and wait time and access to care standards
- Surveyed Canadian centres regarding current wait times
- Developed and documented a consensus opinion on appropriate wait times
- Established a secondary review panel (typically a Canadian stakeholder association) to provide additional input on the proposed pan-Canadian wait times.

Where little relevant literature was available, the subgroups ensured that the consensus-building process involved a broad and comprehensive stakeholder group; 49 physicians and health care experts participated as working members within the subgroups to build an initial consensus on wait-time benchmarks. Each subgroup developed a draft report documenting its research, analysis, consensus process and proposed wait-time benchmarks. The subgroups’ draft reports were provided to 6 national societies and associations and individual specialists for a secondary review. An overview of the cardiac benchmarks by urgency category is provided below (Table 8).

In summary, the CCS has developed a consensus that no person should have to wait longer than:

- 6 weeks for an initial consultation with a cardiologist
- 2 weeks for diagnostic cardiac nuclear imaging
- 6 weeks for diagnostic catheterization (when the condition is stable), PCI for stable conditions, CABG surgery for non-emergent cases, valvular cardiac surgery, pacemaker implant or heart failure services
- 12 weeks for referral to an electrophysiologist, electrophysiologic testing or catheter ablation
- 30 days to begin cardiac rehabilitation.

The CCS notes that adhering to these wait-time

**Table 7: Summary of wait-time benchmarks for cataract surgery**

Procedure	Emergency cases	Urgent cases	Scheduled cases
Cataract surgery	Not applicable	Cases are expedited proportional to relative degree of priority	Within 16 weeks of consultation

benchmarks is currently not possible because of the current shortage of physicians, nurses and technologists in many subspecialties (e.g., heart failure, interventional cardiology, electrophysiology, echocardiography) in Canada.

## How do the proposed wait-time benchmarks relate to the current situation regarding wait times?

A frequent question that the WTA members heard following the release of their interim report is how the proposed benchmarks compare to the current situation in Canada. This question was also frequently raised in the cross-country focus groups. The

majority of patients and the public stated that they believed the actual wait times were longer than the proposed wait-time benchmarks.

Determining whether the benchmarks are currently being met is difficult for two important reasons. First, few data on wait times have been collected systematically and consistently, particularly at the provincial level, to allow for interprovincial comparison. Many provinces did not provide wait-time data for the 2004 series of provincial and federal reports on comparable health and health system performance indicators.<sup>14</sup> Second, a high degree of variation in wait times exists within provinces and territories, making it difficult to make provincial comparisons.

**Table 8: Proposed upper limit for wait-time benchmarks for cardiovascular services and procedures by urgency category**

Procedure/service	Upper limit of wait-time benchmark			
	Emergent	Urgent	Semi-urgent	Non-urgent
Initial specialist consultation	Immediate to 24 h	7 days	4 weeks	6 weeks
Cardiac nuclear imaging	1 working day	3 working days	N/A	2 weeks
Diagnostic catheterization				
After STEMI	Immediate to 24 h	3 days	7 days	N/A
After NSTEMI	Immediate to 48 h	3 days	7 days	N/A
Stable angina	N/A	N/A	N/A	6 weeks
Stable valvular heart disease	N/A	N/A	14 days	6 weeks
Percutaneous coronary intervention (PCI)				
After STEMI	Immediate	Immediate	Immediate	N/A
After NSTEMI	Immediate	Immediate	Immediate	N/A
Stable angina	N/A	7 days	4 weeks	6 weeks
Coronary artery bypass graft surgery (CABG)				
After STEMI	Immediate to 24 h	7 days	14 days	N/A
After NSTEMI	Immediate to 48 h	14 days	14 days	6 weeks
Valvular cardiac surgery	Immediate to 24 h	14 days	N/A	6 weeks
Heart failure services	Immediate to 24 h	14 days	4 weeks	6 weeks
Electrophysiology				
Referral to electrophysiologist	N/A	30 days	N/A	3 months
Pacemaker	Immediate to 3 days	14 days	30 days	6 weeks
EP testing and catheter ablation	N/A	14 days	N/A	3 months
ICD	Immediate to 3 days	N/A	8 weeks	N/A
Cardiac rehabilitation	Immediate*	7 days	N/A	30 days

Note: STEMI = ST segment elevation myocardial infarction; NSTEMI = non-ST segment elevation acute coronary syndrome; EP = electrophysiologic; ICD = implantable cardioverter defibrillator.

\* Some patients are identified by the family or referring physician as being extremely depressed and possibly suicidal. Such patients should be managed by emergency or acute care psychiatry.

A recent report released by ICES<sup>5</sup> provides us with some insight into regional variations regarding wait times for some of the priority areas within the province of Ontario. Table 9 shows the percentage of patients in Ontario receiving treatment within the recommended maximum wait times for cataract surgery (within 4 months) and total joint replacement (within 6 months). The table also provides results for the best-performing health region in the province and the worst-performing region. As one can see, just over half the population received cataract surgery and hip replacement surgery within the WTA benchmark, whereas only 40% of patients received knee replacement within the WTA benchmark. As well, wait times vary among regions, thereby limiting the benefits of relying on provincial averages. For example, 71% of hip replacements were done within 6 months in the best-performing region compared with only 34% in the worst-performing region.

The members of the WTA also report wide variation in access and wait times for their patients across the country. For instance, in Saskatchewan and Prince Edward Island, less than 25% of patients receive cataract surgery within 16 weeks, and waiting times among surgeons can vary from only a few weeks to as long as 18 months. According to the CANM, non-urgent wait times in many jurisdictions greatly exceed the benchmarks, and it would seem that the majority of patients are either waiting for excessive and detrimental times or are seeking alternative services or diagnostic pathways.

If the objective is for most patients to receive treatment within the set wait-time benchmarks, then clearly much work lies ahead. Furthermore, given that it is unlikely that any system will be able to treat 100% of patients within agreed upon benchmarkers on a consistent basis, what level of performance will be acceptable? Will meeting the benchmarks in 70% of cases be acceptable in a post-Chaoulli context?

### The need for wait-time benchmarks for other health care interventions

The WTA members believe that raising the issue of reducing wait times in the 5 priority areas will serve as a “rising tide to lift all boats” by bringing attention to the

notion that lengthy wait times for any type of essential care are unacceptable. Although the WTA naturally focused on the 5 priority health areas identified by the first ministers, its members recognize the need to establish wait-time benchmarks for other health care interventions as well. For example, as has been documented by the Standing Senate Committee on Social Affairs, Science and Technology (Kirby Committee),<sup>15</sup> Canadians in many parts of the country face significant access problems to mental health services. The need to establish wait-time benchmarks for access to mental health services was also a serious concern raised at the 16 June stakeholder workshop. Some work in this area is currently being carried out by a coalition of mental health professional groups.

Another type of care used by many Canadians and one that can significantly affect wait times for the 5 priority areas is care in the hospital emergency department. Long waits in emergency departments are a common complaint of Canadians about their health care system and was an issue raised frequently by participants in the cross-country focus group sessions. A considerable portion of a hospital’s operating time is used for emergency entry patients, and this affects wait times for scheduled surgeries.

In addition, many hospital beds are occupied by “alternate level of care” patients blocking admissions from the emergency department and, in the end, this overflow of inpatients has resulted in cancelled surgery. Moreover, when a patient waits too long for care in the emergency department, his or her condition may deteriorate. The Canadian Association of Emergency Physicians (CAEP) has identified acceptable wait times; their Canadian Triage and Acuity Scale (CTAS) is currently used in 80% of Canada’s emergency departments (see Appendix C).

**Table 9: Proportion of Ontario patients receiving procedures within the recommended maximum wait-time benchmark (RMWT) 2003–04<sup>5</sup>**

	Cataract surgery (RMWT < 4 months); %	Total joint replacement (RMWT < 6 months); %	
		Hip	Knee
Ontario average	51	53	40
Best region	65	71	50
Worst region	37	34	24

# 5. Implementation issues

The WTA asked respondents for their views on issues that need to be addressed to meet the proposed wait-time benchmarks and ultimately improve access to care for patients. The implementation issues come in the form of supply-side and demand-side impediments, both of which contribute to lengthy wait times and the extent of which can vary by region.

Supply-side barriers include insufficient supply of health human resources, a lack of infrastructure and poor system coordination. Demand-side issues include illness prevention, the need for appropriateness guidelines and managing expectations.

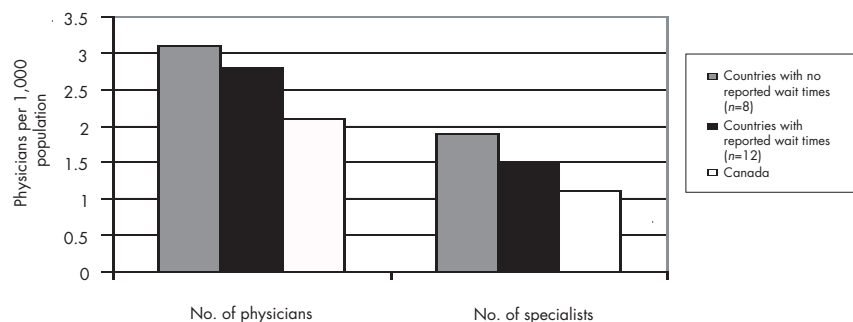
A final implementation issue is the lack of data on wait times, which results in poor understanding of the extent of the problem and difficulty in monitoring the solutions we want to implement.

## Supply-side issues

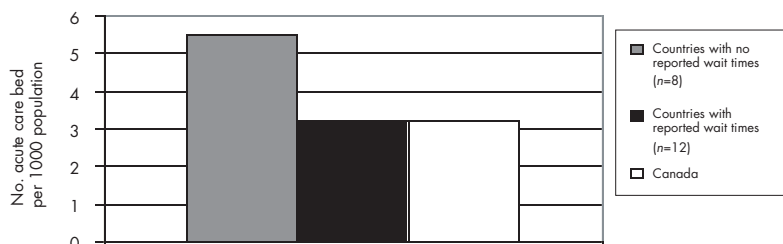
*“Until we have more doctors, operating rooms, machines and people to run them, how can they do this?”*

— Focus group participant

**Figure 3: Wait times and physician resources (2000)<sup>16</sup>**



**Figure 4: Wait times and number of acute care beds (2000)<sup>16</sup>**



Access means nothing without availability of adequate human and physical resources. The results from the consultation process are clear — although there is overwhelming support for the establishment of wait-time benchmarks, the public remains skeptical about the system’s ability to deliver on the performance goals or benchmarks unless resources are strategically increased. The WTA is concerned that without additional resources — in the right places for the right reasons — efforts to reduce wait times in the 5 priority areas could lead to decreased access to other types of care.

A 2003 study by the OECD<sup>16</sup> found that there is a clear negative association between “wait” times and system capacity among countries, either measured in terms of the number of beds or the number of practising physicians. In a comparison between OECD countries that do and do not report significant wait times, the study found that a higher supply of acute care beds plays a key role in explaining shorter wait times. Further, among countries that do report significant wait times, the availability of physicians explains most variations in wait times.

As seen in Figures 3 and 4, a review of Canada’s situation appears to support the link between relatively low capacity and higher wait times. In addition to having a relatively low number of physicians and acute care beds, Canada also has one of the highest occupancy rates of acute care beds among OECD countries (Figure 5). Taken together, these indicators strongly suggest that building capacity is a key challenge to implementing any set of performance goals to reduce wait times in Canada.

These supply issues are especially pronounced in rural and northern areas across the provinces and territories as well as parts of Atlantic Canada. Specific supply issues are discussed below.

## Health human resources

*“Without sufficient providers of care working together, all other health reform efforts will flounder.”*

— Michael Decker, Chair of the Health Council of Canada<sup>17</sup>

The implementation challenge that was most frequently identified in the consultation process is the shortage in health human resources (HHR). Shortages are difficult to quantify and they vary from region to region. However, shortages of specialists, family physicians (to refer and manage patients while waiting) and nurses are directly affecting wait times in all 5 priority areas. For example, the ratio of practising diagnostic radiologists in Canada per 100,000 population has not changed over the last decade, although the volume of work has increased significantly.<sup>18</sup> Likewise, there has historically been a serious shortage of certified nuclear medicine physicians to meet the demand<sup>19</sup> and the number of ophthalmologists in Canada is expected to decrease by half over the next 20 years. In many cases, the technology and equipment are available, but not the staff.

In its summary report on cardiovascular benchmarks, the CCS highlighted the need for additional health human resources: “We are already experiencing a shortage of needed health care professions, which is causing bottlenecks and unacceptably long wait times for care. We desperately need trained professionals to help clear the backlog and to ensure that the wait lists do not climb again after they have been reduced to an acceptable level.” The CCS further notes that the shortage of HHR results in a lower utilization rate, one that is well below the appropriate rate based on current evidence, which means that many patients who require care are not receiving it.

The WTA also acknowledges the role that other medical specialists play in any effort to reduce wait times. We heard frequently about the shortages of anesthesiologists and how this hinders access to surgery. Similarly, given the scope and complexity of cancer services, it is essential to monitor other relevant specialties, including general surgery, pathology and medical oncology, for their impact on wait times related to cancer-related services.\*

The WTA recognizes that family physicians and general practitioners have a central role to play in any strategy to reduce wait times for medical care. As the first point of contact for most patients, they work to ensure that patients requiring more highly specialized care receive it in an appropriate and timely manner. But another angle to this story is the role of the family physician in providing continuing care, particularly while the patient is waiting to receive specialty care (both consultation and treatment if necessary). For family physicians, the wait for specialist and specialty consultation means that they must provide more complex care for their patients during the wait.<sup>4</sup> Consequently, there must be a strong, effective relationship between the family physician and the specialist to provide the necessary high-

quality care to the patient. Although the main focus of this report is wait times in the 5 priority areas, the WTA recognizes that family physicians and general practitioners are a very important part of the solution. Strategies aimed at increasing the supply of family physicians will, in turn, contribute to alleviating wait time problems (see *Family Medicine in Canada: Vision for the Future*, chapter 44 for a discussion of strategies to ensure a sustainable supply of family physicians).

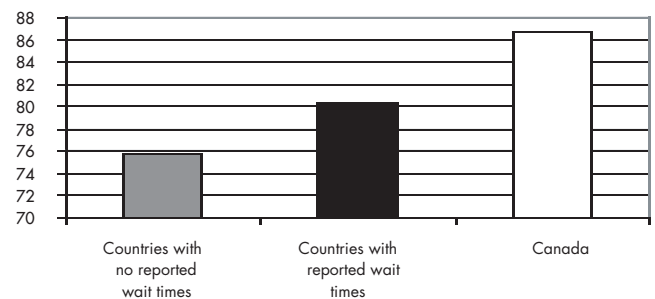
### Infrastructure issues

The lack of infrastructure (equipment and technological devices) and aging of existing infrastructure were also cited frequently as a major impediment to implementing the WTA wait-time benchmarks. However, many respondents noted that these infrastructure problems are closely tied to the HHR challenge. For example, limited operating room time — an infrastructure issue — was identified often, but was seen as reflecting funding and HHR problems (i.e., limited to 8 am to 3:30 pm schedule most of the time due to staffing issues). Reductions in operating room time are also used to control hospital costs, enabling administrators to meet their budgets.

The lack of an adequate equipment base in nuclear medicine is regarded as the biggest factor contributing to wait times for this form of diagnostic imaging. Canada’s supply of nuclear medicine facilities varies considerably across the country with very few available in Atlantic Canada. The lack of availability of FDG and PET services is also seen as a major contributor to the opening of private, patient-pay facilities that try to make up for the shortfall in the publicly funded system.

FDG-PET is a new technology in nuclear medicine that is available in most industrialized countries for the assessment of tumours. However, the positron-emitting radiopharmaceutical most frequently used in cancer imaging has not yet been approved in Canada. Other hurdles

Figure 5: Wait times and % of acute care beds occupied (2003)



Source: OECD health data, 2005.

\*The Saskatchewan Surgical Care Network, an advisory committee to Saskatchewan Health, has established target time frames for surgical care: a target of performing 95% of cancer and suspected cancer surgeries within 3 weeks.



to overcome with this technology include high costs required for university centres to ensure an adequate supply of FDG and the short half-life of the product (109 minutes), requiring it to be produced in facilities near the imaging site.

### **System management and coordination issues**

Better system management and coordination of existing resources were also identified by patients and health care stakeholders as a means to improve timely access. In fact, most provinces and health regions will find the WTA's proposed benchmarks challenging unless they take the following steps: proper integration of local, regional and provincial care; the integration of providers at primary, secondary and tertiary/quaternary levels; and innovative models of care that allow integrated multidisciplinary triage and care to occur.

Proper stewardship of wait times requires recognition of its importance and dedicated resources to implement, for example, central or regional booking services supported by adequate IT systems. It has been estimated that providing dedicated management to wait-time queues alone can reduce wait times by 20% (Peter Glynn, Wait Time Alliance Workshop, Ottawa; 16 June 2005). If the queues are not managed appropriately, patient confidence will erode quickly — something Canada's ailing health care system can ill afford.

System management of wait times requires coordination of the 5 priority areas with other types of care. For example, as mentioned earlier, emergency departments are a major source of patients entering the system for specialized care and resources (e.g., beds, tests). Effective management of wait times must, therefore, include protection from the variations inherent in the emergency room workload and separate capacity calculations based on anticipated volume.<sup>20</sup>

The availability of and coordination with continuing care services can also significantly affect wait times. Without proper community supports, patients cannot be discharged from hospital thereby making room for additional surgeries. A lack of community supports can also reduce outpatient procedures if the patient cannot be cared for at home. At the same time, the availability of continuing and community care services can help patients manage their condition while waiting for specialty care.

### **Demand-side issues**

Demand-side issues are equally important when it comes to reducing lengthy wait times, beginning with the need to prevent illness and disease. This includes primary and secondary prevention through the proper management of chronic illnesses and conditions, such as diabetes, and the

demand that they can put on the 5 priority areas. Physicians can and already do play a meaningful role in mitigating the demand for specialized care by counseling patients on illness and injury prevention as well as healthy living practices.

*“More needs to be done to promote healthy living”*

— Focus group participant

### **Managing expectations**

Managing expectations is a factor in any wait-time strategy. There is a need for patient education to foster realistic views of how priorities are set and what is a medically reasonable time to wait for treatment, particularly for non-urgent cases.

Although the vast majority of people in the focus groups supported the proposed wait-time benchmarks, they did not understand how patients would be managed while waiting for care. As previously mentioned, this uncertainty bothers most people.<sup>21</sup> There was particular concern over the system's ability to prioritize patients properly according to urgency and adjust to any changes in the waiting patient's condition (e.g., would a patient's urgency status increase if his or her health deteriorated and, if so, would their wait time start over in the new category). Patients want to be kept informed of their wait time status. They also want assurances from their physician that waiting for care will not lead to irreversible harm. If they get “bumped,” they want adequate notification, a sound explanation as to why it is happening and a new date for their procedure.

*“I would always think my case is an emergency — I'm worried. You would have to reassure me about semi-urgent or routine.”*

*“I would want to know the risk of waiting. Is it safe to wait?”*

— Focus group participants

Fair, equitable and transparent prioritizing tools — ones that earn the respect and trust of physicians and patients alike — will be required. The pooling of waiting lists to reflect the practices of all physicians will require a change in expectations for both practitioners and patients. It may require physicians to share patient rosters, so that the most urgent patients can be seen by the next available provider. Patients must understand that this will mean they may be treated by another specialist in the pool. They may still choose to have their own specialist perform the procedure, but may have to accept a longer wait. Further research on patient preferences including provider choice is warranted.

## Appropriate use guidelines

Appropriateness guidelines are seen as another element required for implementing wait-time benchmarks successfully. Guidelines are systematically designed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances.<sup>22</sup>

There is no dispute that the application of an appropriateness screen would reduce demand for some health care services. The CAR estimates that approximately 10% of requests for scans do not meet the appropriateness criteria (see Exhibit C). A 10% reduction in the number of tests in Canada would free up 225 radiologists and result in a decrease in health care costs of about \$550 million, a figure that is equivalent to the workload of 125 hospitals or that of the 4 Atlantic provinces combined. This newly available capacity would most likely assist in clearing the backlog of examinations and provide a successful means for reducing wait times, particularly as the demand for scans increases as discussed previously.

In an environment where the volume of information is growing exponentially, it is difficult for each individual

practitioner to maintain current knowledge of appropriateness information. However, the incorporation of decision support tools and care pathways into hospital and facility information systems could assist physicians and other practitioners in making appropriate decisions on utilization. These guidelines, then, need to be monitored and enforced. Working in consultation with other health care providers, including CANM, the CAR has produced comprehensive appropriateness guidelines for diagnostic imaging for physicians, intended to address the issue as it applies to radiology and nuclear medicine.<sup>23</sup>

## Lack of wait-time related data

Most respondents agreed that timely, accurate wait-time related data is a key factor in managing wait times. IT systems must be established not only to capture the necessary data effectively, but also to facilitate its analysis and reporting.

A key challenge will be to ensure that data on utilization and wait times are maintained for both private and public

## Exhibit C

Why are appropriateness guidelines needed?

The case for diagnostic imaging<sup>23</sup>

A useful investigation is one in which the result — positive or negative — will alter clinical management and/or add confidence to the physician's diagnosis. A significant number of radiological investigations do not fulfill these aims and may add unnecessarily to patient irradiation. The chief causes of the wasteful use of radiology are:

1. Repeating investigations which have already been done: e.g., at another hospital, in an outpatient facility, or in other departments. **HAS IT BEEN DONE ALREADY?** Every attempt should be made to get previous films and reports. Transfer of digital data through electronic links such as PACS/RIS (Picture Archiving and Communication systems) will assist in this respect.
2. Investigation when results are unlikely to affect patient management: because the anticipated "positive" finding is usually irrelevant, e.g., degenerative spinal disease (as "normal" as grey hairs from early middle age) or because a positive finding is so unlikely. **DO I NEED IT?**
3. Investigating too early: i.e., before the disease could have progressed or resolved or before the results could influence treatment. **DO I NEED IT NOW?**
4. Doing the wrong investigation. Imaging techniques are developing rapidly. It is often helpful to discuss an investigation with a specialist in clinical radiology or nuclear medicine before it is requested. **IS THIS THE BEST INVESTIGATION?**
5. Failing to provide appropriate clinical information and questions that the imaging investigation should answer. Deficiencies here may lead to the wrong technique being used (e.g., the omission of an essential view). **HAVE I EXPLAINED THE PROBLEM?**
6. Over-investigating. Some physicians tend to rely on investigations more than others. Some patients take comfort in being investigated. **ARE TOO MANY INVESTIGATIONS BEING PERFORMED?**

facilities. This is certainly an issue in terms of estimating the number of nuclear medicine cameras in Ontario, where most are in independent health facilities that are currently not included in CIHI data. The absence of this data from independent health facilities results in difficulties in interpretation. All facilities that receive public funding should be obligated to provide information regarding wait times and resource information such as staffing, equipment type, numbers and age as a condition of operation.

A serious concern raised by some health care providers is that the focus on the 5 priority areas will lead to increases in wait times for other types of care. Effective data systems are, therefore, crucial to ensure that access to health care services beyond the 5 areas does not become more difficult. Wait times for all health care services must be monitored and reported by provincial and territorial governments and by the Health Council of Canada to ensure that this is not occurring.

*The wait-time management process requires dedicated resources and finances to implement, monitor and facilitate the plan. Once established, there has to be continued support provided on an ongoing basis to ensure that the process is working as planned and established.*

— Respondent to WTA feedback questionnaire

## **Ramifications of not meeting the benchmarks**

Related to the implementation of wait-time benchmarks is the issue of what action should be taken (if any) if the wait-time benchmarks are not met. Should they be used as a carrot or a stick? This was a common question in response to the WTA interim report, and it requires a 2-part answer.

First, difficulties in meeting the wait-time benchmarks can be caused by several factors (not only a poorly man-

aged system, which the use of penalties would suggest), including a shortage of specialists, a shortage of hospital resources and high demand due to high morbidity levels. These problems cannot be remedied overnight.

Second, the WTA believes the benchmarks should be viewed as goals rather than standards. Targets can be set to help reach the goals or benchmarks (e.g., 80% of patients should be treated within the benchmark by 2007). As such, we do not believe that attention should be paid to addressing failure to meet the benchmarks, but rather to taking the necessary action to meet benchmark targets. Because adherence to benchmarks will vary not only among provinces but also among regions within provinces, we do not believe that a punitive mechanism — whether federal, provincial or regional — should be pursued. A better alternative would be to realign or create new incentives (e.g., activity-based funding) that will drive the system toward better performance. Increased transparency and accountability at the local, regional, provincial and national levels will also be key ingredients in improving performance.

Finally, the Supreme Court decision on Chaoulli/Zeliotis underscores the importance of ensuring that Canadians have access to necessary care within reasonable wait times. Governments, working with health care providers, have an absolute obligation to help patients obtain access to care in a timely way, even if they must travel to receive such care. To address such situations, the WTA supports the establishment of a new Canada Health Access Fund to assist provinces in further developing and supporting a network of regional registries and referral centres that could take out-of-province or territory referrals. The fund would also be used to support patients and their families financially to seek pre-authorized treatment out-of-province or territory or out-of-country (see recommendation 3 for more information). Effective monitoring systems will be required to assist physicians in finding the closest available resources.

# 6. Strategies to improve timely access to care

The need to reduce lengthy wait times should not be seen as a “government problem” only. Canada’s health system is a shared enterprise and reducing wait times requires a contribution from all stakeholders. Accordingly, the WTA has developed both a Wait-Time Code and a 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times. Both of these are highly dependent on partnerships among all stakeholders.

## The wait-time code

A renewed commitment to partnership among governments, health care providers and Canadian citizens is urgently needed to improve timely access to care. The 1964 Royal Commission on Health Care (Hall Commission) proposed the creation of a Canadian health charter based on the recognition that all partners have a balanced role in supporting the system.<sup>24</sup>

In recent years, the concept of a health charter has re-emerged in several formats (e.g., Canadian Medical Association’s Canadian health charter, the Romanow Commission’s health covenant). This has occurred in part due to declining public confidence in the system, but also in response to better focusing on the perspective of the patient and the desire to promote a culture of service standards and performance measurement within health care systems.<sup>24</sup>

The WTA believes the concept of a charter or code that balances the rights and responsibilities of all key players in the health system is very applicable to the wait-times issue. Accordingly, a Wait Time Code has been developed that identifies how each stakeholder should benefit from the adoption of wait-time benchmarks or performance goals and their responsibilities for successfully implementing them. (See Table 10)

For the purposes of the code, “rights” refer to the benefits each stakeholder can expect to receive from the adoption of the benchmarks or performance goals. “Responsibilities” refer to actions that need to be taken by each stakeholder to make them work. For example, patients should have the right to expect timely access to quality care, but, at the same time, they must accept prioritization tools and queuing for care based on need. Providers should

expect to receive the resources they need to provide timely care to their patients. At the same time, they have a responsibility to monitor their patients’ condition while they wait for care, ensuring that a worsening condition will result in faster access.

## The WTA’s 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times

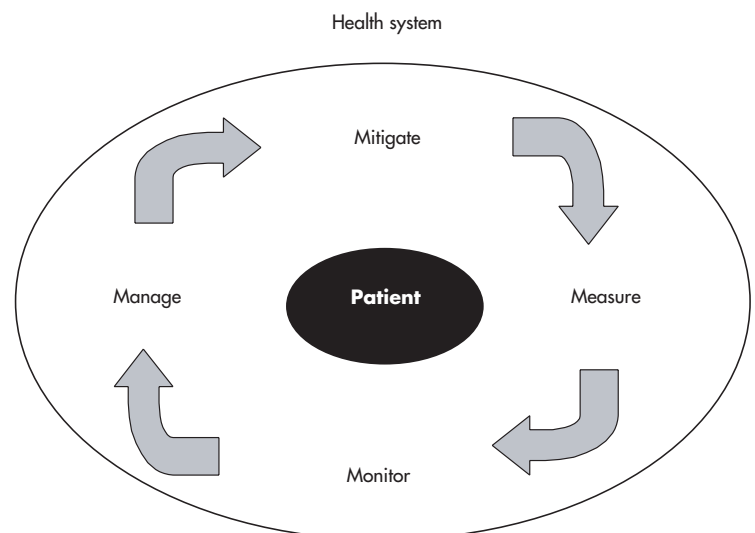
The adoption of wait-time benchmarks will be an important step in reducing wait times and improving access to health services. To be successful, however, the adoption of wait time benchmarks must be part of a broader strategy of measures at the pan-Canadian, provincial and regional levels. The WTA has developed a 4-M Toolbox of strategies (Appendix A) that sets out a menu of initiatives that provincial governments, regional health authorities, health care institutions and practitioners can employ to mitigate, measure, monitor and manage wait times.

As illustrated in the diagram (Figure 6), the 4 main categories of strategies in our 4-M Toolbox operate both at the level of individual patients and the system as a whole:

### Mitigating the need for wait lists

- For patients: Prevention and health promotion reduces the likelihood that they will require specialized services

Figure 6: Illustration of 4-M Toolbox



and improves the likelihood of positive health outcomes if they do.

- For the system: Reduces the overall demand for health services and ensures access to specialized health services is based on relative medical need.

### Measuring wait times

- For patients: Provides knowledge needed to make informed decisions about accessing health care services.
- For the system: Standardized, comparable pan-Canadian data on wait times is the “cornerstone” for assessing system performance in reducing wait times.

### Monitoring wait times

- For patients: Regular monitoring of patients’ condition

while waiting for care reduces anxiety for both patients and their families.

- For the system: Ongoing system monitoring helps to assess progress and assists in calibrating wait-time management strategies.

### Managing wait times

- For patients: Ensures that patients will be able to access the right service, through the right provider, at the right time.
- For the system: Improves productivity of existing resources and increases system capacity to meet defined needs.

As the OCED study<sup>8</sup> on wait times has shown, there is no uniform set of strategies to reduce wait times. Countries that have been successful in reducing wait times have

**Table 10: Wait time code for patients, providers and governments**

	<b>Rights*</b>	<b>Responsibilities</b>
<b>Patients/citizens</b>	<ul style="list-style-type: none"> <li>• Access to timely, quality care</li> <li>• Ability to monitor status of access to system</li> <li>• Recourse to alternatives if public system fails to meet wait-time benchmarks</li> <li>• Choice of health care provider</li> <li>• Security and confidentiality of personal health information</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible use of resources</li> <li>• Acceptance of prioritization tools and queuing based on need</li> <li>• Financial contribution via taxes and cost-sharing</li> </ul>
<b>Providers (professionals, institutions)</b>	<ul style="list-style-type: none"> <li>• Access to resources needed to provide timely care to patients</li> <li>• Consultation/participation in decision-making at all levels</li> <li>• Professional autonomy and clinical independence</li> <li>• Choice in mode of practice</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy on behalf of patients</li> <li>• Prudent management and use of resources, such as centralized booking systems and the development and use of effective prioritization tools</li> <li>• Provision of high-quality, evidence-based care including adherence to clinical practice guidelines where available</li> <li>• Monitoring of patients’ condition while waiting</li> <li>• Collaboration with other disciplines</li> <li>• Reporting on system performance</li> </ul>
<b>Governments</b>	<ul style="list-style-type: none"> <li>• Cooperation of all stakeholders including practitioners in the development and review of wait-time benchmarks</li> <li>• Determination of governance model for overseeing reduction in wait times</li> <li>• Access to information necessary to measure system performance</li> </ul>	<ul style="list-style-type: none"> <li>• Setting of expectations for timeliness and quality of care</li> <li>• Collaborate with health providers and other stakeholders</li> <li>• Provision of adequate, stable funding</li> <li>• Reporting publicly on the performance of the health care system</li> <li>• Respect for the privacy of personal health information</li> </ul>

\*For the purposes of this code, rights are not intended to be legal rights but rather reasonable benefits one should expect to receive. Adapted from *A Prescription for Sustainability*.<sup>24</sup>

found that that the “best buy” is a mixed package of measures to increase capacity, increase productivity and efficiency and manage demand better.<sup>25</sup>

Many of these strategies to reduce wait times are already being put to use in Canada as well as in other countries (see Exhibit D). For example, teaching hospitals and regional health authorities in Canada are:

- Increasing operating room volumes
- Implementing care pathways to improve flow through operating rooms (e.g., for hip and knee replacements)
- Purchasing operating room time from private facilities
- Reviewing productivity of operating room surgeries to ensure resources are being used as effectively and efficiently as possible
- Improving coordination with continuing care partners (e.g., rehabilitation)
- Creating a centralized entry point and standardized regional triage criteria
- Investing in IT systems (e.g., electronic health records, client scheduling software to monitor and track patients as they go through the system).<sup>11</sup>

The WTA recognizes that each province and territory will want to work with appropriate health care professionals to develop their own optimal mix of possible strategies to reduce wait times.

## Exhibit D

What strategies are other countries using to reduce lengthy wait times?

OECD countries that report wait-time problems are using a number of policy levers to address both the supply and demand for services. On the supply side, funding has been increased in a number of ways: to providers with longer waiting lists; to providers who perform extra activity; and to providers conditional on both an increase in activity and a reduction in waiting times (e.g., Spain). Activity-based funding for hospitals and surgeons has also been applied in some countries and is more common among countries that do not report a problem with excessive wait times. Another strategy has been better management of waiting lists and surgical units, for example, by the use of pre-admission screening, better discharge planning and community care to reduce post-operative stays.<sup>8</sup>

In terms of demand-side policies, a few countries have tried to tighten the criteria for eligibility for surgery (e.g., New Zealand) or prioritize cases. Others have increased the use of private insurance (thereby reducing demand on the public side). However increasing reliance on private insurance will not necessarily reduce wait times in the public system if there is a shortage of health care providers.

# 7. Conclusions and recommendations

Canadians have a legitimate expectation that their publicly financed health system will provide timely access to health care based on relative need. Governments are expected to take the necessary steps to fulfill their commitment to reduce wait times. At the same time, other stakeholders — including health care providers and patients — have a responsibility to do their part.

The WTA has identified wait-time benchmarks or performance goals according to the best available medical evidence and clinical consensus and judgment. It has also identified a number of strategies that can be used to improve timely access to care. Other countries, such as the United Kingdom and Spain, have been successful in adopting specific strategies aimed at reducing wait times.

The wait-time issue will remain a serious public policy issue for Canadians for some time to come. In fact, the urgency of improving timely access to care has been underscored by the Chaoulli/Zeliotis decision.

This report provides the basis for governments to accelerate their timetable for adoption of wait-time benchmarks, the setting of targets and the implementation of strategies to meet the targets. Although we acknowledge that a “one size fits all” approach will not work, the WTA recommends the following integrated steps to realize pan-Canadian wait-time benchmarks and improve access to care for patients.

1. To respond to the Chaoulli/Zeliotis decision and the pressing need to demonstrate meaningful reductions in wait times, the WTA calls on federal, provincial and territorial leaders to accelerate the timeline on their wait-time strategy.
  - a) To restore faith in the system, Canadians need to begin to see meaningful reductions in wait times much sooner than was anticipated at the time of the 2004 first ministers’ agreement. As a result, we propose that
    - Federal, provincial and territorial governments respect their commitment to establish wait-time benchmarks in the 5 priority areas by 31 December 2005.
    - Provincial and territorial governments set targets to reduce wait times by 31 March 2006, 21 months ahead of schedule.
  - b) To ensure that national wait-time benchmarks for the 5 priority areas are established by 31 December

2005, the WTA calls on federal, provincial and territorial first ministers to use the benchmarks prepared by the WTA and others to achieve consensus on an overall set of wait-time benchmarks. This process needs to include members from key stakeholder groups, including physicians through their national specialty societies, as well as government representatives.

c) To reduce wait times in a measured and balanced manner, governments should consider the WTA’s 4-M Toolbox of strategies to develop their implementation plans using all available resources from the \$5.5 billion Wait Times Reduction Fund. Governments should use national specialty societies and their provincial counterparts to help identify appropriate wait-time reduction strategies and ensure effective implementation.

2. To address Canada’s number 1 impediment to providing timely access to care, the federal government should establish a 5-year, \$1-billion Health Human Resource Reinvestment Fund. The fund will be used to implement a needs-based, pan-Canadian, integrated HHR plan based on the principle of self-sufficiency for Canada.

Key elements of a pan-Canadian HHR plan to be supported by the fund would include increases in undergraduate education opportunities for health professionals, increases in the availability of postgraduate training positions, accelerated integration of qualified international health workers and the creation of a Canadian coordinating office for HHR, that would coordinate provincial and national initiatives to recruit, retain and repatriate health providers.
3. To improve access to care and provide greater certainty for patients that they will receive care within an acceptable period of time, the federal, provincial and territorial governments should collaborate to establish a new Canada Health Access Fund (\$2 billion over 5 years).

Based on the precedent of the Health Supplementary Insurance Fund created in the 1960s, the Canada Health Access Fund would support provincial and national initiatives to reduce wait times and promote interprovincial and out-of-country portability to maintain wait times within the bounds of

national benchmarks. The federal government would provide \$200 million annually over 5 years. Provinces would be expected to match this investment to share the risk. (A review of current and past federal-provincial joint funding programs should be undertaken to determine a sharing arrangement that provides an appropriate level of support for all provinces and territories.) The fund would be used to:

- Assist provinces to further develop and support a network of regional registries and referral centres to increase economies of scale for the provision of highly specialized, low-volume procedures and
  - Enhance portability of care for patients and their families by reimbursing the cost of out-of-province or out-of-country care when the services are not available in province within the accepted wait-time benchmark (subject to prior approval by the physician normally expected to provide or oversee the care and a medical review panel).
4. To assist in collecting and analysing the necessary data to support strategies to reduce wait times and monitor progress, the following actions are recommended:
    - a) Provincial and territorial ministers of health agree on common data definitions of wait times and urgency measures, and work with the Canadian Institute for Health Information (CIHI) and national specialty societies to develop a pan-Canadian approach to collecting wait-time data that ensure consistent measurement and monitoring of wait times across the country, including for private facilities.
    - b) Canada Health Infoway accelerate investments in information and communication systems (e.g., creating anonymous patient registries that record patient encounters with the system) that will allow for the monitoring of wait times and their comparison with established benchmarks.
    - c) The Health Council of Canada be mandated to serve as an independent evaluator of Canada's progress in reducing wait times in the 5 priority areas and across the health system, with particular attention given to ensuring that progress in reducing wait times in the priority areas does not adversely affect access to other health services.
  5. To build partnerships and ensure a sustained focus on

wait-time reductions, a Canadian Wait-Time Consortium should be established to champion a pan-Canadian wait-time agenda for the next 3 years. The consortium would comprise a wide array of health care stakeholders, including health care provider organizations, health research organizations, patient groups and government representatives (ex officio). Its duties would include periodically reviewing wait-time benchmarks in light of new sources of evidence and suggesting changes if necessary; holding an annual forum (like the Taming of the Queue colloquiums) to review progress on wait times by governments and providers; and serving as a clearinghouse of best practices in wait-times reduction and management for the health care community. The 3-year period would coincide with the 3-year parliamentary review of the effectiveness of Bill C-39 to implement the first ministers' 10-year plan. The consortium's work could be an input into this review.

6. To build knowledge capacity and to support ongoing policy development in wait-time management, the federal government should allocate significant new resources to a comprehensive program of applied research on access and wait-time issues under the auspices of the CIHR or another appropriate agency.

Funding should also be available to ensure that cross-province initiatives, such as the WCWLP, can continue to provide leadership and guidance on wait-time measurement, monitoring and management. The focus of research should include the broader impacts of waiting and the issue of patient-provider choice to understand more about the concerns and expectations of Canadians related to timely access to care.

With the release of this final report, the WTA will focus on monitoring the implementation of wait-time strategies with the support of specialty societies and provincial medical associations. The members of the WTA look forward to continuing to work with the other stakeholders, including patients and governments, to undertake this work and ultimately improve access to care for Canadians.

*“The proof will be in the pudding — after 1 year, see if these times match up with what actually happened.”*

— Focus group participant



---

# Appendix A: 4-M Toolbox of strategies to mitigate, measure, monitor and manage wait times

---

The adoption of wait-time benchmarks will be an important step in reducing wait times and improving access to health services. To be successful, however, the adoption of wait-time benchmarks must be part of a broader strategy of measures at the pan-Canadian, provincial and regional levels. This document sets out a toolbox of strategies that are being used by Canadian jurisdictions and international health communities to mitigate, measure, monitor and manage wait times.

## Mitigating the need for wait lists

The best way to reduce lengthy wait lists for health services is to reduce the likelihood that individuals will *require* health care services through prevention, health promotion, chronic disease management, public-patient education and appropriate use of health services. The following measures are examples of initiatives that can help mitigate the demand for health services within the broader strategy to reduce wait times:

- Implement health promotion and disease prevention strategies that address common risk factors, such as diet, physical activity, smoking, etc.
- Put in place chronic disease management strategies to assist providers in using established treatment protocols.
- Develop, adopt and raise awareness of clinical guidelines that assist providers in making appropriate referral decisions and help prioritize urgency.
- Educate and inform the public and patients about the wait-time service standards in place for health services and what options they have if they experience unreasonably long waits (e.g., patient ombudsman).
- Develop and adopt clinical prioritization tools to facilitate referrals to specialists and ensure that patients needing treatment or surgery are scored consistently.

## Measuring wait times

For patients, measurement and reporting of wait times provide knowledge needed to make informed decisions about access to health care services. Measurement is also the cor-

nerstone of improved performance reporting and public accountability for the system as a whole. Initiatives in this area include the following:

- Develop standardized data definitions of wait times that reflect the patient's journey through the system.
- Ensure that information about wait times for health services is kept up-to-date and is readily available to patients through on-line resources and other communication channels.
- Measure and report on other dimensions of health service accessibility to complement information on wait times.
- Ensure that patient outcomes before and after procedure are measured.
- Agree on common urgency measures within and across procedures.
- Create anonymous disease-specific or system-wide patient registries that record essential data elements on all patient encounters with the system.
- Ensure periodic auditing of patient registries to ensure data quality.

## Monitoring wait times

Once standardized measurement systems are in place, regular monitoring of the patient's condition while waiting for care reduces anxiety for both patients and their families. System-wide monitoring is also critical to assessing progress in reducing wait times and assisting in calibrating wait-time management strategies. Key activities in this regard include:

- Provide easily accessible information to patients on their status while they are waiting for health services.
- Ensure active monitoring of patients' condition by primary care providers while they are waiting.
- Provide for periodic and regular reporting of wait times against benchmarks at national, provincial, regional and facility levels.
- Where wait-time benchmarks do not exist, ensure regular monitoring and reporting of wait times for health services using indicators that capture the statistical distribution of wait times (e.g., by percentile), in addition

to the conventional indicators of mean and median wait times.

- Introduce electronic patient records with cross-system connectivity to ensure accurate tracking of wait times across facilities and providers.
- Include wait-time management practices and policies as 1 of the criteria used in the accreditation of health facilities.
- Devote additional resources to wait-time-related research to generate new knowledge on the impact of wait times on patients and best practices in wait-time management across the full spectrum of health services.

## Managing wait times

In the final analysis, wait times must be managed to ensure that patients will have access to the right service, through the right provider, at the right time. At the system level, this entails a number of strategies to improve the productivity and efficiency of existing resources, as well as increase system capacity to meet defined needs.

Although health care systems are operating at close to full capacity in many areas, there are a number of ways to improve the productivity and efficiency of their use of existing resources, as suggested below:

- Improve management of scheduled surgery through clinical care pathways, including improved pre-admission and admission services, centralized booking systems, increased use of day surgery, optimization of operating room schedule, reduced length of stay, reduced cancellations and patient education.
- Introduce blended or activity-based funding mechanisms for hospital services to facilitate increases in the volume of procedures when required to clear backlogs and ensure that system benchmarks are met.
- Provide financial or non-financial rewards to facilities that reach desired wait-time goals.
- Provide incentives for after-hours use of facilities and providers.
- Pool wait lists across health providers to ensure that waiting times for similar levels of urgency are reasonably consistent across the system.
- Co-locate and better integrate clusters of services needed for diagnosis and treatment to streamline the patient journey and increase overall efficiency.
- Create regional centres of excellence to increase economies of scale for the provision of highly specialized, low-volume procedures.
- Invest in telemedicine and telehealth technologies that

enable distance consultations with specialists and the electronic transfer of medical imaging.

- Ensure mechanisms are in place to transfer patients across institutions, out-of-region, out-of-province and out-of-country to deal with fluctuations in system capacity; also provide appropriate travel assistance for patients and family.

In some areas of the health system, it may be impossible to meet wait-time benchmarks without expanding health system capacity. Initiatives that fall under this category include:

- Develop a pan-Canadian health human resources plan to ensure effective long-term planning of health human resource needs based on the principle of self-sufficiency.
- Increase the availability of postgraduate training positions for medical specialties that are in a long-term shortage situation that cannot be corrected by short-term measures.
- Increase the number and availability of family physicians and other primary care providers to ensure that patients who may need specialized treatment do not experience undue delays in getting medical attention, diagnostic investigations or specialist referral.
- Increase the output of nursing schools and technical programs to ensure adequate staffing of operating rooms and diagnostic facilities.
- Facilitate the appropriate use of physician extenders or delegate procedures to technologists or nursing staff by eliminating remuneration barriers.
- Expand the number of operating rooms or increase their hours of availability in acute care facilities to achieve the desired volume of elective surgical activity.
- Build surge capacity in hospitals to accommodate fluctuations in emergency department admissions.
- Create ambulatory treatment centres to increase the volume of short-stay procedures in targeted areas.
- Expand the availability of medical and diagnostic equipment to achieve the desired volume of activity.
- Where necessary, and as a stop-gap measure only, purchase additional capacity abroad through negotiated agreements with out-of-province or out-of-country providers.
- Ensure that adequate downstream capacity is in place to address the expected volume of post-procedural hospital care, rehabilitation and home care patients.
- Deinstitutionalize the delivery of non-invasive diagnostic procedures (e.g., stress, echo and nuclear tests).

---

# Appendix B: Reports from the specialty societies

## Canadian Association of Radiologists

---

### Introduction

In the 2004 Health Accord, First Ministers committed to achieving meaningful reductions in wait times in 5 key areas; Cancer treatment, heart surgery, diagnostic imaging, joint replacement and sight restoration.

Diagnostic Imaging plays a key role in 4 of the 5 key areas, since imaging studies are needed in both pre and post treatment in the case of heart surgery, hip and knee replacement and cancer. Their wait list capacity depends on the ability of diagnostic radiology to provide services to them. Patients are also not willing to endure lengthy waits for access to the diagnostic imaging studies their physicians need in order to make a diagnosis and determine a course of treatment for them.

Diagnostic imaging is part of the flow of information that is needed to restore a patient back to a state of health. It is the front gate through which these patients must enter before they can access the rest of the healthcare system.

The Canadian Association of Radiologists (CAR) has initiated and participated in many studies of wait times for diagnostic imaging procedures in Canada. All of the studies have identified major access problems for imagery tests and more specifically for CT, MRI, BMD and U/S.

Unlike other diagnostic imaging exams CT has the ability to image a combination of soft tissue, bone and vessels. CT is especially useful in searching for lesions, tumors and metastasis and does not only reveal the site but also the size, spatial location and extent of a tumor. CT has become the initial approach for evaluation or detection of many cancers and heart diseases. Therefore in the context of the 5 in 5 plan of the Government CT is really a priority.

The application of MRI for stroke investigation and Magnetic Resonance Angiography (MRA) for evaluating intra-cranial aneurism and vascular occlusion disease make this modality a tool of choice in the management of such cases. Also MRI's are used to scan areas such as joints and the brain for a wide range of conditions. This is very significant in the area of orthopedic surgery especially for hip and knee replacement. Thus making this modality a priority for access.

Since the Health Accord is specifically targeting wait

lists for CT and MRI as first priorities, the expert panel has decided to limit their comments on those two modalities.

Ultrasound is well established and used in many fields of medicine. Common applications include the diagnosis of gallstones, tumors of the liver or kidney and the sex, position and size of babies in the uterus. The advent of 4D imaging is in US now allows clinics to see fetal motion, behavior and surface anatomy which will make US a key diagnostic tool and if present access problems are not advanced another crisis may be looming.

The same goes for BMD. Bone fracture is a common health problem amongst older women and a major cause of morbidity, disability and reduced quality of life.

Osteoporosis predisposes women to bone fracture, with hip fracture a particular concern. BMD exam helps prevent fractures and complications resulting from them thus saving significant cost to the healthcare system. The wait list problem is therefore of significant importance and should be targeted as soon as possible.

### Methodology

For each modality we have retrieved literature using a defined search strategy. On the Dialog System, the Medline, Embase, Inspec, Biosis Previews and Pascal Databases a cross-search using the duplicate removal feature was performed. The search strategy included descriptor and key words for CT and MRI in the cardiovascular thoracic and neurological areas.

The Committee used recently developed CAR Guidelines for imaging and a search was made of the following for guidelines related to appropriate use:

1. CMA infobase clinical practice guidelines
2. American College of Radiology (ACR) appropriateness criteria
3. The Royal College of Radiologists guidelines

In addition, the Committee used the recent work of provincial committees and reports on the same subject:

1. Alberta Diagnostic Imaging Advisory Committee Report

2. Nova Scotia wait time Diagnostic Imaging Committee Report
3. The Ontario CT / MRI Wait List Expert Committee Report

The following principles were adopted regarding waiting, the benchmarks for diagnostic tests:

- They are based upon the speed with which the information is regarded to plan or execute therapy and thus must be linked to the specific clinical indication.
- Limited accessibility to diagnostic imaging technology should not seem as an impediment to implementing a treatment plan with agreed upon the frames.

An additional search of the web for wait time target information yielded a number of sources listing current wait times for access to radiotherapy, orthopedic surgery, cardiac catheterisation, cardiac bypass grafting, cardiac angioplasty, vascular surgery and orthopedic surgery. This data was used to estimate appropriate wait times based on the above principles.

Benchmarks are needed in order to ensure that patients receive timely access to the diagnostic imaging studies that are critical to their receiving appropriate treatment promptly. However, the use of appropriateness guidelines plays a key role in ensuring that patients are being appropriately referred to the test. With 35 million diagnostic imaging exams being performed each year and an annual increase of 3% it is essential that we avoid inappropriate referrals and the associated costs to the healthcare system. One of the ways that wait lists can be created is when physicians refer patients inappropriately because they are unsure as to which is the best test or lengthy wait lists for the most appropriate test make a less appropriate test more attractive.

A Committee of the CAR has developed appropriateness guidelines for the use of Diagnostic Imaging services the guidelines offers a three-tiered rating evaluation system. Scientific evidence indicates that the Diagnostic Imaging exam rated “A” is the most effective for assessing a given clinical symptom, while “C4” has the least scientific evidence to support a referral.

## Benchmarks

There are no published benchmarks for wait times for diagnostic imaging exams. However we have developed these benchmarks based upon sound evidence for appropriate utilization for these modalities. Furthermore, clinicians believe these to be acceptable.

We have adopted the following definitions:

**Emergency:** Immediate danger to life or limb. Benchmark access within 24 hours.

**Urgent:** Situation that is unstable and has the potential to deteriorate quickly and treatment can-

not be initiated until diagnostic imaging study is preferred. Benchmark access within 7 days.

**Scheduled:** Situation involving minimal pain, dysfunction or disability (also called “routine” or “elective”). Benchmark access within 30 days.

## Priority criteria

Priority tools are defined as a consistent way to prioritize cases. While they may be useful in determining the most urgent cases on a short list of patients waiting for access to CT or MRI scans, it is very difficult to use priority tools effectively to prioritize patients on a long waiting list. Priority tools would have to be applied to a patient’s overall situation — not only individual aspects, since a patient with limited symptoms could potentially be in a critical situation.

Another challenge is that if a physician is able to determine how a patient’s health situation is evolving, this suggests that they may already have a diagnosis and raises questions about the need for a diagnostic imaging test. Attempts to create effective priority tools to manage wait lists have indicated that they are of a limited value. For example, The Western Canada Wait List Initiative was unable to develop priority criteria for MRI of the brain that led to clinically useful priority criteria.

## Conclusion

The First Minister’s meeting on the future of health care in September identified diagnostic imaging as one of five key areas where wait lists need to be reduced. Radiology plays a crucial role in the healthcare system as the precursor to patients receiving treatment; without a diagnosis, patients cannot be treated and returned to a state of good health. Given the rapidly changing technological environment and its impact on diagnostic imaging, it is difficult to propose evidence based benchmarks. However, three expert panels that independently analyzed available data from around the world reached the same conclusions and made similar recommendations regarding benchmarks. These are the benchmarks that the Canadian Association of Radiologists proposes to be used as national benchmarks for wait lists. It is essential that benchmarks be used in tandem with appropriateness guidelines to ensure that diagnostic imaging equipment is being used in the most effective and timely manner.

## References

- Age profile of medical devices in Europe: the need for sustained investment! COCIR News. March 2003. Available: [www.cocir.org/news/Special\\_AgeProf.pdf](http://www.cocir.org/news/Special_AgeProf.pdf) (Accessed 24 Nov. 2004).
- American College of Radiology. ACR appropriateness criteria. Reston;

- The College.
- American College of Radiology Imaging Network. Current Protocols (www.acrin.org/current\_protocols.htm).
- American College of Radiology. Risk contracting in managed care: a handbook for the diagnostic radiologist. Reston, VA: American College of Radiology.
- Andriole KP. Computer radiography overview. In: Siebert. JA. Fillipow L, Andriole KP, eds. *Practical Digital Imaging and PACS*. Madison WI: Medical Physics Publishing; 1999.
- Arenson RL. PACS: current status and cost effectiveness. *Eur Radiol* 2000;10(suppl 3):S354-6.
- Becker C. Imaging: the next generation. *Mod Healthc* 2000;30(49):48-52,61,1.
- Berland LL, Smith JK. Multidetector-array CT: once again technology creates new opportunities. *Radiology* 1998;209:327-9.
- Binkhuysen, BFH. Socioeconomic trends in radiology. *Eur Radiol* 1998;8:323-5.
- Brealey S. What is evidence based medicine? An emerging science not fashionable rhetoric. *Radiography* 2001;7:7-10.
- Burkhardt JF, Sunshine JH. Utilization of radiologic services in different payment systems and patient populations. *Radiology* 1996;200(1):201-7.
- Buyer's guide. Tucson (AZ): AuntMinnie.com; 2004. Available: <http://auntminnie.com/index.asp?sec=def> (accessed 24 Nov. 2004).
- Canadian Association of Radiologists. *Special Ministerial Briefing, Outdated radiology equipment: a diagnostic crisis*. Canadian Association of Radiologists. Sept. 2000.
- Canadian Association of Radiologists. *Vision 2000; medical imaging services in Canada*. Partnership paper with Canadian heads of academic radiology and medical imaging industry, Canadian Association of Radiologists, 2000.
- Canadian Association of Radiologists. *Timely access to quality care: the obligation of government, the rights of Canadians*. Canadian Association of Radiologists, 2001.
- Canadian Institute for Health Information Ottawa. Medical Imaging in Canada. 2003.
- Cascad PN, Webster EW, Kazerooni EL. Ineffective use of radiology: the hidden cost. *Am J Roentgenol* 1998;170:561-4.
- Cheng F. *US diagnostic imaging procedures trends*. Academic Advisory Council, 12th Annual GE Medical Systems, 2001.
- Cook LM. Appropriate use of MRI's-clarifying the boundaries, Medical utilization management: June 1995.
- Dehn TG, O'Connell B, Hall RN, et al. Appropriateness of imaging examinations: current state and future approaches. *Imaging Economics* Mar./Apr. 2000;18-25.
- Dhingra M. Cost justification may loosen purse strings of enterprises considering PACS installation. *Diagn Imaging* May 2000.
- Erikson V. CT Angio: future outlooks for care. *Diagn Imaging* 2000;161-7.
- Esmail N, Walker M. Waiting your turn, hospital waiting lists in Canada (14th Edition). Critical Issues Bulletins. The Fraser Institute (www.fraserinstitute.ca).
- European Commission. Referral guidelines for imaging [Radiation Protection 118]. Luxembourg (UK): Office for Official Publications of the European Communities. 2001. Available: [europa.eu.int/comm/environment/radprot/118/rp-118-en.pdf](http://europa.eu.int/comm/environment/radprot/118/rp-118-en.pdf) (Accessed 21 Jan. 2005).
- Evidence-Based Radiology Working Group. Evidence-based radiology: A new approach to the practice of radiology. *Radiology* 2001;220:566-5.
- Fisher ES, Wennberg DE, Stukel TA, et al. The implications of regional variations in medicare spending. Part 1: The content, quality and accessibility of care. *Ann Intern Med* 2003;138:273-87.
- Fisher ES, Wennberg DE, Stukel TA, et al. The implications of regional variations in medicare spending. Part 2: Health outcomes and satisfaction with care. *Ann Intern Med* 2003;138:288-98.
- Fletcher JG, Johnson CD, MacCarty RL, Welch TJ, Reed JE, Hara AK. CT colongraphy: potential pitfalls and problem solving techniques. *AJR Am J Roentgenol* 1999;172(5):1271-8.
- Friedenberg R. The future of medicine and radiology: part 1. *Radiology* 1999;212(2):301-4.
- Friedenberg R. The future of medicine and radiology: part II. *Radiology* 1999;213(1):3-5.
- Frost and Sullivan. World imaging markets to double, top \$5 billion by 1999 as new entrants offer lower-cost PC options. Frost Reports, 1999.
- Fryback DG, Thornbury JR. The efficacy of diagnostic imaging. *Med Decis Making* 1991;11(2):88-94.
- Fyke K. *Caring for medicare: sustaining a quality system*. Saskatchewan Commission on Medicare. Apr. 2001.
- Hadorn DC and the Steering Committee of the Western Canada Waiting List Project. Developing priority criteria for magnetic resonance imaging: results from the Western Canada Waiting List Project. *Can Assoc Radiol J* 2002;53(4):210-8.
- Hanwell LL, Conway JM. AHRA survey. Trends in radiology 1994: Part II. *Radiol Manage* 1996;18(1):47-52.
- Harriman D, McArthur W, Zelder M. The availability of medical technology in Canada: an international comparative study. Public Policy Sources. Fraser Institute. 1998;28.
- Hay Group. Magnetic Resonance Imaging Services in Ontario: Submission, Report Submitted to the Ontario Ministry of Health and Long Term Care. Hay Group, 2001.
- Health Canada. *A 10-year plan to strengthen health care*. First Ministers' meeting on the future of health care (Sept. 16, 2004). [www.hc-sc.gc.ca/english/hca2003/fimm/index.html](http://www.hc-sc.gc.ca/english/hca2003/fimm/index.html).
- Health Care Advisory Board. *Imaging scanner volumes*. Washington, DC. Nov. 1997.
- Health Care Advisory Board. *Trends in imaging services — executive summary*. Washington, DC. July 1997.
- Health Care Advisory Board. *PET scanning*. Washington, DC. Mar. 1998.
- Health Care Advisory Board. *Richest sources of savings: lessons from America's lowest-cost hospitals*. Washington, DC. 1997.
- Health Care Advisory Board. *Volume of radiology procedures performed per radiology room*. Washington, DC. Mar. 1999.
- Health Care Financing Administration. Federal Register, Vol. 66, No. 149, Aug. 2001.
- Health Care Financing Administration. *Medicare Coverage Issues Manual*. Medicare and Medicaid Services, 2000.
- Hensley S. MRI renaissance. *Mod healthc* 1997;27(48):56-8, 60, 62.
- Hillman BJ. Medical imaging in the 21st century. *Lancet* 1998;350:731-3.
- Iron K, Przybysz R, Laupacis A. *Access to MRI in Ontario: Addressing the information gap*. Institute for Clinical Evaluative Sciences 2003;1-37. [www.ices.on.ca](http://www.ices.on.ca).
- Khorasani R, Goel PK et al. Utilization of radiologic services in different payment systems and patient populations. *Radiology* 1996;200:201-7.
- Khorasani R. (2001). Computerized Physician Order Entry and Decision Support: Improving the Quality of Care. *Radiographics* 1999;21:1015-8.

- Levin DC. The practice of radiology by nonradiologists; cost, quality and utilization issues. *Am J Roentgenol* 1994;162:513-8.
- Levy D. Disease management in patient-centered care. In: Couch JB, ed. *Physicians guide to disease management*. Gaithersburg, MD: Aspen Publishers; 1997. Chap 10.
- Mallin S. *Report: evidence based medicine. Diagn Imaging* 2000;94-102.
- Noseworthy TW, McGurran JJ, Hadorn DC, Steering Committee of the Western Canada Waiting List Project. Waiting for scheduled services in Canada: Development of priority-setting scoring systems. *J Eval Clin Pract* 2003;9(1):23-31.
- OECD health data: a comparative analysis of 30 countries [CD-ROM]. Paris: Organisation for Economic Co-operation and Development. 2004.
- Papatheofanis FJ. Technology assessment in radiology. Decisions in *Imaging Economics* Nov./Dec. 1995.
- Practice guideline for the performance of computed tomography (CT) of the abdomen and computed tomography (CT) of the pelvis. American College of Radiology, revised 2001;225-8.
- Rachils MM. *Medicare for the twenty-first century*. BC Health Innovation Forum. British Columbia Ministry of Health and Ministry responsible for seniors. 1999.
- Reed G, Hobe-Reed D. Consider alternative funding when planning for PACS. *Diagnostic Imaging* Nov. 1998.
- Romanow R. *Shape the future of health care: commission on the future of health care in Canada. Interim report*. Ottawa; Health Canada. 2002.
- Rothschild JM, Khorasani R, Bates DW. Guidelines and decision support help improve image utilization. *Diagn Imaging* 2000;22(11):95-7,99,101.
- Sackett DL, Rosenburg WMC, Gray JA, et al. Evidence based medicine: what is and what isn't. *BMJ* 1996;312(7023):71-2.
- Silverman P. CT technology, expanded application blossom. Proceedings of the 86th Scientific Assembly and Annual Meeting of the Radiological Society of North America, 2001.
- Smith R. The importance of RIS. *Imaging Economics* Jan/Feb. 2001 [www.imagingeconomics.com/library/200101-04.asp](http://www.imagingeconomics.com/library/200101-04.asp).
- Sorensen AG. The link between diagnosis and therapy. *Am J Neuroradiol* 1999;20:3-4.
- Stiell IG, Greenberg GH, R.D. M, Nair RC, McDowell I, Reardon M, et al. Decision rules for the use of radiography in acute ankle injuries. Refinement and prospective validation. *JAMA* 1993;269(9):1127-32.
- Sunshine JH, Bushee GR, Mallik R. US radiologists workload in 1995-1996 and trends since 1991-1992. *Radiology* 1998;208(1):19-24.
- Tu J, Pinfold B, Laupacis A, editors. *Access to health services in Ontario: ICES Atlas*. Toronto: Institute for Clinical Evaluative Sciences; 2005.
- Utilization management key to successful capitation of diagnostic imaging services. *Capitation Rates and Data*: May 2001;54.

## Acknowledgements

### I. Primary CAR Wait Times Committee

- Chair: Dr. Lawrence A. Stein (Montreal)
- Members: Dr. Leonard Avruch (Ottawa)  
 Dr. George Andrew (Edmonton)  
 Dr. George Murphy (Halifax)  
 Mr. Normand Laberge (CAR CEO)

### II. Review Committee

- Dr. Robert M. Miller (Halifax)  
 Dr. David-Ian Hammond (Gloucester)  
 Dr. David B. Vickar (Edmonton)  
 Dr. Gregory J. Butler (Kentville)  
 Dr. Martin H. Reed (Winnipeg)  
 Dr. Nancy A.T. Wadden (St. John's)  
 Dr. Blake M. McClarty (Winnipeg)  
 Dr. Gaétan Barrette (Montreal)

### III. Special thanks for the initial work on clinically indicated wait times for DI services to:

- The Alberta Society of Radiologists
- The Ontario Association of Radiologists
- The Nova Scotia Association of Radiologists

---

# Canadian Association of Nuclear Medicine

---

## Introduction

In the 2004 Health Accord, the First Ministers committed to achieving meaningful reductions in wait times in 4 key clinical areas; cancer treatment, heart surgery, joint replacement and sight restoration, and in a fifth area, that of diagnostic imaging. Nuclear medicine is a specialty involved in the use of radionuclides for the diagnosis and treatment of disease; the majority of nuclear medicine procedures are diagnostic imaging studies. With the exception of sight restoration, nuclear medicine diagnostic procedures play an important role in the management of patients with diseases in the areas targeted by the Ministers. In addition nuclear medicine therapies play a growing role in the treatment of malignant disease; therapeutic Nuclear Medicine will, however, not be addressed in this report.

There is a growing body of literature providing guidelines for the appropriate use of both diagnostic and therapeutic nuclear medicine techniques. These guidelines provide direction as to the utilization of these technologies, but little data is available as to the appropriate time frame in which they should be accessed. This paper will summarize the literature regarding appropriate use and will state wait time data from the literature when available, and synthesize additional wait time information from expert opinion, comparing those to wait times which currently exist across the country.

## Methodology

A nuclear medicine expert committee identified a list of established and new nuclear medicine procedures which are utilized in the assessment of patients with atherosclerotic heart disease, cancer, and bone and joint disease. These procedures are listed in Table 2. The following were then searched for guidelines relating to the use of those procedures:

1. CMA Infobase Clinical Practice Guidelines ([mdm.ca/cpgsnew/cpgs/index.asp](http://mdm.ca/cpgsnew/cpgs/index.asp))
2. American College of Radiology ([www.acr.org](http://www.acr.org))
3. The Royal College of Radiologists ([www.rccr.ac.uk/](http://www.rccr.ac.uk/))
4. The American College of Cardiology ([www.acc.org/](http://www.acc.org/))
5. Canadian Cardiovascular Society ([www.ccs.ca/](http://www.ccs.ca/))
6. American Society of Nuclear Cardiology ([www.asnc.org/](http://www.asnc.org/))
7. Cancer Care Ontario ([www.cancercare.on.ca/](http://www.cancercare.on.ca/))

A review of the health technology assessments of the emerging technology of  $^{18}\text{F}$ -fluorodeoxyglucose positron emission tomography (FDG-PET) imaging for cancer, recently published in the Canadian Society of Nuclear Medicine newsletter PHOTON has been incorporated into this report.

Information on waiting time criteria for clinical procedures and treatments related to the nuclear medicine procedures in question was obtained from a web search using the search term “wait times for medical procedures”. Information regarding appropriate wait times for PET was obtained from Hamilton Health Sciences, Hamilton, Ontario which had developed disease specific wait time guidelines by a consensus process with Disease Site Teams at the Juravinski Cancer Centre. A portion of that report is appended as Appendix A.

A survey of nuclear medicine facilities across Canada was made to determine existing urgent and elective wait times for the list of procedures and factors contributing to prolonged wait times. Subsequent to this survey a decision was taken by the Wait Time Alliance to use the categories **Emergency**, **Urgent**, and **Scheduled**; the “urgent” category used in the survey encompasses both **Emergency** and **Urgent**, and the “routine” category is equivalent to **Scheduled**. The survey form is appended as Appendix B.

The preliminary information gathered was shared with other members of the Wait Time Alliance. The CCS formed a specific Nuclear Cardiology Wait Times subgroup which reviewed the material, added additional relevant material and modified suggested wait times. Therefore the benchmarks proposed for Nuclear Cardiology reflect a consensus opinion from cardiology and nuclear medicine clinicians and experts in nuclear cardiology. Portions of this report specific to nuclear cardiology may be duplicated in the CCS report.

Finally the initially proposed wait time benchmarks were adjusted following receipt of the substantive input we have received from other medical organizations and health stakeholders including patients through the consultative process organized by the CMA and supported by Health Canada. The wait time benchmarks proposed in this report represent a consensus view after this extensive consultation.

## Classification of evidence

A number of systems have been used to classify levels of

evidence. The following table comparing the grading systems used by the reports quoted in this document has been adapted from the Guidelines Advisory Committee of Ontario.<sup>1</sup> The ACR appropriateness criteria are derived from a process which initially grades the evidence for a procedure based criteria similar to those of the Agency for Health Care Policy and Research and then uses a modified Delphi technique to arrive at a consensus ranking from least to most appropriate (1 to 10).<sup>2</sup>

**Table 1: Comparison of guideline developer’s evidence taxonomies**

GAA Level of Evidence to Recommend	American College of Cardiology* <sup>3</sup>	CCS Guidelines* <sup>4</sup>	Agency for Health Care Policy & Research+	Cancer Care Ontario Practice Guideline Initiative	American College of Radiology
Excellent/Good (pro)	Class I	Grade A	Grade A	Grade EV	8,9,10
Excellent/Good(con)					
	Class III	Grade C	Grade B	Grade PE	4-7
Fair	Class IIa	Grade B			
Insufficient	Class IIb			Grade O	1,2,3
Consensus Opinion			Grade C	Grade C	
				Grade E	
				Grade X	

\* to avoid confusion in evaluating the levels of evidence between ACC and CCS, CCS grades A, B, C will be reported as Class levels I, II, III

+ as adapted by Osteoporosis Society & Royal College of Radiology

## Wait times for diagnostic imaging technologies

There is a dearth of data regarding recommended wait times for access to diagnostic technologies. Some data is posted to various web sites on current waiting times for CT and MR; Manitoba posts wait times for bone density and myocardial perfusion imaging (Stress MIBI) which are exams addressed in this report.<sup>5</sup> This paper takes the perspective that appropriate waiting times are linked to the speed with which the information provided is required to plan or execute therapy. For example, myocardial perfusion imaging (MPI) may be used to determine which patients presenting with unstable coronary syndromes should be advanced urgently for cardiac catheterization. In this specific instance, it has been shown that there is a subgroup of patients that are at high risk of significant adverse clinical events in the weeks and months which follow their initial presentation. Further, it has been shown that interventions performed in those patients to relieve the coronary obstruction will significantly reduce the likelihood of such events occurring, if performed in a timely fashion. Non-invasive imaging procedures play an important role in identifying those patients most likely to suffer adverse events, and those most likely to benefit from intervention (e.g. patients with multivessel coronary artery disease and left ventricular dysfunction or with left mainstem coronary artery disease).<sup>3,6</sup> This “risk-stratification”

**Table 2: Nuclear medicine procedures and therapies with recommended wait times**

	Emergency	Urgent	Scheduled
Bone Scan – whole body survey	Immediate to 24h	Within 7d	Within 30d
FDG – PET	Immediate to 24h	Within 7d	Within 30d
Myocardial Perfusion – exercisestress	Immediate to 24h	Within 3d	Within 14d
Myocardial Perfusion – pharmacologic stress	Immediate to 24h	Within 3d	Within 14d
Myocardial Viability – FDG	Immediate to 24h	Within 3d	Within 14d
Myocardial Viability – Thallium	Immediate to 24h	Within 3d	Within 14d
Radionuclide Angiography	Immediate to 24h	Within 3d	Within 14d
Bone Density	N/A	N/A	Within 30d

**Table 3. Nuclear medicine facilities by province**

Province	Total # of nuclear medicine facilities			# of facilities reporting Wait times		
				Hospital	IHF	Total (%)
Newfoundland	4	0	4	4(100%)	0	4 (100%)
Nova Scotia	10	0	10	8(80%)	0	8 (80%)
New Brunswick	6	0	6	3(50%)	0	3 (50%)
Prince Edward Island	1	0	1	1(100%)	0	1 (100%)
Québec	49	2	51	27(55%)	0(0%)	27 (53%)
Ontario	73	42	115	41(56%)	31(74%)	72(62%)
Manitoba	6	3	9	5(83%)	2(66%)	7 (77%)
Saskatchewan	3	0	3	3(100%)	0	3 (100%)
Alberta	13	10	23	11(85%)	6(60%)	17 (74%)
British Columbia	22	1	23	18(82%)	1(100%)	19 (86%)
Total	187	58	245	121	40	161(66%)



allows the most efficient use of expensive and resource intensive revascularization procedures.<sup>7</sup> This is of particular importance in the Canadian health care system in order to maximize the benefit of resources used.

Thus, appropriate wait time benchmarks for a diagnostic imaging test such as MPI must be viewed in the clinical context in which the patient presents. When a patient is admitted to hospital with an acute coronary syndrome there is urgency to risk stratify that individual to determine if invasive procedures are required during that hospitalization. An appropriate wait time benchmark in these circumstances would be 1 day. Conversely when MPI is used to risk stratify prior to major non-cardiac surgery and that surgery has wait times of more than 3 months then a routine wait time of 1 month for MPI may be acceptable.

A search of the web for wait time target information yielded a number of sources listing current wait times for access to radiotherapy, orthopedic surgery, cardiac catheterization, cardiac bypass grafting, cardiac angioplasty, and vascular surgery. This data was used to estimate appropriate wait time benchmarks for related nuclear medicine procedures.<sup>5,8-12</sup> In each case we have selected the shortest recommended wait times among all possible clinical indications for a procedure as the most appropriate benchmark to provide best clinical care. Wait times throughout this report are stated in days.

The task of assessing relative urgency for diagnostic procedures is at best in the early stages of development, and is complicated by the need to estimate the likelihood that the procedure will provide critical diagnostic information, the availability of alternative diagnostic pathways, and the need to estimate the likelihood that subsequent treatment changes will improve health outcomes. The Western Canada Waiting List Project offers some insight into the difficulties involved in establishing and monitoring acceptable wait times for diagnostic testing. The Project constructed a point scoring tool for each of the follow areas: cataract surgery; general surgery procedures; hip and knee replacement; children's mental health; and Magnetic Resonance Imaging (MRI). Reliability was strongest for the general surgery and hip and knee criteria and weakest for the MRI.<sup>13</sup> In the absence of established criteria, the CANM and CAR have agreed upon the following definitions to assess urgency:

**Emergency:** Immediate danger to life or limb

**Urgent:** Situation that is unstable and has the potential to deteriorate quickly and result in an emergency admission

**Scheduled:** Situation involving minimal pain, dysfunction or disability (also called "routine" or "elective")

## Summary of evidence for recommended nuclear medicine procedures and rationale for recommended wait times

For each procedure a summary of the available evidence for appropriate use has been prepared. Recommended wait times have been derived and a rationale for each recommended wait time has been developed. A chart then follows which lists current wait times by province and compares these to the recommended times. These summaries are appended as Appendices C to H. The following table summarizes maximum recommended urgent and routine wait times for each indication.

The following table demonstrates the distribution of facilities providing data for this report. Completeness of reporting varies substantially from province to province. Our survey has sampled a significant proportion of the facilities in Canada including independent health facilities (IHF).

## Factors affecting availability of nuclear medicine procedures and therapies

Facilities were asked to identify factors which contributed to prolonged wait times or lack of access to service. Table 4 summarizes those responses. For both technical staff vacancies and physician vacancies, the number of facilities reporting a vacancy is given first, followed by the total number of vacant positions in brackets.

Three dominating factors emerge from this review, the first is the inadequacy of the equipment base, the second an inability to offer PET services, and the third the relatively large numbers of physician staff vacancies. The number of technical staff vacancies represents an improvement over prior years. The training institutions have monitored this situation and responded by appropriately increasing the number of training positions. Interestingly, outside Québec, an inadequate operating budget is not frequently an area of concern.

## Equipment

Variability in wait time could be caused by varying availability of equipment or maintenance of equipment from jurisdiction to jurisdiction. The recent CIHI report entitled *Medical Imaging in Canada 2004*<sup>14</sup> provides some data on the numbers of Nuclear Medicine cameras reported per million population for each province ("Rate"). These Rates range from a low of 14.5 in PEI to a high of 27.8 in Nova Scotia, with a Canadian mean of 19.5. The CIHI report however, identifies the difficulties the survey had in obtaining information from independent health facilities (IHF). This has almost certainly resulted in a significant error in the calculation of the instrumentation "Rate" in Ontario where only 4 of the 48 IHFs reported information and Alberta where 4 of 10 IHFs reported. As seen in Table 5,

IHF's comprise a significant proportion of imaging facilities.

The current CANM survey is collecting instrumentation information. It is our intent to pursue a goal of 100% response rate. If we are successful, this will provide a unique database of nuclear medicine equipment across the country and should assist in making recommendation regarding appropriate equipment "Rates" to shorten wait times toward these recommended benchmarks. It is almost certain that in some jurisdictions where wait times are excessive (e.g. Prince Edward Island and Newfoundland) that additional imaging units will be recommended.

### PET & FDG

Appendix D provides a more complete discussion of the situation with respect of this technology which is in the process of being introduced to practice in New Brunswick, Nova Scotia, Quebec, Ontario, Manitoba, Alberta and British Columbia. A major limiting factor persists in that FDG, the radiopharmaceutical most frequently used in cancer imaging is not an approved drug in Canada. Because of the short half life of the product (109 minutes), it must be produced in facilities near the imaging site. In Canada, the existing production sites are all within university centres which have faced a crippling regulatory burden which has stained them financially and limited academic output. Two new drug submissions are now submitted to BGTD for an expedited review, but the department is in backlog and there is concern that these submissions may not be dealt with for up to 3 years.

### Health Human Resources

#### a. Physician workforce

The Royal College of Physicians and Surgeons established Nuclear Medicine as medical specialty in 1976. The specialty had been established in Quebec several years earlier. The initiation of the specialty unfortunately coincided with the beginning of cut backs in the number of residency training positions across Canada and, therefore, there have never been a large enough number of certified nuclear medicine practitioners to fill all positions in Canada outside the province of Quebec.

The 1999 CANM Workforce Report identified

significant concerns, paralleling general concerns in medical practice, regarding the nuclear medicine physician workforce.

The report estimated that of a workforce of 530 practitioners practicing nuclear medicine either full or part time that approximately 5 full time nuclear medicine physicians per year would retire over the following decade, and an additional 6 physicians who incorporate Nuclear Medicine as a component of their practice of Radiology or Cardiology will retire. The output of trainees (9 per year) from Canadian residency training programs is insufficient to replace these retiring physicians. Furthermore, additional trainees are required to meet increased demand as a result of; a) the introduction of PET to clinical practice, b) the recognition of the need for improved training standards for cardiologists wishing to incorporate Nuclear Cardiology as a component of their practice, and, c) the need to improve practice quality by ensuring that more physicians practicing nuclear medicine achieve certification by either the RCPSC or the Collège des médecins du Québec.

In 1999 it was recommended by both the CANM & CAR that:

- a) the number of trainee positions be increased to ensure the entry of 15 nuclear medicine physicians to practice annually from the current 9 (i.e., a 50% increase in training positions); and
- b) 50% of trainees pursue dual certification in Radiology & Nuclear Medicine.

**Table 4: Facilities reporting service limiting factors (161 facilities reporting)**

Province	Insufficient operating funds	Technical staff vacancies	Physician staff vacancies	Gamma camera or BMD shortage	Lack of access to PET cameras & FDG
		(# FTE)	(#FTE)	(# instruments)	
Newfoundland	3	4 (7)	2 (2)	4 (4)	X
Nova Scotia	0	2 (0.8)	0	3 (7)	X
New Brunswick	1	0	2 (1)	1 (1)	X
PEI	0	1 (1)	0	1 (1)	X
Québec	13	13 (6)	3 (4)	7 (13)	
Ontario	9	16 (15)	13 (13)	22 (40)	
Manitoba	3	3 (6)	1 (1)	0	
Saskatchewan	1	2 (4)	0	3 (11)	X
Alberta	2	1 (2)	4 (4)	3 (8)	
British Columbia	5	3 (4)	2 (2)	7 (12)	
Total	37	45 (45.8)	27 (27)	51 (97)	

Note: X indicates that the service is not available

While considerable progress has been made in respect of the second recommendation, virtually no progress has been made with respect of the first. The deficit in trained personnel has therefore increased over the intervening six years. This must now be urgently addressed.

In the interim strategies which could be adopted include:

- a) Delegation of procedures to technologists or nursing staff (e.g. conduct of stress tests or administration of medication );
- b) Use of electronic transmission of images to enable a physician to cover more than one facility;
- c) Creation of multicentre practice groups to support physicians in solo practice;
- d) Increased efficiency and improved quality through the use of structured reporting.

## **b. Scientist workforce**

Nuclear Medicine practice incorporates both physicists and radiopharmaceutical scientists. With respect of the first group, there are adequate training programmes available in Canadian universities and appropriate programmes of post doctoral fellowship and certification. The situation in the radiopharmaceutical sciences is not as secure. Although the routine production of radiopharmaceuticals in major centres has become a commercial activity, facilities in smaller communities are dependent upon expert technologists for the preparation of these materials. These technologists have, in general been trained by hospital based radiopharmacists in academic centres who are now disappearing.

Furthermore with the introduction of PET technology across the country and the recent establishment of Good Manufacturing Processes for positron emitting radiopharmaceuticals by Health Canada, an increased number of radiopharmaceutical scientists will be required to support onsite production of these short-lived materials.

At its 2005 meeting the Canadian Society of Nuclear Medicine voted to financially support the development of a education curriculum and certification process by the Canadian Association of Radiopharmaceutical Scientists, in order to ensure that Canadian Healthcare facilities continue to have access to well trained individuals in this important and growing area.

## **Discussion**

### **Wait Times**

Canadians have unequal access to Nuclear Medicine procedures and therapies. Substantial variability exists from province to province and within each province. In many centres wait times significantly exceed the benchmarks specified in this report and impede efficient delivery of care, and potentially reduce the quality of care delivered.

There is no availability of nuclear medicine procedures in Canada's three territories. The creation of wait time benchmarks and standardized collection of wait time information should provide an incentive for regional health authorities to allocate appropriate resources to reduce wait times.

### **Limitations in the use of wait times as a measure of system efficiency**

A list of wait times is an indication of the capacity in the system present prior to the point the data was collected. The expansion of operating hours by the addition of technical staff, or improved efficiency resulting from the replacement of older equipment can have a dramatic effect upon wait times. It is important to track whether wait times for any one procedure or therapy are increasing, decreasing or stable. Most wait time data currently listed is not displayed in that format, although direct discussion with facilities providing services demonstrates that they are aware of the importance of monitoring wait time changes. For example, the addition of 1.0 FTE Nuclear Medicine technologist in Prince Edward Island has resulted in a 40% increase in the availability of bone density examinations and is expected to reduce wait times from 14 months to 1 month over the next year.

When analysis of wait times is applied to diagnostic testing as opposed to surgical or radiation therapy several confounding factors emerge. Clinicians and their patients expect that diagnostic data will be available to them sufficiently quickly that they will be able to create and implement a treatment plan in an acceptable time frame. For example, it is generally accepted that cancer surgery should be carried out in an expeditious manner. However appropriate pre-operative assessment of the patients and preparations for surgery may require up to 4 to 6 weeks; thus a wait time of 3 to 4 weeks for a staging CT or PET/CT examination may be acceptable. In the case of wait times in excess of these, clinicians will use alternate staging methods to expedite care; e.g. gallium scanning or ultrasound.

Alternative diagnostic methods may be less accurate (e.g. abdominal ultrasound for the detection of metastases from colon cancer vs. FDG-PET/CT), more invasive (e.g. mediastinoscopy for staging of non small cell lung cancer vs. FDG-PET/CT), or more costly (e.g. coronary angiography for the diagnosis of coronary artery disease vs. myocardial perfusion scintigraphy). When the risk of waiting for the most appropriate diagnostic test exceeds the risk of an alternative though less appropriate testing and treatment strategy, the physician, in consultation with their patient, will chose the latter. Thus adding the collection of data regarding inappropriate use of technologies would provide a more complete picture of "bottlenecks" in the system and their impact.

Positron Emission Tomography is an emerging technology in Canada, despite its acceptance as a clinical tool in most OECD countries. With no access to this technology, waiting times are unavailable in most jurisdictions; however, the lack of wait time data must not be interpreted as an absence of demand.

### **Information systems**

The collection of data for this report was difficult and time consuming (and as yet, incomplete). This need not be the case. The majority of nuclear medicine departments use their institution's Radiology Information System (RIS) to book studies, create and issue reports. Increasingly the RIS drives the creation of imaging work lists on each imaging modality and links to PACs (Picture Archival and Retrieval system) to provide a comprehensive data set which is used internally within the institution to manage the program. Parameters such as urgent and routine wait times, time from booking to exam completion, time from completion to reporting, and time from reporting to transcription are monitored. It should be possible to routinely collect that data for selected studies to monitor both wait times and wait time trends.

Unfortunately, data held within the RIS is frequently collected according to province specific fee schedules and is not directly comparable from jurisdiction to jurisdiction. For example an identical SPECT myocardial perfusion study (imaging only) in Ontario is represented by four fee codes, and in Alberta by one fee code. Although these schedules are linked to a federal workload measurement system, that system is unable to provide wait list information. The creation of a Canada wide procedure listing which could be linked to province specific fee schedules would enable the routine collection of this data.

### **Comprehensive data**

The recently published *Medical Imaging in Canada 2004*<sup>14</sup> highlighted the difficulties in obtaining information from independent health facilities. The absence of data from independent health facilities results in difficulties in data interpretation. A specific example is described in the section entitled Equipment. By contacting each facility directly and explaining the need for accurate data upon which to base decisions, we have been significantly more successful in obtaining information. It appears that independent facilities will play a growing role in the provision of service in some provinces; they should be, as a condition of licensing, required to provide statistical information, including wait times, and information regarding instrumentation. Complete information is crucial to better management of the system of health care delivery.

### **Regional management**

The data collected to date demonstrates significant variations in wait times within regions. A centralized regional booking system for examination might be useful to reduce wait times. However, experience in recently merged institutions within one community has indicated substantial reluctance on the part of both patients and referring physicians to accept alternate earlier appointments in another facility. Uniform protocols and reporting standards are required to ensure that referring physicians will accept this strategy.

### **Appropriateness guidelines and reducing demand**

The CANM has participated in the CAR lead process of modifying appropriateness guidelines from the Royal College of Radiologists of Britain to suit the Canadian practice environment. It will be necessary to disseminate these guidelines widely among Canada's Family Physicians and Specialists. The incorporation of decision support modules into order entry systems would also be useful to ensure the most appropriate use of test and limit the use of inappropriate examinations.

Appropriate use of procedures and the increased emphasis on the role of the Nuclear Medicine physician as consultant have been identified as strategies to reduce demand. Public education as to the indications for imaging procedures might be effective in providing support to family physicians and specialists as they try to curtail inappropriate use. The creation of nuclear medicine practice groups within local regions or health networks has the potential to facilitate sub-specialization of nuclear medicine physicians improving the integration of these specialists with their clinical colleagues and assisting in the appropriate use of technology.

### **Conclusion**

We have successfully established wait time benchmarks for a number of diagnostic nuclear medicine procedures using information from the literature through a consensus process with an expert panel. These benchmarks have been modified following an extensive consultation process with other medical practitioners, patients and the public.

We have identified that existing wait times frequently exceed these benchmarks, likely resulting in inappropriate utilization of diagnostic tests. Some of the factors contributing to prolonged wait times have been identified.

The CANM plans to complete its survey work and plans to use this comprehensive data to assist government and educational institutions in facility and workforce planning.

## Acknowledgements

### CANM Wait Times Working Group

Karen Y. Gulenchyn, MD, Chair	Hamilton
John Powe, MD	Vancouver
A.J.B. McEwan, MD	Edmonton
Christopher O'Brien, MD	Brantford
Daniel Picard, MD	Montréal
Peter Hollett, MD	St. John's

### Nuclear cardiology Wait Times Subgroup of the CCS

Rob Beanlands, MD, Chair	Ottawa
Michael Freeman, MD	Toronto
Marla Keiss, MD	Vancouver
Karen Gulenchyn, MD	Hamilton

### Nuclear Cardiology Secondary Panel

Terrence D. Ruddy, MD	Ottawa
Gerry Wisenburg, MD	London
Ross A. Davies, MD	Ottawa
Peter Bogarty, MD	Quebec City

**Appendix A: Hamilton Health Sciences and Juravinski Cancer Centre PET wait times**

<b>Disease site group</b>	<b>Tumour</b>	<b>Indication</b>	<b>Maximum acceptable wait</b>
Breast	All subtypes	OCOG Breast Trial Other – not indicated	1 week N/A
GI	Colorectal  Esophagus	? local recurrence ? solitary hepatic met Recurrence or metastases after primary therapy	6 weeks 6 weeks 3 weeks
GU	All	Not indicated	N/A
Lung	NSCLC  Other	OCOG ELPET Trial OCOG START Trail Solitary pulmonary nodule	2 weeks 2 weeks 6 weeks
Skin	Melanoma (including vulvar)	Recurrence or metastases after primary therapy	3 weeks
Mycosis	Mycosis	Not indicated	N/A
Hematology	Lymphoma	HHS Study Residual Tumour Early Response to Rx Pediatric Hodgkins	2 weeks 2 weeks 2 weeks 2 weeks
Sarcoma	Sarcoma	ACRN Trial – pediatric	1 week
Neurooncology	All	Not indicated	N/A
Head & Neck	Head & Neck Thyroid (differentiated)	OCOG PREVENT Recurrence of following primary therapy, with elevated thyroglobulin	1 week 6 weeks
Gynecology	Cervical   Ovarian-Epithelial Germ Cell Ovarian Vulvar  Gestational Trophoblastic Neoplasia	Staging of high risk Stage 1B tumours prior to Sx  Define nodal metastases prior to radiotherapy Restaging after sub-optimal therapy Restaging Detection of recurrence Equivocal lymph nodes on CT/MR to determine radiation fields Tumour markers elevated after primary therapy	4 weeks  4 weeks 4 weeks 2 weeks 2 weeks 4 weeks 4 weeks

## Appendix B: Wait times survey form

Please provide information only for your facility. If you work at more than one facility complete a form for each.

Facility name \_\_\_\_\_

City \_\_\_\_\_

Province \_\_\_\_\_

Postal code \_\_\_\_\_

Academic Hospital     Community Hospital     Independent Health Facility

### Wait Times (please state in working days)

Bone Scan — Cancer Staging or Recurrence

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Cancer Assessment — <sup>18</sup>F-FDG (Dedicated PET camera)

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Cancer Assessment — <sup>18</sup>F-FDG (Coincidence gamma camera)

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Myocardial Perfusion Imaging — Exercise Stress

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Myocardial Perfusion Imaging — Persantine Stress

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Myocardial Viability — <sup>18</sup>F-FDG

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Myocardial Viability — Tl-201

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Radionuclide Angiography (MuGA)

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

Bone Mineral Density

Not available     Urgent \_\_\_\_\_    Routine \_\_\_\_\_

## Radionuclide Therapy

$^{131}\text{I}$  for benign thyroid disease

Not available  Urgent \_\_\_\_\_ Routine \_\_\_\_\_

$^{131}\text{I}$  for thyroid malignancy

Not available  Urgent \_\_\_\_\_ Routine \_\_\_\_\_

Bone pain palliation (e.g.  $^{89}\text{Sr}$ )

Not available  Urgent \_\_\_\_\_ Routine \_\_\_\_\_

Radioimmunotherapy for lymphoma (e.g. Zevalin or Bexxar available by protocol or SAP)

Not available  Urgent \_\_\_\_\_ Routine \_\_\_\_\_

List any other nuclear medicine services which are either not available or for which patients face an extended wait.

---

---

---

### Limiting Factors

Please identify all factors that limit provision of service.

- Operating Budget (My facility operates fully within the allotted budget, but this is insufficient to meet demand.)

Please indicate the change in your operating budget from Fiscal 2003 to Fiscal 2004

Unchanged  Increased \_\_\_\_\_ Decreased \_\_\_\_\_

- Technical Staff Vacancies

Number of vacant positions \_\_\_\_\_

- Physician Staff Vacancies

Number of vacant positions \_\_\_\_\_

- Equipment Shortage - Please indicate additional units required

Bone densitometer # of units \_\_\_\_\_

Gamma Camera – planar \_\_\_\_\_ # of units \_\_\_\_\_

Gamma Camera – SPECT \_\_\_\_\_ # of units \_\_\_\_\_

PET Camera \_\_\_\_\_ # of units \_\_\_\_\_

- Unable to access radiopharmaceutical

FDG

Other – Please list \_\_\_\_\_

\_\_\_\_\_



## Appendix C: Bone Scanning – whole body survey for metastases

Except for a few limitations (multiple myeloma and histiocytosis X), radionuclide bone scanning is the primary imaging examination used to detect bone metastases. It is more sensitive than plain radiography and offers the advantage of providing a survey of the entire skeleton. (ACR Appropriateness 9, RCR Grade B) When the prevalence of metastases is low (e.g. Stage I Breast Cancer) bone scanning is not indicated.<sup>15</sup>

Bone scanning may also be used to assess for the effectiveness of treatment and are helpful to determine when radionuclide therapy for palliation may be indicated.<sup>16</sup>

As bone scintigraphy is used to support staging for diseases in which the time from referral to instigation of therapy occurs in 2 to 10 weeks<sup>8</sup>, bone scintigraphy for the assessment of cancer patients should be available in 7 days for urgent cases and 30 days routinely.

**Table C-1: Procedure: bone scan – whole body survey**

Recommended wait times; Emergency: 1 day; Urgent: 7 days;  
Routine: 30 days

Province	Urgent wait times (days)		Routine wait times (days)	
	Mean	Range	Mean	Range
Newfoundland	Not available on urgent basis		71	35–105
Nova Scotia	2	1–13	13	7–20
New Brunswick	1	1	10	10
PEI	5	5	73	73
Québec	18	1–270	68	1–660
Ontario	2	1–8	10	1–42
Manitoba	2	1–6	10	2–14
Saskatchewan	6	1–15	15	10–20
Alberta	2	1–5	7	1–14
British Columbia	3	1–17	13	2–35

## Appendix D: <sup>18</sup>F FDG PET

Canadian patients lack access to this technology, which is not only one that potentially can improve the care patients with cancer, but which has been shown to be a cost effective technique.<sup>17-19</sup> There are a number of provincial initiatives addressing this issue. Quebec, Alberta, New Brunswick, British Columbia, Nova Scotia and Manitoba have allotted limited funding to allow for the clinical use of the technology. Ontario has introduced the technology by funding 5 clinical trials assessing the technology in lung cancer, breast cancer, colorectal cancer, and head and neck cancer.

The Canadian situation has been compounded by the decision of the Biologics and Genetic Therapies Directorate of Health Canada to impose the full regulatory burden upon the assessment of positron emitting radiopharmaceuticals. FDG-PET has been safely introduced into clinical practice in most regulatory jurisdic-

tions and in those jurisdictions regulatory authorities have typically ameliorated the regulatory framework to facilitate this introduction — for example the FDA in the United States.<sup>20</sup> This amelioration has in part been granted in the knowledge that PET radiopharmaceuticals are safe. The radiopharmaceutical is administered typically in nano or pico molar quantities, and one prospective safety study of more than 80,000 patients failed to show any adverse events.<sup>21</sup>

Clinical PET has been approved and funded in almost all countries in the European Union, in Australia and in the United States. Table D-1 is a summary of those countries in which FDG PET has been approved, and Table D-2 the indications for which it has been approved in Australia, the European Union and the United States.<sup>22-29</sup>

The Royal College of Radiologists states FDG PET is

**Table D-1: International Regulatory Status of <sup>18</sup>F-FDG**

Country	Approval status	Product specific information	Approved clinical indications
Argentina	Approved	Yes	
Australia	Approved	Yes	Yes
Austria	Approved (EU)	Yes	Yes
Belgium	Approved (EU/National)	Yes	Yes
Czech Republic	Approved	Yes	
Denmark	Approved (EU/National)	Yes	Yes
Finland	Approved (EU)	Yes	Yes
France	Approved (EU/National)	Yes	Yes
Germany	Approved (EU/National)	Yes	Yes
Greece	Approved (EU)	Yes	Yes
Ireland	Approved (EU)	Yes	
Italy	Approved (EU/National)	Yes	Yes
Japan	Approved		
Luxembourg	Approved (EU)	Yes	Yes
Netherlands	Approved (EU/National)	Yes	Yes
Portugal	Approved (EU/National)	Yes	Yes
Spain	Approved (EU/National)	Yes	Yes
Switzerland	Approved		
Taiwan	Approved		
Turkey	Approved		
United Kingdom	Approved (EU/National)	Yes	Yes
United States	Approved	Yes	Yes

indicated for evaluation of suspected local recurrence in patients with colorectal cancer and assessment prior to resection of liver metastases (Evidence level A), and for 1) detection of recurrent head & neck cancer; 2) staging of lung cancer; 3) staging esophageal cancer; 4) detection of recurrent or persistent testicular cancer when tumour markers are elevated; 5) staging of lymphoma (Evidence Level B). Several additional indications are listed as indicated with evidence rated at Level C: 1) Staging of ovarian and cervical cancer; and 2) identification of extent of tumour from an unknown primary.<sup>16</sup>

The ACR assigns an appropriateness level of 6 to FDG PET for the evaluation of patients with a solitary pulmonary nodule and for the staging of patients with non-small cell lung cancer.<sup>30</sup> Many other ACR documents relating to the management of cancer have not been reviewed since 1999, and their classification of FDG PET is experimental is no longer relevant.

In 2004 the Department of Nuclear Medicine at Hamilton Health Sciences working with The Disease Site Teams at the associated Juravinski Cancer Centre defined acceptable waiting times for FDG-PET imaging. These times ranged for 2 to 4 weeks (Appendix A). In the absence of other published data, those times have been used in this document.

**Table D-2: Indications for clinical use of <sup>18</sup>F-FDG**

Indication	United States	European Union	Australia
Brain			E
Breast	S,R,M		
Colorectal	D,S,R	E,M	S,R
Head and Neck	D,S,R,	A	
Lung	C,D,S,R	D,A,E	E,S
Lymphoma	D,S,R	A,D	
Melanoma	D,S,R	A	E
Thyroid	R		
Cervix			S
Esophagus	D,S,R		S
Ovary			E
Stomach			S
Myocardial Viability	D	D	D

A = assessment      E = evaluation    R = re-staging  
 C = characterization    M = monitoring  
 D = diagnosis          S = staging

**Table D-3: Procedure: FDG-PET**

Recommended wait times: Emergency: 1 day; Urgent: 7 days;  
 Scheduled: 30 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not available		Not available	
Nova Scotia	Not available		Not available	
New Brunswick	Not available		Not available	
PEI	Not available		Not available	
Québec	14	14	28	40
Ontario	6	1–14	21	7–42
Manitoba	Not available		Not available	
Saskatchewan	Not available		Not available	
Alberta	2	2	12	12
British Columbia	1	1	3	3

## Appendix E: Tomographic Myocardial Perfusion Imaging (SPECT MPI) (Exercise & Pharmacological Stress)

Exercise or pharmacological stress MPI (SPECT or PET) for accepted clinical indications: recommended wait times should be **Emergency within 1 day; Urgent within 3 days; and Scheduled 10 working days.**

The accepted clinical indications are noted below:

### Acute coronary syndromes

The ACC/AHA/ASNC<sup>3</sup> joint guidelines for the clinical use of cardiac radionuclide imaging have made the following recommendations for the use of myocardial perfusion imaging in the setting of acute coronary syndromes:

1. Assessment of myocardial risk with rest SPECT MPI in possible acute coronary syndrome (ACS) patients with nondiagnostic ECG and initial serum markers and enzymes, Class I, Level A;
2. Diagnosis of CAD in possible ACS patients with chest pain with nondiagnostic ECG and negative serum markers and enzymes or normal resting scan, Class I, Level B;
3. Assessment of myocardial risk with pharmacologic stress SPECT MPI following acute STEMI treated with thrombolytics without catheterization, Class I, Level B;
4. Assessment of myocardial risk after NSTEMI or UA in patients who do not undergo catheterization, Class I, Level A;
5. Assessment of myocardial risk after NSTEMI or UA following catheterization when the hemodynamic significance of a lesion is uncertain, Class I, Level A.

*The committees considered all of the above indications as Emergent or Urgent for identifying those patients who would benefit most by further invasive procedures, specifically percutaneous angioplasty with stent placement, or coronary artery bypass surgery during their index hospitalization.*

### Coronary disease risk assessment and prognosis

The guidelines indicate the use of SPECT MPI as a Class I (ACC/AHA/ASNC and CCS) recommendation for the diagnosis of coronary artery disease or assessment of risk and prognosis **in patients with an intermediate clinical probability of CAD**, in the following circumstances:

1. Exercise SPECT MPI to identify extent, severity and location of ischemia in patients who do not have LBBB or paced rhythm but do have a baseline ECG

2. abnormality which interferes with the interpretation of exercise-induced ST segment changes, Class I, Level B;
2. Adenosine (dipyridamole) MPI SPECT in patients with LBBB or paced rhythm, or those who are unable to exercise, Class I, Level B;
3. Exercise or adenosine (dipyridamole) MPI SPECT, as appropriate, to assess the functional significance of intermediate (25 to 75%) coronary lesions, Class I, Level B;
4. Exercise or adenosine (dipyridamole) MPI SPECT, as appropriate, in patients with an intermediate Duke treadmill score, Class I, Level B;
5. Exercise or adenosine (dipyridamole) MPI SPECT, as appropriate, in patients whose symptoms have changed to redefine the risk for cardiac event, Class I, Level C.

MPI can also be performed using PET imaging with <sup>13</sup>N ammonia or <sup>82</sup>Rubidium. PET is not as widely available as SPECT but ACC/AHA/ASNC and CCS guidelines both indicate the use of adenosine or dipyridamole MPI with PET for the in patients **with an intermediate clinical probability of CAD** as follows:

1. For diagnosis or risk stratification in patients whom an appropriately indicated MPI SPECT study has been found to be equivocal, Class I, Level B
2. For diagnosis or risk stratification in patients with LBBB or paced rhythm, Class IIa (ACC/AHA/ASNC); Class I (CCS), Level B.

*In these circumstances of defining risk and prognosis of appropriate wait times are more difficult to define. However, there is evidence to support the use of a strategy whereby SPECT MPI is used to define the need for cardiac catheterization.<sup>3,6</sup> It seems reasonable, therefore to set wait times within those defined for cardiac catheterization by groups such as the Cardiac Care Network of Ontario.<sup>31</sup> This methodology would result in recommended wait time of, Emergency within 1 day, Urgent within 3 days, and, Routine 10 working days for the above indications.*

### Risk stratification before non-cardiac surgery

Finally, the guidelines indicate the use of SPECT MPI as a Class I recommendation for risk stratification before non-cardiac surgery, when the surgery is non-emergent, and when cardiac revascularization might be indicated:

1. Initial diagnosis of CAD in patients with an interme-

diate pretest probability of disease and abnormal baseline ECG or inability to exercise, Level B;

2. Prognostic assessment of patients undergoing initial evaluation for suspected or proven CAD with abnormal baseline ECG or inability to exercise, Level B;
3. Evaluation of patients following a change in clinical status (e.g. ACS) with abnormal baseline ECG or inability to exercise, Level B;
4. Initial diagnosis of CAD in patients with LBBB and an intermediate pretest probability of disease when used with vasodilator stress, Level B;
5. Prognostic assessment of patients with LBBB undergoing initial evaluation for suspected or proven CAD when used with vasodilator stress, Level B;
6. Assessment of patients with intermediate or minor clinical risk predictors and poor functional capacity (less than 4 METS) who require high-risk noncardiac surgery, when used with pharmacologic stress, Level C;
7. Assessment of patients with intermediate clinical risk predictors, abnormal baseline ECGs, and moderate or excellent functional capacity (greater than 4 METS) who require high-risk noncardiac surgery, when used in conjunction with exercise stress, Level C.

*In these circumstances the appropriate wait time would be dictated by the usual wait time for the high risk non cardiac surgery. These wait times may range from 1 to 9 months<sup>5,9-11</sup> and thus a minimum wait time for MPI of 10 working days within the specified timeframe would seem acceptable.*

**Table E-1: Procedure: myocardial perfusion imaging – exercise stress**

Recommended wait times: Emergency: 1 day; Urgent: 3 days; Routine: 10 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not available on urgent basis		120	75-180
Nova Scotia	12	1-56	29	7-56
New Brunswick	6	1-14	57	42-90
PEI	15	15	15	15
Québec	17	1-240	72	5-780
Ontario	5	0-28	19	2-110
Manitoba	14	2-56	158	84-252
Saskatchewan	8	5-10	91	10-222
Alberta	7	1-35	31	9-60
British Columbia	5	1-14	33	2-120

**Table E-2: Procedure: myocardial perfusion imaging – pharmacologic stress**

Recommended wait times: Emergency: 1 day; Urgent: 3 days; Scheduled: 10 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not available on urgent basis		146	75-200
Nova Scotia	4	1-7	28	7-56
New Brunswick	6	1-14	57	42-90
PEI	15	15	15	15
Québec	24	1-300	97	5-810
Ontario	5	1-28	20	1-63
Manitoba	6	2-14	172	126-252
Saskatchewan	10	10	25	10-40
Alberta	7	1-35	31	20-60
British Columbia	5	1-14	35	5-120

## Appendix F: Myocardial Viability (Thallium 201 and <sup>18</sup>F FDG)

Both rest-redistribution Thallium 201 imaging and <sup>18</sup>F FDG PET imaging (combined with either SPECT or PET rest MPI) can be used to define ischemic myocardium which has the potential for functional improvement if revascularization is undertaken. PET techniques appear to

have greater accuracy.<sup>3,32</sup> The randomized Canadian PARR2 trial which has just concluded recruitment is expected to provide a more definitive assessment of these techniques in about two year's time. Both techniques are recommended as Class I investigations at Evidence Level B.

**Table F-1: Procedure: myocardial viability – FDG**

Recommended wait times: Emergency: 1 day; Urgent: 3 days;  
Scheduled: 10 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not Available			
Nova Scotia	Not Available			
New Brunswick	Not Available			
PEI	Not Available			
Québec	Not Available			
Ontario	4	1-7	21	7-42
Manitoba	Not Available			
Saskatchewan	Not Available			
Alberta	Not Available			
British Columbia	Not Available			

*Myocardial viability assessment can sometimes be urgent in critically ill patients with heart failure. Studies should be completed in one working day for this group of patients. Most cases of viability assessment are semi-urgent or scheduled investigations. However, information from previous Canadian studies indicate that there is increased mortality when revascularization is delayed more than 5 weeks after viability is defined.<sup>33</sup> Therefore investigation and prescription of a treatment plan needs to be completed promptly. Imaging within 10 working days is recommended, considering timing of subsequent revascularization, if required.*

**Table F-2: Procedure: myocardial viability – Thallium-201**

Recommended wait times: Emergency: 1 day; Urgent: 3 days;  
Scheduled: 10 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not available on urgent basis		85	75-95
Nova Scotia	4	1-7	30	5-56
New Brunswick	3	1-3	16	2-42
PEI	Not available			
Québec	4	1-7	20	1-100
Ontario	3	1-14	8	1-28
Manitoba	6	3-9	7	5-9
Saskatchewan	8	3-15	12	7-15
Alberta	5	1-7	20	5-60
British Columbia	6	1-10	15	9-30

## Appendix G: Radionuclide angiography

Based on the ACC/AHA/ASNC Guidelines radionuclide angiography is recommended as a Class I investigation in the following circumstances:

1. Measurement of baseline LV function following NSTEMI or STEMI, Level B;
2. Initial assessment of LV and RV function at rest in patients presenting with heart failure, Level A;
3. Baseline and serial assessment of LV function during therapy with cardiotoxic drugs (e.g. doxorubicin), Level A;
4. Initial and serial assessment of RV and LV function in patients with valvular heart disease, Level A.

*Appropriate wait times are best defined by Indication #1 for Urgent as assessment is usually required prior to discharge. Baseline pre-chemotherapy assessment would also be considered urgent i.e. within 3 working days of the specified timeframe required before instituting chemotherapy regimens. Appropriate wait times are best defined by indication #3 for Routine where assessment may be required prior to the next scheduled therapy and should be available within 10 days.*

**Table G-1: Procedure: radionuclide angiography**

Recommended wait times: Emergency: 1 day; Urgent: 3 days; Scheduled: 10 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland	Not available on an urgent basis		36	20–50
Nova Scotia	3	1–7	10	4–21
New Brunswick	3	1–7	15	1–30
PEI	20	20	20	20
Québec	8	1–120	21	1–180
Ontario	3	1–14	9	1–30
Manitoba	2	1–7	12	2–35
Saskatchewan	2	1–3	11	7–14
Alberta	2	1–7	8	2–21
British Columbia	3	1–14	12	2–28

## Appendix H: Bone mineral density (DEXA)

The early detection and treatment of osteoporosis has the potential to reduce the rate of insufficiency fractures, particularly in the female population. About 40% of white women 50 years of age in Canada will have an osteoporotic fracture during their remaining lifetime: 15.6% will experience a vertebral fracture, 16.0% a wrist fracture and 17.5% a hip fracture.<sup>34</sup>

**Table H-1: Procedure: bone density**

Recommended wait times: Emergency or urgent: not applicable; Scheduled: 30 days

Province	Urgent wait times (working days)		Routine wait times (working days)	
	Mean	Range	Mean	Range
Newfoundland			101	40–195
Nova Scotia			57	3–147
New Brunswick			141	14–300
PEI			425	425
Québec			37	14–60
Ontario			23	1–180
Manitoba			252	252
Saskatchewan			323	304–342
Alberta			8	1–42
British Columbia			18	3–42

The Osteoporosis Society of Canada guidelines recommend screening with DEXA for postmenopausal women with 1 major and 2 minor clinical risk factors or those 65 years of age or older.<sup>35</sup> In those women found to have a bone density within 1 standard deviation (SD) of the mean for young adults repeat assessment in 2 years is recommended. For those with a BMD reduced below this level the institution of therapy and a repeat assessment in 1 to 2 years is recommended. To implement these recommendations sufficient access to DEXA is required. The ACR Appropriateness Criteria assign a rating of 9 to DEXA under these circumstances.<sup>36</sup> The Royal College of Radiologists recommends DEXA as indicated in the assessment of metabolic bone disease at evidence level A.

As osteoporosis is a slowly evolving condition rapid access to the technology is not required. A wait **time target of 3 months or 60 working days** is likely appropriate. It is necessary to monitor whether wait times are stable, indicating the presence of adequate resources, growing (inadequate resources) or falling (excess resources). As Canada's population continues to age, continued monitoring of wait times will be required to allocate resources to this area appropriately.



## References

1. GAC levels of evidence: Comparison chart with guideline developers. A comparison of guideline developer's evidence taxonomies. Ontario Guidelines Advisory Committee. 7 Mar. 2003. Available: [gacguidelines.ca/article.pl?sid=03/03/07/2128213&mode=thread](http://gacguidelines.ca/article.pl?sid=03/03/07/2128213&mode=thread)
2. ACR Appropriateness Criteria Development and Methodology. American College of Radiology. 2004. Available: [www.acr.org/ac\\_pda](http://www.acr.org/ac_pda)
3. Klocke FJ, Baird MG, Lorell BH, et al. ACC/AHA/ASNC Guidelines for the clinical use of cardiac radionuclide imaging — executive summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASNC Committee to Revise the 1995 Guidelines for the Clinical Use of Cardiac Radionuclide Imaging). *J Am Coll Cardiol* 2003;42:1318-33. Available: [www.acc.org](http://www.acc.org)
4. Tanser et al. CCS guidelines for evaluation and management of chronic ischemic coronary artery disease. *Can J of Cardiol* 1998;14(Suppl C).
5. Health Services Wait Time Information. Manitoba Health. 30 Nov. 2004. Available: [www.gov.mb.ca/health/waitlist/index.html](http://www.gov.mb.ca/health/waitlist/index.html)
6. Mowatt G, Vale L, Brazzelli M, Hernandez R, Murray A, Scott N et al. Systematic review of the effectiveness and cost-effectiveness, and economic evaluation, of myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction. *Health Technology Assess* 2004;8(30):iii-iv,1-207.
7. Underwood SR, Shaw LJ, Anagnostopoulos C, Cerqueira M, Ell PJ, Flint J et al. Myocardial perfusion scintigraphy and cost effectiveness of diagnosis and management of coronary heart disease. [Review] [19 refs]. *Heart* 2004;90(suppl 5):v34-6.
8. Wait Times. Cancer Care Ontario 2005. Available: [www.cancercare.on.ca/access\\_waitTimes.htm](http://www.cancercare.on.ca/access_waitTimes.htm)
9. Surgical Wait Times. Government of British Columbia. 7 Oct. 2004. Available: [www.swl.hlth.gov.bc.ca/swl/index.html](http://www.swl.hlth.gov.bc.ca/swl/index.html)
10. Alberta Wait List Registry. Alberta Government. 30 Nov. 2005. Available: [www.health.gov.ab.ca/waitlist/WaitListPublicHome.jsp](http://www.health.gov.ab.ca/waitlist/WaitListPublicHome.jsp)
11. Wait Time Information. Saskatchewan Surgical Care Network. 30 Sept. 2004. Available: [www.sasksurgery.ca/wait-list-info.html](http://www.sasksurgery.ca/wait-list-info.html)
12. Cardiac Care Network of Ontario. Cardiac Care Network of Ontario. 2004. Available: [www.ccn.on.ca](http://www.ccn.on.ca)
13. Hadorn DC. Developing priority criteria for magnetic resonance imaging: results from the Western Canada Waiting List Project. *Can Assoc Radiologists J* 2005;53(4):210-8.
14. *Medical Imaging in Canada 2004*. Ottawa: Canadian Institute for Health Information; 2004.
15. El-Khoury GY, Dalinka MK, Alazraki N, Berquist TH, Daffner RH, DeSmet AA et al. *Metastatic Bone Disease. ACR Appropriateness Criteria 1999*. Available: [www.acr.org/ac\\_pda](http://www.acr.org/ac_pda)
16. *Making the best use of a department of radiology*. 5 ed. London: Royal College of Radiologists; 2003.
17. Chong R, Caldwell CB, Mah K. Cost effectiveness of <sup>18</sup>F-FDG PET/CT on radiation therapy for non-small cell lung cancer: A Canadian perspective. *J Nucl Med* 2005;46[5S], 427P. 2005. Ref Type: journal (Full)
18. Gu A-C, Liu J-J, Sun X-G, Huang G. Cost-effective analysis of PET and CT in NSCLC in China. *J Nucl Med* 46[5S], 243P. 2005. Ref Type: Journal (Full)
19. vanTinteren H, Hoekstra OS, Smit EF, van den Bergh JH, Schreurs AJ, Stallaert RA et al. Effectiveness of positron emission tomography in the pre-operative assessment of patients with suspected non-small-cell lung cancer: the PLUS multicentre randomised trial.[see comment]. *Lancet* 2002;359(9315):1361-2.
20. Guidance for Industry: PET drug applications — Content and format for NDAs and ANDAs. US Department of Health and Human Service, Food and Drug Administration. Mar. 2000. Available: [www.fda.gov/cder/guidance](http://www.fda.gov/cder/guidance)
21. Silberstein EB. Prevalence of adverse reactions to positron emitting radiopharmaceuticals in nuclear medicine. Pharmacopeia Committee of the Society of Nuclear Medicine. *J Nuclear Med* 1998;39(12):2190-2.
22. Bradbury I, Bonell E, Boynton J, Cummins E, Facey K, Iqbal K, Laking G, McDonald C, Parpai T, Sharp P, Single A, Walker A. *Positron emission tomography (PET) imaging in cancer management*. Glasgow: Health Technology Board for Scotland; 2002.
23. Adams E, Flynn K. *Positron Emission Tomography: descriptive analysis of experience with PET in VA*. US Department of Veterans Affairs. Dec. 1998. Available: [www.va.gov/vatap/](http://www.va.gov/vatap/)
24. Dussault F-P, Nguyen V H and Rchet F. *Positron Emission Tomography in Québec*. Montreal: Gouvernement du Québec; 2001. Report No.: AÉTMIS 01-3 RE.
25. *Positron emission tomography (PET) for a number of services*. Canberra Medical Services Advisory Committee. Mar. 2000.
26. Adams E, Asua J, Olasagasti JC, Erlichman M, Flynn K, Hurtado-Saracho I. *Positron Emission Tomography: Experience with PET and synthesis of the evidence*. International Network of Agencies for Technology Assessment. 4 Jan. 1999. Available: [www.inahta.org/inahta\\_web/index.asp](http://www.inahta.org/inahta_web/index.asp)
27. Robert G, Milne R. *Positron emission tomography: establishing priorities for health technology assessment*. The National Coordinating Centre for Health Technology Assessment. July 1999. Available: [www.nchta.org/project/data/1\\_project\\_record\\_published.asp?PjtId=1026](http://www.nchta.org/project/data/1_project_record_published.asp?PjtId=1026)
28. Laupacis A, Paszat L, Hodgson D, Benk V. *Health technology assessment of PET (positron emission tomography): a systematic review*. International Network of Agencies for Technology Assessment 2005. Available: [www.ices.on.ca/webpage.cfm?site\\_id=1&org\\_id=68&morg\\_id=0&gsec\\_id=0&item\\_id=1536&type=report](http://www.ices.on.ca/webpage.cfm?site_id=1&org_id=68&morg_id=0&gsec_id=0&item_id=1536&type=report)
29. Minnesota Health Technology Advisory Committee. *Positron emission tomography (PET) for oncology applications*. Minnesota Department of Health. 1999. Available: [www.health.state.mn.us/htac/pet.htm](http://www.health.state.mn.us/htac/pet.htm)
30. McLoud TC, Westcott J, Davis S, Fleishon H, Gefter WB, Henschke CI et al. Staging of bronchogenic carcinoma, non-small cell lung carcinoma. American College of Radiology. ACR Appropriateness Criteria. *Radiology* 2000;215(suppl):611-9. Available: [www.acr.org/ac\\_pda](http://www.acr.org/ac_pda)
31. *Patient Access to Care: Cardiac Catheterization*. Cardiac Care Network of Ontario. 25 Sept. 2004. Available: [www.ccn.on.ca/access/waittimec.html](http://www.ccn.on.ca/access/waittimec.html)
32. Bax JJ, Poldermans D, Elhendy A, Boersma E, Rahimtoola SH. Sensitivity, specificity, and predictive accuracies of various noninvasive techniques for detecting hibernating myocardium. *Current Problems in Cardiology* 2001;26(2):141-86.
33. Beanlands RS, Hendry PJ, Masters RG, deKemp RA, Woodend K, Ruddy TD. Delay in revascularization is associated with increased mortality rate in patients with severe left ventricular dysfunction and viable myocardium on fluorine 18-fluorodeoxyglucose positron emission tomography imaging. *Circulation* 1998;98(19 Suppl):II51-6.
34. Cheung AM, Feig DS, Kapral M, az-Granados N, Dodin S, Canadian Task Force on Preventive Health Care. Prevention of osteoporosis and osteoporotic fractures in postmenopausal women: recommendation statement from the Canadian Task Force on Preventive Health Care. *CMAJ* 2004;170(11):1665-7.
35. Brown JP, Josse RG, Scientific Advisory Council of the Osteoporosis Society of Canada. 2002 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada.[see comment][erratum appears in *CMAJ*. 2003;168(4):400]. [Review] [394 refs]. *CMAJ* 2002;167(10 Suppl):S1-34.
36. Genant HK, Dalinka MK, Alazraki N, Daffner RH, Kneeland JB, Manaster BJ et al. *Osteoporosis and bone mineral density*. ACR Appropriateness Criteria. 2001. Available: [www.acr.org/ac\\_pda](http://www.acr.org/ac_pda)

---

# The National Standards Committee of the Canadian Orthopaedic Association

Ted Rumble and Hans. J. Kreder (Co-chairs), March 2005

---

## Definitions

Different definitions used to measure actual patient waiting times include mean, median, mode, minimum and maximum. In theory a benchmark could be set for each of these measures. Mean, median and mode waiting time benchmarks would ignore the fact that many patients may wait significantly longer than these times, while the overall group may well meet the benchmark as most wait distributions are right skewed. Moreover one must also consider that benchmarks will be applied at the individual patient level (how long should this particular patient wait) albeit overall monitoring of adherence to the benchmark will consider larger patient groups.

Some have advanced the concept of “ideal wait time” as the basis of benchmarking. Most individuals waiting for service of any kind would probably state that an ideal wait time would be immediate service, making it difficult to operationalize a definition of what constitutes an ideal wait. The concept of maximum acceptable wait time is easier to define at least in theory. It implies that some important deleterious effect (emotional, economic, quality of life, etc.) is incurred or that the risk of such an event occurring is substantially increased beyond the acceptable wait time. For example, while it is ideal to establish blood flow immediately to someone with an anoxic brain, the maximum acceptable time to do so is about two minutes before brain cell death and irreversible damage ensues. After consideration of the issues and the benchmark definitions used in most other jurisdictions around the world, the committee decided to recommend using maximum acceptable wait time (MAWT) for benchmarking purposes. MAWT benchmarks should be based on the best available evidence and be constantly updated as new information becomes available.

## General approach

The committee reviewed how other jurisdictions had handled the issue of benchmarking considering that there are many different procedures that could potentially be benchmarked and that patients waiting for treatment within a given condition category might vary dramatically in terms of treatment urgency. Some jurisdictions have taken the

approach of drawing up separate benchmarks for individual diagnostic or operative procedures (see Saskatchewan in appendix I) while others have considered priority ratings that can be applied to any patient irrespective of the diagnosis or procedure. After careful review, the committee felt that the former approach is flawed in the sense that not all patients within a diagnostic (or procedural) category require intervention with equal urgency so that a priority rating tool is still required. Thus the committee has recommended adoption of a wait time benchmark based on priority rating categories. Additional ranking of the patients within a priority category was also considered.

## Benchmarks for maximum acceptable waiting time

The committee focused the discussion as follows:

1. Only scheduled procedures were considered at this time. Urgent and emergent conditions were deferred for future study. Scheduled patients are those that are generally not admitted immediately after consultation (i.e. those that are discharged home but may be scheduled for surgery). Although some acute fractures and soft tissue injuries (locked knee) are discharged home and scheduled in upcoming OR time, we excluded all acute fractures and soft tissue injuries from consideration as scheduled procedures at this time.
2. The MAWT from referral to consultation (*wait for consultation*) was considered separately from the wait after decision for surgery date to surgery (*wait for surgery*).

## Wait for consultation

### **Efficiency gains through better patient filtering**

In many communities orthopaedic surgeons see many patients who are not ready for surgery for a variety of reasons. The committee emphasized the merits of filtering patients before referral to an orthopaedic surgeon's office for maximum efficiency. The Alberta efforts were discussed, whereby patients will be evaluated at regional centres for a

variety of conditions to optimize non-surgical care and to then refer for surgery when appropriate. Alternatives include better primary care provider education on the management of orthopaedic conditions and the proper place of surgical referral. While more orthopaedic education is clearly required in medical student training, this will not lead to changes for some years to come, and the concept of regional centres was considered a preferred option.

### **Efficiency and patient satisfaction gains through surgeon extenders**

When a pre-screened patient is referred for surgery much routine work could be undertaken by a physician assistant (PA) or surgeon extender (for example: review of systems, allergies, medications & preoperative education). Evidence in the US indicates that patient satisfaction with PAs is high and that their presence in the clinical setting improves surgeon productivity.

### **MAWT for consultation**

*The committee recommends that no patient referred to an orthopaedic surgeon should be asked to wait longer than 3 months under any circumstances.* This recommendation is based on policies in other jurisdictions and the consensus of the committee.

### **Wait for surgery (following mutual decision to operate after consultation)**

#### **MAWT for surgery**

*The committee recommends that no patient be asked to wait longer than 6 months after the mutual patient/surgeon decision is made to operate.* The patient's actual MAWT for surgery is determined by that patient's priority rating (see below). This recommendation is based on policies in other jurisdictions and the consensus of the committee.

#### **Priority rating**

After reviewing the available tools used in other jurisdictions, the committee decided to recommend adopting a priority rating scheme similar to one used in Australia. There the priority rating is assigned at the time of surgical booking and becomes part of the patient record.

**Priority 1:** A situation that has the potential to deteriorate quickly and result in an emergency admission should be operated within a MAWT of *1 month*.

**Priority 2:** A situation which involves some pain and disability but which is unlikely to deteriorate quickly to the point of becoming an emergency admission should be operated within a MAWT of *3 months*.

**Priority 3:** A situation that involves minimal pain, dysfunction or disability and which is unlikely to deteriorate quickly to the point of requiring emergency admission should be operated within a MAWT of *6 months*.

### **Western Canada Waiting List Project MAWT**

In February 2005, the Western Canada Waiting List Project (WCWL) released the Final Report, *Moving Forward*, outlining MAWT benchmarks for hip and knee replacement surgery. Utilizing three clinically relevant levels of urgency ranging from least urgent (Urgency 1) to most urgent (Urgency 3), the report proposes the following maximum acceptable waiting times:

Urgency III (most urgent)	1 month
Urgency II	3 months
Urgency I (least urgent)	5 months

The WCWL urgency levels are based their prior work developing and validating a priority screening tool. These represent clinically distinct and relevant patient populations (see Appendix II)

These benchmarks are primarily based on clinical, patient and public input. Orthopaedic surgeons reviewed standardized patient cases developed using the WCWL priority criteria and determined maximum acceptable waiting times. Patients scored with the priority criteria also recommended a maximum acceptable waiting time based on cases like theirs. Members of the public may not hold the clinical or patient experience to make direct MAWT judgments. As a result, the WCWL report used an indirect methodology in which members of the public would choose among different clinical scenarios taken from the priority criteria. Analysis of these responses determined the public MAWTs. Patient and surgeon responses were consistent while the public MAWT were longer. The following table outlines the clinical, patient and public inputs for MAWTs (from the WCWL 2005 Final Report, *Moving Forward*):

	<b>Clinical</b>	<b>Patient</b>	<b>Public</b>
Urgency III (most)	1 month	1 month	7 months
Urgency II	3.25 months	2 months	21.75 months
Urgency I (least)	6.5 months	3 months	36.75 months

### **Relative patient ranking**

Within each priority category, the most urgent patients should ideally receive surgery before less urgent patients,

taking into account various patient, social and disease related factors.

The committee reviewed a number of existing priority and disease severity rating tools and made the following points:

1. Prioritization tools are mainly required when arranging patients for surgery within a long queue. If all patients meet their priority specific benchmark, the need for severity rating and prioritization within that category becomes much less acute.
2. Simple universal priority rating tools are preferred. It would be cumbersome to utilize a different tool for each condition.
3. An ideal tool would have high inter and intra-rater consistency and minimize “gaming”.

Among the tools reviewed were the WOMAC and WCWL. The WOMAC may be collected for all total hip and total knee replacement patients as a preoperative severity rating tool and may be used to monitor the effectiveness of treatment after surgery.

The Western Canada Waiting List Project (WCWL) has developed a priority screening tool for prioritizing patients waiting for hip and knee arthroplasty (see appendix II). While continued validation of the tool is ongoing, existing data support the tool as a measure of physician-rated urgency. In its February 2005 report, the WCWL further adapted this tool for primary health care to prioritize referrals to orthopaedic surgeons based on urgency.

Longer-term the committee recognises the need to develop and validate priority screening tools for orthopaedic procedures beyond TJA. Tools that are condition specific would require considerable effort for a surgeon with a varied practice casemix. In the future, as wait times become shorter, relative priority ranking may become less and less important.

## **Adherence to benchmarks**

There is little value in setting benchmarks unless policy and resources are put into place to ensure compliance. To monitor the effectiveness of such policy it is imperative that actual wait times be periodically measured. It is anticipated that over time the number of persons exceeding the MAWT will be brought down eventually to zero. Specific policy targets should be set in this regard (i.e. bring the percentage exceeding MAWT down by 50% next year).

## **Collection of waiting time Ddata**

Although supporting the collection and public disclosure of wait time information, the committee realizes that such an endeavour is significantly resource intensive and the

Canadian Orthopaedic Association lacks the necessary resources to accomplish this task on its own.

The joint registries that are supported in part by the COA are potential vehicles for national monitoring of care provided to total hip and total knee replacement patients but this leaves many other procedures un-monitored and at risk of suffering at the expense of programs designed to improve access to care for hip and knee replacement patients. Potentially, cooperation with federal & provincial ministries and agencies would best accomplish data collection objectives

The committee encourages authorities to implement the requisite resources for wait time data collection. Additional information that will need to be collected as part of the medical record includes the date of patient referral, surgical booking (decision date) and priority ranking at the time of booking. Ensuring compliance in the collection of this data across the country might be challenging. Requiring this data at the time of submitting a surgical booking is one possible measure to ensure complete data collection.

## **Public disclosure of wait times**

### **Overview**

Public access to information regarding wait times is of interest to patients, providers and policy makers. Regional information regarding wait times and adherence to MAWT benchmarks would provide the public with a sense of the magnitude of the problem of access to orthopaedic care in general as well as highlighting potential regional disparities. This information could then be used to lobby policy makers for the necessary resources to address the problem. The availability of surgeon specific data would provide patients and referring doctors with the necessary information to make an informed choice regarding which surgeon to approach with a referral.

The committee supports the concept of public access to information regarding regional and individual surgeon wait times for consultation and for surgery. This information needs to be accurate and updated on a timely basis. Surgeon specific data could be released in the form of mean or median wait times or as the percentage of patients waiting longer than the MAWT. There may be some sensitivities around the publication of mean wait times for surgeons with excessively long or short queues and the dissemination of information regarding percentage of patients exceeding the MAWT may be more acceptable to surgeons while still providing useful information to the public.

### **Patient choice**

The committee considered that a patient may choose to wait for surgery with a given surgeon, even if that surgeon has a large percentage of patients who receive care in excess

of the MAWT. Provided that alternative providers in the region are available to the patient, and that the regional wait times are within the benchmark, the patient would be able to avail themselves of timely care, but would retain the ability to choose the provider of their choice.

### **Resource allocation**

Ideally resources would be allocated to regions where the benchmarks are not being met. To achieve this while maintaining equity and fairness may be difficult. As noted above, the committee felt strongly that patient choice must be preserved. As such, patients may choose to stay in long queues providing they are made aware of how they might access care more quickly. It would be impossible to preserve equity if additional resources were made available specifically to those providers with a long queue at the expense of the other providers in the region. Moreover such a system might be gamed by booking patients onto the wait list early in the disease process if it meant that more resources would be allocated to that surgeon. While the committee discussed these issues at length no clear implementation plan for resource allocation to regions below the MAWT benchmark was finalized.

### **Which wait times should be monitored?**

There is considerable danger that as attention and resources are allocated to one condition, the wait time for other procedures may be adversely affected. While it would be ideal to monitor the wait times for each conceivable specific condition, it may be more useful to monitor adherence to benchmarks by considering common and effective procedures from various subspecialties rather than individual operations, at least in the initial phase of monitoring. Such procedures might be termed “sentinel” procedures. We considered that sentinel procedures should possess the following attributes:

- a. Apply to an important condition that is proven to benefit from orthopaedic treatment (surgery).
- b. Apply to a relatively common condition that represents an important proportion of services or cost to orthopaedics as a whole or to the subspecialty area in question.
- c. Are measurable and routinely collected so that the number of individuals are treated inside and outside of the MAWT benchmark can be tracked over time (i.e. in CIHI or other billing / administrative databases).

The committee produced a list of potential sentinel procedures to track based on the above criteria and proposed that these be circulated to the membership for consideration and possible modification. In drawing up the list we reviewed the top 50 procedures in Ontario by cost and by frequency of service.

### **List of procedures:**

1. Upper extremity: instability surgery
2. Lower extremity: hip & knee replacement
3. Spine: lumbar disectomy
4. Pediatrics: scoliosis, clubfoot, DDH
5. Sports med: ligament repair
6. Foot & ankle: Forefoot reconstruction including bunions
7. Non-acute trauma related: nonunions, malunions

### **Legal issues**

If payors, hospital administrators, providers and patients agree on a specific time limit for treating a specific condition, it follows that pressure can be brought to bear on payors and administrators to provide the necessary operating room and support resources to ensure that the timelines can be realized. Moreover, if a system of monitoring wait times is in place, the effect of policy initiatives can be evaluated over time to ensure that resources are made available in a cost effective manner.

There is always concern that guidelines will be used to litigate or punish those who failed to provide treatment according to the guideline. What if a surgeon did not operate on a patient within the suggested time limit despite having sufficient resources available? Is he or she liable for any adverse consequences the patient may have suffered? Historically, guidelines have not been successfully used to prosecute providers. While this is a theoretical concern, it is much more likely that benchmarks will be used to the benefit of our patients than to the detriment of care providers. We must also be careful to advise users of the guidelines that each circumstance must be individualized to some degree and that the benchmark is simply a guideline.

The committee has obtained legal opinions that have been forwarded to the COA executive for review.

### **Literature review**

Apart from the literature concerning emergent conditions (such as compartment syndrome, ischemia, etc.), there has been little data published regarding the effect of delay to treatment for orthopaedic conditions other than TJR surgery.

Evidence from the literature indicates that timely access to TJR is advantageous both clinically and economically.

Early TJR surgery is associated with better functional outcomes. Fortin et al. (2002) followed a group of 165 THR/TKR surgery patients in Boston and Montreal assessing pain and function using the WOMAC and SF-36 at baseline, six months and two years.

Improvements in pain and function at two years were similar to those observed at six months. In addition,

patients with worse WOMAC and SF-36 scores at baseline had comparatively worse function six months and two years after surgery. They conclude that early surgical intervention in the course of functional decline is warranted. An earlier study by Fortin et al. (1999) also indicated that THR/TKR patients with better function before surgery had better function six months post-surgery.

Holtzman et al. (2002) investigating hip arthroplasty (using Medicare administrative data in Minneapolis) echoed Fortin et al's findings. They measured activity level, pain, ability to walk and ability to perform Instrumental Activities of Daily Living (IADLs). In all cases, patients with worse pre-operative status were more likely to be worse off one year post-surgery. They conclude that patients who are more likely to benefit from total hip arthroplasty are those with graver pre-operative status. Still, superior pre-operative status is associated with better outcomes.

Also in a 2002 study, Hajat et al. concur that measures of pain and function are worse one year later among patients with worse scores prior to THR. And patients who waited more than twelve months for consultation with a surgeon or for the actual surgery suffered significantly worse measures of pain and function twelve months post-THR.

Health status declines while waiting for surgery. Killi et al. (2003) indicate that Harrison hip scores declined significantly with time on the waiting list for THR. The median wait for surgery in the study is 330 days. They conclude that patients requiring total hip replacement deteriorate while on the waiting list. Waiting times should be as short as possible to reduce unnecessary suffering. Mahon et al. (2002) conclude that clinically important losses in HRQOL and mobility occur in patients waiting more than 6 months for THA.

It is well known that patients lose knee range of motion as their arthritis worsens. It is also known that the ROM achieved by TKR is primarily determined by the pre-operative ROM. Hence, a long wait for TKR is likely to leave patients with less ROM than they might have had if their surgery had not been delayed.

Saleh et al (1997) carried out an economic analysis to determine whether there were economic advantages to performing THA early rather than having patients wait. They conclude that there is the potential for substantial savings in resources as a result of timely surgery.

## Literature review references

- Fortin PR, Penrod JR, Clarke AE, St-Pierre Y, Joseph L, Belisle P, Liang MH, Ferland D, Phillips CB, Mahomed N, Tanzer M, Sledge C, Fossel AH, Katz JN. Timing of total joint replacement affects clinical outcomes among patients with osteoarthritis of the hip or knee. *Arthritis Rheum* 2002;46(12):3327-30
- Fortin PR, Clarke AE, Joseph L, Liang MH, Tanzer M, Ferland D, Phillips C, Partridge AJ, Belisle P, Fossel AH, Mahomed N, Sledge CB, Katz JN. Outcomes of total hip and knee replacement: preoperative functional status predicts outcomes at six months after surgery. *Arthritis Rheum* 1999;42(8):1722-8
- Hajat S, Fitzpatrick R, Morris R, Reeves B, Rigge M, Williams O, Murray D, Gregg P. Does waiting for total hip replacement matter? Prospective cohort study. *J Health Serv Res Policy* 2002;7(1):19-25
- Holtzman J, Saleh K, Kane R. Effect of baseline functional status and pain on outcomes of total hip arthroplasty. *J Bone Joint Surg Am* 2002;84-A(11):1942-8
- Kili S, Wright I, Jones RS. Change in Harris hip score in patients on the waiting list for total hip replacement. *Ann R Coll Surg Engl* 2003;85(4):269-71
- Mahon JL, Bourne RB, Rorabeck CH, Feeny DH, Stitt L, Webster-Bogaert S. Health-related quality of life and mobility of patients awaiting elective total hip arthroplasty: a prospective study. *CMAJ* 2002;167(10):1115-21
- Saleh K, Wood KC, Gafni A, Gross AE. Immediate surgery versus waiting list policy in revision total hip arthroplasty: an economic evaluation *J Arthroplasty* 1997;12(1):1-10.

## Acknowledgements

### National Standards Committee

Chair:	Dr. Hans Kreder
Vice-chair:	Dr. Ted Rumble
Members:	Dr. Nelson V. Greidanus Mr. David Pitman Dr. Steven MacDonald Dr. Sylvain Gagnon Dr. Victor deKorompay Dr. Peter Rockwood Dr. Andrew Berkshire Dr. Brendan Lewis Dr. Keith Stothers Dr. Nizar Mahomed Dr. Michel Fallaha Dr. Peter MacDonald

## Appendix I: International comparison: Maximum acceptable waiting times

Sweden	<ul style="list-style-type: none"> <li>-guarantee on the national level for visits in primary care (non-urgent patients should get a visit within 7 days)</li> <li>-referral to a specialist should not take more than 90 days</li> <li>-plans to introduce a waiting time guarantee of three months for all elective treatment</li> </ul>
New Zealand	<ul style="list-style-type: none"> <li>- a maximum waiting time of six months for first specialist assessment</li> <li>- all patients with a level of need which can be met within the resources (funding) available are provided with surgery within six months of assessment (decision to treat)</li> </ul>
Finland	<ul style="list-style-type: none"> <li>- at present there are no maximum waiting time guarantees</li> <li>- discussions about such initiatives for the future</li> </ul>
Ireland	<ul style="list-style-type: none"> <li>- There is no waiting time guarantee in Ireland</li> <li>- A 2001 government strategy document outlined these goals: <ul style="list-style-type: none"> <li>-By the end of 2002— 12 month wait</li> <li>-By the end of 2003—6 month wait</li> <li>-By the end of 2004—3 month wait</li> </ul> </li> </ul>
Spain	<ul style="list-style-type: none"> <li>-maximum waiting time guarantee in Spain set by each regional health service</li> <li>-maximum waiting time is set to six months except for cardiac surgery</li> </ul>
Australia	<ul style="list-style-type: none"> <li>- public patient requiring elective surgery is assigned to an elective surgery category</li> <li>-Category 1: Admission within 30 days desirable for a condition that has the potential to deteriorate quickly to the point that it may become an emergency.</li> <li>-Category 2: Admission within 90 days desirable for a condition causing some pain, dysfunction or disability but which is not likely to deteriorate quickly or become an emergency</li> <li>-Category 3: Admission at some time in the future acceptable for a condition causing minimal or no pain, dysfunction or disability, which is unlikely to deteriorate quickly and which does not have the potential to become an emergency</li> </ul>
United Kingdom	<ul style="list-style-type: none"> <li>-Achieve a maximum wait of four months (17 weeks) for an outpatient appointment and reduce the number of &gt;13-week outpatient waits by March 2004, as progress towards achieving a maximum wait of three months for an outpatient appointment by December 2005</li> <li>-Achieve a maximum wait of nine months for all inpatient waits and reduce the number of six-month inpatient waits by 40 per cent by March 2004, as progress towards achieving a maximum six-month wait for inpatients by December 2005 and a three-month maximum wait by 2008. This will ensure an overall reduction in the total list size and reduction of at least 80 per cent by March 2005 in the number of over six month inpatient waits from the March 2004 baseline</li> <li>- In all other inpatient and day case treatment, including orthopaedic treatment, the current maximum waiting time for 2004-05 was 18 months, but on 30th June 2004 the Minister announced that the 2nd Offer Scheme will be extended to support a maximum length of wait of 12 months by the end of March 2005</li> </ul>
Saskatchewan	<p>Elective</p> <ul style="list-style-type: none"> <li>-1 week: locked knee, malignant bone tumour, secondary placement of fracture, implant failure (fracture&amp; infection), some cases of peripheral nerve injury</li> <li>-2 weeks: acute tear of major tendon or meniscus in active patient athletes, recent acute lumbar disc protrusion with paralysis, paresis or severe pain, some cases of implant failure and peripheral nerve injury</li> <li>-6 weeks: selected joint replacement (polyarthritis, bilateral disease, revision or when indicated by concomitant disease, recurrent dislocation of total joint, subacute implant infection, congenital dislocation of the hip, routine spinal disk herniation, rotator cuff repair, knee arthroscopy</li> <li>-3 months: club foot correction, anterior cruciate reconstruction, shoulder acromioplasty, selected joint replacements, selected spinal fusion</li> <li>-6 months: all elective surgery</li> </ul>

**Appendix II: Developing priority criteria for hip  
and knee replacement: results from the Western Canada Waiting List Project**

Can J Surg 2003;46(4):290-6

Arnett G, Hadorn DC, and the Steering Committee of the Western Canada Waiting List Project

Reprinted with permission from the CMA Media Inc.

**Western Canada Waiting List Project Hip and Knee  
Replacement Panel, Edmonton, Alta.**

**INTRODUCTION:** The Western Canada Waiting List Project (WCWL), a federally funded partnership of 19 organizations, was created to develop tools for managing waiting lists. The WCWL panel on hip and knee replacement surgery was 1 of 5 panels constituted under this project. **METHODS:** The panel developed and tested a collection of standardized clinical criteria for setting priorities among patients awaiting hip and knee replacement. The criteria were applied to 405 patients in 4 provinces. Regression analysis was used to determine the set of criteria weights that collectively best predicted clinicians' overall urgency ratings. Inter-rater and test-retest reliability was assessed from

6 videotaped patient interviews, scored by orthopedic surgeons, related professionals and general practitioners.

**RESULTS:** The priority criteria accounted for over two-thirds of the observed variance in overall urgency ratings (adjusted  $R^2 = 0.676$ ). The panel modified the criteria and weights based on the empirical findings and on clinical judgement. The reliability of the priority criteria for the hip and knee replacement tool was among the strongest of the 5 instruments developed in the WCWL project. **CONCLUSIONS:** The panel considered the criteria easy to use and reasonably reflective of expert surgical judgement regarding clinical urgency for hip and knee replacement. Further development and testing of the tool appears warranted.

Additional information may be obtained by consulting the Western Canada Waiting List Project Web site: [www.wcwl.ca](http://www.wcwl.ca)



---

# Canadian Association of Radiation Oncologists

---

## Definition of radiation therapy waiting

By: Manpower and Standards of Care in Radiation  
Oncology Committee, September 2000

1. The interval between the date of the *initial referral to radiation oncology* and the date of *the radiation oncology consultation* reflects the waiting time for radiation oncology consultation, and this should not exceed 10 working days.
2. For routine single modality treatments, the interval between *the radiation therapy requisition date* OR *the radiation oncology consultation date*, whichever is later, and the *first day of therapy* reflects the waiting for radiation therapy.
3. For multi-modality treatments, the interval between *the target RT start date* and *the first day of therapy* reflects the waiting for radiation therapy.
4. The waiting for radiation therapy should not exceed 10 working days.
5. As a quality indicator, radiation centres can report at regular intervals *the number OR percentage of patients who have waited more than 10 working days* for radiation oncology consultation or for radiation therapy.

*F. Wong, MD*

*Chair, Manpower and Standards of Care in Radiation  
Oncology Committee*

*Presented/Accepted CARO Board of Directors, Sept. 21, 2000*

*Presented/Accepted CARO Members, Sept. 22, 2000*

---

# Canadian Ophthalmological Society

---

## Introduction

The Wait Time Alliance is a working group of the Canadian Medical Association and six national specialty societies that are most directly affected by the federal government's recent announcement to allocate \$5.5 billion to shorten waiting times in designated areas. The Canadian Ophthalmological Society (COS) is pleased to be a member of the Alliance and to have the opportunity to comment on the allocation of additional resources aimed at reducing waiting times for sight restoration procedures. The COS has chosen to focus its comments on waiting times for cataract surgery since this is the area that affects the greatest number of Canadians and has the greatest number of patients waiting for sight restoration surgery.

## Methodology

As part of its role in the Alliance the COS created a wait time subcommittee to review the available literature and make a recommendation about medically acceptable waiting time for cataract surgery. This committee contained representatives from all regions of the country and had several members who had previously been involved in studies looking at cataract waiting time such as the Western Canada Wait List Project (WCWLP). The committee relied heavily on an extensive literature review on this issue which had previously been undertaken by the WCWLP. This committee's report was then reviewed by the COS Council on Provincial Affairs, a committee made up of the chairs of the provincial ophthalmological associations. The document was then further modified and approved by the COS board of directors.

## Benchmarks

The Canadian Ophthalmological Society advocates that 16 weeks represents a reasonable medically acceptable wait time for visually significant cataract surgery. Ideally 90% of surgeries would be done within this benchmark time. It is felt that higher priority cases should have expedited surgery with the shortening of the waiting time to be proportional to the relative degree of priority. Since the COS made this recommendation the Institute for Clinical Evaluative Sciences (ICES) has come out recommending 16 weeks as

an appropriate wait benchmark for cataract surgery ([www.ices.on.ca/file/Chp4\\_v5.pdf](http://www.ices.on.ca/file/Chp4_v5.pdf)). This 16 week benchmark is only looking at the time from when the patient and surgeon agreed to proceed with surgery until the day it is done. It does not include the time the patient had to wait from their referral by their primary care physician or optometrist until they saw the ophthalmologist. Although data is not available for all part of the country in the regions where data is available there is a significant gap between the proposed benchmark and current wait-times. In Saskatchewan and PEI less than 25% of patients receive their surgery within 16 weeks. In Manitoba 45% and in Ontario 50% receive their surgery within 16 weeks. There is also enormous regional variation within provinces so that in Alberta, for example, waiting times between surgeons can vary from only a few weeks to as long as 18 months.

## Other procedures for benchmarking

In Ophthalmology there are significant waiting time problems for other medical problems besides cataract surgery. Age-related macular degeneration (AMD) is the leading cause of severe and irreversible vision loss in patients over the age of 50 years in many Western countries. For the majority of patients with this condition there are limited treatments available and they experience slow progressive loss of central vision. However, in approximately 10% with so-called "wet" AMD new fragile blood vessels form beneath the damaged retina that are prone to rupture resulted in sudden catastrophic visual loss. Administration of a photo sensitizer followed by laser treatment has been shown to seal these fragile vessels and significantly reduce loss of vision. Currently this treatment is not funded by all provinces. Furthermore, in some provinces where it is funded, the lengthy delays for fluorescein angiography (the diagnostic test needed to confirm the presence of these abnormal vessels) is so great (e.g. 5 months in Manitoba) that many patients permanently lose vision while waiting for the diagnosis to be confirmed. Sometimes lack of manpower makes it difficult to provide consultations for patients with acute vision loss in a timely fashion. While new technologies could expedite screening they are not being funded in all provinces.

Another problem area is in the provision of pediatric ophthalmology services. In most provinces there is a signifi-

cant shortage of pediatric ophthalmologists. It is recognized that children with eyes turned in optimally should have surgical correction by the age of one. Because of shortages of pediatric ophthalmologists and operating room time this is frequently not done in a timely fashion resulting in some loss of vision. Similarly, because of the long waits for initial office consultation visits (e.g. 9 months in Manitoba), some children with crossed eyes because of unrecognized cataracts are losing vision because of the long delays. Screening for retinopathy of prematurity is a major problem in some provinces.

## **Implementation issues**

### ***i) Health human resources issues***

In the long-term our biggest health human resources issue will be the need for more ophthalmologists. This is because the aging demographic shift for society, the aging demographic shift for ophthalmologists, and the reduction almost in half of the number of ophthalmologists trained per year in Canada over the last twenty years when added together lead to projections that the ratio of ophthalmologists to population will drop in half over the next 20 years ([www.eyesite.ca/english/romanow.html](http://www.eyesite.ca/english/romanow.html)). There has been a small increase in the number of training positions nationally in the last year but it is still not enough to prevent this future crisis. In the short term several provinces indicate that the lack of sufficient dedicated ophthalmic OR nurses or technicians is the limiting factor determining the number of cataract surgeries that can be performed. Shortages of anesthesiologists have led to cancellation of surgical slates in some areas.

### ***ii) Infrastructure***

This is not a major problem in most provinces at this time for cataract surgery. Manitoba needs an additional dedicated operating room and PEI is looking forward to the development of ambulatory care center which will meet their needs. In some regions there is a shortage of operating room time for pediatric ophthalmology and retinal surgery.

### ***iii) Organizational structures***

Improved efficiencies in use of operating rooms could allow more cases to be done in some settings. Dedicated ophthalmic surgery rooms along with dedicated ophthalmic nurses/ technicians result in optimal efficiencies.

### ***iv) Family physicians***

Family physicians play an important role in identifying their patients who have medical conditions requiring ophthalmic assessment. Family physicians currently participate in cataract surgery by performing a preoperative exam to ensure that their patient is fit for the procedure. They also

modify medications such as anticoagulants when needed. There is no other specific role envisioned that they could play that would enhance the delivery of cataract surgery.

### ***v) Surgical guidelines***

BC has provincial guidelines for cataract surgery ([www.healthservices.gov.bc.ca/msp/protoguides/gps/cat.pdf](http://www.healthservices.gov.bc.ca/msp/protoguides/gps/cat.pdf)) while nationally most ophthalmologists follow the American Academy of Ophthalmology guidelines. The AAO guidelines ([www.aao.org/education/library/ppp/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=1247](http://www.aao.org/education/library/ppp/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=1247)) are generally endorsed but don't set a specific threshold for surgical intervention but rather indicated that surgery is appropriate when the cataract it is causing significant functional impairment for the patient.

### ***vi) Utilization issues***

The COS does not have any perception that there is excessive or inappropriate cataract surgery occurring in Canada currently. However, some demand for surgery is motivated by the potential loss of a driver's license. The COS has recommended new vision standards for driving in Canada, which, if implemented would reduce this type of demand. There is limited data to suggest that ultraviolet exposure promotes the development of cataracts so that encouraging people to wear sunglasses when they are out in sunlight may have a tiny impact on the volume of cataract surgery. Demand is more likely to increase because of projected demographic changes in the population.

### ***vii) Other implementation issues***

- There are several prioritization processes that are used for cataract surgery in the world. The two that have been in place in Canada for several years are the Misericordia Cataract Wait List Program (*CMAJ* 2001; 164:1177-80) and the cataract prioritization system from the Western Canada Wait List Project ([www.wcwl.ca/media/pdf/library/prioritization\\_tools.5.pdf](http://www.wcwl.ca/media/pdf/library/prioritization_tools.5.pdf)). Other models are being developed in other provinces. At this point we see no need for a prioritization tool that will prioritize across specialties.
- Maintaining a centralized waiting list using a prioritization tool will assist in managing waiting times. At this point in time there is no support for pooling of waiting lists within ophthalmology.
- It is difficult to predict how long it will take to have 90% of the population receive care within our proposed benchmark if we were provided the financial resources because of the limited data available nationally. In Manitoba, assuming the rate of submission of booking forms for cataract surgery remains the same, with the addition of the extra operating time that has been requested from the federal-provincial transfer

funds directed to waiting times it is projected that it will take 5 years for 90% of the population to receive their surgery within the 16 week benchmark.

- It is not possible to project the cost nationally for achieving the benchmark because of data limitations at this time. The cost per case is currently approximately \$750 for the hospital plus the surgeon's fee, biometry costs (ultrasound and/or other measurements to determine the required power for the artificial lens implant), the anesthetist's fee, and the cost of the pre-operative examination by the family physician and any lab tests that are mandated by the province prior to surgery.
- Diagnostic imaging is not necessary for cataract surgery and so does not need to be integrated in the planning to meet the benchmark.

### **Monitoring the progress**

- The first step towards monitoring the achievement of the benchmarks will be the implementation of provincial centralized waiting list systems. Data collection from the centralized lists will enable monitoring of progress. If the benchmarks are not met it will be up to the provincial section of ophthalmology to

work with both levels of government to try to determine the obstacles that have prevented achieving the benchmarks and overcome them. We do not have any concerns about liability related to striving to achieve the benchmarks. Benchmarks should be reviewed every 5 years for currency.

- We do believe that attention to meeting the proposed benchmarks will come at the expense of reducing access to other procedures. This is why we feel that it is so important to increase the number of ophthalmologists in the country, not just have those practicing spending more time on cataract surgery. We also feel that efforts to achieve the benchmarks should be implemented gradually to minimize their disruptive impact on care for other ophthalmic conditions.

### **Acknowledgements**

Dr. Lorne Bellan, Chair, Winnipeg, Man.

Dr. Gilles Cormier, Moncton, NB

Dr. Michel Laflamme, Lachine, Que.

Dr. Suren Sanmugasunderam, Vancouver, BC

Dr. Brent MacInnis, Ottawa, Ont.

Mr. Hubert Drouin, Executive Director, COS, Ottawa, Ont.

---

# Wait-time benchmarks for cardiovascular services and procedures

Submitted to the Canadian Wait Time Alliance  
Submitted by the CCS Access to Care Working Group

Final report  
July 27, 2005

---

## Executive summary

The Alliance for Timely Access (the Alliance) consists of the Canadian Medical Association (the CMA) and medical specialty societies representing the five priority areas identified by Canada's First Ministers to improve access to health services. The Alliance has undertaken to establish pan-Canadian wait times, drawing upon appropriate evidence and clinical expertise to establish reasonable benchmarks.

As a member of the Alliance, the Canadian Cardiovascular Society (CCS) was asked to develop wait-time benchmarks for key cardiac services and procedures. In response to that request, the CCS Access to Care Working Group established seven subgroups to develop wait-time benchmarks and urgency categories for the full continuum of adult cardiovascular services and procedures. This report is a consolidation of the final reports prepared by each of the subgroups. The individual subgroup reports will be made available on the CCS Web site ([www.ccs.ca](http://www.ccs.ca)).

The CCS believes that wait lists are an acceptable, and in fact an essential, component of an efficient publicly-funded health care system, but unmanaged wait lists that do not reflect patient need could well be its death knell. The Canadian healthcare system desperately needs national standards and an effective approach to managing wait lists to ensure timely access to care.

Wait lists must be patient focused and based upon measurable encounters with the health system. Ideally, the wait time would be calculated from the onset of symptoms to treatment and rehabilitation. However, in cardiovascular medicine, there is no reliable way to identify the onset of symptoms from health records. Therefore, the measurable wait time begins at the point of first medical contact (e.g., visit to general practitioner or specialist, visit to an emergency room, hospital admission).

The wait time must incorporate access to the specialist, as well as access to the appropriate investigation, invasive or non-invasive. The wait time must include access to definitive treatments such as surgery and percutaneous

interventions. Cardiovascular queues must also include newer diagnostic procedures such as electrophysiology testing, newer interventions such as radiofrequency ablation, and access to lifesaving pacemakers and implantable defibrillators. Recognizing that cardiovascular disease is a chronic disease, wait times must include access to chronic disease management programs such as heart failure clinics or rehabilitation and risk factor modification programs.

Prioritization must be need-based, with urgency of access based upon objective criteria aimed at minimizing potential morbidity and mortality on the wait list.

## Scope of this report

This report focuses on timely access to cardiovascular services and procedures through the entire continuum of care from consultation and diagnosis to therapeutic procedures to rehabilitation. This approach is consistent with the patient's overall experience, reflecting the entire wait period for the patient from the onset of symptoms to treatment and to rehabilitation.

There are many different types of cardiovascular disease, including, for example:

- Coronary artery disease, when one or more of the coronary arteries are blocked,
- Valvular disease, when one or more of the valves of the heart are not working properly,
- Chronic heart failure, when the heart is unable to pump a sufficient amount of blood to meet the demands of the body,
- Arrhythmias, when there is a disturbance in the regular rhythm (too slow or too fast) of the heartbeat,
- Congenital heart disease, and
- Diseases of the myocardium, pericardium and great vessels.

Wait-time benchmarks are required for all diagnostic and therapeutic procedures required to treat the range of cardiac diseases. Therefore, the procedures covered in this report include cardiac catheterization, nuclear imaging, electrophysiology (EP)\* studies, percutaneous coronary

---

\*A list of acronyms used in this report is provided on page 86.

interventions (PCI), coronary artery bypass graft (CABG) surgery, valve surgeries, implantation of pacemakers and implantable cardioverter defibrillators (ICDs), and percutaneous ablations.

## Methodology

The CCS Access to Care Working Group established subgroups to develop wait-time benchmarks in seven areas of care. Each subgroup had between six and eight physicians representing various disciplines from across Canada.

To the degree possible, each of the subgroups used the following methodology:

- Identified and recruited appropriate specialists to participate in the subgroup, ensuring representation from the relevant medical subspecialties and respecting Canada's geography.
- Conducted a literature review on wait times and access to care.

- Conducted a review (if relevant) of existing clinical practice guidelines and wait time and access to care standards.
- Surveyed Canadian centres regarding current wait times.
- Developed and documented a consensus opinion on appropriate wait times.
- Established a secondary review panel (typically a Canadian stakeholder association) to provide additional input on the proposed pan-Canadian wait times. Where little relevant literature was available, the subgroups ensured that the consensus-building process involved a broad and comprehensive stakeholder group. Forty-nine physicians and related healthcare experts participated as working members within the subgroups to build an initial consensus on wait-time benchmarks. Each subgroup developed a draft report documenting its research, analysis, consensus process and proposed wait time benchmarks.

**Table 1: Proposed upper limit for wait-time benchmarks for cardiovascular services and procedures by urgency category**

Indication	Upper limit of wait-time benchmarks			
	Emergent	Urgent	Semi-urgent	Non-urgent
Initial specialist consultation	Immediate to 24 hours	1 week	4 weeks	6 weeks
Cardiac nuclear imaging	1 working day	3 working days		2 weeks
Diagnostic catheterization (cath)				
After STEMI*	Immediate to 24 hours	3 days	7 days	N/A
after NSTEMACS†	Immediate to 48 hours	3 days	7 days	N/A
Stable angina	N/A	N/A	N/A	6 weeks
Stable valvular heart disease	N/A	N/A	14 days	6 weeks
Percutaneous coronary intervention (PCI):				
After STEMI‡	Immediate	Immediate	Immediate	N/A
After NSTEMACS‡	Immediate	Immediate	Immediate	N/A
Stable angina	N/A	7 days	4 weeks	6 weeks
Coronary Artery Bypass Graft surgery (CABG):				
After STEMI‡	Immediate to 24 hours	7 days	14 days	N/A
After NSTEMACS‡	Immediate to 48 hours	14 days	14 days	6 weeks
Valvular Cardiac Surgery	Immediate to 24 hours	14 days		6 weeks
Heart Failure services	Immediate to 24 hours	14 days	4 weeks	6 weeks
Electrophysiology:				
Referral to electrophysiologist		30 days		90 days
Pacemaker	Immediate to 3 days	14 days	30 days	6 weeks
EP testing and Catheter Ablation		14 days		3 months
ICD‡	Immediate to 3 days		8 weeks	
Cardiac Rehabilitation	Immediate§	7 days		30 days

\* ST segment elevation myocardial infarction.

† Non-ST segment elevation acute coronary syndrome.

‡ Implantable cardioverter defibrillator.

§ Some patients are identified by the family or referring physician as being extremely depressed and possibly suicidal. Such patients should be managed by emergency or acute care psychiatry.

The subgroup's draft reports were provided to a total of six national societies and associations and individual specialists for a secondary review.

## How the benchmarks should be interpreted

These benchmarks are *not* standards and are not to be interpreted as a line beyond which a healthcare provider or funder has acted with negligence. These benchmarks have been derived by medical experts — cardiovascular specialist physicians — who, using the best evidence available, have determined acceptable wait times from a patient-advocate perspective. These benchmarks do *not* reflect current constraints on the capacity required to meet these benchmarks.

If current wait times were acceptable from the perspective of patients and policy makers, the development of wait-time benchmarks for these services and procedures would not be a health care priority today. The physicians who contributed to this document believe that these benchmarks represent a goal towards which we should all be striving to improve access to care and public confidence in our wait list management for cardiovascular services.

## Wait-time benchmarks

In Table 1, we present a summary of the wait-time benchmarks as proposed by the

subgroups. The wait time shown in the table is the longest benchmark within a particular category. The reader is referred to the body of this report and the individual subgroup reports for a description of the urgency categories and a more detailed breakdown of wait times by indication.

In summary, the CCS feels that no person should have to wait longer than:

- Six weeks for an initial consultation with a cardiologist,
- Fourteen days for diagnostic cardiac nuclear imaging,
- Six weeks for a diagnostic catheterization (when the condition is stable), percutaneous coronary intervention (PCI) for stable conditions, coronary artery bypass graft (CABG) surgery for non-emergent cases, valvular cardiac surgery, pacemaker implant, or heart failure services,
- Twelve weeks for referral to an electrophysiologist, electrophysiologic testing or catheter ablation, and
- Thirty days to begin cardiac rehabilitation.

For the most part, the wait times were developed based only on medical evidence, the potential psychological impact on patients and clinical best practice. Limitations to achieving these benchmarks *have not* been explicitly incorporated into our proposed wait-time benchmarks. Therefore, these benchmarks are felt to be patient based and do not reflect current resource availability.

These wait times are intended as initial guidelines.

They are not intended as to be punitive to individuals or processes that lack resources to perform within them. They should be considered as a first step in establishing pan-Canadian standards, based on existing evidence and consensus opinion. As a next step, these benchmarks should be validated through a broader consultation process with clinicians and patients.

## 1.0 Introduction

The Alliance for Timely Access (Alliance) consists of the Canadian Medical Association (CMA) and medical specialty societies representing the five priority areas identified by Canada's First Ministers to improve access to health services. The Alliance has undertaken to establish pan-Canadian wait times, drawing upon appropriate evidence and clinical expertise to establish reasonable benchmarks.

As a member of the Alliance, the Canadian Cardiovascular Society (CCS) was asked to develop wait-time bench-

marks for key cardiac services and procedures. In response to that request, the CCS Access to Care Working Group established seven subgroups to develop wait-time benchmarks and urgency categories for the full continuum of adult cardiovascular services and procedures. This report is a consolidation of the final reports prepared by each of the subgroups. The individual subgroup reports will be made available on the CCS Web site ([www.ccs.ca](http://www.ccs.ca)).

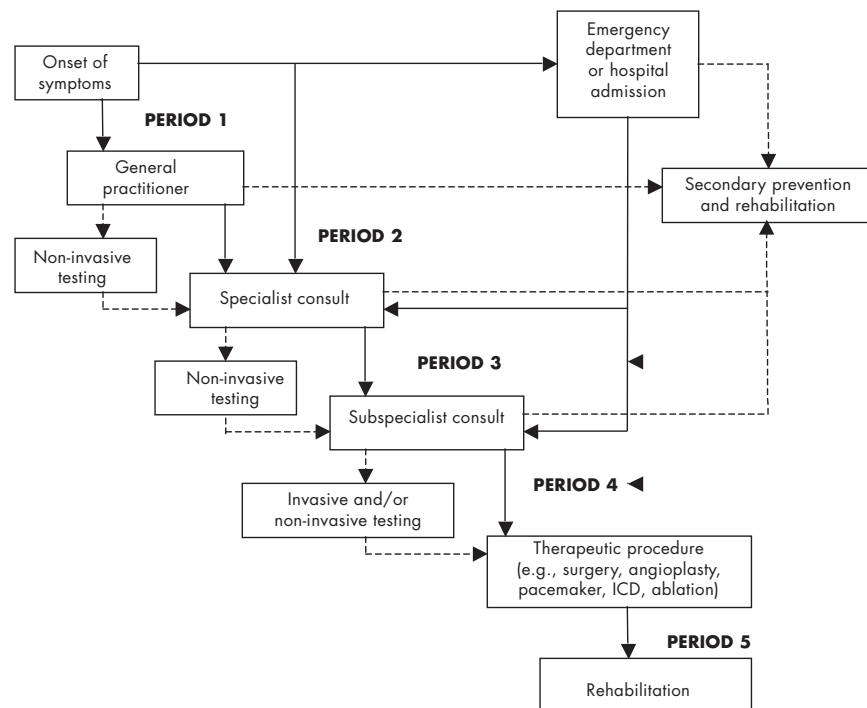
With the recent Supreme Court of Canada decision suggesting Canadians have a right to timely access to care within a publicly funded system or other options, this process has taken on even more meaning. The CCS believes that wait lists are an acceptable component of an efficient publicly-funded health care system, but unmanaged wait lists that do not reflect patient need could well be its death knell. The Canadian healthcare system desperately needs national standards for access to care and an effective approach to managing wait lists to ensure timely access to care.

While the First Ministers Agreement (*A 10-Year Plan to Strengthen Health Care*) identifies five initial areas of focus, we believe that this process can be the genesis of a broader policy approach to measuring, managing and monitoring Canadians' access to a range of health services.

### 1.1 Importance of managing the entire continuum of care

The report focuses on timely access to cardiovascular services and procedures through the entire continuum of care

**Figure 1: Patient's waiting periods from onset of symptoms to rehabilitation**



Total patient wait time = PERIOD 1 + 2 + 3 + 4 + 5

from consultation and diagnosis to therapeutic procedures to rehabilitation. This approach is consistent with the patient's overall experience, reflecting the entire wait period for the patient from the onset of symptoms to treatment and to rehabilitation.

The patient's journey from the initial onset of cardiac symptoms to rehabilitation is shown graphically in Figure 1. As shown in the figure, there are five major time intervals between the various access points to care and services. Each of these intervals is often made up of smaller waits. For example, the family physician may refer a patient to a cardiologist, but only after receiving test results. Any delay in receiving these tests extends the overall waiting period for the patient.

Although there has been much focus on access to therapeutic procedures (e.g., surgery), the CCS strongly believes that **every access point on this continuum of care must have a wait-time benchmark** for the following reasons:

- Procedural wait times measure only one of the five waiting periods identified in the figure. The patient's experience is much longer than this single time interval. Often, the wait for a procedure is one of the shortest waits.
- Further, the typical measure for access to procedures is from the date the procedure is booked (i.e., the decision-to-treat date), and not necessarily the date of the first consultation with the subspecialist. The procedure may be delayed pending the results of other tests (e.g., cardiac catheterization, electrophysiology study).
- Some patients will be referred to more than one specialist. For example, for some cardiac arrhythmias, the patient will first see a family physician, then a cardiologist, who may then refer the patient to an electrophysiologist (i.e., a cardiologist who has further subspecialized in electrophysiology). The wait times to see each physician are additive.

- Any delay along the continuum can result in the patient's condition becoming more urgent while waiting. As a result, once the need for a procedure is finally identified, the remaining available wait time may be significantly shorter than it would have been with an earlier diagnosis.
- In extreme cases, the patient may short circuit the system by presenting at an emergency department. This tendency creates a reactive response to the patient's condition and can add an unnecessary burden to an already overtaxed emergency system.
- Figure 1 is meant to be representative of the process, but cannot represent all scenarios. For example, some patients may enter rehabilitation programs on referral from their family physician or prior to any definitive therapeutic procedure.

## 1.2 Importance of a programmatic or patient centred approach

There are many different types of cardiovascular disease, including, for example:

- Coronary artery disease, when one or more of the coronary arteries are blocked,
- Valvular disease, when one or more of the valves of the heart are not working properly,
- Chronic heart failure, when the heart is unable to pump a sufficient amount of blood to meet the demands of the body,
- Arrhythmia, when there is a disturbance in the regular rhythm (too slow or too fast) of the heartbeat,
- Congenital heart disease, and
- Diseases of the myocardium, pericardium and great vessels.

The urgency of these indications varies significantly; some that can be treated with life style changes or medication, while others are life-threatening and require emergency diagnosis and treatment.

Although cardiac surgery has received much attention over the past ten years or so, many cardiac indications do not require surgery, but do require other diagnostic and therapeutic procedures. The focus on cardiac surgery, while extremely important, must be expanded to these other procedures. Indeed, as shown in Table 2, for every CABG surgery performed, 225 electrocardiograms are performed.

The table also shows that, based on current indications, some services and procedures (e.g., implantable cardioverter defibrillators and rehabilitation services) are provided to only a small pro-

**Table 2: Cardiovascular procedures, volumes and rates for 100,000 population, Canada**

	No. of services provided	No. of patients indicated	No per 100,000 adult population	Comment
Electrocardiogram	5,017,200		15,999	2002/03 data <sup>1</sup>
Cardiac catheterization	131,277		419	2002/03 data*
Coronary angioplasty	44,946		143	2002/03 data*
CABG	22,167		71	2002/03 data*
Insertion of pacemaker	27,427		87	2002/03 data*
ICDs (actual)	2,300		74	2003/04 CCS estimate
ICDs (indicated)		92,000	296	2003/04 CCS estimate
Heart failure		500,000	1,610	2005/06 CCS estimate
Rehabilitation		750,000	2,415	2005/06 CCS estimate

\*Some patients are identified by the family or referring physician as being extremely depressed and possibly suicidal. Such patients should be managed by emergency or acute care psychiatry.



portion of the population for whom the services are clinically indicated. Effectively managing a wait list for a particular cardiovascular service or procedure will cause increased demands elsewhere which also must be managed. For example, more pacemakers and defibrillators will require more pacemaker and device clinic visits, more noninvasive cardiac testing and more heart failure clinic visits.

Given the breadth of cardiovascular medicine, the huge current and forecasted future demands in our aging population, wait-time benchmarks are required for all diagnostic and therapeutic procedures. Therefore, the procedures covered in this report include cardiac catheterization, nuclear imaging, electrophysiology (EP) studies, percutaneous coronary interventions (PCI), coronary artery bypass graft (CABG) surgeries, valve surgeries, implantation of pacemakers and implantable cardioverter defibrillators (ICDs), and percutaneous ablations.

### 1.3 How the benchmarks should be interpreted

These benchmarks are *not* standards and are not to be interpreted as a line beyond which a healthcare provider or funder has acted with negligence. These benchmarks have been derived by medical experts — cardiovascular specialist physicians — who, using the best evidence available, have determined acceptable wait times from a patient-advocate perspective. These benchmarks do *not* reflect current constraints on the capacity required to meet these benchmarks.

If current wait times were acceptable from the perspective of patients and policy makers, the development of wait-time benchmarks for these services and procedures would not be a healthcare priority today. The physicians who contributed to this document believe that these benchmarks represent a goal towards which we should all be striving to improve access to care and pub-

**Table 3: Wait-time benchmarks for hospital-based referral and expedited consultation**

Indication	Priority categories	Benchmark	Comment on benchmark
<b>Hospital-based referral and testing</b>			
Acute coronary syndromes	Known or suspected STEMI or NSTEMI Rest pain consistent with ischemia		These indications would be best facilitated by hospital-based evaluation and urgent referral.
Arrhythmias	Hemodynamically significant		
Heart Failure	New onset Class III or IV		
Endocarditis	Known or suspected		
Cardiac tamponade			
Aortic dissection			
Pulmonary embolism	Suspected or known but untreated		
Emergent assessment for non-cardiac surgery			
Embolism	With suspected cardiac source		
Post-cardiac transplantation	With suspected rejection		
Syncope	With prior myocardial infarction or significant left ventricular dysfunction or aortic stenosis		
Prosthetic valve dysfunction	Suspected with hemodynamic compromise		
Hypertensive crisis			
<b>Expedited consultation</b>			
Atrial fibrillation	Initial onset without associated chest pain and without hemodynamic compromise.	Within 1 week. If time of onset is clear, assessment and possible cardioversion is ideally performed within 48 hours.	These indications are best dealt with in the emergency department as this setting is needed for parenteral drug administration and electrical cardioversion
Supra-ventricular tachycardia	Symptomatic or hemodynamic instability	Within 1 week	
Ventricular tachycardia	Asymptomatic	Within 1 week	
Angina	Crescendo or initial onset without rest pain	Within 1 week	Rapid assessment chest pain clinic is helpful.
CHF	New onset or known with deterioration (ischemic and non-ischemic heart disease)	Within 1 week	Heart function clinics useful in this setting. Early echocardiography by primary care.
Syncope	With structural heart disease, family history of sudden death and Wolff Parkinson White Syndrome or other ECG evidence for possible cause	Within 1 week	

lic confidence in our wait list management for cardiovascular services.

## 2.0 Methodology

The CCS Access to Care Working Group established subgroups to develop wait-time benchmarks in seven areas of care. Each subgroup had between six and eight physicians and recognized health care experts in the related field, representing various disciplines from across Canada. The members of the Working Group are identified in Appendix A. The membership of the seven subgroups is shown in Appendix B.

To the degree possible, each of the subgroups used the following methodology:

- Identified and recruited appropriate specialists to participate in the subgroup, ensuring representation from the affected medical subspecialties and respecting Canada's geography.
- Conducted a literature review on wait times and access to care.
- Conducted a review (if relevant) of existing clinical practice guidelines and wait time and access to care standards.
- Surveyed Canadian centres regarding current wait times.
- Developed and documented a consensus opinion on appropriate wait times.
- Established a secondary review panel (typically a Canadian stakeholder association) to provide additional input on the proposed pan-Canadian wait times.

In some areas, an extensive literature review had been undertaken recently, and the subgroup's efforts were limited to updating that work. For many cardiovascular indications (e.g., revascularization, implantation of pacemakers and ICDs, heart failure, rehabilitation), a sufficient body of evidence exists to support the development of wait-time benchmarks. For other areas, there was little or no relevant published literature to guide deliberations.

Where little relevant literature was available, the subgroups ensured that the consensus-building process involved a broad and comprehensive stakeholder group. Forty-nine physicians and related health care experts participated as working members within the subgroups to build an initial consensus on wait-time benchmarks.

Each subgroup developed a draft report documenting its research, analysis, consensus process and proposed wait-time benchmarks. The subgroup's draft reports were provided to a total of six national societies and associations and individual specialists for a secondary review. See Appendix C for a list of participating organizations and specialists.

For the most part, the wait times were developed based

only on medical evidence, the potential psychological impact on patients and clinical best practice. Limitations to achieving these benchmarks *have not* been explicitly incorporated into our proposed wait-time benchmarks. Therefore, these benchmarks are felt to be patient based and do not reflect current resource availability.

These wait times are intended as guidelines, many of which were developed by consensus and require validation. They will require time to achieve what for many jurisdictions will be ambitious targets. They are not intended to be punitive to individuals or processes that lack resources to perform within them.

These benchmarks are intended to be applied only to clinically-indicated procedures. For all services and procedures, we have determined an urgency category to differentiate the level of risk between clinical conditions. We recognize that it is difficult for a patient to understand that any cardiovascular service is not urgent. The category labels used in this document are not intended to belittle the importance of or need for any procedure. The labels are simply used to distinguish between categories of more or less risk. We feel strongly that the term "elective" is pejorative and, as such, outdated in a patient-centered model of care. The term non-urgent is used in place of the older terminology.

The wait-time benchmarks contained in this report are a first step in establishing pan-Canadian standards, based on existing evidence and consensus opinion. As a next step, these benchmarks should be validated through a broader consultation process with clinicians and patients.

## 3.0 Wait-time benchmarks

In the following sections, we present wait-time benchmarks for the following services and procedures:

- Diagnostic services and procedures, including:
  - Specialist consultations and non-invasive testing, and
  - Nuclear cardiology.
- Therapeutic services and procedures for the following indications:
  - Acute coronary syndrome (ACS),
  - Coronary artery disease,
  - Valvular disease,
  - Heart failure, and
  - Arrhythmia.
- Cardiac Rehabilitation.

These wait times are only one part of an effective wait-list management system. We believe that the following principles should guide the development and use of any wait list system to ensure timely care for individual patients:

1. Triage categories must be determined based on the risk of waiting to that individual patient, based on the best available science.

**Table 4: Wait-time benchmarks for outpatient referral and non-invasive testing**

Indication	Priority categories	Benchmark	Comment on benchmark	Indication-specific treatment-to-wait-time benchmark	Non-invasive testing
<b>Chest Pain</b>	Stable angina	4 weeks	Strongly-positive stress non-invasive test usually requires more urgent invasive testing. Wait time also depends upon professional and psycho-social factors.	ASA Beta blockers Lipid lowering medications Nitrates	Wait time should include the performance of non-invasive tests. Exercise or pharmacological imaging study should be considered in the presence of exercise limitations, resting ECG abnormalities or other confounding factors.
	Atypical chest pain	6 weeks	This limit may not always be appropriate in women for presenting symptoms of serious disease are frequently atypical.		
<b>Class I or II Heart Failure</b>	Valvular heart disease			Beta blockers	Echocardiography – With this indication, there is evidence to support routine ordering of echocardiography by primary care physicians. This should be performed prior to consultation and within one week of ordering the test.
	With aortic stenosis	2–4 weeks	Depending upon level of symptoms	ACE inhibitors	
	With deterioration	1–2 weeks	Depending upon clinical course	Statins	
	Without deterioration	4 weeks		ASA	
	Cardiomyopathy without deterioration in status				
	Ischemic	4 weeks	Common clinical problem effectively handled by many family physicians and internists.		
<b>Dizziness or syncope</b>	Recurrent syncope	Early phone call to consultant to develop plan	Committee opinions vary widely as nature and consequences of symptomatic episodes must be factored in.	Identify potentially pro-arrhythmic medications Identify and treat electrolyte disorders. Examine for orthostasis. Institute precautionary measures. Examine for orthostatic hypotension and institute precautionary measures prior to consultation	ECG to be sent with consult. Tests are often best left until after the first direct patient contact with the cardiologist.
	Orthostatic hypotension	6 weeks			
<b>Atrial Fibrillation</b>	Persistent or paroxysmal	6 weeks	Urgent consultation needed with uncontrolled rates	Anticoagulation (except age < 65 with no other stroke risks); if contraindicated, urgent telephone consultation needed.  Rate control with calcium channel blockers or beta blockers	Ambulatory ECG only when diagnosis is suspected but not confirmed.  Wait time – within total 6 week consult period  Echocardiography – Evidence supporting routine pre-referral testing is weak.
<b>Heart murmurs</b>	First discovery (asymptomatic) or chronic and	6 weeks		Bacterial endocarditis prophylaxis for lesions prone to infection	Chest X-Ray Echocardiography not routinely needed before consultation.
<b>Assessment for non-cardiac surgery*</b>	Urgent surgery with known CAD or structural heart disease	Before optimal surgical date	E.g., cancer, unstable vascular disease, abdominal or orthopedic disease		Routine testing is not indicated prior to consultation
	Other	4 weeks	Non-urgent non-cardiac surgery		
<b>Palpitation</b>	Including documented episodic supra-ventricular tachycardia	6 weeks	In the absence of worrisome co-morbidities (e.g., syncope or presyncope, LV dysfunction, family history of sudden death)		Attempt symptom-rhythm correlation while waiting for referral and forward results when available.
	Other	6 weeks			
<b>Pregnancy-related assessment</b>	Pre-pregnancy risk assessment	6 weeks	Management and family counselling before or during pregnancy in adults with congenital heart disease or significant valvular heart disease can be complex and is often best managed through multidisciplinary specialized clinics		Apart from ECG, not indicated prior to consultation
	Pregnancy with known structural heart disease	2 weeks			
<b>Non-specific assessment requests</b>	Referrals not motivated by symptoms or where length of wait is unlikely to add to patient risk or anxiety.	10 weeks	These referrals are those motivated by the family history or other risk factor in absence of symptoms.	<i>It is assumed that identifiable risk factors would be modified during the wait time.</i>	

\*Known coronary artery or structural heart disease.

2. Once triaged to a specific category, a patient's care should be provided on a first-come first-served basis. Discretionary queue reassignment should not occur.
3. Because most triaging systems rely heavily on patient-reported symptoms, there must be ongoing treatment and surveillance of patients on the waitlist and re-categorizing of those whose symptoms have changed.
4. The waitlist management system and current wait times must be transparent and visible to both the medical profession and the public. Both referring sources and the patients should be informed if the preferred specialist's wait time is longer than waits for other available specialists so they can make an informed decision regarding the choice of specialist.
5. The length of waiting times must be monitored so that appropriate adjustments can be made in capacity.
6. To safely move patients from the "in-house" category to "urgent outpatient", there must be access to necessary supporting infrastructure in the community.

With the rapid development of cardiac magnetic resonance (MR) and CT scanning, similar clarity on waiting times (and indications) will soon be required for these new and expensive diagnostic procedures.

Notwithstanding the above principles, it is important to appreciate that efficient use of resources dictates that the weekly procedural mix of cases includes patients from all triage categories, not just the most ill or urgent. This is essential to ensure that the system does not develop bottlenecks in intensive care or long-term care facilities that might occur if only very ill patients received services and procedures and to ensure that patients waiting at home are moving up the queue.

### 3.1 Diagnostic services and procedures

Access to diagnostic services is vitally important to determine the nature and urgency of the patient's condition. Only after an initial assessment has been performed can the physician determine what services are actually needed, and how long the patient can comfortably wait.

**Table 5: Wait-time benchmarks for cardiac nuclear imaging, by indication, days**

	<b>Emergent</b>	<b>Urgent</b>	<b>Non-urgent</b>
Myocardial perfusion – Exercise or pharmacologic - SPECT or PET	0	3	14
Myocardial Viability – FDG or thallium	1	3	14
Radionuclide Angiography (RNA)	1	3	14

Note: 0 means within 24 hours of the referring physician's recommended date of the test.

#### 3.1.1 Access to specialist consults and non-invasive tests

The initial diagnosis is typically made (or confirmed) through consultation with a specialist (i.e., cardiologist or general internist), with the support of non-invasive diagnostic tests (e.g., echocardiograph, stress test). Many of these tests can be ordered by either the general practitioner (GP) or the specialist.

The subgroups took the perspective that appropriate waiting times for diagnostic services and procedures are linked to the speed with which the information provided is required to plan or execute therapy. For example, myocardial perfusion imaging (MPI) may be used to determine which patients presenting with unstable coronary syndromes should be advanced urgently for cardiac catheterization. If urgent catheterization should be carried out within eight days, then wait times for urgent MPI must be shorter than eight days for the test to be appropriately used. In each case we have selected the shortest wait times among all indications as the wait-time benchmark for procedures to provide best clinical care.

The CCS subgroup identified three general urgency levels for access to these services:

- Hospital-based referral and testing, where the indications would be best facilitated by hospital-based evaluation and urgent referral. See Table 3 for a list of indications.
- Expedited consultation, including some indications that are best dealt with in an emergency room setting. See Table 3 for a list of indications and associated wait times.
- Outpatient referral. See Table 4 (see page 76) for a list of indications and associated wait times.

The subgroup members felt that all expedited consultations should occur within one week of referral. A consensus opinion emerged that six weeks should be the absolute limit for referral waiting times for the lowest priority indications, including performance of exercise treadmill testing, nuclear imaging and echocardiography, as shown in Table 4.

#### 3.1.2 Nuclear Imaging

Cardiovascular nuclear medicine or nuclear cardiology uses agents labelled with radioisotopes that can be imaged with cameras capable of detecting the gamma photons. These include single photon emission computed tomography (SPECT) and positron emission tomography (PET). In contrast to most other forms of imaging, nuclear imaging tests show the physiological or biological function of the system being investigated rather than the anatomy. In cardiology, nuclear imaging is most often used to examine myocardial perfusion, ventricular function and/or viability.

The Canadian Association of Nuclear Medicine (CANM) is also a member organization of the Alliance and

has submitted benchmarks for nuclear imaging. The CCS, through one of its subgroups, reviewed the CANM's document and confirmed the wait times for nuclear cardiology.

The CANM chose perfusion imaging and FDG imaging as its benchmarks; therefore, these benchmarks were also used for the CCS report. The wait times for cardiac nuclear imaging are zero to one day for emergent cases, up to three days for urgent cases, and up to 14 days for routine tests, as shown in Table 5.

In non-invasive cardiac imaging, appropriate waiting times are linked to the speed with which the information provided is required to plan or execute other diagnostic tests including angiography and therapies such as PCI and CABG. Wait times, therefore, may contrast with the wait times noted in Radiological Sections for Diagnostic Imaging.<sup>2</sup> Wait times for non-invasive cardiac imaging must be viewed in the clinical context in which the patient presents.

Urgent wait times apply in all conditions where the patient's clinical status dictates the need for diagnostic information in order to make urgent therapeutic decisions. For example, in patients with acute coronary syndromes in whom nuclear imaging is indicated,<sup>3</sup> testing is considered emergent or urgent in order to identify those patients who would benefit most by further invasive procedures, PCI or CABG during their index hospitalization.

In out-patients with stable cardiac disease in whom nuclear imaging is indicated<sup>3</sup> for diagnosis or risk stratification, non-urgent wait times are reasonable.

Myocardial viability assessment (FDG or thallium imaging) can also be emergent or urgent in critically ill patients with heart failure where decisions need to be made rapidly as to whether a revascularization procedure is indicated. Most cases of viability assessment are semi-urgent or non-urgent investigations. However, data from previous Canadian studies

indicate that there is increased mortality when revascularization is delayed more than five weeks after significant viability is defined. Therefore, investigation and prescription of a treatment plan needs to be completed promptly. Hence a benchmark of **within 14 days** has been determined.

For ventricular function assessment with radionuclide angiography (RNA), appropriate wait times are again best defined by the clinical presentation. In the assessment of pre-chemotherapy, assessment may also be considered urgent (i.e., within three working days of the specified timeframe), required before instituting chemotherapy regimens.

Further discussion and details can be obtained in the CANM submission to the Wait Time Alliance<sup>4</sup> and the report from the CCS Cardiac Nuclear Medicine subgroup report.<sup>5</sup>

**Table 6: Wait-time benchmarks for after STEMI, by indication**

Urgent indication for transfer/cath/PCI	Target	Benchmark	Benchmark
	cath/PCI	cath/PCI±	CABG§
In candidates for primary* or rescue** PCI.	< 90 minutes	90 minutes	< 2 hours
% within benchmark	90%	90%	90%
In cardiogenic shock who are candidates for revascularization.	< 90 minutes	12-18 hours	< 2 hours
% within benchmark	Varies‡	Varies	90%
In candidates for surgical repair of ventricular septal rupture or severe mitral regurgitation (MR).	< 90 minutes	12-18 hours	< 2 hours
% within benchmark	Varies	Varies	90%
In patients with persistent ischemic symptoms, hemodynamic and/or electrical instability.	< 90 minutes	12-18 hours	<2 hours
% within benchmark	Varies	Varies	90%
In patients where there is objective evidence of recurrent myocardial infarction (MI).	< 90 minutes	12 hours	< 2 hours
% within benchmark	Varies	Varies	90%
In patients with moderate or severe spontaneous myocardial ischemia during recovery from STEMI.	< 24 hours	< 24 hours	<24 hours
% within benchmark	90%	90%	90%
In patients with provokable myocardial ischemia during recovery from STEMI.**	< 3 days	5 days	< 7 days
% within benchmark	90%	90%	90%
In patients with LV ejection fraction (LVEF) ≤ .40 CHF, or serious ventricular arrhythmias.**	< 3 days	5 days	< 7 days
% within benchmark	90%	90%	90%
In patients who had clinical heart failure during the acute episode but subsequently demonstrated well preserved LV function.**	< 3 days	5 days	< 7 days
% within benchmark	90%	90%	90%
Non-urgent coronary angiography might be considered as part of an invasive strategy after fibrinolytic therapy particularly anterior MI or aborted or near aborted MI.+	< 3 days	5 days	< 14 days
% within benchmark	90%	90%	90%

± Wait time for cath/PCI represents the timeframe in which the evidence suggests the intervention is felt to be beneficial. All evidence supports the best outcomes occur when the optimal targets are achieved.

§ Wait time for CABG is additional wait time after cardiac catheterization

\* Primary PCI implies choice of angioplasty as reperfusion therapy in acute ST segment elevation myocardial infarction (STEMI). The target for primary PCI as preferred reperfusion strategy for AMI is 90% < 90 minutes. When primary angioplasty cannot be reasonably made available within Wait time, then medical jurisdictions should employ every means possible to administer thrombolysis in as timely a manner as possible including in the prehospital setting.

\*\* Rescue PCI implies use of angioplasty when there is evidence of reperfusion failure following fibrinolysis.

‡ Target Time is dependent upon geographic availability of the service but should be minimized to achieve the target benchmark as closely as possible.

+ Aborted MI was defined as maximal CK ≤ 2x upper limit of normal combined with typical evolutionary ECG changes. Near aborted MI is defined as maximal CK ≥ 2x upper limit of normal but elevation considered considerably less than expected given extent of ST elevation on presenting ECG.

### 3.2 Therapeutic services and procedures

Once an initial diagnosis has been made regarding the underlying cause of the patient's cardiovascular symptoms, the appropriate therapeutic procedure is recommended. The diagnoses that have been examined as part of this work include:

- Acute coronary syndrome (i.e., unstable angina or heart attacks),
- Coronary artery disease (i.e., blockage of one or more coronary arteries),
- Valvular disease,
- Heart failure, and
- Arrhythmias.

For each of these indications, we provide a short description of the disease, the prescribed therapeutic procedures, and the wait-time benchmarks.

#### 3.2.1 Acute coronary syndrome (ACS) – STEMI

Acute coronary syndromes (ACS), myocardial infarction and unstable angina, are amongst the most common causes of hospitalization. ACS is subdivided on the basis of initial presenting ECG into ST elevation (STEMI) and non ST segment elevation acute coronary syndromes (NSTEMACS). NSTEMACS are further divided by presence of biochemical markers of myocardial necrosis into unstable angina or, if biomarker positive, non ST segment myocardial infarction (NSTEMI).

Wait-time benchmarks for revascularization after STEMI are shown in Table 6 and for after NSTEMACS in

Table 7. In addition to the benchmarks, the table also provides target wait times for cath and PCI. In this context, the target wait times are the ideal times to achieve optimal results. The benchmark wait-times in this table represent acceptable times given external constraints (e.g., geography).

#### 3.2.2 NSTEMACS (see table 8)

#### 3.2.3 Coronary artery disease

Coronary artery disease (CAD) is caused by the buildup of cholesterol-containing plaques in the walls of the arteries that supply the heart muscle (myocardium). Patients do not generally experience symptoms until 70% or more of the artery is obstructed. Ischemia occurs when the amount of oxygen supplied to the myocardium is insufficient for optimal function, and any damage to the heart muscle can be reversed when oxygen supply is again adequate. Infarction (i.e., heart attack) occurs when the heart muscle suffers irreversible damage from such a blockage which usually has progressed to 100%.

The diagnosis of coronary artery disease is typically confirmed with a cardiac catheterization (cath). Depending on the results of this invasive cardiac test, the patient may require revascularization by either percutaneous coronary intervention (PCI) or coronary artery bypass graft (CABG) surgery.

Due to public perception that patients were waiting too long for cardiac care (especially CABG), this area of cardiac care has received a considerable amount of attention relative

to other indications. Most cardiac surgeries are CABG; the second most common cardiac surgery is for valvular disease. In some cardiac surgeries, the patient requires both CABG and valve surgery combined in one operation.

Wait-time benchmarks for cardiac catheterization and PCI are shown in Table 8 and for CABG in Table 9.

#### 3.2.4 Valvular heart disease

Valvular heart disease occurs when one or more of the valves of the heart are not working properly. Valves may not open completely (stenosis). They may close incompletely (insufficiency). For example, the aortic valve can be affected by a range of diseases that cause it to become leaky or stuck partially closed (i.e., stenotic). Aortic valve replacement currently requires open heart surgery. Valve surgery is performed at the same time as CABG if there are coexisting blockages.

**Table 7: Wait-time Benchmarks for after NSTEMACS, by indication**

Risk category	Wait-time benchmark	
	For cardiac cath and PCI	For CABG
<b>High risk</b> TIMI Risk Score 5-7, Or Persistent or recurrent chest pain Dynamic ECG changes with chest pain CHF, hypotension, arrhythmias with C/P Moderate or high (>5ng/ml) Troponin Rise	90% within 24-48 hours	90% within 24-48 hours
<b>Intermediate risk</b> TIMI Risk Score 3-4, Or NSTEMI with small troponin rise (>1<5ng/ml) Worst ECG T wave inversion or flattening Significant LV dysfunction (EF<40%) Previous documented CAD, MI or CABG, PCI	90% within 3-5 days	90% within 1-2 weeks
<b>Low risk</b> TIMI Risk Score 1-2, Or Age < 65 years No or minimum troponin rise (<1.0ng/ml) No further Chest Pain Inducible ischemia ≤ 7 MET's workload	90% within 5-7 days	90% within 6 weeks

Wait-time benchmarks for valvular surgery are shown in Table 10.

### 3.2.5 Heart failure (HF)

Chronic heart failure (CHF) is the inability of the heart to pump a sufficient amount of blood to meet the demands of the body. Heart failure is categorized according to the side of the heart (i.e., left versus right heart failure), or whether the problem originates during contraction (systolic heart failure) or relaxation (diastolic).

Chronic HF affects approximately 500,000 Canadians with 50,000 new cases diagnosed per year. The prevalence of HF increases with age such that 1% of Canadians over age 65 and 4% of Canadians over age 70 have HF. In Canada, HF is reaching epidemic proportions with an age-adjusted mortality of 106/100,000, which is greater than the combined age-adjusted mortality for AIDS and breast cancer.

Wait-time benchmarks for heart failure are shown in Table 11. During the waiting period, it is critically important that the clinical practice guidelines are adhered to.

### 3.2.6 Arrhythmias

A cardiac arrhythmia is a disturbance in the regular rhythm of the heartbeat. There are two major classes of cardiac arrhythmias:

- Bradycardia: This is a heart rhythm which beats too slowly. Treatment may involve the implant of a pacemaker.
- Tachycardia: This is a heart rhythm which is too fast. Conditions range from the entirely benign to the instantly fatal. Treatment strategies include pharmacotherapy, radiofrequency ablation, and implantable cardioverter defibrillator (ICD) implants.

An electrophysiology (EP) consultation can be obtained for various arrhythmia diagnoses or symptoms. It can be prescribed from a general practitioner, an internist, a cardiologist or cardiac surgeon. After the EP assessment, additional tests can be ordered to support a precise diagnosis or to decide on the final treatment. These special tests will have to be performed according to the outpatient waiting list for each test. At the end, the cumulative waiting time is

**Table 8: Wait-time benchmarks for cardiac catheterization and PCI**

Urgency category	Cath	PCI
STEMI Primary PCI, Rescue PCI, Shock, Complications Recurrent ischemia Provocable ischemia/CHF	Immediate — 18 hours 24 hours 3 days	Immediate
NSTEMI High risk Intermediate risk Low risk	24–48 hours 3–5 days 5–7 days	Immediate
Stable angina	6 weeks	High risk — 1 week Semi-urgent — 4 weeks Others — 6 weeks
Stable valvular heart disease High risk (Critical AS)	6 weeks 2 weeks	N/A

**Table 9: Wait-time benchmarks for CABG**

Urgency category	Target	Benchmark
Emergency (unrelenting cardiac compromise unresponsive to all therapy except surgery)	< 90 minutes	< 4 hours
In house urgent (unable to be discharged due to need for intravenous nitroglycerine, heparin, or intra-aortic balloon pump (IABP))	1 day	7 days
Urgent outpatient	7 days	14 days
Non-urgent outpatient	6 weeks	6 weeks

**Table 10: Wait-time benchmarks for valvular cardiac surgery**

Urgency category	Target	Benchmark
Emergency (unrelenting cardiac compromise unresponsive to all therapy except surgery for valvular complications of endocarditis, aortic dissection, myocardial infarction and trauma)	< 4 hours	< 1 day
Aortic Stenosis – critical with symptoms	14 days	14 days
Non-urgent Outpatient – all others	6 weeks	6 weeks

**Table 11: Wait-time benchmarks for heart failure, by indication**

Triage category	Examples	Standard	Professional health care provider
Emergent	Acute severe myocarditis Cardiogenic shock Transplant evaluation — acutely unstable patient First episode of Acute Pulmonary Edema Acute cardiac valvular regurgitation	<24 hours	Heart failure specialist (HFS), Disease management program (DMP)
Urgent	New diagnosis of HF — unstable, decompensated Progressive Heart Failure Post MI heart failure New progression to AHA/ACC class D* Post hospitalization discharge heart failure	< 1 week < 2 weeks < 2 weeks < 2 weeks < 2 weeks	HFS, DMP, Cardiologist
Semi urgent	AHA class C† New diagnosis of HF — stable, compensated	< 4 weeks	HFS, DMP, Cardiologist, Internist
Non urgent	Chronic HF management AHA class A‡ and B§	< 6 weeks < 6 weeks	GP, Internist, Cardiologist, DMP or HFS

\* AHA/ACC class D Patients with advanced structural heart disease and marked symptoms of HF at rest despite maximal medical therapy and who require specialized interventions.

† AHA/ACC class C Patients who have current or prior symptoms of HF associated with underlying structural heart disease. Dyspnea or fatigue due to left ventricular systolic dysfunction; asymptomatic patients who are undergoing treatment for prior symptoms of HF.

‡ AHA/ACC class A Patients at high risk of developing HF because of the presence of conditions that are strongly associated with the development of HF. Such patients have no identified structural or functional abnormalities of the pericardium, myocardium, or cardiac valves and have never shown signs or symptoms of HF. Systemic hypertension; coronary artery disease; diabetes mellitus; history of cardiotoxic drug therapy or alcohol abuse; personal history of rheumatic fever; family history of cardiomyopathy.

§ AHA/ACC class B Patients who have developed structural heart disease that is strongly associated with the development of HF but who have never shown signs or symptoms of HF. Left ventricular hypertrophy or fibrosis; left ventricular dilatation or hypocontractility; asymptomatic valvular heart disease; previous myocardial infarction.

**Table 12: Wait-time benchmarks for an electrophysiology consultation**

Urgency category	Benchmark
Emergent	Refer to Emergency Room or to EP on duty
Patients with syncope and structural heart disease (e.g., ejection fraction less than 40%), bundle branch block, hypertrophic cardiomyopathy, congenital heart disease, family history of sudden cardiac death, inherited heart disease)	30 days
Patients referred for consideration of an ICD implantation (primary prevention) and/or cardiac resynchronization therapy (CRT) device	30 days
Patients electively referred for an electrophysiologist opinion (e.g., palpitation, supraventricular tachycardia, syncope without structural heart disease, or other medical conditions)	90 days

**Table 13: Wait-time benchmarks for pacemakers**

Urgency category	Benchmark
Single and dual Chamber Pacemakers	
Urgent/semi-urgent* with TTVP	1 working day
Urgent/semi-urgent* with no TTVP	3 working days
Non-urgent, with high risk of syncope	14 days
Non-urgent, with lower risk of syncope	30 days
Resynchronization (biventricular) pacemakers	
With or without a defibrillator	6 weeks

TTVP= temporary transvenous pacemaker

\*In the judgment of the physician, the patient cannot safely leave the hospital until a permanent pacemaker is implanted.

**Table 14: Wait-time Benchmarks for electrophysiologic testing and catheter ablation**

Urgency category	Benchmark
Patients with the Wolff-Parkinson-White syndrome who have rapid atrial fibrillation or syncope	2 weeks
Patients with high-risk arrhythmias due to congenital heart disease or inherited arrhythmia diseases.	
Patients with left ventricular dysfunction who are at risk for, or who have documented, ventricular arrhythmias.	
All indications not noted above	3 months

**Table 15: Wait-time Benchmarks for implantable cardioverter defibrillators (from decision to proceed)**

Urgency category	Benchmark
Patients meeting established criteria to receive an ICD who have had a life-threatening episode of ventricular tachycardia (VT)/ventricular fibrillation (VF) for <b>secondary prevention</b> of sudden death.	Within 3 working days
Patients meeting established criteria to receive an ICD who have not had a life-threatening episode of VT/VF for <b>primary prevention</b> of sudden death.	Within 8 weeks

**Table 16: Wait-time benchmarks for cardiac rehabilitation, urgent and semi-urgent patients**

Urgency category	Target	Benchmark
Urgent patients Would show marked deterioration in medical or psychological state if not treated within a very short time frame.	Within 24 hrs*	Within 1–3 days
Semi-urgent Need to be seen within an earlier time frame or they would likely not receive rehabilitation, or significant deterioration (either physical or mental) might occur with any delay.	24–48 hours	1 week (depending on circumstances)

\*Some patients are identified by the family or referring physician as being extremely depressed and possibly suicidal. Such patients should be managed by emergency or acute care psychiatry.

the total elapsed time from the initial EP reference to the final decision to proceed to an EP study, ablation, pacemaker or ICD implant.

Wait-time benchmarks for an electrophysiology consultation are shown in Table 12.

Permanent pacemaker implantation may be done on either an urgent or semi-urgent basis (i.e., the patient is an inpatient who requires the

implant of a permanent pacemaker before the patient can be safely discharged from hospital); or on a non-urgent or elective basis. Most patients requiring pacemakers have sinus node dysfunction, atrial fibrillation with a slow ventricular response, or atrioventricular node disease.

Typically, urgent and semi-urgent patients (non-elective) are admitted to hospital either because their bradycardia has been symptomatic, or because there is concern that the patient is at high risk for the development of an adverse event. Symptoms may include presyncope, syncope, fatigue, or dyspnea. Adverse events include falls with injury, the development of heart failure, and sudden death.

Wait-time benchmarks for pacemakers are shown in Table 13.

Electrophysiologic studies and catheter ablation are central to the contemporary management of many cardiac arrhythmias. Newer ablation techniques using advanced mapping systems are emerging that permit improved management of previously untreatable arrhythmic conditions.

Catheter ablation is a first-line treatment for many cardiac arrhythmias, including supra-ventricular tachycardia (SVT), atrial flutter and idiopathic forms of ventricular tachycardia (VT). These procedures are routinely performed on an outpatient basis, with very few complications and, in contrast to most pharmacological and surgical therapies in medicine, are typically *curative*.

Wait-time benchmarks for electrophysiologic testing and catheter ablations are shown in Table 14.

The implantable cardioverter defibrillator (ICD) is accepted as the dominant direct therapy for the primary prevention of sudden death in patients with a demonstrated propensity to, or considered to be at high risk for, life-threatening ventricular tachycardias. Prevention of sudden death in patients with a history of life-threatening ventricular tachycardias is termed secondary prevention.

Most patients who have experienced an episode of a life-threatening ventricular tachycardia are admitted to hospital. In the absence of identification of a reversible or transient cause for the ventricular tachycardia and in the absence of prohibitive comorbidities, most such patients will receive



an ICD during the index hospitalization. These patients should receive their secondary prevention ICD within three working days of the decision to proceed. Most patients identified as being an appropriate candidate for treatment with a primary prevention ICD are outpatients.

Because the purpose of ICD therapy is to prevent sudden death in patients at high-risk of experiencing a life-threatening ventricular tachyarrhythmia, patients who are waiting to receive ICD therapy are at risk of death that would likely have been prevented had the ICD therapy been provided in a timely fashion. To date, there are no published reports detailing the risk of death among patients waiting to receive an ICD.

Wait-time benchmarks for ICDs are shown in Table 15.

### 3.3 Rehabilitation

Cardiovascular disease (CVD) is a chronic disease, one that can be controlled and not, at present, cured. In today's environment of less invasive interventions and shorter hospital lengths of stay, the needs of patients with chronic CVD are not fully addressed by acute care alone. Good chronic disease management and secondary prevention have become essential elements in contemporary cardiac care. Core elements of CR programs include management of cardiac risk factors, education, individualized exercise programs, nutrition counseling, and psychosocial and vocational counseling.

It is important to clarify the difference between patients who are able to access cardiac rehabilitation services (i.e., a referral is made but they may have to wait to participate in a program, which represents approximately 20% of all eligible patients) and those who are not able to access such services (i.e., no referral is made, which represents approximately 80% of all eligible patients).

Wait-time benchmarks for urgent and semi-urgent cardiac rehabilitation are shown in Table 16 and for outpatient cardiac rehabilitation in Table 17.

Elective referral patients are those who are stable at the time of assessment and who can wait for cardiac rehabilitation without experiencing any significant adverse events. The wait time will likely vary according to the diagnostic category.

The notes below reflect some of the issues that may relate to each diagnostic category. The 'ideal time' reflects some of the guidelines used by various programs and reflects the time when optimal benefits should accrue. The "benchmark time" has been set by the expert committee as that time where most of the benefits should be available.

- (1) Physical issues (sternotomy) may prevent these patients from beginning exercise earlier, but all other aspects of cardiac rehabilitation (CR) could start immediately.

- (2) These patients tend to return to work and 'normal duties' shortly after the procedure.
- (3) These patients likely need to be seen earlier as there may be more significant medical, vocational and social decisions required.
- (4) If the cardiac rehabilitation team is seeing the patient for early mobilization post transplant, then the patient needs to be seen as soon as possible. Often these patients may be from out of town.
- (5) Urgency likely reflects the psychosocial sequelae.

## 4.0 Considerations

### Human Resource Issues

This document outlines appropriate wait times for cardiac patients. We cannot currently achieve and maintain these standards in Canada because of the current shortage of physicians, nurses and technologists trained in many subspecialties (e.g., HF, interventional cardiology, electrophysiology, echocardiography) in Canada.

The increased requirement for human resource requirements is driven by two major factors:

- In many of these professions, we are already experiencing a shortage of needed health care professions, which is causing bottlenecks and unacceptably long wait times for care. We desperately need trained professionals to help clear the backlog and to ensure that the wait lists do not climb again after they have been reduced to an acceptable level.
- For many of these services and procedures (e.g., heart failure clinics, ICDs), the current utilization rate is well below the appropriate rate based on current evidence, which means that many patients who are indicated for this care are not receiving it. Achieving a more appropriate utilization rate will require a significant investment in human resources, as well as in physical resources and supporting infrastructure.

**Table 17: Wait-time benchmarks for outpatient cardiac rehabilitation**

Diagnostic Category	Waiting time (event to program entry)			Notes
	Ideal*	Preferable†	Benchmark‡	
CABG/Valvular disease	21 days	21–30 days	30 days	(1)
PTCA	2 days	2–7 days	7–30 days	(2)
MI/CHF/Stable and unstable angina	7 days	7–30 days	30 days	(3)
Heart transplantation	4 days	4–10 days	10–30 days	(4)
Arrhythmias	1–7 days	7–30 days	30 days	(5)

\* There would be no adverse effects of waiting, and optimal benefit of CR intervention should be possible.

† It is not anticipated that there would be significant adverse events, and most, if not all, of the benefits can be achieved.

‡ This time frame recognizes the reality of the present waiting lists. Given that patients do show improvement and that any increase in the referral pool could delay even these times, it is felt that these times are acceptable.

## **Impact on other medical or non-medical services**

These benchmarks have profound implications at all levels within cardiology and the interdisciplinary teams that treat our patients:

- After their procedure, many patients will require repatriation to their community or regional hospitals, which will affect both equipment and personnel requirements.
- The multidisciplinary requirements of disease management program for heart failure patients will involve significant recruitment and training of health care professionals.
- Information transfer and electronic health records will greatly facilitate this process.

At present, urgent and semi-urgent patients are directed to the emergency room for quick assessment and treatment. Successful implementation of these wait-time benchmarks might result in a reduced demand for emergency room services.

### **Effects if not followed**

With diagnostic procedures, when the risk of waiting for the most appropriate diagnostic test exceeds the risk of an alternative though less appropriate testing and treatment strategy, the physician, in consultation with the patient, will choose the latter. Adding the collection of data regarding inappropriate use of technologies would provide a more complete picture of “bottlenecks” in the system and their impact.

### **Suggestions to meet benchmarks**

The collection and posting of wait time data in each jurisdiction for a specific list of services and procedures should be automated through the use of each facility's information system. This will require the creation of a common procedures list across the country for the selected procedures to allow system management and inter-jurisdictional comparisons against benchmarks. This information will also help to identify areas with surplus capacity (if any) to assist more constrained centres to achieve the wait-time benchmarks.

All facilities that receive public funding should be obligated to provide information regarding wait times and resource information such as staffing, equipment type, numbers and age as a condition of operation.

Most provinces and health regions will find these benchmarks challenging without patient-focused programs at a local, as well regional and provincial level. They will require detailed planning and integration of providers at primary, secondary and tertiary/quarternary levels. Systems will have to explore innovative models of care and physician remuneration models that allow such integrated mul-

tidisciplinary triage and care to occur. Wait lists must be managed, and patients in the queue still need to be managed and monitored for any signs of deterioration.

### **Litature references**

#### **Access to initial cardiology consultation**

- Baker DW, Hayes RP, Massie BM, Craig CA. Variations in family physicians' and cardiologists' care for patients with heart failure. *Am Heart J* 1999;138(5 Pt 1):826-34.
- Bellotti P, Badano LP, Acquarone N et al. Specialty-related differences in the epidemiology, clinical profile, management and outcome of patients hospitalized for heart failure; the OSCUR study. Outcome dello Scompensio Cardiaco in relazione all'Utilizzo delle Risore.[see comment]. *Eur Heart J* 2001;22(7):596-604.
- Dougan JP, Mathew TP, Riddell JW et al. Suspected angina pectoris: a rapid-access chest pain clinic.[see comment]. *QMJ* 2001;94(12):679-86.
- Francis CM, Caruana L, Kearney P et al. Open access echocardiography in management of heart failure in the community [see comments]. *BMJ* 1995;310(6980):634-6.
- Glassman PA, Kravitz RL, Petersen LP, Rolph JE. Differences in clinical decision making between internists and cardiologists. *Arch Intern Med* 1997;157(5):506-12.
- Halm EA, Browner WS, Tubau JF, Tateo IM, Mangano DT. Echocardiography for assessing cardiac risk in patients having non-cardiac surgery. Study of Perioperative Ischemia Research Group.[see comment][erratum appears in *Ann Intern Med* 1997;126(6):494]. *Ann Intern Med* 1996;125(6):433-41.
- Natarajan MK, Mehta SR, Holder DH et al. The risks of waiting for cardiac catheterization: a prospective study.[see comment][erratum appears in *CMAJ*. 2003;168(2):152.] *CMAJ* 2002;167(11):1233-40.
- Philbin EF, Weil HF, Erb TA, Jenkins PL. Cardiology or primary care for heart failure in the community setting: process of care and clinical outcomes. *Chest* 1999;116(2):346-54.
- Reeder GS. Exercise testing in rapid-access clinics for assessment of chest pain. *Lancet* 2000;356(9248):2116-30.
- Reis SE, Holubkov R, Zell KA, Edmundowicz D, Shapiro AH, Feldman AM. Unstable angina: specialty-related disparities in implementation of practice guidelines. *Clin Cardiology* 1998;21(3):207-10.
- Smith LE, Faberi SA, Pai R, Ferry D, Heywood JT. Symptomatic improvement and reduced hospitalization for patients attending a cardiomyopathy clinic. *Clin Cardiology* 1997;20(11):949-54.
- Young W, Rewa G, Goodman SG et al. Evaluation of a community-based inner-city disease management program for postmyocardial infarction patients: a randomized controlled trial.[see comment]. *CMAJ* 2003;169(9):905-10.
- McAlister FA, Stewart S, Ferrua S, McMurray JJJV. Multidisciplinary strategies for the management of heart failure patients at high risk for admission: a systematic review of randomized trials. *J Am Coll Cardiol* 2004;44:810-819.

#### **Urgent and emergent**

- Antman EM, Anbe DT, Armstrong PW, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction. [Erratum in: *J Am Coll Cardiol* 2005;45(8):1376] *J Am Coll Cardiol*. 2004;44:671-719.
- Braunwald E, Antman EM, Beasley JW, et al. ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction. *J Am Coll Cardiol* 2002;40:1366-74
- Bertrand ME, Simoons ML, Fox KA, et al. Management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. *Eur Heart J* 2002;23:1809-40.

Morrow DA. New insight into clinical risk scores for patients with acute coronary syndromes. *Am Heart J* 2004; 146: 754-56.

### Heart failure

- Naylor CD, Slaughter PM, eds. *Cardiovascular Health and Services in Ontario: An ICES Atlas*. Toronto: Institute for Clinical Evaluative Sciences; 1999 p.16-49.
- Michalsen A, König G, Thimme W. Preventable causative factors leading to hospital admission with decompensated heart failure *Heart* 1998;80:437-41.
- Rich MW, Beckham V, Wittenberg C, Leven CL, Freedland KE, Carney RM. A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 1995;333:1190-5.
- Stewart S, Marley JE, Horowitz JD Effects of a multidisciplinary, home-based intervention on unplanned readmissions and survival among patients with chronic congestive heart failure: a randomised controlled study. *Lancet* 1999;354:1077-83.
- F A. McAlister, S Stewart, S Ferrua, J J. V. McMurray, Multi-disciplinary Strategies for the Management of Heart Failure Patients at High Risk for Admission A Systematic Review of Randomized Trials. *J Am Coll Cardiol* 2004;44:810-9.
- Gwadrý-Sridhar FH, Flintoft V, Lee DS, Lee H, Guyatt GH. A systematic review and meta-analysis of studies comparing readmission rates and mortality rates in patients with heart failure. *Arch Intern Med* 2004;164:2315-20.
- Phillips CO, Wright SM, Kern DE, Singa RM, Shepperd S, Rubin HR. Comprehensive discharge planning with postdischarge support for older patients with congestive heart failure: a meta-analysis. *JAMA* 2004;291:1358-67.
- DeBusk RF, Houston Miller, N, Parker KM, Bandura A, Chmura Kraemer, H, Cher DJ, et al. Care management for low-risk patients with heart failure. A randomized, controlled trial. *Ann Intern Med* 2004;141:606-13.
- Atienza F, Anguita M, Martinez-Alzamora N, et al. Multicenter randomized trial of a comprehensive hospital discharge and outpatient heart failure management program. *Eur J Heart Fail* 2004;6:643-52.
- Johansen H, Strauss B, Arnold JMO, et al. On the rise: The current and projected future burden of congestive heart failure hospitalization in Canada. *Can J Cardiol* 2003;19(4):430-35.
- Gustafsson F, Arnold JMO. Heart failure clinics and outpatient management: review of the evidence and call for quality assurance. *Eur Heart J* 2004;25(18):1596-1604.

### CABG and valve

- Naylor CD, Sykora K, Jaglal SB, et al. Waiting for coronary artery bypass surgery: population-based study of 8,517 consecutive patients in Ontario, Canada: the Steering Committee of the Adult Cardiac Care Network of Ontario. *Lancet* 1995; 346:1605-9.
- Ray AA, Buth KJ, Sullivan JA, et al. Waiting for cardiac surgery: results of a risk-stratified queuing process. *Circulation* 2001;104(12 Suppl 1):I92-8.
- Cardiac Care Network of Ontario Website: [www.ccn.ca](http://www.ccn.ca)
- March 2004 CCN Consensus Panel Report on Target Setting: [www.ccn.ca](http://www.ccn.ca)

### PCI

- Faris PD, Grant FC, Galbraith PD, Gong Y, Ghali WA for the Canadian Cardiovascular Outcomes Research Team. Diagnostic cardiac catheterization and revascularization rates for coronary heart disease. *Can J Cardiol* 2004;20:391-7.
- Cardiac Care Network of Ontario. Consensus Panel on Target Setting (2004) — final report and recommendations. [www.ccn.on.ca](http://www.ccn.on.ca)

### Nuclear cardiology

- Levels of evidence and grades of recommendation: a guidelines advisory

committee comparison of guidelines developer's evidence taxonomies. Ontario Guidelines Advisory Committee. 7 Mar. 2003. Available: <http://gacguidelines.ca/article.pl?sid=03/03/07/2128213&mode=thread>

- ACR Appropriateness Criteria Development and Methodology. American College of Radiology 2004. Available: [www.acr.org/ac\\_pda](http://www.acr.org/ac_pda)
- Klocke FJ, Baird MG, Bateman TM, et al. *ACC/AHA/ASNC Guidelines for the clinical use of cardiac radionuclide imaging*. American College of Cardiology/American Heart Association Task Force on Practice Guidelines 2003;1-69. Available: [www.acc.org](http://www.acc.org)
- Tanser et al. CCS guidelines for evaluation and management of chronic ischemic coronary artery disease. *Can J of Cardiol* 1998;14(Suppl C).
- Hadorn DC. Developing priority criteria for magnetic resonance imaging: results from the Western Canada Waiting List Project. *Can Assoc Radiol J* 2005;53(4):210-8.
- Health Services Wait Time Information. Manitoba Health. 2004 Nov. 30. Available: [www.gov.mb.ca/health/waitlist/index.html](http://www.gov.mb.ca/health/waitlist/index.html)
- Surgical Wait Times. Government of British Columbia. 7 Oct. 2004. Available: [www.swl.hlth.gov.bc.ca/swl/index.html](http://www.swl.hlth.gov.bc.ca/swl/index.html)
- Alberta Wait List Registry. Alberta Government. 30 Nov. 2005. Available: [www.health.gov.ab.ca/waitlist/WaitListPublicHome.jsp](http://www.health.gov.ab.ca/waitlist/WaitListPublicHome.jsp)
- Wait Time Information. Saskatchewan Surgical Care Network. 30 Sept. 2004. Available: [www.sasksurgery.ca/wait-list-info.html](http://www.sasksurgery.ca/wait-list-info.html)
- Cardiac Care Network of Ontario. Cardiac Care Network of Ontario 2004. Available: [www.ccn.on.ca/](http://www.ccn.on.ca/)
- Medical Imaging in Canada 2004*. Ottawa: Canadian Institute for Health Information; 2004.
- Guidance for Industry: PET drug applications — Content and format for NDAs and ANDAs. US Department of Health and Human Service, Food and Drug Administration 2000 Mar. Available: [www.fda.gov/cder/guidance](http://www.fda.gov/cder/guidance)
- Silberstein EB. Prevalence of adverse reactions to positron emitting radiopharmaceuticals in nuclear medicine. Pharmacopeia Committee of the Society of Nuclear Medicine. *J Nuclear Med* 1998;39(12):2190-2.
- Adams E, Flynn K. *Positron Emission Tomography: descriptive analysis of experience with PET in VA*. U S Department of Veterans Affairs 1998 December. Available: [www.va.gov/vatap/](http://www.va.gov/vatap/)
- Dussault F-P, Nguyen V H and Rchet F. *Positron emission tomography in Québec*. Montréal: Gouvernement du Québec; 2001. Report No. AÉTMIS 01-3 RE.
- Positron emission tomography (PET) for a number of services. Canberra Medical Services Advisory Committee. Mar. 2000.
- Adams E, Asua J, Olasagasti JC, et al. *Positron emission tomography: Experience with PET and synthesis of the evidence*. International Network of Agencies for Technology Assessment. 4 Jan.1999. Available: [www.inahta.org/inahta\\_web/index.asp](http://www.inahta.org/inahta_web/index.asp)
- Robert G, Milne R. *Positron emission tomography: establishing priorities for health technology assessment*. The National Coordinating Centre for Health Technology Assessment. July 1999. Available: [www.nchta.org/projectdata/1\\_project\\_record\\_published.asp?PjtlD=1026](http://www.nchta.org/projectdata/1_project_record_published.asp?PjtlD=1026)
- Laupacis A, Paszat L, Hodgson D, Benk V. *Health technology assessment of PET (positron emission tomography): a systematic review*. International Network of Agencies for Technology Assessment. 2005. Available: [www.ices.on.ca/webpage.cfm?site\\_id=1&org\\_id=68&morg\\_id=0&gsec\\_id=0&item\\_id=1536&type=report](http://www.ices.on.ca/webpage.cfm?site_id=1&org_id=68&morg_id=0&gsec_id=0&item_id=1536&type=report)
- Minnesota Health Technology Advisory Committee. Positron emission tomography (PET) for oncology applications. Minnesota Department of Health 1999. Available: [www.health.state.mn.us/htac/pet.htm](http://www.health.state.mn.us/htac/pet.htm)
- Mowatt G, Vale L, Brazzelli M, et al. Systematic review of the effective-

ness and cost-effectiveness, and economic evaluation, of myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction. *Health Techno Assess* 2004;8(30):iii-iv, 1-207.

Patient Access to Care: Cardiac Catheterization. Cardiac Care Network of Ontario. 2004 Sept 25. Available: [www.ccn.on.ca/access/waittimec.html](http://www.ccn.on.ca/access/waittimec.html)

Bax JJ, Poldermans D, Elhendy A, et al. Sensitivity, specificity, and predictive accuracies of various noninvasive techniques for detecting hibernating myocardium. *Curr Probl in Cardiol* 2001;26(2):141-86.

Beanlands RS, Hendry PJ, Masters RG, et al. Delay in revascularization is associated with increased mortality rate in patients with severe left ventricular dysfunction and viable myocardium on fluorine 18-fluorodeoxyglucose positron emission tomography imaging. *Circulation* 1998;98(19 Suppl):II51-6.

### EP consultation

Massel D. Access to an outpatient cardiology consultation in southwestern Ontario. *Can J Cardiol* 1999;15:879-83.

Naylor CD, Levinton CM, Wheeler S et al. Queueing for coronary surgery during severe supply-demand mismatch in a Canadian referral centre: a case study of implicit rationing. *Soc Sci Med* 1993;37:61-7.

Hippisley-Cox J, Pringle M. Inequalities in access to coronary angiography and revascularisation: the association of deprivation and location of primary care services. *Br J Gen Pract* 2000;50:449-54.

Carroll RJ, Horn SD, Soderfeldt B et al. International comparison of waiting times for selected cardiovascular procedures. *J Am Coll Cardiol* 1995;25:557-63.

Naylor CD, Levinton CM, Baigrie RS. Adapting to waiting lists for coronary revascularization. Do Canadian specialists agree on which patients come first? *Chest* 1992;101:715-22.

### Pacemakers

Goldman BS, Nishimura S, Lau C. Survey of cardiac pacing in Canada. *Can J Cardiol* 1996; 12:573-8.

Crysler Report on the Canadian Cardiovascular Market, 2005.

Simpson CS, Fisher MA, Curtis MJ et al. Correlation of waiting time with adverse events in patients admitted for nonelective permanent pacemaker implantation. *Can J Cardiol* 1998; 14(6):817-21.

Leung WM, Simpson CS, Abdollah H, et al. Effect of a dedicated implant facility on waiting times and morbidity in patients requiring pacemakers. *Pacing Clin Electrophysiol* 2003;26(2)(II):S145.

Molin F, Page P, Daoust L. Implantation of permanent pacemakers in the electrophysiology laboratory: What has it changed in a general teaching hospital? *Can J Cardiol* 2000;16(7):871-5.

### Electrophysiologic testing and ablation

Vora AM, Green MS, Tang AS. Safety and feasibility of same day discharge in patients undergoing radiofrequency catheter ablation. *Am Heart J* 1998;81:233-5.

Bathina MN, Mickelsen S, Brooks C, et al. Radiofrequency catheter ablation versus medical therapy for initial treatment of supraventricular tachycardia and its impact on quality of life and healthcare costs. *Am J Cardiol* 1998;82:589-93.

Marshall DA, O'Brien B, Nichol G. Review of economic evaluations of radiofrequency catheter ablation for cardiac arrhythmias. *Can J Cardiol* 2003;19:1285-1304.

Sintetos AL, Roark SF, Smith MS, et al. Incidence of symptomatic tachycardia in untreated patients with paroxysmal supraventricular tachycardia. *Arch Intern Med* 1986;146:2205-9.

Klein GJ, Bashore TM, Sellers TD, et al. Ventricular fibrillation in the Wolf-Parkinson-White Syndrome. *N Engl J Med.* 1979;301:1080-5.

Mittal S, Iwai S, Stein KM, et al. Long-term outcome of patients with

unexplained syncope treated with an electrophysiologic-guided approach in the implantable defibrillator era. *J Am Coll Cardiol* 1999;34:1082-9.

### Implantable cardioverter defibrillators

The Antiarrhythmics Versus Implantable Defibrillators Investigators. A comparison of antiarrhythmic-drug therapy with implantable defibrillators in patients resuscitated from near-fatal ventricular arrhythmias. *N Engl J Med* 1997;337:1576-83.

Connolly SJ, Gent M, Roberts RS, et al. Canadian Implantable Defibrillator Study (CIDS): a randomized trial of the implantable cardioverter defibrillator against amiodarone. *Circulation* 2000;101:1297-302.

Kuck K-H, Cappato R, Siebels J, R pper R, CASH Investigators. Randomized comparison of antiarrhythmic drug therapy with implantable defibrillators in patients resuscitated from cardiac arrest. *Circulation* 2000;102:748-54.

Connolly SJ, Hallstrom AP, Cappato R, et al. Meta-analysis of the implantable cardioverter defibrillator secondary prevention trials. *Eur Heart J* 2000;21:2071-8.

Tang AS, Ross HR, Simpson C, et al. Canadian Cardiovascular Society / Canadian Heart Rhythm Society position paper on implantable cardioverter defibrillator (ICD) use in Canada. *Can J Cardiol* (in press).

Moss AJ, Hall WJ, Cannom DS, et al. Improved survival with an implanted defibrillator in patients with coronary artery disease at high risk for ventricular arrhythmia. *N Engl J Med* 1996;335:1933-40.

Buxton AE, Lee KL, Fisher JD, et al. A randomized study of the prevention of sudden death in patients with coronary artery disease. *N Engl J Med* 1999;341:1882-90.

Moss AJ, Zareba W, Hall WJ, et al. Prophylactic implantation of a defibrillator in patients with myocardial infarction and reduced ejection fraction. *N Engl J Med* 2002;346:877-83.

Bristow MR, Saxon LA, Boehmer J, et al. Cardiac-resynchronization therapy with or without an implantable defibrillator in advanced chronic heart failure. *N Engl J Med* 2004;350:2140-50.

Bardy GH, Lee KL, Mark DB, et al. Amiodarone or an implantable cardioverter-defibrillator for congestive heart failure. *N Engl J Med* 2005;352:225-37.

Kadish A, Dyer A, Daubert JP, et al. Prophylactic defibrillator implantation in patients with nonischemic dilated cardiomyopathy. *N Engl J Med* 2004;350:2151-8.

Strickberger SA, Hummel JD, Bartlett TG, et al. Amiodarone versus implantable cardioverter-defibrillator: randomized trial in patients with nonischemic dilated cardiomyopathy and asymptomatic ventricular tachycardia — AMIOVERT. *J Am Coll Cardiol* 2003;41:1707-12.

Bigger JT, CABG-Patch Investigators. Prophylactic use of implanted cardiac defibrillators in patients at high risk for ventricular arrhythmias after coronary-artery bypass graft surgery. *N Engl J Med* 1997;337:1569-75.

Hohnloser SH, Kuck K-H, Dorian P, et al. Prophylactic use of an implantable cardioverter-defibrillator after myocardial infarction. *N Engl J Med* 2004;351:2481-8.

B nsch D, Antz M, Boczor S, et al. Primary prevention of sudden cardiac death in idiopathic dilated cardiomyopathy: the Cardiomyopathy Trial (CAT). *Circulation* 2002;105:1453-8.

Nanthakumar K, Epstein AE, Kay N, Plumb VJ, Lee DS. Prophylactic implantable cardioverter-defibrillator therapy in patients with left ventricular systolic dysfunction. *J Am Coll Cardiol* 2004;44:2166-72.

Simpson CS, O'Neill BJ, Sholdice MM, et al. Canadian Cardiovascular Society commentary on implantable cardioverter defibrillators in Canada. Waiting times and access to care issues. *Can J Cardiol* 2005;21 Suppl A:19-24.

## **Appendix A: CCS Access to Care Working Group members**

Blair O'Neill, MD, (chair), Halifax, Nova Scotia  
Robert Beanlands, MD, Ottawa, Ontario  
James Brophy, MD, Montreal, Quebec  
William Dafoe, MD, Edmonton Alberta  
Anne Ferguson, Canadian Cardiovascular Society  
Kevin Glasgow, MD, Toronto, Ontario  
Michelle Graham, MD, Edmonton, Alberta  
Merril Knudtson, MD, Calgary, Alberta  
David Ross, MD, Edmonton, Alberta  
Heather Ross, MD, Toronto, Ontario  
John Rottger, MD, Pincher Creek, Alberta  
Chris Simpson, MD, Kingston, Ontario  
Marcella Sholdice, Project Manager

## **Appendix B: Subgroup members**

### **Access to Care in Emergent and Urgent Situations**

Blair O'Neill, MD (chair), Halifax, Nova Scotia  
Eric Cohen, MD, Toronto, Ontario  
Stephen Fremes, MD, Toronto, Ontario  
Michelle Graham, MD, Edmonton, Alberta  
Greg Hirsh, MD, Halifax, Nova Scotia  
Merril Knudtson, MD, Calgary, Alberta  
David Ross, MD, Edmonton, Alberta

### **Access to Specialist Consultation and Non-invasive Testing**

Merril Knudtson, MD (co-chair), Calgary, Alberta  
John Rottger, MD (co-chair), Pincher Creek, Alberta  
Jay Brophy, MD, Montreal, Quebec  
Lyll Higginson, MD, Ottawa, Ontario  
Bruce Josephson, MD, Halifax, Nova Scotia  
Brad Munt, MD, Vancouver, British Columbia

### **Access to Nuclear Cardiology**

Rob Beanlands, MD (chair), Ottawa, Ontario  
Michael Freeman, MD, Toronto, Ontario  
Karen Gulenchyn; MD, Hamilton, Ontario  
Marla Kiess, MD, Vancouver, British Columbia

### **Access to Revascularization Procedures**

David Ross, MD (co-chair), Edmonton, Alberta  
Michelle Graham, MD (co-chair), Edmonton, Alberta  
Eric Cohen, MD, Toronto, Ontario  
Stephen Fremes, MD, Toronto, Ontario  
Merril Knudtson, MD, Calgary, Alberta  
Blair O'Neill, MD, Halifax, Nova Scotia  
Jack Tu, MD, PhD Toronto, Ontario

### **Access to Electrophysiology Services**

Chris Simpson, MD, (chair) Kingston, Ontario  
Paul Dorian, MD, Toronto, Ontario  
Martin Green, MD, Ottawa, Ontario  
Jeff Healey, MD, Hamilton, Ontario  
Brent Mitchell, MD, Calgary, Alberta  
Francois Phillippon, MD, Ste. Foy, Quebec  
John Sapp, MD, Halifax, Nova Scotia  
Larry Sterns, Victoria, British Columbia  
Raymond Yee, MD, London, Ontario

### **Access to Heart Failure Clinics**

Heather Ross, MD (chair), Toronto, Ontario  
Malcolm Arnold, MD, London, Ontario  
Israel Belenkie, MD, Calgary, Alberta  
Catherine Demers, MD, Hamilton, Ontario  
Paul Dorian, Toronto, Ontario  
Nadia Gianetti, MD, Montreal, Quebec  
Haissam Haddad, MD, Ottawa, Ontario  
Jonathan Howlett MD, Halifax, Nova Scotia

Andrew Ignaszewski, MD, Vancouver, British Columbia  
Philip Jong, MD, Toronto, Ontario  
Peter Liu, MD, Toronto, Ontario  
Robert McKelvie, MD, Hamilton, Ontario  
Gordon Moe, MD, Toronto, Ontario  
John D. Parker, Canadian Cardiovascular Society  
Vivek Rao, MD, Toronto, Ontario  
Jean Rouleau, MD, Montreal, Quebec  
Koon Tang Teo, MD, Hamilton, Ontario  
Ross Tsuyuki, MD, Edmonton, Alberta  
Jack Tu, MD, PhD Toronto, Ontario  
Michel White, MD, Montreal, Ontario

### **Access to Cardiac Rehabilitation**

Bill Dafoe, MD (chair), Edmonton, Alberta  
Heather Arthur, PhD, Hamilton, Ontario  
Louise Beaton, Ottawa, Ontario  
Louise Morrin, Ste. Foy, Quebec  
Helen Stokes, PhD, Edmonton, Alberta

## **Appendix C: Secondary review participating organizations**

### **Access to Care in Emergent and Urgent Situations**

Canadian Association of Interventional Cardiologists (CAIC)  
Canadian Society for Cardiac Surgeons (CSCS)

### **Access to Specialist Consultation and Non-invasive Testing**

Canadian Cardiovascular Society (CCS) invited 20 community cardiologist members to review the report

### **Access to Revascularization Procedures**

Canadian Cardiovascular Society (CCS) invited 20 community cardiologist members to review the report

### **Access to Nuclear Cardiology**

Canadian Association of Nuclear Medicine (CANM)  
Peter Bogaty, MD, Ste. Foy, Quebec  
Ross A. Davies, MD, Ottawa, Ontario  
Terrence D. Ruddy, MD, Ottawa, Ontario  
Gerry Wisenberg, MD, London, Ontario

### **Access to Heart Failure Clinics**

### **CCS Secondary Panel for the Diagnosis and Management of Heart**

### **Failure Consensus Conference**

Access to Electrophysiology Services  
Canadian Heart Rhythm Society

### **Access to cardiac Rehabilitation**

Canadian Association of Cardiac Rehabilitation

## **List of acronyms**

ACC	American College of Cardiology
ACS	Acute coronary syndrome
AF	Atrial fibrillation
AHA	American Heart Association
AMI	Acute myocardial infarction
CABG	Coronary artery bypass graft surgery
CAD	Coronary artery disease
CANM	Canadian Association of Nuclear Medicine
CCS	Canadian Cardiovascular Society
CHF	Chronic heart failure
CMA	Canadian Medical Association
CNS	Clinical nurse specialist
CR	Cardiac rehabilitation
CRT	Cardiac resynchronization therapy
DMP	Disease management program
ECG	Electrocardiogram
EP	Electrophysiology or Electrophysiologist
ER	Emergency Room
FDG	Fluorodeoxyglycose

GP	General practitioner
HF	Heart failure
HFS	Heart failure specialist
ICD	Implantable cardioverter defibrillator
LV	Left ventricle
MD	Medical doctor, physician
MI	Myocardial infarction
MPI	Myocardial perfusion imaging
NP	Nurse practitioner
NSTEACS	Non-ST segment elevation acute coronary syndrome
PCI	Percutaneous coronary intervention
PET	Positron emission tomography
SPECT	Single photon emission computed tomography
STEMI	ST segment elevation myocardial infarction
TTVP	Temporary trans-venous pacing
VF	Ventricular fibrillation
VT	Ventricular tachycardia

## References

1. Canadian Institute for Health Information. National Grouping System Categories (NGS) Report, Canada, 2002-2003.
2. Canadian Association of Radiation Oncologists. Manpower and standards of care. September 2000.
3. Klocke FJ, Baird MG, Bateman TM, et al. *ACC/AHA/ASNC Guidelines for the clinical use of cardiac radionuclide imaging*. American College of Cardiology/American Heart Association Task Force on Practice Guidelines 2003;1-69. Available: [www.acc.org](http://www.acc.org)
4. Tanser et al. CCS guidelines for evaluation and management of chronic ischemic coronary artery disease. *Can J of Cardiol* 1998;14(Suppl C).
5. Gulenchyn KY, et al. Canadian Association of Nuclear Medicine (CANM). Submission to the Canadian Alliance for Timely Access. 2005

---

# Appendix C: Benchmarks of the Canadian Association of Emergency Physicians

Taking action on the issue of overcrowding in Canada's emergency departments  
June 16, 2005

---

## Situation analysis

In 2004, Canada's First Ministers concluded *A Ten-Year Plan to Strengthen Health Care*, stating that improving access to care and reducing wait times are of national concern and a clear priority. Canada's physicians and provincial governments have taken some important first steps to reducing wait times starting with five priority areas including cardiac care, cancer care, diagnostic imaging, sight restoration and joint replacement.

The Wait Times Alliance, made up of six specialty groups, was formed to assist federal-provincial-territorial ministers of health in identifying evidence-based benchmarks for medically acceptable wait times for the five priority areas and to provide advice on the implementation of wait time reduction strategies.

Through the Canada Health Transfer, the federal government has committed \$4.5 billion over the next six years to a Wait Times Reduction Fund. Provinces and territories will determine where those dollars are allocated based on jurisdictional priorities within the framework of the Health Accord. In the 2005 budget, the federal government announced an additional \$15 million for wait time initiatives.

Work on the Wait Time Reduction Strategy is underway in each of the provinces. The Health Accord committed the federal and provincial governments to develop evidence-based benchmarks for medically acceptable wait times in five specific areas by December 2005. Multi-year plans to achieve these targets are to be in place by March 2007.

## What's missing from the wait time strategy: The need to address the crisis in Canada's emergency departments

Wait time in Canada's Emergency Departments is an issue of great importance to Canadians. Seventy-four percent (74%) of Canadians have indicated that they are concerned about prolonged Emergency Department (ED) waits and deteriorating service. Prolonged wait time is a national epidemic in Canada and a continuing issue in other countries

around the world, including the United States. The principal cause of prolonged wait times is Emergency Department overcrowding.

ED overcrowding is the most serious issue facing Canada's Emergency Departments and is a very serious patient health issue. Overcrowding results in increased patient suffering, prolonged wait time, deteriorating levels of service, and on occasion, a worsened medical condition or even loss of life. Unless action is taken to effectively deal with this need, patient health will continue to be compromised and preventable patient deaths may continue.

In addition, Emergency Departments continue to be a major access point to the health care system and as such, have become a highly visible indicator of the state of Canadian health care generally.

With 10 million visits made to Canadian Emergency Departments every year, Canadians' opinions about wait times are determined very substantially by their Emergency Department experiences.

## Emergency department overcrowding – front line crisis

Overcrowding is defined as a situation in which the demand for emergency services exceeds the ability of an Emergency Department to provide quality care within medically acceptable time frames.

The principal cause of overcrowding is the lack of beds on hospital wards and in Intensive Care Units. With the shortage of hospital beds, overflow patients are often "warehoused" in Emergency Departments, creating a situation where the sickest patients are "blocked" from accessing timely care. Acute care bed capacity is also significantly affected by patients who require an "alternate level of care" (ALC), patients who could be served at home, shortages in home care resources as well as a lack of chronic and palliative care beds. These patients account for up to 20% of acute care hospital beds and act as "bed blockers", thereby contributing to the problem of ED overcrowding by preventing the admission of emergency patients to hospital beds. On average, one patient "warehoused" in the Emergency Department denies access to four patients per

hour to the Emergency Department, directly contributing to prolonged wait times and patient suffering.

Over the past decade, Canada has seen a forty percent (40%) decrease in overall hospital bed capacity due to government funding cuts. Hospital and bed closures, coupled with an aging and increasingly complex patient population have created an overcrowding crisis in Emergency Departments across the country.

British studies have shown that ED overcrowding rarely occurs when bed occupancy rates approach eighty-five percent (85%), but consistently occurs when occupancy is greater than ninety percent (90%). Most hospitals in Canada currently operate on ninety-five percent (95%) bed occupancy rates. The Canadian Association of Emergency Physicians (CAEP) believes that if bed capacity could be restored and there was a focus on matching the level of care to the level of patient need and on moving the ‘right patient’ to the ‘right bed.’, then the issue of long wait times and overcrowding could be largely resolved.

## Medically acceptable wait times in Canadian emergency departments

Medically acceptable wait times in Canadian Emergency Departments have already been identified and are defined by the Canadian Triage and Acuity Scale (CTAS).

The scale was developed by CAEP in 1998. The objectives of CTAS were to more accurately define patients’ needs for timely care and to allow Emergency Departments to evaluate their acuity level, resource needs and performance against certain operating objectives.

Patients are assigned a triage level on initial registration in the Emergency Department based on the perceived urgency of their presenting complaint. Patients are assigned to one of five categories according to level of urgency and, with each level, comes an expected fractile response time indicating maximum waiting time for the type of complaint.

CTAS is currently used in approximately eighty percent (80%) of Canadian Emergency Departments.

The five CTAS triage levels are as follows:

CTAS level	Level of illness/acuity	Nursing response time	Physician response time	Sentinel diagnosis	Fractile response	Admission rate
Level 1	Resuscitation	Immediate	Immediate	Cardiac arrest	98%	70–90%
Level 2	Emergent	Immediate	<15 minutes	Chest pain	95%	40–70%
Level 3	Urgent	<30 minutes	<30 minutes	Moderate asthma	90%	20–40%
Level 4	Less urgent	<60 minutes	<60 minutes	Minor trauma	85%	10–20%
Level 5	Non urgent	<120 minutes	<120 minutes	Common cold	80%	0–10%

### Notes:

- In recognition of wide variations in demand for care and that ideals cannot always be achieved without unlimited resources, each triage level is given a fractile response objective. A fractile response is the proportion of patient visits for a given triage level where the patients were seen within the CTAS time frame defined for that level. Fractile response does not deal with whether the absolute delay for an individual is reasonable or acceptable.
- This would mean that even though a Level 2 patient should be seen within 15 minutes, it might only occur 95% of the time. Although Level 5 patients have been given a time response objective of 2 hours, the fractile of 80% means that patients may have to wait over 6 hours on occasion. Patient assessment errors may occur when waiting times are beyond the recommended response times.
- The physician response time for CTAS Levels 1 and 2 are based on scientific evidence. The physician response times for all other levels are based on physician expert opinion and consensus and assumes ideal operational conditions.
- The CTAS defined response times are, at present, guidelines only. There remain no articulated, enforced, minimum guidelines for operational performance for Canadian Emergency Departments.

## Not addressing the issue of ED wait times and overcrowding – What’s at stake?

Until the issue of wait times and overcrowding on the front line within Canadian Emergency Departments is addressed, CAEP believes that Canadians will continue to doubt the safety and accessibility of their health care system.

No matter what progress is being made in other areas with respect to wait time, if we can’t improve the front line experience of patients, then we run the risk of looking as though wait times are not being addressed. The prevalence of media reports about diverted ambulances, long waits

and regrettably, a worsened medical condition or even loss of life will continue to erode confidence in our health care system.

CAEP believes that success in relieving ED overcrowding will help build positive momentum for other key health care reforms and demonstrate meaningful reform to improve patient care.



## **Diversion of patients is not the main issue**

One of the most common myths about overcrowding is the notion that it is caused by people who opt for a visit to the emergency ward when they could be cared for elsewhere. This is simply not the case. The reality is that Emergency Departments can handle these cases efficiently and at little, if any, incremental cost. Given the relatively fixed costs of the ED operation (facility, staffing, 24-hour access), non-urgent patients do not cost the system more money.

The reason that “non-urgent” patients are not relevant to the overcrowding problem is because they do not occupy acute care stretchers, they require little or no nursing care, and they typically have brief treatment times. In its report on primary care renewal, the Canadian Medical Association stated unequivocally that public health initiatives aimed at diverting non-urgent patients from the ED would not have an impact on the overcrowding issue. Similarly, the American College of Emergency Physicians’ study on overcrowding found that while there were more people in the waiting room area, non-urgent use of the ED had no effect on the treatment areas.

Emergency Departments also provide those in need with important access to care. By moving these patients to other primary care facilities, extra costs will be incurred.

## **Solutions and critical success factors**

CAEP believes that the CTAS scale already serves as THE standard for medically acceptable wait times in Canadian Emergency Departments. CAEP strongly recommends that the scale be adopted by federal and provincial governments and incorporated into the National Wait Time Strategy.

Not all hospitals have incorporated CTAS into emergency care management. As a first step to implementation, each jurisdiction must ensure that the CTAS scale is used in every hospital. In many hospitals, there is no common computerized system for recording Emergency Department operations. CAEP recommends that each jurisdiction ensure that systems are put in place to record wait time against the CTAS scale.

CAEP also recommends that each jurisdiction establish working groups to investigate and address challenges in meeting the CTAS standard for all Emergency Department visits. This will include determining the number of additional acute care beds required in each hos-

pital and outside the hospital in the community, human resource issues, minimum operational standards for Emergency Departments and other factors.

## **Benchmarks and indicators**

In the majority of Emergency Departments in Canada, there are already indicators and benchmarks in place to monitor Emergency Department activity. The data base has been developed by the National CTAS Working Group and the Canadian Emergency Department Working Group (CEDIS). The standards have been set and the collection of the data can be undertaken. Time to triage, time to nurse, time to physician, time to admission and time to transfer to floor are all indicators of overcrowding. This data is easily retrievable and can be used as benchmarks when implementing changes needed to relieve Emergency Department overcrowding.

## **About CAEP**

The Canadian Association of Emergency Physicians is a national advocacy and professional development organization representing 1,800 of Canada’s emergency physicians. CAEP’s mission is to provide leadership in emergency health care with a goal to enhance the health and safety of all Canadians.

## **Contact information**

Dr. Andrew Affleck  
President, CAEP  
Tel: 807 624-4839  
afflecka@shaw.ca

Dr. Alan Drummond  
Chair, Public Affairs Committee, CAEP  
Tel: 613 267-6222  
drummond@perth.igs.net

Ms. Valoree McKay  
Executive Director, CAEP  
Tel: 613 523-3343 x15  
execdir@caep.ca

# References

1. Federal-Provincial-Territorial First Ministers. *A 10-year plan to strengthen health care*. Ottawa: Health Canada; Sep. 2004.
2. Chaoulli v. Quebec (Attorney General), 2005 SCC.
3. Wait Time Alliance. *No more time to wait: toward benchmarks and best practices in wait time management*. Ottawa: CMA; Apr. 2005. Available: [www.cma.ca/multimedia/CMA/Content/Images/Inside\\_cma/Media\\_Release/pdf/2005/no\\_more\\_wait.pdf](http://www.cma.ca/multimedia/CMA/Content/Images/Inside_cma/Media_Release/pdf/2005/no_more_wait.pdf) (accessed 27 July 2005).
4. *Family medicine in Canada: vision for the future*. Mississauga: College of Family Physicians of Canada; Nov. 2004.
5. Tu JV, Pinfold SP, McColgan P, Laupacis A. *Access to health services in Ontario*. Toronto: Institute for Clinical Evaluative Sciences; April 2005: p.5. Available: [www.ices.on.ca/webpage.cfm?site\\_id=1&org\\_id=31&morg\\_id=0&gsec\\_id=0&item\\_id=2862](http://www.ices.on.ca/webpage.cfm?site_id=1&org_id=31&morg_id=0&gsec_id=0&item_id=2862) (accessed 27 July 2005).
6. Sanmartin C, Gendron F, Berthelot J-M, Murphy K. *Access to health care services in Canada, 2003*. Ottawa: Statistics Canada; 2004. Cat. no. 82-575-XIE.
7. Decima Research. Decima Express national telephone poll for the College of Family Physicians of Canada; Oct. 2004.
8. Hurst J, Siciliani L. *Tackling excessive waiting times for elective surgery: a comparison of policies in twelve OECD countries*. Paris: Organisation for Economic Co-operation and Development; July 2003: p.10. Health working paper no. 6.
9. Bill C-39, *An act to amend the federal provincial fiscal arrangements act and to enact an act respecting the provision of funding for diagnostic and medical equipment*, Canada Gazette, Chap. 11, Vo. 28, No. 2.
10. *Moving forward: final report*. Calgary: Western Canada Waiting List Project; 28 Feb. 2005. Available: [www.wcwl.ca/media/pdf/news/moving\\_forward/report.pdf](http://www.wcwl.ca/media/pdf/news/moving_forward/report.pdf) (accessed 27 July 2005).
11. "Wait" watchers ... weighing in on wait time initiatives across ACAHO members. Ottawa: Association of Canadian Academic Healthcare Organizations; Mar. 2005: p.6.
12. Reference deleted.
13. Ross Baker GR, Schwartz F. *Strategies for addressing waits and delays in the Ontario cancer system*. Toronto: Cancer Quality Council of Ontario; 16 Nov. 2004.
14. *Comparable health and health system performance indicators for Canada, the provinces and territories, November 2004*. Ottawa: Canadian Institute for Health Information; Nov. 2004. Available: [secure.cihi.ca/cihiweb/dispPage.jsp?cw\\_page=prtwg\\_2004\\_e](http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=prtwg_2004_e) (accessed 27 July 2005).
15. *Mental health, mental illness and addiction: issues and options for Canada* (interim report of the Standing Senate Committee On Social Affairs, Science and Technology: Report 3). Ottawa: Government of Canada; Nov. 2004. Available: [www.parl.gc.ca/38/1/parlbus/commbus/senate/com-e/soci-e/rep-e/report3/repintnov04vol3-e.htm](http://www.parl.gc.ca/38/1/parlbus/commbus/senate/com-e/soci-e/rep-e/report3/repintnov04vol3-e.htm) (accessed 27 July 2005).
16. Siciliani L, Hurst J. *Explaining wait time variations for elective surgery across OECD countries*. Paris: Organisation for Economic Co-operation and Development; Oct. 2003. Health working paper 7.
17. *Health care renewal in Canada: accelerating change*. Ottawa: Health Council of Canada; Jan. 2005. Available: [hcc-ccs.com/report/Annual\\_Report/report\\_index.aspx](http://hcc-ccs.com/report/Annual_Report/report_index.aspx) (accessed 27 July 2005).
18. *Medical imaging in Canada*. Ottawa: Canadian Institute for Health Information; Sep. 2003. Available: [secure.cihi.ca/imaging/](http://secure.cihi.ca/imaging/) (accessed 27 July 2005).
19. Curry L. *Imaging the future: final report*. Ottawa: Canadian Association of Radiologists; Nov. 2004. Available: [www.car.ca/about\\_car/publications/future/Imaging\\_final.pdf](http://www.car.ca/about_car/publications/future/Imaging_final.pdf) (accessed 27 July 2005).
20. Vertesi L. Reporting role of the WGWTA. Presented at Taming of the Queue II workshop, 31 Mar. 2005. Available: [www.cprn.org/en/doc.cfm?doc=1288](http://www.cprn.org/en/doc.cfm?doc=1288) (accessed 27 July 2005).
21. McMurtry R, Vertesi L. Taming the queue. Presented at Taming of the Queue II workshop, 1 Apr. 2005. Available: [www.cprn.org/en/doc.cfm?doc=1289](http://www.cprn.org/en/doc.cfm?doc=1289) (accessed 27 July 2005).
22. Field MJ, Lohr KN (editors). *Guidelines for clinical practice: from development to use*. Washington: National Academy Press; 1992.
23. *Diagnostic imaging referral guidelines*. Ottawa: Canadian Association of Radiologists; May 2005.
24. *A prescription for sustainability — Canadian health charter* (discussion paper). Ottawa: Canadian Medical Association; June 2002.
25. Hurst J. OECD project on waiting times for elective surgery. Presentation at Taming of the Queue I, Aylmer, Que.; 31 Mar. 2004.



**Canadian Medical Association**

Member Service Centre

1867 Alta Vista Dr.

Ottawa ON K1G 3Y6

613 731-8610 • 888 855-2555 x2307

[msc@cma.ca](mailto:msc@cma.ca)

***cma.ca***