

Organ Donation: An Overview for Theatre Nurses

Larna Kennedy

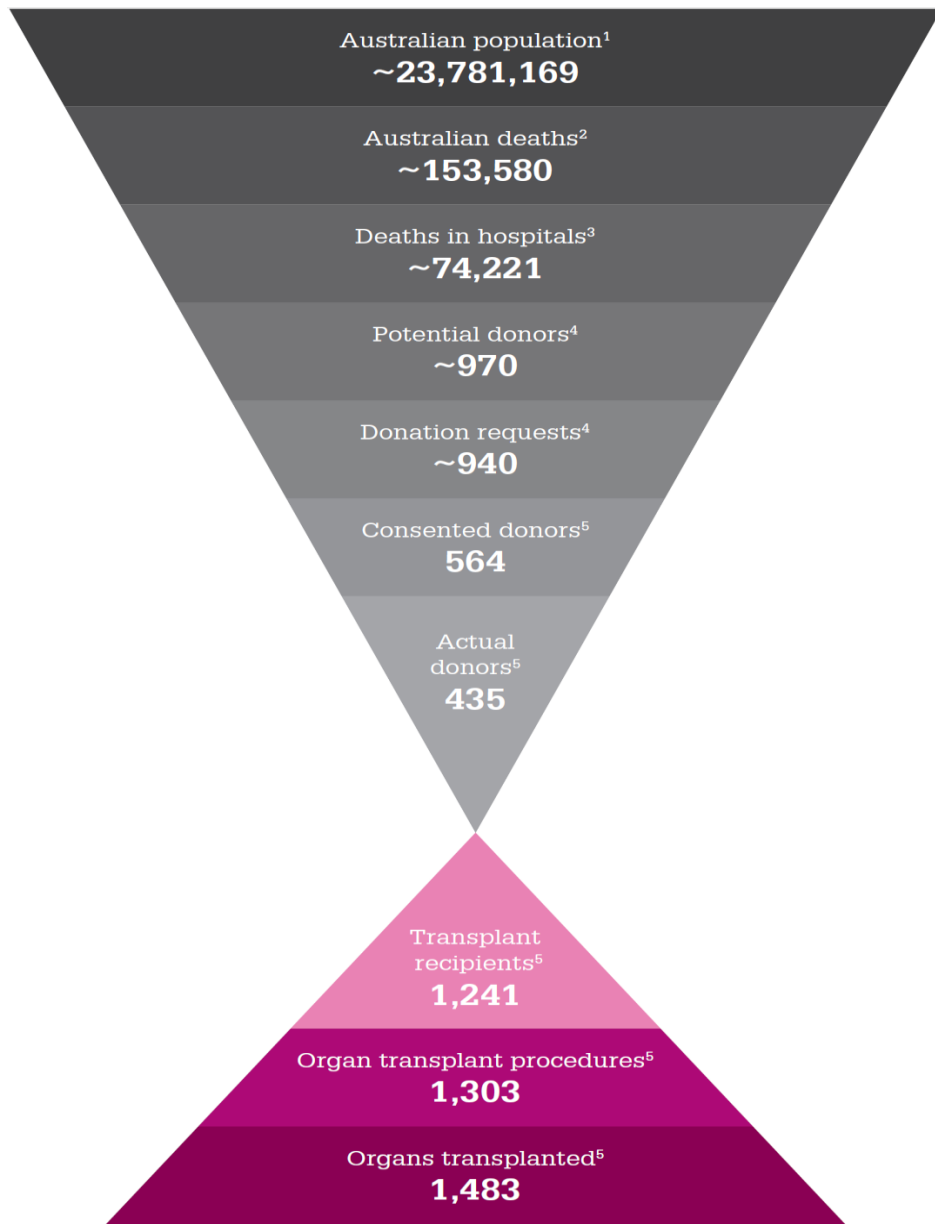
Nurse Donation Specialist
Ballarat Health Services



**How many donors
were there in
Australia in 2015??**



Less than 1% can!



Donation Consent Rates



When donor has registered to donate



When families know donor's decision



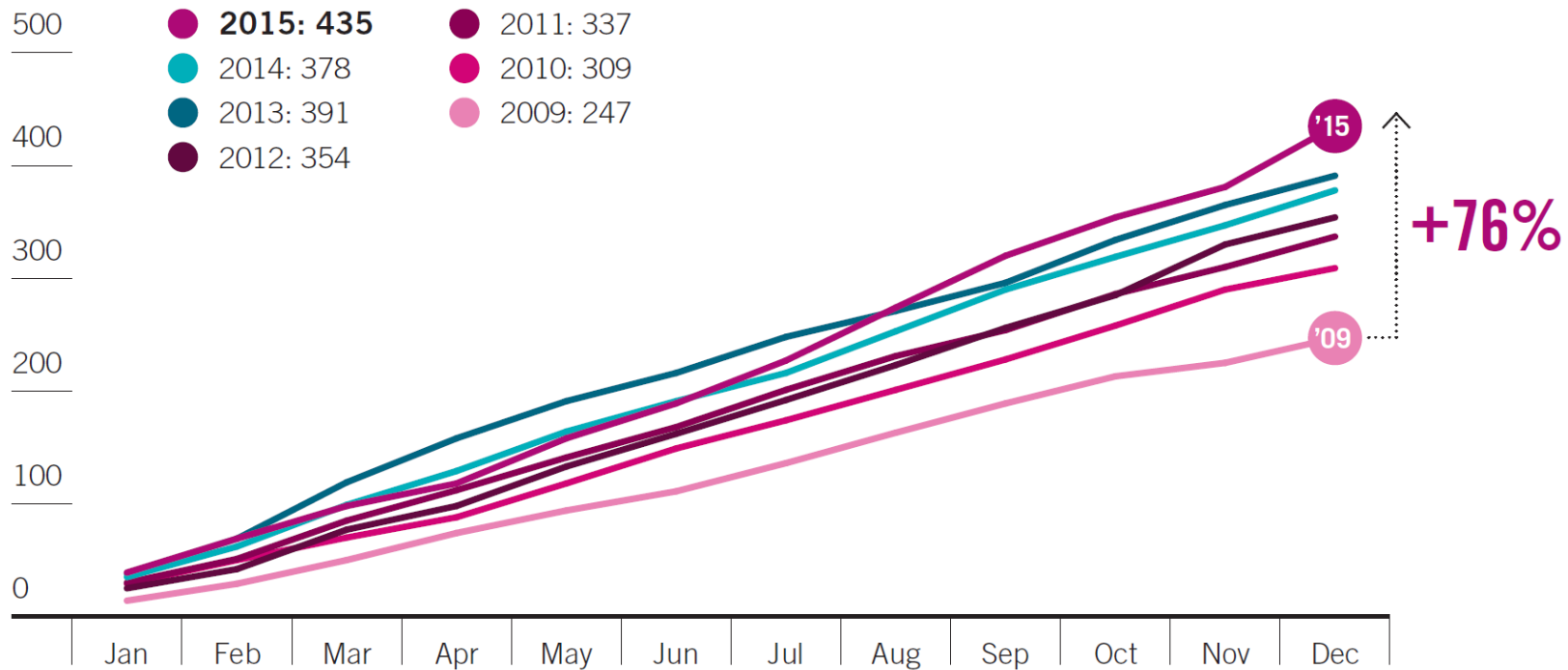
National average



When donor has not registered and family does not know donor decision



Deceased Organ Donors 2009-2015



Who is a potential organ donor?

- Intubated & Ventilated
- Died from brain death or imminently dying and WCRS is planned
- Sufficient BP for organ perfusion
- No evidence of:
 - Current malignancy
 - HIV*
- Age limits 1 - 80 years (loosely)

Call the donor coordinator regarding medical suitability to donate

ICU/ED

Brain Death

Heart

Lungs

Liver

Kidneys

Pancreas

Intestine

Eye tissue

Musculoskeletal tissue

Skin tissue

Heart valves

ICU/ED

Circulatory Death

Heart **

Lungs

Liver

Kidneys

Eye tissue

Musculoskeletal tissue

Skin tissue

Heart valves

Ward/Out of Hospital

Circulatory Death

Eye tissue

Musculoskeletal tissue

Skin tissue

Heart valves

Pathways to organ and tissue donation

Donation after Brain Death (DBD)

1. Catastrophic neurological injury
2. Brain death testing
3. **Death certified**
4. End of life discussion
5. Donation discussion
6. Family consent and authorisations
7. Donation assessment
8. Organ & tissue offer & allocation
9. Retrieval surgery

Donation after Circulatory Death (DCD)

1. Irreversible end stage organ failure or neurological injury
2. Decision to withdraw cardiorespiratory support (WCRS)
3. End of life discussion
4. Donation discussion
5. Family consent and authorisations
6. Donation assessment
7. Organ & tissue offer & allocation
8. WCRS
9. **Death certified**
10. Retrieval surgery

Declaration of Death

In Australia there are two legal definitions of death:

- Irreversible cessation of circulation of blood in the body of a person - ***cardiac death***

OR

- Irreversible cessation of all function of the brain of a person - ***brain death***

Sudden event, accident or illness leading to hospital admission

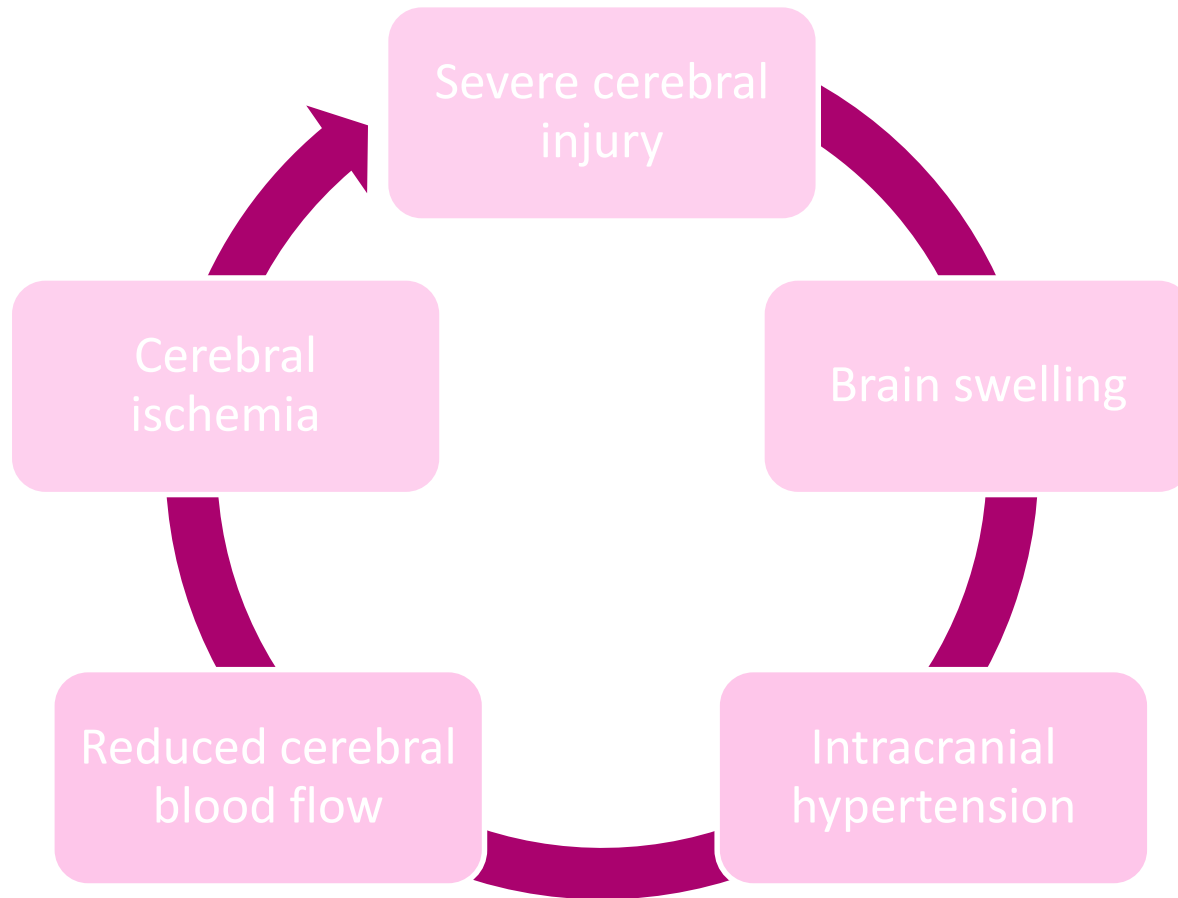


Exploration of all medical treatment options



**Patient declared brain dead via
clinical tests / imaging
OR
decisions are made regarding
futility of ongoing treatment
(DCD)**


Process of Brain Death



As this cycle continues, cerebral blood flow declines to a point at which it ceases altogether and whole brain death occurs

Clinical Testing



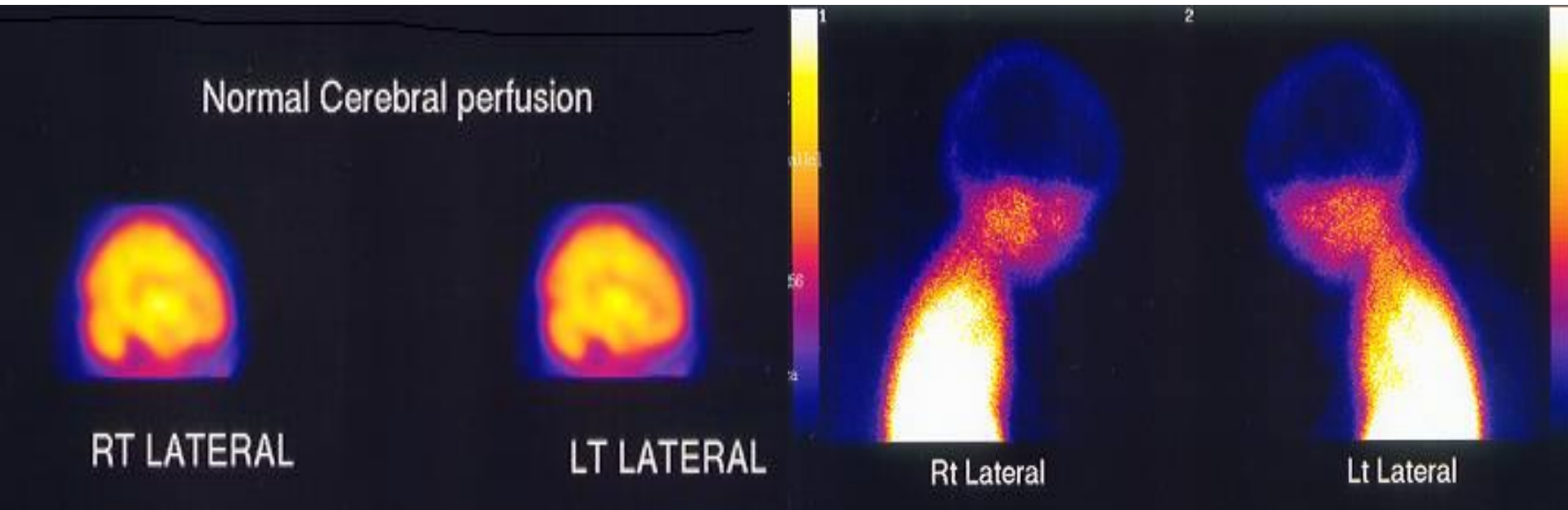
DOCUMENTATION FOR DETERMINATION OF BRAIN DEATH		
		
AUSTRALIAN AND NEW ZEALAND INTENSIVE CARE SOCIETY		Affix patient label here
Hospital: _____		
Known cause of irreversible loss of brain function		
There is acute brain pathology consistent with the irreversible loss of brain function.		
Doctor A: Specify condition _____		
Doctor B: Specify condition _____		
Period of continuous observation of apparent loss of neurological function		
For determination of brain death by clinical examination there has been at least a 4 hour period of observation (24 hours for hypoxic-ischaemic encephalopathy) and mechanical ventilation during which the patient has unresponsive coma, with pupils non-reactive to light, absent cough/tracheal reflex and no spontaneous breathing efforts.		
This period began at (Date and time) _____		
Determination of brain death by clinical examination		
Preconditions	Doctor A Please ✓	Doctor B Please ✓
1. Hypothermia is not present – temperature is >35°C	Specify temperature: _____ °C	_____ °C
2. Blood pressure is adequate (e.g. MAP>60 in an adult)	<input type="checkbox"/>	<input type="checkbox"/>
3. Sedative drug effects are excluded	<input type="checkbox"/>	<input type="checkbox"/>
4. There is no severe electrolyte, metabolic or endocrine disturbance	<input type="checkbox"/>	<input type="checkbox"/>
5. Neuromuscular function is intact	<input type="checkbox"/>	<input type="checkbox"/>
6. It is possible to examine the brain-stem reflexes (including at least one ear and one eye)	<input type="checkbox"/>	<input type="checkbox"/>
7. It is possible to perform apnoea testing	<input type="checkbox"/>	<input type="checkbox"/>
Clinical testing		
1. There is no motor response in the cranial nerve distribution to noxious stimulation of the face, trunk and four limbs and there is no response in the trunk or limbs to noxious stimulation within the cranial nerve distribution	<input type="checkbox"/>	<input type="checkbox"/>
2. There are no pupillary responses to light	<input type="checkbox"/>	<input type="checkbox"/>
3. There are no corneal reflexes	<input type="checkbox"/>	<input type="checkbox"/>
4. There is no gag (pharyngeal) reflex	<input type="checkbox"/>	<input type="checkbox"/>
5. There is no cough (tracheal) reflex	<input type="checkbox"/>	<input type="checkbox"/>
6. There are no vestibulo-ocular reflexes on ice-cold caloric testing	<input type="checkbox"/>	<input type="checkbox"/>
7. Breathing is absent (despite arterial PCO ₂ > 60mmHg (8 kPa) and arterial pH < 7.30)	<input type="checkbox"/>	<input type="checkbox"/>
8. Specify PCO ₂ in mmHg or kPa (circle one) and pH at end of apnoea	PCO ₂ _____ pH _____	PCO ₂ _____ pH _____
Determination of brain death when clinical examination cannot be done:	Doctor A Please ✓	Doctor B Please ✓
1. There is no intracranial blood flow	<input type="checkbox"/>	<input type="checkbox"/>
2. (Delete one as appropriate) This has been demonstrated by either intra-arterial angiography or other suitably reliable method (Specify) _____	<input type="checkbox"/>	<input type="checkbox"/>
We have determined, according to the above procedures, that this patient is brain dead:		
Doctor A (Name): _____		Doctor B (Name): _____
Status: _____		Status: _____
Signature: _____		Signature: _____
Date and time of assessment: _____		Date and time of assessment: _____
Date and time of death (End of the assessment by second doctor) : _____		

DETERMINATION OF BRAIN DEATH

Imaging - Cerebral Angiogram



Imaging - Radionuclide Scan



Flow

No Flow

What is DCD?

- Donation of organs from patients declared dead by cardio-pulmonary criteria
- Prior to the introduction of brain death into the law in the early 80's, ALL organ transplants from deceased donors came from what were then termed “non-heart beating donors” – now DCD



Benefits of DCD

- More organs are available for transplantation
- Allows families to consider donation in scenarios where
 - patients thought unlikely to progress to BD
 - families not accepting of BD diagnosis
 - families of BD patients who wish to be with loved one when heart stops
- Fulfills patient's wishes
- Meets community expectations

Who are the candidates:

- Patients with end stage organ failure for whom end of life care is planned
- Intubated and Ventilated
- Medically suitable to donate but not BD
- CO needs to cease within 90 mins of WCRS



Organ timeframes for DCD

Timeframe in which the organs remains viable for transplantation – warm ischaemic time

- Liver & Pancreas - 30 minutes
- Kidneys - 60 minutes
- Lungs - 90 minutes



DBD Vs DCD

The major differences for Operating Room staff



End of Life conversations had with family



Call made to DonateLife to check the AODR and brief medical suitability

Blood Group (if known)
Height & Weight
Age
Medical Past History



Family donation conversation / donation raised




Donation decision




Referral to DonateLife to engage donor coordinator to attend hospital



Formal written consent with donor family


Australian Government
Organ and Tissue Authority



DonateLife
Electronic Donor Record Form

Instructions for use
The DonateLife EDR Form should be used in the event that the online EDR application is unavailable.
Note: Once availability is restored, all data must be re-entered into the online EDR application.
The DonateLife Medical and Social History Questionnaire is available as a separate document for use as required.
For any questions relating to the DonateLife EDR Form, please contact your State or Territory System Administrator for the EDR.

State and Territory DonateLife Agency and New Zealand contact telephone numbers

QLD	07 3240 2111	SA	08 8378 1671
NSW	02 9903 2801	VIC	06 9340 3333
ACT	02 6244 2222	NT	08 8922 8888
VIC / TAS	03 9347 0408	NZ	+64 9 630 0935

- Confidential -

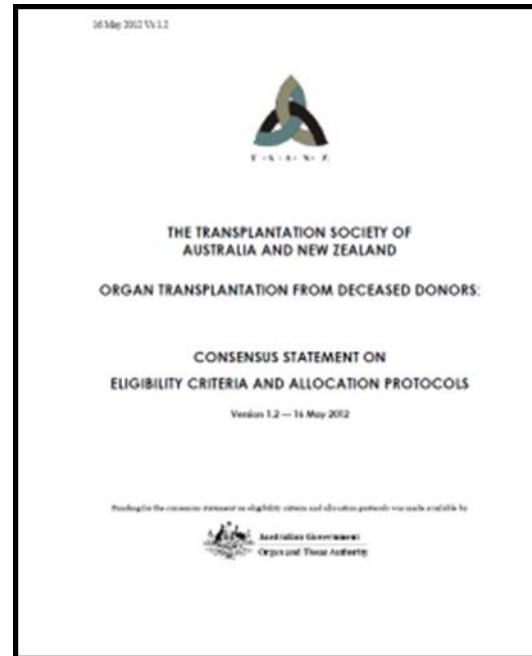
EDR - October 2012 - V1



Medical investigations to assess organ suitability

Blood group, height & weight
Circumstances of death
Past and current organ function
Diagnostic tests & pathology
Serology, NAT & tissue typing
Physical examination

Donor coordinator refers organs to transplant units



Patient transported to theatre



Transporting the donor

DBD:

- Donor is transported monitored and on a ventilator
- Escorted by anaesthetist +/- anaesthetics nurse
- Tech, donor co-ordinator to help escort patient



Transporting the donor

DCD:

- Donor is not monitored or ventilated
- Transport is done swiftly, with care to ensure no delay with lifts or doors between the ICU and OR
- Tech, donor coordinator, bedside nurse/ doctor to help escort the patient
- Care taken to reduce any exposure of the donor to the public (if applicable)



Arrival in theatre

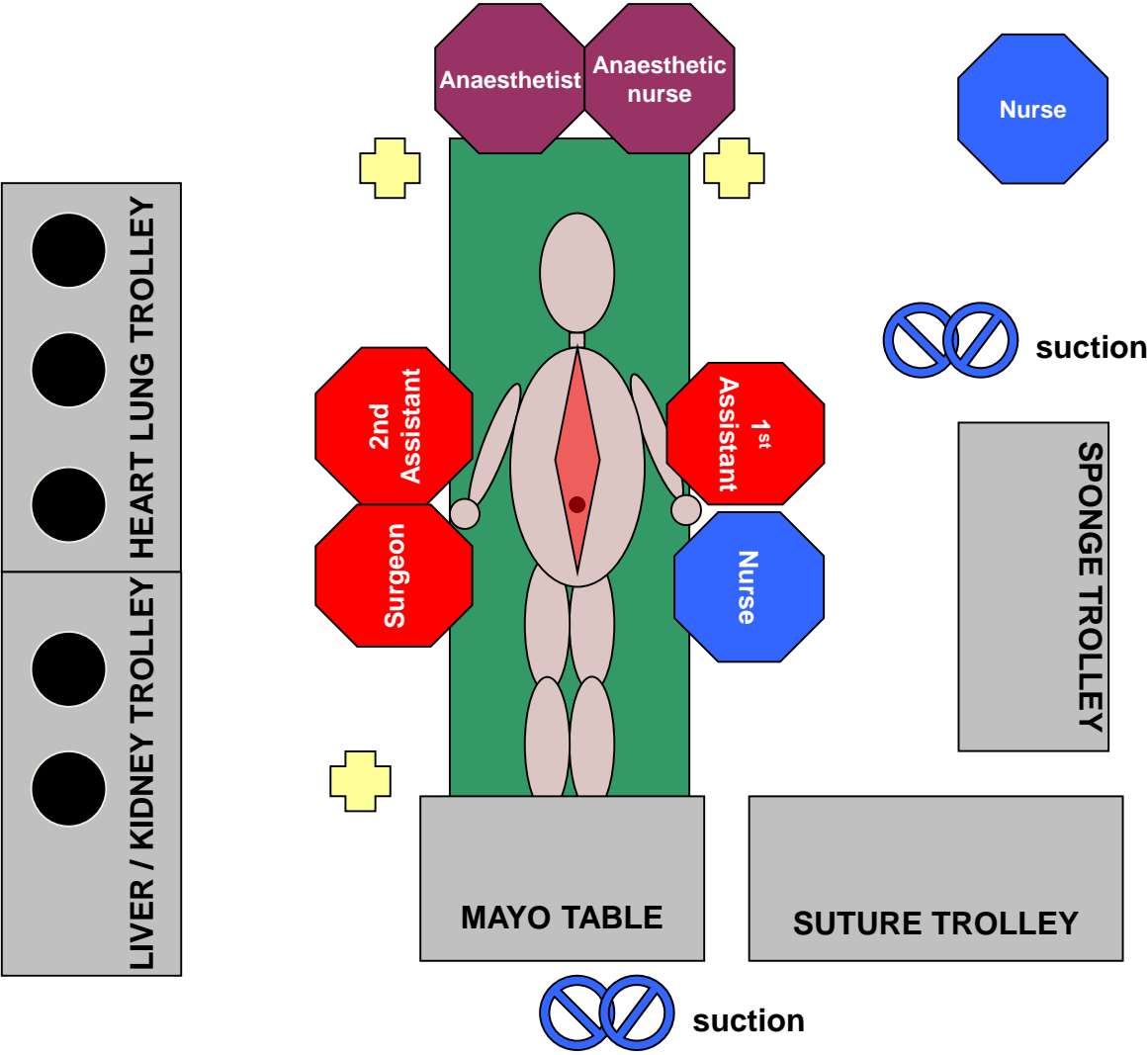
DBD

- formal time out and checking of identification and consents in theatre with all staff to be involved in the retrieval present

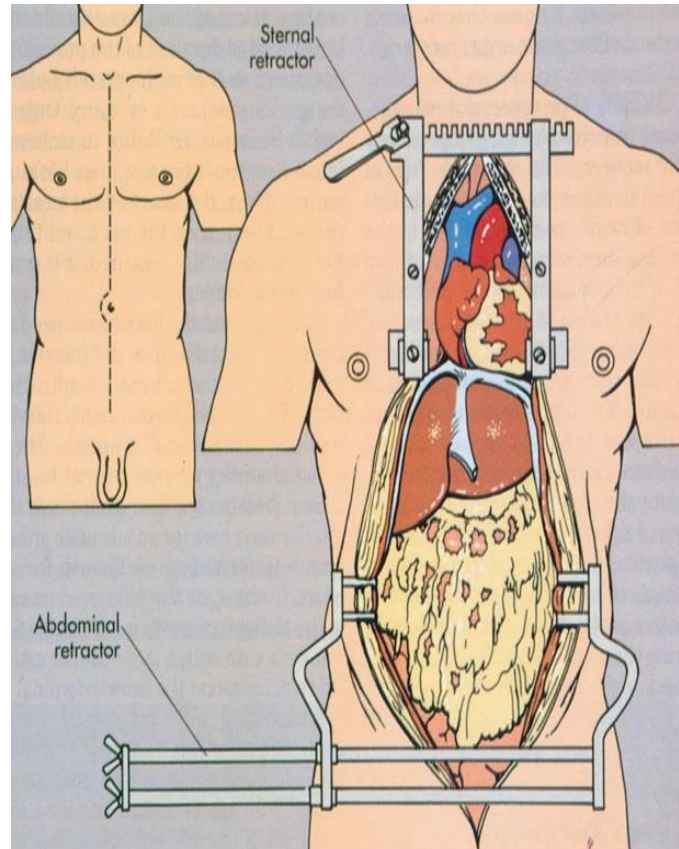
DCD

- checking of identification and consents is done in the DCD pre-meeting in the ICU with all staff to be involved in the retrieval - only a quick ID check is then done on arrival to theatre

Theatre Set-Up



Surgeons commence organ retrieval procedure (DBD)



Cross clamp of aorta



Mechanical ventilation ceased



Donor coordinator packages organs



Surgeons close patient

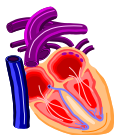


Transplant surgeons leave with respective organs



Cold Storage Ischaemic Times

Heart



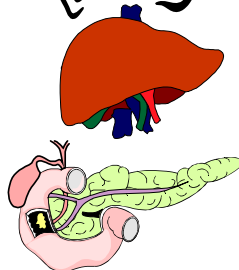
2 - 4 hrs

Lungs



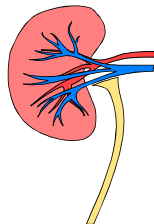
4 - 6 hrs

Liver/Intestine
Pancreas



8 -12 hrs

Kidneys



24 hrs

Family viewing



Staff debrief



THEATRE STAFF

Frequently Asked Questions



Who is present during the retrieval surgery?

- Scrub nurse
- Scout nurse (2 is helpful)
- Donor coordinator (+/- Nurse Donation Spec.)
- Anaesthetist & Anaesthetic nurse
- Abdominal surgeon and assistant
- Thoracic surgeon and assistant
- Theatre technician
- Observers with permission from coordinator

What is the donor coordinator's role in the Operating Suite?

- Donor & donor family advocate
- Coordination of surgical teams
- Communicating with transplant coordinators
- Legal & administrative documentation
 - including coronial requirements
- Education & support of staff
- Packing of organs & documentation
- Preparation of body for viewing / mortuary

How is organ retrieval is different to other surgery?

DBD

- Patient appearance
- Cessation of circulation during retrieval

DCD

- Patient has appearance of deceased person
- More time pressured for reduction of warm ischemic time
- Uncertainty - 90 minute wait scrubbed
- Patient may be re-intubated for lung donation
- Pre-theatre meeting

What is the role of the anaesthetist in retrieval surgery?

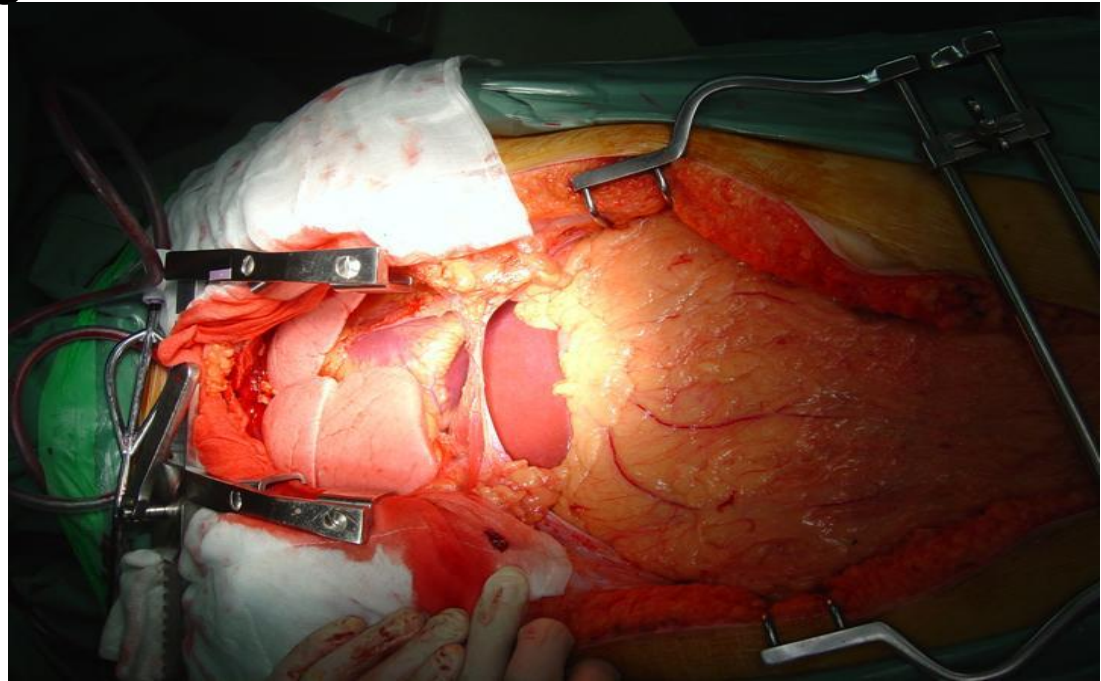
- **Required for both DBD and DCD donation**
- Ensure optimal perfusion / protection of organs during retrieval
- Administration of medication to support retrieval - antibiotic and heparin administration
- Re-intubation for DCD (Lung retrieval only)
- Leadership and team support

****Anaesthetic management of the organ donor document available****



What is intra-operative evaluation?

- Visual appearance
- Trauma to the organ
- Presence of:
 - infection
 - malignancy
 - scarring
 - atherosclerosis
 - shrinkage
- May need to perform biopsy to assess organ suitability



How long does the retrieval surgery take?

- DBD
 - Multi-organ ~ 6 hours
 - Abdominal organs only ~ 4 hours
 - Liver insitu split ~ 8 - 10 hours
 - Kidney only ~ 3 hours
- DCD
 - 90 minutes +/- ~ 2 hours
- OT set up
 - 1 hour

DonateLife

Theatre Nurses Workshop

An organ donation education workshop for theatre nurses



Upcoming workshop:

Wednesday 27th July, 2016

Ballarat Base Hospital, Education Resource Centre – Seminar Room 1 & 2

Workshop program

- Diagnosis and declaration of brain death
- Donation after Circulatory Death (DCD) donation
- The donation process in Intensive Care
- Preparation for organ retrieval
- The organ procurement procedure
- Caring for self and supporting others
- Resources and support strategies
- Donor family and recipient experiences

For further information or to register please contact:

DonateLife Victoria - ph: 8317 7405 or

email: educationvic.donatelife@redcrossblood.org.au



