

# ANZDATA SPECIAL REPORTS : 1



## Unit Survey 2020

*Summarising the findings from the unit survey conducted in association with the December 2019 ANZDATA data collection.*

## Contents

Introduction .....	2
Purpose of the unit survey .....	2
Methods .....	2
Descriptive data .....	3
1. Responders and non-responders by state and country .....	3
2. Total kidney failure patients per each unit .....	3
3. Individuals who completed the survey .....	3
4. Type of funding of parent renal unit .....	4
5. Transplanting units by country .....	4
6. Number of full-time equivalent consultant nephrology staff in each renal unit .....	5
7. Number of basic physician trainees and advanced trainees in each public renal unit .....	5
8. Health care professionals available in each renal unit .....	6
9. Therapy offered to patients at each renal unit .....	6
10. Dialysis practices .....	7
a. Renal units with a nurse-led phosphate management protocol for dialysis patients .....	7
b. Renal units with a nurse-led iron administration protocol for haemodialysis patients .....	7
c. Renal units with a multidisciplinary dialysis access service .....	7
d. Staff who perform dialysis access creation for haemodialysis patients .....	8
e. PD catheter insertion .....	8
f. Staff who insert tunnelled cuffed catheters for dialysis .....	8
g. Routine tunnelled cuffed catheter insertion within 24 hours of the need being identified (including weekends) .....	9
h. Units that actively pursue a PD first policy in incident pre-dialysis patients by country .....	9
i. Regular screening of HD patients for antibiotic resistant bacterial infections .....	9
11. Provision of transplant assessments .....	10
12. Dissemination of ANZDATA reports to health professionals .....	10
Conclusions .....	10

## Suggested Citation

McDonald S, Hewawasam E, Hurst K, Irish G, Clayton P. ANZDATA Special Reports 1: Unit survey 2020. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2021. ISBN: 978-0-6453621-0-7 Available at: <http://www.anzdata.org.au>

## Introduction

This is the first of the ANZDATA “Special reports” series. These reports aim to complement existing output (such as the Annual Report) and provide an opportunity to release material that is of relevance to contributors but does not fit readily within an annual reporting structure, or suitable for publication in a peer-reviewed research journal. These reports are prepared and reviewed internally. We hope to allow publication of material that is of interest and relevance outside of the existing formats.

This report provides summary information about the survey responses, to inform contributing units in Australia and New Zealand and others about characteristics of units. Considerable further work is anticipated examining the relationships between various unit characteristics and other factors.

## Purpose of the unit survey

A number of previous ANZDATA publications have shown a high degree of variability in patient and treatment outcomes across renal units in Australia and New Zealand<sup>1-4</sup>. A considerable proportion of this variation between units was attributable to currently measured patient or unit level factors. However, there was still a substantial proportion of variation between units unexplained by the currently measured unit level characteristics.

Historically, ANZDATA has focused on characteristics of individual patients. Strategically, it is important to identify characteristics at unit level associated with better or worse outcomes, with the ultimate aim of improving treatment and outcomes in the area of dialysis and transplantation. To this end, ANZDATA conducted a unit survey in conjunction with the end of year patient survey in 2019. A specific aim of this report is to make the preliminary data available to support further development of the unit survey.

## Methods

We disseminated the survey via SurveyMonkey in conjunction with the end of year ANZDATA survey in December 2019. This was sent to the heads of all “parent” renal units in Australia and New Zealand, with the request that it be completed by someone with the relevant knowledge about their unit. Questions covered a variety of areas including staffing, resources and clinical practice. The survey returns were closed in July 2020 at the completion of patient-level data collection within ANZDATA.

“Parent units” are the standard care-giving unit within ANZDATA. Typically, these are renal units based in hospitals. They are defined as the entity with responsibility for overall care for a patient’s dialysis and transplantation. They will usually be associated with one or more satellite haemodialysis units, provide access to peritoneal dialysis services, kidney transplantation (either directly or by referral) and inpatient hospital care.

The contents of the survey were determined after consultation with ANZDATA working groups and others. A further survey is anticipated with the December 2021 ANZDATA patient survey; suggestions for inclusion are welcome.

---

<sup>1</sup>Mac K, Hedley J, Kelly PJ et al. *Nephrology* 2019.

<sup>2</sup>Nadeau-Fredette AC, Johnson DW, Hawley CM et al. *Perit Dial Int* 2016.

<sup>3</sup>Htay H, Cho Y, Pascoe EM et al. *Clin J Am Soc Nephrol* 2017.

<sup>4</sup>Htay H, Cho Y, Pascoe EM et al. *Am J Kid Dis* 2018.

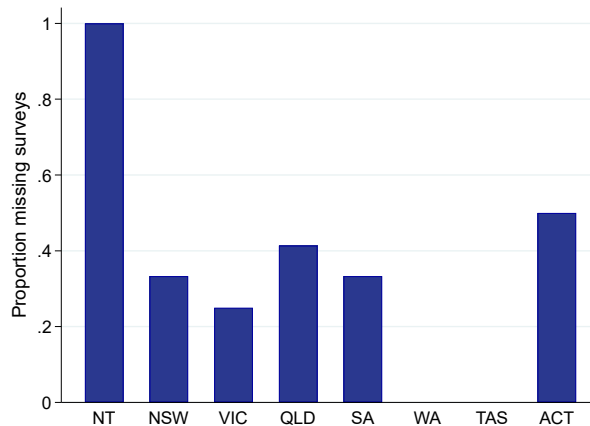
## Descriptive data

In this report, basic descriptive data of survey responses are presented for each of the survey items.

### 1. Responders and non-responders by state and country

Overall, 66% of parent units responded to the survey in Australia, which care for 20,486 patients (77% of all patients in Australia). All renal units in New Zealand, Western Australia and Tasmania completed the survey. None of the renal units in Northern Territory completed the survey (Figure 1).

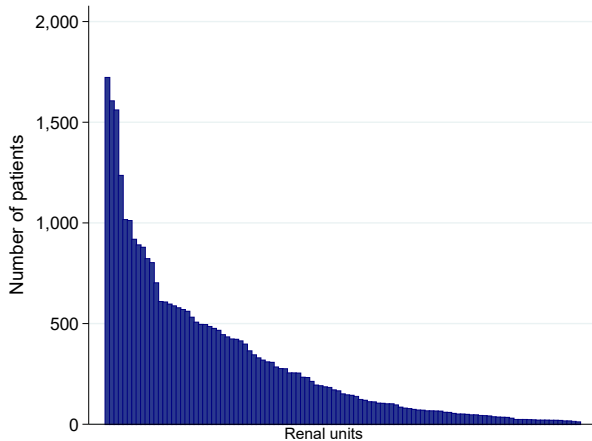
**Figure 1. Proportion of missing surveys in Australian states**



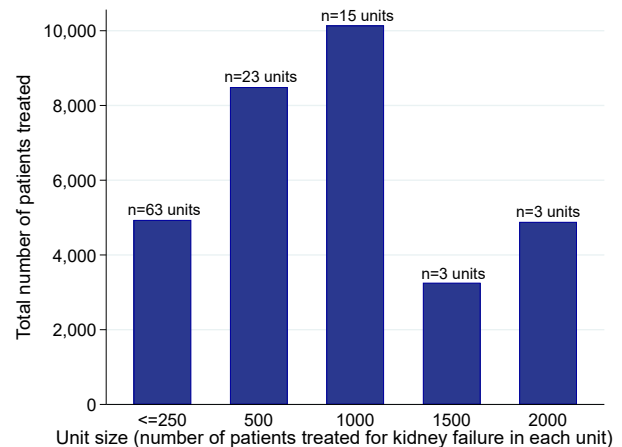
### 2. Total kidney failure patients per each unit

There was a large variation in the unit size, considered as the number of kidney failure patients (people receiving dialysis treatment or kidney transplant recipients) (Figures 2 & 3). Although the largest units care for well over 1,000 patients, most patients were cared for in smaller units.

**Figure 2. Number of patients treated for kidney failure in each unit**



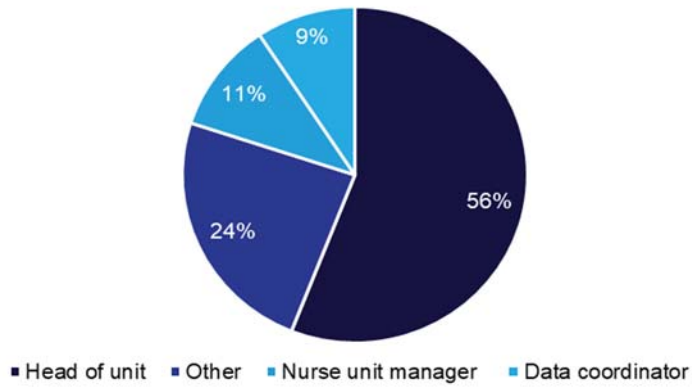
**Figure 3. Total number of patients by unit size. The bars indicate the total number of patients with kidney failure cared for by all units in that category**



### 3. Individuals who completed the survey

The majority of the surveys were completed by heads of unit, followed by other staff (e.g. nephrologist, clinical nurse, transplant coordinator), nurse unit manager and data coordinator (Figure 4).

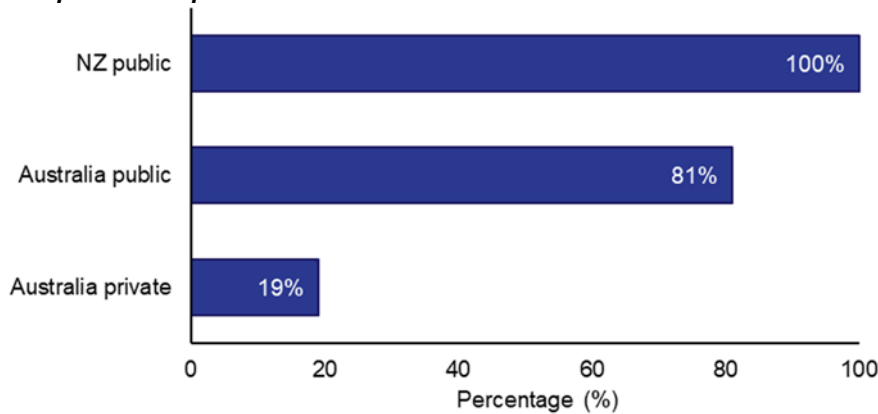
Figure 4. Role of individuals who completed the survey (n, %).



#### 4. Type of funding of parent renal unit

All units in New Zealand were publicly funded, while a majority of units in Australia were public facilities (Figure 5). For this survey, “private” units were defined as those units which only accepted people whose dialysis was funded by private health insurance (this is distinct from private satellite units that accept patients whose management is overseen by clinicians at public hospitals). Of the responding units, 97% of patients in Australia were treated in public units while only 3% of patients were treated in private units in NSW, VIC and QLD.

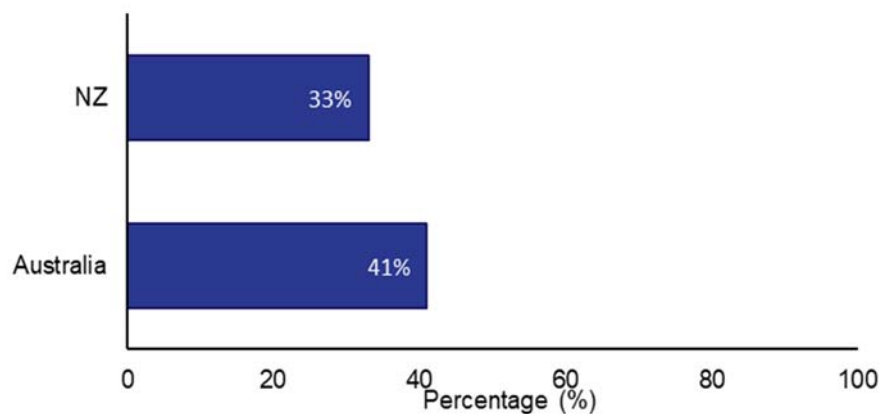
Figure 5. Percentage of “public” vs “private” funded units



#### 5. Transplanting units by country

“Transplanting units” were defined as units where kidney transplantation surgery was performed. Of responding units, about one third of units in New Zealand were transplanting units; slightly more in Australia (Figure 6).

Figure 6. Percentage of transplanting units in Australia and New Zealand



## 6. Number of full-time equivalent consultant nephrology staff in each renal unit

The median number of full-time equivalent (FTE) consultant nephrology staff available at each renal unit was 3.4 (interquartile range: 1.7-5.3) (Figure 7). Using the number of dialysis and transplant patients cared for at each unit at the end of 2019, ratios of patients per consultant FTE (Table 1) and ratios of patients per total medical staff FTE (includes basic physician trainees and advanced trainees; Table 2) within public units by treatment modality, transplanting unit status and country were calculated. One FTE is assumed for each basic and advanced trainees.

Figure 7. Full-time equivalent consultant nephrology staff per each renal unit

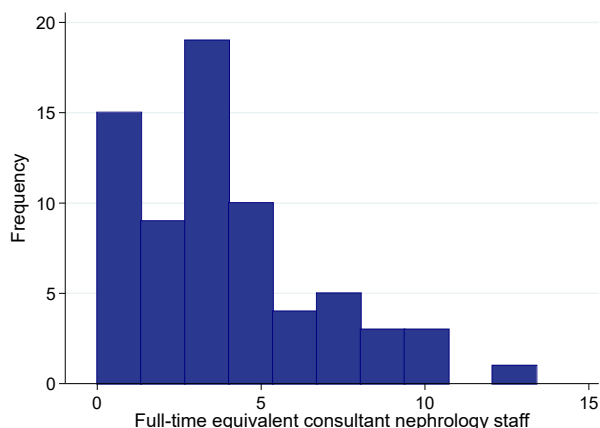


Table 1. Ratio of patients per consultant FTE within public units by treatment modality (median and IQR), transplanting unit status and country.

Country	Transplanting status	Peritoneal dialysis	Haemodialysis	Transplant*	Total
Australia	Yes	8.2 (2.8-14.5)	38.4 (6.7-60.7)	60.6 (17.9-84.7)	109.4 (28.1-166.9)
	No	6.7 (3.7-11.0)	34.9 (28.6-44.4)	28.2 (20.7-38.7)	72.6 (48.0-99.3)
New Zealand	Yes	8.7 (4.7-13.0)	22.8 (7.4-31.8)	37.6 (19.0-54.5)	72.6 (39.4 -91.0)
	No	11.2 (8.4-22.5)	33.5 (29.6-38.4)	33.0 (32.0-44.2)	84.3 (76.5-97.7)
<b>Total</b>		<b>8.6 (4.1-11.9)</b>	<b>34.8 (21.4-45.5)</b>	<b>33.5 (21.1-57.7)</b>	<b>82.5 (49.5-109.2)</b>

\*Number of prevalent kidney transplant recipients at point of yearly census

Table 2. Ratio of patients per total medical staff FTE (includes consultants, basic physician trainees and advanced trainees) within public units by treatment modality (median and IQR), transplanting unit status and country. Assumption of 1 FTE for basic and advanced trainees.

Country	Transplanting status	Peritoneal dialysis	Haemodialysis	Transplant*	Total
Australia	Yes	3.8 (1.7-7.6)	19.8 (4.1-28.2)	32.8 (10.6-42.2)	55.6 (17.9-76.2)
	No	4.4 (3.3-5.6)	23.5 (16.0-30.7)	15.7 (12.1-24.8)	49.9 (31.8-61.2)
New Zealand	Yes	6.1 (3.1-9.5)	15.6 (5.3-22.5)	27.2 (12.5-39.8)	50.4 (26.1-66.8)
	No	6.6 (5.3-10.7)	22.0 (18.7-25.7)	20.2 (17.0-22.1)	52.3 (44.6-60.7)
<b>Total</b>		<b>4.5 (2.5-6.7)</b>	<b>21.0 (14.9-27.6)</b>	<b>22.7 (12.1-33.2)</b>	<b>50.6 (31.8-65.6)</b>

\*Number of prevalent kidney transplant recipients at point of yearly census

## 7. Number of basic physician trainees and advanced trainees in each public renal unit

The majority of public units had basic and/or advanced physician trainees working in the renal unit (Table 3). The number of basic physician (Table 4) and advanced physician trainees (Table 5) in each public unit are categorized by state.

Table 3. Number of basic physician and advanced physician trainees in each public renal unit

Public Units		Advanced physician trainees				Total
		0	1	2-3	≥4	
Basic physician trainees	0	9	7	2	0	18
	1	2	7	11	2	22
	2-3	2	4	7	3	16
	≥4	0	1	0	4	5
	<b>Total*</b>	<b>13</b>	<b>19</b>	<b>20</b>	<b>9</b>	<b>61</b>

\*Only in responding units

**Table 4. Number of basic physician trainees in each public renal unit by state**

Basic physician trainees	State							Australia	New Zealand
	NSW	VIC	QLD	SA	WA	TAS	ACT		
0	8	2	4	0	0	0	0	14	4
1	7	3	3	0	2	2	1	18	4
2-3	4	2	5	1	2	0	0	14	2
≥4	0	2	0	1	0	0	0	3	2
<b>Total*</b>	<b>19</b>	<b>9</b>	<b>12</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>48</b>	<b>12</b>

\*Only in responding units

**Table 5. Number of advanced physician trainees in each public renal unit by state**

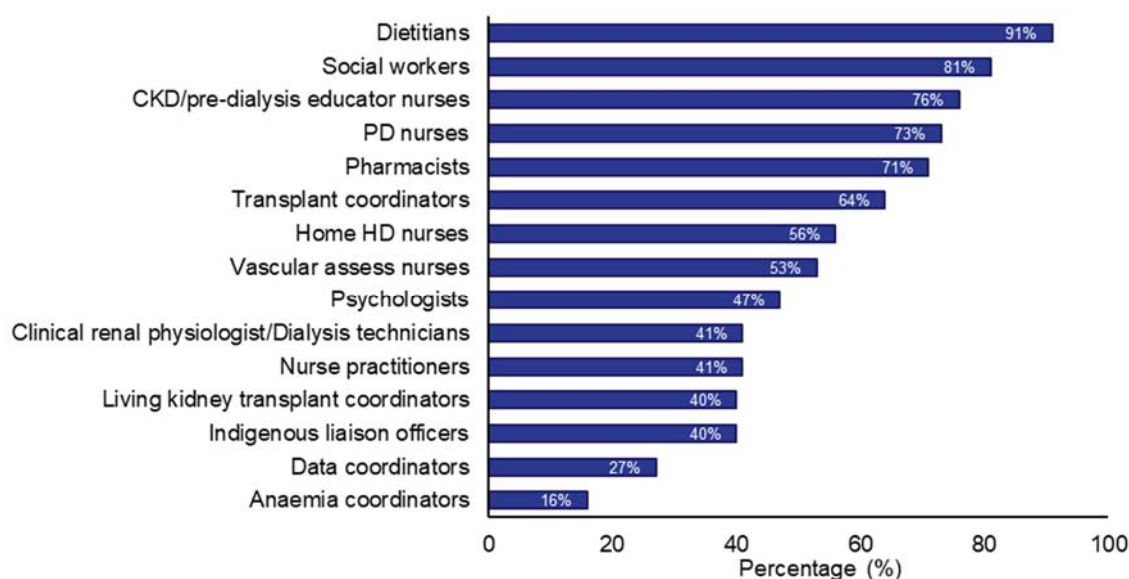
Advanced Physician Trainees	State							Australia	New Zealand
	NSW	VIC	QLD	SA	WA	TAS	ACT		
0	5	1	6	0	0	0	0	12	1
1	5	4	2	0	2	1	0	14	5
2-3	7	2	2	1	2	1	1	16	4
≥4	2	2	2	1	0	0	0	7	2
<b>Total*</b>	<b>19</b>	<b>9</b>	<b>12</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>49</b>	<b>12</b>

\*Only in responding units

## 8. Health care professionals available in each renal unit

The majority of the units had dietitians, social workers and CKD/pre-dialysis educator nurses available. Fewer units had Indigenous liaison officers, data coordinators and anaemia coordinators (Figure 8).

**Figure 8. Percentage of health care professionals available in each renal unit (Note: Percentages may add up to more than 100% as responders were able to select more than one answer)**



## 9. Therapy offered to patients at each renal unit

Most units offered home haemodialysis, self-care haemodialysis and peritoneal dialysis both in Australia (public units) and New Zealand. Private units had a different profile and did not offer home dialysis modalities (Table 6).

**Table 6. Therapy training provided to patients at each renal unit, n (%)**

Therapy training	Australia Public	Australia Private	New Zealand
None	6 (12)	12 (100)	0
PD	11 (23)	0	1 (9)
Home HD and self-HD care	2 (4)	0	0
Home HD care and PD	10 (21)	0	2 (18)
Home HD care, self-HD care and PD	19 (40)	0	8 (73)

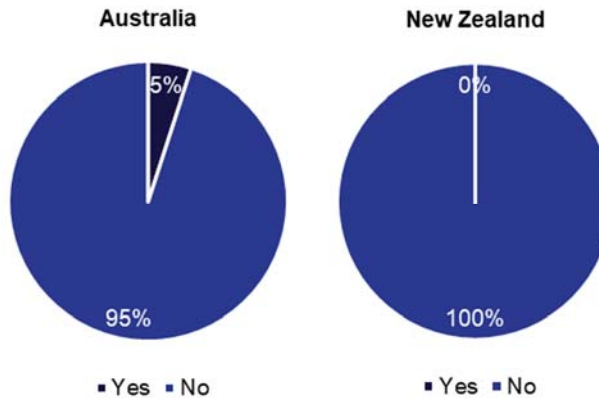
## 10. Dialysis practices

A number of specific questions were included around practices associated with dialysis.

### a. Renal units with a nurse-led phosphate management protocol for dialysis patients

The great majority of the units did not have a nurse-led phosphate management protocol in place (Figure 6).

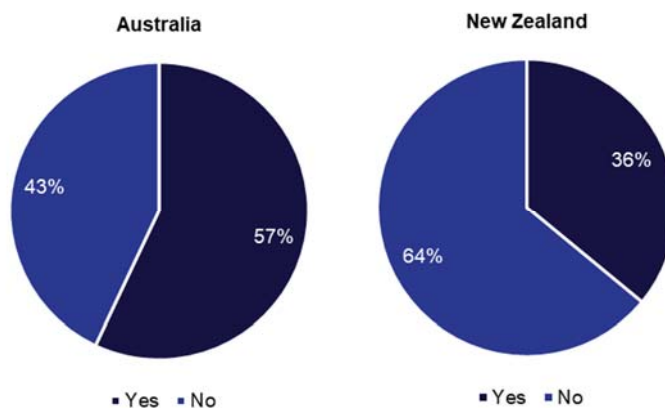
**Figure 6. Percentages of renal units that administered a nurse-led phosphate management protocol for dialysis patients**



### b. Renal units with a nurse-led iron administration protocol for haemodialysis patients

Just over half of the renal units had a nurse-led iron administration protocol for haemodialysis patients in place (Figure 7). Data about specific details of protocols were not collected.

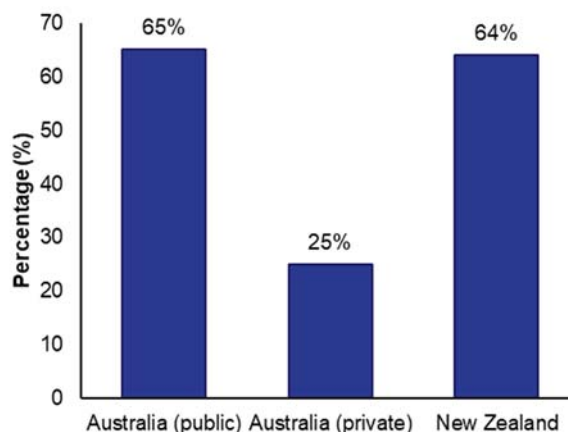
**Figure 7. Percentages of renal units that administered a nurse-led iron administration protocol for haemodialysis patients**



### c. Renal units with a multidisciplinary dialysis access service

Over half of the renal units had a multidisciplinary dialysis access service (Figure 8) and majority were publicly funded units.

**Figure 8. Percentage of renal units with a multidisciplinary dialysis access service**

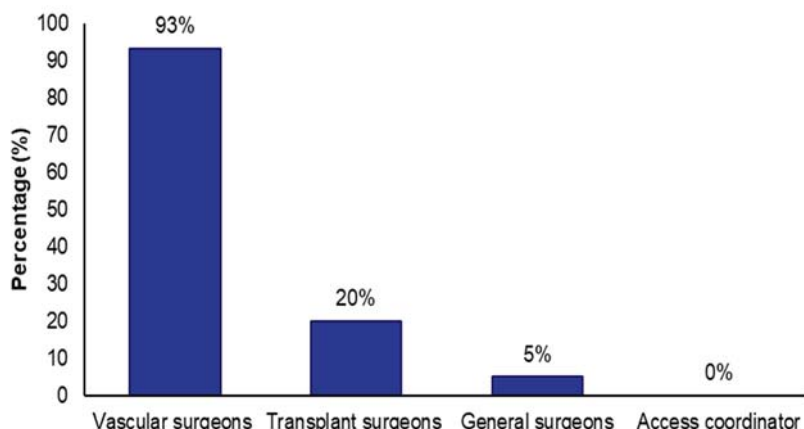




#### d. Staff who perform dialysis access creation for haemodialysis patients

In most units, dialysis access creation was performed by vascular surgeons followed by transplant surgeons and general surgeons (Figure 9).

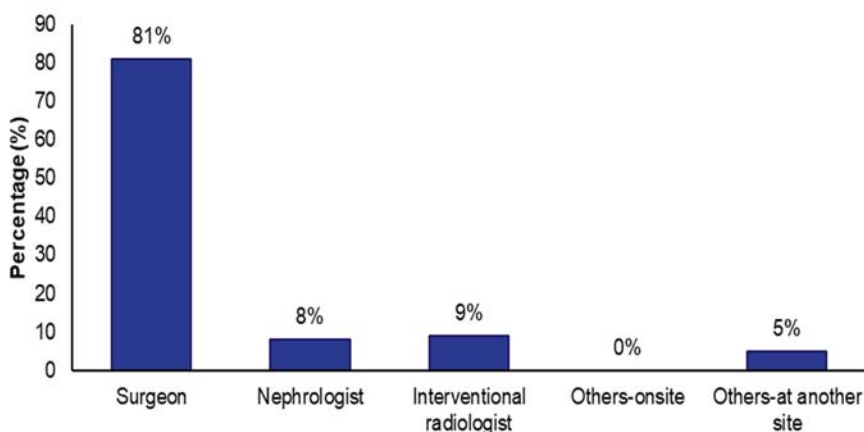
**Figure 9. Staff who perform dialysis access creation for haemodialysis patients in each renal unit (Note: Percentages may add up to more than 100% as responders were able to select more than one answer)**



#### e. PD catheter insertion

In 81% of units PD catheter insertion was performed by surgeons followed by smaller proportions of interventional radiologists and nephrologists (Figure 10).

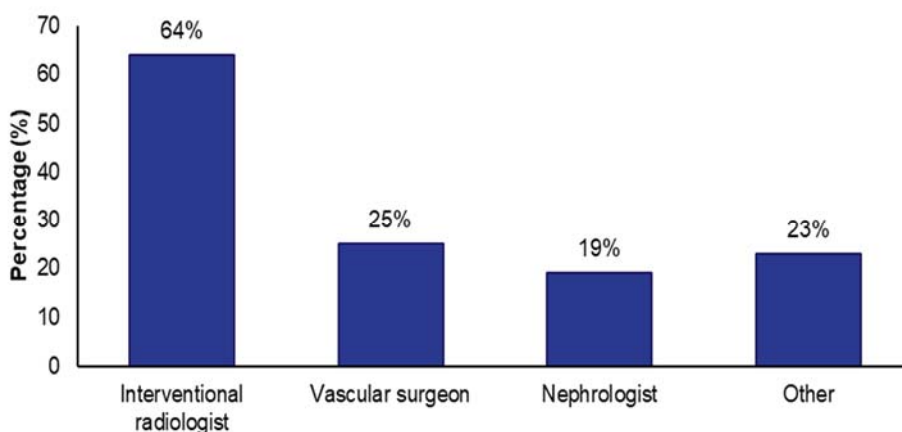
**Figure 10. Staff who perform PD catheter insertion in each renal unit (Note: Percentages may add up to more than 100% as responders were able to select more than one answer)**



#### f. Staff who insert tunnelled cuffed catheters for dialysis

In the majority (64%) of units, tunnelled cuffed catheters were inserted by interventional radiologists followed by vascular surgeons and nephrologists (Figure 11).

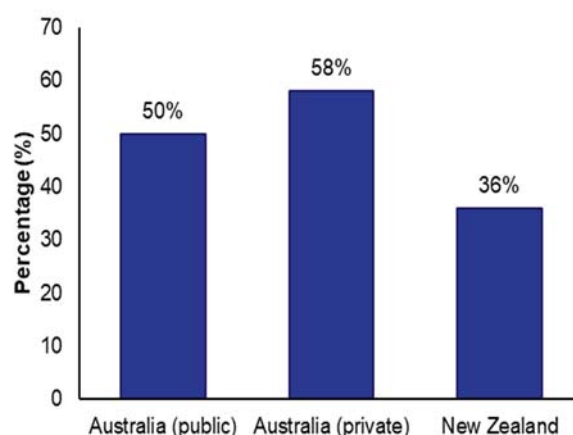
**Figure 11. Background of staff who insert tunnelled cuffed catheters for dialysis in each unit**



### g. Routine tunnelled cuffed catheter insertion within 24 hours of the need being identified (including weekends)

About half of the renal units were able to insert tunnelled cuffed catheters within 24 hours of the need being identified (Figure 12).

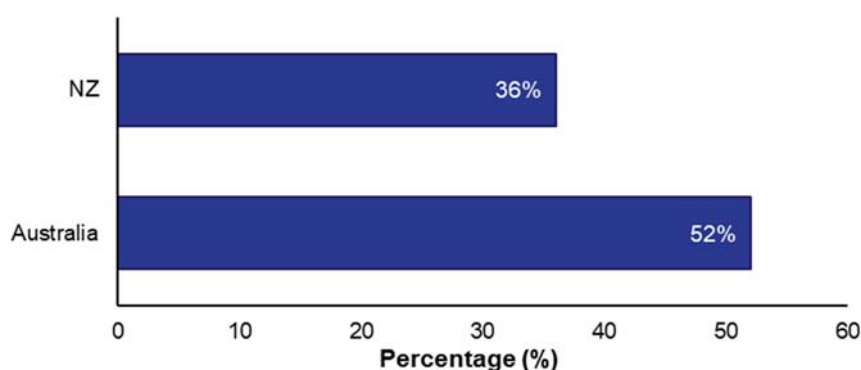
**Figure 12. Percentage of units that are able to insert tunnelled cuffed catheters within 24 hours of the need being identified (including weekends)**



### h. Units that actively pursue a PD first policy in incident pre-dialysis patients by country

Half of the units in Australia report they pursue a PD first policy, and about one third in New Zealand (Figure 13).

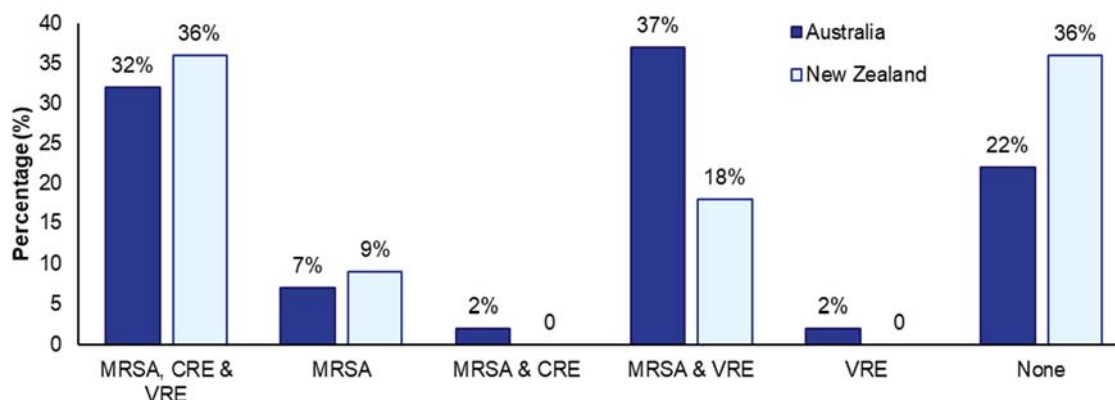
**Figure 13. Percentage of units in Australia and New Zealand that actively pursue a PD first policy in incident pre-dialysis patients**



### i. Regular screening of HD patients for antibiotic resistant bacterial infections

The majority of units screen for MRSA either alone or in combination with VRE or CRE. Around one third of the renal units screen for all three of the antibiotic resistant infections, MRSA, CRE and VRE (Figure 14), with a similar proportion screening for MRSA and VRE. About one quarter of units did not screen for any of these organisms.

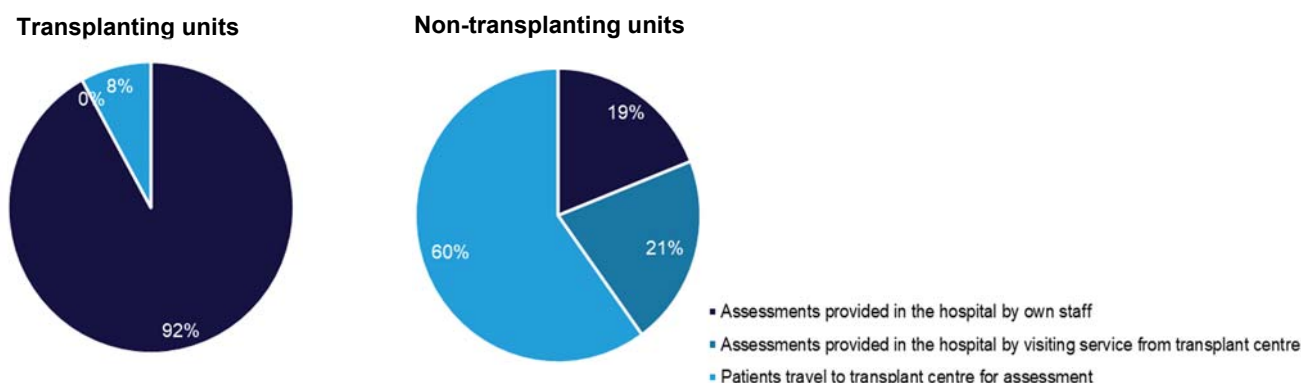
**Figure 14. Percentage of units that regularly screen haemodialysis patients for antibiotic resistant bacterial infections**



## 11. Provision of transplant assessments

Prior to acceptance onto the waiting list for a deceased donor transplant, patients go through an assessment process to ensure that the criteria for acceptance onto the waiting list are met and appropriate. For transplanting units, 92% of assessments were provided in the hospital by own staff, whereas for non-transplanting units, the majority of patients travelled to transplant unit for assessment (Figure 15).

**Figure 15. Percentage of renal units that provide transplant assessments**



## 12. Dissemination of ANZDATA reports to health professionals

Each year ANZDATA produces a number of reports. The Annual report is publicly available. Individual hospital reports are risk-adjusted reported prepared on a yearly basis. The distribution of these is now broader, but at the time of the survey these were distributed to heads of units only. The distribution of these reports is summarised in Table 7.

**Table 7. Dissemination of ANZDATA reports to health professional staff, n (%)**

Staff	Real time activity monthly reports	Dialysis key performance reports	Annual reports	Individual hospital reports
CEO	2 (3)	6 (8)	15 (20)	15 (20)
HOU	30 (40)	30 (40)	38 (51)	38 (51)
Medical staff	20 (27)	30 (40)	41 (55)	37 (49)
Nursing staff	21 (28)	26 (35)	34 (45)	33 (44)
Allied health staff	4 (5)	7 (9)	10 (13)	9 (12)
Other	5 (7)	7 (9)	7 (9)	7 (9)

## Conclusions

There was a considerable variation in clinical practice, resources and staffing available at renal units in Australia and New Zealand. There are a number of areas where development of this data is anticipated. Initial steps will include more detailed analyses of relationships between unit-level characteristics and patient-level outcomes, together with the extent to which variation in unit practices and outcomes is explained by observed variation in practices.