

# MAXIMIZING THE KIDNEY DONOR POOL WITH DCD

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## DISCLOSURES

- No financial disclosures or conflicts of interest to declare
- Transplant Surgeon and Intensivist
- Groote Schuur Hospital
- University of Cape Town
- South Africa

**BECOME AN ORGAN DONOR**



A photograph of a person's bare torso, showing the chest and abdominal muscles. A small, dark recycling symbol is tattooed on the left side of the chest, just below the armpit. The text "BECOME AN ORGAN DONOR" is printed in white, bold, sans-serif capital letters across the upper chest area.

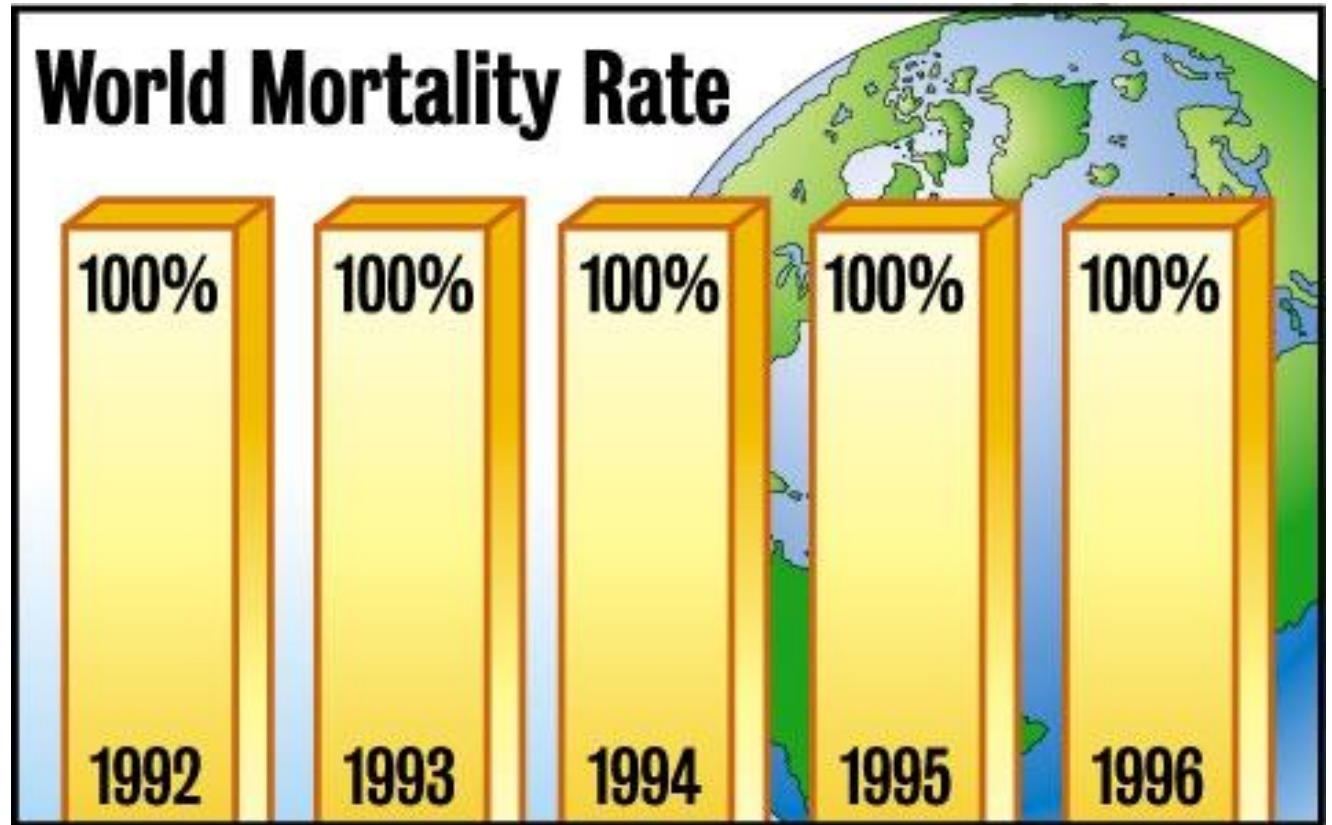
**BECOME AN ORGAN DONOR**

**CORE**  
Center for Organ Recovery & Education

**PA** DEPARTMENT OF  
**HEALTH**  
The People's Government



# HUMAN MORTALITY



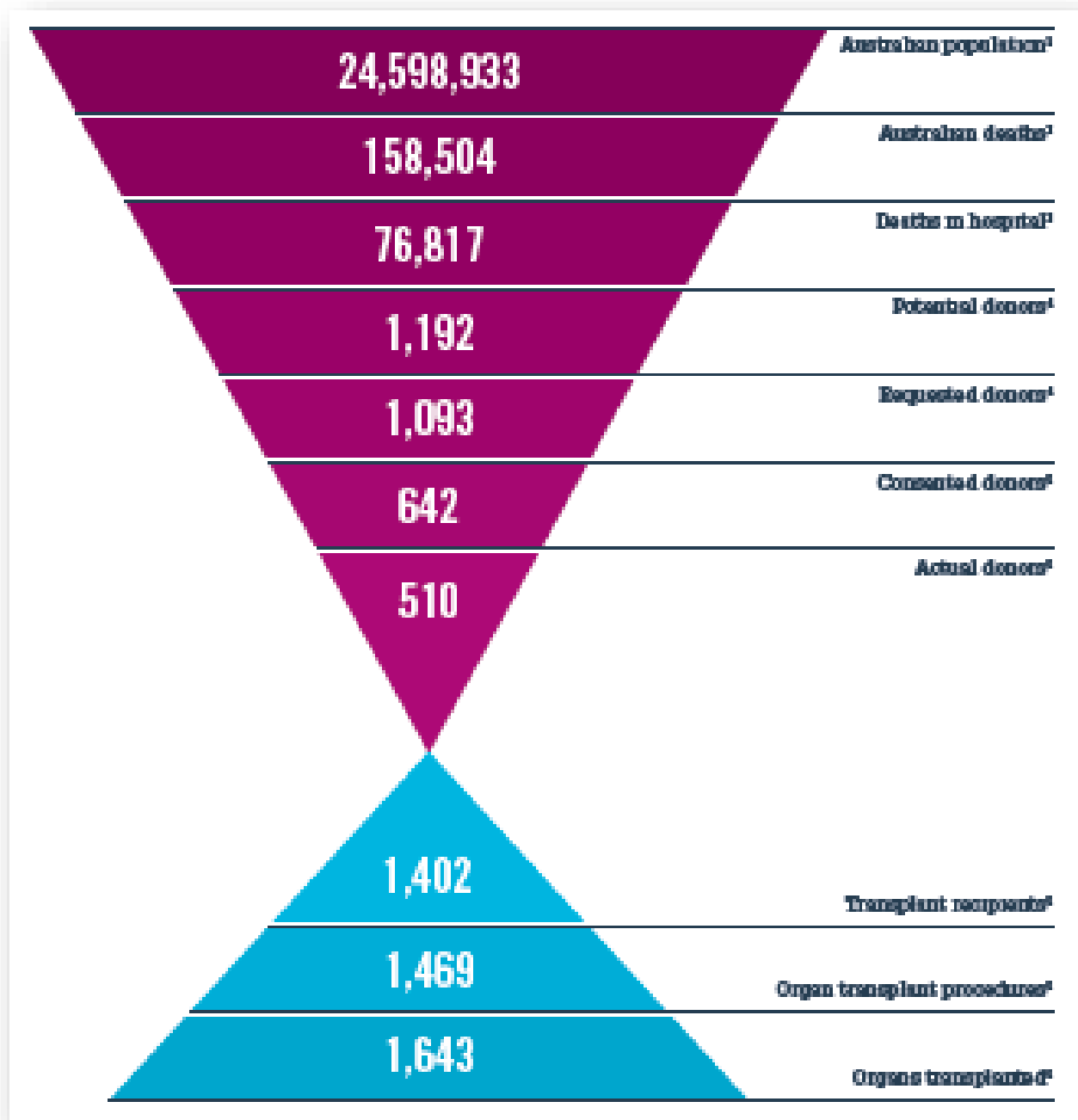


# BRAIN DEATH DIAGNOSIS

< 1%

# Death, donation and transplantation activity

Australia





## REVIEW ARTICLES

# International perspective on the diagnosis of death

D. Gardiner<sup>1\*</sup>, S. Shemie<sup>2</sup>, A. Manara<sup>3</sup> and H. Opdam<sup>4</sup>

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## SOMATIC CRITERIA

**Table 1** Recognition of life extinct: conditions unequivocally associated with death<sup>32</sup>

1. Massive cranial and cerebral destruction
  2. Hemisporrectomy
  3. Massive truncal injury incompatible with life including decapitation
  4. Decomposition/putrefaction (where tissue damage indicates that the patient has been dead for some hours)
  5. Incineration (the presence of full thickness burns with charring of >95% of the body surface)
  6. Hypostasis (the pooling of blood in congested vessels in the dependent part of the body in the position in which it lies after death)
  7. Rigor mortis (the stiffness occurring after death from the post mortem breakdown of enzymes in the muscle fibres)
- In the newborn, fetal maceration

## ICU Deaths in the US

52%

38%

10%

52% died  
despite  
maximal therapy

38%  
withdrawal  
of treatment

10%  
withholding  
treatment

## PREFERRED TERMINOLOGY



CIRCULATORY DEATH



CIRCULATORY  
DETERMINATION OF DEATH

## SCENARIO #6

- Brain dead patient following emergency cardiac surgery for clotted valve
- Family says they do not accept brain death
- Organ donor: Yes or No?





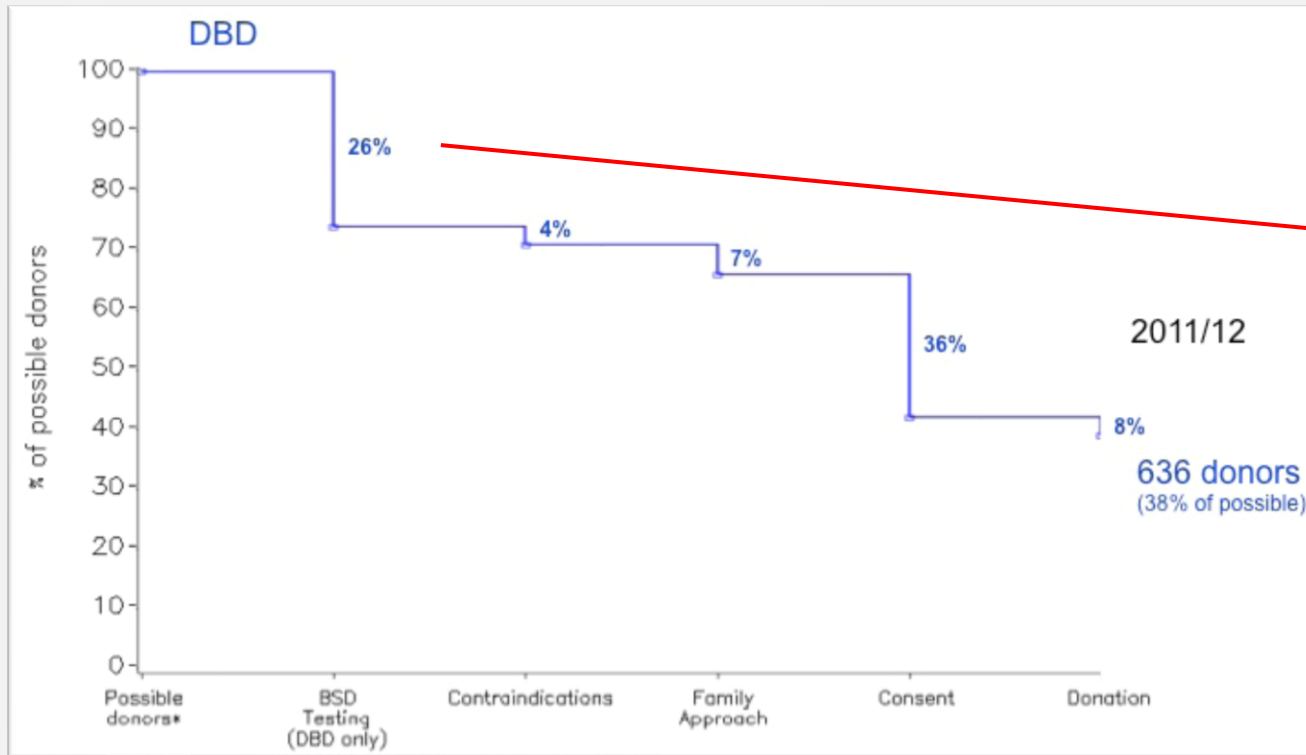
DONATION IS POSSIBLE IN A LOT MORE  
CIRCUMSTANCES THAN WE REALISE



The background of the image is the Union Jack, the national flag of the United Kingdom, which features a red cross with a white border on a blue field. The flag is shown with a slight wavy motion. A dark red rectangular box with a thin white border is centered horizontally across the middle of the image.

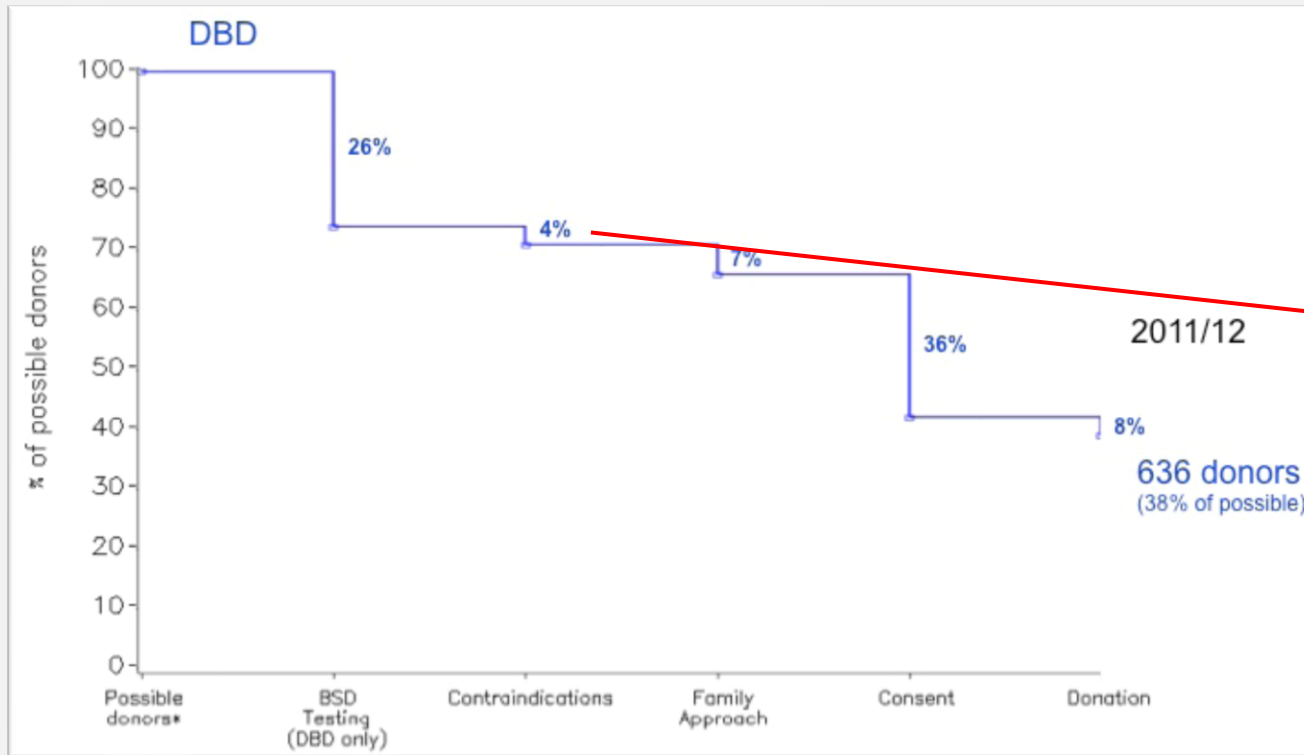
UNITED KINGDOM

# UK POTENTIAL DONOR AUDIT



- Not tested
- Medical contra-indications
- Family not approached
- Consent not given
- Donor unstable

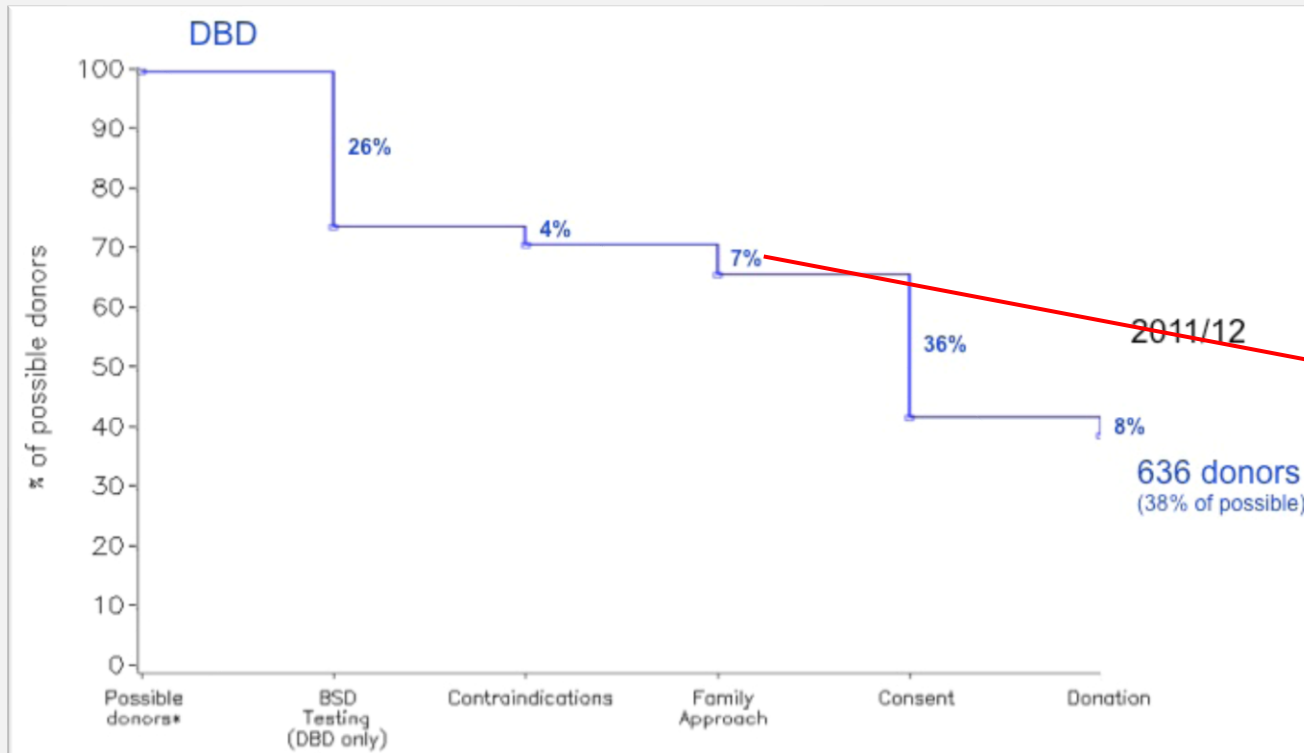
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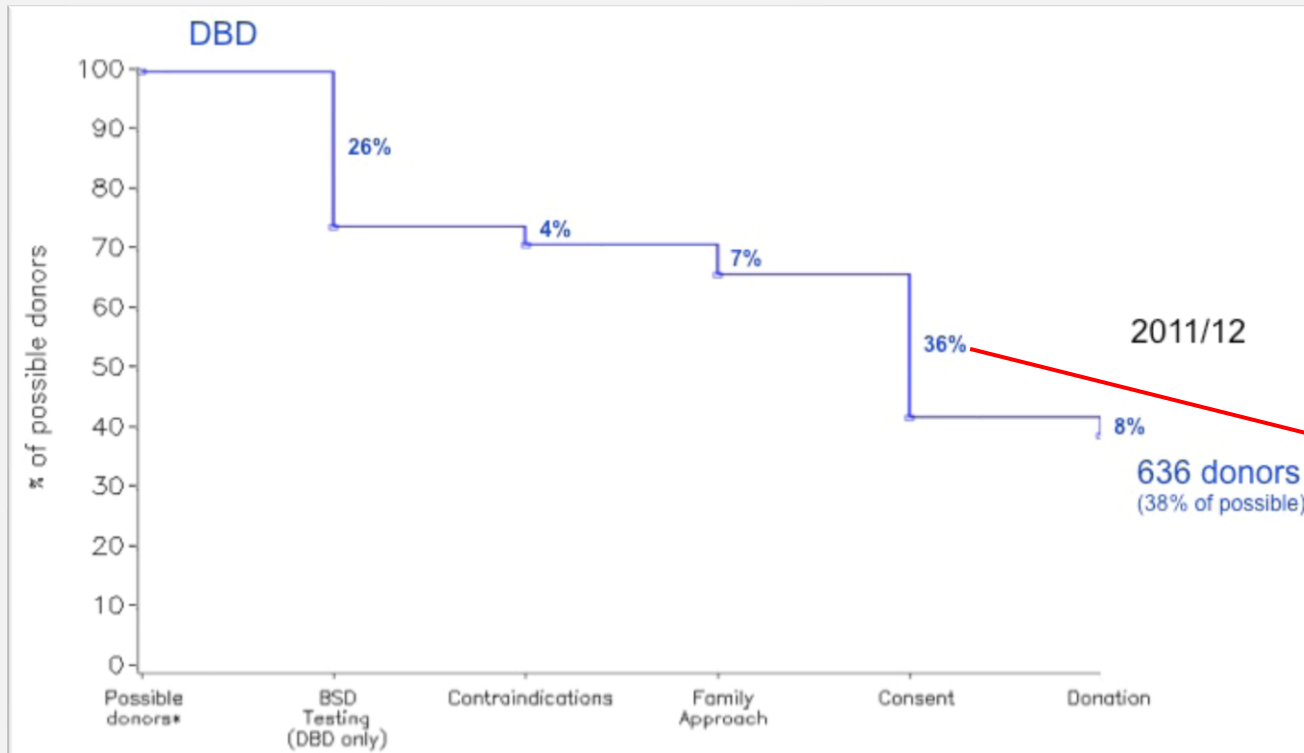


# UK POTENTIAL DONOR AUDIT



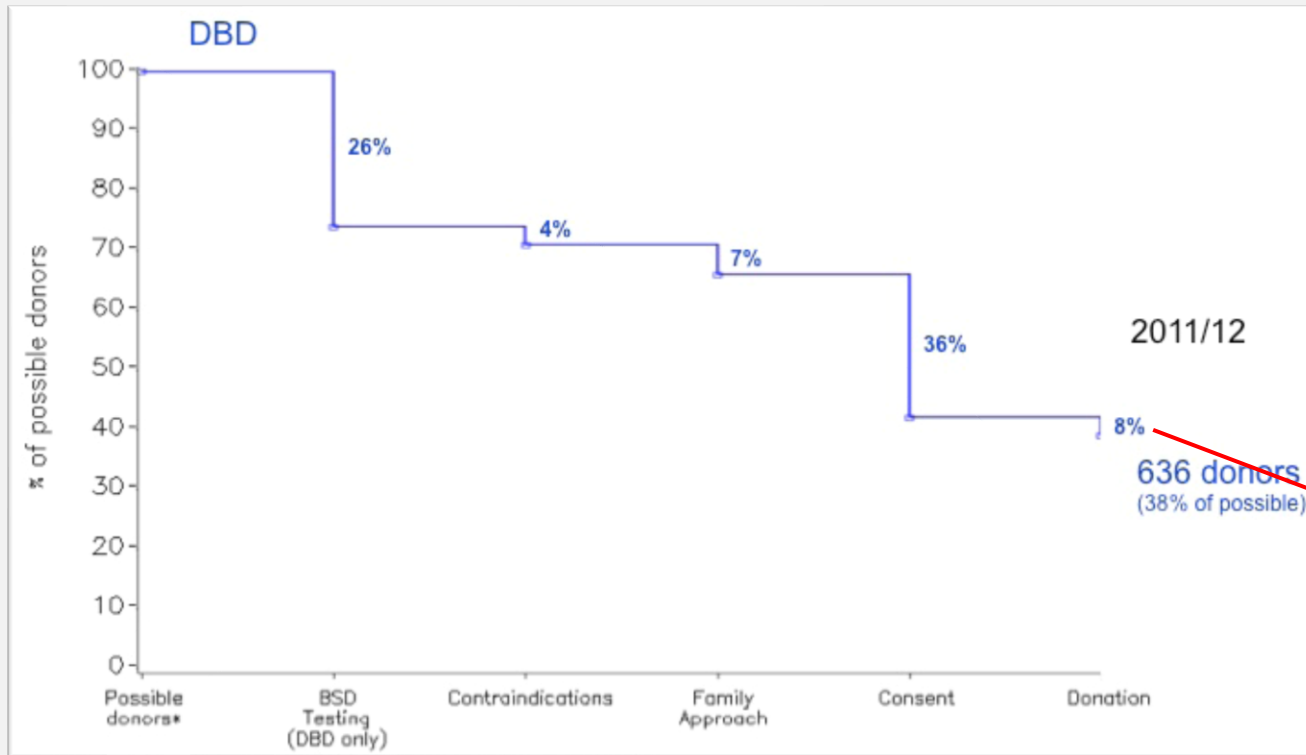
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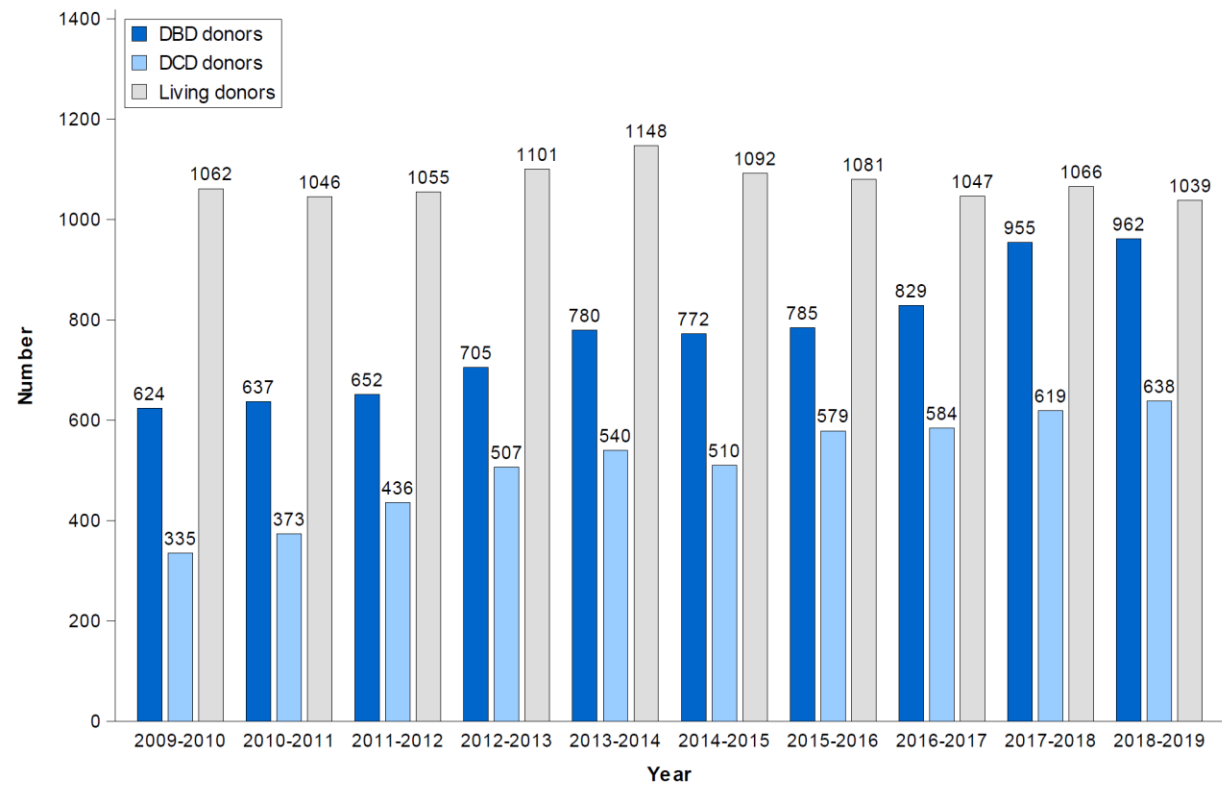
- Not tested
- Medical contra-indications
- Family not approached
- Consent not given
- Donor unstable

## CLINICAL TRIGGERS - UK

- Patients who have had a catastrophic brain injury
  - (a) the absence of one or more cranial nerve reflexes and
  - (b) a Glasgow coma scale score of  $\leq 4$  (not explained by sedation)
  - and/or a decision has been made to perform brainstem death tests, whichever is the earlier; or
- The intention to withdraw life sustaining treatment in patients with a life threatening or life limiting condition that will, or is expected to, result in circulatory death.

# ORGAN DONATION

**Figure 2.2** Number of deceased and living donors in the UK, 1 April 2009 - 31 March 2019





# Factors influencing deceased organ donation consent rates in South Africa

Bookholane H, Muller E, Reyneke M, McCurdie F,  
Steenkamp L, Thomson, D.



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Division of Transplant Surgery,  
Groote Schuur Hospital



# PUBLIC AND PRIVATE

## PUBLIC

- 74 approaches
  - 18 consents
- 24% consent rate
- 2 453 668 people
- 7.34 donors pmp

## PRIVATE

- 9 approaches
  - 5 consents
- 55% consent rate
  - 1 660 668
- 3.31 donors pmp

- 5.59 donors pmp

## CONDITION OF THE POTENTIAL DONOR AT TIME OF REFERRAL

- In 67% of patients required immediate fluid resuscitation with over 1 liter of fluid

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*Was the family aware of the  
poor prognosis?*

<i>Yes</i>	<i>41 (55.4%)</i>	<i>8 (88.9%)</i>
<i>No</i>	<i>32 (43.2%)</i>	<i>1 (11.1%)</i>
<i>Not recorded</i>	<i>1 (1.4%)</i>	<i>0</i>

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CLARITY OF PRIOR COMMUNICATION

# ORGAN DONATION

- End of life care should, as standard of care, explore the patient's wishes towards organ and tissue donation.
- The recommended time for such an assessment is when a decision is made to perform brain death testing or to withdraw life-sustaining treatment



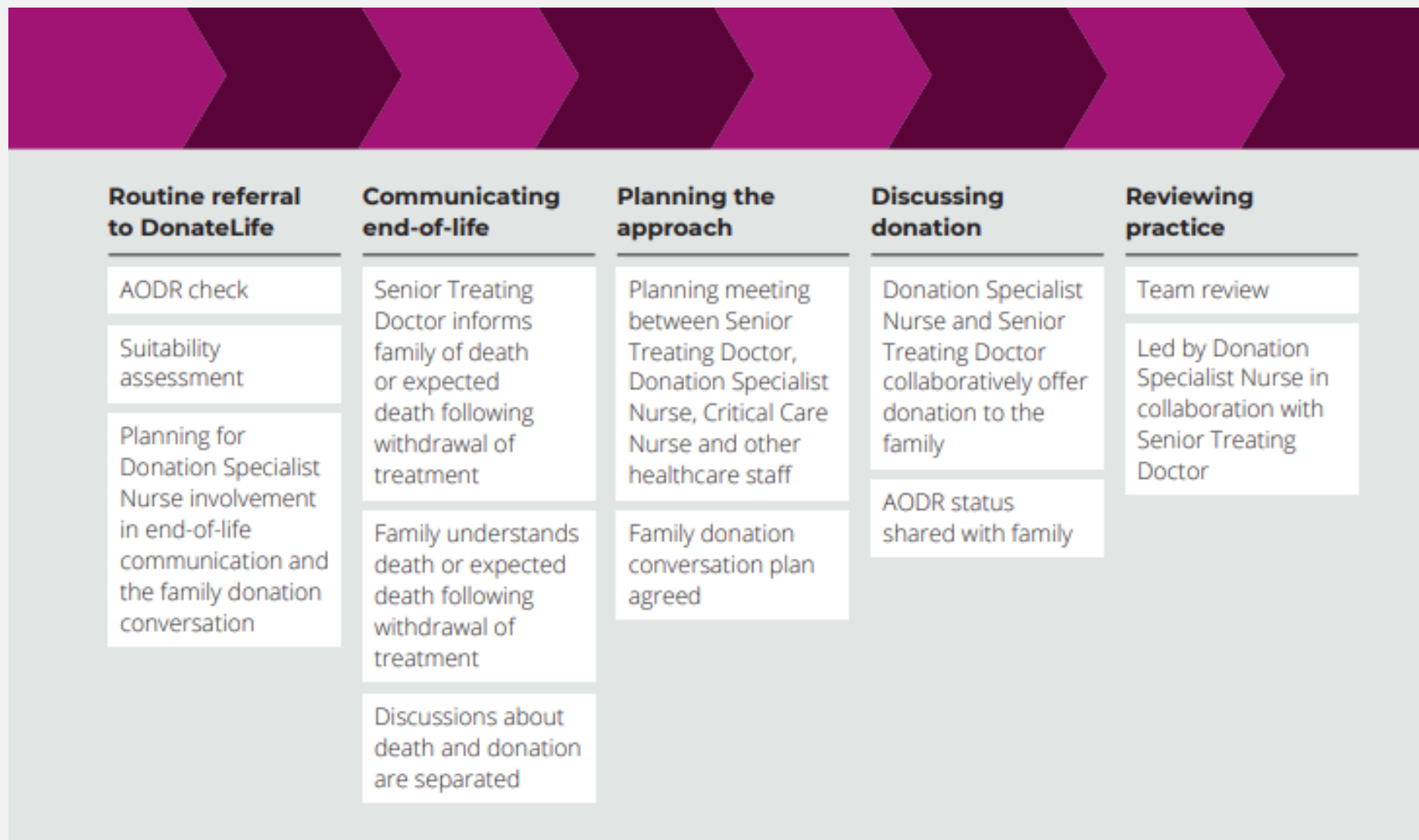




**Australian Government**  
**Organ and Tissue Authority**



# **Best Practice Guideline for Offering Organ and Tissue Donation in Australia**





## Element 1

### Routine referral to DonateLife

Patients in the Intensive Care Unit (ICU) and Emergency Department (ED) for whom there is medical consensus for planned end-of-life care are referred to DonateLife (Agency or hospital Donation Specialist staff). Referral enables DonateLife to assess suitability for donation, check the patient's registration status on the Australian Organ Donor Register (AODR), and facilitates the involvement of a Donation Specialist Nurse to support planning and family communications.<sup>6,10,13</sup>

### Roles and responsibilities

 <b>Senior Treating Doctor</b>	<p>Refers patients in the ICU or ED with planned end-of-life care to Donation Specialist staff in the hospital or DonateLife Agency</p> <hr/> <p>Plans for Donation Specialist Nurse involvement</p>
 <b>DonateLife</b>	<p>Obtains status of patient's registration on the AODR prior to end-of-life conversations</p> <hr/> <p>Provides advice on donor suitability and the donation process</p> <hr/> <p>Plans for Donation Specialist Nurse involvement in family conversations and the donation process</p>


## Element 2

### Communicating end-of-life

The family are informed and understand that the patient has died, or that death is expected following the withdrawal of treatment.

#### Roles and responsibilities

---



##### Senior Treating Doctor

Considers inviting Donation Specialist Nurse into end-of-life meeting


---

Discusses patient care and prognosis with family and ensures there is an understanding of death

---

Separates conversations about death and donation to create time and space for family

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##### Donation Specialist Nurse

Provides advice to treating clinical team in separating death and donation conversations

---

Attends family meeting about death when invited

---

## Element 4

### Discussing donation

Donation is discussed with the family in a collaborative approach involving the Senior Treating Doctor and the Donation Specialist Nurse. Information about donation, including the patient's registration status on the AODR, is shared to assist the family in reaching a fully informed decision about donation.

#### Roles and responsibilities

##### Treating clinical team

Senior Treating Doctor commences the meeting, introduces new staff and confirms family understanding of death

Works in collaboration with the Donation Specialist Nurse in the family donation conversation, as agreed in the planning meeting

Provides further information as required to the family

Provides ongoing support to family

##### Donation Specialist Nurse

Offers donation to family in collaboration with the Senior Treating Doctor

Provides the family with factual information about donation and transplantation, including patient AODR status, and answers any questions

Supports the family in their decision-making

If the family consents, undertakes next steps in the donation process

## Element 5

### Reviewing practice

A team review occurs after each family donation conversation process to provide an opportunity to reflect upon and improve practice.

#### Roles and responsibilities

---

**Treating  
clinical team  
and support  
staff**

Provides feedback on the family donation conversation process

**Donation  
Specialist  
Nurse**

Reflects upon the family donation conversation process

---

Complete the family donation conversation review template

---

# CHECKLIST

### Patient details

Name of patient

DOB, age, sex

Cause of death

Details and status of the determination of neurological death or the planned withdrawal of treatment, and related family conversations  
*(include anticipated timing of family conversations about end-of-life if these have not already occurred)*

Coroners case / details

Transfer from another facility



### Clinical picture

Course of admission

Length of stay in unit

Any complications /  
treatments / misadventure

Current clinical  
considerations

Any previous conditions /  
co-morbidities / high risk  
behaviours

Decision makers in the family / senior available next of kin	
How did the family react to the news of neurological death or the decision to withdraw treatment?	
What family members were present?	
How did they show their understanding that their relative had died or would die?	
Has donation been mentioned or volunteered by family or staff? If so, when was it raised, by whom and what was the outcome?	
Is there any indication of the family's current attitudes towards donation? If so, what is it?	
Are there specific issues that should be considered, such as: — Family dynamics? — Relationships with patient? — Grief risk factors? — Cultural, language or religious considerations for patient and for the family?	

### Family Donation Conversation

Planned time & location of  
FDC

Time:

Location:

FDC attendees

Family:

Staff:

Staff roles

Introductions  
(agree exact wording)

Who will offer donation and  
how? (agree exact wording)

Outcome of AODR check and  
the approach for sharing this  
with the family

**Patient AODR decision** (please tick): ☐ Yes ☐ No ☐ Not registered

Plan for team review  
after FDC

Time:

Location:

# DEBRIEF

Scheduled

Each FDC process should be reviewed and discussed by the team as soon as practical after the FDC. This template may be used to guide the team review meeting and to record team discussions.

Date of team review

Case identifiers:

Referral to DonateLife and organisation of the Donation Specialist Nurse

What was done well?

What are the lessons from this case?

Communication with family about end-of-life

What was done well?

Were there alternative methods that could have been used to describe death or expected death to this family?

Were family conversations about death or withdrawal of treatment separated from the donation conversation? (please tick)

☐ Yes☐ No

Was this appropriate and why?

Team planning

What was done well?

What are the lessons from this case?

Was the following information shared and discussed in the team planning meeting? (please tick)

<b>a</b> Clinical picture of the potential donor	<input type="radio"/> Yes	<input type="radio"/> No
<b>b</b> Outcomes of previous family meetings	<input type="radio"/> Yes	<input type="radio"/> No
<b>c</b> Family dynamics and background	<input type="radio"/> Yes	<input type="radio"/> No
<b>d</b> Australian Organ Donor Register status of potential donor	<input type="radio"/> Yes	<input type="radio"/> No
<b>e</b> Decisions about roles for the Family Donation Conversation	<input type="radio"/> Yes	<input type="radio"/> No
<b>f</b> Agreement on how participants will be introduced	<input type="radio"/> Yes	<input type="radio"/> No
<b>g</b> Discussion of who will offer donation and how	<input type="radio"/> Yes	<input type="radio"/> No
<b>h</b> Planning about location for the Family Donation Conversation	<input type="radio"/> Yes	<input type="radio"/> No

If above information not discussed, why not?

What other information could have been discussed in the team planning meeting to enable the team to better support the family?

Did it feel like a team approach? (please tick)

☐ Yes☐ No

Any suggestions on alternatives that could have been used?

EDUCATION



## Professional training

### Introductory Donation Awareness Training (IDAT) workshop

This multidisciplinary workshop is aimed at a wide range of health professionals and provides an overview of the donation process.

[Introductory Donation Awareness Training \(IDAT\) workshop >](#)

### Core Family Donation Conversation (FDC) workshop

This workshop focuses on family care and communication to support grieving families in donation conversations.

[Core Family Donation Conversation \(FDC\) workshop >](#)

### Practical Family Donation Conversation (FDC) workshop

This workshop extends learning by offering challenging scenarios in targeted role play.

[Practical Family Donation Conversation \(FDC\) workshop >](#)

### Perioperative workshop

Focused on perioperative nurses, this workshop provides an overview of the donation process and organ retrieval surgery.

[Perioperative workshop >](#)

### Janette Hall Professional Training and Development Fund

The Janette Hall fund offers the opportunity to attend training and education through DonateLife agencies.

[Janette Hall Professional Training and Development Fund >](#)

### DonateLife learning portal

DonateLife staff can enter our learning portal to access training and resources.

[DonateLife learning portal >](#)

## ODT CLINICAL

[Home](#)

[Deceased donation](#) ▼

[Living donation](#) ▼

[Retrieval](#) ▼

[Transplantation](#) ▼

[Statistics and reports](#) ▼

[Home](#) / [Deceased donation](#) / [Education and training](#) / The National Deceased Donation Course for ICM Trainees

# The National Deceased Donation Course for Intensive Care Medicine (ICM) Trainees

*"One of the best courses I have attended, high quality is mainly driven by the enthusiasm and great knowledge of the faculty members and leads in the subject of organ donation"* - **Delegate feedback, submitted anonymously**

## Why do deceased donation simulation?



A simulated donor assessment

Deceased donation occurs at times of significant family distress.

It is often not appropriate for junior staff to lead a donation discussion with families. Training in this area is, therefore, not easily facilitated in the clinical arena.

Simulation allows staff training and development in a safe environment whilst enacting real-time events.

## The importance of deceased donation simulation

Organ and tissue donation is an important aspect of end-of-life care. In the United Kingdom the General Medical Council establishes a duty of medical practitioners to identify potential organ donors, be prepared to explore the option of deceased donation when a patient is close to death and follow any national donation procedures (GMC Treatment and care towards end of life: good practice in decision making, 2010).



# **Dead Donor Rule**

**All organ donors are clinically dead**

**Transplant team is not involved in the  
dying process**

# **Donation after circulatory arrest**

**A patient who is expected to die upon withdrawal of life support can potentially donate lungs, liver, kidneys and pancreas**

**Informed consent**

**Co-ordination with the transplant team**

**Procurement operation needs to happen immediately upon certification**

# **A typical scenario**

**Catastrophic stroke with a GCS of 3 but preserved corneal and cough reflexes and sporadic gasping respirations**

**Decision made with family to withdraw life support**

**Organ donation discussed and family consents**

**Patient taken to theatre by treating clinician and palliated (extubated on a morphine infusion and heparin bolus given)**

**Transplant team is scrubbed and waiting in the anteroom**

**Either**

# **Patient arrests**

**Within an hour of being extubated**

**After a period of 5 minutes with no spontaneous cardiac and respiratory effort the treating clinician certifies the patient dead**

**Theatre team proceeds with operation to procure the organs**

**Patient does not arrest**

**Within an hour of being extubated**

**Transferred to end-of-life palliative care ward**

**Transplant team stands down**

**Family informed that organ procurement was not possible**

---

# **Variability in the Determination of Death After Cardiac Arrest: A Review of Guidelines and Statements**

**Sonny Dhanani, MD, FRCPC<sup>1,3</sup>, Laura Hornby, MSc<sup>2,3</sup>,  
Roxanne Ward, RN, BA (Psy)<sup>3,4</sup>, and Sam Shemie, MD, FRCPC<sup>5,6</sup>**

Journal of Intensive Care Medicine  
27(4) 238-252

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DOI: 10.1177/0885066610396993

<http://jicm.sagepub.com>



# HOW LONG DO YOU WAIT?





## FROM THE ABSENCE OF WHAT?

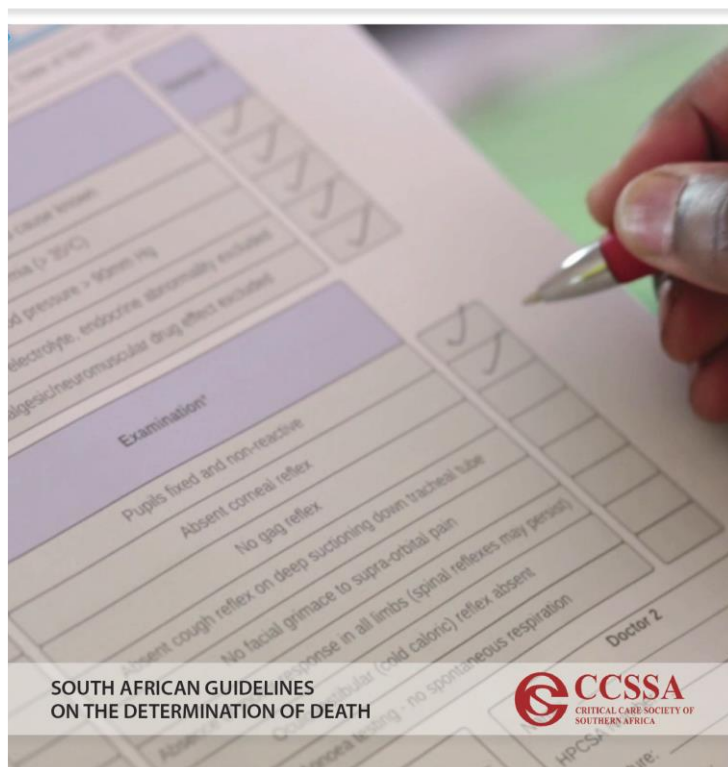
- Respiration?
- Movement?
- Auscultation of heartbeat?
- Palpation of heartbeat?
- ECG flatline?
- A-line flatline?
- Echocardiography flatline?

The background of the image is the Italian flag, featuring three vertical stripes of green, white, and red. The flag is shown with a slight wavy motion, giving it a dynamic appearance. A horizontal black bar with a white border is superimposed over the center of the flag.

ITALY



GERMANY



## South African guidelines on the determination of death

D Thomson,<sup>1</sup> FCS (SA), MMed (Surg), Cert Crit Care; I Joubert,<sup>2</sup> FCA (SA); K De Vasconcellos,<sup>3</sup> FCA (SA), MMedSc, Cert Crit Care; F Paruk,<sup>4</sup> PhD; S Mokongong,<sup>5</sup> MB ChB; R Mathivha,<sup>6</sup> FCPaed (SA), Cert Crit Care, DBS (BM); M McCulloch,<sup>7</sup> FCPaed (SA); B Morrow,<sup>8</sup> PhD, BSc (Physio), PG Dip (Health Research Ethics), PG Dip (Paed Palliative Med); D Baker,<sup>9</sup> MB ChB, FRCP (Lond); B Rossouw,<sup>10</sup> MMed (Paed), Cert Crit Care (Paed); N Mdladla,<sup>11</sup> FCA (SA); G A Richards,<sup>12</sup> PhD; N Welkovic,<sup>13</sup> FCS (SA), Cert Crit Care; B Levy,<sup>14</sup> MB ChB; I Coetzee,<sup>15</sup> BCur (IntA), MCur (Crit Care), PGCH, PhD, Dip Crit Care; M Spruyt,<sup>16</sup> MMed (Chir) Crit Care; N Ahmed,<sup>17</sup> FCS (SA), MMed Surgery (SU), Cert Crit Care; D Gopalan,<sup>18</sup> MB ChB, FCA (SA), Crit Care

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<sup>3</sup> Department of Critical Care, King Edward VIII Hospital, Durban, South Africa; Discipline of Anaesthesiology and Critical Care, School of Clinical Medicine, University of KwaZulu-Natal, Durban, South Africa

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<sup>5</sup> Department of Neurosurgery, University of Pretoria, South Africa

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<sup>7</sup> Paediatric Intensive Care Unit and Transplant Unit, Red Cross War Memorial Children's Hospital and Faculty of Health Sciences, University of Cape Town, South Africa

<sup>8</sup> Department of Paediatrics and Child Health, Faculty of Health Sciences, University of Cape Town, South Africa

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<sup>11</sup> Dr George Mukhari Academic Hospital, Sefako Makgatho University, Johannesburg, South Africa

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<sup>13</sup> Netcare Unitas Hospital, Centurion, South Africa

<sup>14</sup> Netcare Rosebank Hospital, Johannesburg, South Africa

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<sup>17</sup> Consolidated Critical Care Unit, Tygerberg Hospital, Department of Surgical Sciences, Department of Anaesthesiology and Critical Care, Faculty of Medicine and Health Sciences, Stellenbosch University, Cape Town

<sup>18</sup> Discipline of Anaesthesiology and Critical Care, School of Clinical Medicine, University of KwaZulu-Natal, Durban, South Africa

Corresponding author: D Thomson (David.Thomson@uct.ac.za)

Death is a medical occurrence that has social, legal, religious and cultural consequences requiring common clinical standards for its diagnosis and legal regulation. This document compiled by the Critical Care Society of Southern Africa outlines the core standards for determination of death in the hospital context. It aligns with the latest evidence-based research and international guidelines and is applicable to the South African context and legal system. The aim is to provide clear medical standards for healthcare providers to follow in the determination of death, thereby promoting safe practices and high-quality care through the use of uniform standards. Adherence to such guidelines will provide assurance to medical staff, patients, their families and the South African public that the determination of death is always undertaken with diligence, integrity, respect and compassion, and is in accordance with accepted medical standards and latest scientific evidence. The consensus guidelines were compiled using the AGREE II checklist with an 18-member expert panel participating in a three-round modified Delphi process. Checklists and advice sheets were created to assist with application of these guidelines in the clinical environment (<https://criticalcare.org.za/resource/death-determination-checklists/>).

### Key points

- Brain death and circulatory death are the accepted terms for defining death in the hospital context.
- Death determination is a clinical diagnosis which can be made with complete certainty provided that all preconditions are met.
- The determination of death in children is held to the same standard as in adults but cannot be diagnosed in children <36 weeks' corrected gestation.
- Brain-death testing while on extra-corporeal membrane oxygenation is outlined.
- Recommendations are given on handling family requests for accommodation and on consideration of the potential for organ donation.
- The use of a checklist combined with a rigorous testing process, comprehensive documentation and adequate counselling of the family are core tenets of death determination. This is a standard of practice to which all clinicians should adhere in end-of-life care.

S Afr Med J 2021;111(4b):367-380. <https://doi.org/10.7196/SAMJ2021.v111i4b15200> | South Afr J Crit Care 2021;37(1b):41-55. <https://doi.org/10.7196/SAJCC.2021v37i1b-466>

Death is a medical occurrence that has social, legal, religious and cultural consequences requiring common clinical standards for its diagnosis and legal regulation.<sup>[1]</sup> There is no documented case of a person who fulfils the preconditions and criteria for brain death ever subsequently developing any return of brain function.<sup>[2,3]</sup>

Clear medical standards for death certification augment the quality and rigor of death determination.<sup>[4,5]</sup> Currently there are no clinical guidelines on death determination in South Africa (SA), with clinicians using available international guidelines, which vary markedly and are not always applicable to the SA context.<sup>[2-6]</sup> The World Federation

# CHECKLIST

## CIRCULATORY DEATH CERTIFICATION

Summary Recommendations - South African Death Determination Guidelines Checklist

Name: \_\_\_\_\_ Hospital Number: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

### Prerequisites

Inappropriate to attempt cardiopulmonary resuscitation or attempts at cardiopulmonary resuscitation have failed

Intensive support (ventilation, inotropes) withdrawn at \_\_\_\_\_ (time) on  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ (date)

### Examination

Absence of mechanical cardiac function confirmed by one of the following:  
- Absence of central pulse / heart sounds on auscultation  
- Absence of pulsatile flow on intra-arterial BP monitoring  
- Absence of contractile activity on echocardiography

Patient observed for 5 minutes with no respiratory or circulatory activity seen\*

At end of 5 minutes observation period lack of pupillary response to light and motor response to supraorbital pain confirmed

Death certified at \_\_\_\_\_ (time) on \_\_\_\_/\_\_\_\_/\_\_\_\_\_ (date) by

#### Doctor 1

Name: \_\_\_\_\_

HPCSA Number: \_\_\_\_\_

Signature: \_\_\_\_\_

#### Doctor 2 (in case of organ donation\*\*)

Name: \_\_\_\_\_

HPCSA Number: \_\_\_\_\_

Signature: \_\_\_\_\_

\*Any spontaneous return of circulatory or respiratory activity during the 5-minute observation period requires a reset of the observation period from this point

\*\* In cases of possible organ donation after circulatory death one doctor with more than 5 years experience, neither doctor may be involved with the transplant team.

## CONTEXT OF CIRCULATORY DEATH DETERMINATION

- One of the following criteria must be met:
  - It is inappropriate to attempt cardiopulmonary resuscitation
  - Attempts at cardiopulmonary resuscitation have failed
  - Treatment aimed at sustaining life has been withdrawn
- Treatment may be withdrawn because:
  - it has been decided to be of no further benefit to the patient and is not in his or her best interest to continue
  - It is in respect of the patient's wishes via an advanced directive to refuse treatment

## HOW AND HOW LONG?

- The patient should be observed by the person responsible for confirming death for a minimum period of five minutes to establish that irreversible circulatory arrest has occurred.
- The absence of mechanical cardiac function should be confirmed using a combination of the following:
  - absence of a central pulse on palpation
  - absence of heart sounds on auscultation

# INVASIVE MONITORING

- In the hospital setting clinical assessment of absent mechanical cardiac function can be supplemented by one or more of the following:
  - absence of pulsatile flow using direct intra-arterial pressure monitoring
  - absence of contractile activity using echocardiography



INTERMITTENT ELECTRICAL ACTIVITY CAN  
OCCUR UP TO 30 MINUTES AFTER  
COMPLETE LOSS OF CARDIAC OUTPUT



## FINAL CONFIRMATION

- After the five minute period of continued circulatory arrest has passed the absence of pupillary responses to light and of any motor response to supra-orbital pressure should be confirmed. The time of death is recorded as the time at which these criteria are fulfilled.

## CIRCULATORY DEATH CERTIFICATION

Summary Recommendations - South African Death Determination Guidelines Checklist

Name: \_\_\_\_\_ Hospital Number: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

### Prerequisites

Inappropriate to attempt cardiopulmonary resuscitation or attempts at cardiopulmonary resuscitation have failed

Intensive support (ventilation, inotropes) withdrawn at \_\_\_\_\_ (time) on  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ (date)

## Examination

Absence of mechanical cardiac function confirmed by one of the following:

- Absence of central pulse / heart sounds on auscultation
- Absence of pulsatile flow on intra-arterial BP monitoring
- Absence of contractile activity on echocardiography

Patient observed for 5 minutes with no respiratory or circulatory activity seen\*

At end of 5 minutes observation period lack of pupillary response to light and motor response to supraorbital pain confirmed

Death certified at \_\_\_\_\_ (time) on \_\_\_\_/\_\_\_\_/\_\_\_\_ (date) by

**Doctor 1**

Name: \_\_\_\_\_

HPCSA Number: \_\_\_\_\_

Signature: \_\_\_\_\_

**Doctor 2 (in case of organ donation\*\*)**

Name: \_\_\_\_\_

HPCSA Number: \_\_\_\_\_

Signature: \_\_\_\_\_

\*Any spontaneous return of circulatory or respiratory activity during the 5-minute observation period requires a reset of the observation period from this point

\*\* In cases of possible organ donation after circulatory death one doctor with more than 5 years experience, neither doctor may be involved with the transplant team.

WHAT'S MISSING?

## ISSUES TO CLARIFY IN YOUR PROTOCOL

- Patient selection
- Ante-mortem interventions not to the benefit of the patient
  - Heparin and tissue typing bloods
- Location of withdrawal
  - Theatre or ICU / ED
- Time allowed
  - For different organs
- Consideration of normothermic regional perfusion

# SAMJ SPECIAL

- Transplant Special Edition
- Submissions mid-2023
- Editor and fundraiser in chief – Prof Jerome Loveland
- Publication aimed for November 2023



# DONOR SELECTION

Type of DCD

## The Maastricht classification of Donation after Circulatory Death

Category	Type	Circumstances	Typical location
1	Uncontrolled	Dead on arrival	Emergency Department
2	Uncontrolled	Unsuccessful resuscitation	Emergency Department
3	Controlled	Cardiac arrest follows planned withdrawal of life sustaining treatments	Intensive Care Unit
4	Either	Cardiac arrest in a patient who is brain dead	Intensive Care Unit

Category	Circumstances	Controlled/Uncontrolled	Location of care
Category 1	Dead on arrival	Uncontrolled	ED in a transplant centre
Category 2	Unsuccessful resuscitation	Uncontrolled	ED in a transplant centre
Category 3	Anticipated cardiac arrest	Controlled	ICU and ED in transplant and non-transplant centres
Category 4	Cardiac arrest in a brain-dead donor	Controlled	ICU and ED in transplant and non-transplant centres
Category 5	Unexpected arrest in ICU patient	Uncontrolled	ICU in a transplant centre

# PREDICTING ARREST



## TIMINGS - UK

- Liver: 30 minutes (from warm ischaemic time to into the cooler box)
- Pancreas: 30 minutes
- Lungs: 60 minutes (from onset of functional warm ischaemia to mechanical re-inflation of lungs)
- Kidney: 120 minutes - then reassess with regard to logistics possibly another 2 hours

# ANTE MORTEM INTERVENTIONS

- Heparin 25 000 U
    - If not felt to hasten death
  - Infectious screening
  - Organ assessment investigations
  - Tissue typing
- 
- Not wires, ECMO cannulas, not cleaned and draped



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SAMJ **RESEARCH**

# A 10-year analysis of organ donor referrals to a South African tertiary public sector hospital

**T du Toit,<sup>1</sup> MMed (Surg); K Manning,<sup>1</sup> MSc (Med); D Thomson,<sup>1</sup> MMed (Surg); F McCurdie,<sup>2</sup> B Nursing; E Muller,<sup>1</sup> PhD**

<sup>1</sup> *Department of Surgery, Faculty of Health Sciences, University of Cape Town, and Groote Schuur Hospital, Cape Town, South Africa*

<sup>2</sup> *Transplant Co-ordinator, Groote Schuur Hospital, Cape Town, South Africa*

**Corresponding author:** T du Toit ([dutoitjm@yahoo.com](mailto:dutoitjm@yahoo.com))

**Methods.** This was a retrospective descriptive study of consecutive deceased donor referrals at Groote Schuur Hospital, Cape Town, SA (from January 2007 to December 2016), utilising a regional donor referral registry. Qualitative and quantitative data were collected and presented as descriptive statistics and temporal trends.

**Results.** Over the 10-year study period, 861 possible organ donors were referred, with a steady increase in the number of referrals over time. Of the referrals, 514 (59.7%) were eligible for donation of at least one solid organ. Of the 508 families that were approached for consent to donation, 342 declined consent for a variety of reasons, resulting in a consent rate of 32.7%. Ultimately, at least one solid organ was obtained from 159 of the 166 consented donors. Despite the increasing number of possible and eligible donors, a statistically significant decline in consent rate was observed over time ( $p_{\text{trend}}=0.023$ ). Furthermore, increasing trends in medical (as opposed to trauma) ( $p_{\text{trend}}<0.001$ ) and extended criteria (as opposed to standard criteria) donor referrals ( $p_{\text{trend}}<0.001$ ) were observed over the 10-year study period.



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**P.058**

**Kidney Transplantation Utilising Donors After Circulatory Death – The First Report from the African Continent**

Tinus Du Toit, Kathryn Manning, David Thomson, Elmi Muller  
Department of Surgery, University of Cape Town, Cape Town,  
South Africa.

**Results:** 13 DCD procurements were performed, with no kidneys discarded. Utilised donors were young (median age 22 years; IQR 21-32) with well-preserved renal function (median terminal serum creatinine 86  $\mu\text{mol/l}$ ; IQR 73-181). 26 Renal transplants were performed with a mean cold ischaemic time of 11 hours (IQR 8-14). Cumulative incidence of DGF was 65.4%. The median length of stay was 20 days (IQR 16-28) in those who experienced DGF and 11 days (IQR 9-16) in those who did not. 30-Day morbidity (other than DGF) was 19.2% (Figure 2). Graft survival at 1, 2 and 5 years were 100%, 95.8% (95% CI 73.9% - 99.4%) and 83.6% (95% CI 56.1%-94.8%) respectively (Figure 3). Patient survival at 1, 2 and 5 years was 92.3% (95% CI 72.6-98.0), as no deaths occurred between 1 and 5 years post-transplant

## CONTEXT



- 31.7 donors per million population



- 47 donors per million population



- 22.5 donors per million population



- 16.3 donors per million population



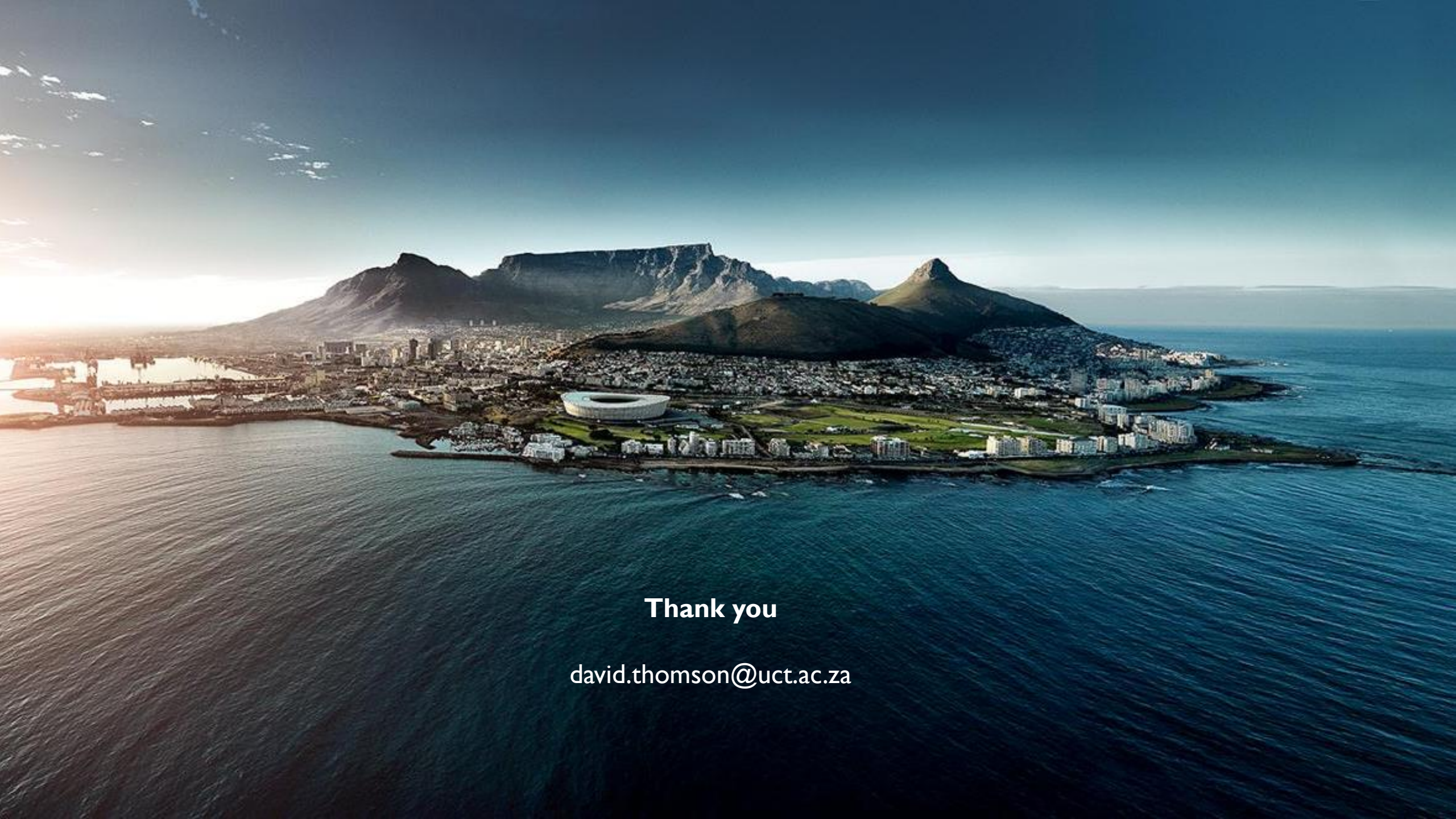
- 1.6 donors per million population



CONSENT IS LINKED TO HOW WE COMMUNICATE  
AND COMPASSIONATELY HANDLE END OF LIFE  
CARE WITH THE FAMILY

A family will always have just lost a loved one





**Thank you**

david.thomson@uct.ac.za





LOVING  
MEMBER OF  
JAMES SINCLAIR  
WHO DIED  
AT MURDISTON COTTAGE  
17th APRIL 1871 AGED 31 YEARS  
AND OF  
ELIZABETH FROWN  
HIS WIFE  
WHO DIED IN EDINBURGH  
MARCH 18th 1874  
AND OF  
THEIR ONLY SON  
THOMAS  
BORN 18th APRIL 1841 IN CANADA

JAMES MACMARTIN  
BORN 17th APRIL 1841  
DIED 17th APRIL 1871  
AND OF  
ANNIE MACCUBBEN  
BORN 17th APRIL 1841  
DIED 17th APRIL 1871

THE GRAVE OF  
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