

Organ and Tissue
Donation and
Transplantation
in New Zealand

Report 2007



Organ Donation New Zealand

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Introduction

This report summarises organ and tissue donation from deceased donors and organ and tissue transplantation in New Zealand in 2007. This activity is compared to the previous four years. Earlier data are available in the 2006 report which is available, along with previous reports, on the Organ Donation New Zealand (ODNZ) website. This report also contains a summary of the current and planned activity of ODNZ.

Acknowledgements

We would like to thank Cecilia Westmacott, Val Honeyman and Kerry-Lee Bruce of ODNZ who assisted in the preparation of this report and acknowledge the editors of the Australia and New Zealand Organ Donation Registry (ANZOD). We gratefully acknowledge Louise Moffatt and Helen Twohill from the New Zealand National Eye Bank, Jill Faulkner, Lorraine Craighead and Darren Welch from the New Zealand Heart Valve Laboratory, Estelle Bester from the Tissue Bank at the New Zealand Blood Service and John Russell from Forensic Pathology, Auckland City Hospital, who provided us with information for this report. We are also grateful to Dr Toby Whitlock who again provided the actuarial survival statistics for heart and lung transplantation.

We thank our many medical and nursing colleagues in intensive care units (ICUs),

operating theatres, anaesthetic departments and transplantation who continue to generously support the work of ODNZ. In particular we appreciate the commitment of the Link Teams (of nurses from the ICUs and operating theatres and doctors from the ICUs). We take strength from the encouragement we have received from the ODNZ Advisory Committee and from the Ministry of Health. Thank you all.



Stephen Streat FRACP
Clinical Director, ODNZ



Janice Langlands
Team leader, ODNZ

Organ Donation New Zealand

ODNZ is accountable to the Auckland District Health Board, which is in turn funded for ODNZ on behalf of all District Health Boards. The offices of ODNZ are located at the Green Lane Clinical Centre, in Auckland. The staff of ODNZ includes three full-time donor coordinators, a part-time clinical director and a full time team support staff member. ODNZ has an Advisory Committee comprised of representatives from intensive care medicine and nursing, organ and tissue transplantation, representatives of Maori health and Pacific health, and a consumer representative. This committee meets with ODNZ and a representative from the Ministry of Health every six months.

Dawn Kelly resigned in 2007 and Cecilia Westmacott joined ODNZ in September as the third donor coordinator. Cecilia is a senior intensive care nurse who has worked for many years in intensive care medicine in London and more recently the Department of Critical Care Medicine, Auckland City Hospital. There were no other staffing changes at ODNZ during 2007.

Activities of ODNZ during 2007

Coordinating organ and tissue donation from deceased donors in NZ Intensive Care Units (ICUs)

The three donor co-ordinators for ODNZ provide a twenty-hour service for referrals from ICUs for organ donation, for tissue referrals and for livers referrals from Australia. ICUs are encouraged to consult with ODNZ early about possible donation. There were 66 such consultations in 2007 (c.f. 55 in 2006) and 38 donors (c.f. 25 in 2006).

Providing ongoing support for the families of these donors

The donor co-ordinators provide support and information for families following donation and for as many years as the family wishes. Recipients often wish to write anonymous letters of thanks to the family of their donor. This communication is forwarded via the donor co-ordinator to the donor family, if they wish to receive it. In 2007, 69 recipients sent letters to their donor family and 17 families sent letters to recipients. ODNZ organises two Thanksgiving Services annually. These services respectfully acknowledge the generosity of families who have donated organs and tissues following the death of a family member. Families of donors, recipients and their families and health professionals involved in both organ donation and transplantation are invited to these services. Services were held in Auckland and Christchurch in 2007 with approximately 500 attendees at the Auckland service and 300 at the Christchurch service.

Tissue donation from donors who died in ICU but did not become brain dead

ODNZ has been working with ICU staff to create processes that enable families to be offered the option of tissue (eyes, heart valves and skin) donation following the death of a family member. Tissue donation was facilitated from Whangarei Hospital ICU, North Shore Hospital Medical Ward and ICU, Auckland City Hospital (DCCM and CVICU), Hawkes Bay Hospital and the Mercy Hospice. There were also referrals received from wards in Wairau and Waikato Hospitals and Intensive Care Units in Waikato, Christchurch, and Auckland City Hospitals,

Organ Donation New Zealand (CONTINUED)

from Hawkes Bay Palliative Care and from a number of General Practitioners, Funeral Homes and Private Hospitals. ODNZ referred these as appropriate to the New Zealand National Eye Bank who facilitated eye donation.

Donation after cardiac death (DCD)

During 2006 ODNZ worked with a large number of health professionals to develop a protocol for DCD which was applicable in New Zealand and in accord with international best practice. Following approval of the protocol by the Multi-Region Ethics Committee in June 2007, ODNZ has been carrying out a detailed education and implementation program for DCD in Auckland City, Wellington and Christchurch Hospitals. This final phase of preparation for DCD was completed at Auckland City Hospital in December 2007 and has now been completed at Wellington Hospital. It is likely that there will be a small number of DCD donors during 2008. ODNZ will invite other hospitals to participate in staged implementation of DCD during 2008. Information about DCD is also included on the ODNZ website.

Providing hospital study days for staff involved in organ and tissue donation

ODNZ provided fourteen study days on organ donation during 2007 (c.f. eight in 2006) for the following hospitals: Whangarei [2], Gisborne, Auckland City, Hawke's Bay [2], Waikato, Rotorua, Nelson, Timaru, Dunedin, Hutt, Christchurch and Palmerston North. These study days were well attended by nursing staff from ICUs and operating theatres

and other health professionals involved in the donation process.

Australasian Donor Awareness Program Training (ADAPT)

ADAPT aims to provide health professionals with expertise in the organ donation processes. During 2007 ODNZ provided four ADAPT Nursing Modules (Auckland, Wellington, Christchurch and Waikato) and one Medical Module (Auckland) for staff involved in organ and tissue donation. It was gratifying to note that, for the first time in New Zealand, demand for the ADAPT Medical Module was more than could be accommodated by a single workshop (12 participants in this 2007 workshop) and some applicants were deferred until an extra workshop which will be held in Wellington in March 2008. It is anticipated that a further (Medical Module) workshop will be held in August 2008, along with four Nursing Module workshops. ODNZ is working with the ICU Link Doctors and Clinical Directors of each ICU to encourage all senior doctors working in ICUs to attend an ADAPT workshop. So far, a total of 65 doctors have attended an ADAPT medical workshop in New Zealand since they began in 2001. It is planned that the content of the ADAPT workshops will be revised and updated during 2008.

The Link Team program

ODNZ provided a two-day Link Team Workshop in Auckland in November 2007 for Link Team members (ICU Link Doctor, ICU Link Nurse and Operating Theatre Link Nurse). Forty-five Link nurses and seven Link doctors attended the workshop in 2007. Topics discussed included: ODNZ and its strategic

plan, tissue donation, the ICU Death Audit, Donation after Cardiac Death, the revised ANZICS “Statement on Death and Organ Donation”, the forensic autopsy, the role of the Coroner, the progress of legislative changes to the Human Tissue Act, in-situ splitting of livers during organ retrieval, the use of donated corneal and scleral tissue, the use of donated skin and artificial substitutes in burns, the use of donated heart valves in children and adults, screening donors for transmissible disease and an audit of local end-of-life clinical practice from one of the ICU link nurses.

Assessment of local hospital “organ and tissue donation problem issues” and identifying and addressing local hospital organ and tissue donation needs.

Dr Stephen Streat and Janice Langlands have met with the Link Team at the donor hospitals and conducted a structured interview with the Link Team members. This covers all aspects of the donation process and the team’s assessment of the issues in their own hospital and how ODNZ can help. During 2007, Gisborne, Wairau, Nelson, Wellington, Hutt, Invercargill and Dunedin hospitals were visited and the remaining 5 hospitals will be visited during 2008.

The ODNZ ICU Death Audit

A web-based audit tool was developed by ODNZ and Enigma (an IT company) with substantial financial support from Roche Pharmaceuticals. This will enable ODNZ to indefinitely audit all deaths in ICUs in all public hospitals in New Zealand, to monitor the incidence of severe brain damage and of brain death, the potential for organ donation and the associated practices

related to organ donation. The audit tool was finalised at the end of 2006 and approval was obtained from the Multi-region Ethics Committee in October 2007. The system ‘went live’ after the Link Team workshop in November 2007 and is working well. Data obtained from this will provide factual information about many aspects of organ donation practices about which there is currently only speculation and opinion. This information will assist ODNZ to identify the educational needs of various hospitals and then address those needs specifically.

Providing increased public access to information on organ and tissue donation

ODNZ responds to public enquiries from the 24-hour 0800 number (08004DONOR) and from the website (<http://www.donor.co.nz>), which was extensively revised and reformatted during 2007. ODNZ is listed in all New Zealand telephone directories. Transplant recipients again assisted in 2007 with the distribution of pamphlets in their communities. ODNZ is in discussion with the Ministry of Health over how this work might be enhanced during 2008.

The Advisory Committee of ODNZ

The Advisory Committee of ODNZ was constituted during 2006 and met in July and December 2007. Two additional members were appointed during 2007: Maori Health Representative Ms Naida Glavish, Chief Advisor Tikanga and General Manager Maori, Auckland District Health Board, and Pacific Persons Health representative Dr Viliami Tutone, Nephrologist at South Auckland Health.

Organ Donation New Zealand (CONTINUED)

Providing advice to the Ministry of Health and to Government

ODNZ made written and oral submissions to the Parliamentary Health Select Committee on the Human Tissue (Organ Donation) Amendment Bill (a Members Bill) and the Human Tissue (Government) Bill. The Members Bill was not supported by the Select Committee and the Human Tissue (Government) Bill has been revised and is proceeding through the House. The Select Committee did not support the establishment of an 'Organ Donor Register' but provision has been left in the current draft legislation for the creation of such a register by regulation in the future. ODNZ has provided advice to the Ministry of Health about other initiatives to enhance organ and tissue donation and is in discussion with the Ministry over expanding our roles in this regard.

Revision of the ANZICS document on organ donation

ANZICS created a reference document on brain death and organ donation in 1993, which was revised in 1998. This document forms the current standard of practice for these matters throughout Australia and New Zealand. In 2006 Dr Streat was invited to join the

ANZICS Working Party on Brain Death and Organ Donation which had been revising this document. The new document, now entitled "The ANZICS Statement on Death and Organ Donation" is due to be released early this year. This document contains new sections including DCD and the language of organ donation. ODNZ has revised documentation for the determination of death (brain death and DCD) and will be introducing this documentation in New Zealand in parallel with the introduction of the new ANZICS Statement. The ANZICS Statement is congruent with the ODNZ protocol for DCD and both current New Zealand law and the present draft of the proposed Human Tissue (Government) Bill.

Other activities

ODNZ facilitated a Bereavement Course run by Mal McKissock in Auckland in August and provided educational sessions on organ donation for transplant services, other hospital services, nursing students, Rotarians and school students.

Attendance at Conferences and Training Workshops

ATCA Australasian Transplant Coordinators Association Conference Melbourne 15th-16th November 2007

Janice Langlands attended this annual conference of the Australasian Transplant Coordinators Association.

5th Greek Armed Forces Critical Care and Emergency Medicine Meeting Athens 18th-19th May 2007, Greek Society of Intensive Care Medicine

Dr Stephen Streat was invited to attend this meeting and gave several presentations including: Decompressive craniectomy in traumatic brain injury – a controversial mixed blessing.

Recent relevant publications by ODNZ staff

- Streat SJ. Organ donation. In Oh's Intensive Care Manual 6th Edition. Eds Soni N, Bersten A. Butterworth-Heinemann, Edinburgh, 2008
- Streat SJ. Organ donation. In Intensive Care. Eds Avidan M, Barnett K, Hill L, Hopley L, Jones N, Van Schalkwyk J. Elsevier, Edinburgh, 2008
- Streat SJ. Ethics – Limiting and withdrawing treatment. In Intensive Care. Eds Avidan, Hill, Hopley L, Jones N, Van Schalkwyk J. Elsevier, Edinburgh, 2008

Organ and tissue donation

During 2007 there were 38 deceased donors from ICUs in 12 donor hospitals who donated organs (and tissues) for transplantation. This does not include those who donated tissues (eyes, heart valves, skin) only. All donors were certified brain dead and there were no Donation after Cardiac Death (DCD) donors during 2007. In 2007 there were more donors than in the previous two years. Donors in 2007 were predominantly European and more frequently died of (primarily haemorrhagic) stroke.

The ongoing (average 10% p.a.) fall in the incidence of brain death in the Department of Critical Care Medicine (DCCM) at Auckland City Hospital continued during 2007 (see Figure 1). Equivalent national information will become available during this year as part of the ICU death audit.

Figure 1 – Number of brain dead patients in the DCCM, Auckland City Hospital

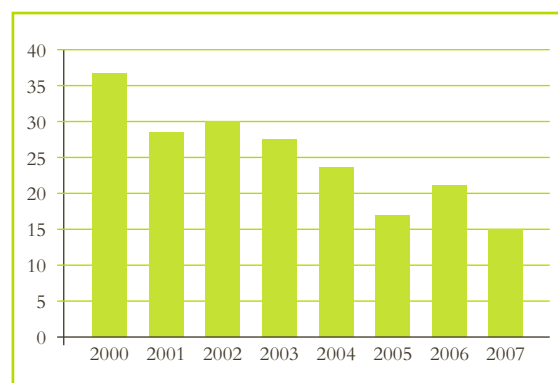


Table 1 – Number of Organ Donors by Donor Hospital and Year

Hospital	2003	2004	2005	2006	2007
DCCM, Auckland City*	8	5	6	4	9
Christchurch	5	4	3	3	9
Dunedin	5	6	3	2	2
Hawkes Bay	3	2	2	2	3
Hutt	1	0	0	1	0
Middlemore	1	2	1	3	1
Nelson	0	1	0	0	6
North Shore	1	1	0	0	0
Palmerston North	0	3	1	0	1
Rotorua	1	1	0	0	0
Southland	4	1	1	0	2
Starship Children's	1	0	0	0	0
Taranaki	1	0	2	1	1
Tauranga	0	1	3	2	0
Timaru	0	0	0	1	1
Waikato	6	3	1	1	1
Wairau	0	0	0	0	1
Wanganui	0	1	0	1	0
Wellington	2	9	5	3	2
Whakatane	1	0	0	0	0
Whangarei	0	0	1	1	0
Total	40	40	29	25	38

*Formerly "Auckland Hospital"

Organ and tissue donation (CONTINUED)

Table 2 – Cause of Donor Death by Year

	2003	2004	2005	2006	2007
CVA	20	19	17	14	25
Trauma (road)	9	6	3	8	7
Trauma (other)	7	6	3	1	3
Other	4	9	6	2	3
Total	40	40	29	25	38

Table 3 – Age of Donors by Year

	2003	2004	2005	2006	2007
Mean	38.0	43.0	44.9	36.5	46.7
Median	39.7	46.1	48	35.4	48.8
Minimum	13	1.1	17	11.6	11.9
Maximum	75.1	78.2	64	69.4	71.7

Table 4 – Ethnicity of Donors by Year

	2003	2004	2005	2006	2007
European	39	35	25	17	37
Maori	0	3	0	7	0
Pacific People	1	1	0	0	0
Other	0	1	4	1	1
Total	40	40	29	25	38

Table 5 – Organs and Tissues retrieved for Transplantation from organ donors

	2003	2004	2005	2006	2007
Kidneys*	74	65 (3)	55	42 (1)	68 (3)
Hearts	25	7 (1)	16	9	12
Lungs‡	22	12	11	13	13
Liver	34	35	22	24	32
Pancreas	6	2	2	6	1
Corneas#	35	32	11	9	20
Heart Valves#	9	21	6	7	14
Bone#	2	0	1	0	0
Skin#	0	0	0	0	1

* Single kidneys, ‡ number of lung recipients, () Organs not suitable for transplantation, # Number of donors of these tissues

Table 6 – Organs from New Zealand donors transplanted in Australia

	2003	2004	2005	2006	2007
Liver	5	6	4	8	8 (2)
Hearts	3	2	3	1	3
Lungs	9	3	2	3	4
Kidneys	0	1	4	0	0

() Number of splits (L or R lobes)

Table 7 – Organs from Australian donors transplanted in New Zealand

	2003	2004	2005	2006	2007
Liver	8	7	6	12	4
Hearts	0	0	0	0	0
Lungs	0	0	0	0	0
Kidneys	0	0	0	0	0

Organ and tissue donation (CONTINUED)

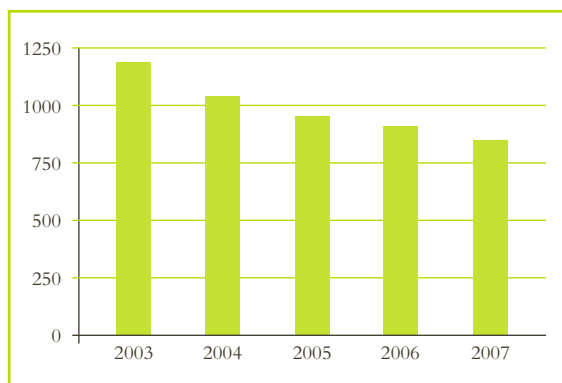
Tissue donation

Tissues including eyes (for corneas and sclera), heart valves and skin are donated for transplantation by a number of deceased donors in various circumstances. The option of tissue donation is offered to families by the Donor Tissue Co-ordinators, Department of Molecular Medicine and Pathology, University of Auckland. These donors are having coroner's autopsies performed in Auckland and the tissues are removed during that process.

The number of such autopsies has fallen by 29% over the last five years (see Figure 2. below).

Eye donation is offered to families by the staff of Bereavement Care at Middlemore Hospital in conjunction with the New Zealand National Eye Bank. Tissue donation is also offered by intensivists to families of organ donors. ODNZ has begun offering tissue donation to families of patients who have recently died in ICU. Tissue donation also occurs when dying patients or their families offer donation and this is coordinated by the New Zealand National Eye Bank for eye donation or ODNZ for multi-tissue donation. In addition, heart transplant recipients most commonly donate the valves from their explanted hearts.

Figure 2 – Number of Coronial autopsies in Auckland



Organ and Tissue Transplantation

Overview

Transplantation in New Zealand includes kidney, heart, lung, liver, pancreas, corneas and sclera, heart valves, skin and bone.

Kidney transplantation, including live-donor kidney transplantation, is provided at Auckland City Hospital (and Starship Children's Hospital), Wellington Hospital and Christchurch Hospital. Heart, lung, liver and pancreas transplantation are provided at Auckland City Hospital (including paediatric heart, lung and liver transplantation at Starship Children's Hospital). The liver transplant program also performs live-donor adult-to-adult and adult-to-child transplantation.

Corneal tissue is stored for up to 21 days at the New Zealand National Eye Bank, at the Faculty of Medical and Health Sciences, University of Auckland. Corneal

transplantation takes place in 13 centres throughout New Zealand, most commonly for keratoconus.

Heart valves are stored for up to five years at the New Zealand Heart Valve Laboratory, Starship Children's Hospital, and are transplanted at Auckland City Hospital, Starship Children's Hospital, Mercy Hospital and Ascot Hospital and very occasionally at other hospitals performing cardio-thoracic surgery.

Skin is stored for up to five years at the Tissue Bank at the New Zealand Blood Service and is used as a 'temporary dressing' to cover large wounds, most commonly after large burns.

Kidney transplantation

During 2007 there were 123 kidney transplants performed including 65 where the kidney was from a deceased donor and 58 from a living donor.

Table 8 – Kidney transplantation by year and donor type

	2003	2004	2005	2006	2007
Recipients, deceased-donor, single kidney	66	54	47	41	65
Recipients, deceased-donor, double kidney	1	4	0	0	0
Living-donor	44	48	46	47	58
Total	111	106	93	88	123

Organ and Tissue Transplantation (CONTINUED)

Heart transplantation and Lung transplantation

There have been 201 heart transplants and 116 lung transplants performed in New Zealand up until the end of 2007, including 9 heart transplants and 9 lung transplants in 2007.

Table 9 – Heart and Lung transplantation by year

	2003	2004	2005	2006	2007
Heart	22	4	13	8	9
Lung*	14	7	8	13	9

*Lung recipients

Liver transplantation

There have been 324 liver transplants performed in New Zealand up until the end of 2007, including 289 transplants in adult recipients and 35 transplants in children. Fourteen of these transplants were from live donors (four adult recipients, ten children).

Table 10 – Liver transplantation by year

	2003	2004	2005	2006	2007
Adult, deceased donor	32	33	21	27	32
Adult, live adult donor	0	0	0	2	1
Child, deceased donor	5	3	3	5	3
Child, live adult donor	1	0	4	2	3
Total	38	36	28	36	39

Pancreas transplantation

There have been 17 pancreas transplants performed in New Zealand (all simultaneous with kidney transplants) including only one in 2007.

Table 11 – Pancreas transplantation by year

	2003	2004	2005	2006	2007
Pancreas	6	2	2	6	1

Corneas and scleras

During 2007 the New Zealand National Eye Bank received ocular tissue from 146 donors, including 50 donors from the Auckland Coroners service, 68 from public hospitals and 8 from private hospitals or directly from the community. A total of 246 corneas and 179 sclera were transplanted during 2007.

Skin

Skin was donated from 18 donors in 2007, including 17 who had undergone Coronial autopsy at the Auckland Coroners service and one co-ordinated by ODNZ.

Heart valves

During 2007 heart valves were retrieved from 44 donors, including 17 donors who had undergone Coronial autopsy at the Auckland Coroners service, 14 organ donors, 4 tissue-only donors facilitated by ODNZ and 9 heart transplant recipients.

Organ and Tissue Transplantation (CONTINUED)

Appendix 1

Trends in driver licence numbers and in recorded response to the 'DONOR' question.

In order to obtain a drivers licence in New Zealand, the applicant is required to answer the following question which is printed on the application form: *Would you be willing to donate organs in the event of your death?* There is a box to tick for 'Yes' and one for 'No'. Land Transport New Zealand can not produce a licence card until the applicant has ticked one or other box. If the 'No' box is ticked nothing is shown on the driver licence regarding this question; if the 'Yes' box is ticked the word 'DONOR' is printed on the licence card. This information is also available on the driver licence database¹.

Land Transport New Zealand provided ODNZ with summary statistical information from this database, which is presented and discussed below.

Over the last three years the New Zealand population has increased by 1.3% p.a. overall; the 'adult' (15 years and over) population by 1.4% p.a. There has been an increase of 0.9% p.a. in the proportion of the 'adult' population with a driver licence, currently 92.9%. At the same time there has been an increase of 0.9% p.a. in the proportion of the licences with DONOR, which currently stands at 47.1%. As a result of the combination of these three trends, the number of persons with a licence printed with DONOR has risen by 4.6% p.a. over this time. Currently 43.8% of the New Zealand population aged 15 years or older has a licence printed with the word DONOR.

Table 12. Trends in driver licence numbers and response to "DONOR" question

Time point	NZ resident population	15 years and over	No. driver licences	%>15yrs with licence	No. licences with DONOR	% licences with DONOR
Jan 2006	4,140,000	3,262,000	2,967,849	91.0	1,344,150	45.3
Jan 2007	4,190,000	3,314,300	3,042,766	91.8	1,406,815	46.2
Jan 2008	4,250,000	3,361,800	3,122,785	92.9	1,471,442	47.1

The numbers of driver licences printed with DONOR at various age ranges for each of the three years is shown in Figure 3. Figure 4 shows, for each of the three years, the percentage of licensees at each age range whose licence is printed with DONOR. Figure 5 shows, for the 2008 data, the percentage of men and women at each age range whose licence is printed with DONOR.

Figure 3. Numbers of driver licences printed with 'DONOR' at various age ranges for each of the three years 2006 – 2008

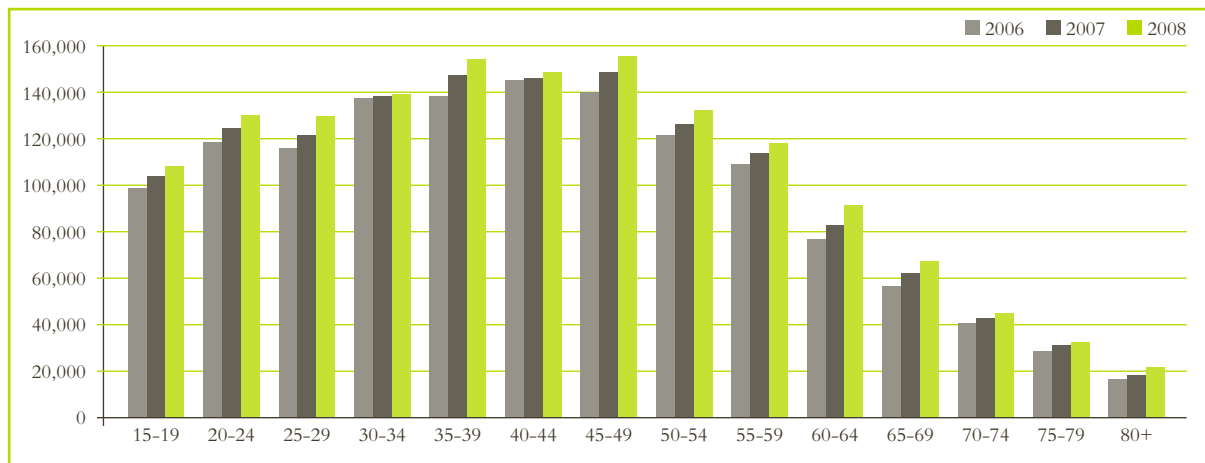


Figure 4. Percentage of driver licensees at each age range whose licence is printed with 'DONOR' for each of the three years 2006 – 2008

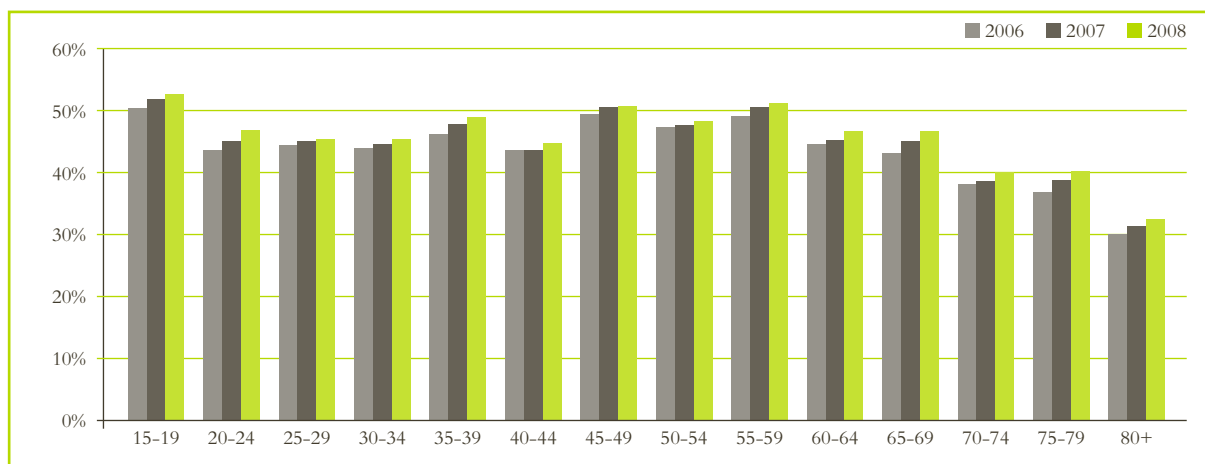
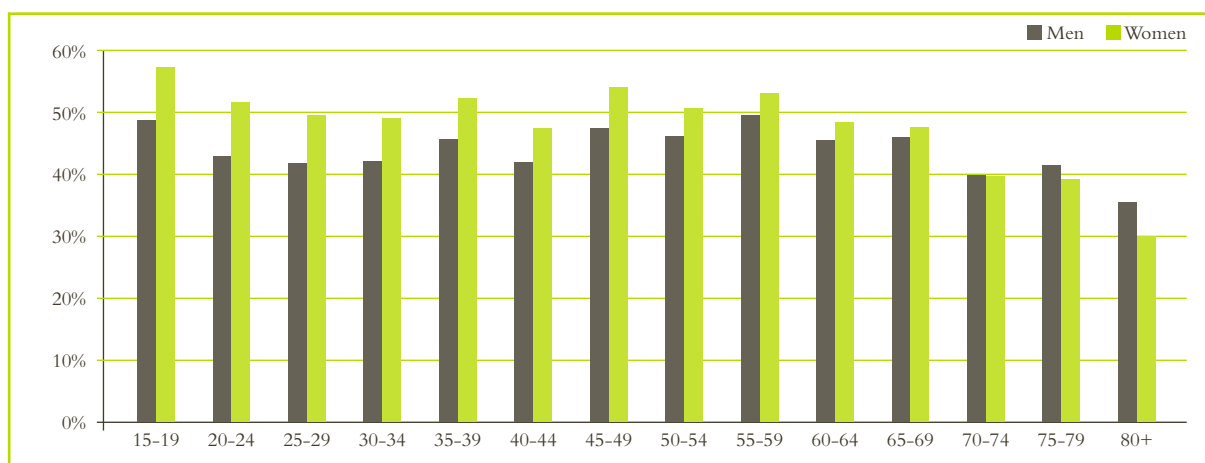


Figure 5. Percentage of men and women driver licensees at each age range whose licence is printed with 'DONOR' in 2008



Organ and Tissue Transplantation (CONTINUED)

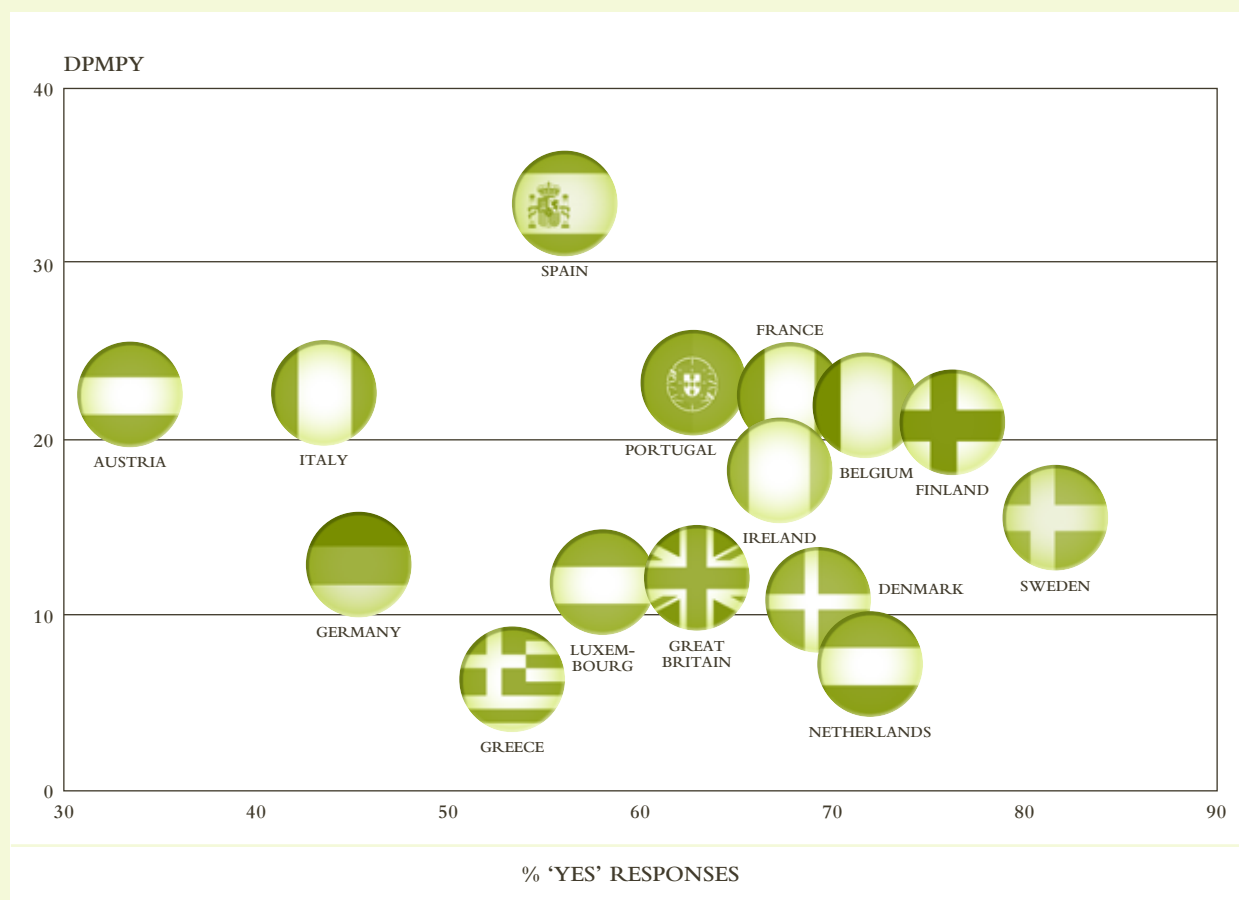
The percentage of licensees who have answered 'Yes' to the donor question is highest (52.7% in 2008) for the age range 15-19 years, somewhat lower (~45%) up to the age of 45, rises again to ~50% until the age of 60 and then falls progressively to around 30% in drivers aged 80 or older. There has been an increase of around 1% p.a. in the percentage of 'Yes' respondents at each age range over the time period. A higher percentage of women respondents have said 'Yes' than men; overall in 2008 49.9% of women licensees and 44.5% of men had responded 'Yes'. The difference in 'Yes' responses between men and women was greatest (~8%) at younger age ranges, narrowed to ~2% by age 65 and is slightly reversed at ages over 75.

Comparable data for other countries are not available. However, the question which forms the basis for these data is very similar to a question asked of 28,584 Europeans in 29 countries² in late 2006 viz. Would you be willing to donate one of your organs to an organ donation service immediately after your death? The same question had been asked four years previously³. Overall 56% of respondents in the most recent European survey answered 'Yes' to this question, 26% 'No' and 18% were undecided. There were slightly fewer 'Yes' responses from older people. No gender difference was found in this survey.

In the 2006 survey, there was a large range of 'Yes' responses among the EU 25 countries – highest in Northern Europe [Sweden (81%), Finland (73%), Belgium (73%), the Netherlands and Denmark (69% in both countries)] and lowest in Eastern Europe [Czech Republic (44%), Austria (33%) and Latvia (29%)]. 'Yes' responses were higher in France (67%), Ireland (67%), Portugal (66%) and the UK (63%) than in Spain (57%), Greece (53%), Poland (51%) or Germany (46%).

The percentage of 'Yes' respondents in the EU15 countries which were surveyed twice (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom) fell from 59% in 2002 to 57% in 2006. Organ donation rates are often quoted in donors per million per year (DPMPY) and comparisons often made between countries on this basis. DPMPY for 2004 for the EU15 countries⁴ (such data are not available for the EU25 countries) are compared with the percentage of 'Yes' responses in each country in the 2006 survey and are shown in Figure 6. There is no relationship ($R^2=0.02$) between these two variables.

Figure 6. Donors per million population per year in 2004 versus percentage of respondents answering “Yes” to “donation of an organ after death” in 15 EU countries



Organ and Tissue Transplantation (CONTINUED)

Although 82% of the 2006 respondents in the EU15 countries answered 'Yes' to the question 'Do you support the use of organ donation cards to make it easier to identify people willing to donate organs after their death?' only 12% had such cards already. There is a weak negative correlation ($R^2=0.23$, $p=0.04$) between higher use of donor cards and lower organ donation rates. Organ donation rates (DPMPY) were lowest (12.6 ± 3.0 SD) in the five countries with highest use of donor cards (Netherlands 44%, Sweden 30%, Ireland 29%, United Kingdom 26%, Denmark 25%), intermediate (17.8 ± 4.4) in the five with lower use of donor cards (Finland 17%, Luxembourg 14%, Italy 13%, France 10%, Germany 9%) and highest (20.9 ± 9.6) in the five with very low use of donor cards (Spain 7%, Austria 4%, Greece 3%, Belgium 3% and Portugal 2%). The use of donor cards in the Netherlands, the highest in the EU, is six times their use in Spain – whereas the organ donation rate in the Netherlands is only 25% of the rate in Spain.

Clearly the variation in organ donation rates internationally is much more determined by factors other than individual willingness to donate and the use of donor cards. In contrast to the EU15, the personal willingness of an individual drivers licence applicant in

New Zealand to 'donate organs in the event of their death' has risen in recent years. The response to this question may be a useful measure of 'societal acceptability' of donation but (as the European survey data show) it should not be thought of as necessarily correlating with or determining organ donation rates. The utility of the drivers licence information in New Zealand, other than as a trend monitor of public attitudes to donation, is not clear. It may or may not 'make it easier for relatives to decide what to do'. However, treating it as anything but an indicative measure of 'willingness' may lead to a fall in donation rate, particularly in consideration of older potential donors. In the only published report of its type (published only in abstract form)⁵ a fall in organ donation rates of 20% followed the introduction in 2000 in the State of Virginia, USA of legislation enforcing drivers licence 'donor designation'. The drivers licence designation became the most common cause of 'no permission' while all other reasons (emotional, religious, prior discussion, unknown) fell. Similar theoretical concerns have been raised in Australia^{6,7} but elucidating Australian data have so far not been reported since the change in the legal status of the Australian Organ Donor Register.

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