

Evolution of Renal Transplantation in the Hunter

Adrian Hibberd

Foundation HNELHD Director of Transplantation 1985-2010

200 years of a Hospital in Newcastle



Challenges in Building Renal Transplant Unit in the Hunter

1. Australia/ NSW had lowest donor rates in the Western ~~World~~ → inadequate renal supply
2. Population base too small → low transplant rate
3. Communication with patients, community and governments
4. Resources and dedicated transplant facility
5. Establish transplant research programme

Milestones for Kidney Transplantation in the Hunter

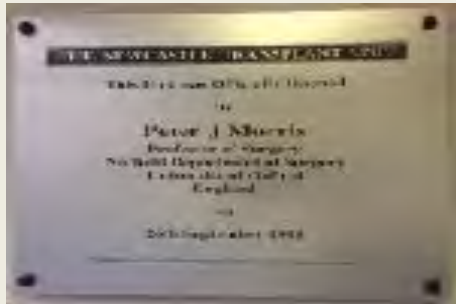
- <1980 renal transplants done Sydney Hospital - R Sheil
- 1980-1984 renal transplants done at RNH: RB, PR, AB, ST
- 1981-1984 decision to construct a renal transplant unit - Ranjit Nanra, Robert Burton, late Owen James
- 1985 transplant surgeon/ director appointed
- 1985 organ donation programme started
- 1988 Renal Transplantation Unit authorized by determination of Board Greater Newcastle Heath Area Service: transplant practice recognized as specialty
- 1991 Newcastle Transplant Unit at JHH opened with dedicated 4 bed Unit



Opening of the Newcastle Transplant Unit
26th September 1991

The Transplant Ward

Envy of Australian Transplant Units



John Hunter Hospital First Transplant April 1991

"First Transplant" for John Hunter

The John Hunter Hospital's Transplant Unit successfully "transplanted" itself from the Royal Newcastle Hospital and recently conducted its first kidney transplant at John Hunter Hospital.

Professor Adrian Hibberd, The Area Director of Transplantation, said that the latest results showed that the patient survival rate for the Unit was higher than the Australian average. Newcastle also operates as the third largest organ retrieval service in N.S.W., providing between 8 and 12 kidneys a year to patients with renal failure.

Two recent transplant recipients, Mrs. June Cairns of Mayfield and Mrs. Denise Martin of Singleton were very pleased to have received a successful kidney operation. Mrs. Cairns was the last patient to have a kidney transplant at Royal Newcastle and Mrs. Martin was the first transplant patient at John Hunter. Both received their kidneys from brain-dead Hunter Valley donors. Mrs. Cairns said she felt "totally liberated" by her transplant operation which took place on March 27th. "The freedom from dialysis is marvellous", she said. Professor Hibberd, said he was confident that the promised funding from the N.S.W. Department of Health for the Transplant Unit would commence from July 1st. This would be the first time that proper funding has been available in the unit's eleven year history.



Professor Hibberd with Mrs. June Cairns and Mrs. Denise Martin



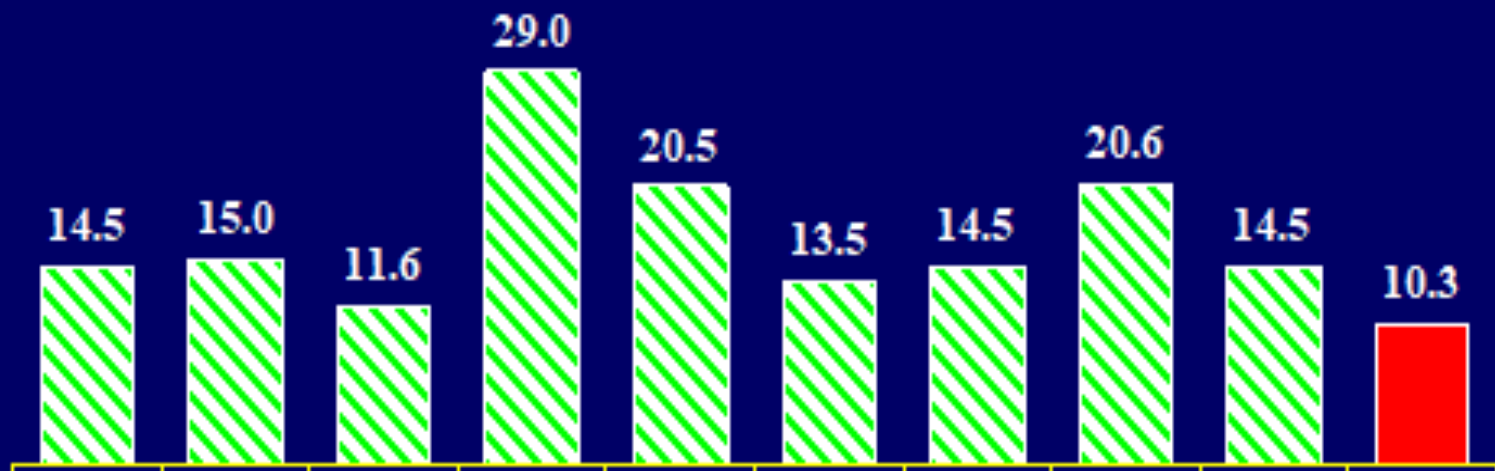
First Challenge

Very low deceased donor rate in
Australia

International Donor Statistics 1997

% of Multiple Organ Donors

Donors PMP



Euro-Trans France Italy Spain Port. Scan. UK USA Can. AUST

% Mult.
Donors

71% N/A 81% 82% 70% 65% 80% N/A 80% 76%

Eurotransplant: Germany, Austria, Belgium, Luxembourg, The Netherlands
Scandia Transplant: Denmark, Finland, Norway, Sweden

Figure 2

Source: Council of Europe 1997

Study of Impediments and Intervention about Organ Donation in Major Hospitals in Sydney 1988-1994

- multidisciplinary
- grant from NSW Health
- examination of causes of all deaths 1989- 1990
- classification of wrt categories of potential donors
- major task - 6 years
- 5 papers published

Potential for cadaveric organ retrieval in New South Wales

Adrian D Hibberd, Ian Y Pearson, Cate J McCosker, Jeremy R Chapman, Graham J Macdonald, John F Thompson, Dianne L O'Connell, Paula J Mohacsi, Moira P McLoughlin, Phillip M Spratt, Jeffrey S Compton, Mark A Brown

Abstract

Objectives—To measure the potential for cadaver organ retrieval in New South Wales and to determine the reasons for potential donors failing to become actual donors.

Design—Prospective audit of all patients dying in five hospitals in New South Wales between 1 December 1989 and 30 November 1990; quality assurance of the data by independent medical specialist and if disagreement by study committee.

Patients—2879 patients (100% of all deaths) yielding 364 patients with coma and 181 potential donors.

Outcome measures—Realistic medically suitable potential donor rate, missed potential donor rate, rate of potential donors with permission refused, donor rate, reasons for realistic medically suitable potential donors failing to become actual donors.

Results—2879 deaths yielded 73 medically suitable

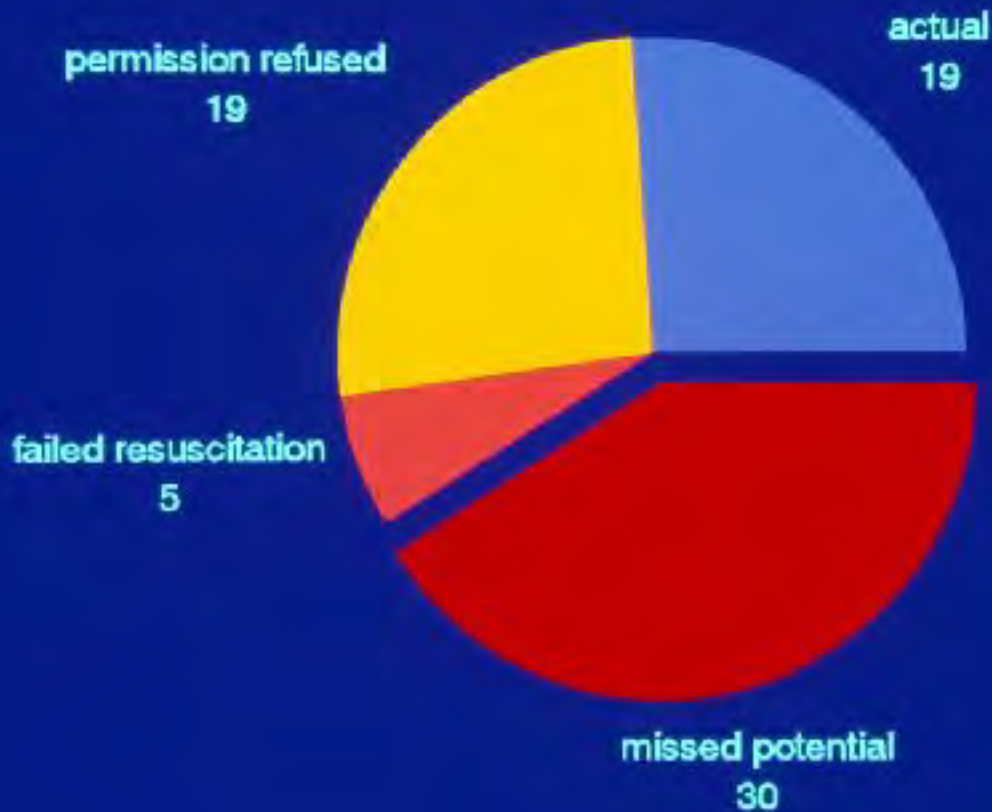
South Wales.¹ These rates were lower than those in the United Kingdom (14.5/million population/year)² and the United States (16/million population/year).³

Demand for transplantation exceeds organ supply in all countries with established transplantation programmes. It has been suggested, however, that supply would be adequate if all potential donors became actual donors.⁴ Few comprehensive studies have measured this difference between potential and actual donor rates. Gore *et al* studied intensive care units and Gentleman *et al* audited a neurosurgical unit.^{2,5} None of these studies considered other areas in the hospital where brain death might occur, such as the coronary care department, primary and emergency care units, or neurology departments. Salih *et al* surveyed 21 hospitals: the likelihood of a patient becoming a potential donor was not decided by clinicians.³ Hence the New South Wales Histo-

The potential for cadaveric organ retrieval in New South Wales.
BMJ 1992; 304:1339-43

Outcomes

Realistic Medically Suitable Potential Donor



Conclusions

The donor rate could be increased 70%-80% by overcoming the reluctance of medical practitioners to resuscitate missed potential donors and increased further by gaining permission for organ retrieval from the next of kin.

Hibberd AD, Pearson IY, McCosker CJ, Chapman JF, MacDonald GJ, Thompson JF, O'Connell DL, Mohacsi PJ, McLoughlin MP, Spratt PM, Compton JS, Sara AF. Measurement of the potential for cadaver organ retrieval in New South Wales, Australia. **Transplant Proc 1993; 25: 1565-6.**

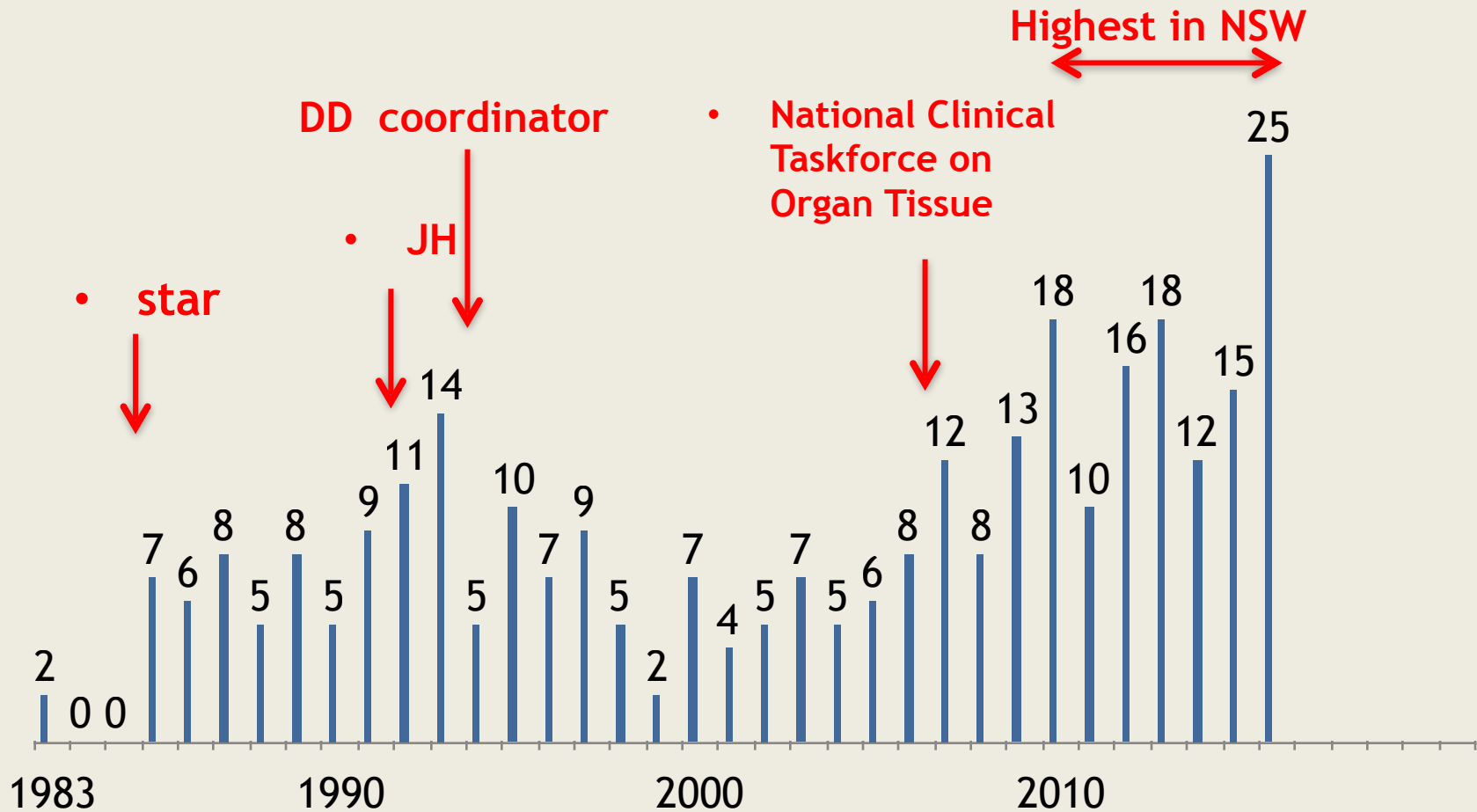
Chapman JR, Hibberd AD, McCosker C, Thompson JF, Ross W, Byth P, Macdonald GJ. Obtaining consent for organ donation in nine NSW metropolitan hospitals. **Anaesthesia and Intensive Care. 1995; 23: 81-7.**

Thompson JF, McCosker CJ, Hibberd AD, Chapman JF, MacDonald GJ, O'Connell DL, Mohacsi PJ, Spratt PM, Mahoney J. Identification of the cadaveric potential organ donors in New South Wales. **Anaesthesia and Intensive Care. 1995; 23: 75-80.**

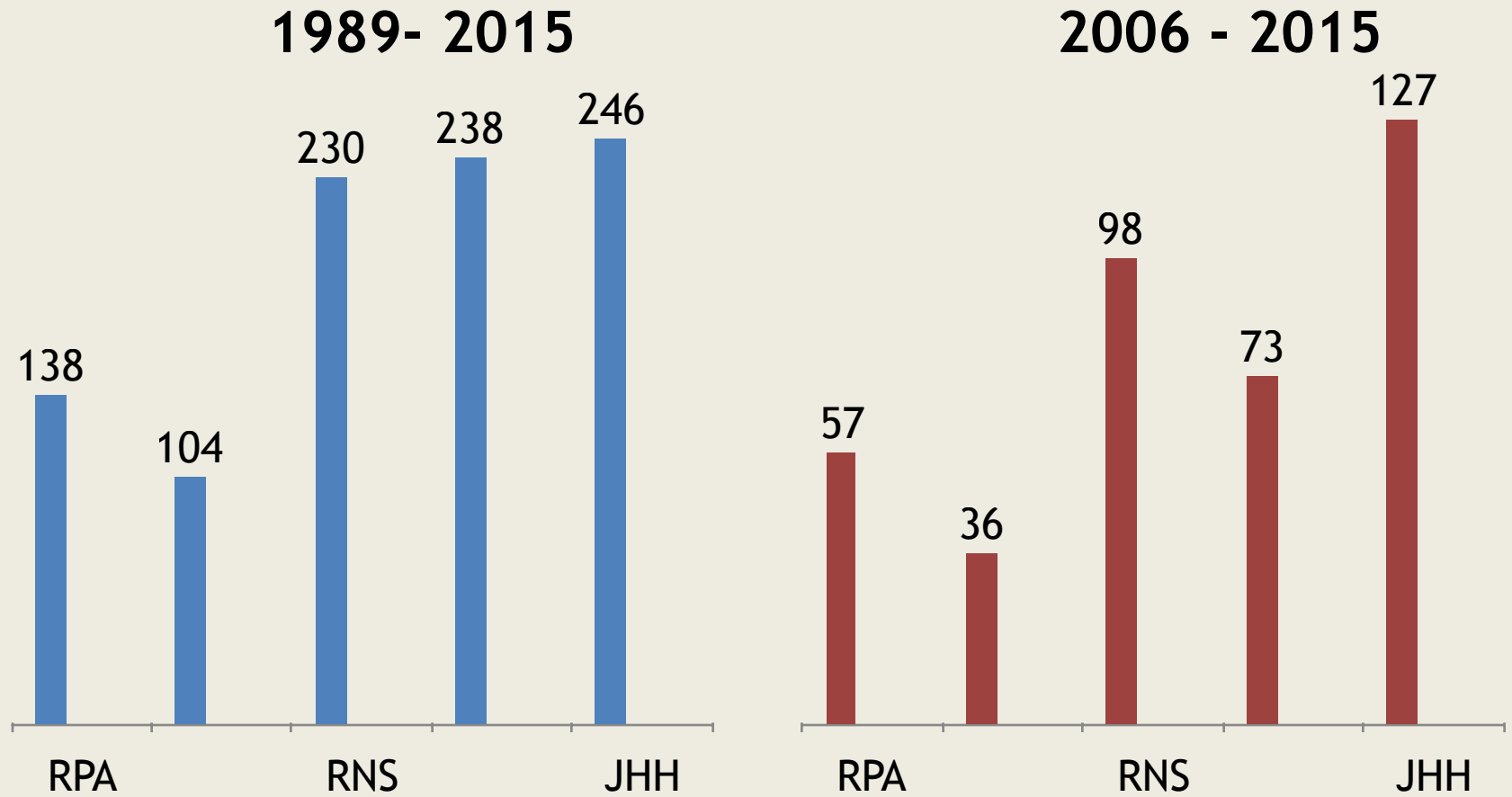
Thompson JF, Hibberd AD, Pearson IY, McCosker CJ, Chapman JF, Macdonald GJ, O'Connell DL, Mohacsi PJ, McLoughlin MP, Spratt PM, Compton JS, Brown MA. Can the demand for renal transplantation be met? **Transplant Proc 1992; 24: 2270-1**

Thompson JF, Hibberd AD, Mohacsi PJ, Chapman JR, Macdonald GJ, Mahony JF. Can cadaveric organ donation rates be improved? **Anaesthesia and Intensive Care. 1995; 23: 99-103.**

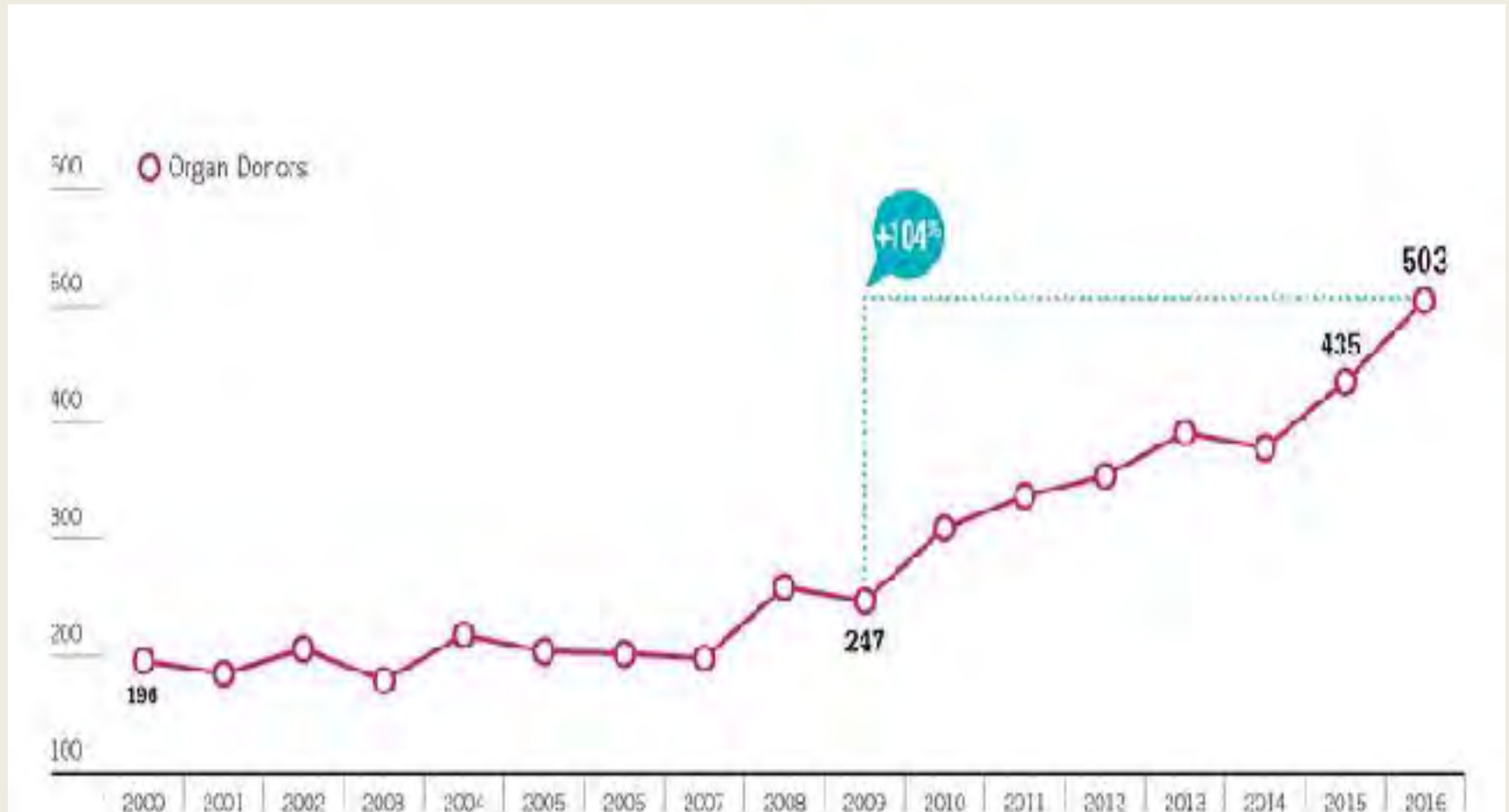
Deceased Organ Donors at John Hunter Hospital and Royal Newcastle Hospital



Numbers of Organ Donors by NSW Major Hospitals



Actual Deceased Donors by Year in Australia

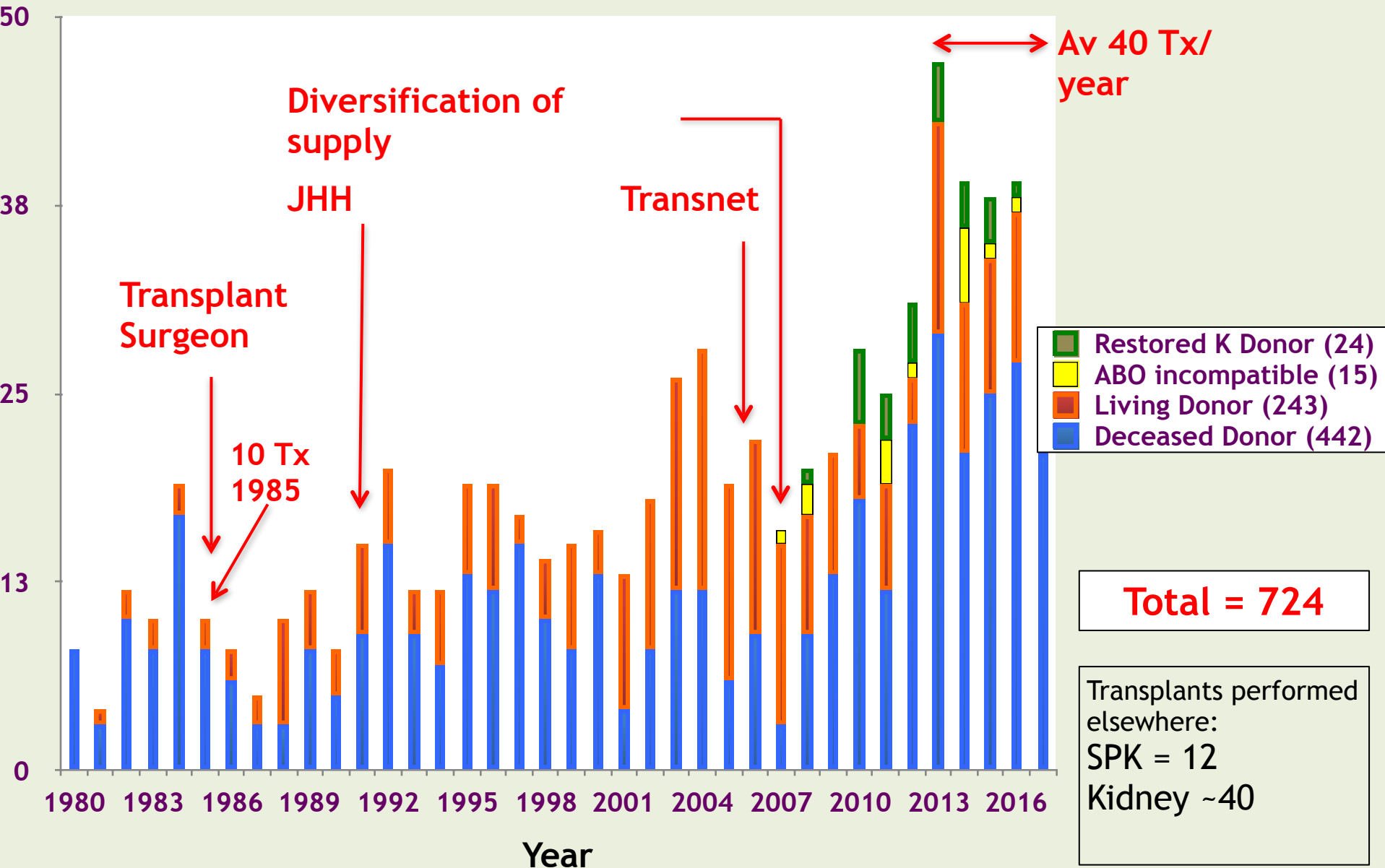


Data from Australian Organ Tissue
Donation Authority

Second Challenge

Renal Transplant Rate

Number Kidney Transplants by Year at Newcastle Transplant Unit 1980-2017

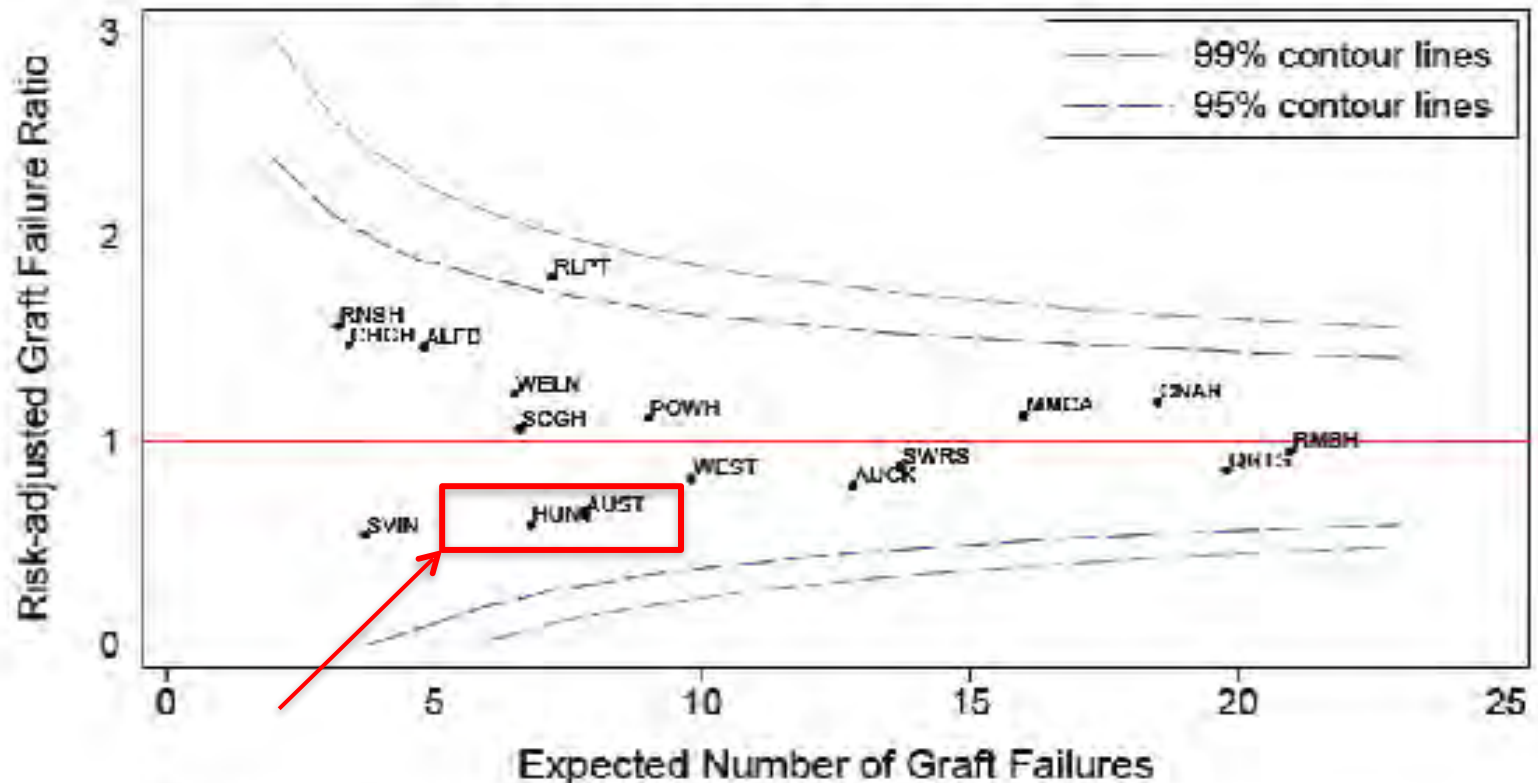


Individual Transplant Units

One year graft loss over period 2010-2015

3.2 Funnel Plot

Risk-adjusted Graft Failure Ratio at 1 Year



Observations with missing values are dropped from the model

Some Unique Achievements by Newcastle Transplant Unit

- First unit in Australia to transplant highly sensitized recipients across a positive cross match.
- Second unit in Australia to perform an ABO incompatible transplant
- First unit in the world to perform a simultaneous kidney and parathyroid gland transplant from a living donor
- Second unit in Australia to perform restored kidney transplants from kidneys removed for cancer
- Most number of dual kidney transplants in Australia
- Lead unit for campaign to allow “Good Samaritan” donors in Australia
- First compassionate transplant of a PNG national
- First clinical point of care electronic health record for transplant patients (“Transnet”)

Transnet - Point-of-Care, Web-Based EHR for Transplant and Dialysis Patients

The screenshot displays the Transnet EHR interface for a patient. The browser address bar shows the URL: <https://transnet.khsahealth.nsw.gov.au/OutputView/Review.aspx?PID=45287&MedID=74655287&HTypalD=484From=KCHHealthSearch.aspx>

Transnet 4.0
Nephrology & Renal Transplant System

MAIN MENU | SETTINGS | HELP | SEARCH | LOGIN/OUT | ABOUT

Referring GP: Joanne Morris
Nephrologist, Nephrologist, Post TRANSPLANT

APPOINTMENTS | REFERRALS | DIAGNOSTIC PLAN | LABORATORY RESULTS | DIAGNOSIS | ALLEGED CHURCH

Patient Visits

- 18.08.17 Post-Fix Outpatient Review
- 07.04.17 Admission
- 02.03.17 Post-Fix Outpatient Review
- 03.04.16 Admission
- 24.02.15 Post-Fix Outpatient Review
- 26.02.14 Admission
- 15.03.14 Post-Fix Outpatient Review
- 14.03.13 Admission
- 18.03.13 Post-Fix Outpatient Review
- 26.05.12 Admission
- 13.05.12 Post-Fix Outpatient Review
- 04.05.12 Admission
- 04.05.12 Post-Fix Outpatient Review
- 26.07.10 Admission
- 26.07.10 Outpatient Review
- 14.05.10 Post-Fix Outpatient Review
- 02.03.09 Admission
- 02.03.09 Post-Fix Outpatient Review
- 17.02.09 Admission
- 17.02.09 Post-Fix Outpatient Review
- 24.03.05 Admission
- 24.03.05 Post-Fix Outpatient Review
- 09.11.05 Admission
- 07.11.05 Post-Fix Outpatient Review
- 01.03.01 Transplant Event
- 01.03.00 Feasibility Assessment
- 21.03.00 Initial Assessment

OBSERVATIONS

Review Date: 10/10/2017 Transplant Date: 05-Feb-2008
 P.O.D. #112 (-6 months post-transplant)
 Position: days | HT cm

Height: 170 cm Weight: 65 kg Hb: 10.0 g/dl BUN: 11.2 mg/dl
 Temperature: Blood Pressure: 156 / 112

PHYSICAL EXAMINATION

PROGRESS NOTES

12/04/2017: Patient is well. Anson has been much better and is able to walk 5 km and then up flights of stairs. Her chronic kidney disease has apparently also improved with reduction in steroids. Liver has a fractured scapula and needs to be seen at orthopaedic clinic. Her BP has been running a bit low and also her sugars are much improved. I have arranged for a lot of insulin. Her bowel habit is good mostly as she has had a stool per day but she has been loose occasionally when due for the transplant. I have asked to see her in 6 weeks.

MANAGEMENT PLAN

12/04/2017: Inpatient follow up advice from CR and Dr. Babji is to use anti-TNF agents unless needed. Strategy will be to increase TAC and maintain low dose steroid possibly methylpred. 02/03/2018: Prednisolone shows some cholelithiasis and arteriole lumens consistent with CKD toxicity. PI is only on low dose TAC, but may be grounds to bring in mTORi and reduce pred. 14/04/2018: Kidney transplant recipient's serum creatinine shows increasing trend. Patient has had a good response to prednisolone. Inpatient follow up with Dr. Babji. Inpatient follow up with Dr. Babji. Inpatient follow up with Dr. Babji. 11/03/2009: Creatinine shows evidence of CKD toxicity. Prescribed increased Pred, calcitriol and possibly anti-TNF agents. 05/03/2008: Inpatient follow up with Dr. Babji. Inpatient follow up with Dr. Babji.

PHYSICAL EXAMINATION SPECIFIC FINDINGS:

NEW ACTIVE WOUNDS: Add Epilim

Medication List for: 10 October 2017

Drug	Route	Dose	Interval
Immunosuppression			
Prochlorone	po	5 mg	daily
Tacrolimus SR	po	3 mg	twice
Ulcer Prophylaxis			
Rabeprazole	po	20 mg	twice
Mineral Replenishment			
Racalrol	po	0.5 sp	twice weekly
Immunosuppression			
Mycophenolate	po	300 mg	twice
Aspirin			
Lipsum		1000 g	daily
Multivite	po	1 cap	daily
Other			
Allopurinol	po	100 mg	daily
Prochlorone	po	20 mg	daily
Hydrochlorothiazide	po	10 mg	daily
Hydrocortisone	po	0 mg	twice
Prochlorone	po	0 mg	twice
Syringicillin	po	25 mg	daily
Vedolizumab	iv	1 unit	2nd month

Buttons: Save, Authorize, Add, Delete

Transnet Authors



Paul Trevillian, Gerard Chanekon, Andrew James, Adrian Hibberd

DECEMBER 23 2012 - 10:30PM

Transplant saves PNG doctor's life

ALISON BRANLEY, Health Reporter



JHH NTU avoids PCP Epidemic

Post-transplant *Pneumocystis jirovecii* pneumonia—a re-emerged public health problem?

Jeremy R. Chapman^{1,2}, Deborah J. Marriott³, Sharon C-A Chen² and Peter S. MacDonald³ on behalf of TSANZ and the consensus meeting attendees⁴

¹Centre for Transplant and Renal Research, Westmead Hospital, Westmead, New South Wales, Australia; ²Department of Infectious Diseases, Westmead Hospital, Westmead, New South Wales, Australia and ³Departments of Cardiology and Infectious Diseases, St Vincent's Hospital, Darlinghurst, New South Wales, Australia

- The first Australian cluster was identified at a large tertiary kidney transplant unit in Sydney in 2010, with a second outbreak in 2012 (a total of 22 cases—Index Hospital 1, [Table 3](#)).
- All other kidney transplant units in the jurisdiction of New South Wales have also experienced cases of PCP infection since 2010
- Hence, overall, **83** cases of PCP were identified between 2010 and 2012, resulting in a total of **13** deaths and **nine additional graft losses**

Wrong! NTU has not had a single case during this period





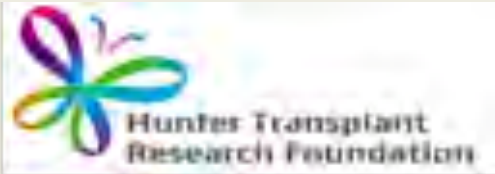
Hunter Transplant Research Foundation
3 February 2018
Nobby's Beach

OCTOBER 12 2012

Taylor's our golden girl



Australian Transplant Games, Newcastle 2012



Hunter Transplant Research Foundation
www.htrf.net.au

Research arm of Newcastle Transplant Unit
Subsidiary of HMRI (2012) Laboratory at JHH with human and offsite
animal translational research projects

Strongly supportive **Transplant Patient Support Group**

Community Fundraising activities- Annual **Glowalk**, A Day at the
Beach, Trivia nights

Creating the Foundation Professorship of Transplant Immunology

>190 published works on UoN Research Office Database



Report Card

- Over 700 transplants done
- Deceased organ programme now the leader in NSW and Australia: 35 donors pmp 2016
- >40 renal transplants/ year 2013-2016
- Transplant survival above National average
- Transnet software improved care, communications
- Hunter Transplant Research Foundation >190 papers on NURO
- Newcastle Transplant Patient Support Group-robust >500 participants

Surgeons who have contributed to Transplantation in HNELHD

- Robert Burton
- Philip Robinson
- Alan Bray
- Stuart Taylor
- Adrian Hibberd
- Sandy Grant
- Philip Sprott
- Munish Heer

Renal Physicians have contributed to Transplantation in HNELHD

- Ranjit Nanra
- Paul Trevillian
- Al Gillies
- Steve May
- Shane Carney
- Bernard Jones
- Eswari Vilayur
- Mohanus Vattekan
- Peter Chou
- Rita Cervantes
- Bobby Chacko

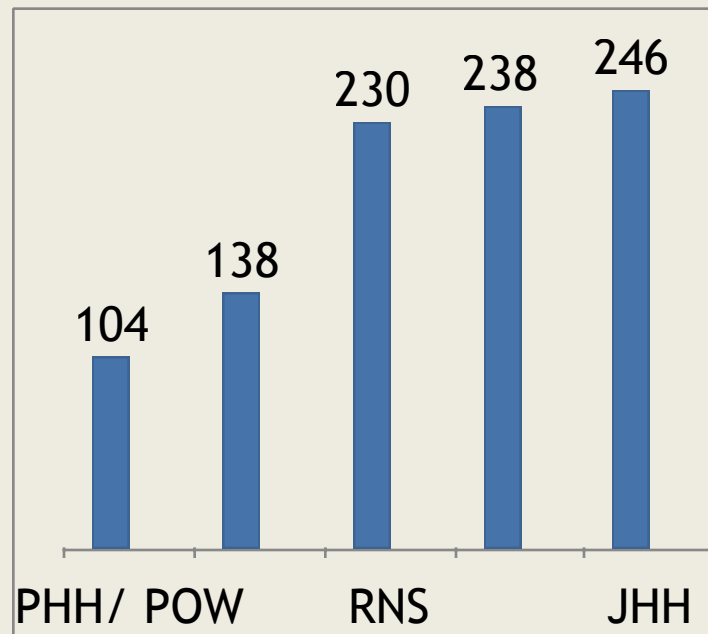


THE SPECTATOR 25 May 1991



Numbers of Organ Donors by NSW Major Hospitals

1989 -2015



2006-2015

