The Twenty Sixth Report

Australia and New Zealand Dialysis and Transplant Registry

2003

Edited by
Stephen McDonald and Graeme Russ

FUNDED BY

Commonwealth Department of Health and Ageing
Australian Kidney Foundation
New Zealand Ministry of Health

SUPPORTED BY

Novartis Pharmaceuticals Australia Pty Ltd
AMGEN Australia Pty Ltd
Janssen-Cilag Pty Ltd
Fresenius Medical Care Australia
Roche Products Pty Ltd
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Coordinating Centre

ANZDATA Registry, C/- The Queen Elizabeth Hospital
28 Woodville Road, Woodville South,
Adelaide, South Australia, 5011

Phone (61-8) 8222.6704
Fax (61-8) 8222.6402 / 8222.6795
Email anzdata@anzdata.org.au
Web http://www.anzdata.org.au

Prof G Russ Chair of ANZDATA Executive / Editor
Dr S McDonald AMGEN Fellow in Epidemiology / Editor
Mrs L Excell Registry Manager
Mr B Livingston Computer Programmer
Ms B Leonardi Biostatistician
Mrs E Steinmetz Administrative Assistant

Printed in Adelaide, South Australia, 2003

AKF ACN 008 464 426

ISSN 1329-2870

Acknowledgments

ANZDATA Registry offers its most grateful appreciation to everyone who helped make this 26th Annual Report possible, especially the professionals and the staff of all the Renal Units and Tissue Typing Laboratories, upon whose reporting of data this enterprise ultimately depends.

Suggested Citation

An example of suggested citation for this report is as follows:

.. [Author's name] ..
Peritoneal Dialysis .. [page numbers] ..
ANZDATA Registry Report 2003
Australia and New Zealand Dialysis and Transplant Registry
Adelaide, South Australia.

Editors: Stephen McDonald and Graeme Russ

Publications based upon ANZDATA Registry information reported here or supplied upon request, must include the citation as noted above and the following notice:

> The data reported here have been supplied by the Australia and New Zealand Dialysis and Transplant Registry. The interpretation and reporting of these data are the responsibility of the Editors and in no way should be seen as an official policy or interpretation of the Australia and New Zealand Dialysis and Transplant Registry.

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See Website (www.anzdata.org.au)

INTRODUCTION

This is the 26th Annual Report from the ANZDATA Registry. Again it is a comprehensive and detailed account of the delivery of dialysis and transplantation services in Australia and New Zealand. All of the Australian and New Zealand Renal Units have contributed to the Registry and we remain confident that there is one hundred percent reporting of patients.

Similar to the last two years, the report consists of two parts. The first consists of the standard core chapters examining demographics and delivery of renal replacement therapy by chronic dialysis or transplantation in Australia and New Zealand. The second part consists of special reports some of which have been written by authors not directly associated with the Registry or its Working Groups.

There have been a number of new ventures for the Registry this year. We have embarked on data collection for a Peritonitis Registry and hopefully this will be reported in the next year's report. In addition a Registry of Living Kidney Donors has been initiated.

In 2003, an agreement has been reached between ANZDATA Registry and the Collaborative Transplant Study which is based in Heidelberg, Germany. For a number of years Transplant Units in Australia and New Zealand have contributed to the latter registry and from this year it has been possible for these data to be sent directly from ANZDATA to the CTS, thus preventing the need for double handling of data by the contributing units.

There has been a small expansion of the staff of the Registry over the last year. Lee Excell continues in her role as Manager, Brian Livingston continues as our main computer programmer and Lis Steinmetz provides administrative support. We have been joined by Bianca Leonardi who has been appointed as Biostatistician. Bianca's appointment will provide the ability to perform more sophisticated statistical analyses and also provides us with another person with database analysis skills which will allow more rapid responses to requests to the Registry from contributors and others.

Dr Stephen McDonald continues in his role as AMGEN Fellow in Epidemiology. He continues to be productive, with a number of publications having been accepted in the international nephrological literature. In addition he has taken a greater role in the day to day running of the Registry and has had a major input into the composition and compilation of this report.

Dr Angela Webster also continues in her role as Fellow in Cancer which has been funded by Novartis.

The major funding of the Registry comes from the Commonwealth Department of Health and Ageing. Funds have also been obtained from the Australian Kidney Foundation and the New Zealand Ministry of Health.

The internet based data exchange scheme continues to progress slowly and it is hoped that 2004 will see its eventual roll out to contributing units. Once again generous grants from Novartis, Janssen-Cilag, Roche and Wyeth have enabled us to develop this new system. The ultimate aim is that this data exchange will not only provided a mechanism for data entry but also allow units to enquire of the database for their own analytical purposes.

The ANZDATA Registry Executive and ANZDATA Registry Advisory Committee are Subcommittees of the Dialysis, Nephrology and Transplant Committee of the Australia and New Zealand Society of Nephrology and the Australian Kidney Foundation. The ANZDATA Registry Advisory Committee currently consists of:

A/Prof Rowan Walker (Chair)
Prof Graeme Russ (Chair of ANZDATA Executive)
Dr Stephen McDonald (AMGEN Fellow in Epidemiology)
Mrs Leonie Excell (Registry Manager)
A/Prof Tim Mathew (AKF Representative)
Dr Steven Chadban (Manager/Transplantation)
Dr Jeremy Chapman (Manager/Cancer)
Dr Angela Webster (NOVARTIS Cancer Fellow)
A/Prof Jonathan Craig (Manager/Paediatrics)
A/Prof Peter Kerr (Manager/Haemodialysis)
A/Prof David Johnson (Manager/CAPD)
Dr Nicola Hay (NZ Representative)
Dr Harry Moody
Dr John Agar
Dr Mark Marshall

In addition small Working Groups continue to work in each of the specialty areas and have been responsible for analysis of data in their specialty as well as the production of manuscripts for publication in this report and in the international literature.

Graeme Russ
Chair ANZDATA Executive

In December 2001 changes to the Commonwealth Privacy Act were introduced which have led to changes to the collection of personal information. Essentially these extend to the private sector a number of changes based around 10 "National Privacy Principles" (NPP's). A detailed exposition of these can be found at the Privacy Commissioners Website (www.privacy.gov.au). Briefly however, health information is treated as "sensitive" information, which must usually be collected and handled with consent of the person, unless certain conditions are met.

Each Australian State has also enacted similar provisions which cover practice and patients in public hospitals.

Collection of Data

ANZDATA spent some time during 2002 formulating an appropriate response to these issues including seeking advice from a variety of sources. The approach taken has been that of a "opt-out" consent, whereby patients are distributed information outlining the nature and purpose of the information collected, offered an opportunity to view that data and ask questions, and the opportunity to request withdrawal of part or all of their data. This approach is explicitly suggested for Registries by the Privacy Commissioner in his "Guidelines for the Health Sector". To this end ANZDATA has circulated to all participating hospitals a patient information sheet, for each hospital to use (or a locally modified version if appropriate) to inform patients.

At the time of data collection each unit is asked to certify that they have complied with measures under the relevant privacy act.

Use of Data

ANZDATA does not release data identifiable by patient name. Results are published/released in tabular or graphic format. On occasion, when data identifying particular hospitals is involved, consent from the Director of the relevent renal unit is sought prior to the release of information.

ANZDATA REGISTRY

Australia and New Zealand Dialysis and Transplant Registry

C/- The Queen Elizabeth Hospital
28 Woodville Road
Woodville South, 5011
South Australia

Phone: (08) 8222.6704
Fax: (08) 8222.6402
Email: anzdata@anzdata.org.au
Web: http://www.anzdata.org.au

(04 09 02)

Important Privacy Information

As part of routine medical care of people receiving treatment with dialysis or kidney transplantation, your kidney specialist collects certain information about the patients they treat. All kidney specialists throughout Australia and New Zealand report this information every 6 months to the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA). ANZDATA collects the information for the purpose of monitoring treatments and performing analyses to improve quality of care for people with kidney failure.

1. What is ANZDATA ?

ANZDATA is an organization set up by the Australian Kidney Foundation and the Australia and New Zealand Society of Nephrology to monitor dialysis and transplant treatments. ANZDATA is funded by the Australian and New Zealand Governments and the Australian Kidney Foundation.

2. What information is collected about you ?

This information includes your name, age, gender, racial origin, hospital of treatment, some aspects of your medical condition (such as whether you have diabetes) and details about the type of kidney treatment you are receiving (dialysis or transplant).

We **DO NOT** collect details about your address, telephone number, medical insurance, or non-medical matters such as occupation, income, etc

3. Is personal data ever released ?

The identity of people in the database **IS NOT released publicly nor in any reports**. Measures have been put into place to ensure the security of all collected information.

4. What is this information used for ?

The information is used primarily for quality assurance, investigating patterns of kidney disease, and planning appropriate health services. We release reports on a variety of topics, including an Annual Report examining the rates and treatment of kidney failure in Australia and New Zealand. We also have a major role in ensuring the quality of patient care by sending to each kidney unit each year a report outlining their activity. These reports also compare the outcome of the treatment they provide with that of other units throughout the two countries. Reports are also produced at a state and national level, and from time to time analyses are also produced for renal units, government health departments and industry concentrating on particular aspects of renal failure management eg peritoneal dialysis, transplantation, haemodialysis.

5. Can you see what personal information ANZDATA collects and the reports that it produces ?

Individuals are able to view their own information on request. You can request alterations if you believe it is inaccurate. You may also opt not to have your treatment included in this database, and you should let your kidney specialist know if this is the case. You can also choose not to have some information (e.g. racial origin) recorded. However, if your information is not included in the Registry, the ability to compare results in Australia and New Zealand or to analyse the results of different treatment methods and for different patient types (eg diabetics) will be compromised.

The national reports and much other material produced by ANZDATA are available free on the Internet at www.anzdata.org.au, or they can be sent to you on request to the address above. Your kidney specialist will also have copies of many of the reports.

If you wish to discuss any of the issues raised here, please let your doctor know or telephone the ANZDATA Registry direct on 08 8222 6704. You may also write to us (ANZDATA Registry, C/- The Queen Elizabeth Hospital, 28 Woodville Road SA 5011) or send us an e-mail (anzdata@anzdata.org.au).

Guidelines for Data Release

The policy for release of data to investigators, renal units and others was revised during 2002 and is summarised on the Website. ANZDATA encourages the analysis, use and citation of its data, and receives many data requests annually which vary in size and complexity. At times these overwhelm the limited resources within the Registry, and must be prioritised. Generally, formal requests for data are preceded by a period of consultation with a member of the Registry staff. Requests are welcome from Renal Physicians, other staff members of Renal Units, Charitable Bodies, Academic Institutions, Government Departments and Industry. Requests dealing with identifiable Hospital data will only be fulfilled with the explicit consent of the Heads of the relevant Hospital Units.

Attribution of Publications

The policy on attribution of publications which incorporate ANZDATA sourced data was revised during 2002, following a period of consultation with participating physicians.

Where a member of a participating unit has analysed data provided by ANZDATA and subsequently prepared a manuscript, then "ANZDATA Registry" should be acknowledged as a secondary institution in addition to the author's Hospital or University. This applies whether the primary data analysis is performed by the author or by ANZDATA staff. Where the author is an ANZDATA office holder or staff member then the primary attribution should be "ANZDATA Registry".

Where ANZDATA data is only a minor portion of the work, then it may be more appropriate to acknowledge the source explicitly in the "Acknowledgements" section.

In both cases the disclaimer on page ii of this report should be included.

In all cases the source and treatment of the data should be made clear in the "Methods" section. Preferably the abstract (and keywords if applicable) should also include "ANZDATA" which would allow for searching Registry publications.

CONTRIBUTING AUTHORS

Dr Steven Chadban
Nephrologist and Transplant Physician
Department of Renal Medicine, Royal Prince Alfred Hospital,
Missenden Road, Camperdown, New South Wales, 2050

Associate Professor Jonathan Craig
Paediatric Nephrologist
The Children's Hospital at Westmead, NSW, 2006

Ms Karen Herbertt
Manager
SA Organ Donation Agency, 10 Pulteney Street, Adelaide, South Australia, 5000

Associate Professor David Johnson
Nephrologist, Director Renal Unit
Princess Alexandra Hosital, Ipswich Road, Woolloongabba, Queensland, 4102

Associate Professor Peter Kerr
Nephrologist
Renal Unit, Monash Medical Centre, 246 Clayton Road, Clayton, Victoria, 3168

Ms Bianca Leonardi
Biostatistician
ANZDATA, C/- The Queen Elizabeth Hospital,Woodville, South Australia, 5011

Dr Mark Marshall
Nephrologist
Middlemore Hospital, Otahuhu, Auckland, New Zealand

Dr Stephen McDonald
AMGEN Fellow in Epidemiology and Nephrologist,
ANZDATA, C/- The Queen Elizabeth Hospital,Woodville, South Australia, 5011

Dr Kevan Polkinghorne
PhD Scholar,
Renal Unit, Monash Medical Centre, 246 Clayton Road, Clayton, Victoria, 3168

Professor Graeme Russ
Chair ANZDATA Executive, Director Renal Unit
C/- The Queen Elizabeth Hospital,Woodville, South Australia, 5011

These definitions apply throughout this report unless otherwise stated.

1. Wording

Throughout this report 'treatment' refers to renal replacement therapy, including haemodialysis, peritoneal dialysis and transplantation

HD = haemodialysis
APD = automated peritoneal dialysis
CAPD = continuous ambulatory peritoneal dialysis
ESRD = end stage renal disease

2. Data collection

ANZDATA collects information from all renal units in Australia and New Zealand every 6 months. Currently this is by a paper-based system, with manual completion of the form and manual data entry. No formal audit mechanism is in place at this stage.

For transplants, HLA matching and panel reactive antibodies are obtained direct from the Tissue Typing laboratories in each State.

3. Inclusion criteria

Included in the Registry are all patients receiving renal replacement therapy where the intention to treat is long-term, i.e. medical opinion is that renal function will not recover. Cases of acute renal failure are excluded. People who move overseas permanently are censored at date of last treatment (or departure in the case of transplant recipients).

4. Modality attribution

The initial mode of dialysis is determined at 90 days after first treatment, to allow for early changes and maturation of access. Other transfers (between modalities, or from satellite to hospital HD etc.) are not analysed if less than 30 days, except for transfers between dialysis centres to which a 60 day rule is applied to allow for holiday movements.

5. Underlying renal disease

This is recorded by the treating hospital according to a modified EDTA coding system (details on back of survey form).

6. Deaths

Deaths are coded by the treating hospital using a modified EDTA coding system (details on back of survey form). Where a recent change in location or modality preceded death by <30 days, the death is attributed to the modality / location at time of death, although some analyses differ and this is stated for those analyses. All deaths following transplant surgery are attributed to transplantation.

7. Co-morbid conditions

These are recorded by the treating hospital. No definitions are supplied; the treating clinician is asked to record whether the patient has coronary artery disease, chronic lung disease, cerebrovascular disease, peripheral vascular disease or diabetes according to their clinical opinion on a yes / suspected / no basis.

8. Transplant Waiting List

The active transplant waiting list includes listing at any stage during the survey period.

9. Derived measures

9.1 Haemoglobin

Haemoglobin is recorded as the last available measurement before the end of the survey period.

9.2 Erythropoietic agents

Erythropoietin agent use is recorded as "yes" if these agents were used at any time during the survey period.

9.3 Iron Studies

Iron studies are requested within the last three months of the survey period.

9.4 Estimated creatinine clearance

Where creatinine clearance is estimated from serum creatinine at entry or post transplantation, the Cockroft-Gault equation is used [1].

$$Cl_{Cr}=(140\text{-age})*\text{weight} / (814*Cr_{serum})[*0.85 \text{ if female}]$$

The weight term used for this is lean body mass, calculated using the equation LBW=(0.9*[height-152])+(50 if male, 45.5 if female).

9.5 Urea reduction ratio / Kt/V

Results are requested in one of these formats, using the stop flow method on a mid-week dialysis. Single pool Kt/V is collected, along with the method used.

For conversion of URR to Kt/V urea the formula used [2] is

$$Kt/V = 0.023*PRU - 0.284$$ (note that PRU = percent reduction in urea and not URR).

9.6 Body Mass Index

Body mass index (BMI) is calculated as $\frac{\text{weight (kg)}}{(\text{height (m)})^2}$

The standard NH&MRC categories are used:

underweight	<20 kg/m^2
normal	20-24.9 kg/m^2
overweight	25-29.9 kg/m^2
obese	≥ 30 kg/m^2

9.7 Peritoneal Dialysis measures

These are the standard measures, often calculated by computerised patient management programs.

9.7.1 Residual renal function

The measure used is the arithmetic mean of urea and creatinine clearance from a 24-hour urine collection and serum creatinine & urea.

9.7.2 Peritoneal equilibration test

The ratio of dialysate to plasma glucose is used, following a 4 hour dwell of a 2 litre 2.5% bag of dialysate, performed within 6 months after initiation of PD.

10. Rates & Measures

10.1 Incidence rates

Except where otherwise stated, quoted incidence rates are per calendar year, and are expressed per million population.

10.2 Prevalence rates

Except where otherwise specified, prevalence rates are point prevalence rates at 31 December 2002.

10.3 Population denominator

The population estimates used are the estimated resident populations (ERP) for the year 2002, released by the Australian Bureau of Statistics and Statistics New Zealand. Figures used are those for the June quarter.

For both countries, the statistics bureaux record indigenous status on a self-identification basis.

For Australia, there has been considerable change in the propensity to self-identify as indigenous, such that a number of estimates are released by the ABS [3]. For this report, the low range projections have been used.

10.4 Survival rates

For transplant recipients, survival rates exclude those who were transplanted overseas or were recipients of multiple organ grafts.

Graft survival (unless otherwise qualified) includes both cessation of graft function (i.e. return to dialysis) and patient death.

Patient survival for transplant recipients - rates for fixed period are calculated according to the life-table method and include an adjustment to the risk-set of ½ of those censored without failure over the interval to create an “average” risk set.

Patient and technique survivals for Haemodialysis and Peritoneal Dialysis are based on the dialysis modality at 90 days after first treatment for patients not grafted during that period. Patients are followed up until they are either grafted (at which point they are censored) or until they have a ‘permanent’change of dialysis modality or until death or most recent follow up date. A ‘permanent’change of dialysis is defined as any change in excess of 30 days.

10.5 Death and other event rates

Rates are expressed per 100 person years at risk (unless otherwise stated).

10.6 Age standardisation

All rates are crude, not age-standardised. The age distribution of the populations for Australia and New Zealand are given in Appendix I.

11. Database

Data is stored on a relational database using ORACLE version 8I.

12. Statistics

Statistical analyses were performed using SPSS release version 10.0.7 and Stata version 8.2.

13. References

1. Cockcroft DW, Gault MH: Prediction of creatinine clearance from serum creatinine. Nephron 16:31-41, 1976.
2. Basile C, Casino F, Lopez T: Percent reduction in blood urea concentration during dialysis estimates Kt/V in a simple and accurate way. Am J Kidney Dis 15:40-45, 1990.
3. Australian Bureau of Statistics: Experimental estimates of the Aboriginal and Torres Strait Islander Population, Australia, 1998. Canberra, ABS Cat.No. 3230.0, 1998.

3/01

AUST. & N.Z. DIALYSIS AND TRANSPLANT SURVEY

THIS SECTION FOR ALL PATIENTS

REGISTRY NUMBER | **1 INITIAL HOSPITAL** Hospital/State | Hosp. Unit No. | **CURRENT PARENT HOSPITAL** Hospital/State | Hospital. Unit No | Physician (Optional)

2 Surname | Given Names | **3 DATE OF BIRTH** | **4 SEX**

5 RACIAL ORIGIN (Record from list) | IF ABORIGINAL - Resident State at Entry | **6 PRIMARY RENAL DISEASE** (Record from list) | OTHER | **7 BIOPSY** Y/N | **8 SE. CREATININE** AT ENTRY

9 COUNTRY OF BIRTH (IF Australia or NZ - Tick box) Aust | NZ | OTHER COUNTRY (Please specify)

10 POSTCODE AT ENTRY

AUSTRALIAN KIDNEY

11 CO-MORBID CONDITIONS AT ENTRY

LATE REFERRAL <3 MTHS BEFORE FIRST TREATMENT (Y/N)	HEIGHT (cms)	WEIGHT (kg)	CIGARETTE SMOKING N=Never F=Former C=Current	HYPERTENSION REQUIRING TREATMENT (Y/N)

DISEASE AT ENTRY AND DURING CURRENT SURVEY

Y=Yes N=No S=Suspected

DIABETES N=No O=Type 1 Insulin dependent P=Type 2 Non Insulin requiring Q=Type 2 Insulin requiring

	CHRONIC LUNG Y/S/N	CORONARY ARTERY Y/S/N	PERIPHERAL VASCULAR Y/S/N	CEREBRO VASCULAR Y/S/N	DIABETES
AT ENTRY					
LAST					
CURRENT					

OTHER CO-MORBID CONDITIONS (Write In)

AT ENTRY	
PREVIOUS ENTRIES	
CURRENT	

12 CENTRE OF TREATMENT Enter geographical location at Death or End of survey

	HOSPITAL / CENTRE NAME (Write In or Tick if same)	CENTRE CODE	DATE TRANSFER
CURRENT			
LAST			

13 ON TRANSPLANT WAITING LIST (Dialysis Patients Only) Y=Yes N=No | CURRENT | LAST

14 HEPATITIS C ANTIBODY 1=Positive 2=Negative 3=Not done | CURRENT | LAST

15 COURSE OF TREATMENT - COMPLETE ACCORDING TO CODE

A Hospital/Outpatient APD / IPD
C Satellite APD / IPD
E Home APD / IPD
L Hospital/Outpatient CAPD
M Home CAPD
B Hospital HD
D Satellite HD
F Home HD
G Transplant in AUST/NZ
H Date of last post graft dialysis
X Transplant Overseas
I Graft function Temporary/Permanently ceased (Date return to dialysis)
J Own kidney function recovered. Dialysis ceased
K Date of last visit if lost to follow up
Z DATE OF DEATH

	CODE	DAY	MTH	YR		CODE	DAY	MTH	YR		CODE	DAY	MTH	YR
1st					16th					31st				
2nd					17th					32nd				
3rd					18th					33rd				
4th					19th					34th				
5th					20th					35th				
6th					21st					36th				
7th					22nd					37th				
8th					23rd					38th				
9th					24th					39th				
10th					25th					40th				
11th					26th					41st				
12th					27th					42nd				
13th					28th					43rd				
14th					29th					44th				
15th					30th					45th				

16 CANCER EVER? Y/N — If Yes, enter separate Cancer Form

17 CAUSE OF DEATH (Record from list) OTHER

18 WAS GRAFT SUSTAINING LIFE? Without dialysis at time of death Y=Yes N=No

19 PARENTHOOD HAS THIS PATIENT BECOME PREGNANT OR FATHERED A CHILD DURING THIS SURVEY — Y=Yes N=No — If Yes, please complete the Pregnancy Outcome sheet — DATE OF LAST OUTCOME

THIS SECTION FOR ALL PATIENTS DIALYSED AT ANY TIME DURING THIS SURVEY PERIOD

20 TYPE OF DIALYSIS (Record from list)

21 DRY WEIGHT AT LAST DIALYSIS HD and PD Patients At end of Survey, Transplantation or Death (nearest kg)

22 HAEMOGLOBIN Last Available g/l

23 EPO AGENT Y=Yes N=No

24 FERRITIN Within last 3 mths of Survey or record not done ug/l

25 % SATURATION IRON (Transferrin Saturation) Within last 3 mths of Survey or record not done

HAEMODIALYSIS

Enter Questions 22 to 25 for **ALL PATIENTS ON DIALYSIS** at the end of Survey

26 DIALYSER BRAND (Write In) CODE | BRAND NAME AND MODEL

27 BLOOD FLOW RATE Pump Speed mls/min

28 SESSIONS PER WEEK

29 HOURS PER SESSION

30 UREA REDUCTION or Kt/V Method (See List) | Value

31 ACCESS IN USE (Functioning only) Enter for **ALL PATIENTS ON HAEMODIALYSIS** at the end of Survey

PRESENT: 1=Native 2=Synthetic 3=Tunnel CV Catheter 4=Non Tunnel CV Catheter

DECLOTTED during Survey: Y=Yes N=No D=Declotted and revised

REVISED during Survey: N=No S=Surgical A=Angioplasty B=Both

IN THE EVENT OF THE PATIENT HAVING BOTH HD AND PERITONEAL DIALYSIS DURING THE SURVEY COMPLETE SECTIONS 20-41 INCLUSIVE

ALL PERITONEAL DIALYSIS

32 PET TEST (Once only) Within first 6 mths (Dx/Plasma Creatinine at 4 hours)

33 CONNECTION SYSTEM CODE | (Write In)

34 PERITONITIS DATE OF FIRST EPISODE

35 NUMBER OF EPISODES OF PERITONITIS During this Survey

36 TOTAL VOLUME OF WEEKLY EXCHANGES (Litres/week)

37 DIALYSATE CREATININE CLEARANCE Adjusted for Body Surface Area (Litres/week/1.73 m²)

38 DIALYSATE WEEKLY Kt/V Range 10-200 Litres/week | Range 0.1 - 5.0

39 RESIDUAL CREATININE CLEARANCE Adjusted for Body Surface Area (Litres/week/1.73 m²)

40 REASON FOR TRANSFER FROM CAPD / APD (Record from list)

CURRENT GRAFT (IN THE EVENT OF BOTH GRAFT FAILURE AND RETRANSPLANT IN THIS SURVEY – USE A NEW FORM)

41 GRAFT NUMBER

42 DATE OF THIS TRANSPLANT

43 REFERRING HOSPITAL

44 DONOR HOSPITAL

45 TRANSPLANT HOSPITAL

46 RECIPIENT ANTIBODY STATUS AT GRAFT CMV | EBV — 1=Positive 2=Negative 3=Not done

47 NUMBER REJECTION EPISODES THIS SURVEY (Complete acute rejection form for each episode) (Within 6 months of transplant)

48 DONOR DETAILS SOURCE (See list) | AGE | SEX

49 TOTAL ISCHAEMIA (Hours)

50 IMMEDIATE FUNCTION (See list)

51 DISEASE IN GRAFT (See list)

52 DATE FIRST PROVEN (eg. Graft biopsy)

53 CAUSE OF GRAFT FAILURE Other (Record from list)

54 MONOCLONAL / POLYCLONAL THERAPY (Record from list)

COURSE	DATE	AGENT	OTHER	NUMBER OF DOSES GIVEN	REASON	OTHER
1st						
2nd						
3rd						

55 TOTAL DAILY DRUG DOSE (mg)

	TOTAL INITIAL ORAL DOSE	1 MTH	2 MTH	3 MTH	6 MTH	1 YR	2 YR	3 YR	5 YR	7 YR	10 YR	15 YR	20 YR	25 YR	30 YR	35 YR
CYA																
AZA																
PRED																
TACROL																
MMF																
SIROL																
OTHER																

56 CYA SPARING DRUG 0=NOT GIVEN 1=GIVEN (eg DILTIAZEM - KETOCONAZOLE - VERAPAMIL)

57 BODY WEIGHT (kg)

58 SERUM CREATININE µmol/L

FOR OFFICE USE ONLY

59 HLA TYPING

	BLOOD GROUP	A	B	DR	DQ
RECIPIENT					
DONOR					

60 PRA AND CROSSMATCH

MAXIMUM	CURRENT

INSTRUCTIONS FOR DIALYSIS AND TRANSPLANTATION SURVEY COMPILATION
PLEASE READ THE EXPLANATORY NOTES BEFORE COMMENCING TO FILL IN THE FORMS

Please complete the form using neat capitals and <u>in pencil</u>

5 – RACIAL ORIGIN

1 Caucasoid
2 Australian Aborigine
3 Chinese
4 Maori
5 Arab
61 Cook Islander
63 Samoan
64 Tongan
65 Torres Strait Islander
69 Pacific Islander – other (**specify**)
7 Indian
8 Indonesian
9 Malay
10 Filipino
11 Vietnamese
20 Other (**specify**)
00 Patient objects to answering question

Mixed race coded by patient's assessment

6 - PRIMARY RENAL DISEASE

Results of ANCA (Anti Neutrophil Cytoplasmic Antibody) test in association with glomerulonephritis should be entered in box marked OTHER

100 Presumed GN, type undefined histologically (no biopsy)
110 Focal sclerosing GN (including hyalinosis)
121 Mesangiocapillary GN with subendothelial deposits (double contour)
122 Mesangiocapillary GN with intramembranous deposits (dense deposit disease)
130 Membranous GN
140 Extra and intra capillary GN (extensive crescents - clinically rapidly progressive)
151 Mesangial proliferative (IgA+ positive)
152 Mesangial proliferative (IgA- negative)
153 Mesangial proliferative (no I.F. studies)
160 Focal and segmental proliferative GN (including focal necrotising)
170 Advanced GN (unclassified = end stage)
180 GN with systemic disease (**specify**)
181 Goodpasture's syndrome with linear IgG and lung haemorrhage
182 Proliferative GN with linear IgG -no lung haemorrhage
183 SLE
184 Henoch-Schonlein purpura
185 Wegener's Granulomatosis
186 Microscopic Polyarteritis
187 Scleroderma
190 GN other (**specify**)
191 Familial GN (**specify Alport's - yes** or **no**)
200 Analgesic nephropathy
300 Renal vascular disease due to malignant hypertension (NO primary renal disease)
301 Renal vascular disease – type unspecified
302 Renal vascular disease – due to hypertension (nephrosclerosis) (NO primary renal disease)
303 Atheroembolic disease (cholesterol emboli)
304 Bilateral renal artery stenosis
400 Polycystic kidney disease
401 Medullary cystic disease
402 Infantile/juvenile polycystic kidney disease
500 Reflux nephropathy
600 Pyelonephritis
700 Calculi
701 Gout
801 Diabetes – Type 1 (insulin dependent) **[Juvenile onset]**
802 Diabetes – Type 2 (non-insulin requiring)
803 Diabetes – Type 2 (insulin requiring) **[Mature onset]**
000 Other (**specify**)
001 Uncertain diagnosis
002 Lead nephropathy
003 Cadmium toxicity
004 Renal tuberculosis
005 Amyloid disease
006 Haemolytic uraemic syndrome
007 Cortical necrosis
008 Interstitial nephritis
009 Congenital renal hypoplasia and dysplasia
010 Loss of single kidney (trauma, surgery)
011 Megaureter
012 Oxalosis
013 Cystinosis
014 Balkan nephropathy
015 Renal cell carcinoma (GRAWITZ)
016 Transitional cell carcinoma of urinary tract
017 Paraproteinaemia (including multiple myeloma)
018 Light chain nephropathy (benign)
019 Lithium toxicity

PRIMARY RENAL DISEASE cont....

020 Post partum nephropathy
021 Sarcoidosis
031 Posterior urethral valves
032 Pelvi-ureteric junction obstruction
033 Obstructed megaureter
034 Neuropathic bladder
035 Non-obstructed dilated bladder and ureters (megacystitis – megaureter)
036 Spina bifida or myelomeningocoele
037 Bladder neck obstruction (incl. prostatomegaly)
039 Other lower urinary tract abnormalities (with secondary reflux) (**specify**)
040 Ureteric obstructive nephropathy
041 Obstructive nephropathy

17 - CAUSE OF DEATH

CARDIAC

10 Myocardial ischaemia (presumed)
11 Myocardial ischaemia and infarction
12 Pulmonary oedema
13 Hyperkalaemia
14 Haemorrhagic pericarditis
15 Hypertensive cardiac failure
16 Cardiac arrest – cause uncertain
17 Other causes of cardiac failure (**specify**)

VASCULAR

21 Pulmonary embolus
22 Cerebrovascular accident
23 Gastrointestinal haemorrhage
24 Haemorrhage from dialysis access site
25 Haemorrhage from transplant artery
26 Aortic aneurysm – rupture
27 Haemorrhage from elsewhere (**specify**)
28 Bowel infarction

INFECTION

Please enter code for nature of infective organism, after the code for site of infection Please **<u>specify type of organism</u>**
eg Staph, CMV, Candida, etc

eg 321 Lung infection – bacterial (staph)
322 Lung infection – viral (CMV)

31 CNS	1 Bacterial
32 Lung	2 Viral
33 Urinary tract	3 Fungal
34 Wound	4 Protozoa
35 Shunt	5 Other
36 Peritoneum	
37 Septicaemia – site unknown (**specify organism**)	
38 Liver (incl. viral hepatitis) (**specify** A, B, CMV, herpes, etc)	
39 Other site (**specify**)	

SOCIAL

41 Patient refused further treatment (**specify reason**)
42 Suicide
43 Therapy ceased for any other reason (**specify**)
44 Accidental death (**specify**)

MISCELLANEOUS

50 Hepatic failure (**specify**)
51 Uraemia caused by graft failure
52 Pancreatitis
53 Bone marrow depression
54 Cachexia
55 Unknown
56 Malignant disease
57 Perforation of abdominal viscus – peptic ulcer, diverticulum, appendix
58 Dialysis dementia (aluminium)
59 Other (**specify**)
60 Immunodeficiency due to viral infection (**specify organisms involved**)
61 Chronic respiratory failure
62 Sclerosing peritonitis

20 – TYPE OF DIALYSIS

10 Haemodialysis – coil dialysers
11 Haemodialysis – plate dialysers
12 Haemodialysis – hollow fibre dialysers
15 Haemofiltration
16 Haemodiafiltration
20 Peritoneal – bags no cycler
21 Peritoneal – continuous ambulatory (CAPD)
22 Peritoneal – automated (APD)
23 Peritoneal – intermittent cycler (IPD)
25 Peritoneal – other (**specify**)

30 – URR or Kt/V **Please enter method used**

A Urea Reduction Ratio % (URR)
B Kt/V (by BIOSTAT)
C Kt/V (by UKM)
D Kt/V (by DAUGIRDAS – single pool)
E Kt/V (other method – **specify**)

<u>Kt/V</u> (for HD patients) Range 0.5 – 2.2

UREA REDUCTION RATIO %

(<u>Pre dialysis urea – post dialysis urea</u>) x 100 **= URR%**
Pre dialysis urea

<u>Pre dialysis urea:</u>
Blood should be drawn from the 'arterial' needle immediately prior to dialysis, at a mid-week dialysis session

<u>Post dialysis urea:</u>
Blood is again drawn from the 'arterial' needle and this should occur **<u>within 20 seconds</u>** after cessation of the blood pump (alternatively the pump can be turned down to 50 ml/min) – this is to avoid problems with recirculation

32 – PET TEST (Required **Once Only** per patient)

Standard Peritoneal Dialysis Equilibration Test
performed 1-6 months after initiation of PD
(2.5% 2 litre exchanges)

Provide dialysis/plasma creatinine at 4 hours
Range 0.1 – 1.2

37 to 39 – PD CLEARANCE STUDIES

Generated from a 24 hour collection of PD effluent and urine

37 DIALYSATE CREATININE CLEARANCE (per week)
Total (includes a 24 hour urine and dialysate creatinine)
Range 10 - 200 litres/week
Litres /week / 1.73m² Body Surface Area

38 DIALYSATE WEEKLY Kt/V
Range 0.1 – 5.0

39 RESIDUAL CREATININE CLEARANCE
(per week) = mean of urea and creatinine clearance
Litres /week / 1.73m² Body Surface Area

40 – REASON FOR TRANSFER FROM CAPD / APD

10 Recurrent / persistent peritonitis
11 Acute peritonitis
15 Tunnel / exit site infection
16 Diverticulitis
20 Inadequate solute clearance
21 Inadequate fluid ultrafiltration
27 Abdominal abscess
30 Dialysate leak
31 Catheter block
32 Haemoperitoneum
35 Hernia
36 Abdominal pain
40 Abdominal surgery
41 Sclerosing peritonitis
45 Haematuria
46 Pleural effusion
50 Patient preference
51 Unable to manage self-care
60 Recovery of renal function
70 Transplantation
80 Death
81 Transfer outside Australia
82 Other surgery
83 Hydrothorax
99 Other (**specify**)

48 – SOURCE OF DONOR KIDNEY

1 Cadaver
2 Sister (if twin, record 6 or 7)
3 Brother (if twin, record 6 or 7)
4 Mother
5 Father
6 Monozygotic (identical) twin
7 Dizygotic (non-identical) twin
8 Other related living donor (**specify**)
9 Son
10 Daughter
11 Husband
12 Wife
13 Cousin
14 Unrelated living donor (**specify**)

49 – TOTAL ISCHAEMIA (HOURS)

From time of donor renal artery interruption or aortic clamp, until time of release of renal artery in the recipient (clamp off)

50 – IMMEDIATE FUNCTION

1 Spontaneous fall in se.creatinine by 10% within 24 hours

2 Spontaneous fall in se.creatinine by 10%, first recorded between 25-72 hours

3 Poor immediate function. No spontaneous fall in se.creatinine within 72 hours; but no dialysis needed

4 No immediate function. No spontaneous fall (> 10%) in se.creatinine; dialysis required within 72 hours

51 – DISEASE IN GRAFT **Histologically proven**

Complete this section for **<u>FUNCTIONING or FAILED GRAFTS</u>**

Y = Disease recurrence
– primary renal disease and disease in graft the same

D = De novo glomerulonephritis
– primary renal disease known and not the same

G = Glomerulonephritis in graft
– primary renal disease unknown or not biopsied

In cases of glomerulonephritis, where histological confirmation of recurrence may be uncertain, enter as G

53 – CAUSE OF GRAFT FAILURE

REJECTION

10 Hyperacute rejection (within 48 hours of transplantation)
20 Acute rejection (anytime: severe rejection after a period of good function)
30 Subacute rejection (progressive or repeated moderately severe rejection usually within several months of transplant)
40 Chronic rejection (slow progressive deterioration after some months of stable function)

VASCULAR

50 Renal artery stenosis
51 Renal artery thrombosis
52 Renal vein thrombosis
53 Renal vessel haemorrhage (primary)
54 Renal vessel haemorrhage (secondary)
55 Embolus – thrombo
56 Embolus – cholesterol
57 Haemolytic uraemic syndrome

TECHNICAL

60 Non-viable kidney (due to pre-transplant cortical necrosis)
61 Cortical necrosis post transplant (not due to rejection)
70 Ureteric and bladder problems

GLOMERULONEPHRITIS

82 Mesangiocapillary GN with subendothelial deposits
83 Mesangiocapillary GN with intramembranous deposits (dense deposit disease)
84 Focal sclerosing GN (including hyalinosis)
85 Membranous GN
86 Mesangial proliferative GN (IgA positive)
87 Goodpasture's syndrome
88 Intra and extra capillary GN with extensive crescents (clinically rapidly progressive)
89 Other (**specify**)

DRUG THERAPY

90 Complications of drug therapy requiring reduction or withdrawal of steroid and/or immunosuppressants
91 Non-compliance with therapy – causing graft failure
92 Rejection following I/S reduction due to malignancy
93 Rejection following I/S reduction due to infection

MISCELLANEOUS

00 Other (**specify**)
01 Donor malignancy
02 Malignancy invading graft

54 – MONOCLONAL / POLYCLONAL THERAPY

Record in order of administration, each separate course of such drugs; a second course of the same drug should be separately recorded
Complete the requested details regarding, date, identity of drug, number of doses given, and reason for administration, according to the following codes

TYPE OF AGENT	NUMBER OF DOSES
2 Daclizumab (Zenepax)	Record actual number of doses given
4 OKT3	
6 Basiliximab (Simulect)	
8 Polyclonal	
9 Other monoclonal (**specify**)	

REASON FOR USE

1 Prophylaxis
7 Treatment for acute rejection
8 Other (**specify**)

55 – TOTAL DAILY DRUG DOSE

Enter the total daily dose for each drug where applicable; if an unlisted drug is used, enter the name in the space provided marked **OTHER**

Only those drugs taken at the listed intervals should be entered; where necessary provide the dose recorded on the closest day preceding the requested time interval

The initial drug dose (at zero months) is **<u>the first oral maintenance dose</u>**: do **<u>NOT</u>** enter the intravenous loading doses administered at or shortly after transplantation

QUEENSLAND
Allamanda Private Hospital
Bundaberg Base Hospital
Cairns Base Hospital
Goldcoast Hospital
Greenslopes Private Hospital (Baxter)
Hervey Bay Hospital
John Flynn Hospital
Mackay Base Hospital
Nambour Hospital
Pine Rivers Private Hospital
Princess Alexandra Hospital
Rockhampton Base Hospital
Royal Brisbane Hospital
St. Andrew's Private Hospital (Gambro)
St. Vincent's Hospital, Robina
Toowoomba Hospital
Townsville General Hospital
Wesley Private Hospital

NEW SOUTH WALES
Dubbo Base Hospital
East Coast Renal Service
Prince of Wales Hospital
Sydney Children's Hospital
St. George Hospital
St. Vincent's Hospital
Wollongong Hospital
Gosford Hospital
John Hunter Hospital
Lindfield Private Dialysis Centre (Gambro)
Lismore Hospital
Mater Misericordiae Hospital
New Children's Hospital
Port Macquarie Community Dialysis Centre
Port Macquarie Private Hospital
Royal North Shore Hospital
South West Sydney Renal Service
Bankstown Hospital
Liverpool Hospital
Statewide Renal Services
Concord Hospital
Royal Prince Alfred Hospital
Sydney Adventist Hospital
Tamworth Hospital
Western Renal Network
Westmead Hospital
Orange Base Hospital
Wentworth Hospital

AUSTRALIAN CAPITAL TERRITORY (ACT)
The Canberra Hospital

VICTORIA
Alfred Hospital
Austin and Repatriation Medical Centre
Brighton Dialysis Centre (Nephrocare)
Epworth Hospital
Forest Hill Dialysis Centre (Nephrocare)
Geelong Hospital
Kew Private Dialysis Centre (Baxter)
Monash Medical Centre – Adult
Monash Medical Centre – Paediatric
Royal Children's Hospital
North West Dialysis Service
Royal Melbourne Hospital
St. Vincent's Hospital

TASMANIA
Launceston General Hospital
Royal Hobart Hospital

SOUTH AUSTRALIA
Flinders Medical Centre
Modbury Private Dialysis Centre (Fresenius)
The Queen Elizabeth Hospital
Payneham Private Dialysis Centre (Baxter)
Royal Adelaide Hospital
Women's and Children's Hospital

NORTHERN TERRITORY
Royal Darwin Hospital
Alice Springs Hospital

WESTERN AUSTRALIA
Fremantle Hospital
Hollywood Private Hospital
Midland Private Dialysis Centre (Baxter)
Princess Margaret Hospital for Children
Royal Perth Hospital
Sir Charles Gairdner Hospital
St. John of God Private Hospital

NEW ZEALAND
Auckland Hospital
Starship Children's Hospital
Christchurch Hospital
Dunedin Hospital
Middlemore Hospital
Palmerston North Hospital
Waikato Hospital
Wellington Hospital
Whangarei Area Hospital

Queensland

Princess Alexandra Hospital (Adult & Paediatric)
Director of Transplantation - Dr David Nicol
Ipswich Road
Woolloongabba 4102

New South Wales

John Hunter Hospital
Director of Transplantation - Professor Adrian Hibberd
Lookout Road
New Lambton Heights
Newcastle 2304

Prince of Wales Hospital (Adult & Paediatric)
Director - Professor John Charlesworth
Barker Street
Randwick 2031

Royal North Shore Hospital
Director - Dr Lloyd Ibels
Pacific Highway
St Leonards 2065

Royal Prince Alfred Hospital
Director - Associate Professor Josette Eris
Missenden Road
Camperdown 2050

St. Vincent's Hospital
Director - Dr Tim Furlong
Victoria Street
Darlinghurst 2010

Westmead Hospital (Adult & Paediatric)
Director - Dr Jeremy Chapman
Cnr Hawkesbury and Darcy Road
Westmead 2145

Victoria

Alfred Hospital
Director - Professor Napier Thomson
Commercial Road
Prahran 3181

Austin & Repatriation Medical Centre
Director - Dr David Power
Burgundy Road
Heidelberg 3084

Monash Medical Centre Paediatric
Director - Dr Amanda Walker
246 Clayton Road
Clayton 3165

Monash Medical Centre Adult
Director - Professor Robert Atkins
246 Clayton Road
Clayton 3165

Royal Children's Hospital
Director - Dr Colin Jones
Flemington Road
Parkville 3052

Royal Melbourne Hospital
Director - Professor Gavin Becker
Parkville 3052

St. Vincent's Hospital
Director - Dr Brendan Murphy
41 Victoria Parade
Fitzroy 3065

South Australia

The Queen Elizabeth Hospital
Director - Professor Graeme Russ
28 Woodville Road
Woodville 5011

Women's and Children's Hospital
Director - Dr Paul Henning
72 King William Road
North Adelaide 5006

Western Australia

Princess Margaret Hospital for Children
Director - Dr Ian Hewitt
Roberts Road
Subiaco 6008

Royal Perth Hospital
Director - Dr Ashley Irish
Wellington Street
Perth 6001

Sir Charles Gairdner Hospital
Director - Dr Brian Hutchison
Verdun Street
Nedlands 6009

New Zealand

Auckland Hospital
Director - Dr John Collins
Park Road
Grafton, Auckland

Christchurch Hospital
Director - Dr Richard Robson
Riccarton Avenue
Christchurch

Starship Children's Hospital
Director - Dr William Wong
Park Road
Grafton, Auckland

Wellington Hospital
Director - Dr Grant Pidgeon
Riddiford Street
Newtown, Wellington South

Queensland
Atherton Satellite - Cairns Base Hospital
Calvary Hospital - Cairns Base Hospital
Home Hill Satellite - Townsville General Hospital
Innisfail Hospital - Cairns Base Hospital
Ipswich Satellite - Princess Alexandra Hospital
Keperra - Royal Brisbane Hospital
Logan Satellite - Princess Alexandra Hospital
Noosa Satellite - Nambour Hospital
Palm Island Satellite - Townsville General Hospital
Redcliffe Satellite - Royal Brisbane Hospital
Sandgate Satellite - Royal Brisbane Hospital
Vincent Satellite - Townsville General Hospital

New South Wales
Ballina Satellite - Lismore Hospital
Bankstown Hospital - South West Sydney Renal Service
Bathurst - St. Vincent's Hospital
Blacktown Satellite - Westmead Hospital
Brewarrina Hospital
Broken Hill Hospital
Coffs Harbour Base Hospital
Coonamble Hospital
Dame Eadith Walker - Statewide Renal Services
Dubbo Base Hospital
Eora Cottage - Prince of Wales Hospital
Gosford Hospital
Grafton Hospital - Lismore Hospital
Kempsey Hospital - Port Macquarie Community Dialysis Centre
Lakehaven Satellite - Gosford Hospital
Lanceley Cottage - Royal North Shore Hospital
Lindfield Private Dialysis (Gambro)
Liverpool Community Centre - South West Sydney Renal Service
Maitland Hospital
Muswellbrook - John Hunter Hospital
Nita Reed House (Taree) - John Hunter Hospital
Norfolk Island Hospital
Orange Base Hospital
Port Macquarie Community Dialysis Centre
Port Macquarie Private Hospital
Shellharbour - Wollongong Hospital
Shoalhaven Satellite (Nowra) - Wollongong Hospital
Singleton Satellite - John Hunter Hospital
Sydney Adventist Hospital
Sydney Dialysis Centre
Wagga Wagga Base Hospital
Wansey Satellite - John Hunter Hospital
Wellington Hospital - Dubbo Hospital
Wentworth Satellite - Westmead Hospital

Australian Capital Territory (ACT)
Canberra Community Dialysis Centre

Victoria
Angliss Hospital
Ararat Hospital
Austin Training Satellite - Austin & Repatriation Hospital
Bacchus Marsh Hospital
Bairnsdale Hospital
Ballarat Hospital
Bendigo Hospital
Berwick Hospital
Brighton Private Dialysis (Nephrocare)
Broadmeadows Hospital
Brunswick Satellite
Casterton Hospital
Caulfield Satellite
Coburg Satellite
Cohuna Hospital
Colac Hospital
Corryong Satellite
Cranbourne Satellite
Daylesford Hospital
Echuca Hospital
Edenhope Hospital
Epping Dialysis Unit
Epworth Hospital
Forest Hill Private Dialysis (Nephrocare)
Frankston Satellite
Gambro - Diamond Valley Hospital
Geelong Hospital
Goulburn Valley Hospital
Hamilton Hospital
Hastings Hospital
Heidelberg - Austin & Repatriation Hospital
Horsham Satellite
Kew Private Dialysis Centre (Baxter)
La Trobe Regional Satellite

Victoria cont...
Lorne Hospital
Maryborough District Health Service
Mildura Hospital
Mitcham Hospital
Moorabbin Satellite
Myrtleford Hospital
Nauru (overseas) - Alfred Hospital
Nauru (overseas) - Monash Medical Centre Adult
Newcomb Satellite
North East Kidney Service - Austin & Repatriation Hospital
Northern Hospital Satellite
Omeo District Hospital
Peter James Centre
Portland Hospital
Robinvale Hospital
Rosebud Hospital
Sale Hospital
Sandringham Satellite
Seymour Hospital
St. Arnaud Hospital
Sunshine Hospital
Swan Hill Hospital
Terang Satellite
Wangaratta Hospital
Warrnambool Hospital
Werribee Mercy Hospital
Western Gippsland Hospital
Williamstown Satellite
Wodonga Hospital
Wonthaggi Hospital
Yarawonga District Hospital
Yarram Hospital

Tasmania
North West Renal Unit, Burnie - Launceston Hospital
Royal Hobart Hospital

South Australia
Berri Hospital
Ceduna Satellite
College Grove Private Hospital
Hartley Private Hospital (Fresenius)
Lyell McEwin Satellite
Modbury Private Dialysis (Fresenius)
Noarlunga Satellite Centre
North Adelaide Satellite Centre
Payneham Private Dialysis (Baxter)
Port Augusta Hospital
Port Lincoln Satellite Centre
Wayville Satellite Centre

Northern Territory
Bathurst Island Hospital - Royal Darwin Hospital
Community Health Centre - Alice Springs Hospital
Katherine Dialysis Unit - Royal Darwin Hospital
Nightcliff Community Centre - Royal Darwin Hospital

Western Australia
Albany Satellite
Armadale Satellite
Broome Hospital
Bunbury Satellite
Geraldton Hospital
Joondalup Satellite Unit
Kalgoorlie Hospital
Kimberley Satellite
Melville Satellite
Midland Private Dialysis (Baxter)
Peel Health Campus - Mandurah
Pilbara Dialysis Unit - Port Hedland
Princess Margaret Hospital for Children
Royal Perth Rehabilitation Hospital - Royal Perth Hospital

New Zealand
Alexandra Satellite - Dunedin Hospital
Carrington Satellite - Auckland Hospital
Dunstan Hospital - Dunedin Hospital
Greenlane Hospital - Auckland Hospital
Hastings Hospital
Middlemore Hospital
New Plymouth Hospital
Porirui Satellite - Wellington Hospital
Taranaki Hospital

Manuscripts based on Registry data which were published in the year 2002 are shown here.
A more up to date list is shown on our website.

1. ESRD in Australia and New Zealand at the end of the millennium: A Report from the ANZDATA Registry.
McDonald SP, Russ GR, Collins J, Kerr PG.
Am J Kid Dis 2002. 40:1122-1131.

2. Survival of recipients of cadaveric kidney transplants compared to dialysis treatment in Australia and New Zealand, 1991-2000.
McDonald SP, Russ GR.
Nephrol Dial Transplant 2002. 17:2212-2219.

3. Associations between use of cyclosporine-sparing agents and outcome in kidney transplant recipients.
McDonald SP, Russ GR.
Kidney Int 2002. 61:2259-2265.

4. End-stage renal disease in indigenous Australians: a disease of disadvantage.
Cass A, Cunningham J, Snelling P, Wang Z, Hoy W.
Ethn Dis 2002. 12:373-378.

5. Delayed referral to a nephrologist: outcomes among patients who survive at least one year on dialysis.
Cass A, Cunningham J, Arnold PC, Snelling P, Wang Z, Hoy W.
Med J Aust 2002. 177:135-138.

6. Graft loss following renal transplantation in Australia: is there a centre effect?
Briganti EM, Wolfe R, Russ GR, Eris JM, Walker RG, McNeil JJ.
Nephrol Dial Transplant 2002. 17:1099-1104.

7. Risk of renal allograft loss from recurrent glomerulonephritis.
Briganti EM, Russ GR, McNeil JJ, Atkins RC, Chadban SJ.
N Engl J Med 2002. 347:103-109.

SUMMARY

KEY SUMMARY POINTS FROM THE REPORT

AUSTRALIA

- There were 12,945 patients (658 per million) receiving renal replacement therapy (RRT) at 31 December 2002. Of these, 5,740 (292 per million) had a functioning kidney transplant and 7,205 (366 per million) received dialysis treatment.
- 1,855 patients commenced RRT in Australia in 2002 (94 per million). The intake varied from 293 per million population in the Northern Territory to 76 per million in Tasmania.
- The mean age at commencement was 59.3 years.
- 26% of new patients had glomerulonephritis attributed as their cause of end stage renal failure, 26% diabetic nephropathy, and 16% hypertension.
- Of patients <65 years of age, 39% were on the active kidney transplantation waiting list. This proportion varied between 13% in the Northern Territory and 61% in the Australian Capital Territory. Only 6% of Aboriginal/Torres Strait Islander patients <65 years were on the transplant waiting list.
- The death rate per 100 patient years was 14.9 for dialysis dependent patients (haemodialysis 13.6, peritoneal dialysis 18.7) and 2.5 for those with a functioning kidney transplant (cadaver donor 3.0, living donor 1.0).
- Of the 1,046 deaths among dialysis dependent patients in 2002, 39% were due to cardiovascular causes, 15% to infection, 23% to withdrawal from treatment and 6% from malignancy.
- Of the 139 deaths among patients with functioning kidney transplants, 32.5% were due to cardiovascular causes, 32% due to malignancy and 14.5% to infection.
- There has been a 5% increase in the total number of dialysis dependent patients, and the number of patients increased in all States.
- The numbers of peritoneal dialysis dependent patients decreased from 1,809 to 1,770.
- There were 602 kidney transplant operations performed in 2002, a transplant rate of 31 per million population.
- Of these, 38% (228 grafts) were from living donors, compared to 39% (212 grafts) in 2001. 25% of living donor operations were performed without the recipient receiving prior dialysis therapy.
- For primary cadaver grafts performed in 2001, the 12 month patient and graft survival rates were 94% and 91% respectively.
- The five year primary cadaver recipient and graft survival for operations performed in 1997 were 85% and 76% respectively.
- There were 5,740 functioning kidney transplants in Australia at 31 December 2002, a prevalence of 292 patients per million (a 5% increase over 2001).

KEY SUMMARY POINTS FROM THE REPORT

NEW ZEALAND

- There were 2,700 patients (685 per million) receiving renal replacement therapy (RRT) at 31 December 2002. Of these, 1,099 (279 per million) had a functioning kidney transplant, and 1,586 (403 per million) received dialysis treatment.
- 453 patients (115 per million) commenced RRT in 2002.
- The mean age at commencement was 55.4 years.
- Diabetic nephropathy accounted for 45% of new patients and glomerulonephritis 23%.
- Of patients <65 years of age, 26% were on the active kidney transplantation waiting list. 23% of Maoris and 14% of Pacific Islanders <65 years of age were on the transplant waiting list.
- The death rate per 100 patient years was 15.2 for dialysis dependent patients (haemodialysis 13.9, peritoneal dialysis 16.6) and 2.9 for those with a functioning kidney transplant (cadaver donor 3.8, living donor 0.6).
- Of the 232 deaths among dialysis dependent patients in 2002, 56% were due to cardiovascular causes, 10% to infection and 10% to miscellaneous causes.
- Of the 31 deaths among patients with a functioning kidney transplant, 32.5% were due to cardiovascular causes and 26% due to malignancy.
- The number of patients who were dialysis dependent at 31 December 2002 (1,586) was an increase of 8% over the previous year. 62% of all dialysis dependent patients were receiving home dialysis. 77% of these were on peritoneal dialysis.
- There were 117 kidney transplant operations performed in 2002, a rate of 30 per million population.
- The percentage of living donors in 2002 was 41%.
- For primary cadaver grafts performed in 2001, the 12 month patient and graft survival rates were 94% and 92% respectively.
- The five year primary cadaver recipient and graft survival for operations performed in 1997 were 86% and 74% respectively.
- The 1,114 functioning kidney transplants at 31 December 2002 represent a 5% increase from 2001.