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**Australia and New Zealand  
Dialysis and Transplant Registry  
(ANZDATA)**

**37th Annual Report**

*Data to 31 December 2013*



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## Acknowledgments

ANZDATA Registry offers its most grateful appreciation to everyone who helped make this 37th 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.

## Funding

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Australian Organ and Tissue Authority  
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Kidney Health Australia

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AMGEN Australia Pty Ltd  
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Dr Wai Lim (Project Manager - Transplantation Group)

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A/Professor Kevan Polkinghorne (Project Manager - Haemodialysis Group)

Dr Germaine Wong (Project Manager - Cancer Group)

Dr Sean Kennedy (Paediatric Group)

Dr Wai Lim (General Member)

Dr Helen Pilmore (General Member)

Dr Nicholas Gray (General Member)

A/Professor Robyn Langham (General Member)

Dr Grant Pidgeon (New Zealand Representative)

A/Professor Timothy Mathew (Kidney Health Australia Representative)

Ms Cathy Hill (Nursing Representative)

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## Introduction

### Introduction

The ANZDATA Registry has great pleasure in presenting the 2014 Annual Report. This is the 37<sup>th</sup> Annual Report from the Registry and covers data collected until the 31<sup>st</sup> December 2013.

The Report is a result of the commitment and involvement of renal units throughout Australia and New Zealand. This commitment is a reflection of the enormous time and work from staff of these units. Participation of 100% of units in Australia and New Zealand continues and we are confident that all the patients who have received renal replacement therapy in Australia and New Zealand in this time period are included.

This year's Report has been substantially revised. The old Stock and Flow and Methods and Location of Dialysis chapters have been removed, the New Patients chapter has been renamed Incidence and a new Prevalence chapter has been introduced. In addition this Report sees the introduction of a Home Dialysis chapter, examining the incidence, prevalence and outcomes of home dialysis (PD plus home HD). A number of smaller changes have been made to the remaining chapters. Finally, the overall look and feel of the Report has been refreshed.

The Registry is currently modernising its database software. This is a large undertaking that we expect to be complete towards the end of 2015. Amongst other features, the new database will allow web-based real-time entry of all data collected by the Registry.

The role of Executive Officer of the Registry continues to be filled by Professor Stephen McDonald. Once again, he provides the intellectual and academic leadership of the Registry and has been the driving force in the dissemination of data and its analyses, both nationally and internationally. Dr Philip Clayton continues as the Editor of the Annual Report.

Dr Namrata Khanal has continued her role as the Epidemiology Fellow. We are greatly indebted to Amgen who continue to make the commitment through the funding of this position. For 12 years now this position has proven to be a major stimulus for the academic output of the Registry. Dr Aarti Gulyani has replaced Dr Blair Grace as the Registry's grant-funded scientist.

Mrs Kylie Hurst enters her fourth year as Manager of the ANZDATA Registry and we acknowledge the pivotal role that she has played in generating new ideas and innovations in the way the Registry functions. Brooke Martin continues to provide administrative support. Biostatistical expertise has been provided by Nancy Briggs and Hannah Dent.

Professor Matthew Jose continues in his role as the Chair of the ANZDATA Registry Steering Committee. His enthusiasm and ongoing interest in the Registry and its operations and output are acknowledged. The members of the ANZDATA Registry Committees and Working Groups are listed on page vii of this report. The Executive gratefully acknowledges the involvement and contribution of these many individuals.

Major funding for the Registry has been provided from the Australian Commonwealth Department of Ageing through the Australian Organ and Tissue Donation and Transplant Authority, Kidney Health Australia and the New Zealand Ministry of Health.

We also gratefully acknowledge industry support which in 2013 consisted of non-tied grants from AMGEN Australia, Novartis Pharmaceuticals, Pfizer, Roche Products and Sanofi-Aventis Australia.

**GRAEME R RUSS**

CHAIR ANZDATA EXECUTIVE

August 2015

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Dr Philip Clayton

Dr Shlomo Cohney

Professor Jonathon Craig

Dr Angela Webster

### Haemodialysis Working Group

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## Guidelines for Data Release

The policy for release of data to investigators, renal units and others was revised during 2013 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 (i.e. data which identifies outcomes of an individual hospital) will only be fulfilled with the explicit consent of the Heads of the relevant Hospital Units. Individual patient identified data (names) is not released.

## 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.

## Suggested Citation

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

.. [Author's name] ..

Peritoneal Dialysis .. [page numbers] ..

ANZDATA Registry Report 2014

Australia and New Zealand Dialysis and Transplant Registry

Adelaide, South Australia.

Editors: Philip Clayton, Kylie Hurst

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 authors 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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## Privacy Aspects of Data Collection

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 Commissioner's website ([www.privacy.gov.au](http://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. Patients are entitled to view the information the Registry holds about them, and request alterations if the data is thought to be inaccurate.

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

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

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 (see opposite), 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 measures.

Tissue Typing Data and Transplant Waiting List data are collected in each Tissue Typing Laboratory and entered into the National Organ Matching System database. These data are transmitted to ANZDATA for inclusion in the ANZDATA database and for this Report.

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**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 twelve 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 Kidney Health Australia 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 Kidney Health Australia.

**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 e.g. 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 (eg 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](http://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 0949. You may also write to us (ANZDATA Registry, C/- Royal Adelaide Hospital, DX800, Mail Point 117, North Terrace, Adelaide, SA. 5000) or send us an e-mail ([anzdata@anzdata.org.au](mailto:anzdata@anzdata.org.au)).

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## Definitions and Methods

A number of definitions given below are used throughout this report unless otherwise stated.

### 1. Wording

Throughout this report 'treatment' refers to renal replacement therapy, including haemodialysis, peritoneal dialysis and transplantation. In places the word "graft" (or "allograft") is used for kidney transplant.

HD = haemodialysis

CAPD = continuous ambulatory peritoneal dialysis

APD = automated peritoneal dialysis

ESKD = end stage kidney disease

### 2. Data collection

ANZDATA collects information from all renal units in Australia and New Zealand. Data collection occurs at two time points. Key events (new patients, deaths, transplants) are notified as they occur, with units requested to send this at least monthly. This can occur either via a web-based interface or paper submission. An extensive cross-sectional survey is then performed annually (for data to 31st December). 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 kidney transplants, HLA matching and panel reactive antibodies are obtained direct from the National Organ Matching System. Monthly summaries are distributed to the contributing units. Results contained in this report are based on a final database locked and prepared after the end of year survey returns are received.

### 3. Inclusion criteria

Included in the Registry are all patients resident in Australia or New Zealand 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

For survival analysis the initial mode of dialysis is generally 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 haemodialysis 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

Death rate is predominantly reported as number of patients died/total number of years of treatment of all patients treated at any time during the year. It is expressed as deaths per 100 patient years (pt yrs) at risk.

### 7. Comorbid conditions

These are recorded by the treating hospital. No formal 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 is based on data from the National Organ Matching System (Australia) linked probabilistically with ANZDATA.

### 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 glomerular filtration rate

Where glomerular filtration rate is estimated from serum creatinine at entry or post transplantation, the CKD-EPI formula is used:<sup>[1]</sup>

*Females with Cr ≤ 62 micromol/L:*  $eGFR = (144 + 22 \text{ if black}) \times (Cr/0.7)^{-0.329} \times 0.993^{\text{age}}$

*Females with Cr > 62 micromol/L:*  $eGFR = (144 + 22 \text{ if black}) \times (Cr/0.7)^{-1.209} \times 0.993^{\text{age}}$

*Males with Cr ≤ 80 micromol/L:*  $eGFR = (141 + 22 \text{ if black}) \times (Cr/0.9)^{-0.411} \times 0.993^{\text{age}}$

*Males with Cr > 80 micromol/L:*  $eGFR = (141 + 22 \text{ if black}) \times (Cr/0.9)^{-1.209} \times 0.993^{\text{age}}$

Where Cr is creatinine in micromol/L and age is age in years. The correction for "black" race, based on US data, is not applied

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to any patients.

#### 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 <sup>[3]</sup> is  $Kt/V = 0.023 \cdot PRU - 0.284$  (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 categories used are : underweight <20 kg/m<sup>2</sup>, normal 20-24.9 kg/m<sup>2</sup>, overweight 25-29.9 kg/m<sup>2</sup>, obese  $\geq 30$  kg/m<sup>2</sup>

#### 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 and 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 peritoneal dialysis.

## 10. Rates and 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<sup>st</sup> December 2011.

### 10.3 Population denominator

All populations used in this report were stratified by age and sex.

Australian populations were taken from the Australian Bureau of Statistics (ABS) and New Zealand populations were taken from Statistics New Zealand (SNZ).

All estimated and projected populations used for Australia and New Zealand were for 30 June of each year, and all websites were accessed 23 September 2014 for analysis of annual 2013 locked dataset..

Estimated population data for each Australian state and territory came from ABS 3101.0 series <sup>(4)</sup>

Projected population data for each Australian state and territory came from ABS 3222.0 series <sup>(5)</sup>

Population data for Indigenous Australians were taken from ABS 3238.0<sup>(6)</sup>, using series A (the most conservative estimates) for populations after 1996.

Populations serviced by the Greater Southern Area Health Service were estimated by the South Eastern Region of NSW. These estimates were taken from ABS 3235.0<sup>(7)</sup>

All New Zealand population estimates were taken from Statistics NZ Infoshare <sup>(8)</sup> and projected population were taken from NZ.Stats (9). Maori populations were taken from NZ Infoshare Maori population estimates <sup>(10)</sup>.

Estimates of resident Pacific People populations after were taken from NZ Stats <sup>(11)</sup> for years 2006 onwards. Prior to this, populations of Pacific people before 2006 were only available for years 1996, 2001 (and 2006), and we used linear interpolation to estimate populations for each age and sex group for the years 1997-2001 and 2002-2005.

### 10.4 Death Population Data:

All Australian death data were taken from ABS 3302.0 series <sup>(12)</sup>. Death data is not available for publications by age and sex on ABS website for some states. Overall data by states and territory is used. New Zealand death data were taken from NZ Infoshare <sup>(13)</sup>

### 10.5 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 (ie return to dialysis) and patient death.

Rates for patient survival for fixed periods for transplantation are calculated according to the life-table method and thus include an adjustment to the risk-set of ½ of those censored without failure over the interval to create an "average" risk set.

### 10.7 Graft survival

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For outcomes of kidney transplants, graft failure includes both loss of graft function (i.e. return to dialysis) and death of patients (with graft function). Calculations of patient survival for transplant recipients includes all subsequent modalities (i.e. deaths after graft failure are included). Patients transplanted overseas are excluded from calculations.

#### *10.8 Dialysis Survival*

Patient and technique survivals for haemodialysis and peritoneal dialysis are based on the dialysis modality at 90 days after first treatment for patients not transplanted during that period. Patients are followed up until they are either transplanted (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.

Peritonitis survivals are calculated from first peritoneal dialysis (ignoring all earlier treatments) to date of first peritonitis episode. If there were no episodes of peritonitis then calculation is censored at change of treatment from peritoneal dialysis to haemodialysis or transplantation. Peritoneal dialysis includes automated peritoneal and continuous ambulatory peritoneal dialysis. Excluded are patients who had peritonitis before commencing peritoneal dialysis.

#### *10.9 Death and other event rates*

Rates are expressed per 100 person years at risk (unless otherwise stated). Some analyses include survival of all patients, others exclude the first 90 days of follow up. This is stated in the individual analyses.

#### *10.10 Age standardisation*

All rates are crude, not age-standardised. The age distribution of the populations for Australia and New Zealand can be obtained by contacting the Registry.

#### *10.11 Peritonitis rates*

Peritonitis rates are present using episodes of peritonitis reported during periods of peritoneal dialysis - episodes reported prior to commencement of peritoneal dialysis (for example between Tenckhoff catheter insertion and commencement of peritoneal dialysis) are not included in these calculations.

## **11. Database**

Data is stored on a relational database using Oracle version 9l.

## **12. Statistics**

Statistical analyses were performed using Stata version 14.

## **13. References**

- 1) Levey AS, Stevens LA, Schmid CH, Zhang YL, Castro AF, Feldman HI, et al. A new equation to estimate glomerular filtration rate. *Ann Intern Med.* 2009 May 5;150(9):604-612.
  - 2) Zasadny KR, Wahl RL: Standardized uptake values of normal tissues at PET with 2-[fluorine-18]-fluoro-2-deoxy-D-glucose: variation with body weight and method for correction. *Radiology* 1993; 189:847-850.
  - 3) 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* 1990; 15:40-45.
  - 4) <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Mar%202014?OpenDocument>
  - 5) [http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02012%20\(base\)%20to%202101?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02012%20(base)%20to%202101?OpenDocument)  
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3238.02001%20to%202026?OpenDocument>
  - 7) <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3235.02013?OpenDocument>
  - 8) <http://www.stats.govt.nz/infoshare/SelectVariables.aspx?pxID=3e317ac0-5674-4037-99a5-45121873f289>
  - 9) <http://nzdotstat.stats.govt.nz/wbos/Index.aspx#>
  - 10) [http://www.stats.govt.nz/browse\\_for\\_stats/population/estimates\\_and\\_projections/MaoriPopulationEstimatesHOTPAJun14.aspx](http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/MaoriPopulationEstimatesHOTPAJun14.aspx)
  - 11) <http://nzdotstat.stats.govt.nz/wbos/Index.aspx#>
  - 12) <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3302.02013?OpenDocument>
  - 13) <http://www.stats.govt.nz/infoshare/SelectVariables.aspx?pxID=9f25b908-80cc-439c-a39f-6711da92fcc2>
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Parent hospitals, transplanting unit and satellite dialysis units together with their state and unit codes are listed below. In some cases, these have combined as part of a regional network and this is also indicated. The definition of a 'parent hospital' is a pragmatic one, and refers to units which offer a full range of dialysis services (i.e. can commence patients on dialysis, have on-site nephrologist presence and can deal with patients of all degrees of complexity).

In contrast, satellite units provide haemodialysis treatments to selected patients, usually with lower staff ratios and no on-site nephrologist.

*NOTE: The states listed below are in no particular order.*

### Queensland (State code 4)

| PARENT HOSPITALS                                   | Unit Code | SATELLITE DIALYSIS UNITS            | Unit Code |
|--|-----------|-------------------------------------|-----------|
| Allamanda Private Hospital (Fresenius)             | ALLA      | Atherton Private Hospital           | ATHR      |
| Bundaberg Base Hospital                            | BUND      | Cairns Home Training Unit           | CHTR      |
| Cairns Base Hospital                               | CAIR      | Cairns Private Hospital Satellite   | CPRV      |
| Chermside Dialysis Unit (Fresenius)                | CHER      | Caloundra Public Hospital           | CAPU      |
| Child and Adolescent Renal Service                 | CARS      | Cooktown Satellite                  | COOK      |
| Gold Coast Hospital                                | GOLD      | East Street Self Care Dialysis Unit | EAST      |
| Greenslopes Private Hospital (Baxter)              | GREN      | Gympie Satellite                    | GYMP      |
| Hervey Bay Hospital                                | HERV      | Home Hill Satellite                 | HILL      |
| John Flynn Hospital                                | FLYN      | Innisfail Hospital                  | INNI      |
| Mackay Base Hospital                               | MACK      | Ipswich Satellite                   | IPSW      |
| Princess Alexandra Hospital                        | PSAH      | Kingaroy Satellite                  | KROY      |
| <i>Queensland Renal Transplant Service</i>         | QRTS      | Logan Satellite                     | LOGN      |
| Rockhampton Base Hospital                          | ROCK      | Maryborough Hospital                | MARY      |
| Royal Brisbane Hospital                            | RBSH      | Mossman Satellite                   | MOSS      |
| St Andrew's Dialysis Clinic (Diaverum)             | GSTA      | Mt. Isa Satellite                   | MTIS      |
| <i>Sunshine Coast Health District</i>              |           | Noosa Satellite                     | NOOS      |
| <i>Caloundra Private Hospital</i>                  | CALO      | North Lakes Dialysis Unit           | NLAK      |
| <i>Nambour General Hospital</i>                    | NAMB      | North Ward Satellite                | NWAR      |
| <i>Nambour Selangor Private Hospital</i>           | NPRV      | Palm Island Satellite               | PISL      |
| The Townsville Hospital                            | TOWN      | Redcliffe Satellite                 | REDC      |
| Toowoomba Hospital                                 | TWMB      | Redlands Satellite                  | REDL      |
| Wesley Private Hospital                            | WSLY      | St Vincent's Robina Satellite       | STVR      |
| <br>   |           |                                     |           |
| TRANSPLANTING UNIT                                 | Unit Code |                                     |           |
| Queensland Renal Transplantation Service           | QRTS      |                                     |           |
| Princess Alexandra Hospital (Adult and Paediatric) |           |                                     |           |
| Director of Transplantation                        |           |                                     |           |
| Dr Tony Griffin                                    |           |                                     |           |
| Ipswich Road                                       |           |                                     |           |
| Woolloongabba 4102                                 |           |                                     |           |

### Australian Capital Territory (ACT) (State code 9)

| PARENT HOSPITALS      | Unit Code | SATELLITE DIALYSIS UNITS              | Unit Code |
|-----------------------|-----------|---------------------------------------|-----------|
| The Canberra Hospital | CANB      | Canberra Community Satellite          | CSAT      |
|                       |           | Northside Dialysis Clinic (Fresenius) | NSID      |

### Tasmania (State code 7)

| PARENT HOSPITALS            | Unit Code | SATELLITE DIALYSIS UNITS              | Unit Code |
|-----------------------------|-----------|---------------------------------------|-----------|
| Launceston General Hospital | LAUN      | Launceston Community Centre Satellite | LCCS      |
| Royal Hobart Hospital       | RHBT      | North West Renal Unit, Burnie         | NWRU      |

### South Australia (State code 5)

| PARENT HOSPITALS                             | Unit Code | SATELLITE DIALYSIS UNITS             | Unit Code |
|--|-----------|--------------------------------------|-----------|
| Flinders Medical Centre                      | FMDC      | Berri Satellite                      | BERI      |
| Central Northern Adelaide Transplant Service | CNAR      | Ceduna Hospital                      | CEDU      |
| <i>The Queen Elizabeth Hospital</i>          | QEZB      | Clare Satellite                      | CLAR      |
| <i>Royal Adelaide Hospital</i>               | RADL      | Hampstead Rehabilitation Satellite   | HAMP      |
| Women's and Children's Hospital              | WCHL      | Hartley Private Hospital (Fresenius) | HART      |
|  |           | Port Lincoln Satellite Centre        | LINC      |
|  |           | Lyell McEwin Satellite               | LMCK      |
|  |           | Millicent Hospital                   | MILL      |
| TRANSPLANTING UNIT                           | Unit Code | Maitland Hospital                    | MLAN      |
| Central Northern Adelaide Transplant Service | CNAR      | Modbury Satellite (Fresenius)        | MSAT      |
| Royal Adelaide Hospital                      |           | Mount Gambier Satellite              | MTGA      |
| Director - Professor Graeme Russ             |           | Murray Bridge Hospital               | MURR      |
| North Terrace                                |           | Noarlunga Satellite                  | NOAR      |
| Adelaide 5000                                |           | Payneham Satellite (Baxter)          | PAYN      |
|  |           | Port Augusta Hospital                | PTAG      |
|  |           | Port Piri Satellite                  | PIRI      |
| Women's and Children's Hospital              | WCHL      | Victor Harbour Satellite             | VHAR      |
| Director - Dr Paul Henning                   |           | Wayville Satellite Centre            | WAYV      |
| 72 King William Road                         |           | Whyalla Satellite Centre             | WHYA      |
| North Adelaide 5006                          |           |                                      |           |

### Northern territory (State code 1)

| PARENT HOSPITALS       | Unit Code | SATELLITE DIALYSIS UNITS    | Unit Code |
|------------------------|-----------|-----------------------------|-----------|
| Alice Springs Hospital | ALIC      | Flynn Drive Satellite       | FDVE      |
| Royal Darwin Hospital  | DARW      | Katherine Dialysis Unit     | KATH      |
|                        |           | Nightcliff Community Centre | NTCL      |
|                        |           | Palmerston Satellite        | PTON      |
|                        |           | Tennant Creek Hospital      | TENN      |
|                        |           | Tiwi Dialysis Centre        | TIWI      |

### Western Australia (State code 6)

| PARENT HOSPITALS                        | Unit Code | SATELLITE DIALYSIS UNITS                 | Unit Code |
|---|-----------|--|-----------|
| Fremantle Hospital                      | FREM      | Albany                                   | ALBA      |
| Princess Margaret Hospital for Children | PMHC      | Armadale Satellite                       | ARMA      |
| Royal Perth Hospital                    | RLPT      | Bunbury Satellite                        | BUNB      |
| Sir Charles Gairdner Hospital           | SCGH      | Busselton Satellite                      | BUSS      |
|   |           | Cannington Dialysis Clinic (Diaverum)    | CANN      |
|   |           | Derby Satellite                          | DERB      |
| TRANSPLANTING UNIT                      | Unit Code | Geraldton Hospital                       | GRLD      |
| Princess Margaret Hospital for Children | PMHC      | Joondalup Satellite                      | JOON      |
| Director - Dr Ian Hewitt                |           | Hollywood Private Hospital               | HPRH      |
| Roberts Road                            |           | Kalgoorlie Dialysis Unit                 | KALG      |
| Subiaco 6008                            |           | Kimberley Dialysis Centre                | KIMB      |
|   |           | Melville Satellite                       | MELV      |
| Royal Perth Hospital                    | RLPT      | Midland Private Dialysis Centre (Baxter) | MIDL      |
| Director - Dr Kevin Warr                |           | Murdoch                                  | STJM      |
| Wellington Street                       |           | Peel Health Campus                       | MAND      |
| Perth 6001                              |           | Port Hedland Dialysis Unit (Pilbara)     | PTHD      |
|   |           | Rockingham Satellite                     | RHAM      |
| Sir Charles Gairdner Hospital           | SCGH      | Spearwood Satellite                      | SPEA      |
| Director - Dr Harry Moody               |           | Stirling Dialysis Clinic (Diaverum)      | STIR      |
| Verdun Street                           |           | St. John of God Private Hospital         | SJOG      |
| Nedlands 6009                           |           | Subiaco                                  |           |



## Victoria (State code 3)

| PARENT HOSPITALS                           | Unit Code | SATELLITE DIALYSIS UNITS         | Unit Code |
|--|-----------|----------------------------------|-----------|
| Alfred Hospital                            | ALFD      | Casterton Hospital               | CAST      |
| Austin Health                              | AUST      | Caulfield General Medical Centre | CAUL      |
| Bendigo Hospital                           | BEND      | Coburg Satellite                 | COBG      |
| Diamond Valley Dialysis Clinic (Diaverum)  | GDIA      | Cohuna Hospital                  | COHU      |
| Eastern Health Integrated Renal Services   | EHRS      | Colac Hospital                   | COLA      |
|  | EPWT      | Corryong Satellite               | CORR      |
| Forest Hill Dialysis Centre (Fresenius)    | FORE      | Craigieburn Satellite            | CRAI      |
| Geelong Hospital                           | GLNG      | Cranbourne Satellite             | CRAN      |
| Kew Private Dialysis Centre                | KEWP      | Dandenong Satellite              | DAND      |
| Malvern Dialysis Centre (Fresenius)        | MALV      | Daylesford Hospital              | DAYL      |
| Monash Medical Centre – Adult              | MMCA      | Donald Hospital                  | DONA      |
| Monash Medical Centre – Paediatric         | MMCP      | Eastern Health Incentre Dialysis | EHUB      |
| North Melbourne Dialysis Clinic (Diaverum) | NMDC      | Echuca Hospital                  | ECHU      |
| North West Dialysis Service                | NWDS      | Edenhope Hospital                | EDEN      |
| Royal Melbourne Hospital                   | RMBH      | Epping Dialysis Unit             | EPPG      |
| Royal Children’s Hospital                  | RCHL      | Frankston Satellite              | FRAN      |
| St. Vincent’s Hospital                     | SVIN      | Goulburn Valley Hospital         | GVAL      |
| Western Health                             | WSTH      | Hamilton Hospital                | HAML      |
|  |           | Hastings Hospital                | HSTG      |
|  |           | Heidelberg Hospital              | HEDG      |
|  |           | Horsham Satellite                | HORS      |
|  |           | Kyabram Satellite                | KYAB      |
|  |           | Kyneton Hospital                 | KYNE      |
|  |           | Latrobe Regional Satellite       | LATR      |
|  |           | Mansfield District Hospital      | MANS      |
|  |           | Maroondah Satellite              | MARO      |
|  |           | Maryborough Hospital             | MRYB      |
|  |           | Melton Hospital                  | MELT      |
|  |           | Mildura Hospital                 | MILD      |
|  |           | Moorabbin Satellite              | MOOR      |
|  |           | Myrtleford Hospital              | MYRT      |
|  |           | Newcomb Satellite                | NCOM      |
|  |           | Nhill Hospital Satellite         | NHIL      |
|  |           | Northern Hospital Satellite      | NSAT      |
|  |           | North East Kidney Service        | NEKS      |
|  |           | Orbost Hospital                  | ORBO      |
|  |           | Peter James Centre               | PJAM      |
|  |           | Portland District Health         | PORT      |
|  |           | Robinvale Hospital               | ROBV      |
|  |           | Rosebud Hospital                 | ROSE      |
|  |           | Sale Hospital                    | SALE      |
|  |           | Sandringham Satellite            | SNDR      |
|  |           | Seymour Hospital                 | SEYM      |
|  |           | South Geelong Satellite          | SGEO      |
|  |           | St. George’s Hospital            | SGRU      |
|  |           | Sunbury Satellite                | SUNB      |
|  |           | Sunshine Satellite Centre        | SUNS      |
|  |           | Swan Hill Hospital               | SWAN      |
|  |           | Terang Hospital                  | TERA      |
|  |           | Wagga Hospital                   | WAGG      |
|  |           | Wangaratta Hospital              | WANG      |
|  |           | Warrnambool Hospital             | WARN      |
|  |           | Werribee Mercy Hospital          | WERR      |
|  |           | Western Gippsland Hospital       | WGIP      |
|  |           | Williamstown Satellite           | WILL      |
|  |           | Wodonga Regional Health Service  | WDGA      |
|  |           | Wonthaggi Hospital               | WONT      |
|  |           | Yarawonga District Hospital      | YARA      |
|  |           | Yarram Hospital                  | YARM      |
| TRANSPLANTING UNIT                         | Unit Code |                                  |           |
| Alfred Hospital                            | ALFD      |                                  |           |
| Director - Professor Napier Thomson        |           |                                  |           |
| Commercial Road                            |           |                                  |           |
| Prahran 3181                               |           |                                  |           |
|  |           |                                  |           |
| Austin Health                              | AUST      |                                  |           |
| Director - Dr David Power                  |           |                                  |           |
| Burgundy Road                              |           |                                  |           |
| Heidelberg 3084                            |           |                                  |           |
|  |           |                                  |           |
| Monash Medical Centre (Paediatric)         | MMCP      |                                  |           |
| Director - Dr Amanda Walker                |           |                                  |           |
| 246 Clayton Road                           |           |                                  |           |
| Clayton 3165                               |           |                                  |           |
|  |           |                                  |           |
| Monash Medical Centre (Adult)              | MMCA      |                                  |           |
| Director - Professor Peter Kerr            |           |                                  |           |
| 246 Clayton Road                           |           |                                  |           |
| Clayton 3165                               |           |                                  |           |
|  |           |                                  |           |
| Royal Children’s Hospital                  | RCHL      |                                  |           |
| Director - Dr Colin Jones                  |           |                                  |           |
| Flemington Road                            |           |                                  |           |
| Parkville 3052                             |           |                                  |           |
|  |           |                                  |           |
| Royal Melbourne Hospital                   | RMBH      |                                  |           |
| Director - Professor Gavin Becker          |           |                                  |           |
| Parkville 3052                             |           |                                  |           |
|  |           |                                  |           |
| St. Vincent’s Hospital                     | SVIN      |                                  |           |
| Director - Professor Robyn Langham         |           |                                  |           |
| 41 Victoria Parade                         |           |                                  |           |
| Fitzroy 3065                               |           |                                  |           |
| SATELLITE DIALYSIS UNITS                   | Unit Code |                                  |           |
| Broadmeadows Satellite                     | BRDM      |                                  |           |
| Brunswick Satellite                        | BRUN      |                                  |           |
| Casey Hospital                             | CASE      |                                  |           |

## New South Wales (State code 2)

| PARENT HOSPITALS                                     | Unit Code | TRANSPLANTING UNIT (CONT)            | Unit Code |
|--|-----------|--------------------------------------|-----------|
| Dubbo Base Hospital                                  | DUBB      | Sydney Children's Hospital           | SCHL      |
| East Coast Renal Service                             |           | Director - Dr Andrew Rosenberg       |           |
| <i>Prince of Wales Hospital</i>                      | POWH      | C/- Department of Nephrology         |           |
| <i>St. George Hospital</i>                           | STGH      | Prince of Wales Hospital             |           |
| <i>St. Vincent's Hospital</i>                        | STVI      | Barker Street                        |           |
| <i>Sydney Children's Hospital</i>                    | SCHL      | Randwick 2031                        |           |
| <i>Wollongong Hospital</i>                           | WGNG      |                                      |           |
| Gosford Hospital                                     | GOSF      |                                      |           |
| Lismore Hospital                                     | LISM      | The Children's Hospital at Westmead  | NEWC      |
| Lismore Private Dialysis Clinic                      | LPDC      | Director - Dr Stephen Alexander      |           |
| Macleay Dialysis Centre - Kempsey                    | MACL      | Cnr Hawkesbury and Hainsworth Street |           |
| Manning Rural Referral Hospital                      | MANN      | Westmead 2145                        |           |
| Mater Misericordiae Hospital                         | MATR      |                                      |           |
| Mayo Private - Taree                                 | MAYO      |                                      |           |
| Newcastle Nephrocare                                 | NCAS      | Westmead Hospital                    | WEST      |
| Port Macquarie Base Hospital                         | PTMQ      | Director - Professor Jeremy Chapman  |           |
| Port Macquarie Private Hospital                      | PMPH      | Cnr Hawkesbury and Darcy Road        |           |
| Royal North Shore Hospital                           | RNSH      | Westmead 2145                        |           |
| South West Sydney Renal Services                     | SSYD      |                                      |           |
| <i>Liverpool Hospital</i>                            | LVPL      |                                      |           |
| Statewide Renal Services                             | SWRS      |                                      |           |
| <i>Royal Prince Alfred Hospital</i>                  | RPAH      |                                      |           |
| Sydney Adventist Hospital                            | SADV      |                                      |           |
| Tamworth Hospital                                    | TAMW      |                                      |           |
| The Children's Hospital at Westmead                  | NEWC      |                                      |           |
| The Tweed Hospital                                   | TWHD      |                                      |           |
| Western Renal Network                                |           |                                      |           |
| <i>Nepean Hospital</i>                               | NEPN      |                                      |           |
| <i>Orange Hospital</i>                               | ORAN      |                                      |           |
| <i>Westmead Hospital</i>                             | WEST      |                                      |           |
|  |           |                                      |           |
| TRANSPLANTING UNIT                                   | Unit Code | SATELLITE DIALYSIS UNITS             | Unit Code |
| John Hunter Hospital                                 | HUNT      | Armidale Hospital                    | ARMID     |
| Director of Transplantation -                        |           | Auburn Satellite                     | AUBN      |
| Professor Adrian Hibberd                             |           | Ballina Hospital                     | BLNA      |
| Lookout Road   |           | Bankstown Hospital                   | BANK      |
| New Lambton Heights                                  |           | Bathurst Satellite Dialysis Centre   | BATH      |
| Newcastle 2304                                       |           | Bega Satellite                       | BEGA      |
|  |           | Blacktown Regional Dialysis          | BLAK      |
| Prince of Wales Hospital                             | POWH      | Bondi Dialysis Unit (Diaverm)        | BOND      |
| Director - Professor Bruce Pussell                   |           | Brewarrina Hospital                  | BREW      |
| Barker Street  |           | Broken Hill Hospital                 | BROK      |
| Randwick 2031  |           | Campbelltown Satellite               | CAMP      |
|  |           | Concord Repatriation Satellite Unit  | CRSU      |
| Royal North Shore Hospital                           | RNSH      | Condobolin Hospital                  | COND      |
| Director - Dr Bruce Cooper                           |           | Coonamble Hospital                   | COON      |
| Pacific Highway                                      |           | Dame Eadith Walker                   | DEWE      |
| St Leonards 2065                                     |           | Eora Satellite                       | EORA      |
|  |           | Fairfield Satellite                  | FAIR      |
| Statewide Renal Services                             | SWRS      | Forbes Hospital                      | FORB      |
| Royal Prince Alfred Hospital                         | RPAH      | Gilgandra Satellite                  | GILG      |
| Director of Transplantation - Professor Steven Chad- |           | Gosford Satellite                    | GOSS      |
| Missenden Road                                       |           | Goulburn Satellite (Fresenius)       | GLBN      |
| Camperdown 2050                                      |           | Grafton Hospital                     | GRFT      |
|  |           | Griffith Base Hospital               | GRIF      |
|  |           | Invarell Satellite                   | INVR      |
|  |           | Lakehaven Satellite                  | LAKE      |
|  |           | Lanceley Cottage                     | LANC      |
|  |           | Liverpool Community Centre           | LCOM      |
|  |           | Maitland Hospital                    | MAIT      |
|  |           | Mona Vale Satellite                  | MNVL      |
|  |           | Moree Satellite                      | MORE      |
|  |           | Moruya Satellite (Fresenius)         | MORU      |
|  |           | Muswellbrook                         | MUSW      |

## New South Wales (Cont.)

| SATELLITE DIALYSIS UNITS          | Unit Code |
|-----------------------------------|-----------|
| Norfolk Island Hospital           | NORF      |
| Penrith Community Dialysis Centre | PCDC      |
| Shellharbour                      | SHEL      |
| Shoalhaven Satellite (Nowra)      | SHOA      |
| Singleton Satellite               | SING      |
| Sutherland Hospital               | SUTH      |
| Sydney Dialysis Centre            | SYDC      |
| Taree Community Dialysis          | NITA      |
| Wagga Wagga Base Hospital         | WAGG      |
| Wansey Satellite                  | WANS      |
| Wellington Hospital               | WGTN      |
| Wollongong Satellite              | WSAT      |

## New Zealand (Code 8)

| PARENT HOSPITALS             | Unit Code |
|------------------------------|-----------|
| Auckland City Hospital       | AUCK      |
| Starship Children's Hospital | STAR      |
| Christchurch Hospital        | CHCH      |
| Dunedin Hospital             | DUND      |
| Hawkes Bay Hospital          | HAWK      |
| Middlemore Hospital          | MIDM      |
| Palmerston North Hospital    | PALM      |
| Taranaki Base Hospital       | TARA      |
| Waikato Hospital             | WKTO      |
| Wellington Hospital          | WELN      |
| Whangarei Area Hospital      | WHAN      |
| Waitemata                    | WMAT      |

| TRANSPLANTING UNIT           | Unit Code |
|------------------------------|-----------|
| Auckland City Hospital       | AUCK      |
| Director - Dr Ian Dittmer    |           |
| Park Road                    |           |
| Grafton, Auckland            |           |
| Christchurch Hospital        | CHCH      |
| Director - Dr David McGregor |           |
| Riccarton Avenue             |           |
| Christchurch                 |           |
| Starship Children's Hospital | STAR      |
| Director - Dr William Wong   |           |
| Park Road                    |           |
| Grafton, Auckland            |           |

| SATELLITE DIALYSIS UNITS    | Unit Code |
|-----------------------------|-----------|
| Auckland Home Training Unit | AHOM      |
| Bay of Islands Hospital     | BAYI      |
| Carrington Satellite        | CARR      |
| Grafton Training Unit       | GRAF      |
| Greenlane Hospital          | GLNE      |
| Kaitaia Hospital            | KAIT      |
| Kawakawa Hospital           | KAWA      |
| Manukau Satellite           | MANU      |
| Nephrocare                  | NEPH      |
| Nelson Hospital             | NELS      |
| Porirua Community Dialysis  | PORI      |
| Rotarua Hospital            | ROTO      |
| Tauranga Hospital           | TAUR      |
| Waitakere Satellite         | WAIT      |

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

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|                   | Late Referral   | 12-18       |
|                   | Vascular Access   | 12-19       |
|                   | Patient Flow  | 12-21       |
|                   | Cause of Death  | 12-23       |
| <b>Appendix A</b> | <b>Incident Data 2013 (Refer to website)</b>  |             |
| <b>Appendix B</b> | <b>Prevalent Data 2013 (Refer to website)</b>   |             |
| <b>Appendix C</b> | <b>Death Data 2013 (Refer to website)</b>   |             |

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**AUST. & N.Z. DIALYSIS AND TRANSPLANT SURVEY**

**THIS SECTION FOR ALL PATIENTS**

**REGISTRY NUMBER**  **1 INITIAL HOSPITAL**  **CURRENT/PARENT HOSPITAL**   
Hospital/State Hosp. Unit No. Hospital/State Hosp. Unit No.

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

**5 RACIAL ORIGIN** (Record from list)  **6 PRIMARY RENAL DISEASE** (Record from list)  **7 BIOPSY**  **8 SE. CREATININE**   
OTHER Y/N AT ENTRY

**9 COUNTRY OF BIRTH** (If Australia or NZ - Tick box)  **10 POSTCODE** At Entry  At End Survey   
AUST NZ OTHER COUNTRY (Please specify)

**11 CO-MORBID CONDITIONS AT ENTRY**

**LATE REFERRAL** (>3 Mths before first treatment)  **HEIGHT** (cms)  **WEIGHT** (kg)  **CIGARETTE SMOKING**  
Y=Yes N=No  W=Never C=Current

**DISEASE AT ENTRY AND DURING CURRENT SURVEY**

**Y=Yes N=No S=Suspected**

**CHRONIC LUNG Y/S/N**  **PERIPHERAL VASCULAR Y/S/N**  **CEREBRO VASCULAR Y/S/N**  **DIBETES N=No**  
O=Type 1 Insulin dependent P=Type 2 Non-Insulin requiring G=Type 2 Insulin requiring

**AT ENTRY**  **LAST**  **CURRENT**

**OTHER CO-MORBID CONDITIONS** (Write In)

**12 CENTRE OF TREATMENT**

**AT ENTRY**  **AT GRAFT**  **HOSPITAL / CENTRE NAME** (Write In or Tick, if same)  **CENTRE CODE**  **DATE TRANSFER**   
Enter geographical location at Death or End of Survey

**13 COURSE OF TREATMENT**

**COMPLETE ACCORDING TO CODE**

**REASON FOR DIALYSIS MODALITY CHANGE FROM CAPD to APD / APD to CAPD / Any PD to HD / HD to any PD**  
Enter Reason for Change FROM Previous Modality TO Current Modality

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

| ISS. CODE | DAY  | MTH        | YR           | REASON | ISS. CODE | DAY | MTH | YR | REASON |
|-----------|--|------------|--------------|--------|-----------|-----|-----|----|--------|
| A         | APD  | IFD        | Hospital     | 18     |           |     |     |    |        |
| C         | APD  | IFD        | Satellite    | 19     |           |     |     |    |        |
| E         | APD  | IFD        | Home         | 20     |           |     |     |    |        |
| L         | CAPD   | Hospital   | Outpatient   | 21     |           |     |     |    |        |
| M         | CAPD   | Home       |              | 22     |           |     |     |    |        |
| BC        | HD   | Hospital   | Conventional | 23     |           |     |     |    |        |
| DC        | HD   | Satellite  | Conventional | 24     |           |     |     |    |        |
| FC        | HD   | Home       | Conventional | 25     |           |     |     |    |        |
| BQ        | HD   | Hospital   | Quotidian    | 26     |           |     |     |    |        |
| DQ        | HD   | Satellite  | Quotidian    | 27     |           |     |     |    |        |
| FQ        | HD   | Home       | Quotidian    | 28     |           |     |     |    |        |
| G         | Transplant   | in AUST/NZ |              | 29     |           |     |     |    |        |
| H         | Date of last post-graft dialysis                                       |            |              | 30     |           |     |     |    |        |
| X         | Transplant Overseas  |            |              | 31     |           |     |     |    |        |
| I         | Graft function temporarily/permanently ceased (date dialysis required) |            |              | 32     |           |     |     |    |        |
| J         | At visit if lost to follow-up  |            |              | 33     |           |     |     |    |        |
| K         |  |            |              | 34     |           |     |     |    |        |
| Z         | DATE OF DEATH  |            |              |        |           |     |     |    |        |

**15 CANCER EVENTS?** Y/N

**16 CAUSE OF DEATH** (Record from list)  **17 WAS GRAFT SUSTAINING LIFE?** (Without dialysis at time of death) Y/Yes N/No  
Y=Yes N=No

**18 PARENTHOOD**

HAS THIS PATIENT BECOME PREGNANT OR FATHERED A CHILD DURING THIS SURVEY? Y/Yes N/No    
If Yes, please complete a Parenthood Outcome form.

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

**19 TYPE OF DIALYSIS**  **20 DRY WEIGHT AT LAST DIALYSIS**  **21 UNCORRECTED CALCIUM**  **22 PHOSPHATE**  **23 HAEMOGLOBIN**  **24 EPO AGENT**  **25 FERRITIN**  **26 % SATURATION OF IRON**   
(See list) (kg and PD Patients) (See instructions on the back of the form) (mmol/l) (g/l) (Transform Saturation) (When last 3 mths of Survey or record not done) Y=Yes N=No

**HAEMODIALYSIS**

**27 DIALYSER BRAND** (Write In)  **28 BLOOD FLOW RATE**  **29 SESSIONS PER WEEK**  **30 HOURS PER SESSION**  **31 UREA REDUCTION or Kt/V**   
BRAND NAME AND MODEL (mL/min) (Last Available)

**32 ACCESS IN USE (Functioning only) Enter for ALL PATIENTS ON HAEMODIALYSIS AT ANY TIME DURING THIS SURVEY PERIOD**

**AT FIRST HD**  **AT LAST HD**  **AT DECLETTED**  **AT REVISITED**   
1=Native 2=Synthetic 3=Junctional CV Catheter 4=Non Junctional CV Catheter and revised

**ALL PERITONEAL DIALYSIS**

**33 PET TEST (Once Only)**  **34 CONNECTION SYSTEM**  **35 PERITONITS DATE OF FIRST EPISODE**  **36 NUMBER OF EPISODES OF PERITONITS**  **37 TOTAL VOLUME OF WEEKLY CHANGES**   
Within first 6 mths (Write In) (Litres/week) (Litres/week)

**38 CREATININE CLEARANCE**  **39 WEEKLY Kt/V**  **40 RESIDUAL RENAL FUNCTION**   
Adjusted for Body Surface Area (Creatinine Clearance) (Litres/week/1.73 m<sup>2</sup>) (Range 0.1 - 5.0) (Litres/week/1.73 m<sup>2</sup>)

**41 PD SOLUTIONS** - Y=Yes N=No (Please fill in all boxes)

**OTHER**

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

**42 GRAFT NUMBER**  **43 DATE OF THIS TRANSPLANT**  **44 REFERRING HOSPITAL**  **45 DONOR HOSPITAL**  **46 TRANSPLANT HOSPITAL**  **47 RECIPIENT ANTIBODY STATUS**  **48 NUMBER REJECTION EPISODES THIS SURVEY**   
(Complete acute rejection form for each episode)

**49 DONOR DETAILS** **50 TOTAL ISCHEMIA**  **51 IMMEDIATE FUNCTION**  **52 DISEASE IN GRAFT**  **53 DATE FIRST PROVEN**  **54 CAUSE OF GRAFT FAILURE**   
SOURCE AGE SEX (Hours) (See list) (See list) (See list) (eg. Graft biopsy)

**55 MONOCLONAL / POLYCLONAL THERAPY** (Record from list)

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

**56 TOTAL DAILY DRUG DOSE (mg)**

| TOTAL INITIAL DRUG 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                     |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| AZ                      |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| PRF                     |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| D                       |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| TACTOL                  |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| MMP                     |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| SIRCOL                  |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |
| OTHER                   |       |       |       |       |      |      |      |      |      |       |       |       |       |       |       |

**57 CYA SPARING DRUG** 0=NOT GIVEN 1=GIVEN (eg DILTIAZEM - KETOCOANZOLE - VERAPAMIL)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |   |

**58 BODY WEIGHT** (kg)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |

**59 SERUM CREATININE** (µmol/L)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |

**60 HLA TYPING**

**BLOOD GROUP**  **RECIPIENT**  **DONO**   
T R

**FOR OFFICE USE ONLY**

**A**  **B**  **DR**  **DQ**

**G2 PRA AND CROSSMATCH**  **CURRENT**

**Data Collection Form**

# Data Collection From (Back Side)

## 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

### 5 - RACIAL ORIGIN

- 1 Caucasian
  - 2 Australian Aboriginal
  - 3 Chinese
  - 4 Indian
  - 5 African
  - 6 Other
  - 7 Cook Islander
  - 8 Samoan
  - 9 Tongan
  - 10 Torres Strait Islander
  - 11 Pacific People - other (specify)
  - 12 Indian
  - 13 Malay
  - 14 Filipino
  - 15 Vietnamese
  - 20 Other (specify)
- 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 undetermined histologically (no biopsy)
- 110 Focal sclerosing GN (including hyalineosis)
- 111 Primary focal sclerosing GN or focal glomerular sclerosis
- 112 Secondary focal sclerosing GN
- 121 Mesangiocapillary GN with subendothelial deposits (double contour) 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 (IgA- F)
- 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-Schönlein purpura
- 185 Wegener's Granulomatosis
- 186 Microscopic Polyangiitis
- 187 Scleroderma
- 190 GN other (specify)
- 200 Analogue nephropathy
- 300 Renal vascular disease due to malignant hypertension (NO primary renal disease)
- 301 Renal vascular disease - type unspecified (nephrosclerosis) (NO primary renal disease)
- 302 Renal vascular disease - due to hypertension
- 303 Bilateral renal artery stenosis
- 400 Polycystic kidney disease
- 401 Medullary cystic disease
- 402 Infantile/juvenile polycystic kidney disease
- 500 Reflux nephropathy
- 600 Pyelonephritis
- 700 Acute tubulointerstitial nephritis
- 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 Renal tubulointerstitial disease
- 003 Chronic tubulointerstitial disease
- 004 Renal tubulosis
- 005 Amyloid disease
- 006 Haemolytic uraemic syndrome
- 007 Cortical necrosis
- 008 Interstitial nephritis
- 009 Longitudinal renal hypoplasia and dysplasia
- 010 Longitudinal kidney (specify - eg. trauma, surgery)
- 011 Megacystis
- 012 Ovarian
- 013 Cystinosis
- 014 Balkan nephropathy
- 015 Renal cell carcinoma (GRANWITZ)
- 016 Transitional cell carcinoma of urinary tract
- 017 Paraneoplasms (including multiple myeloma)

### PRIMARY RENAL DISEASE cont.

- 018 Light chain nephropathy (benign)
- 019 Lithium toxicity
- 020 Post puerum nephropathy
- 021 Sarcoidosis
- 022 Systemic lupus erythematosus
- 023 Post-uremic junction obstruction
- 024 Neurogenic bladder
- 025 Non-obstructed dilated bladder and ureters (megacystitis - megoureter)
- 026 Spina bifida or myelomeningocele
- 027 Neurogenic bladder (neurogenic)
- 028 Other lower urinary tract abnormalities (with secondary reflux) (specify)
- 039 Obstructive nephropathy
- 040 Ureteric obstructive nephropathy

### 13 - REASON FOR MODALITY CHANGE

From CAPD to APD  
From APD to CAPD  
From any form of PD to HD  
From HD to any form of PD

- 10 Recurrent / persistent peritonitis
- 11 Acute peritonitis
- 15 Tunnel / exit site infection
- 20 Inadequate solute clearance
- 21 Inadequate ultrafiltration
- 22 Exit site fluid localisation
- 23 Exit site infection
- 27 Abdominal abscess
- 30 Dialysate leak
- 31 Catheter block
- 32 Haemoperitoneum
- 33 Catheter fill out
- 34 Abdominal pain
- 38 Abnormal pain
- 40 Abdominal surgery
- 41 Sclerosing peritonitis
- 42 Peritoneal infection
- 43 Multiple adhesions
- 44 Pregnancy
- 45 Hematuria
- 46 Peritonitis
- 47 Cardiovascular instability
- 48 Geography - poor access to dialysis services
- 49 Vascular access problems
- 50 Patient preference
- 51 Unable to manage self-care
- 52 Recovery of renal function
- 53 Transplantation
- 54 Death
- 81 Transfer outside Australia or New Zealand
- 82 Other surgery
- 83 Hydrothorax
- 85 Poor nutrition
- 86 Scrotal oedema
- 87 Poor access to dialysis services
- 88 Planned transfer after acute HD start
- 89 Other (specify)

### 16 - CAUSE OF DEATH

- CARDIAC
- 10 Myocardial ischaemia (consumed)
  - 11 Myocardial ischaemia and infarction
  - 12 Pulmonary oedema
  - 13 Hypokalaemia
  - 14 Haemorrhagic pericarditis
  - 15 Hypertensive cardiac failure
  - 16 Aortic aneurysm - 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 Haemorrhage from transplant vein
  - 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 specify type of organism

eg Staph. CMV, Candida, etc

eg 321 Lung infection - bacterial (staph)

322 Lung infection - viral (CMV)

### CAUSE OF DEATH cont.

- 31 CNS
  - 32 Lung
  - 33 Urinary tract
  - 34 Wound
  - 35 Shunt
  - 36 Peritonium
- CAUSE OF DEATH cont.
- 37 Septicaemia - site unknown (specify organism)
  - 38 Liver (incl. viral hepatitis) (specify A, B, CMV, herpes, etc)
  - 39 Other site (specify)
- SOCIAL
- 40 Withdrawal for psycho-social reasons
  - 41 Patient refused further treatment (specify reason)
  - 42 Satisfactory
  - 43 Therapy ceased for any other reason (specify reason)
  - 44 Accidental death (specify)
  - 45 Withdrawal for cardiovascular comorbid conditions
  - 46 Withdrawal for cerebrovascular comorbid conditions
  - 47 Withdrawal for peripheral vascular comorbid conditions
  - 48 Withdrawal related to malignancy
  - 49 Withdrawal related to dialysis access difficulties (AVF, Tenckhoff, etc)
- MISCELLANEOUS
- 50 Hepatic failure (specify)
  - 51 Uraemia caused by graft failure
  - 52 Pancreatitis
  - 53 Bone marrow depression
  - 54 Leukemia
  - 55 Lymphoma
  - 56 Malignant disease
  - 57 Perforation of abdominal viscus - peptic ulcer, diverticulum, appendix
  - 58 Dialysis dementia (aluminium)
  - 59 Other (specify)
  - 60 Immuno-deficiency due to viral infection (specify)
  - 61 Chronic respiratory failure
  - 62 Sclerosing peritonitis
- 19 - TYPE OF DIALYSIS
- 11 Haemodialysis - plate dialysers
  - 12 Haemodialysis - hollow fibre dialysers
  - 15 Haemodiafiltration
  - 19 C.V.V.H/D (Intensive Care Unit)
  - 21 Peritoneal - continuous ambulatory (CAPD)
  - 22 Peritoneal - automated (APD)
  - 23 Peritoneal - intermittent cyclic (IPD)
  - 25 Peritoneal - other (specify)
- 20 - DRY WEIGHT
- At end of survey, transplantation or death.
- 21 - UNCORRECTED CALCIUM
- Not corrected for albumin  
Midweek, predialysis and closest to end of survey, transplantation or death.
- 22 - PHOSPHATE
- Midweek, predialysis and closest to end of survey, transplantation or death.
- 23 - HAEMOGLOBIN
- Midweek, predialysis and closest to end of survey, transplantation or death.
- 31 - URR OR Kt/V Phase enter method used
- A Urea Reduction Ratio % (URR%)  
B Kt/V by BICOSTAT  
C Kt/V by UKM  
D Kt/V by DAUGHDRAS - single pool  
E Kt/V by other method - (specify)
- Kt/V (for HD patients) Range 0.5 - 2.2

### UREA REDUCTION RATIO %

(Ea dialysis urea - post dialysis urea) / x 100 = URR%  
Pre dialysis urea

Ea dialysis urea:  
Blood should be drawn from the 'arterial' needle immediately prior to dialysis, at a mid-week dialysis session

Post-dialysis urea:  
Blood is again drawn from the 'arterial' needle and this should occur within 20 seconds 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 - ACCESS IN USE

Type at Entry HD - leave blank if initial renal replacement treatment was not haemodialysis.

Type at Last HD - enter for all patients on haemodialysis at any time during the survey. Enter the procedure closest to the end of survey, change to PD, transplantation, or death.

33 - 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

38 to 40 - PD CLEARANCE STUDIES

performed from a 24 hour collection of PD effluent and urine

NOTE: Dialysate Creatinine Clearance and KtV both refer to dialysis creatinine ONLY (NOT the total of dialysis and renal clearances)

### 38 CREATININE CLEARANCE (Dialysate only)

- 38 Creatinine Clearance (Dialysate only)  
Range 10 - 100  
Litres/week/1.73m<sup>2</sup> Body Surface Area
  - 39 WEEKLY KtV (Dialysate only) - Range 0.1 - 5.0
  - 40 RESIDUAL RATION FUNCTION (Creatinine Clearance)  
Litres/week/1.73m<sup>2</sup> Body Surface Area
- 49 - SOURCE OF DONOR KIDNEY
- 1 Deceased Donor
  - 2 Sister (if twin, record 6 or 7)
  - 3 Brother (if twin, record 6 or 7)
  - 4 Mother
  - 5 Father
  - 6 Allogenic (identical) twin
  - 7 Diogenic (non-identical) twin
  - 8 Other related living donor (specify)
  - 9 Son
  - 10 Daughter
  - 11 Husband
  - 12 Wife
  - 13 Cousin
  - 14 Unrealised living donor (specify)
- 50 - 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)
- 51 - 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 dialyser needed
  - 4 No immediate function. No spontaneous fall (> 10%) in se creatinine; dialyser required within 72 hours
- 52 - DISEASE IN GRAFT Histologically proven
- Complete this section for FUNCTIONING or FAILED GRAFTS
- Please enter Date first proven (e.g. Graft Biopsy)
- B = BK virus nephropathy in graft  
Y = Disease recurrence  
- primary renal disease and disease in graft the same  
D = De novo glomerulonephritis  
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

### 54 - CAUSE OF GRAFT FAILURE

- REJECTION
- 10 Hypersensitise rejection (within 48 hours of transplantation)
  - 11 Acute rejection
  - 12 Chronic rejection
  - 40 Chronic allograft nephropathy (slow progressive loss of renal function; not due to recurrent original disease or acute rejection)
- 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 Nephrotic biopsy (due to pre-transplant cortical necrosis)
  - 61 Cortical necrosis post transplant (not due to rejection)
  - 62 Cortical necrosis post transplant (due to rejection)
- GLOMERULONEPHRITIS
- 80 Mesangiocapillary GN with intramembranous deposits (dense deposit disease)
  - 81 Mesangiocapillary GN with subendothelial deposits (dense deposit disease)
  - 84 Focal sclerosing GN (including hyalineosis)
  - 85 Membranous GN
  - 86 Mesangial proliferative GN (IgA positive)
  - 87 Goodpasture's syndrome
  - 88 Extra and extra capillary GN with extensive crescents (clinically rapidly progressive)
  - 89 Other (specify)

### DRUG THERAPY

- 90 Complications of drug therapy requiring reduction or cessation of drug therapy
  - 91 Non-compliance with drug therapy
  - 92 Rejection following US reduction due to malignancy
  - 93 Rejection following US reduction due to infection
- MISCELLANEOUS
- 01 Donor malignancy
  - 02 Donor malignancy
  - 05 BK virus nephropathy
- 55 - 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
- 2 Daclizumab (Zenepax)
  - 4 OKT3
  - 5 Intravenous immunoglobulin
  - 6 Rituximab (Simulect)
  - 8 Polyclonal anti T cell
  - 9 Other monoclonal (specify)
- NUMBER OF DOSES
- Record actual number of doses given
- REASON FOR USE
- 1 Prophylaxis
  - 7 Treatment for acute rejection
  - 8 Other (specify)
- 56 - 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 the first local maintenance dose; do NOT enter the intravenous loading doses administered at or shortly after transplantation
- (2007)



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