



# **WORKFORCE RECOMMENDATIONS FOR RENAL DIETITIANS IN AUSTRALIA AND NEW ZEALAND**

Developed by

**THE AUSTRALIAN AND NEW ZEALAND  
RENAL DIETITIANS WORKFORCE PLANNING GROUP**

*This information has satisfied the requirements for the Dietitians Association of Australia and Dietitians New Zealand process of endorsement.*

Completed 8<sup>th</sup> August 2012  
First review: May 2016  
Second review February 2018  
Next review 2021

# CONTENTS

# PAGE

Members of the Australian and New Zealand Renal Dietitians Workforce Planning Group (2010-2015) .....	3
Acronyms and Abbreviations .....	3
1. Executive summary .....	4
2. Introduction .....	4
3. Background .....	4
4. Using this Document .....	5
5. Recommended Hours for Renal Dietitian Consultations .....	6
6. Calculating Renal Dietitian Workforce Requirements .....	8
7. Conclusion .....	8
Appendix 1: Hours available for clinical care per FTE staff member .....	9
Appendix 2: Sample Calculations of Renal Dietitian FTE Requirements .....	11
Appendix 3: Worksheet to Calculate Renal Dietitian FTE Requirements .....	12
References .....	13

**THE AUSTRALIAN AND NEW ZEALAND RENAL DIETITIANS WORKFORCE PLANNING GROUP (2010-2012) – a sub-group of the DAA Renal IG and includes members of the *Dietitians Association of Australia* and Renal Dietitians from New Zealand**

**Members:** Carmel Crosby (NSW - convenor Workforce Group), Katrina Campbell (Queensland), Lauren Caruana (Northern Territory), Maria Chan (NSW), Ruth Dumont (Western Australia), Kristi Germaine (Victoria), Sarah Gordon (Australian Capital Territory), Phil Juffs (Queensland), Lyn Lloyd (NZ), Anthony Meade (South Australia), Robyn Montgomery (Tasmania), Aditi Patwardhan (NSW), Karen Salamon (Victoria)

**Members for 2016 review:** Carmel Crosby (NSW - convenor Workforce Group), Maria Chan (NSW), Ruth Dumont (Western Australia), Lyn Lloyd (NZ), Anthony Meade (South Australia), Robyn Montgomery (Tasmania), Aditi Patwardhan (NSW), Karen Salamon (Victoria), Katrina Campbell (Queensland), Joanna Martin (Queensland), Simone McCoy (Queensland), Kate Killen (Northern Territory), Claire Speer (Australian Capital Territory),

**Members for 2018 review:** Carmel Crosby (NSW – convenor Workforce Group), Maria Chan (NSW), Ruth Dumont (Western Australia), Lyn Lloyd (NZ), Anthony Meade (South Australia), Robyn Montgomery (Tasmania), Karen Salamon (Victoria), Joanna Martin (Queensland), Stephanie Notaras (NSW)

It would be appreciated if any users of this resource, contact the Renal Interest Group convenor, via the Dietitians Association of Australia ([info@daa.asn.au](mailto:info@daa.asn.au)), with comments/suggestions as part of ongoing evaluation.

**ACRONYMS**

<b>ADO</b>	Allocated Day Off
<b>CKD</b>	Chronic Kidney Disease
<b>DAA</b>	Dietitians Association of Australia
<b>FTE</b>	Full Time Equivalent
<b>GFR</b>	Glomerular Filtration Rate
<b>GMCT</b>	Greater Metropolitan Clinical Taskforce
<b>IG</b>	Interest Group
<b>NSW</b>	New South Wales
<b>NZ</b>	New Zealand
<b>PA</b>	Per Annum
<b>RRT</b>	Renal Replacement Therapy

## **1. EXECUTIVE SUMMARY**

In 2010 the Dietitians Association of Australia (DAA) Renal Interest Group (IG) set improving staffing levels as its top priority. A DAA Renal Dietitians Workforce Planning Group was formed and included experienced renal dietitians from Australia and New Zealand. This document has been produced by this group to provide recommendations on minimum dietetic staffing levels required for the various renal modalities.

## **2. INTRODUCTION**

Survey data<sup>1,2</sup> has shown repeatedly that staffing allocation of dietitians in many renal medicine services is inadequate and distributed on a relatively ad-hoc basis resulting in serious inequalities in service provision across sites. Many renal dietitians operate as sole practitioners, with little support staff, without consideration of the patient complexity, growth in numbers of renal patients and services or variety in treatment modalities.

The incidence rate of treated End Stage Kidney Disease is projected to increase by nearly 80%, from 11 per 100,000 population in 2009 to 19 per 100,000 population in 2020.<sup>3</sup> Growth in the dialysis population has been 3% per annum over the 4 years to 2013<sup>4</sup> and for every new case of end stage kidney disease treated with dialysis or transplantation, there is one that is not.<sup>5</sup> It is therefore imperative that renal dietitian staffing levels are enhanced, so as to improve the nutritional status of people with Chronic Kidney Disease (CKD) and those on Renal Replacement Therapy (RRT).

## **3. BACKGROUND**

### **Nutrition Care of the person with renal disease**

Kidney disease is a complex progressive disease resulting in multiple, undesirable consequences that effect the individuals' nutrition status (uraemia, metabolic acidosis, hyperkalaemia, hyperphosphataemia). Nutrition care is vital at all stages of CKD.

Nutrition care practiced by a dietitian involves a comprehensive assessment of multiple factors, determination of nutrition related problems and potential aetiologies prior to developing an appropriate nutrition prescription. Nutrition interventions are designed for individual patients and need to prioritize factors with the largest impact on health outcomes and mortality risk. Monitoring and evaluation assesses the effectiveness of the nutrition interventions.

Renal dietitians are trained experts in renal nutrition and should provide nutrition care to patients on dialysis and those with Stage 3 – 5 CKD.<sup>6-9</sup> Generalist dietitians or diabetes dietitians can provide nutrition care for patients in the earlier stage of CKD Stages 1 – 2 and stable renal transplant recipients.

A challenge for patients is the ability to access a specialised renal dietitian despite evidence showing the benefit of reduced mortality rate, improved serum albumin and reduced cachexia. Slinin et al<sup>10</sup> reported that adult renal patients seen by a dietitian prior to initiating dialysis had 19% lower mortality rate than those who had not. Secondary analysis of data from the Dialysis Outcome and Practice Patterns Study (DOPPS) reported that haemodialysis patients cared for by

a dietitian were 15% less likely to have low serum albumin and were 13% less likely to be cachexic.<sup>11</sup> Low albumin has long been associated with increased mortality in renal patients.

An Australian study<sup>12</sup> showed less malnutrition, increased protein and energy intake and a decrease in serum phosphate over a 3 year period, where renal dietitians implemented a systematic approach to patients' nutritional care, based on the Australia and New Zealand Evidence Based Practice Guidelines for the Nutritional Management of CKD.<sup>6</sup> Some hospital admissions for hyperkalaemia (4000 in NSW in 2007)<sup>13</sup> could possibly be prevented with more regular review by a renal dietitian.

Renal dietitians deliver services to both inpatients and outpatients for people with all types and stages of kidney disease including Acute Kidney Injury, kidney stones, CKD, RRT (haemodialysis and peritoneal dialysis), Renal Supportive Care and transplantation. Traditionally, dietetic services have only been allocated for renal in-patient care but increasing numbers of patients on dialysis and in outpatient services means that staffing across most services is currently inadequate and needs to be addressed.

Current renal nutrition guidelines<sup>6, 9, 14-17</sup> recommend the following minimum nutrition assessment and intervention:

- CKD Stage 3 (GFR is  $<60\text{ml}/\text{min}/1.73\text{m}^2$ ) – every 6-12 months
- CKD Stages 4 and 5 (GFR  $<30\text{ml}/\text{min}/1.73\text{m}^2$ ) - every 1 to 3 months
- Established dialysis patients - every 3-6 months<sup>6, 9</sup>
- Established transplant recipients – yearly<sup>16</sup>

#### **4. USING THIS DOCUMENT**

This document is intended to be used by renal dietitians, renal unit and dietetic managers and other administrators to assist in the planning and recruitment of appropriate dietetic staff for renal services. This includes, but is not limited to, business planning to actively advocate for the consideration of nutrition and dietetic services when models of care are being developed or new services planned.<sup>18</sup>

With variability between sites, services and populations, it is recommended that these guidelines be used as part of a business case, using information relevant to individual workplaces. Several factors may impact on staffing requirements such as client complexity, case mix, models of care, skills and expertise of staff, local level infrastructure and processes, local demographics impacting on the health needs of a community and financial resource.<sup>18</sup>

The *Resource Allocation Manual*,<sup>18</sup> produced by DAA, is a useful tool for compiling a business case for dietetic resources and staffing. The *GMCT/NSW Health Metropolitan Hospital Allied Health Project - Clinical Interventions and Staffing Guidelines*<sup>21</sup> also has valuable information to assist a business case.

These renal dietitian workforce recommendations are the minimum requirements for assessment and intervention in patients with CKD or RRT. If an enhanced service is to be provided, additional time would be required and this can be provided for at individual workplaces.

## **5. RECOMMENDED HOURS FOR RENAL DIETITIAN CONSULTATIONS**

### **Outpatients**

The Australia and New Zealand Evidence Based Practice Guidelines for the Nutritional Management of CKD <sup>6</sup> and other guidelines <sup>9, 14-17, 19, 20</sup> have been used as a basis to estimate the required consultation hours per annum (PA) per type of renal patient. In addition, expert opinion was sought from experienced renal dietitians in Australia and New Zealand and the DAA Renal Dietitians IG Workforce Planning Group, to calculate time required per patient.

The minimum recommended renal dietitian consultation hours for each renal modality are detailed in Table 1.

- **New patient consultation hours should be added to the overall ongoing established patient population, as new patients take additional clinical care time.**
- If CKD patient numbers are unknown, criteria for referral of CKD patients to the renal dietitian should be developed and used to estimate the CKD patient population. Alternatively, count the numbers of new and established CKD patients seen yearly. This can, however, underestimate the true numbers of CKD patients and consequently the actual hours required to service this population adequately.
- All the different types of patients seen in the area covered by the renal dietitian position need to be included, and calculations made to provide for adequate hours PA to service all patients.

### **Hospital Inpatients**

In 2015, experienced renal dietitians from New Zealand and the DAA Renal IG have calculated the average actual time spent per acute hospital inpatient admission as 2.05 hours (range 1.2-3.5 hours) per patient. Many dietitians felt more time would be spent with patients and more patients would be seen if there was sufficient staffing. In addition, many hospital dietitians spend time, which is not recorded in patient statistics, screening new inpatients using the electronic medical record to view admission data, blood test results etc, and thus decide if a patient needs to be formally assessed. For these reasons it is recommended a minimum of **2.25 hours per inpatient per admission** be used for calculations.

Renal inpatient loads vary in each workplace. In some cases, the renal dietitian workload may be limited to patients admitted to a dedicated ward, whereas in other cases it may include all renal patients admitted within the hospital. The total number of inpatients with renal disease seen by the renal dietitian PA, needs to be calculated, depending on the practice in each workplace. This can then be used to determine the number of renal dietitian FTE required for inpatients at that site.

HOSPITAL INPATIENTS – Total hours per patient admission	2.25 hours
---	------------

**Table 1: Minimum Time Recommendations for Renal Dietetic Consultations**

<i>Columns 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Modality</b>	<b><u>New Patient</u> consultation hours (hours in first 1-2 months)</b>	<b><u>Established</u> ** patient consultation hours Per Annum (PA)</b>	<b><u>Hospital Inpatient</u> consultation hours per admission</b>
<b>Outpatient CKD Stages 1-3</b>	2	4	----
<b>Outpatient CKD Stages 4 – 5, Supportive Care and Pre-dialysis</b>	2	6***	----
<b>Outpatient Haemo-dialysis service*</b>	2	8 <sup>#</sup>	----
<b>Outpatient Peritoneal Dialysis service*</b>	2	8 <sup>#</sup>	----
<b>Transplant (provided as Inpatients and Outpatient service)</b>	5 hours in first 3 months	2	----
<b>HOSPITAL INPATIENTS</b>	----	----	2.25

NB. As described in following sections, an additional 50% time is required for culturally diverse groups, so all hours in this table should be increased by 50% for such clients.

\* Includes all consultations to home, in-centre, satellite and training patients except when they are hospital inpatients

\*\*Established patient hours are in addition to “New patient consultation hours” i.e. new patients would require 10 hours PA in total and established patients 8 hours PA. If patients change modalities, additional 2 hours consultation is required

\*\*\* 6 hours PA are required for Stage 4-5 (verses 4 hours PA for Stage 1-3) for established patients preparing for dialysis or on the Supportive Care Pathway (Conservative Management). 1 hour every second month is allowed for dietitian review. Adjust hours locally according to determined need.

# Established dialysis patient hours based on:

- 6 monthly nutritional assessment (2hrs each)
- review with minimal intervention post monthly blood tests (2 hours PA)
- additional nutrition intervention for emergency consults, malnourished patients, pre-transplant weight control, new co-morbidities etc (2hr PA)

## **6. CALCULATING RENAL DIETITIAN WORKFORCE**

**REQUIREMENTS** (see Appendix 3 for the calculation worksheet and accompanying excel spreadsheet to assist in the calculation process)

$$\text{FTE required per modality} = (\mathbf{a \times b}) \div \mathbf{c}$$

Where, for either new or established patients or inpatients:

a = hours required PA per modality per patient (see Table 1)

b = numbers of each type of patient PA at this workplace

c = total hours available for the renal dietitian PA (see Appendix 1)

## **7. CONCLUSION**

The DAA Renal Dietitians IG Workforce Planning Group has responded to the need for renal dietitian workforce recommendations to guide those planning renal services. This document can be used along with other tools to upgrade existing services, in business planning, when models of care are being developed or new services planned.

## **APPENDIX 1: HOURS AVAILABLE FOR CLINICAL CARE PER FTE STAFF MEMBER**

### **A. Proportion of time spent on clinical care**

1. The amount of time in a dietitian's work day apportioned to clinical care needs to be determined. Clinical care time includes anything that can be assigned to an individual patient e.g. consulting the patient or other staff about the patient, checking blood results, reading and writing medical record entries or letters, organising the hospital diet and also activities such as ward rounds or discussions on a number of patients, planning and delivery of group education sessions and travel time.
2. **This clinical care time has been estimated at 65% of a senior renal dietitian's work hours**<sup>18, 19, 21</sup> and this figure will be used in this document to determine hours available each year by the consulting renal dietitian. An alternative % time spent on clinical care can be calculated for individual workplaces if information is available
3. The remaining 35% of time is for (a) clinical service management (administration, data collection, service development, special projects); (b) teaching and training; (c) research and quality improvement; (d) mandatory training; (e) patient education resource development.

### **B. Hours available need to be adjusted for:-**

1. **Increased management duties** which results in a reduced percentage of time (<65%) available for clinical care.
2. **Junior renal dietitians**, who might spend more time on clinical work (estimated 80%).
3. **Culturally diverse patient caseload**, such as those with a non-English speaking background or indigenous clients. The expert group estimated that these patient groups require 50% extra time.
4. **Travel time** to outlying centres or home patients
5. **Time spent covering for non-renal clinical workloads**
6. **Leave cover:** As workplace arrangements for leave coverage vary, it should first be determined how many hours the renal dietitian will be in attendance per annum. This can be calculated for each workplace, depending on how many hours are worked per week (e.g. 38 or 40 hour week) and whether there is cover for the various types of leave or days off, including public holidays. The following scenarios consider different levels of leave cover and use either (a) a 38 hour week with no ADOs or (b) a 40 hour week. A 40 hour week is either the usual hours of work (e.g. NZ) or if a 38 hour week is worked as a 40 hour week with 12 ADOs taken PA. There are then 2080 hours PA (40hrs x 52 weeks)
  - a) 38 hour week: if 10 public holidays, 4 weeks annual leave, 1 week sick, conference etc leave are not covered, maximum hours available per FTE are 1712 hours (45 weeks). 65% of 1712 hours = 1113 hours. This scenario would also apply to someone working a 38 hour week as 40 hours per week with no ADO cover on the 12 ADOs PA
  - b) 40 hour week: if 10 public holidays are not covered and all other leave and ADOs are covered, then the maximum hours available per 1 FTE are 2000 hours (2080 hours minus 80 hours for 10 public holidays) (=50 weeks). 65% of 2000 hrs = 1300 hrs

**Table 2: Calculation of Total Hours Available per Dietitian PA for Patient Care**

Dietitian hours available PA adjusting for hours worked per week and leave coverage, as per Appendix 1, B.6	
Adjust for % time available for clinical care (Appendix 1, A.2) e.g. senior dietitian 65%, junior dietitian 80%	
Adjust for increased management time	
Adjust for travel time	
Adjust for time spent covering non-renal clinical workload	
Other adjustments for local issues	
<b>Total hours available per year for patient care [(c) in FTE equation, page 8]</b>	

**Notes**

1. To adjust for requiring 50% additional time for **culturally diverse patients**, it is easier to do separate calculations in Tables 5 and 6 than to adjust hours available for the dietitian PA in this section e.g. if there are 100 established haemodialysis patients, with 20 being indigenous, calculate Table 6 for 80 patients and re-calculate using 50% more hours in column 2 (i.e. 12 hours PA for established haemodialysis patients) for the 20 indigenous patients. This can be done for each modality where there is a percentage of culturally diverse patients
2. Expected **part-time positions** can also be calculated as above as FTE required is the end resulting figure. All leave covered or not and extra time required for other duties is in the calculation

## APPENDIX 2: SAMPLE CALCULATION OF RENAL DIETITIAN FTE REQUIREMENTS

Based on 1113\* working hours available PA (c) and sample numbers of patients (b).  
 (\*see Appendix 1:B,b)

$$\text{FTE required per modality (column 4)} = (a \times b) \div c$$

Where, for either new or established patients or inpatients:

a = hours required PA per modality per patient. Column 2 (as per Table 1)

b = numbers of each type of patient PA at this workplace. Column 3

c = total hours available for the renal dietitian PA (see Appendix 1)

**Table 3 New Patients (Outpatients):** Sample calculation

<i>Columns 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Modality</b>	<b><u>New Patient</u> assessment hours (a)</b> (hours in first 1- 2 months)	<b>Number of <u>New</u> patients in this modality PA at this workplace (b)</b>	<b>FTE required per modality</b>
<b>CKD Stages 1-5, Supportive Care and Pre-dialysis</b>	2	50	0.09
<b>Haemodialysis</b>	2	50	0.09
<b>Peritoneal Dialysis</b>	2	50	0.09
<b>Transplant</b>	5 (hours in first 3 months)	50	0.23
<b>TOTAL</b>	--	--	<b>0.5</b>

**Table 4 Established patients and Hospital Inpatients:** Sample calculation

<i>Columns 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Modality</b>	<b><u>Established</u> Patient Consultation Hours PA(a)</b>	<b>Number of <u>Established</u> patients in this modality PA at this workplace (b)</b>	<b>FTE required per modality</b>
<b>CKD Stage 1-3</b>	4	100	0.36
<b>CKD Stage 4-5, Supportive Care and Pre-dialysis</b>	6	100	0.54
<b>Haemodialysis</b>	8	100	0.72
<b>Peritoneal Dialysis</b>	8	100	0.72
<b>Transplant</b>	2	100	0.18
<b>Any Hospital Inpatients</b>	2.25	500	1.01
<b>TOTAL</b>	--	--	<b>3.53</b>

**Total Renal Dietitian FTE required this workplace is (0.5 + 3.53) 4.03 FTE**

## **APPENDIX 3: WORKSHEET TO CALCULATE RENAL DIETITIAN FTE REQUIREMENTS**

$$\text{FTE required per modality (column 4)} = (\text{a} \times \text{b}) \div \text{c}$$

Where, for either new or established patients or inpatients:

a = hours required PA per modality per patient. Column 2 (as per Table 1)

b = numbers of each type of patient PA at this workplace. Column 3

c = total hours available for the renal dietitian PA (see Appendix 1)

**Table 5: New Patients - FTE calculation**

<i>Columns 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Modality</b>	<b><u>New Patient</u> assessment hours (a) (hours in first 1-2 months)</b>	<b>Number of <u>New</u> patients in this modality PA at this workplace (b)</b>	<b>FTE required per modality</b>
<b>CKD Stages 1-5, Supportive Care and Pre-dialysis,</b>	2		
<b>Haemodialysis</b>	2		
<b>Peritoneal Dialysis</b>	2		
<b>Transplant</b>	5 hours in first 3 months		
<b>TOTAL</b>	--	--	

**Table 6: Established patients and Hospital Inpatients - FTE calculation**

<i>Columns 1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Modality</b>	<b><u>Established</u> Patient Consultation Hours PA (a)</b>	<b>Number of <u>Established</u> patients in this modality PA at this workplace(b)</b>	<b>FTE required per modality</b>
<b>CKD Stages 1-3</b>	4		
<b>CKD Stage 4-5, Supportive Care and Pre-dialysis</b>	6		
<b>Haemodialysis</b>	8		
<b>Peritoneal Dialysis</b>	8		
<b>Transplant</b>	2		
<b>HOSPITAL INPATIENTS*</b>	2.25		
<b>TOTAL</b>	--	--	

\*Inpatients calculated per admission, whether new or established

## **REFERENCES**

1. Crosby C, Patwardhan A, Barnes P, Lambert K, Rounsley K. A Survey of Renal Dietitian Staffing in New South Wales. *Nephrology*. 2010;9(Supplement 1).
2. Patwardhan A, Bartlett L, Chan M, Ryan C. A Survey of Renal Dietitian Staffing in New South Wales. *Nephrology*. 2004;9 (Supplement 1).
3. Australian Institute of Health and Welfare. Projections of the Incidence of Treated End-Stage Kidney Disease in Australia; 2010 - 2020. Canberra: Australian Institute of Health and Welfare (AIHW); 2011. <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737419873>
4. Australia and New Zealand Dialysis and Transplant Registry (ANZDATA). 37th Annual Report. 2014. [http://www.anzdata.org.au/v1/report\\_2014.html](http://www.anzdata.org.au/v1/report_2014.html)
5. Australian Institute of Health and Welfare. End-Stage Kidney Disease in Australia: Total Incidence, 2003-2007. Canberra: Australian Institute of Health and Welfare; 2011. <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737419266&libID=10737419265>
6. Ash S, Campbell K, MacLaughlin H, McCoy E, Chan M, Anderson K, et al. Evidence Based Practice Guidelines for the Nutritional Management of Chronic Kidney Disease. *Nutrition & Dietetics*. 2006;63(s2):S33-S45. <http://onlinelibrary.wiley.com/doi/10.1111/j.1747-0080.2006.00100.x/epdf>
7. DAA Renal Interest Group. Core Areas of Dietetic Knowledge and Practice for Kidney Disease. November 2008
8. DAA Renal Interest Group. Role Statement for Dietitians Practising in Kidney Disease. November 2008.
9. Kidney Disease: Improving Global Outcomes. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney International Supplements*. 2013;3(1).
10. Slinin Y, Guo H, Gilbertson D, Mau L, Ensrud K, Collins A, et al. Prehemodialysis Care by Dietitians and First-Year Mortality After Initiation of Hemodialysis. *American Journal of Kidney Diseases*. 2011;58(4):583-90.
11. Lopes A, Bragg-Gresham J, Elder S, Ginsberg N, Goodkin D, Pifer T, et al. Independent and Joint Associations of Nutritional Status Indicators with Mortality Risk Among Chronic Hemodialysis Patients in the Dialysis Outcomes and Practice Patterns Study (DOPPS). *Journal of Renal Nutrition*. 2010;20(4):224-34.
12. Campbell K, Ash S, Zabel R, McFarlane C, Juffs P, Bauer J. Implementation of Standardised Nutrition Guidelines by Renal Dietitians is Associated with Improved Nutrition Status. *Journal of Renal Nutrition*. 2009;19:136-44.
13. NSW Ministry of Health. Number of Admissions from all NSW Hospitals with Hyperkalaemia: 1st July 2007 to 30th June 2008. *Statistics and Performance Information Systems Report*, Health Information Exchange; 2008.

14. American Dietetic Association. Chronic Kidney Disease Evidence-Based Nutrition Practice Guideline. American Dietetic Association. 2010.
15. Ash S, Campbell KL, Bogard J, Millichamp A. Nutrition Prescription to Achieve Positive Outcomes in Chronic Kidney Disease: A Systematic Review. *Nutrients*. 2014;6(1):416-51.
16. New South Wales Greater Metropolitan Clinical Taskforce (Renal Services Network). Evidence Based Practice Guidelines for the Nutritional Management of Adult Kidney Transplant Recipients. Sydney: Dietitians Association of Australia; 2009.  
<https://daa.asn.au/resource/evidence-based-practice-guidelines-for-the-nutritional-management-of-adult-kidney-transplant-recipients/?referer=search>
17. Wright M, Jones C. Clinical Practice Guidelines: Nutrition in Chronic Kidney Disease. 5th ed: UK Renal Association; 2010. <https://renal.org/wp-content/uploads/2017/06/nutrition-in-ckd-5th-edition-1.pdf>
18. Dietitians Association of Australia. Resource Allocation Manual. April 2011.  
<https://daa.asn.au/resource/business-resources/?referer=search>
19. British Renal Society Multi-Professional Team. Recommendations of the National Renal Workforce Planning Group. 2002. <http://www.wales.nhs.uk/sites3/documents/434/Workforce.pdf>
20. Department of Health Western Australia. Chronic Kidney Disease Model of Care. In: Department of Health WA, editor. Perth: Health Networks Branch; 2008.  
[http://www.healthnetworks.health.wa.gov.au/modelsofcare/docs/CKD\\_Model\\_of\\_Care.pdf](http://www.healthnetworks.health.wa.gov.au/modelsofcare/docs/CKD_Model_of_Care.pdf)
21. GMCT/NSW Health Metropolitan Hospital Allied Health Project. Clinical Interventions and Staffing Guidelines. In: Health NDo, editor. 2006.  
[http://www.aci.health.nsw.gov.au/\\_data/assets/pdf\\_file/0015/154023/alliedhealthproject\\_fullreport\\_final.pdf](http://www.aci.health.nsw.gov.au/_data/assets/pdf_file/0015/154023/alliedhealthproject_fullreport_final.pdf)