International Models of Donation: Canada

1st National Organ Donation Congress
NHS Blood and Transplant
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Canadian Blood Services

The Loeb Research Consortium in Organ Donation
International ‘Models’ of Donation
Summary

1. Description of health care delivery in Canada

2. Depressing and embarrassing statistics that precisely demonstrate our level of shame in comparison to Spain

3. Gradual but insufficient improvements

4. Process for development of widespread system change lead by Canadian Blood Services

5. Leading model for donation in Canada
Canadian Health Care System
Canada Health Act with Provincial Delivery of Services

Principles
1. Public administration
2. Comprehensiveness
3. Universality
4. Portability
5. Accessibility

The Provinces/Territories are responsible for the funding, administration and delivery of health care services.

ICU’s are almost exclusively ‘closed’ units
TRANSPLANT PROGRAMS

Population: 33,212,696
Size: 9.7 million square kilometres

2010 Statistics*
2153 organs transplanted
• 1234 kidneys
• 443 livers
• 167 hearts
• 178 lungs

3171 on waitlists(active)
• 511 withdrew from lists
• 247 died while waiting

468 deceased organ donors

*CORR e-statistics

Source: Canadian Organ Replacement Register, 2008
ORGAN PROCUREMENT PROGRAMS
10 Provincial OPOs

Coordinating large distances across different health care jurisdictions

Source: Canadian Organ Replacement Register, 2008
2009 Global Deceased Donation Rates

Global Observatory on Donation and Transplantation, WHO, 2009
2009 Global Deceased & Living Donation Rates

Global Observatory on Donation and Transplantation, WHO, 2009
The need for a multi-stakeholder planning process

Volpe Report

DM Report/ ACHS

CCDT established

Citizens Panel (ON)

CDM Report/ CCDT

CCDT merges with CBS

Alberta Framework for Action

National Coordinating Committee

Volpe Report

QC Minister/ CEST

Source: CORR 2007 Annual Report and E-Statistics
CURRENT STATE

DECEASED DONORS PER MILLION POPULATION (2010)*

Five years ago UK lagged behind Canada.

Two years ago Australia lagged behind Canada.

2 years ago Canada was at 14.6.

*ONT (Spain), UNOS (US), NHSBT (UK), Donatelife (Aus), CIHI/CORR (Canada)
Donor Rate (PMP) by Donor Source

(Deceased vs. Living)

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Source: Canadian Organ Replacement Register, 2011, CIHI
International Donation after Cardiac Death Donor Rates
2009 pmp

Source: International, IRODat as of December 2010; Canada, CORR
Lifetime Rates: Canada vs. USA

Deceased donor rates
60% of US rates

Living donation
40-80%

Transplantation rates
35-60%

Shemie et al, Am J Transplant, 2011
Shemie et al, Loeb Research Consortium, 2011
Lifetime probability of receiving a transplant for individuals on the waiting list, by age* and gender

Canadians have a 30-40% probability of never receiving an organ transplant.

*Based on age added on the waiting list

Shemie et al, Am J Transplant, 2011
Fragmented System but....
Variable Progress Continues

Hospital donor coordinators

Local OD committees and quality assurance process

Donation registries- ON, BC, NS, NB, MB(in process)

Gradual advancement of DCD

Collaboration and Collaboratives

High school curriculum

Hospital accreditation standards in OTDT
Mechanical Circulatory Assist in Children
Berlin Heart Summary Outcomes

- survival to transplant 60-70%
- mortality rate ~ 25%
- neurological complications ~30%
- 1 year system costs $410K
  (start up hardware $61K, monthly $15K, pump change $34K)
- 1 year PICU care $1.3M (not including physician/surgeon costs)
Cost Avoidance in End Stage Renal Disease
Bridge versus Transplant

Dialysis:
$70,000/patient/year

Renal Transplant:
$15,000/patient/year (45K year one)
COST AVOIDANCE OF KIDNEY TRANSPLANTATION
TP waiting list = DEMAND

Donors = SUPPLY

"Gap" = morbidity & death on wait lists
Behaviour and Natural Law

When the water level in the watering hole goes down...

The Bulls start looking at each other differently
Organs for Sale

2/3 of organ donors in China are executed prisoners

Bulletin of the WHO, Jan 2007
A call for government accountability to achieve national self-sufficiency in organ donation and transplantation

Prof Francis L Delmonico MD, Beatriz Domínguez-Gil MD ᵃ, Rafael Matesanz MD ᵃ, Luc Noel MD ᵇ

Summary

Roughly 100 000 patients worldwide undergo organ transplantation annually, but many other patients remain on waiting lists. Transplantation rates vary substantially across countries. Affluent patients in nations with long waiting lists do not always wait for donations from within their own countries. Commercially driven transplantation, however, does not always ensure proper medical care of recipients or donors, and might lengthen waiting times for resident patients or increase the illegal and unethical purchase of organs from living donors. Governments should systematically address the needs of their countries according to a legal framework. Medical strategies to prevent end-stage organ failure must also be implemented. In view of the Madrid Resolution, the Declaration of Istanbul, and the 63rd World Health Assembly Resolution, a new paradigm of national self-sufficiency is needed. Each country or region should strive to provide a sufficient number of organs from within its own population, guided by WHO ethics principles.
The journey towards self-sufficiency
Designing a system to improve OTDT performance in Canada
What are the Principle Goals of an Organ Donation and Transplant System?

1. Serve the needs of potential transplant recipients = ‘underserviced population’ = perform as many transplants as possible

2. Do so in an ethical, legal, safe and equitable manner

3. Provide the opportunity to donate without compromising the duty of care to the dying patient or living donor
THE CHALLENGES

- In 2008, the OTDT community was beset with divergent opinions

- Provincial health care systems not designed for national approach to health care service delivery

- Canadian Blood Services was a “stranger” to the organ and tissue communities

- Organs & tissues communities were separate, yet overlapping
THE OPPORTUNITY

- The federal, provincial and territorial governments (except Quebec) agreed to leverage the experience of its national blood operator—Canadian Blood Services—to deliver improved OTDT performance via a national system.
WHAT WE DO:

Transfusable products: recruit donors, collect, process, test and distribute blood components

Plasma Protein Products: collect plasma, custom fractionate, purchase and distribute formulary of PPPs

OneMatch Marrow and Stem Cell Network: linked to > 50 registries worldwide, public cord blood banking

Diagnostic Services: regional laboratory services

Research and Education: R&D, education, clinical consultation

Insurance Captives: $1 billion comprehensive coverage

Fundraising program: limited activity currently

HOW WE DO: (2010/2011)

867,000: whole blood donations
55,500: plasmapheresis donations
49,000: plateletpheresis donations
465,000: active donors
>22,000: collection sessions
>271,000: OneMatch registrants
732: Healthcare institutions served
4,700: employees
17,000: volunteers
$1.02B: annual P/T revenue
WHY CBS?
THE ONLY NATIONAL HEALTH CARE SERVICE DELIVERY MODEL IN CANADA

- national, not-for-profit corporation with independent Board of Directors
- accountable, transparent, with public participation
- subject to Federal regulations (under Food and Drugs Act)
- P/T Ministers of Health are Members (shareholders) of the corporation
- two wholly owned insurance subsidiaries provide $1 billion coverage
- extensive risk management programs embedded
OUR MANDATE

In April 2008, the FPT governments gave Canadian Blood Services a mandate for organ and tissue donation and transplantation:

1. Activities of the former Canadian Council for Donation and Transplantation (CCDT), including leading practices, public awareness and education, system performance metrics and benchmarks

2. Patient Registries: Living Donor Paired Exchange, Urgent Status Patients, Highly Sensitized Patients and other related databases

3. Development of a coordinated strategic plan for Organ and Tissue Donation and Transplantation
THE STRATEGY DEVELOPMENT PROCESS

A formal, structured process to meet the needs of the community:

- Established three committees:
  - Steering Committee, Organ Expert Committee, Tissue Expert Committee
- Incorporated broad stakeholder consultation to bridge the diversity of the stakeholder groups, their opinions and perspectives
- Focused on Solutions to system problems, building on what already works well
- Solutions that raise the performance of all provinces without negatively impacting today’s stronger performers
- Two distinct systems: organs and tissues
There are many complex issues in OTDT and a wide diversity of opinions. To ensure the development of the best possible system for Canadians, Canadian Blood Services insisted on extensive consultations with governments as well as key experts and stakeholders. Those consultations informed and shaped the design of the proposed OTDT system.

- 400 experts in 14 cities and 10 provinces
- 9 partner groups
- 25 surgeons
- 7 professional organizations
- Surveyed burn units and cardiac surgical programs
- 9 public dialogues in 9 different cities with more than 300 Canadians
Where are the Problems in the Donation System?

Over-Statements:

1. Transplanters: “They are missing way too many donors in the ED and ICU”

2. Intensivists: “We never miss donors in the ICU”

3. Hospital Administrators: “Remind me again why we are spending money on dead people?”

4. Our Funders: “Sorry, cannot take your call right now- we are busy with pandemics and cancer- please leave a message that I will be sure to ignore”
Measuring System-wide ODT Performance

- Through a comprehensive, integrated inter-provincial organ registry
- Through a inter-provincial tissue system with an integrated inventory managed by one organization

Data management & analytics

Consistent referral, listing & allocation criteria

Information technology infrastructure
FINAL RECOMMENDATIONS

- 25 recommendations in total—13 for TDT and 12 for ODT

- Completed and sent to Federal, Provincial and Territorial Deputy Ministers of Health in April 2011

- Presentation at June 2011 Conference of Ministers

- Response anticipated Spring 2012
Coordinated and/or managed by Canadian Blood Services

With thanks, Steve Brule, Peter Nickerson, Ed Cole
**A surgical marathon that spanned the country**

Unprecedented chain of kidney transplants traded vitally needed organs among three recipients in three different cities all at once.

**Organ pipe**

Some people are unable to donate organs to family members because they’re medically incompatible. Canadian Blood Services’ national kidney registry links up people to donate a kidney to someone who’s a perfect match. This month, the registry completed 122 transplants.

*The first person is really a hero because they facilitated not just one, but four kidney transplants, with absolutely no personal gain. This is a win-win for everyone.*

John Vande Velde, University Health Network’s kidney transplant program in Toronto

*“The people who got kidneys today would never have lived on transplant waiting lists. The kidney was a gift for life. The first person is really a hero because they facilitated not just one, but four kidney transplants, with absolutely no personal gain. This is a win-win for everyone.”*

John Vande Velde, University Health Network’s kidney transplant program in Toronto

*The pilot project is the model for the future, mass-produced thanks to the CBS’s new national registry. It allows donors who can’t, or don’t want to join existing transplant waiting lists, to sign up to help save lives. It’s a win-win for everyone.*

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*Organ pipe*
1. Specialization of donation care within hospital systems including the implementation of Donation Physicians

2. Implementation of an optimized funding model

3. Increased investment for enabling infrastructure for increased organ donation
Nova Scotia Systems Change

1. Change in hospital culture with education
   - medical and nursing are better informed
   - more comfortable approaching families
   - donation is a priority
   - nurse coordinators

2. Resource model

3. Advisory Council

4. Partners are engaged
   - ICU, tissue banks, medical examiner, emergency rooms, neurosurgery,

3. Routine chart audits

4. Revised legislation (Human Tissue Gift Act)

5. Successful consent registry – highest in Canada (55%)

Stephen Beed, with thanks
### Nova Scotia Organ Donors 2004-2011

#### NS Donors 2004 - 2011

26.4 donors PMP

4.3 organs/donor

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