ORGAN DONATION AND
TRANSPLANTATION IN CANADA

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INTRODUCTION

The organ donor rate in Canada continues to be mediocre despite efforts in recent years to increase it. This paper will provide an overview of the Canadian experience with respect to the federal role in organ donation and transplantation, particularly in the past 10 years, reveal some of the statistics involved and discuss the options for increasing the donor rate, such as registries, presumed consent and expanding donor criteria.

BACKGROUND

Two reports highlighting concerns about a persistent and growing gap between the supply of and demand for organs and tissues for transplantation in Canada were issued in 1999, one by the House of Commons Standing Committee on Health and the other by the National Coordinating Committee for Organ and Tissue Donation, Distribution and Transplantation.\(^1\)

In its September 1999 response to the House of Commons Health Committee’s report, the government stated that it accepted the recommendations “as the framework for discussions with the provinces and territories towards the establishment of a sustainable solution for transplantation in Canada” and acknowledged that proper implementation would be dependent on support from all levels of government.\(^2\)


Both reports proposed the development of a national strategy and the formation of a council of experts to assist in developing and monitoring the strategy. A component of the proposed strategy was the establishment of the Canadian Council for Donation and Transplantation (CCDT), which was announced by the Government of Canada in April 2001.\(^{(3)}\)

The CCDT was established in October of that year as an advisory body to the Conference of Deputy Ministers of Health (CDM) in support of its efforts to coordinate federal, provincial and territorial activities relating to organ donation and transplantation. The CCDT was created as a Secretariat of Health Canada but in 2004 became a non-profit organization at arm’s-length to Health Canada and until 2007 had a contribution agreement with Health Canada.

The CCDT was originally mandated to provide advice on:

- a coordinated pan-Canadian strategy and high-quality provincial/territorial strategies;
- standards and clinical practice guidelines based on leading/best practices;
- social marketing strategies and their implementation;
- pan-Canadian information management systems;
- educational resources for interdisciplinary professionals involved in donation and transplantation processes;
- a system to monitor the performance of the Canadian experience against the experience in other jurisdictions and progress towards implementation targets; and
- an ongoing process to identify emerging issues and link to the strategic process.

The CCDT focused, however, on only one of these items, conducting extensive consultations on standards and clinical practice guidelines and making recommendations on the issues of cardiac death, severe brain injury, immunological risk following transplant and medical management to optimize donor organ potential. Neither the CCDT nor Health Canada has devoted much attention to social marketing strategies, which include public awareness campaigns (also called public education and social awareness campaigns), undertakings whose importance was emphasized in the two reports mentioned above. No campaigns have been conducted since 2001 and 2002, when for a month before the end of National Organ Donation

\(^{(3)}\) Additional information about the Canadian Council for Donation and Transplantation can be obtained from its website at [www.ccdt.ca](http://www.ccdt.ca).
Week, Health Canada’s Marketing and Creative Services Division ran a National Awareness Campaign that included television commercials in French and in English, print advertisements, a website, and the national distribution of posters and green ribbon organ donation pins. In 2005, the CCDT did make some recommendations on the need for increased public education on the issue of organ donation and suggested the creation of a national public awareness task force to coordinate the required activities. It is true that, as an advisory body to the Conference of Deputy Ministers of Health, the CCDT is limited in its capacity to coordinate national campaigns.

With respect to a coordinated pan-Canadian strategy, pan-Canadian information management systems and a system to monitor Canadian performance, Canada has made some small advances since the release of the two reports in 1999. In October 2007, the deputy ministers of health for the provinces (except Quebec) and territories agreed in principle to a proposal that CCDT’s functions be transferred to Canadian Blood Services (CBS) and that CBS assume responsibility for Canada’s organ and tissue donation and transplantation system. On 12 August 2008 CBS announced that it had merged with CCDT and its mandate would be expanded beyond blood to include organs and tissues. (4)

TRENDS, STATISTICS AND COMPARISONS

When considering the trends and statistics in organ donation, as well as when making comparisons of these figures among jurisdictions, it is important to keep in mind a number of variables. A low donor rate, for example, may be more reflective of lower rates of injury and better health care interventions than it is of a lack of altruism or poor recruitment of donors. Similarly, an ever-growing waiting list for organ transplant may indicate that patients are surviving longer while waiting than they once did. Below is a discussion of Canada’s performance in organ donation and transplantation over the years and how that performance compares to that of other nations that are considered to be leaders in this area.

A. Defining Donor Rate

Before defining donor rate, it is important to explain that there are different types of donors:

- Intended donor – An individual who has indicated a desire to become a donor upon death, or when appropriate, during life.
- Potential donor – An individual identified within a health care facility as being appropriate to pursue as a donor, and includes those individuals from whom organs may have been procured but not allocated or transplanted.
- Actual donor – An individual from whom at least one organ has been procured, allocated and transplanted.
  - Cadaveric donor – An individual who becomes a donor following death, either brain death\(^{(5)}\) or cardiac death\(^{(6)}\)
  - Living donor – An individual in good health who donates to either a related or unrelated recipient.

Although the cadaveric donor rate in Canada has declined slightly over the past 10 years from approximately 15 to 13 donors per million population (PMP), the absolute number of cadaveric donors has been fairly constant at around 420 donors per year, with small spikes of 471, 464 and 471 cadaveric donors in 2000, 2006 and 2007. In large part, cadaveric donation has followed brain death, as this has traditionally been the criteria. However, since 2006, donors have been recruited following cardiac death, under certain circumstances. This new category of cadaveric donation accounts for a total of 25 organs – 4 in 2006 and 21 in 2007. Although brain deaths still account for the majority of cadaveric donations, the proportion of cadaveric donors following cardiac death is expected to continue increasing. The issue of cardiac death is discussed further in the section “Addressing Donor Rates.”

\(^{(5)}\) Brain death refers to the total cessation of brain function as manifested by the absence of consciousness, spontaneous movement, absence of spontaneous respiration, and absence of all brain stem functions.

\(^{(6)}\) Cardiac death refers to irreversible cessation of the heart after cardiac arrest.
Canada’s cadaveric donation rate is reportedly lower than that of most of the countries to which it is compared. International comparisons of organ donor rates usually include Spain and the United States, whose donor rates are reportedly 33.4 and 21.4 PMP respectively. These countries, however, have different social, demographic and mortality characteristics than Canada, and they use a different definition of “donor rate”: Both Spain and the United States include in their calculations those situations in which a donor is identified but ultimately no organ is transplanted into a recipient, thus inflating their numbers relative to Canada, where the numbers include actual donors only. In addition, the term “donor rate” in Spain and the United States refers to the “cadaveric donor rate,” thus excluding living donors, an increasingly significant category in Canada.

Canada has been doing well relative to other countries with respect to recruiting live donors. In fact, the rate of live donors, both related and unrelated to the recipient, has been steadily increasing in Canada for kidney, liver and single-lung transplants. Between 1995 and 2007, the number of living donors grew from 230 to 550, and in 2001 the number of living donors surpassed the number of deceased donors. Canada now has a live donor rate of just over 15 donors PMP. Spain has one of the lowest rates among 32 reporting countries at less than 1 PMP. At about 19 PMP, the live donor rate in the United States is higher than it is in Canada.

B. Identifying the Donor Pool

There is a tendency to count all members of the general population as “potential donors.” However, this is somewhat misleading, because so few will ever be in the situation of being considered for organ donation. Proponents of donor registries (databases containing the names of those who wish to donate their organs after death) suggest that such databases better reflect the donor pool. As with the general population, this is not strictly true because the number of individuals who ultimately become available as possible donors (“potential donors”) is a small fraction of those who may be interested in becoming a donor (“intended donors”).

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(8) Preliminary statistical information on donation and transplantation in Canada for 2007 is available in Lilyanna Trpeski, “Report on CORR Performance and Recent Trends in Donor, Transplant and Waiting Statistics in Canada – Preliminary Results,” Canadian Institute for Health Information, PowerPoint presentation delivered to the Canadian Association for Transplantation, 1 March 2008, available at http://secure.cihi.ca/cihiweb/dispPage.jsp?cw_page=services_corr_e. Data from earlier years is also available is also in this presentation.
Generally, deceased organ donors are identified from within the very limited pool of individuals who have been declared “brain dead.” (9) Most brain deaths are the result of such incidents as trauma from a motor vehicle accident or a gunshot wound, for example, or a cerebrovascular accident such as stroke. Further, within this limited pool, there is a tendency, if not a medical necessity, to limit the candidates to those under the age of 70, although this policy is slowly changing.

Both Spain and the United States report significantly higher mortality rates from motor vehicle accidents than does Canada. Trauma due to gunshot wounds is a more frequent occurrence in the United States than it is in Canada. Additionally, Spain’s demographics are different from those of the United States and Canada. Spain’s population is older, and the mortality rate related to cerebrovascular accidents and motor vehicle accidents rises with age. As such, Spain has a larger proportion of donors aged 60 years and over, but this proportion includes patients identified as potential donors and includes those from whom ultimately no organs are procured, or the organs are not transplanted. (10) Conversely, Canada and the United States have proportionally more people under the age of 15 than does Spain. This age group, as one would expect, has a relatively low mortality rate. However, the United States reports that it has twice the proportion of donors under the age of 15 than does Canada, reflecting the higher mortality rate from motor vehicle accidents and gunshot wounds in that country.

The issues connected with mortality rate and demographics effectively reduce the available donor pool in Canada. Therefore, adopting the practices used in Spain and the United States cannot be expected to bring donor rates to similar levels.

C. Use of Donated Organs

In 2007, 1,040 people, living and deceased combined, actually donated organs, and 2,254 transplants were performed in Canada. The average number of organs used for transplantation from cadaveric donors, where multiple organs are available for transplant, has been rising over the past decade and is now 3.87 organs/donor. This value is higher than that of the United States and Spain; since their donor counts include donors from whom no organs are removed as well as unused organs, their ratios are lower. Canada has also improved patient and

(9) There can also be donors following cardiac death, which will be discussed later.
(10) For more information on non-use of organs, see the heading “non-use of organs” in this paper.
organ maintenance in order to optimize organ viability, thereby further increasing the number of organs per donor. From 1997 to 2007, the transplant rate continued to rise, from 52.8 transplants PMP to 67.5 PMP, because of better use of donated organs and improved recruitment of donors.

D. Non-use of Organs

As already discussed, Canada does not include in its donor rate calculations those potential donors whose organs were not used (either because the organs were not recovered or because they were not transplanted). There are numerous reasons for non-use of organs, only some of which can be controlled and possibly targeted as areas through which organ donor rates could be improved. Some of the reasons for non-use that cannot be overcome include viral infection (HIV, hepatitis), organ damage or other anatomical damage and poor organ function. However, there are two circumstances under which organs have been lost that could be addressed: logistical problems with the donation and transplant teams, and failure to search for or locate potential recipients.

The logistical issues and identification of compatible recipients could be improved with a proper information management system like the real-time national waiting list operated by the United Network for Organ Sharing (UNOS) in the United States.\(^{(11)}\) The Organ Procurement and Transplantation Network (OPTN), which was created under the National Organ Transplant Act of 1984 to link all professionals involved in the donation and transplant system, was awarded to UNOS in 1986, and UNOS remains the only organization to ever have run the OPTN. The OPTN maintains the national waiting list and allocates donated organs on an equity basis.\(^{(12)}\) All US transplant centres and organ procurement organizations are members of the OPTN. The US national waiting list is discussed in greater detail under the section on registries.

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\(^{(11)}\) UNOS originated in 1977 as the South-Eastern Organ Procurement Foundation and developed the first computerized system for matching organs to recipients. In 1984, UNOS was incorporated as an independent, non-profit organization. Its website is [www.unos.org](http://www.unos.org).

\(^{(12)}\) According to UNOS, “equity basis” refers to the principle that compatible transplant candidates have an equitable chance of receiving a transplant according to appropriate medical criteria. Candidates for deceased donor organs are prioritized for organ offers only on the basis of medical and logistical characteristics, not on personal/social/economic factors such as wealth, underlying cause of organ failure, celebrity status, etc.
E. Aging Population

According to the Canadian Organ Replacement Register (CORR) operated by the Canadian Institute for Health Information, the gap between the number of donor organs available for transplant and the number of individuals on the waiting list for transplants has been largely constant since 2001, although there was a slight jump in 2007 in the number of people awaiting transplant. This recent jump may indicate the increased demand for organs that Canada can expect as the population ages. The older sector of the population is both a larger consumer of donated organs and a smaller contributor of donated organs.

As long as there is a gap between the number of organs available and the number of organs needed, there is a clear need to explore options for increasing the donor rate.

ORGAN AND TISSUE DONATION AND TRANSPLANTATION REGULATIONS

In December 2007, federal regulations for organ and tissue donation and transplantation came into effect. Health Canada indicated that the purpose of the new regulations was “to minimize the potential health risks to Canadian recipients resulting from transplantation.”(13) The Safety of Human Cells, Tissues and Organs for Transplantation Regulations standardize the screening and testing of potential donors in Canada and are described as reflecting the “best practices” already in place across the country.(14)

The regulations require that the procuring establishment does the following to determine donor suitability:

- obtain donor information and history;
- perform a physical exam of the donor;
- perform certain tests for disease and disease agents; and
- ensure that the donor is not unsuitable to donate on the basis of the exclusionary criteria.


(14) Links to the Safety of Human Cells, Tissues and Organs for Transplantation Regulations, as well as other background information, can be obtained at Health Canada, Drugs and Health Products, “Cell Tissues and Organs,” http://www.hc-sc.gc.ca/dhp-mps/compli-conform/info-prod/cell/index-eng.php.
The Canada General Standard referenced in the regulations and including the exclusionary criteria states that potential donors shall be excluded if they meet any one of a number of criteria. These include death from unknown causes; infection with a prion disease or encephalitis; affliction with dementia; and infection with, or a high risk of infection with, HIV, viral hepatitis and rabies. An annex to the Standard expands on the final category of those at risk for HIV and viral hepatitis, primarily hepatitis B and C (HBV and HCV). The exclusionary criteria listed in the annex are these:

- men who have had sex with men in the preceding five years;
- persons who have used intravenous, intramuscular or subcutaneous drugs in the preceding five years;
- persons with hemophilia who have received clotting factor concentrates;
- persons who have traded sex for money or drugs in the preceding five years;
- persons who have had sex in the past year with someone described in the above categories;
- persons who have been directly exposed in the preceding year to known or suspected HIV, HBV or HCV-infected blood;
- current inmates or individuals who have been incarcerated for 72 consecutive hours in the preceding year;
- persons who, within the preceding year, have undergone tattooing, ear or body piercing with shared instruments; and
- persons who have had close contact within the preceding year with another person having clinically active hepatitis.

However, Section 40 of the regulations allows for “exceptional distribution” and permits the use of organs from donors who would fall under the exclusionary criteria under certain conditions, including an informed consent from the recipient and a notice of exceptional distribution in their health records.
ADDRESSING DONOR RATES

A. Registries

Containing information either about donors or recipients, a national registry can help authorities to identify who is willing to provide an organ or who requires one. While a database of donors might be helpful in identifying greater numbers of donors, a transplant recipient database can help to improve efficiency in identifying compatible recipients. Below are three types of national registries for consideration.

1. National Database of Intended Donors

Also referred to as a donor registry, this is what most people have in mind when they discuss a national registry. It refers to a database of names, or other identifying information, of individuals who have registered their intent to donate one or more organs and tissues after death. The registry could be set up only for those individuals interested in registering their consent to donate or, as is the case in Australia, for registering either consent or refusal to become a donor.

In Canada, both British Columbia and Nova Scotia maintain databases of those individuals who have registered their names as intended donors. British Columbia has operated its database since 1997 and, according to information on the British Columbia Transplant Society website, the database celebrated its 500,000th registrant in 2005. However, British Columbia’s cadaveric donor rate remains lower than Canada’s average rate and performs better than the Canadian average for living donations.

Nova Scotia’s organ and tissue donation program is called Legacy of Life, and this province has maintained an organ donor database since 1995, which is compiled via registration through the health card system. Individuals must reconfirm their intent each time their health card is renewed. No other information regarding the registry or the number of potential donors was available from the Legacy of Life website at the time of this publication.

A registry can help to identify individuals who have consented to donate their organs should they become candidates; however, this may be overshadowed by several other factors:

(15) See the British Columbia Transplant Society website at http://www.transplant.bc.ca.
(16) The Legacy of Life website is available at http://www.legacyoflife.ns.ca/.
• Do the number of organ donations that result from the quick identification of potential donors upon their death warrant the complex logistics involved in maintaining and updating a database of several hundred thousand or even millions of names? As already discussed, only a very small percentage of individuals become eligible for cadaveric donation.

• Is the health care sector properly pursuing organ donors? A registry is of little use if potential donors are not being followed up for organ retrieval. The efficiency and coordination of the donation/transplantation system in Canada has not been comprehensively studied.

• Has the family been part of the individual’s decision to register as an intended donor? Health care professionals are unlikely to go against the family’s wishes despite an individual’s registration on the database. It is therefore necessary also to inform one’s family of the decision to donate, arguably making the registration itself unnecessary.

• Would the database be voluntary or mandatory? A voluntary system as operated within Nova Scotia and British Columbia could be run through the existing provincial or territorial health card system, but to obtain information for a national database, cooperation among jurisdictions would be needed. A registry is maintained in Quebec by its notaries. The Registre des consentements au don d’organes et de tissus compiles the consents of about 250,000 people in Quebec collected by 3,319 notaries.

A national system could be run, but only voluntarily, through information provided on federal income tax or census forms. Even so, provinces could argue that this approach encroaches on their jurisdiction. Additionally, even with a database, voluntary or otherwise, there would still be the issue of family consent overriding a potentially cumbersome and costly system. Furthermore, many people believe that if they grant consent before the fact, then less effort will be put into saving their lives. This perception may explain the discrepancy between the high proportion of people who say they support organ donation and the low percentage of individuals who actually sign their donor cards.

2. National Real-time Waiting List for Patients Requiring Transplant

As mentioned above, Canada does not have a centralized list of patients waiting for an organ. Currently, organ procurement organizations work independently to locate suitable recipients for organs. In Canada, most organs are transplanted within the region where they were procured, while fewer organs are sent to other provinces. A very small number of organs are sent to the United States for transplant, while some organs from the United States are used in Canada. The cooperation of all transplant organizations across the country would be needed to
operate a centralized waiting list. Any one of the organizations could serve as the coordinating body that collected the waiting list data and kept a real-time database, or the responsibility could become part of the Canadian Blood Services’ new mandate for organ and tissue donation and transplantation.

In the United States, when an organ donor is identified and consent has been obtained, the procuring organization accesses the national transplant computer system, the OPTN, through the Internet or contacts the UNOS Organ Center directly to enter donor information, and a donor–recipient match is run for each donated organ. The resulting match list of potential recipients is ranked according to objective medical criteria (i.e., blood type, tissue type, size of the organ, medical urgency of the patient as well as time already spent on the waiting list and distance between donor and recipient). Each organ has its own specific criteria. Using the match of potential recipients, the local organ procurement coordinator or an organ placement specialist contacts the transplant centre of the highest-ranked patient, based on policy criteria, and offers the organ. If the organ is turned down, the next potential recipient’s transplant centre on the match list is contacted. Calls are made to multiple recipients’ transplant centres in succession to expedite the organ placement process until the organ is placed. Once the organ is accepted for a patient, UNOS assists with the transportation arrangements, and the transplant surgery is scheduled. (17)

A limiting factor for both the donor and waiting list registries is geography. The viability of retrieved organs is measured in hours and the faster an organ can be transplanted, the better are the chances for a successful transplant. For example, transplantation should occur within eight hours for a liver or a pancreas, four hours for a heart and two hours for a heart/lung. The time constraint creates a geographical limitation for a large country like Canada for recipient possibilities, which is not an issue for smaller countries like Spain.

3. Live Donor Registry

In Canada, the OneMatch Stem Cell and Marrow Network is a national registry of potential live donors of bone marrow or circulating peripheral blood (both sources of stem cells). This database was founded in 1987 as the Unrelated Bone Marrow Donor Registry by the

(17) Information about UNOS and OPTN were obtained from their websites at http://www.unos.org; and http://www.optn.org.
Bruce Denniston Bone Marrow Society and was moved to the Canadian Red Cross Society in 1989. It now exists under Canadian Blood Services, and more than 220,000 Canadians are registered. (18)

4. Living Donor Paired Exchange Registry

On 24 June 2009, Canadian Blood Services announced the first kidney transplants performed through the Living Donor Paired Exchange Registry, the first of its kind in Canada. This type of registry aims to optimize the use of organs from living donors by offering a mechanism by which an individual who is willing to donate an organ, primarily a kidney, to a family member or a friend, but who is not a match, may register and possibly be a match for someone else who is registered along with a family member or friend also willing to be a donor. Thus, this type of registry is a mixture of a donor and a recipient registry. It registers pairs of individuals: a willing donor and a needy recipient looking for another pair where tissue type and blood group make “swapping” possible. (19)

B. Presumed Consent

Another option often suggested as a way to increase the donor rate is presumed consent, sometimes called the opting-out system. Under this approach, consent to donate is presumed unless a person has expressly indicated otherwise during his or her lifetime. Canada operates under an opting-in system (also referred to as required consent) whereby individuals express the intention to become a donor. However, failure to express a desire to donate during one’s lifetime is not necessarily deemed as a refusal to become a donor. Again, the family becomes the ultimate source for consent. Proponents of the opting-out approach note that the vast majority of Canadians are in favour of organ donation when polled, but that only a small percentage of them actually fill out their donation cards.

Several countries have adopted the presumed consent approach. An American study reports that there is no direct correlation between organ donor rates and presumed

(18) Information about the OneMatch Stem Cell and Marrow Network is available on the Canadian Blood Services website at http://www.bloodservices.ca/centreapps/internet/uw_v502_mainengine.nsf/9749ca80b75a038585256aa200600d703/3f5843b97c8959ae8525734e00635b89?OpenDocument.

Although presumed consent is the approach used in Spain, the country with the highest reported organ donor rate, several other countries that have also adopted that approach have donor rates that are far lower than countries that operate an opting-in system. For example, Poland and Sweden, which both operate presumed consent systems, report lower donor rates than does Canada, and the United States and Ireland, which are among within the higher donor rate countries, have opting-in systems. The authors indicate that presumed consent is rarely enforced and that family consent is always sought regardless. However, they argue that after accounting for other determinants of donation, such as family consent and effective identification of donors within the health care setting, presumed consent may increase rates of donation, but it cannot be implemented on its own and be expected to increase rates. Once other determinants of donation have been adequately addressed, such as awareness campaigns that reinforce the need to voice one’s intentions to family, and professional awareness and training programs so that donor identification and recruitment are done under a specific set of guidelines and policies, then benefit might be gained from a presumed consent system.

Consent to donate is covered under the provincial and territorial statutes pertaining to organ and tissue donation, and in all cases consent is required, that is, all provinces and territories operate opting-in systems.

C. Required Referral and Required Request

Required referral refers to the requirement that health care professionals report all brain deaths (and possibly cardiac deaths) or imminent deaths, to their local organ procurement organization. Required request obliges health care professionals to approach the families of identified, potential organ donors and inquire about donation. The introduction of such measures in Canada would require regulatory or legislative change at the provincial and territorial levels. These obligations could increase the number of potential and actual donors but would be a further stressor on the health care profession and would undoubtedly require additional resources. Such obligations would supply useful data which could be collected, with provincial and territorial cooperation, by CORR to measure the efficiency and level of coordination within the procurement/transplantation community. British Columbia and Ontario have legislated

required referral (or mandatory reporting), while New Brunswick and Nova Scotia have instituted required request. Only Manitoba has both required request and required referral.\(^{(21)}\)

**D. Professional Training in Donor Recruitment**

Health care professionals are generally not given specific training for recruiting organ donors. Surveys of health care professionals have revealed a high degree of reluctance to approach the families of potential donors and a low level of knowledge about organ referral. Organ donor coordinators are found at most major hospitals, but there are many settings where potential donors are lost because no one with the proper training is available to approach the family and discuss donation. Where organ donor coordinators are found, resources may be limited and candidates may be missed. These coordinators should have adequately trained support to assist them in these instances. As with the required referral and required request, professional training is under the purview of the provincial and territorial governments.

**E. Mandatory Declaration**

Mandatory declaration ties organ donation consent to a different area, usually a regulated program such as the procurement of a driver’s licence or a health card. This approach requires that an individual declare whether or not he or she consents to organ donation.

**F. Organ Donation Following Cardiac Death**

In a July 2005 report, the Canadian Council for Donation and Transplantation (CCDT) recommended considering as organ donor candidates people who have succumbed to cardiac death, also known as cardiorespiratory death (DCD). Circumstances that could result in DCD include cardiac arrest in someone already brain-dead; unsuccessful resuscitation of a person in cardiac arrest; and cardiac arrest following withdrawal of treatment in the intensive care unit. The latter is referred to as “controlled” DCD because preparations for organ removal and preservation can be initiated before the donor’s death, thereby controlling the timing of the withdrawal of treatment.\(^{(22)}\) Information from CIHI indicates that DCD began in 2006, but only in Ontario and Quebec.


G. Donor Age Limit

Traditionally seniors have not been candidates for organ donation. Many jurisdictions have been re-examining whether biological age should be a criterion for donation or if a potential donor’s organs should be assessed on a case-by-case basis. Age distribution of deceased donors is available from CIHI and indicates that the proportion of donors over 70 years of age fluctuated between 4% and 12% of the total between 1999 and 2006.\(^{(23)}\)

H. Public Awareness

Many of the preceding options cannot easily be addressed federally due to jurisdictional concerns. It is possible that the government could use its spending power to link health transfers to issues such as required referral and required request or to cooperation in a national database, but proving the necessity of such a measure could be difficult. Public awareness campaigns, however, can be coordinated federally.

A key component of the national donation and transplantation strategy that was recommended in both 1999 reports (see note 1) was a public awareness campaign. Such a campaign would be essential for providing individuals with relevant information and dispelling myths. The aim would be to enable informed choice and to increase support for and participation in the donation and transplantation process. Health Canada has a clear mandate to design and implement such campaigns. In fact, when the minister of Health announced a national organ and tissue plan, including the creation of CCDT, in 2001, the news release indicated that the plan was to include “implementation of a national public awareness campaign to promote organ and tissue donation across Canada, developed in partnership with various non-governmental organizations, as well as a number of volunteers.”\(^{(24)}\) It was proposed that the Governor General of Canada would serve as honorary campaign patron. Although public awareness campaigns were designed and implemented in 2001 and 2002, there have been none since. To be effective, a public awareness campaign must be a longer-term commitment.

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CONCLUSION

Canada’s cadaveric organ donation rate has not significantly increased in the past 10 years, despite announcements following the publication of two key reports in 1999 that a national strategy to improve donation rates would be developed. Some steps can be taken to improve the rates. If a central, national, information management system were to be established, for example, cooperation from provincial and territorial jurisdictions could be sought to implement existing policies and legislation aimed at addressing donation rates. In the meantime, Canadian Blood Services or another experienced body could study the information management system used in the United States at the United Network for Organ Sharing to determine whether a similar system would be appropriate for Canada. The results could be provided to the Conference of Deputy Ministers for consideration. Finally, a public awareness campaign to inform the general population of the importance of organ donation, dispel myths and emphasize the importance of family involvement in the consent process could also be pursued.