# ORGAN DONATION NEW ZEALAND

# ANNUAL REPORT 2010

Organ Donation New Zealand (ODNZ) would sincerely like to thank the families who agreed to organ and tissue donation which enabled many recipients to benefit from transplantation.

We would also like to thank Starfish Pictures, donor families, recipients and the health professionals involved in the making of *Situation Critical* – the TV series about organ donation and transplantation that screened on TV ONE in October/November 2010. We acknowledge the time and emotion involved for those who agreed to be part of the series.

ODNZ is grateful for the continued commitment of the Link Teams and the many other health professionals in hospitals throughout New Zealand.

We would like to thank our colleagues at ODNZ who contributed to this report – Dr James Judson, Melanie Selby, Cecilia Westmacott, Rachel Josephson and Margaret Kent.

For their input into this report we also gratefully acknowledge Lee Excell, editor of the Australia and New Zealand Organ Donation Registry; Rosalie Gow from the Department of Forensic Pathology, Auckland City Hospital; Louise Moffatt and Helen Twohill from the New Zealand National Eye Bank; Jill Faulkner and Lorraine Craighead from the New Zealand Heart Valve Laboratory; and Vladimir Slyshkov from the New Zealand Tissue Bank at the New Zealand Blood Service.

We appreciate the support and encouragement we receive from the ODNZ Advisory Committee, our transplant colleagues, the Ministry of Health and the Australian and New Zealand Intensive Care Society.

**Stephen Streat FRACP**
Clinical Director, ODNZ

**Janice Langlands**
Team Leader, ODNZ

Organ Donation New Zealand (ODNZ) is the national service for deceased organ and tissue donation and its primary responsibility is to co-ordinate organ and tissue donation from deceased donors in New Zealand.

The Donor Co-ordinators provide information and ongoing support for those families who have generously donated organs or tissues.

ODNZ continues to work with health professionals throughout New Zealand to ensure there are nationally consistent processes for donation and all families of potential donors are offered the option of organ and tissue donation. The service also provides education and training for health professionals as well as supplying information to the media and the public.

ODNZ is managed through the Auckland District Health Board which is funded for ODNZ on behalf of all District Health Boards. The offices of ODNZ are situated at the Greenlane Clinical Centre, in Auckland.

## Staffing

The staff of ODNZ remained unchanged in 2010. There are three Donor Co-ordinators: Janice Langlands (Team Leader), Cecilia Westmacott and Rachel Josephson; and two Medical Specialists: Dr Stephen Streat (Clinical Director) and Dr James Judson. Melanie Selby is the Communications Advisor and Margaret Kent is the Team Administrator.

Link Teams:

The Link Teams consist of health professionals who are the local experts on organ donation matters for their hospital. All donor hospitals in New Zealand have Link Teams consisting of Intensive Care Unit Link Nurse(s), Operating Theatre Link Nurse(s) and an ICU Link Doctor. ODNZ is grateful for their commitment and ongoing support.

## Advisory Committee

The Advisory Committee is comprised of representatives from intensive care medicine and nursing, organ and tissue transplantation, representatives of Maori health and Pacific health, and a consumer representative.

In 2010 Wellington Nephrologist Dr Phillip Matheson replaced Christchurch Nephrologist Prof. Richard Robson as the renal transplant representative and Wellington ICU Nurse Christine Southerwood replaced Dunedin ICU Nurse Elly Campbell. ODNZ met with its Advisory Committee in March and December 2010.

## Co-ordination of Organ and Tissue Donation

The Donor Co-ordinators provide a 24-hour service for referrals from ICUs for organ donation, tissue donation and for referrals of livers and cardiothoracic organs from Australia. A Medical Specialist is increasingly involved in all potential organ donors to assist the health professionals in the ICUs with any issues relating to donation, including medical suitability, physiological support, requirements for the determination of brain death and consent.

When families volunteer donation from deceased relatives whose organs (heart, lungs, liver, kidney and pancreas) cannot be donated, ODNZ facilitates tissue (eyes, heart valves and skin) donation where possible.

In 2010 the Donor Co-ordinators worked with health professionals to increase awareness of tissue donation and to provide the option of tissue donation for patients and/or their families.

## Donor Family Support

The Donor Co-ordinators meet with the family before the organ retrieval operation if they are present in the ICU. At that time the Donor Co-ordinator explains the follow up and support that can be provided for families if they wish to receive it. They also offer hand prints and locks of hair of their loved ones.

The continued support for families includes phone calls, letters and emails for as many years as they wish to receive it. Anonymous communication between donor families and recipients is also facilitated by the Donor Co-ordinators and the Recipient Co-ordinators. Guidelines are being written to help donor families who would like to write anonymously to the recipients. The guidelines for recipients who wish to write to donor families are also being updated.

In 2010 ODNZ updated the Donor Family Booklet which is given to families a week after the donation. The booklet offers a message of support to donor families and also provides them with information about donation, as well as donor family and recipient stories.

ODNZ organises annual Thanksgiving Services. 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, Wellington and, for the first time, Dunedin in 2010 with approximately 500 attendees at the Auckland service, 300 at the Wellington service and 200 at Dunedin.

## Education

### Study Days and Health Professional Education

ODNZ facilitates organ donation study days throughout New Zealand for nursing staff from ICUs and Operating Theatres (OT), and other health professionals involved in the donation process. In 2010 study days were held in the following hospitals: Auckland, Waikato, Rotorua, Wellington, Wairau, Nelson and Dunedin.

Other educational sessions were provided for postgraduate nurses, nursing students and other health professionals throughout the country.

### Australasian Donor Awareness Program Training (ADAPT)

A Medical ADAPT workshop was held in Auckland in 2010. This workshop provided ICU doctors with expertise in the organ and tissue donation process, including communication with families. Dr Stephen Streat continues to be a member of the working party who is currently revising the content of the Medical ADAPT workshop.

### Link Workshop

The Link Nurses attended a two-day workshop in Auckland in November 2010. The workshop included a day-long session with bereavement counsellor Mal McKissock, visits to the tissue banks and an update on organ donation processes and the activities of ODNZ. In 2010 Janssen-Cilag again provided an educational grant for the Link Workshop which ODNZ was grateful for.

### Link Nurse Induction Day

ODNZ held its first induction day for 14 new Link Nurses in Auckland in August 2010. The purpose of this day was to upskill the new Link Nurses to ensure they are comfortable being ODNZ's representative in their hospital. The ICU Link Nurses were trained in data entry for the ICU Death Audit.

### ODNZ News

A quarterly newsletter produced by ODNZ and featuring information about organ donation and transplantation was distributed throughout donor hospitals in New Zealand by the Link Nurses. Each newsletter also features a story from a donor family and a transplant recipient. The purpose of the newsletter is to provide hospital staff with a better understanding of organ donation and transplantation.

### Donation After Cardiac Death (DCD)

ODNZ continued to implement DCD in donor hospitals throughout New Zealand during 2010. A detailed education programme for DCD was completed in Middlemore and Nelson Hospitals and is soon to be completed in Hawke's Bay hospital. The programme has commenced in Dunedin Hospital.

### Educational Brain Death DVD

Filming for the new educational DVD on brain death for health professionals has commenced. This will be consistent with the determination of brain death outlined in the updated Australian and New Zealand Intensive Care Society statement. ODNZ would like to acknowledge ScreenTime Media for their assistance.

### Bereavement Course

Bereavement counsellor Mal McKissock also travelled to Auckland from Sydney in April 2010 to facilitate the three-day bereavement course that is annually organised by ODNZ. This was attended by health professionals who support families following bereavement.

## ICU Death Audit

ODNZ gratefully acknowledges the ICU Link Nurses who collect and report the data for the Audit. The overall quality of the data is very good and reflects the commitment of the ICU staff to donation and to the audit process.

In 2010 Dr James Judson provided feedback on the ICU Death Audit at the Link Workshop and to the Advisory Committee.

## Public Awareness

Starfish Pictures completed filming a seven-part TV series about organ donation and transplantation. The series screened on TV1 in October 2010 but unfortunately, due to low ratings, the series was taken off air after four episodes. It is expected the series will be rescheduled to screen in 2011. ODNZ received extremely positive feedback from people all over New Zealand about the series and many also expressed disappointment when it was taken off air.

ODNZ ran a 30-second ad campaign on Health TV which screened for eight weeks in 200 medical centre waiting rooms throughout New Zealand in April and May 2010. The ad encouraged people to pick up ODNZ's brochure for more information and to talk to their family about their wishes.

Also in April 2010 New Zealand Olympic and Commonwealth Games medallist Paul Kingsman captained a team of six top New Zealand swimmers in Swimming New Zealand's "Legends Race for Charity". The race took place at Westwave Aquatic Park in Auckland and featured a collection of New Zealand's top swimmers including Danyon Loader and Anthony Mosse.

A number of positive stories about organ donation appeared in various media outlets in 2010. This included an eight-page feature in Pacific and Maori magazine Spasifik, a one-hour long show on Radio New Zealand's Maori Kaupapa programme Te Ahi Kaa, a storyline in popular New Zealand soap Shortland Street and a feature article in the New Zealand Herald in April. There were also many positive stories about organ donation shared by donor families and recipients in various publications throughout the country. ODNZ is grateful for all the support received from donor families, recipients, health professionals and the media.

ODNZ responds to public enquiries from the 24-hour 0800 number (0800 4DONOR) and from the website (www.donor.co.nz). ODNZ also speaks at public forums.

## Attendance at Conferences and Training Workshops

| | |
|---|---|
| 2010 DonateLife™ Network Annual Forum, Melbourne 4–5 March | Janice Langlands and Melanie Selby attended this forum which provided them with the opportunity to network with colleagues and to be updated with initiatives from the Australian Organ and Tissue Donation and Transplantation Authority. |
| Mal McKissock Bereavement Course, Auckland 21–23 April | This course was attended by Melanie Selby and Margaret Kent to give them confidence when communicating with donor families. |
| Intensive Bioethics Course, Washington, USA 7–11 June | James Judson attended the annual Intensive Bioethics Course run by the Kennedy Institute of Ethics which provided an excellent overview of ethics in health care. |
| ETCO European Organ Donation Conference, Cardiff 23–26 September | This conference was attended by Cecilia Westmacott and provided her with the opportunity to network with colleagues from all over the world. Cecilia was updated on new initiatives and developments in organ and tissue donation and donor care in the ICU. Thanks to Janssen Cilag for providing financial assistance which enabled Cecilia to attend this conference. |
| International Critical Care Symposium 2010, Chennai, India 29–30 October | Dr Stephen Streat spoke at this international conference about Organ Donation – issues for the Intensivists. |

In 2010 there were 41 deceased donors from ICUs in 13 donor hospitals who donated organs (and tissues) for transplantation. This does not include those who donated tissues (eyes, heart valves and skin) only. Of the 41 donors, 40 donated following brain death and one donated following cardiac death.

Table 1:

**Number of Deceased Organ Donors in New Zealand**

| HOSPITAL | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| AUCKLAND CITY DCCM | 4 | 9 | 8 [1]* | 12 | 8 |
| CHRISTCHURCH | 3 | 9 | 4 [1]* | 4 | 3 [1]* |
| DUNEDIN | 2 | 2 | 3 | 7 | 4 |
| GISBORNE | 0 | 0 | 2 | 0 | 0 |
| GREY BASE | 0 | 0 | 0 | 1 | 1 |
| HAWKE'S BAY | 2 | 3 | 1 | 3 | 1 |
| HUTT | 1 | 0 | 0 | 0 | 1 |
| MIDDLEMORE | 3 | 1 | 1 | 1 | 2 |
| NELSON | 0 | 6 | 1 | 1 | 1 |
| NORTH SHORE | 0 | 0 | 0 | 1 | 0 |
| PALMERSTON NORTH | 0 | 1 | 1 | 0 | 0 |
| ROTORUA | 0 | 0 | 0 | 1 | 1 |
| SOUTHLAND | 0 | 2 | 0 | 0 | 2 |
| STARSHIP CHILDREN'S | 0 | 0 | 1 | 2 | 0 |
| TARANAKI BASE | 1 | 1 | 0 | 1 | 0 |
| TAURANGA | 2 | 0 | 0 | 0 | 0 |
| TIMARU | 1 | 1 | 1 | 1 | 0 |
| WAIKATO | 1 | 1 | 5 | 2 [1]* | 11 |
| WAIRAU | 0 | 1 | 0 | 1 | 0 |
| WANGANUI | 1 | 0 | 0 | 0 | 0 |
| WELLINGTON | 3 | 2 | 3 | 4 [1]* | 5 |
| WHANGAREI | 1 | 0 | 0 | 1 | 1 |
| **TOTAL NUMBER OF DONORS** | **25** | **38** | **31** | **43** | **41** |

Note: [ ]* DCD donors

Table 2:

**Cause of Donor Death by Year**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| CVA | 14 | 25 | 22 | 21 | 23 |
| TRAUMA (ROAD) | 8 | 7 | 2 | 9 | 9 |
| TRAUMA (OTHER) | 1 | 3 | 2 | 4 | 3 |
| OTHER | 2 | 3 | 5 | 9 | 6 |
| **TOTAL** | **25** | **38** | **31** | **43** | **41** |

Table 3:

**Age of Deceased Donors by Year**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| MEAN | 36.5 | 46.7 | 42.7 | 43.0 | 43.5 |
| MEDIAN | 35.4 | 48.8 | 44.4 | 46.9 | 44.4 |
| MINIMUM | 11.6 | 11.9 | 12.0 | 3.6 | 15.1 |
| MAXIMUM | 69.4 | 71.7 | 67.6 | 74.6 | 71.4 |

Table 4:

**Ethnicity of Deceased Donors by Year**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| EUROPEAN | 17 | 37 | 27 | 35 | 32 |
| MAORI | 7 | 0 | 3 | 5 | 5 |
| PACIFIC PEOPLE | 0 | 0 | 1 | 0 | 1 |
| OTHER | 1 | 1 | 0 | 3 | 3 |
| **TOTAL** | **25** | **38** | **31** | **43** | **41** |

Table 5:

**Organs and Tissues Retrieved from Deceased Donors and Transplanted**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| KIDNEYS* | 41 | 65 | 53 | 56 (4) | 56 [8] |
| HEARTS | 9 | 12 | 10 | 11 | 11 |
| LUNGS‡ | 13 | 13 | 14 | 16 | 12 |
| LIVER# | 24 | 32 | 23 | 33 | 32 |
| PANCREAS | 6 | 1 | 4 | 2 | 3 |
| CORNEAS# | 9 | 20 | 15 | 13 | 19 |
| HEART VALVES# | 7 | 14 | 8 | 8 | 7 |
| SKIN# | 0 | 1 | 3 | 4 | 1 |

* Single kidneys
‡ Number of lung recipients
( ) En-Bloc kidneys
[ ] Double adult
# Number of donors of these organs/tissues

Some organs from New Zealand donors are transplanted to Australia recipients and vice versa in accord with the trans-Tasman organ sharing agreement of the Transplant Society of Australia and New Zealand (TSANZ), http://www.tsanz.com.au

Table 6:

**Organs from New Zealand Deceased Donors Transplanted in Australia**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| LIVER | 8 | 8 (2) | 2 | 5 | 5 [2] |
| HEART | 1 | 3 | 2 | 0 | 0 |
| LUNGS | 3 | 4 | 2 | 8 | 3 |
| KIDNEY | 0 | 0 | 0 | 0 | 2 |

Table 7:

**Organs from Australian Deceased Donors Transplanted in New Zealand**

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| LIVER | 12 | 4 | 9 | 3 | 6 [1] |
| HEART | 0 | 0 | 0 | 0 | 0 |
| LUNGS | 0 | 0 | 0 | 0 | 0 |
| KIDNEY | 0 | 0 | 0 | 0 | 0 |

[ ] Split livers

Transplantation in New Zealand includes organs: heart, lungs, liver, kidney and pancreas; and tissues: eyes (corneas and sclera), heart valves, skin and bone (from living donors).

Kidney transplantation, including deceased and live-donor kidney transplantation, is provided at Auckland City Hospital, Starship Children's Hospital, Wellington Hospital and Christchurch Hospital.

Heart, lung, liver and pancreas transplantation is provided at Auckland City Hospital. Paediatric heart, lung and liver transplantation is provided at Starship Children's Hospital. The liver transplant programme includes live-donor adult-to-adult and adult-to-child transplantation.

Table 8:

**Kidney Transplantation by Year and Donor Type**

Kidney Transplantation

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| RECIPIENTS, DECEASED-DONOR, SINGLE KIDNEY | 41 | 65 | 53 | 52 | 46 |
| RECIPIENTS, DECEASED-DONOR, DOUBLE KIDNEY | 0 | 0 | 0 | 2 | 4 |
| LIVING DONOR | 47 | 58 | 69 | 67 | 60 |
| **TOTAL** | **88** | **123** | **122** | **121** | **110** |

In 1998 Christchurch Renal Transplant Unit facilitated the first altruistic kidney donation in New Zealand. There have now been 36 people in New Zealand who have generously donated a kidney to a completely unknown recipient.

Table 9:

**Heart and Lung Transplantation by Year**

Heart and Lung Transplantation

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| HEART | 8 | 9 | 9 | 11 | 11 |
| LUNG* | 13 | 9 | 12 | 8 | 9 |

* Lung recipients

The Left Ventricular Assist Device (LVAD) program was available again in 2010 for critically ill transplant eligible patients. Two LVADs were successfully implanted in 2010 and these patients are awaiting heart transplantation.

Table 10:

**Liver Transplantation by Year**

Liver Transplantation

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| ADULT, DECEASED DONOR | 27 | 32 | 27 | 28 | 29 |
| ADULT, LIVE ADULT DONOR | 2 | 1 | 3 | 2 | 0 |
| CHILD, DECEASED DONOR | 5 | 3 | 4 | 3 | 6 |
| CHILD, LIVE ADULT DONOR | 2 | 3 | 4 | 6 | 6 |
| **TOTAL** | **36** | **39** | **38** | **39** | **41** |

In 2010 there were 41 liver transplants in New Zealand – the highest number performed in a single year since transplantation commenced in 1998. There have been 437 liver transplants performed in New Zealand to the end of 2010.

Table 11:

**Pancreas Transplantation by Year**

Pancreas Transplantation

| | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| PANCREAS | 6 | 1 | 4 | 2 | 3 |

There were two combined kidney/pancreas transplants in 2010, and the first-ever pancreas after kidney transplant performed in New Zealand.

People who die in the Auckland region who are not able to donate organs for transplantation can be considered for tissue donation (eyes – corneas and sclera, heart valves and skin). Eye donation can be considered from people who die throughout New Zealand.

In 2010 tissue donation was facilitated by ODNZ from the following ICUs:

Table 12:

**Tissue Only Donation Facilitated by ODNZ**

| REFERRED FROM | NUMBER OF TISSUE (ONLY) DONORS |
|---|---|
| AUCKLAND CITY HOSPITAL – DCCM | 3 |
| DUNEDIN | 1 |
| NORTH SHORE HOSPITAL | 1 |
| WELLINGTON HOSPITAL | 1 |

Tissue donation is also facilitated by the Donor Tissue Co-ordinator from the Department of Forensic Pathology, Auckland City Hospital.

Other potential tissue donors referred to ODNZ were referred to the New Zealand National Eye Bank for eye donation. The Corneal Co-ordinators facilitate eye donation from donors referred directly to the New Zealand National Eye Bank. The Bereavement Team at Middlemore Hospital provide the option of eye donation for patients dying in Middlemore Hospital.

Heart valves are also donated by consenting patients having heart transplantation.

Total Tissue Donation in NZ

Table 13:

**Tissue Donation for Transplantation by Year**

| NUMBER OF DONORS | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| SKIN | 14 | 18 | 25 | 18 | 10 |
| HEART VALVES | 35 | 44 | 29 | 19 | 21 |
| EYES | 139 | 146 | 126 | 123 | 142 |

## What is DCD?

Donation after Cardiac Death (DCD) refers to organ donation after death where death has been determined by the absence of the circulation of blood and absence of other signs of life.

In 1995 Gauke Koostra from Maastricht first defined four categories of what he then called 'non-heart-beating-donors'[1,2], but we now call DCD:

viz –

| | |
|---|---|
| Category I | Dead on arrival |
| Category II | Failed resuscitation |
| Category III | After withdrawal of treatment in ICU and |
| Category IV | Cardiac arrest after determination of brain death |

(Strictly speaking, Category IV is not 'DCD' – as the brain dead patient is already dead before the circulation stops, and is not determined to be dead on the basis of absent circulation. However Category IV is 'non-heart-beating').

In September 2001, the United Network for Organ Sharing (UNOS), under contract with the United States Department of Health and Human Services convened the Intraoperative Advisory Council on Donation after Cardiac Death[3]. The term 'DCD' began to be used after that time[4,5] but did not become widespread until after a US national consensus conference on DCD which was held in 2005[6].

The word 'cardiac' in DCD has the possible interpretation that the heart, rather than the patient, is dead. This has caused some confusion when the heart has been donated and transplanted and functioned well in recipients[7,8]. Some authors have suggested that the word 'cardiac' in DCD be replaced with 'circulatory' or 'cardio-circulatory'[7] to clarify that the 'heart' is not the issue, but rather the cessation of circulation.

As the number of brain dead donors has been static or declining in many countries, ethical opportunities for DCD have been recognised in many countries including the UK, USA, Canada, Australia and New Zealand. DCD has added modestly to the number of deceased donors and thereby moderated the increasing gap between the number of recipients who might benefit and the number of organs available for transplant.

Organ Donation New Zealand (ODNZ) developed a national protocol for DCD[9] during 2006 in consultation with intensive care and transplant professionals. All concerns expressed were addressed by ODNZ before the protocol was submitted to the Multi-region Ethics Committee (MEC). The protocol was reviewed by the Multi-Region Ethics Committee and approved in June 2007.

This protocol recognises that DCD is a possibility in ventilated intensive care patients in whom a consensus decision has already been taken that treatment will be withdrawn and in whom death is likely to occur within an hour of treatment withdrawal. It applies only to Maastricht Category III and IV donors and is consistent with principles for DCD in the ANZICS Statement on Death and Organ Donation (2010)[10], the Australian National Protocol for DCD (2010)[11] and the US position on DCD[12].

## What happens in DCD?

### Withdrawal of treatment

Withdrawal of intensive treatments is a well-established practice in intensive care medicine worldwide. In New Zealand around half of all deaths which occur in ICUs take place after treatment has been withdrawn. Treatment is withdrawn on the basis that continuation of such treatment is not in the patient's best interests. This decision is taken by consensus between the treating team and the family, taking into account the condition of the patient, the opinions of the treating team as to the prognosis of the patient, the views of the patient (if these are known or able to be ascertained) and the views of the family. The process by which these decisions are taken is in accord with consensus professional guidelines of the Australian and New Zealand Intensive Care Society[13] and is an established part of New Zealand intensive care practice. If treatment is withdrawn, the patient continues to be cared for by the medical and nursing staff of the ICU and death usually occurs within a period of hours to sometimes a few days. Treatment is directed at ensuring that the patient is comfortable and without distress, is cared for with dignity and respect, and that the needs of family members are also provided for.

### The possibility of organ donation

A small number of patients dying after withdrawal of treatment do so within a short period of time. The circulation fails during the dying process and damage from insufficient blood flow can occur to internal organs during this time. However, if the time when blood flow is low is short (i.e. under an hour for kidneys, 30 minutes for livers) then such damage is minor and reversible and the organs recover their function after transplantation.

As it is legally and ethically permissible for organ donation to take place after death has occurred, the fact and time of death can be ascertained in the usual clinical manner (i.e. after the cessation of the circulation) rather than by certification of brain death, and organ donation can then commence.

Brain death occurs rarely and sometimes the possibility of donation is raised by families of dying patients who are not brain dead or likely to become brain dead. DCD provides the option of donation to some of these families. Currently in New Zealand only kidneys, liver and tissues (e.g. eyes, heart valves and skin) are considered for DCD. It is ethically acceptable to discuss the possibility of organ donation with families, even before death had occurred, as long as that discussion is subsequent to and independent of a consensus decision between the treating team and the family about withdrawal of treatment[10]. In New Zealand, in a situation where DCD might be possible, discussion with the family about DCD always involves a specialist (usually a specialist in intensive care medicine) with experience in organ donation after brain death[9]. As well as this specialist, the intensive care nurse looking after the patient and family is part of this discussion[9]. A medical specialist from ODNZ also provides advice and support as needed.

## What happens in DCD? (continued)

### The process of treatment withdrawal and determination of death

If the family agree to organ donation, then the subsequent processes are coordinated by the ODNZ Donor Co-ordinator. At a time which is appropriate for the family, the treating team and the retrieval team, treatment is withdrawn from the patient. This usually involves removal of mechanical ventilation and withdrawal of the artificial airway tube by the intensive care team caring for the patient. Sometimes the family wish to be present at this time and sometimes they do not. After treatment is withdrawn, an intensive care specialist and nurse remain with the patient (and family) to provide care for the patient, including giving small amounts of sedation if this is needed. This is done in exactly the same way as sedation is given when treatment is withdrawn but organ donation is not possible[9]. When the patient dies, the intensive care specialist determines the fact of death by the absence of responsiveness, breathing and of the circulation and records the time of death. This is done in accord with Australasian best practice and according to the specific detail and documentation described in the ANZICS Statement on Death and Organ Donation[10]. If the patient does not die within a time frame which permits subsequent DCD (i.e. one hour) then organ donation is no longer possible and the patient will continue to be cared for by the intensive care team[9]. Tissue donation might still be possible if death occurs after one hour.

### The process of organ retrieval after death

If the patient is in the ICU at the time of their death, they are rapidly transferred to the operating theatre. Sometimes, with the prior agreement of the family, treatment is withdrawn in the operating theatre (again under the auspices of the treating intensive care team). After the patient has died, the family (if they are present) and intensive care team leave the operating theatre. The specialist surgical team then enters the operating theatre and the process of organ retrieval begins in a similar manner to organ retrieval after brain death. The surgical team are not involved in any of the processes which occur prior to the patient's death. There is an opportunity for the family to spend time, in private, with their relative after organ retrieval[9]. Organs are allocated to transplant recipients in the same way as for organs donated after brain death and in accord with the organ allocation protocols of the Transplantation Society of Australia and New Zealand[14].

### How has DCD been received in New Zealand?

There have been few DCD donors so far in New Zealand but the families of these donors have been grateful for the opportunity to donate. DCD is a challenging process for health professionals and ODNZ has ensured that appropriate consultation, education and detailed preparation have taken place before DCD is carried out in any hospital. ODNZ has audited the process of DCD on each occasion and continues to do so to ensure that the needs of the family as well as those of the involved health professionals are taken care of, and that the organs are retrieved in the best possible condition for the benefit of subsequent transplant recipients. DCD is available in the larger hospitals in New Zealand and some smaller ones. It is likely that the number of DCD donors in New Zealand will increase modestly in the future, as has been the case in other countries where DCD has been introduced. However, it will remain a small but contributory part of organ donation for transplantation.

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NOTES

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