REVIEW OF THE
STATEWIDE RENAL DIALYSIS PROGRAM
AND
RENAL DISEASE IN WESTERN AUSTRALIA

SUMMARY

November 2002
EXECUTIVE SUMMARY

Since its establishment in 1997/98 the Statewide Renal Dialysis Program has made advances in terms of developing clinical and inter-sectoral partnerships; service delivery, coordination and development; and activity monitoring and funding. The program is often cited as a model for clinical program management. In November 2001, the program was acknowledged with high commendations for innovation and management improvement under the Premier’s Awards for Excellence in Public Sector Management. Despite these achievements, the program continues to face a number of challenges.

In order to address these challenges the Department of Health and the Renal Dialysis Reference Group, which supports the program, agreed to conduct a review of the Statewide Renal Dialysis Program in February 2001. The purpose of this review was to evaluate the program against its stated objectives, assess current service provision and develop a five year service development plan. This review was written in consultation with a number of providers, purchasers, professional and patient stakeholders. Through the use of informal interviews and surveys the review sought to reflect the views of all participants within the program.

The review makes a number of recommendations for the continued improvement of program management, service development and delivery. These recommendations include aspects of communication, capital management, activity reporting, early intervention programs and workforce development. Other recommendations involve procedures for improving home haemodialysis referrals, training and support; implementing a comprehensive renal data system; addressing Aboriginal renal health; encouraging the development of private services; and piloting a Dialysis Education and Training Centre.

The 2002-2007 Renal Dialysis Service Development Plan makes specific recommendations regarding service development within the metropolitan area. This plan utilises the findings of the Geographic Modelling of Dialysis Services Project in the analysis. The areas of Stirling, Rockingham and Cannington are identified as priority areas for service development. It is proposed that further service developments within rural and remote Western Australia focus on limited self-care facilities.

Both the Department of Health and Renal Dialysis Reference Group will consider the recommendations proposed in this review and develop an implementation plan for Government endorsement. Recommendations will be implemented where appropriate and subject to the availability of funds.

Bob Kucera APM MLA
MINISTER FOR HEALTH

21 MAR 2003
ACKNOWLEDGEMENTS

The Department of Health wishes to acknowledge the commitment of the members of the Renal Dialysis Reference Group and Renal Review Working Group in directing the development of this review.

The following individuals deserve special thanks:

Mr Chris Bone Mr Clory Carrello Dr Ian Hewitt Dr Brian Hutchison Dr Ashley Irish Ms Fiona Johnson Mr Godfrey Leung Mr Suki Loe Mr Andrew Marshall Ms Narelle Mullan Ms Sue McKechnie Ms Cathie McKinley Ms Ellaine Pavlos Ms Delia Perrett Ms Elizabeth Rohwedder Mr Jeff Whittaker Dr Andrew Woodroffe

Armadale Health Service Resource Management Princess Margaret Hospital for Children Sir Charles Gairdner Hospital Royal Perth Hospital Resource Management Royal Perth Hospital Fremantle Hospital Sir Charles Gairdner Hospital Health Information Centre Resource Management Peel Health Campus Resource Management Pilbara-Gascoyne Health Region Resource Management Fremantle Hospital Fremantle Hospital

In addition, the many staff and patient participants within the program who gave their time and advice are acknowledged and appreciated.

The Chair of the Review was Sue McKechnie, Director, Resource Management.

The Author of the Review Publication is Erica Kneipp, Resource Management.
# TABLE OF CONTENTS

Review of the Statewide Renal Dialysis Program and Renal Disease in Western Australia - Summary

- Executive Summary
- Acknowledgments
- Introduction  1
- Renal Dialysis Service Development Plan  2
- Primary Renal Disease graph  3
- Intake of New Patients graph  4
- Age of New Patients graph  5
- Racial Origins of New Patients graph  6
- Metropolitan Perth End Stage Renal Failure  7
- Corporatised Service Models  8
- Private Services  9
- Renal Patient Data System  10
- Workforce Development  10
- Chronic Disease Framework  11
- Resourcing Strategy  12
- Implementation  13
- References  13
Introduction

The Statewide Renal Dialysis Program (SRDP) was established in 1997/98 to:

- Improve the coordination of renal dialysis service delivery;
- Increase activity monitoring and ensure that program funds follow patients as they move across dialysis modalities;
- Analyse population health needs in relation to renal dialysis care; and
- Develop satellite services that are closer to the homes of patients.

Since its establishment, the program has made advances in terms of developing clinical and inter-sectoral partnerships; service delivery, coordination and development; and activity monitoring and funding. The program is often cited as a model for clinical program management, however, despite these achievements, it continues to face a number of challenges.

In order to address these challenges the Department of Health and the Renal Dialysis Reference Group, which supports the program, agreed to conduct a review of the Statewide Renal Dialysis Program in February 2001. The purpose of the review was to evaluate the program against its stated objectives, assess current service provision and develop a five year service development plan. The review was written in consultation with a number of stakeholders, including health service management, clinicians, nursing staff and patients. Through the use of informal interviews and surveys the review sought to reflect the views of all participants within the program.

The review makes a total of 36 recommendations for the continued improvement of program management, service development and delivery. These recommendations include aspects of communication, capital management, activity reporting, early intervention programs and workforce development. Other recommendations involve procedures for improving home haemodialysis referrals, training and support; implementing a comprehensive renal data system; addressing Aboriginal renal health; encouraging the development of private services; and piloting a Dialysis Education and Training Centre.

Nine specific recommendations from the Review, along with recommendations relating to resourcing the SRDP and implementing the recommendations of the review, are highlighted in this summary as being crucial as the program moves forward over the next five years. These are described below and are critical requirements in ensuring that the program continues to provide adequate service provision to patients with End Stage Renal Failure (ESRF) in Western Australia, whose numbers continue to grow at approximately 6 per cent per annum.
Renal Dialysis Service Development Plan

Renal dialysis treatment ranges from high dependency teaching hospital care to independent home self-care. The four treatment modalities are:

- In-centre Haemodialysis (HD);
- Satellite HD;
- Home HD; and
- Home Continuous Ambulatory Peritoneal Dialysis (CAPD).

In Western Australia, Royal Perth, Sir Charles Gairdner and Fremantle Hospitals provide in-centre HD, support for metropolitan and remote home CAPD, and associated patient training services. Royal Perth Hospital also provides support for metropolitan and remote home HD, including patient training and technical support on a Statewide basis. Princess Margaret/King Edward Memorial Hospital provides a paediatric HD and CAPD service on a clinical need basis.

Satellite HD services exist in both publicly and privately operated non-teaching hospital and community settings, with referral based on clinical need and acuity and proximity of the service to the patient’s home. These services are currently provided in Armadale, Joondalup, Midland, Melville, Shenton Park, Peel, Geraldton, Kalgoorlie, Bunbury, Albany, and Port Hedland. An additional satellite service was established in Broome in late October 2002.

In order to assess current renal dialysis service provision and to establish a five year service development plan, an analysis of the patient population, current service provision, and a geographic modelling exercise have been undertaken to project the growth in demand for services on a regional basis.
Glomerulonephritis (30%) remains the most common cause of renal failure both nationally and in Western Australia, followed by diabetic nephropathy and hypertension.

Below is a summary of primary causes of renal disease:

**Percentage Primary Renal Disease for Australia and Western Australia 1997-2000**

<table>
<thead>
<tr>
<th></th>
<th>Australia (%)</th>
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<th>Western Australia (%)</th>
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</thead>
<tbody>
<tr>
<td>1 Glomerulonephritis</td>
<td>34 32 30 30</td>
<td>33 29 27 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Diabetic Nephropathy</td>
<td>22 22 25 22</td>
<td>32 30 29 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Hypertension</td>
<td>12 12 11 13</td>
<td>11 13 14 19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Miscellaneous</td>
<td>10 10 10 11</td>
<td>7 8 13 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Polycystic Kidney Disease</td>
<td>6 7 7 7</td>
<td>4 6 10 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Uncertain Diagnosis</td>
<td>6 7 7 7</td>
<td>5 4 3 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Analgesic Nephropathy</td>
<td>5 6 6 5</td>
<td>4 4 2 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Reflux Nephropathy</td>
<td>5 4 4 5</td>
<td>4 6 2 4</td>
<td></td>
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</tbody>
</table>

From an incidence perspective, Australia’s incidence rate of renal disease grew by 18% from 1995 to 1999, with the national rate being 90 patients per million population.

For the same period, the WA incidence rate is higher than the national average and second only to the Northern Territory with an incidence rate of 106 per million population. The Australian rate appears to be reaching a relative plateau while in WA it is climbing upward and steadying out at a higher level.

### Annual Intake of New Patients for Australian States and Territories 1995-1999

<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensland</td>
<td>738(73)</td>
<td>231(69)</td>
<td>271(80)</td>
<td>296(86)</td>
<td>304(87)</td>
</tr>
<tr>
<td>New South Wales/ACT</td>
<td>502(78)</td>
<td>548(84)</td>
<td>526(80)</td>
<td>542(82)</td>
<td>551(82)</td>
</tr>
<tr>
<td>Victoria</td>
<td>324(72)</td>
<td>342(75)</td>
<td>361(78)</td>
<td>429(92)</td>
<td>442(94)</td>
</tr>
<tr>
<td>Tasmania</td>
<td>41(87)</td>
<td>30(63)</td>
<td>30(63)</td>
<td>30(64)</td>
<td>23(49)</td>
</tr>
<tr>
<td>South Australia</td>
<td>93(63)</td>
<td>105(71)</td>
<td>97(66)</td>
<td>114(77)</td>
<td>140(94)</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>40(224)</td>
<td>48(270)</td>
<td>57(305)</td>
<td>48(253)</td>
<td>50(259)</td>
</tr>
<tr>
<td>Western Australia</td>
<td>141(81)</td>
<td>124(70)</td>
<td>141(78)</td>
<td>151(82)</td>
<td>198(106)</td>
</tr>
<tr>
<td>AUSTRALIA</td>
<td>1,378(76)</td>
<td>1,428(78)</td>
<td>1,483(80)</td>
<td>1,610(86)</td>
<td>1,708(90)</td>
</tr>
</tbody>
</table>

Source: ANZDATA Report 2000, Interim Summary Report 31 March 2001 ( ) per million population

### Annual Intake of New Patients for Australia and Western Australia 1995-1999

![Graph showing annual intake of new patients for Australia and Western Australia](source: ANZDATA Report 2000, Interim Summary Report 31 March 2001)

From a demographic perspective, it is noted that in 1999, Australian-wide, 42% of new patients were 65 and older. The age range was 7 months to 94 years with a median age of 61 years and a mean age of 57 years. In WA, the median age was 60 and the mean 57 with the age range between 8 months and 88 years.

Western Australian patients tended to enter the program at a slightly younger age than the national average while the majority of patients were in the 64-75 age group (45%). Within the 64-75 age group the number of new patients in the WA program has increased by nearly 40% since 1997.

Percentage Age of New Patients for Australia and Western Australia 1999

On average there are more males than females entering dialysis programs in Australia. In WA, 43% of patients were female and 57% male which is comparable with the national proportions.
From a racial perspective, in 2000, on average in Australia, 81% of new patients were Caucasoid, 8% Aboriginal, 7% Asian, 2% Pacific Islander and 2% other. WA is second only to the Northern Territory in the number of Aboriginal patients entering the program. Third highest proportion of Aboriginal patients is in Queensland. All three jurisdictions are well above the national average of 8% new Aboriginal patients.

![Percentage Racial Origins of New Patients for Western Australia, Northern Territory, Queensland and Australia 2000](source)

The geographic modelling exercise undertaken involved calculating the distance travelled from patients homes to existing and proposed dialysis services.

The modelling identified that in the metropolitan area, a higher concentration of dialysis patients live north of the river. The suburbs between Royal Perth Hospital and Sir Charles Gairdner Hospital and Joondalup appeared to be in need of a satellite service. In terms of patient numbers and estimating continued growth within the SRDP of 6% per annum, new services between the river and Armadale, and between Fremantle and Peel are also noted for consideration.
From a rural perspective, it is important to note that with the establishment of the Broome Satellite Dialysis Unit in October 2002, all major regional centres will have access to haemodialysis services. Additional services for rural WA may need to consider limited self-care options for pockets of patients living in remote areas. These services could see the placement of equipment in community health centres with minimal support from local trained nurses and general practitioners. Information on regional patterns of renal failure...
among Aboriginal Australians and accessibility to dialysis facilities is used to make recommendations on possible citings for self-care facilities.

**RECOMMENDATION** – That the development of a satellite service in the Local Government Area of Stirling be an immediate priority for the 2002-2007 Renal Service Development Plan. A third year initiative will be the development of a service in Rockingham following the redevelopment of the Peel Satellite Unit. In 2006/07 consideration should be given to developing a satellite service in Canning, subject to current patient population information.

**RECOMMENDATION** – That the development of additional rural and/or remote renal services in Western Australia be considered with respect to increasing the availability of limited self-care facilities. Priority sites for consideration, as per Aboriginal patient demographics, are Newman, Warburton and Kununurra.

**Corporatised Service Models**

In 1999, the SRDP was faced with a situation where new metropolitan satellite services were required but there were minimal capital funds available. In exploring alternative service models to address this problem, the RDRG developed the concept of ‘corporatisation’. Corporatisation is different from privatisation in that it necessitates inter-sector partnerships and does not relinquish management control solely to the private sector. The result was the establishment of the Midland and Melville Dialysis Centres. With the exception of Royal Perth Hospital clinical support, the private provider provides all aspects of dialysis at Midland. At Melville, clinical and nursing support remains with Fremantle Hospital.

Corporatisation involves the development of a unique management arrangement between the public and private sector. It enables:

- clinical management to remain with the tertiary sector;
- consistent clinical and nursing protocols;
- competitive price per treatment arrangements;
- satellite services to be located in community shopping areas;
- inter-sector and patient involvement in management;
- transfer of time consuming daily operational responsibilities and risks; and
- sophisticated data linkages with security safeguards.

The outcome has been the establishment of modern community-based satellite facilities with no capital outlay by the public sector and at a price that is competitive with public services. In the case of Midland, over the life of the contract, savings to the health system are estimated to be in the range of $1.9 million. There have also been measurable improvements in patient quality of life with higher compliance rates, lower rates of hospital admission and a stronger emphasis on self-care and rehabilitation at the centres. The success of the Midland Dialysis Centre Project was recognised with a high
commendation at the 2001 Premier’s Awards for Excellence in Public Sector Management under the categories of Innovation and Management Improvement.

Midland and Melville are the first examples of corporatised ambulatory health care in WA and have become national demonstration models for dialysis services. Several interstate agencies and providers are currently investigating the feasibility of developing similar services. The corporatisation model is innovative because it takes dialysis into the community and introduces a partnership with the private sector. Based on ongoing constraints within the health budget, and the success of Midland and Melville in terms of clinical outcomes and management procedures, the application of corporatised dialysis service models in other areas of satellite need is worth exploring and comparing with other service models.

RECOMMENDATION – That partnerships between the public and private sector should be considered in any planning to develop new satellite services, particularly within the metropolitan area. The corporatisation service model involves contracting a private provider to operate a public service in cooperation with a leading public provider. It provides a foundation for inter-sector partnerships, enables service development in an environment of restricted capital funds and has delivered proven positive health outcomes for patients.

Private Services

It is noted that while the provision of dialysis services has been historically within the public sector, there are an increasing number of patients receiving these services in facilities across Australia funded by rebates from private health insurers. These rebates are specifically for the provision of haemodialysis services and are sufficiently funded to allow the provision of services entirely within the private sector. Regrettably, this has not been the case in WA.

The poor and inequitable health insurance rebates for renal dialysis provided by the Western Australian insurers has hampered the development of private dialysis services in this State. This has led to the anomalous situation where Western Australians dialysing interstate (for example on holiday) receive a rebate for dialysis but are denied a similar rebate when they return to their own State. Similarly, interstate visitors to WA can be reimbursed for the provision of dialysis within this State.

Anecdotal information suggests that approximately 25% of patients with ESRF have private health cover but do not admit themselves as private patients due to the poor rebate. In other States, a higher and more equitable rebate has enabled the development of private dialysis facilities in Adelaide, Sydney, Melbourne, Brisbane, Cairns and the Gold Coast with others under consideration. It is clear that there is a market for the development of a private dialysis facility in WA which could alleviate the pressure on the public sector.
**RECOMMENDATION** – That Western Australia has the capacity to support a private dialysis service. In order to open up the market, the Department of Health should facilitate negotiations between WA private health insurers, potential private dialysis providers and senior clinicians regarding the emergence of a private dialysis services in Western Australia.

**Renal Patient Data System**

While individual clinicians and hospitals maintain data sets on their patients, a comprehensive patient data system is absent within the SRDP. There is no common data set that could provide information on pre-dialysis patients, dialysis regimes and medications administered. Given that patients tend to move between modalities and providers, a secure data set would be a valuable asset to clinicians, nurses and administrators. The accurate tracking of patients, especially pre-dialysis patients, would also greatly assist planning initiatives.

Strong support has been received from those involved with the program for the implementation of an all inclusive data system that could record the continuum of care from pre-ESRF patients to all dialysis modalities and transplantation.

The requirements for such a data system would need to be agreed by the Western Australian Renal Medicine Group and piloted with a range of providers including metropolitan and rural satellites for applicability and sustainability.

**RECOMMENDATION** – That there is a requirement within the Statewide Renal Dialysis Program for the development and implementation of a comprehensive Renal Patient Data System. A proposal for such a system needs to be developed by the Western Australian Renal Medicine group in consultation with key stakeholders and submitted to the Director of Information Policy at the Department of Health for consideration and funding.

**Workforce Development**

Renal medicine clinicians and nurses are in shortage in WA. WA has one of the lowest proportions of nephrologists in Australia and the second highest incident rate for ESRF. It is suggested that an additional nephrologist is required for every 35 dialysing patients plus an unspecified pre-dialysis patient list. Applying this ratio to the activity funded for dialysis patients in 2001/02 and considering the fact that there are currently four specialists in training, there is a requirement for two additional nephrology positions. This ratio of ESRF patients to nephrologists will result in a more equitable distribution of the current workload. It will also bring WA in line with the renal specialist ratios operating in the rest of Australia.
A similar situation exists for renal nursing. Renal services are heavily reliant on nursing staff. The accepted ratio for in-centre dialysis treatment is one nurse to two patients and for satellite dialysis treatment is one nurse to four patients. The shortage of nurses is critical and must be considered in the planning of new services. Consideration also needs to be put on expanding the workforce and professionals operating in the field including enrolled nurses and Aboriginal health workers. An entry level Renal Care Nursing Education Program for registered and enrolled nurses was developed and piloted by Central TAFE for the Department of Health in early 2001 in an effort to address the critical shortage of renal nurses. The program was well received and it is recommended that it continue.

**RECOMMENDATION** – That in order to adequately manage the current End Stage Renal Failure population, a ratio of one nephrologist to every 35 patients dialysing be established. Immediate funding is required to fill an additional two positions in 2002/03 and another two in 2003/04 in order to bring Western Australia in line with coverage arrangements elsewhere in Australia. In creating these positions, consideration should be given to joint appointments and rural placements.

**RECOMMENDATION** – That in order to address the critical shortage of renal nurses, the Statewide Renal Dialysis Program will work in cooperation with the Department of Health Workforce Directorate, and the Western Australian Nurses Board, to encourage the entry of registered and enrolled nurses and Aboriginal health workers into the renal field.

**RECOMMENDATION** – That the entry level Renal Nursing Education Program for registered and enrolled nurses piloted by Central TAFE in 2001 be continued. Funding for this program should be supported, where appropriate, by Commonwealth and/or State professional education programs.

**Chronic Disease Framework - Importance Of Prevention & Early Intervention**

At the Commonwealth and State/Territory level there is a move towards developing chronic disease frameworks. These frameworks work from a public health perspective to integrate chronic disorders that all have common underlying factors. Disorders considered include type II diabetes, renal disease, hypertension, ischaemic heart disease and chronic airways disease. This approach acknowledges that these diseases and their underlying factors are preventable, but interventions are needed before complications appear (Weeramanthri, 1999).

Frameworks - such as the Northern Territory and National Framework for Chronic Disease Prevention - focus on prevention, early detection and best practice management. Implementation of a chronic disease framework will result in delayed onset and reduced number of adverse health outcomes in the short to medium term, as well as a reduction in long term financial costs but the full impact of interventions will not be noticeable for some years (Weeramanthri, 1999). The emphasis is on integration of the social and medical
determinants of health. Renal health can benefit from activity participating in this approach.

The Department of Health, Population Health Division, has developed a Strategic Framework for Primary Prevention of Diabetes and Cardiovascular Disease (Healthy Lifestyles 2002 - 2007). This framework is based on the chronic disease approach. It has linkages with existing State and national prevention plans, has the capacity to overlay regional area plans and provides the basis for funding primary prevention. ESRF can be the result of macrovascular complications resulting from the poor management of diabetes and cardiovascular disease. For these reasons, the SRDP should work within this framework to ensure that any prevention, detection and screening strategies adequately address renal disease as an issue.

RECOMMENDATION – That the Statewide Renal Dialysis Program support the development of a chronic disease framework that considers prevention of and early treatment of renal disease amongst other related conditions.

Resourcing Strategy

Renal dialysis is a high volume and high cost specialty. In line with the continuing growth in the incidence of ESRF in WA, the health allocation to renal dialysis has grown at a steady rate of 8 to 10 per cent per annum. The current allocation is almost $31 million for approximately 730 patients.

While more funding will be required to implement some of the recommendations of the review of the SRDP, such as the establishment of additional nephrologist positions, others offer the potential to provide savings to the health system. For example, the establishment of a private renal dialysis service in Western Australia will potentially shift the cost of some dialysis services to the private insurance sector. Also, there is potential to replicate the corporatised service models established in Midland and Melville in the development of additional satellite dialysis units in this State. As stated previously, in the case of the Midland Dialysis Centre, it is estimated that over the life of the contract, the savings to the health system of this service will be $1.9 million.

There is considerable interest from the private sector in continuing the establishment of corporatised renal dialysis services in this State and this could be investigated further to determine the financial benefits that this mode of service delivery could deliver.

RECOMMENDATION – That given the continuing growth in demand for renal dialysis services, it is recommended that the health allocation continue to budget for an increase of 8 to 10 per cent per annum for the provision of these services. This will mean the allocation of an additional $3.1 million for the 2003/04 financial year.
Implementation

Considerable detailed planning needs to be undertaken to give effect to these recommendations and also to evaluate the ongoing impact of the Renal Dialysis Program to influence the health and quality of life for people with End Stage Renal Failure.

RECOMMENDATION – That the Renal Dialysis Reference Group oversees the development of detailed business cases for presentation to the Director General of Health.

REFERENCES
