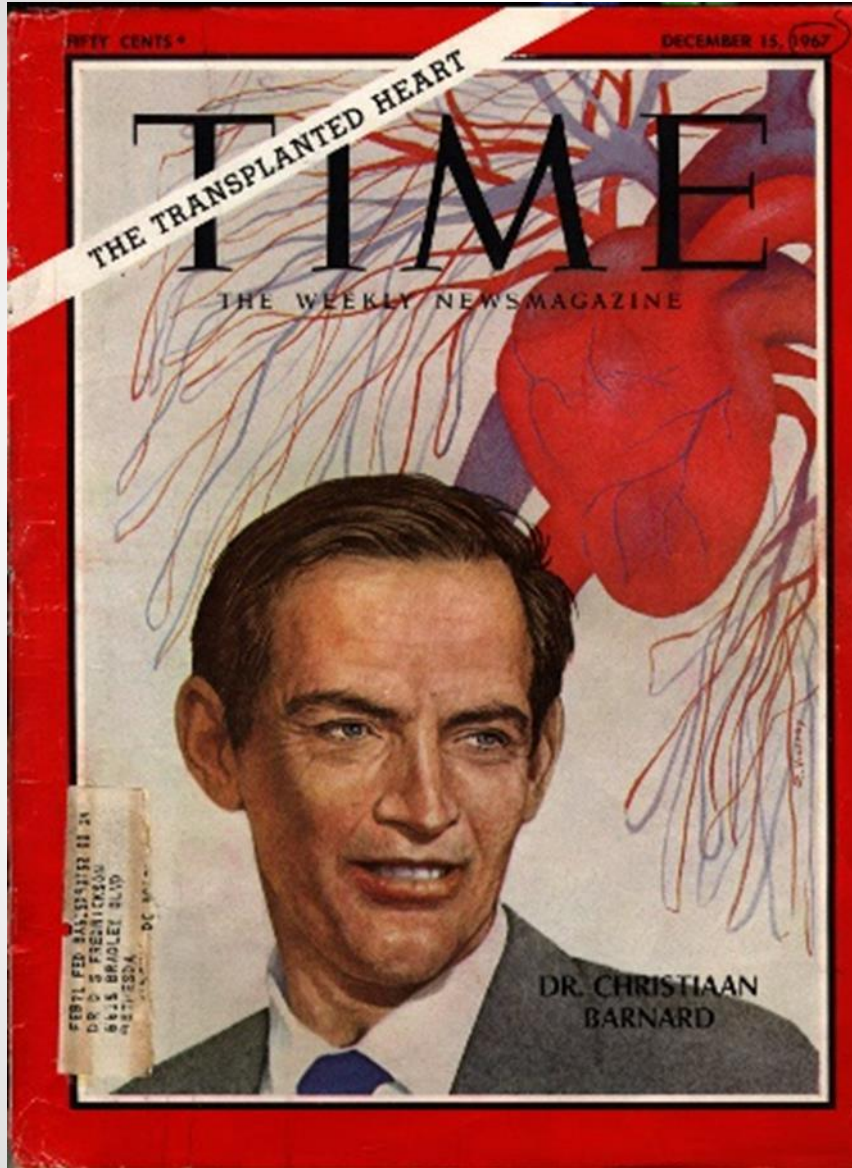


ORGAN AND TISSUE DONATION

Fiona McCurdie

August 2018



PLAN

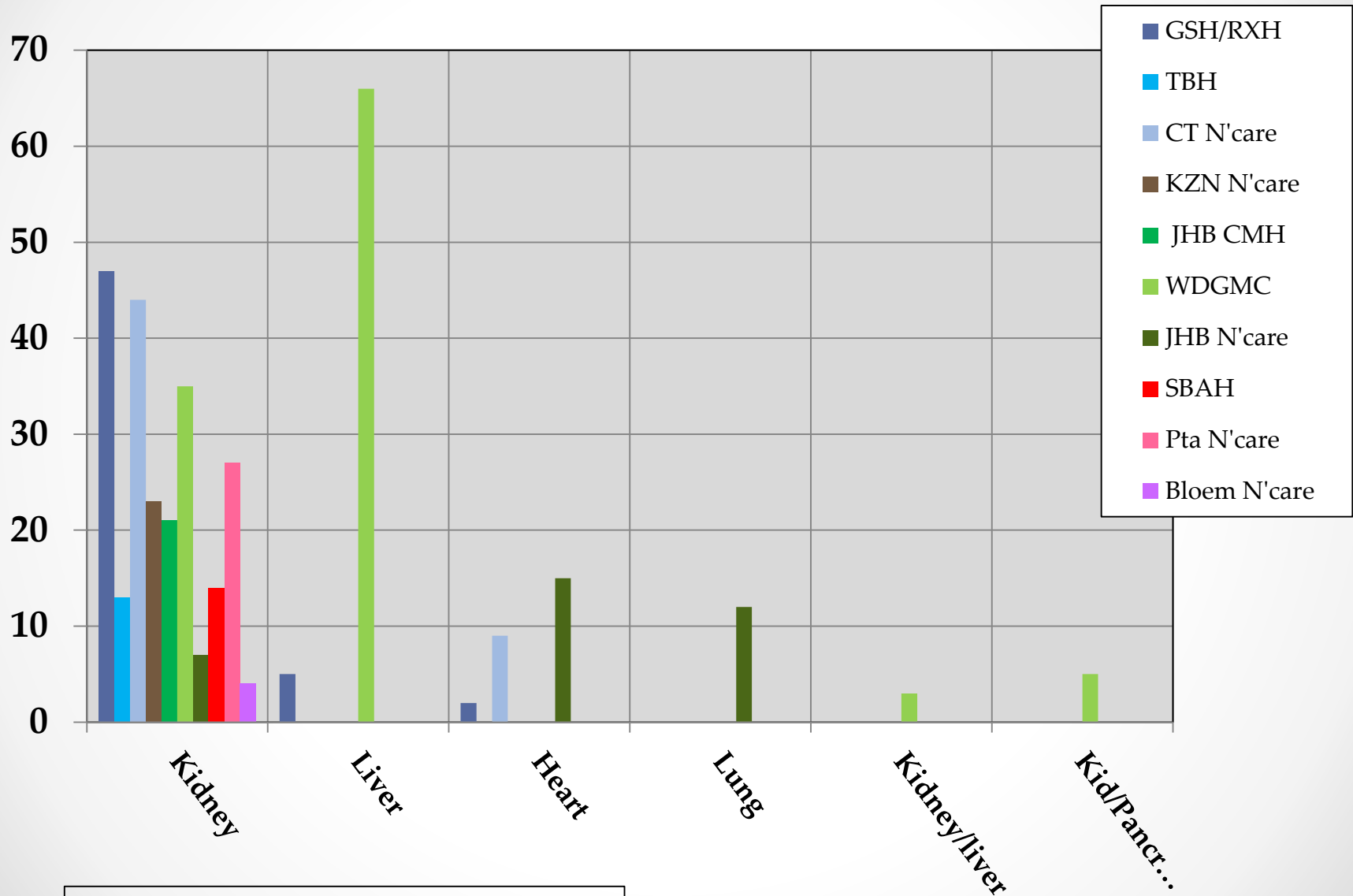
1. Overview of SA situation
2. Living Donation
3. Deceased Donation
4. Consent Issues
5. Tissue Donation

1. Overview of Organ Donation (and Transplantation) in SA

The SA Crisis

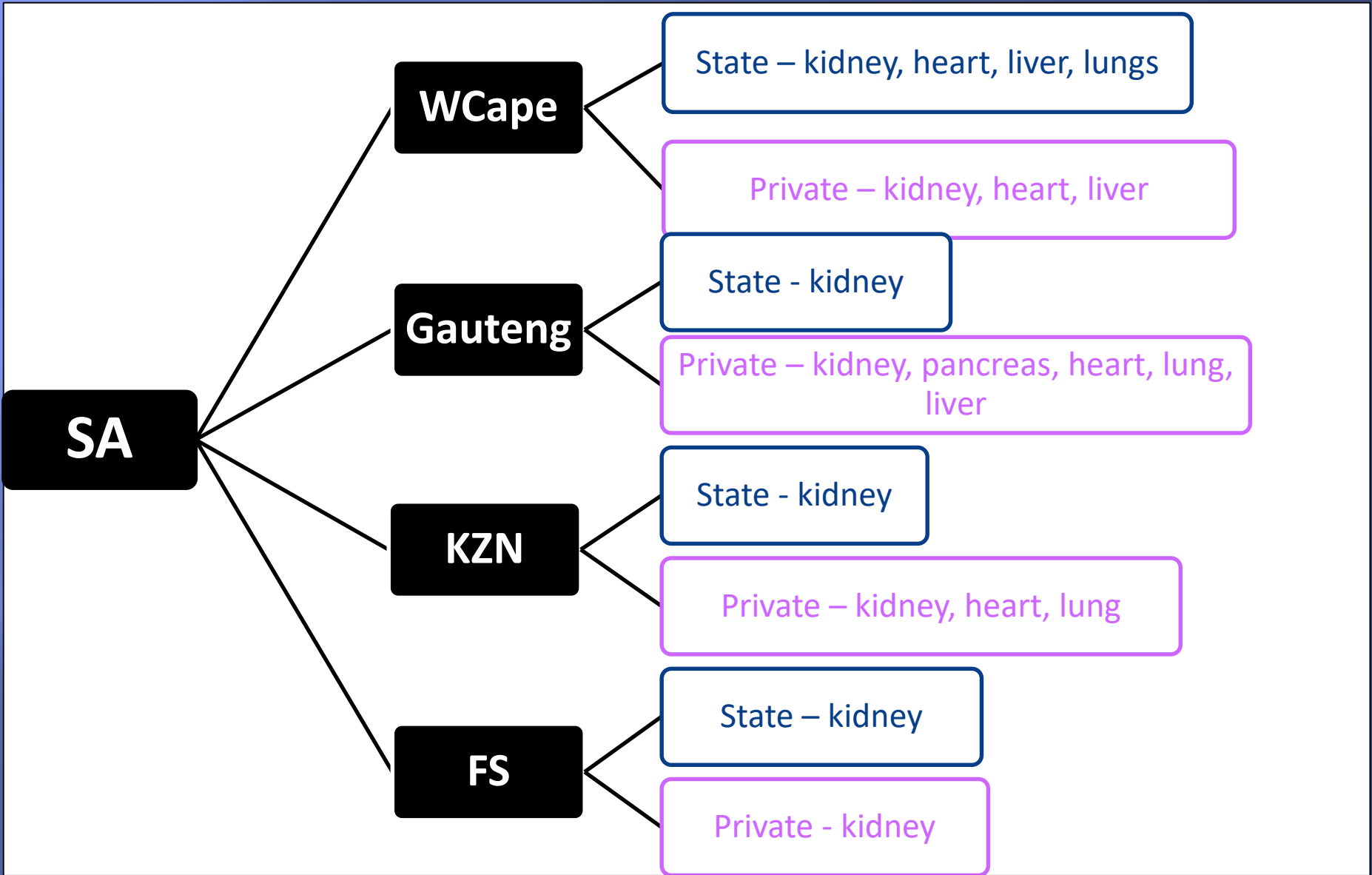
- 🚑 **NEED** for organs far exceeds **supply** of organs
- 🚑 350 - 400 liver, heart, lung or kidney transplants performed in whole country each year
- 🚑 **Over 2000** people on waiting lists
- 🚑 **33%** of patients on cardiac and liver waiting lists die while waiting
- 🚑 Restrictions on dialysis in State Sector

SA Transplants 2015



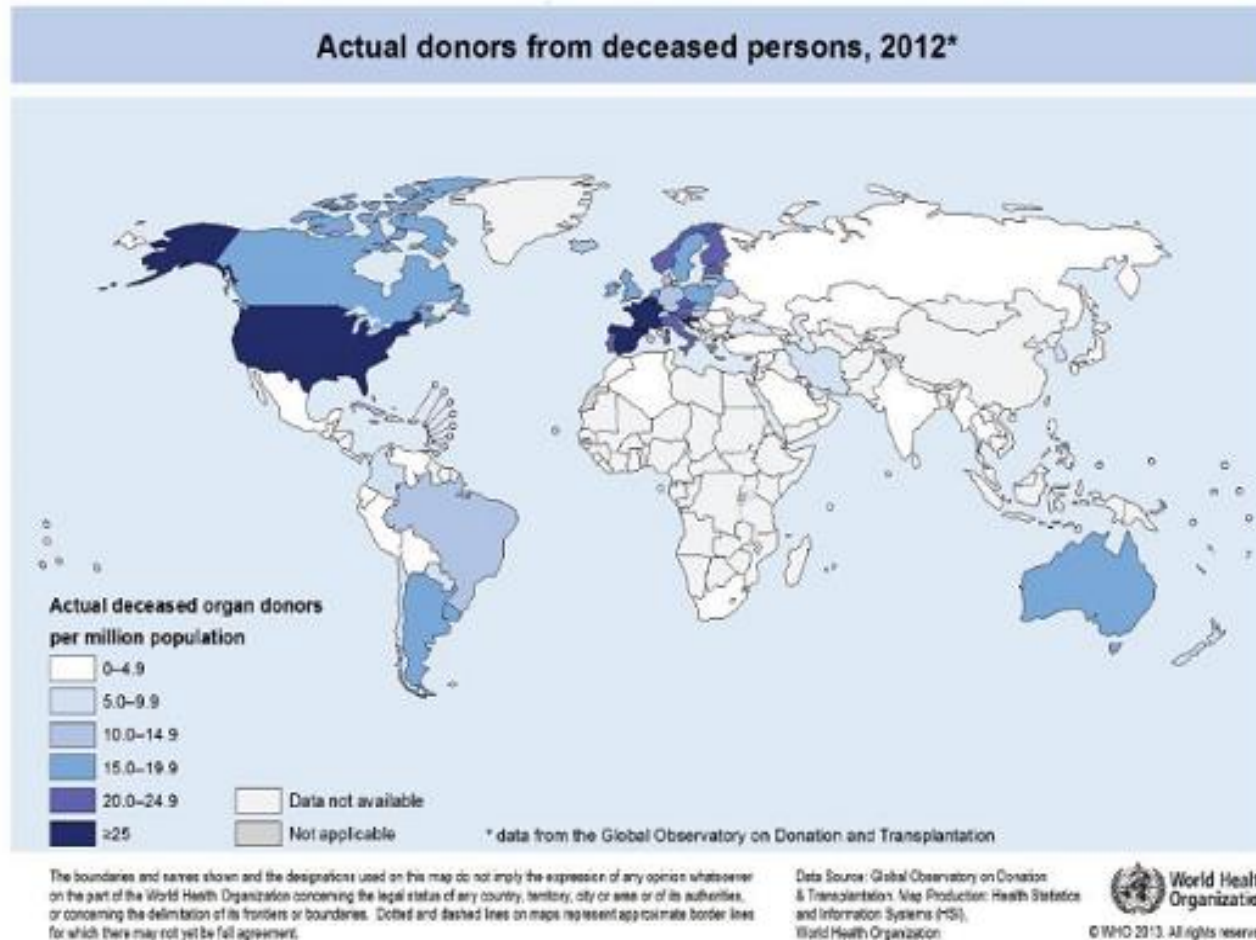
Statistics supplied by Organ Donor Foundation

Which organs are transplanted where...?



ORGAN DONATION GLOBALLY

Source: Global Observatory on Donation & Transplantation (WHO/ONT); Courtesy: B. Dominguez-Gil, ONT



Donor rates

Spain 30pmp USA 20 – 30pmp UK 16pmp SA 1.4pmp

HOW DO WE COMPARE?

SPAIN

- 🚚 Population 48million
- 🚚 480 transplant coordinators
- 🚚 35.1 Donors pmp
- 🚚 Half the transplant coordinators are nephrologists or intensivists

SOUTH AFRICA

- 🚚 Population 50 million
- 🚚 20 transplant coordinators
- 🚚 1.4 Donors pmp
- 🚚 Coordinators are ICU or trauma trained registered nurses (one is a paramedic)

Organ Sharing and Allocation

- Regional sharing for kidneys
- National Sharing for Liver, Heart and Lungs
- Referral Protocols for non urgent cases
- Referral protocols for urgent/priority cases
- Public and private sector co-operation
- Logistics
- Flights/timing
- Tissues – SATiBA
- Corneas, skin, bone, heart valves

Where we are today.....

Transplantation

- Accepted form of treatment for end stage organ disease
- Improved surgical techniques
- Increased understanding of immunological issues
- Improved medication
- Better outcomes

Organ Donation

- Lack of organs and tissues available for transplantation
- Families refusing consent for donation
- Colleagues not referring potential donors
- Colleagues discouraging consent

Strategies to increase Living and Deceased

Donation... And Transplantation

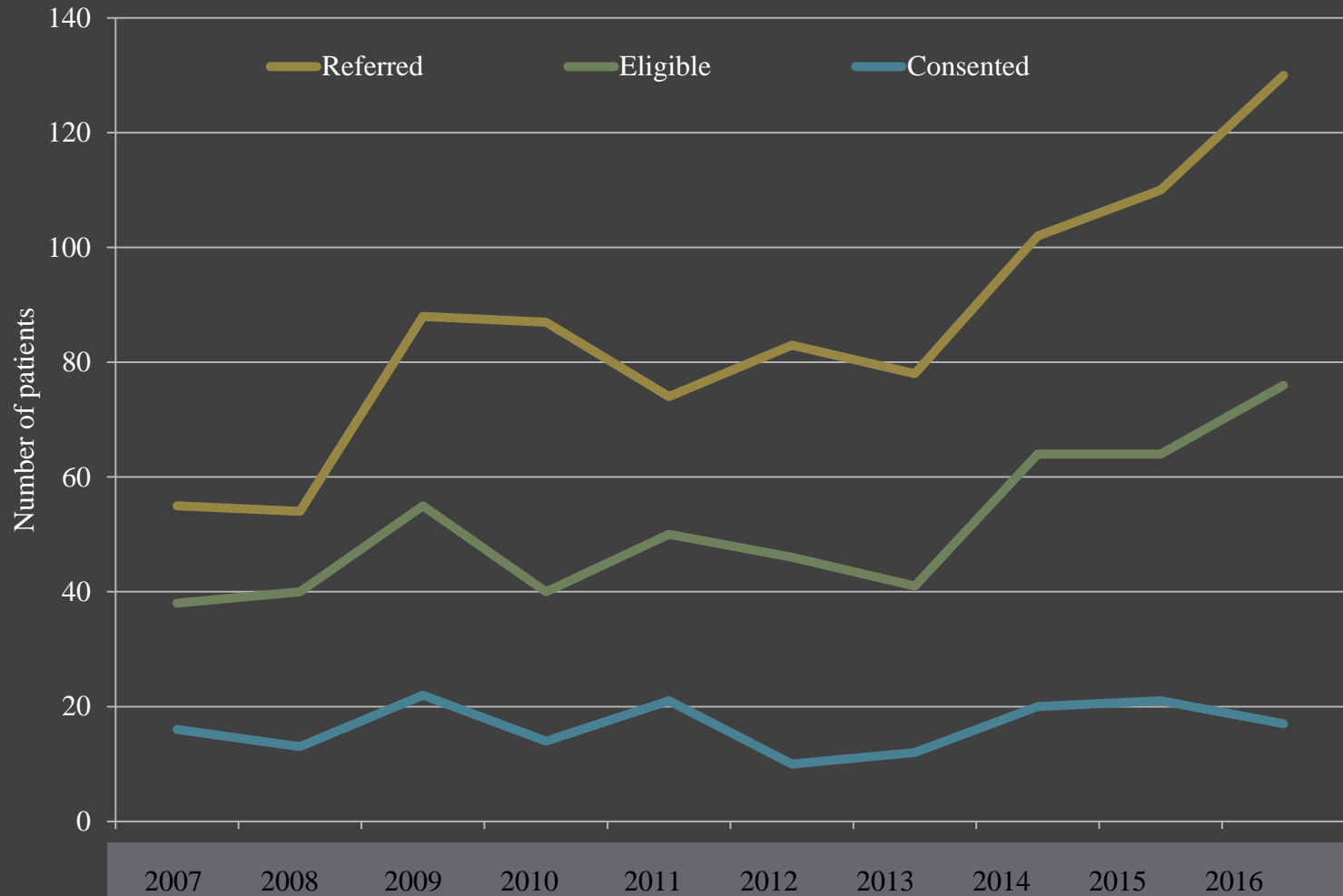
Extended Criteria Donors

- Deceased Donors
 - age,
 - Medical issues, HIV
 - Donation after Circulatory Death
- Living Donors
 - unrelated /altruistic
 - ABO incompatible
 - paired kidney exchange
 - domino transplants

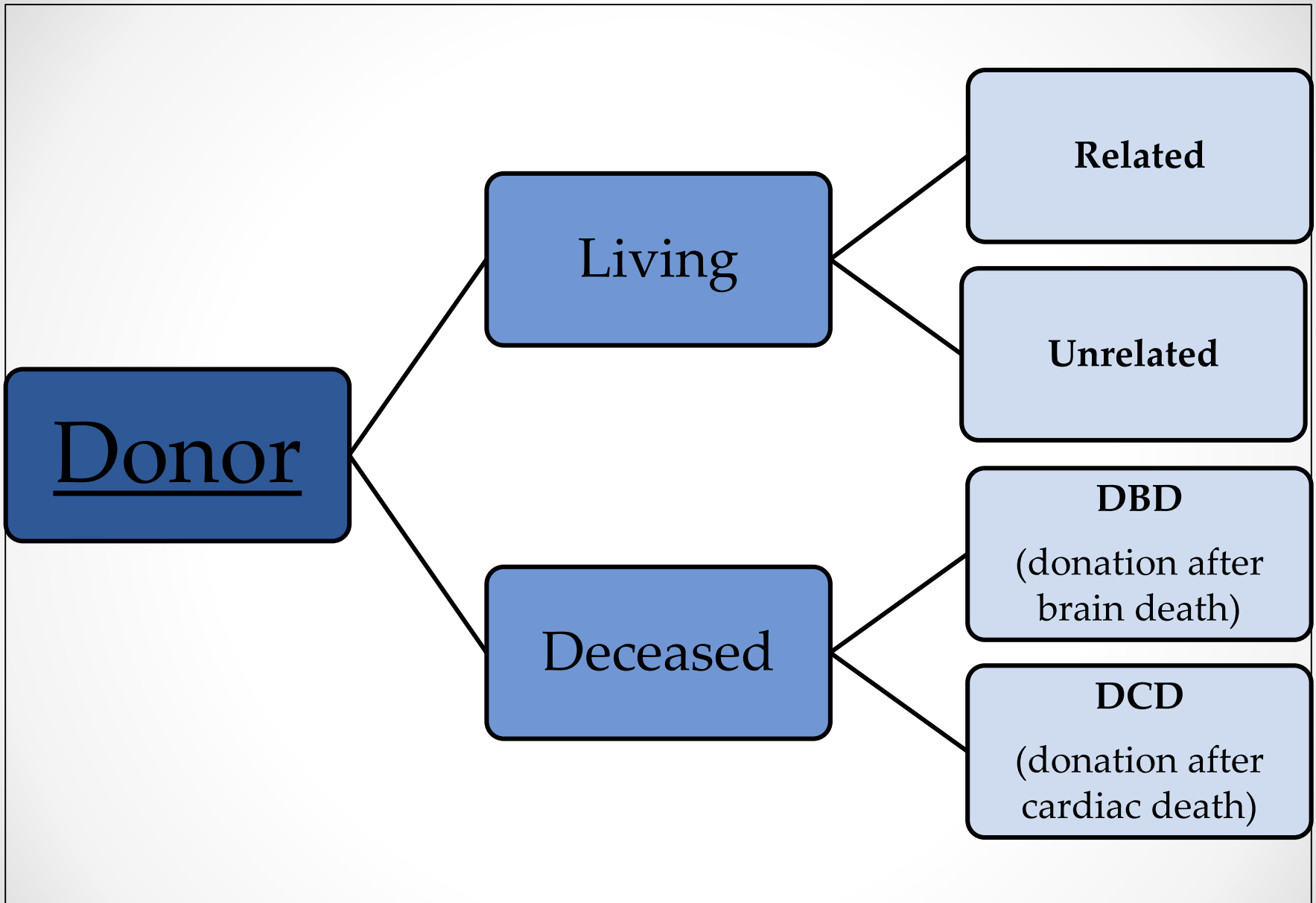
Policy changes

- Required donor referral policy
- Required submission of donor and transplant statistics – improve sharing of all organs
- SA Transplant Society
- Presumed consent

Observed trends in the number of referred, eligible and consented donors from 2007 to 2016 - GSH



2. LIVING DONATION



LIVING DONORS

RELATED

- Parents
- Siblings
- Children
- Grandparents
- Parents siblings
- Parents siblings children

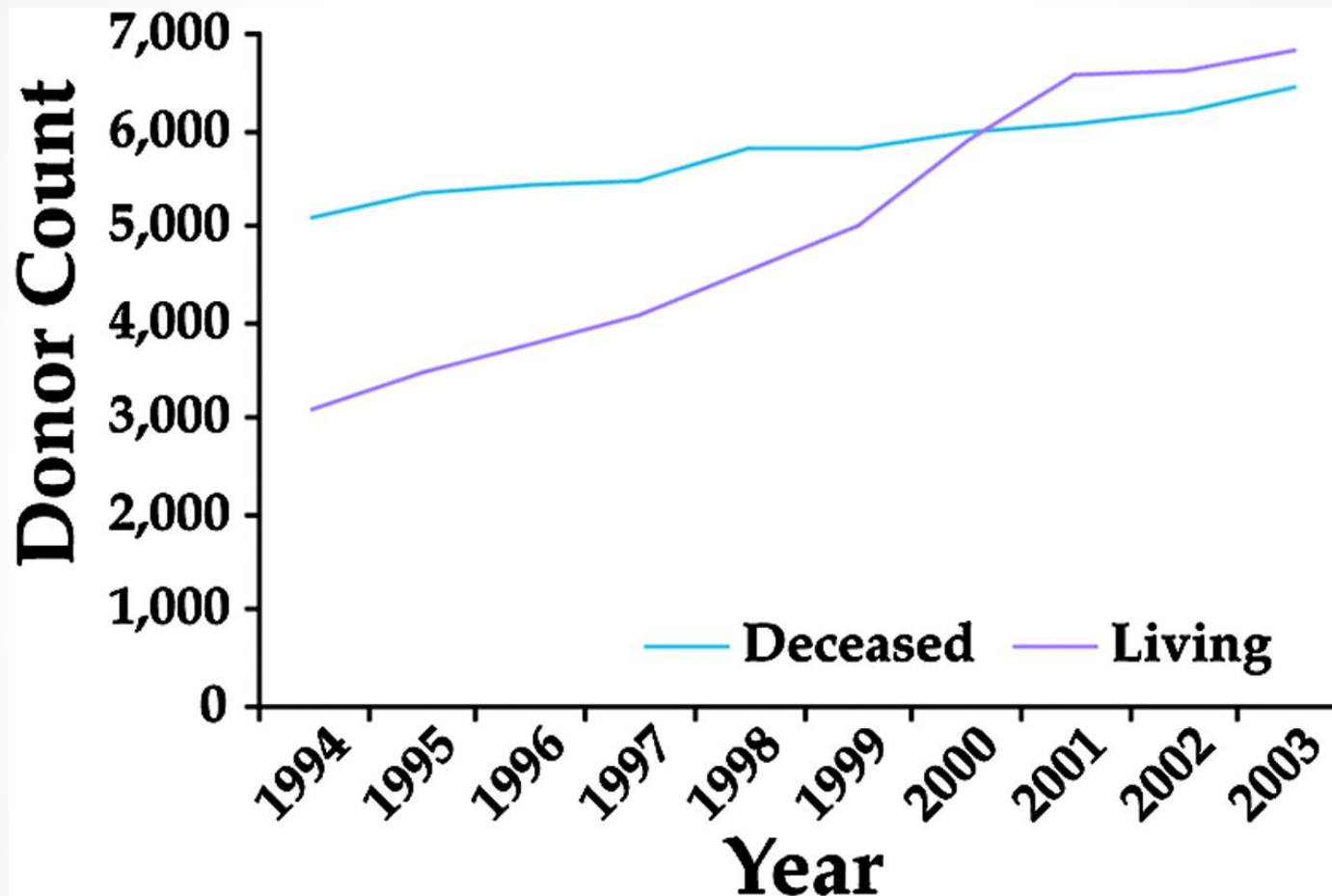
UNRELATED

- Spouse /partner
- 2° relatives
- Colleagues
- Friends
- Altruistic

- Paired Exchange
- Domino Chain

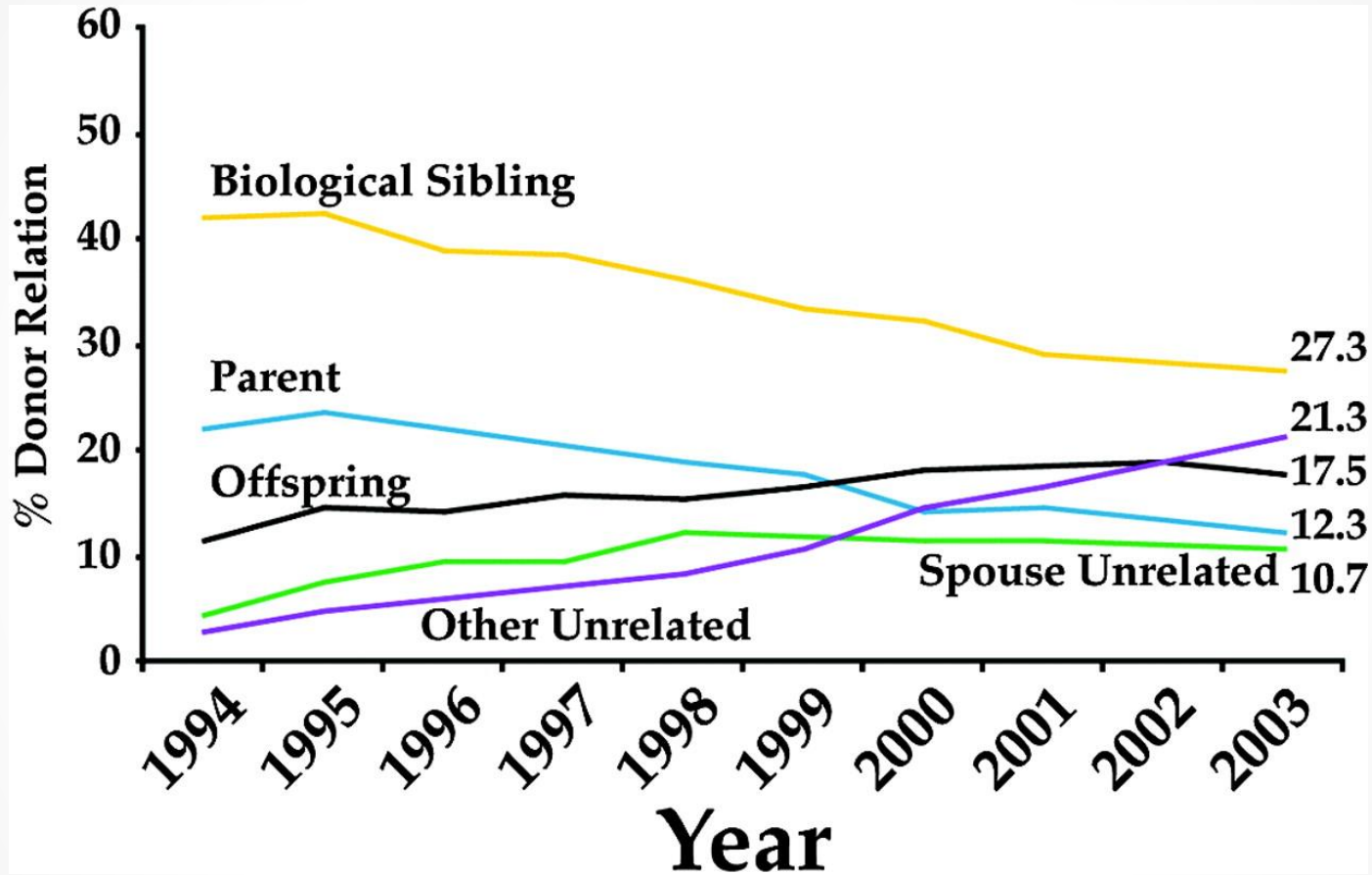
- Ministerial Advisory Committee

Figure 1. The number of living and deceased donors from 1994 to 2003



Davis, C. L. et al. J Am Soc Nephrol 2005;16:2098-2110

Figure 4. Donor relation to recipient by year, 1994 to 2003



Davis, C. L. et al. J Am Soc Nephrol 2005;16:2098-2110

Recipient

Pro

- Shorter waiting time than for deceased donor kidney
- LD kidney better “quality” than DD kidney
- Possibility of good tissue typing match
- Better longterm outcome

Con

- Hesitant to ask family for help
- Guilt if kidney fails
- Guilt if donor has unexpected postoperative complications

Donor

Pro

- Family member off dialysis sooner, healthy, normal family life
- Full health check before donating
- Long term follow up and support
- Ability to “save a life”

Con

- Surgical risks for no benefit to self
- (Small) chance of postoperative complications
- Maintain healthy lifestyle longterm
- Guilt if kidney fails

Important Points

- Psychosocial – coercion, spouse support, work support
- Physical - weight/BMI
- Commitment to donating = commitment to looking after own health for life - annual checkups, weight, exercise, diet
- Amsterdam Protocol

Tissue Typing and choosing the best donor

- Compatible Blood Group
- Negative Cytotoxic Antibody Crossmatch
- Common/Matching Tissue Typing Antigens
- Donor Specific Antibodies Absent

Donor Assessment and Work up

<u>LIVING DONOR ASSESSMENT</u>	
NAME: _____ AGE: _____ Folder Number: _____ Cell: _____ Relationship to Recipient: _____ Recipient: _____ Unit: _____ BGrp: _____	
DATE: _____	
SIGN	
<u>INFORMATION/COUNSELLING –</u> Clinical work up – Blood - BGrp; T/Typing and Xmatch; chemistry; virology; haematology Urine - MC&S; Microalbumin creat ratio Radiology – CXR ;U/Sound; ECG; Renogram and GFR; CT angio Physician Examination and Social worker Interview Other – GTT; Pap smear, PSA; 24hr BP	
Admission / Post operative follow up - Pre-operative checks – bloods/ CXR/ ECG/Dr examination - Approx 5 days in hospital - open or lap/epidural/analgesia/incision/catheter/IV's/drain/ mobility/eating - 3 month post op check then annual follow up at GSH renal clinic	
HIV – essential test; confidentiality; knowledge; implications; results; support system	
Psychosocial – Recipient dialysis/deceased donor/living donor - Free will / major decision/Payment/Coercion/partner support - Risks – Peri-operative – infection; haemorrhage; DVT; pain - Non function of Transplant Kidney in recipient (immunological / technical) - General Anaesthetic - Confidentiality /Family Support/Withdraw from donation/Costs - Longterm implications – responsibility to live healthy lifestyle	
Ht Wt BMI BP	
<u>HISTORY –</u>	
Medical History	
Surgical History	
Medication	
Pregnancies	
Smoking / Alcohol / Recreational drugs	
Partner/children	
<u>COMMENTS:</u>	

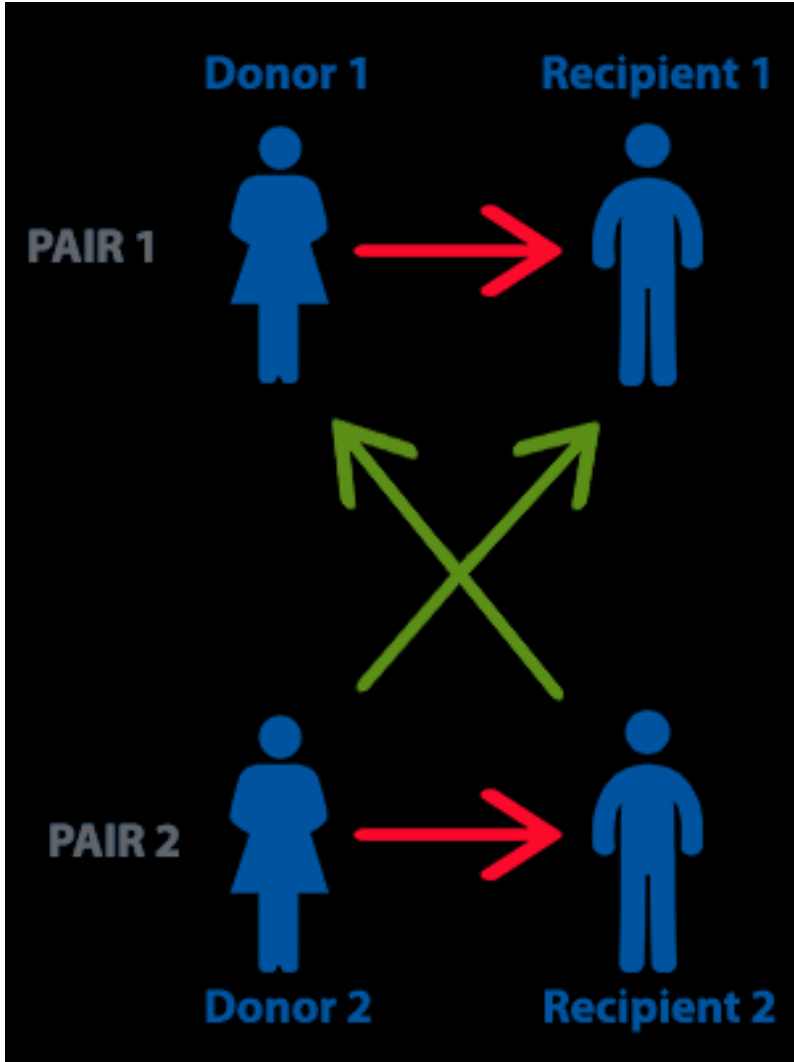
WORKUP FOR LIVING DONORS

	Date Done	Result Recvd	Doctor Check
<u>Blood</u>			
1. Blood Group			
2. Tissue Typing, Antibody screen and CDC and Flow Crossmatches			
3. Renal Function – Urea, Creatinine			
4. Electrolytes – Na, K, Ca, Mg			
5. Liver Functions - Bili, T Prot, Alb, ALP, GGT, AST, ALT, LDH.			
6. Fasting Glucose and Cholesterol			
7. FBC, Differential, INR, PTT			
8. Serology - HIV, HbsAg, Hep C, CMV IgG, Syphilis			
<u>Urine</u>			
1. Microalbumin/creatinine ratio			
2. MSU - MC&S			
3. 24 Hr Urine Collection for protein and creatinine clearance			
(** only needed if unable to do microalb/creat ratio and Isotope GFR **)			
<u>Radiology etc</u>			
1. CXR			
2. ECG			
3. Renal U/Sound (include assessment of liver)			
4. Split function Renogram and Isotope GFR			
5. Renal CT Angiography			
<u>Other</u>			
1. Examination by Physician: as per assessment form			
Note - pregnancy test where relevant			
- breast examination; Pap Smear			
- PR / PSA in male patients over 50 yrs of age			
2. Social Worker/Psychologist Interview			
<u>NOTE</u>			
1. Glucose Tolerance Test - if 1 st degree relative has DM			
2. 24hr Ambulatory BP monitor – if BP borderline			
3. Lung Function Tests – if smoker, any history of “asthma”			
3. PAP smear –			
<u>ALSO</u>			
Copy of ID book			

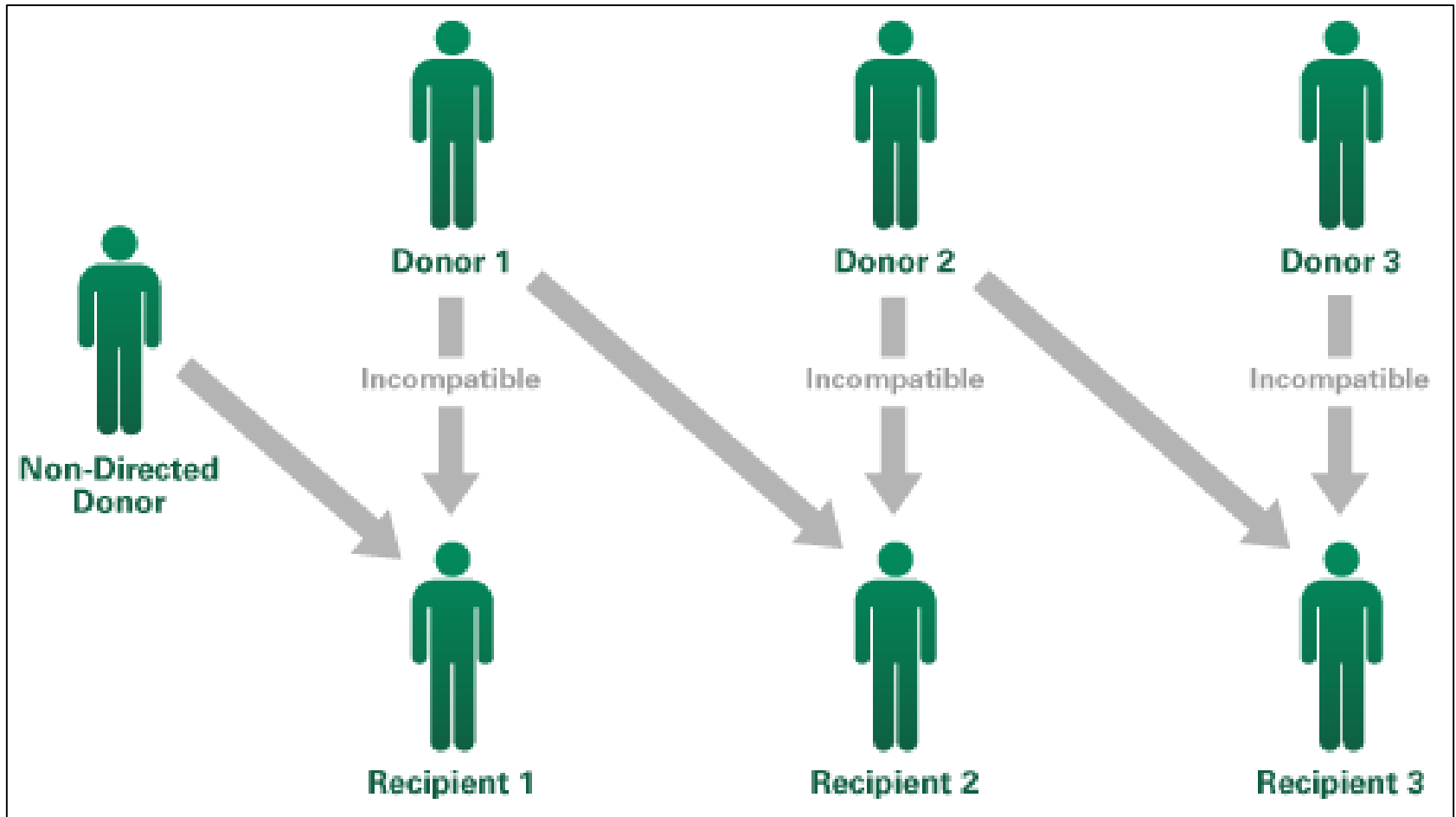
Blood Group Compatibility

RELATIONSHIPS BETWEEN BLOOD TYPES AND ANTIBODIES				
Blood Type	Antigens on Red Blood Cell	Can Donate Blood To	Antibodies in Cerum	Can Recieve Blood From
A	A	A, AB	Anti-B	A, O
B	B	B, AB	Anti-A	B, O
AB	A and B	AB	None	AB, O
O	None	A, B, AB, O	Anti-A and Anti-B	O

- Paired Donation



- Domino Transplants



Ministerial Advisory Committee

- All unrelated transplants - including spouses
- Established in response to questionable practices
- Co-ercion...bribery...payment
- Foreigners
- Full reports on donor and recipient - physical and psychosocial
- Assessed by MAC – nephrologists and psychologist
- MAC advise the Minister of Health whether or not transplant can be approved
- DG of Health and MOH sign off on transplant

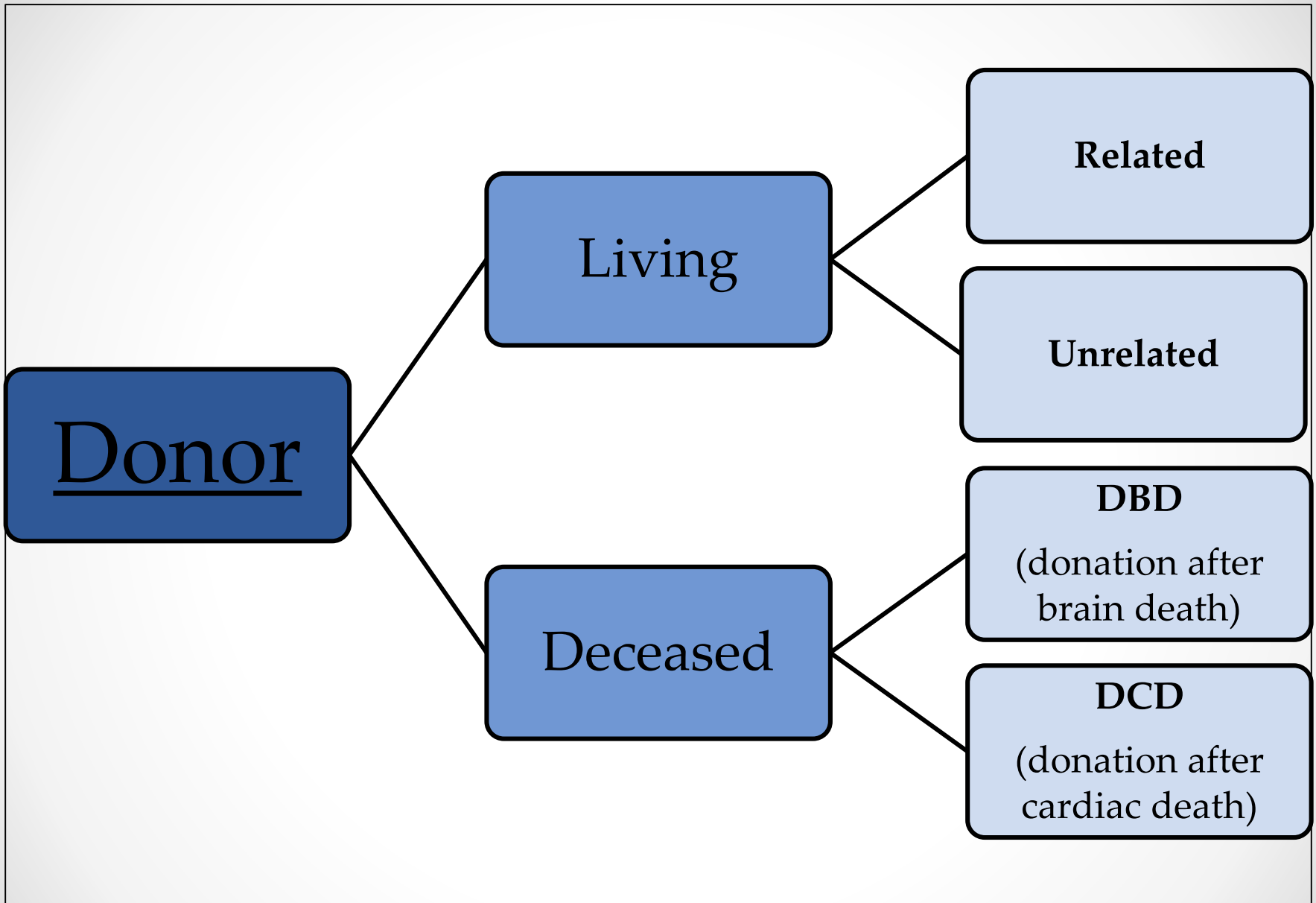
Immunological “Manipulation”

- Flow Cytometry Positive Crossmatch (DSA's)
- Incompatible blood groups
- Desensitisation using Plasmapheresis and Immunoglobulin immediately prior to the transplant with “High Risk Transplant” Immunosuppression Protocol
- Check DSA level/ A or B antibody levels pre transplant
- Check levels following the transplant

Donor Surgery

- Open Nephrectomy
- Laparoscopic Nephrectomy

3. DECEASED DONATION



Donation after Brain Death (DBD)

Background

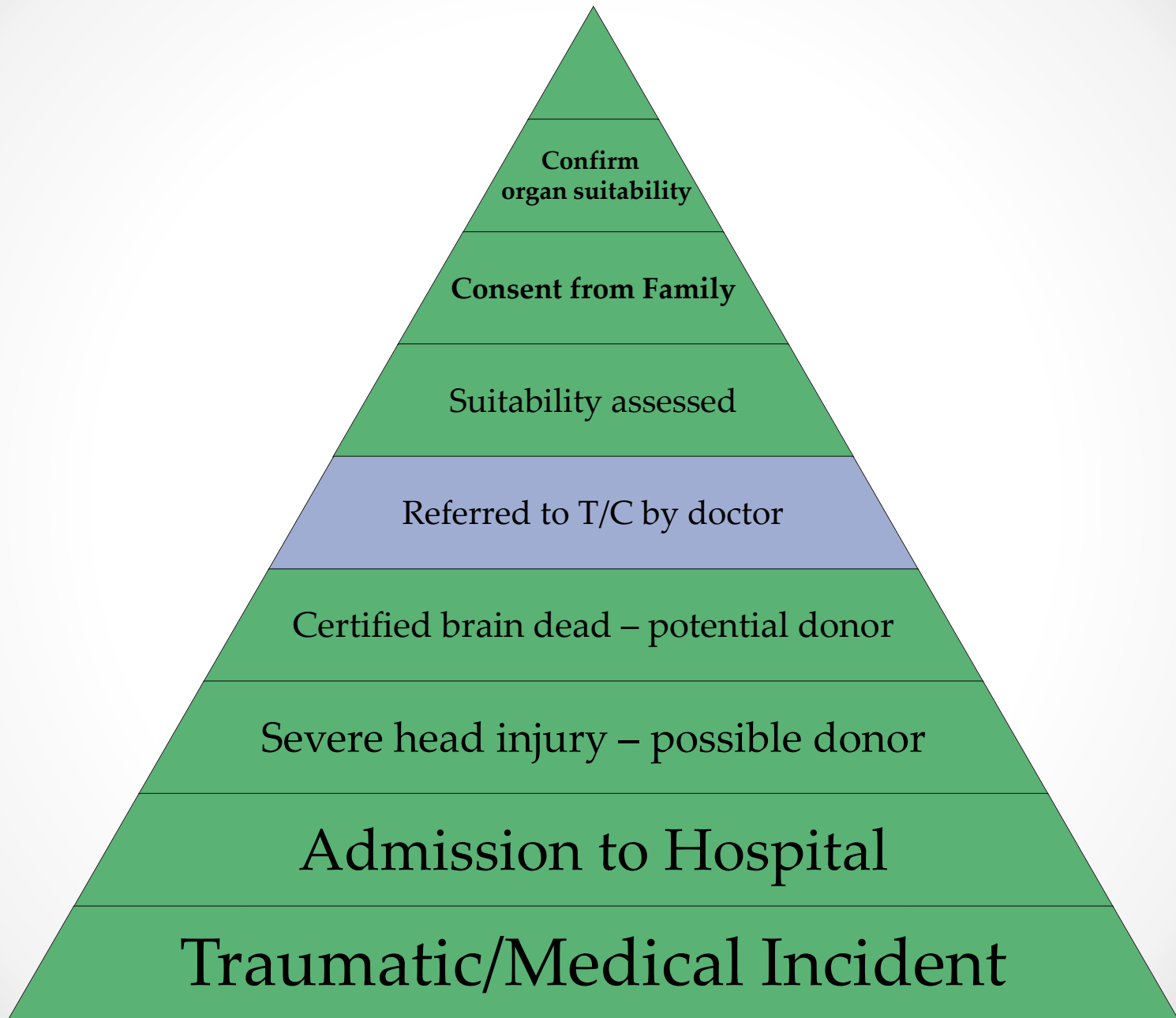
- Chapter 8 of the Health Act
- Regulations
- Regulates certification of donors

- Organ and Tissue Donation
 - catastrophic head injury brain death
 - ventilated
- Tissue Donation
 - cardiac death...at home, in ward

WHO CAN BE A DONOR?



- 8 months – 80years
- Traumatic death
- “Medical” death
(haemorrhage, hypoxia,
meningitis, tumour)
- HIV positive
- PLEASE REFER ALL
POTENTIAL DONORS
- Transplant Team should
make final decision
regarding suitability of
referred patient as a donor

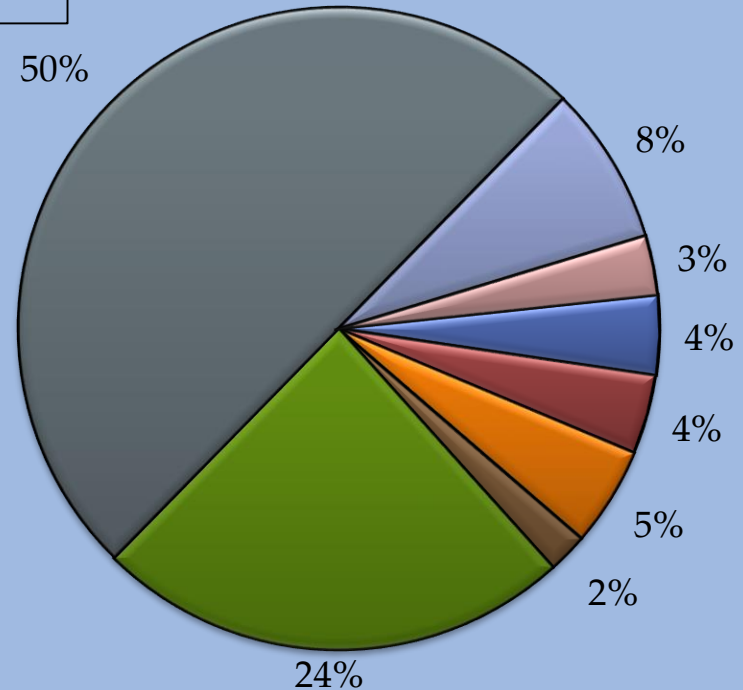


Western Cape Donor Referrals to GSH and TBH over a 3½ yr period.

Reasons for referrals not resulting in Transplants

N= 394

- Not brain dead
- Unknown
- No Family
- Distant Family
- Medically Unsuitable
- Consent Refused
- Arrested
- Other



Certification of brain death

- **Legislated**

Two doctors to certify patient brain dead

Both must be registered with HPCSA - one for at least 5 yrs

Neither can be a member of the transplant team

- **Not legislated**

Involvement of Neurosurgeon / Neurologist

Timing of 2 tests

Donor Management

The body is critically / fatally ill

Intensive organ support

Full ventilation

Maintain a BP $> 90/60$ mmHg

Adequate urine output

AIM – healthy transplantable organs

Role of the Transplant Co-ordinator



CONSENT (counselling)

- First – Check understanding of situation /Dr's explanation
- Issues – Religion; Insight; Education; Culture
- Consent – organs and tissues
- Patients social and medical history



CLINICAL

- Physiological effects of Brain Death
- Donor Management – fluid balance, inotropes, medication
- Blood Screening - BGrp; ABG; chemistry; haematology; virology; tissue typing
- Body Habitus – wounds; bruising; tattoo's; scars, nutrition, height, weight



MEDICO-LEGAL

- State Pathologist consent if a police case ie unnatural death
- Medical Superintendent/hospital manager consent
- Ethical sharing of organs

IMPORTANT

- No family = no procurement
- Family can specify organs and tissues
- Anonymity
- Theatre – respect and dignity (Moment of Silence)
- Family follow up by co-ordinators



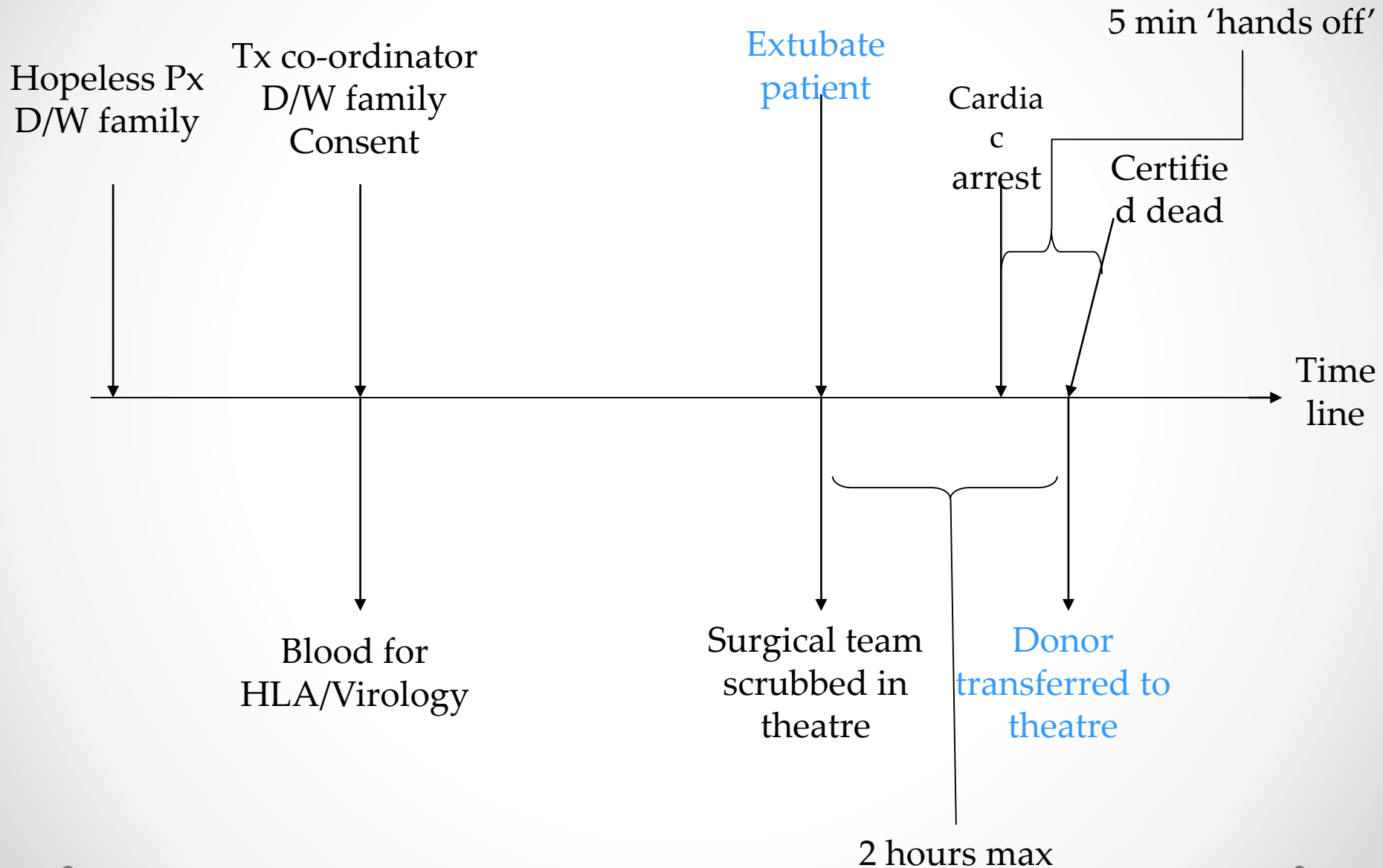
Donation after Circulatory
Death
(DCD)

DCD – South Africa

- Only practical for a hospital with a transplant centre
- GSH only transplant centre in SA with DCD programme
- Extensive background work done before putting in place – ethics committee, medico-legal team, public, management, colleagues in ICU, theatres

- Pt with low GCS but does not fulfil brain death criteria
- Withdrawal of supportrequest for kidneys
- All transplants at GSH into GSH recipients
- Need short as possible cold ischaemic time
- As expected, delayed graft outcomes
- 1 and 5 year survival difficult to assess until bigger numbers

Practicalities



4. CONSENT

Consent for Organ Donation

- Organ Donation not mentioned until brain death certified or decision to withdraw treatment made
- Separate request for consent from discussion about prognosis / outcome
- Call in transplant co-ordinator if available in area
- Request consent for Organs and Tissues
- Allow time for family discussion
- Next of Kin – spouse...parent...adult child...adult siblings
- Telephonic Consent acceptable
- Responses unpredictable

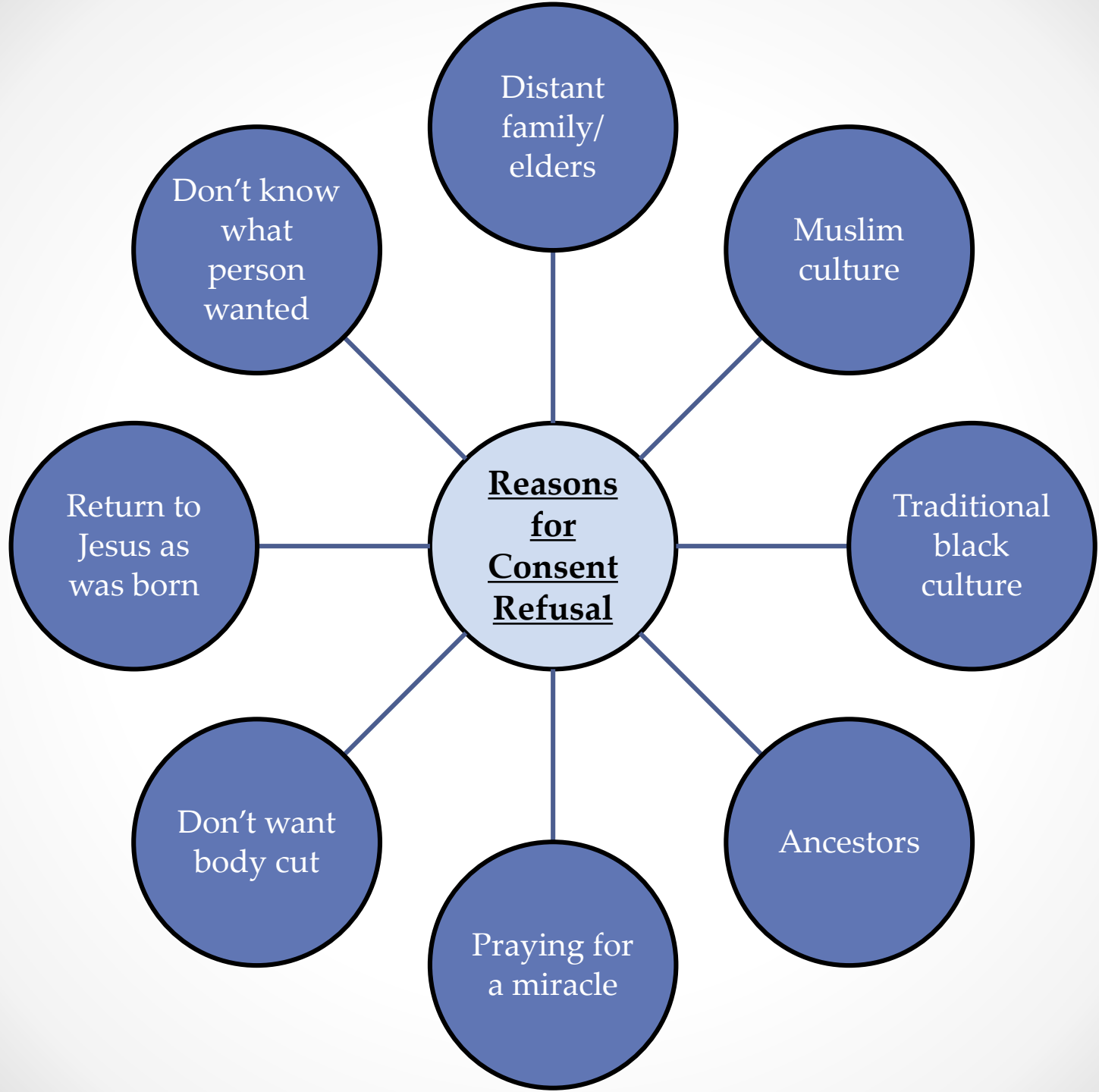
Complex Issue

PUBLIC SECTOR

- 20 – 30%
- Resource and time pressure
- Environment
- Family availability
- Insight/ knowledge

PRIVATE SECTOR

- > 75%



5. Tissue Donation

- SATiBA – South African Tissue Banking Association
- Associated with SA Transplant Society

- Eyes/ Corneas
- Skin
- Bone
- Heart Valves

- Different time constraints for suitability of different tissues

- Work closely with Transplant Co-Ordinators – tissue from brain dead donors
- Referrals from families, GP's, retirement homes, mortuaries, hospitals

Conclusion

- Overview of Organ and Tissue Donation
- Support of colleagues vital for Transplant Programmes
- Contact transplant teams if have queries about donation
- Contact transplant teams if have a patient who may need a transplant
- ODF can supply pamphlets for public education
- MOOC

MOOC

Free Online Course
Colleagues and Public
4 Weeks – 2-3hrs/wk

Topics

- brain death and consent
- Donation after Circulatory Death
- The Organ Donation Process
- Ethical Issues in Transplantation

30 CPD points (incl 5 ethics points)

The banner features a central illustration of a human figure with internal organs highlighted, surrounded by icons for a gift and a recycling symbol. Text elements include 'Financial aid available for certificates', the University of Cape Town logo, 'UCTMOOCs FREE ONLINE COURSES', the course title 'ORGAN DONATION: From Death to Life', the presenter 'Dr David Thomson', and a call to action 'Enroll now' with the URL 'www.coursera.org/learn/organ-donation'. A circular portrait of Dr. Thomson is in the bottom right.

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Thank you

***"Nobody can do everything.
But everybody can do something."***