ANZDATA & ANZSN
SPECIAL REPORT

Haemodialysis Capacity Survey 2025

Summarising the findings of a survey of all haemodialysis units across Australia and New Zealand

CONTENTS

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PLAIN LANGUAGE SUMMARY

Background

This report presents the results of a 2025 survey by the Australian and New Zealand Society of Nephrology (ANZSN), the Australia and New Zealand Dialysis and Transplant (ANZDATA) Registry and the New Zealand National Clinical Renal Network. The report covers all haemodialysis units in Australia and New Zealand.

Haemodialysis is a treatment for kidney failure in which an individual's blood is passed through a machine to clear fluid and toxins that failed kidneys cannot remove. Other treatments for kidney failure include peritoneal dialysis (in which dialysis fluid is passed into the abdomen) and kidney transplant. Together, these treatments are termed 'kidney replacement therapies'.

Haemodialysis is the most common form of kidney replacement therapy in Australia and New Zealand. Haemodialysis treatments may be administered in hospital, a dialysis centre ('satellite'), or at home. In Australia and New Zealand, receiving haemodialysis treatment in a hospital or a satellite is most common.

A haemodialysis machine can only provide treatment to one person at a time. Adequate haemodialysis 'capacity' depends on sufficient haemodialysis machines, staff and physical space to deliver treatment to those who require it. For haemodialysis delivered in a treatment centre (as opposed to at home), these should all be available reasonably close to where people live due to the frequency and duration of haemodialysis treatments required.

The ratio of people receiving haemodialysis to available haemodialysis machines is one important component of haemodialysis capacity. This Report presents these ratios across Australia and New Zealand, in capital cities and regions. This report also details why and where some haemodialysis machines are not functional and where waiting lists exist for people to access haemodialysis.

Calculating capacity

The usual schedule of a haemodialysis unit is two shifts per day (morning and afternoon), six days per week. On this schedule, one haemodialysis machine enables treatment for four people per week (Figure 1).

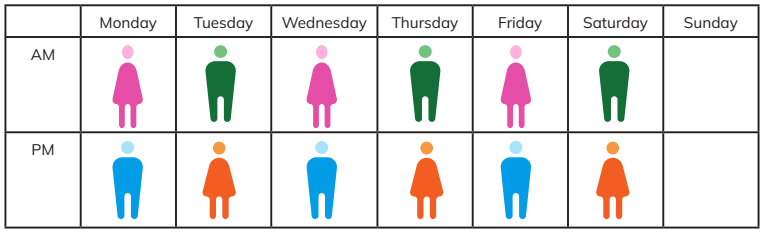

Figure 1
With ordinary staffing, one haemodialysis machine enables care for four people per week

Ratios of more than four people receiving haemodialysis to one haemodialysis machine indicate that more people are treated than usual and that the haemodialysis unit is operating above the capacity available with usual staffing and scheduling. The actual "ideal" ratio is not clear, however it is likely to be substantially less than four people per machine.

Results

Findings indicate significant haemodialysis capacity constraints across Australia and New Zealand. Almost every capital city in Australia and New Zealand contained regions operating above usual capacity.

In Australia

- The overall ratio of people receiving maintenance haemodialysis to haemodialysis machines is 3.34.
    - When haemodialysis for people admitted to hospital is included, the ratio is 3.49.
- Many areas operate at, or close to, the usual capacity available with standard staffing and scheduling.
- Over half of haemodialysis units have waiting lists for people to access treatment in their centre.
- Many units have funding and staff shortages resulting in non-utilised haemodialysis machines.

In New Zealand

- The overall ratio of people receiving maintenance haemodialysis to haemodialysis machines is 4.53.
- Half of haemodialysis units operate above the capacity available with usual staffing and scheduling.
- Many units routinely utilise three dialysis shifts per day to meet demand.
- Many units have funding and staffing shortages.

There are some important considerations when reviewing the ratios and maps in this report.

- Ratios may appear low in areas where people do not live close enough to make use of all available haemodialysis facilities.
- Ratios are high only where units can increase the number of people they treat.
    - Some units increase ratios by opening more haemodialysis shifts, but this report shows that even in units with haemodialysis machines, there is often not enough staff or funding to use them in this manner.
    - Other units increase ratios by using home dialysis training machines to provide maintenance haemodialysis. This is not recommended as this delays people transitioning to doing their dialysis at home and uses resources in the haemodialysis unit that could be used by others.
    - Other units increase ratios by providing shorter or less frequent dialysis, but this is strongly discouraged if it is not medically appropriate as it risks inadequate treatment and puts patients at risk of harm.
    - Retaining delaying patients' haemodialysis commencement or retaining patients on peritoneal dialysis longer than is medically suitable is also inappropriate and risks harm.

It is also important to note that this report does not capture all elements of haemodialysis capacity. Numbers of people waiting to start haemodialysis treatment or on waiting lists to access treatment closer to home (many of whom travel long distances to access haemodialysis whilst waiting), and other local constraints affecting timely and equitable access to treatment, are not captured in this report.

- Recognising this limitation, this report also includes many quotes from people working in kidney units about their experience of haemodialysis capacity constraints, and planned future work will try to understand these factors in more detail.
- Further work is also being undertaken to determine the impact of the ratios reported in this report on outcomes for people living with kidney failure.

Summary

The results of this report indicate significant strain on delivery of haemodialysis across Australia and New Zealand, with significant variation geographically indicating equity issues in access to treatment. The findings will inform health services and government to better plan and coordinate dialysis capacity planning, to ensure delivery of kidney care that is timely, appropriate, safe and equitable for people living with kidney failure, their families and communities.

EXECUTIVE SUMMARY

The 2025 ANZDATA & ANZSN Haemodialysis Capacity Survey presents the most comprehensive bi-national assessment of dialysis capacity undertaken to date, including—for the first time—national data on the provision of acute haemodialysis in Australia. The message is clear and urgent: haemodialysis services across Australia and New Zealand are operating under significant strain. Many regions are now functioning at or beyond what is considered safe and sustainable.

This report builds on the previous ANZDATA/ANZSN Haemodialysis capacity report published in 2024 and the ANZSN, Kidney Health Australia (KHA), Kidney Health New Zealand (KHNZ), the Renal Society of Australasia (RSA) and Australian and New Zealand Society of Paediatric Nephrology (ANZPNA) position statement released in 2024 that set expectations around dialysis capacity to provide optimal kidney health for all people. All dialysis units in Australia and New Zealand were surveyed assessing numbers of haemodialysis machines for "maintenance" (long term) dialysis patients, and information about the "acute" workload for dialysis units was also collected. Hospital based dialysis units experience substantial demand for haemodialysis for patients with acute kidney injury, or "maintenance" haemodialysis patients admitted to hospital or those requiring more complex care only available in a hospital environment. These hospital dialysis units can provide dialysis treatment for acutely unwell admitted patients, provide on-site medical and surgical support and urgent (after hours) dialysis. In contrast, "satellite" dialysis units are staffed by nursing staff and do not have medical and allied health support on site, and care for stable, ambulant patients.

The usual schedule of a haemodialysis unit is two shifts per day, six days per week, which theoretically enables four people to be treated per haemodialysis machine. In practice this is not feasible in many settings. For example, hospital units need the flexibility to care for acutely unwell patients. The report data demonstrates wide variation with many units substantially in excess of the "usual" capacity ratio of 4. Significant variation is also seen in regions unable to provide additional treatments, either due to funding or staffing constraints, or non-operational haemodialysis infrastructure.

Overall, Australia's national ratio is 3.34 people on maintenance haemodialysis per machine but increases to 3.49 people per machine when acute dialysis requirements are included. Acute haemodialysis activity, not previously captured in national reporting, substantially increases pressure on dialysis services. Many units do not have a meaningful buffer to respond to unplanned clinical needs.

There is substantial variation and inequity between regions and even within cities, with Northern Territory and Western Australia the states experiencing the highest ratios of 4.43 and 4.40 people treated per haemodialysis machine in Australia. New Zealand's national ratio is 4.53, with half of renal services operating above usual capacity. Auckland operates at 150% of usual capacity (ratio 6.0). Almost every capital city in both countries contains areas operating above "usual" capacity.

Staffing and funding shortfalls limit the use of existing infrastructure. 24% of Australian units have dialysis machines that cannot be used—not because of a lack of patients requiring treatment—but due to insufficient staff or funding. These constraints affect nearly half of Australia's geographic regions, including two-thirds of Victoria and over half of New South Wales and the Northern Territory. Capacity pressures are particularly marked in public facilities with public systems increasingly contracting dialysis services to private providers, reflecting structural undercapacity in publicly funded services rather than true expansion of care. For patients, of course, it is not the national average that is relevant but the capacity in their local area.

Waiting lists and delayed access to dialysis are now commonplace. Some units report waiting times of years for local dialysis treatment. Over 80% of Australian regions have waiting lists for people needing to start dialysis or transfer to receive dialysis closer to home. Patients travel increasingly long distances—sometimes hundreds of kilometres—multiple times per week, imposing substantial financial, social, cultural, and health burdens.

This report quantifies the experiences of clinicians who have raised the issues of lack of available haemodialysis capacity in various areas in Australia and New Zealand and the impact of these capacity deficits on the ability to safely provide treatment to patients. Lack of haemodialysis capacity has multiple impacts on patients, including reduced autonomy in treatment selection, difficulties transitioning from home to satellite dialysis when needed, long travel times to dialysis and restricted ability to travel for leisure, work, family or cultural responsibilities.

Workarounds to meet demand pose risks to patients. In response to capacity pressures, some units report: providing shorter or less frequent dialysis, repurposing home-training machines for maintenance dialysis, and maintaining people on less suitable dialysis modalities longer than clinically appropriate. These practices risk patient harm, increased hospitalisations, and poorer long-term outcomes.

Haemodialysis is a life-sustaining therapy for people with kidney failure. Demand for dialysis continues to grow due to the rising incidence and prevalence of kidney disease yet growth in dialysis funding, staffing and infrastructure has not kept pace with clinical need. This has resulted in bottlenecks that delay, restrict, or fragment access to essential care for Australians and New Zealanders with kidney failure.

Dialysis capacity pressures are widespread. System-level inequities are increasing. Regional and remote communities face higher ratios, reduced access to local services, and greater reliance on travel or relocation. In New Zealand's South Island, long-distance or permanent relocation for dialysis anecdotally remains common.

The survey findings demonstrate that current dialysis capacity is insufficient to meet present-day demand, let alone future growth. Without strategic and sustained investment, the health systems of Australia and New Zealand risk increased emergency presentations and hospitalisations, compromised patient safety, worsening inequities for vulnerable and rural communities, escalating long-term costs due to preventable complications, reduced workforce stability and increased burnout and a diminished ability to provide culturally safe and locally delivered care.

There is optimism that newer therapeutic agents will slow the progression of chronic kidney disease, but the effect of these medications will not be seen for some time. Dialysis is not optional; it is lifesaving and non-deferrable. Haemodialysis capacity must be treated as critical national health infrastructure—analogous to emergency services and cancer treatment—requiring forward planning, reliable funding, and coordinated national strategy. The pressures documented in this report do not merely represent operational challenges but a significant threat to health equity and patient safety. Investing now—in machines, workforce, infrastructure, and coordinated planning—will prevent avoidable harm, reduce costs, and ensure that people living with kidney failure can access care.

As organisations committed to advancing kidney health, ANZSN and ANZDATA will continue to advocate for appropriate, equitable, and sustainable dialysis services. It is our shared responsibility to ensure that every person requiring haemodialysis can access safe, timely, and culturally appropriate care—now and into the future.

Dr Sharon Ford
President, ANZSN

Professor Stephen McDonald AM
Executive Officer, Director of Strategy and Policy
ANZDATA

DEFINITIONS

Maintenance haemodialysis: refers to regular, scheduled haemodialysis for people with kidney failure.
- These individuals are registered in routine (annual) ANZDATA Reporting.

'Acute' haemodialysis: refers to short-term dialysis for individuals who:
- Have an acute kidney injury requiring temporary dialysis from which they are expected to recover.
    - These individuals are not registered in routine (annual) ANZDATA Reporting.
- Are newly starting haemodialysis and expected to require ongoing (maintenance) haemodialysis.
- Normally receive maintenance haemodialysis but who are admitted to hospital or require treatment in a hospital facility for medical reasons.

'Acute' haemodialysis does not include continuous renal replacement therapy in intensive care units.

Unit: a haemodialysis unit is a centre that provides haemodialysis treatments. This can be located in a hospital or a haemodialysis 'satellite'. A health service (also called 'parent unit') may provide care through multiple haemodialysis units under their management. Unit types:
- **Satellite units** are those that are intended to deliver haemodialysis to stable ambulant patients. These units do not have medical Nephrology staff on site, and do not provide treatment to acute inpatients. Although haemodialysis satellites may be located in a hospital (particularly in regional areas), they provide haemodialysis to stable outpatients and, occasionally, stable patients receiving rehabilitation. It is common for 'parent' units to be associated with one or more satellite units that provide access to dialysis for patients across their region.
- **Hospital units** are those which provide haemodialysis to patients that are medically unstable or who have greater care needs that require a higher level of staffing. There will generally be specialist Nephrology medical staff continuously available on-site for Hospital units, together with the ability to provide inpatient care onsite.

There may be many haemodialysis units within a region, or there may be none. People living in regions without haemodialysis units are required to travel, or in some cases, relocate permanently, to the nearest haemodialysis unit with capacity to provide their treatments.

Public haemodialysis units are facilities owned by government entities and provide haemodialysis in the public health system.

Private haemodialysis units are facilities owned by non-government entities that provide dialysis to people with private health insurance. These units may also provide haemodialysis treatments to individuals without private insurance, under various arrangements with public health services.

Ratio: refers, in the context of this report, to the number of people requiring maintenance ± acute haemodialysis to the haemodialysis infrastructure available to provide treatment. When receiving haemodialysis, individuals sit in a chair (or lay in a bed, in some cases of 'acute' dialysis) and are connected to a haemodialysis machine through which their blood is passed to clear fluid and toxins that failed kidneys cannot remove. Specialist trained staff deliver this treatment.
- **'Haemodialysis machines'** is used as the measure of haemodialysis infrastructure throughout this report. The number of individuals cared for by each staff member varies depending on the health and medical complexity of the people receiving haemodialysis.
- The term 'haemodialysis machines' should not be considered an indicator of staffing requirements.

Dialysis Capacity: is defined by ANZSN Statement on 'dialysis capacity' as *the ability of dialysis units and kidney services to provide timely, appropriate dialysis, in keeping with individuals' wishes and medical needs*. Due to the duration and frequency of haemodialysis treatments, capacity for facility (as opposed to home)-based haemodialysis also refers to individuals' ability to access care at facilities in reasonable proximity to their home. Adequate infrastructure, staffing, physical space, funding and number of haemodialysis machines are all essential components of this capacity.

- There is no consensus definition on what constitutes ideal haemodialysis capacity. For a satellite unit, a ratio of four people receiving maintenance haemodialysis to one haemodialysis machine might be ideal "usual" capacity, based on two shifts per days and three days per week. This assumes there is no unexpected delays or changes to schedules, no technical or maintenance issues and no "acute" workload. In reality, ratios substantially less than four are likely to be required for optimal delivery of safe care in an efficient manner.

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INTRODUCTION

Background of Special Reports

This Special Report is a collaboration between the Australian and New Zealand Society of Nephrology (ANZSN) and the Australia and New Zealand Dialysis and Transplant (ANZDATA) Registry. ANZSN is a not-for-profit organisation representing health professionals working in the prevention and treatment of kidney disease. The ANZDATA Registry is a Clinical Quality Registry that collects data regarding people in Australia and New Zealand receiving kidney replacement therapy (KRT - dialysis or a kidney transplant). The ANZDATA Registry does not include people with chronic kidney disease who are not receiving KRT nor people with acute kidney injury who are expected to recover without ongoing need for dialysis.

The ANZDATA Annual Report details the number and location of people receiving different types of KRT in Australia and New Zealand. The ANZDATA Registry also generates reports for individual Nephrology units to standardise outcomes and provide benchmarking for quality indicators. Together, ANZSN and ANZDATA additionally release Special Reports to address topics important to people with kidney failure and their families, the Nephrology workforce, health services and governments, but which not covered in routine ANZDATA reporting. This is the fifth ANZDATA 'Special Report', and third in conjunction with ANZSN.

This Special Report: Haemodialysis Capacity

People with kidney failure who receive kidney replacement therapy are treated with dialysis or a kidney transplant. Haemodialysis is the commonest form of dialysis in Australia and New Zealand.[1,2] In recent years, the number of people with kidney failure requiring haemodialysis in Australia and New Zealand has increased and future growth is projected.[3]

Growth in demand for haemodialysis treatment has not been consistently matched by expansion in infrastructure or the dialysis workforce, creating challenges for Nephrology units to meet the needs of growing numbers of people with kidney failure, their families and communities.[4] Particular strain is reported in 'hot-spots' of kidney failure, regions where demand for dialysis services has increased faster than population growth.[5]

The ANZSN Statement on Dialysis Capacity defines 'dialysis capacity' as *the ability of dialysis units and kidney services to provide timely, appropriate dialysis, in keeping with individuals' wishes and medical needs*. Due to the duration and frequency of haemodialysis treatments, capacity for facility (as opposed to home)-based haemodialysis also refers to individuals' ability to access care at facilities in reasonable proximity to their home. Adequate infrastructure, staffing, physical space, funding and number of haemodialysis machines are all essential components of this capacity. Capacity constraints arise when demand for haemodialysis treatment exceeds these available resources.[6]

This Special Report builds on findings reported in the ANZDATA and ANZSN Special Report on:

- Haemodialysis Capacity (2022), which aimed to address the data gap regarding available numbers of haemodialysis machines at a haemodialysis unit level, and describe ratios of individuals receiving maintenance haemodialysis to haemodialysis machines in Australia and New Zealand.[7]
- Workforce and Dialysis Capacity (2024), which aimed to describe the Nephrology workforce across Australia and New Zealand, and ratios of people receiving KRT to medical, nursing and allied health staff. This Report also detailed units' experience of dialysis capacity constraints.[8]

An important component of haemodialysis capacity is the ratio of individuals receiving haemodialysis to the number of haemodialysis machines available to deliver treatment. Haemodialysis treatments are usually three times per week. As each treatment usually lasts 3.5-5 hours, plus the time required for preparation and cleaning, most haemodialysis units operate two shifts per day – morning and afternoon – six days per week. Under this usual schedule, one haemodialysis machine can provide treatment for four individuals per week (Figure 1).

Accordingly, a ratio of four individuals receiving regular, scheduled, maintenance haemodialysis to one machine is broadly considered 'usual' capacity.

There is however no consensus regarding what constitutes appropriate haemodialysis capacity. Units operating at 'usual' capacity have no reserve capacity to manage haemodialysis machine malfunction, staff shortages or to provide additional treatments that may be required in addition to individuals' routine schedules. Units that provide 'acute' haemodialysis (see **Definitions**) also require additional reserve capacity to respond to demand, which is largely unplanned, unpredictable, and which changes on a daily basis.

Recent evidence indicates that capacity constraints are common in Australia and New Zealand. Over half of Nephrology units in Australia and over two-thirds of units in New Zealand reported dialysis capacity constraints in the 2025 ANZSN/ANZDATA Unit Survey.[8] Geographic mismatches between where individuals live and where haemodialysis machines are located has also been reported, with significant variation in the ratio of individuals receiving haemodialysis to available machines identified in the 2022 ANZSN/ANZDATA Haemodialysis Capacity Survey Special Report.[7]

In this context, this survey aimed to determine the number of haemodialysis machines at all haemodialysis units in Australia and New Zealand and to compare these numbers to numbers of individuals receiving maintenance haemodialysis. In Australian units, additional data were collected about the provision of 'acute' haemodialysis, which is not captured in routine ANZDATA Reporting (see **Definitions**). Collecting and interpreting 'acute' haemodialysis data is challenging, as demand fluctuates daily. Nevertheless, as 'acute' dialysis represents a substantial component of the workload of many haemodialysis units, it is an important factor to consider. This report is the first to provide a nationwide snapshot of this activity, so that presented ratios more accurately reflect the workload in haemodialysis units.

The aims of this Special Report are to:

1. Report ratios of individuals receiving haemodialysis to haemodialysis machines across Australia and New Zealand.

For Australian units to:

2. Describe 'acute' haemodialysis provision which is not captured by routine ANZDATA data collection.
3. Report waiting lists to access haemodialysis treatment.
4. Describe the role of private haemodialysis units in providing haemodialysis care to individuals funded through the public health system.

Using bi-national data, the Report also aims to:

5. Inform advocacy groups (ANZSN, the Renal Society of Australasia, Kidney Health Australia and Kidney Health New Zealand), health services and government agencies to support identification of priority investment areas to improve haemodialysis capacity so that people may receive timely, appropriate treatment, close to home.
6. Refine ongoing ANZDATA data collection to better monitor and address these issues.

AUSTRALIA: METHODS

ANZSN and ANZDATA working groups formulated a survey which was distributed in early 2025 alongside annual individual-level data collection by ANZDATA, using the REDCap electronic data capture tools hosted at the South Australian Health and Medical Research Institute.[9,10] The survey was sent to all haemodialysis units in Australia, excluding paediatric units as children and adolescents requiring dialysis are more often treated with peritoneal dialysis. If required, haemodialysis for children and adolescents is performed in specialised paediatric facilities, which do not experience significant capacity constraints in Australia or New Zealand.[8] ANZDATA Registry staff liaised with units to achieve comprehensive, complete and accurate survey responses.

Survey questions covered:

- Utilised haemodialysis machines
    - Haemodialysis machines used for training individuals to receive or administer haemodialysis at home were excluded from reported numbers, as these are intended for training purposes rather than for routine maintenance haemodialysis.[8]
- Non-utilised haemodialysis machines, and reasons for their non-utilised status
    - These were not included in total haemodialysis machine numbers for ratio calculation.
- Provision of 'acute' haemodialysis and number of 'acute' haemodialysis treatments administered in one week.

Respondents were also invited to share experiences of haemodialysis capacity that was not otherwise captured in the survey questions. Representative responses are included as quotes throughout this report.

The number of people receiving 'acute' dialysis was calculated as the number of 'acute' treatment sessions in the week of the survey divided by three, to approximate a usual weekly haemodialysis schedule for individuals receiving maintenance haemodialysis. These were added to the number of people receiving maintenance haemodialysis obtained from the 2024 ANZDATA Annual Survey.[2] Children and adolescents, and people receiving home haemodialysis were excluded from numbers of people receiving maintenance haemodialysis. The total number of people receiving maintenance ± 'acute' dialysis was divided by the number of haemodialysis machines in each unit. Where units were only open three days per week (half of a standard dialysis schedule), machine numbers were divided by two, to reflect the actual capacity of staffed and available haemodialysis machines over the course of one week.

In order to better reflect regional service delivery beyond individual haemodialysis units which are otherwise aware of their own ratios, this report combined numbers of people receiving haemodialysis and haemodialysis machines into Greater Capital City Statistical Areas and Statistical Area (SA) 4 levels, by the Australian Statistical Geography Standard, Edition 3, to present ratios by geographical region.[11]

Data were analysed using Stata v18.0[12] and Microsoft Excel,[13] and mapped using ArcGIS Pro v3.6.[14]

AUSTRALIA: RESULTS

1. Survey responses

100% survey response rate was achieved. 329 haemodialysis units were included for analysis (Table 1).

Table 1
Number of haemodialysis units analysed (% of Australian haemodialysis units), by state/territory

State/Territory	Responses *n* (%)
Australian Capital Territory	5 (1.5)
New South Wales	92 (28.0)
Northern Territory	23 (7.0)
Queensland	70 (21.3)
South Australia	25 (7.6)
Tasmania	4 (1.2)
Victoria	85 (25.8)
Western Australia	25 (7.6)
Total	**329 (100)**

Most surveys were completed by the dialysis unit nurse manager, followed by the dialysis coordinator and associate nurse unit manager (ANUM). 16% were completed by other various staff members including clinical nurse consultants, clinical nurse educators, dialysis nurses and data managers (Figure 2).

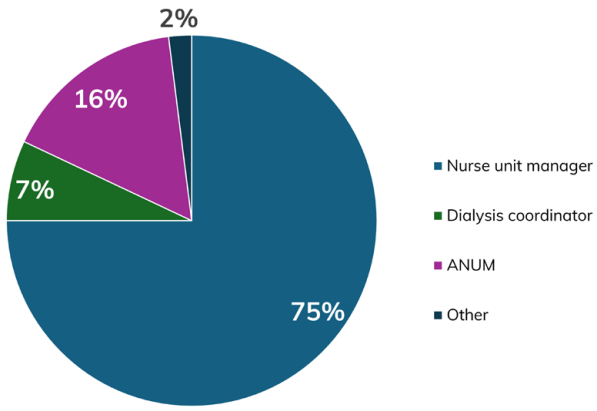

Figure 2
Role of individuals who completed the survey

2. Unit funding structure

Most haemodialysis units were publicly funded (86%, n=282). Among private units (see **Definitions**), more than half (56%, n=26), under various arrangements, provided haemodialysis to individuals did not have private health insurance and who would otherwise receive care through the public health system (Table 2).

Table 2
Number of public and private dialysis units and as a proportion of total dialysis units, by state/territory, and number and proportion of private units providing treatment to individuals who would otherwise receive care through the public health system

Jurisdiction Funding type	**Responses** n (%)
Australian Capital Territory	**5**
Public	2 (40.0)
Private	3 (60.0)
Provision of 'public' dialysis	0 (0.0)
New South Wales	**92**
Public	81 (88.0)
Private	11 (12.0)
Provision of 'public' dialysis	7 (63.6)
Northern Territory	**23**
Public	21 (91.3)
Private	2 (8.7)
Provision of 'public' dialysis	2 (100.0)
Queensland	**70**
Public	53 (75.7)
Private	17 (24.3)
Provision of 'public' dialysis	7 (41.2)
South Australia	**25**
Public	23 (92.0)
Private	2 (8.0)
Provision of 'public' dialysis	2 (100.0)
Tasmania	**4**
Public	4 (100.0)
Private	0 (0.0)
Provision of 'public' dialysis	N/A
Victoria	**85**
Public	78 (91.8)
Private	7 (8.2)
Provision of 'public' dialysis	5 (71.4)
Western Australia	**25**
Public	20 (80.0)
Private	5 (20.0)
Provision of 'public' dialysis	3 (60.0)
Total	**329**

3. Unit practices

Most haemodialysis units (90%, n=298) provided dialysis services on six or seven days per week (Figure 3).

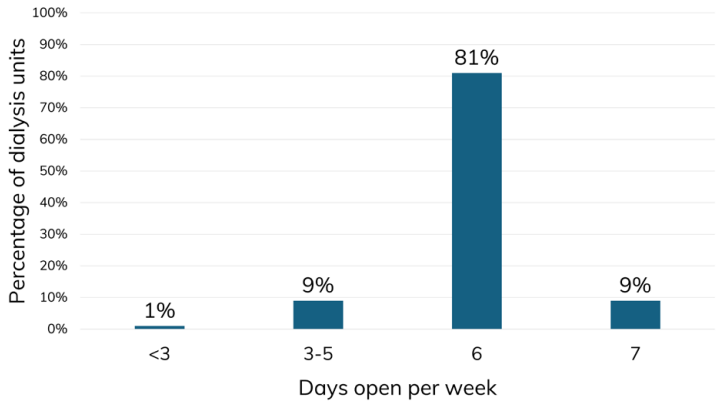

Figure 3

Proportion of dialysis units open by number of days of the week

4. Dialysis infrastructure and staffing

a) Non-utilised haemodialysis machines

Almost one quarter of units (24%, n=80) reported having non-utilised haemodialysis machines. In a minority of units (21%, n=17 units), machines were not utilised because they were surplus to requirements; in most cases however (79%, n=63), non-utilised status was due to funding or staffing shortages, or a combination of both (Table 3). Machines not utilised due to funding or staffing constraints were more common in regional areas (21% of regional units, n=43 units) than in capital cities (16% of capital cities, n=20 units). Non-utilised HD machines were not included in calculations of ratios presented in this report.

Table 3

Number of utilised and non-utilised haemodialysis machines per unit

Haemodialysis machine status	Units reporting, n (%)
Fully utilised	249 (75.7)
Non-utilised	63 (19.2)
Funding shortfall	22 (34.9)
Funding and staffing shortfall	19 (30.2)
Staffing shortfall	11 (17.5)
Shared space with other facilities (e.g. chemotherapy)	2 (3.2)
Temporary construction in unit	3 (4.8)
Spaces held (e.g. for individuals requiring dialysis during rehabilitation)	2 (3.2)
Other	4 (6.4)
Surplus to need	17 (5.2)
Total	**329**

When considering these results by geography, it is evident that non-utilised haemodialysis machines are a widespread problem across Australia. **Funding or staffing shortfalls resulted in non-utilised haemodialysis machines across almost half of Australia** (47%), including two-thirds of Victoria and over half of New South Wales and the Northern Territory (Figure 4).

"If more funding and staff were available, our unit could run six days per week."
Associate Nurse Unit Manager, Victoria

"Our unit is capped at half of its [potential] patient capacity due to budget."
Associate Nurse Unit Manager (location withheld)

"This unit has been understaffed since it was established. I have worked on the floor with a full patient load for the past decade."
Nurse Unit Manager, New South Wales

"Staff are very hard to find due to [the unit's] rural location."
Nephrologist, Head of Unit, New South Wales

"We are running an afternoon shift due to demand but are not currently funded for this."
Nurse Unit Manager, Victoria

Figure 4 demonstrates the widespread issue of non-utilised haemodialysis machines across Australia.

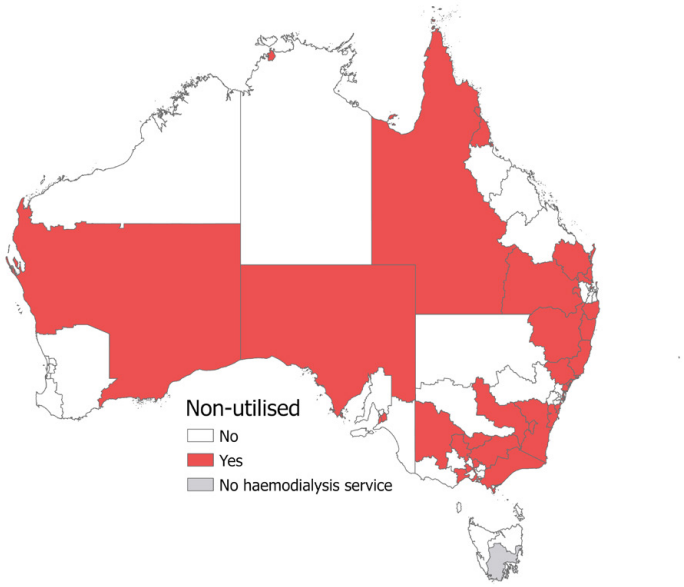

Figure 4
Non-utilised haemodialysis machines across Australia by Statistical Area 4 areas

5. Haemodialysis capacity by state/territory and overall

Across Australia, there were 3.34 individuals treated with maintenance haemodialysis for each haemodialysis machine overall. Ratios were above 4.0 in Western Australia (4.3) and the Northern Territory (4.22), indicating that overall, regions in these capital cities treated more people per machine than is typical. Ratios were approaching usual capacity in South Australia (3.6) and Victoria (3.32). The range of ratios was wide, however, indicating significant variation in the ratio within states and territories. **Almost every state and territory contained jurisdictions with ratios far exceeding usual capacity**, even if the ratio was not elevated for the state overall.

When individuals treated with 'acute' haemodialysis were included in these calculations, the ratio increased in every state and territory and was 3.49 for Australia overall (Table 4), demonstrating how 'acute' haemodialysis significantly increases the workload in units providing this service.

Table 4
Ratio of individuals receiving haemodialysis to haemodialysis machines by state/territory

Jurisdiction	Individuals treated*	Haemodialysis machines	Ratio	Range
Australian Capital Territory				
Maintenance	178	71	2.51	N/A
Maintenance and acute	195		2.74	N/A
New South Wales				
Maintenance	3,428	1,085	3.16	1.33-5.26
Maintenance and acute	3,558		3.28	1.33-5.37
Northern Territory				
Maintenance	738	175	4.22	4.20-4.23
Maintenance and acute	775		4.43	4.20-4.53
Queensland				
Maintenance	2,613	845	3.09	1.73-4.27
Maintenance and acute	2,751		3.26	1.73-4.30
South Australia				
Maintenance	861	239	3.60	2.89-4.11
Maintenance and acute	893		3.74	2.89-4.17
Tasmania				
Maintenance	177	74	2.39	2.13-2.95
Maintenance and acute	185		2.50	2.14-3.33
Victoria				
Maintenance	2,845	856	3.32	2.30-4.47
Maintenance and acute	3,009		3.51	2.42-5.08
Western Australia				
Maintenance	1,448	337	4.30	2.76-5.51
Maintenance and acute	1,482		4.40	2.76-6.22
Total				
Maintenance	**12,288**	**3,682**	**3.34**	**1.33-5.51**
Maintenance and acute	**12,848**		**3.49**	**1.33-6.22**

*Number of 'acute' haemodialysis treatments in one week/3 plus number of individuals treated with maintenance haemodialysis on 31st December 2024 (2024 ANZDATA annual survey), excluding individuals receiving home haemodialysis.

6. Haemodialysis capacity in capital cities

In Australian capital cities, the ratio of individuals receiving maintenance haemodialysis to utilised haemodialysis machines was highest in Perth and Darwin. In both cities, the ratio exceeded usual capacity of 4.0. Ratios approached usual capacity in Adelaide (3.67), Sydney (3.54) and Melbourne (3.37). Every capital city apart from Canberra and Hobart contained regions operating above usual capacity (Table 5).

Inclusion of individuals receiving 'acute' haemodialysis demonstrated the limited flexibility of regions to accommodate additional treatments. When 'acute' dialysis is included, ratios in Perth were 4.65 but included regions with ratios over 6.0, indicating that **some regions have workloads over 150% of usual capacity**. Whilst these regions in Perth are extreme, Sydney and Melbourne also reported very high ratios, with regions operating at 125% usual capacity.

Table 5
Ratio of individuals receiving haemodialysis to haemodialysis machines in Australian capital cities

Jurisdiction	Individuals treated*	Haemodialysis machines	Ratio	Range
Canberra				
Maintenance	178	71	2.51	N/A
Maintenance and acute	195		2.74	N/A
Sydney				
Maintenance	2,157	610	3.54	2.75-5.26
Maintenance and acute	2,218		3.64	2.88-5.37
Darwin				
Maintenance	256	61	4.20	N/A
Maintenance and acute	258		4.23	N/A
Brisbane				
Maintenance	1,073	326	3.29	1.73-4.27
Maintenance and acute	1,116		3.42	1.73-4.30
Adelaide				
Maintenance	687	187	3.67	3.17-4.09
Maintenance and acute	719		3.84	3.34-4.17
Hobart				
Maintenance	81	38	2.13	N/A
Maintenance and acute	81		2.13	N/A
Melbourne				
Maintenance	2,150	638	3.37	2.30-4.47
Maintenance and acute	2,307		3.62	2.78-5.08
Perth				
Maintenance	1,055	234	4.51	3.67-5.51
Maintenance and acute	1,087		4.65	3.67-6.22
Total				
Maintenance	**7,637**	**2,165**	**3.53**	**1.73-5.51**
Maintenance and acute	**7,982**		**3.69**	**1.73-6.22**

*Number of individuals receiving maintenance haemodialysis on 31st December 2024 (2024 ANZDATA annual survey), excluding individuals receiving home haemodialysis.

7. Haemodialysis Capacity Outside of Capital Cities

Ratios of individuals receiving maintenance haemodialysis to haemodialysis machines are summarised for units outside of capital cities in Table 6. Ratios in these areas were mostly lower than their corresponding capital cities. In the Northern Territory and Tasmania however, the inverse was observed, with ratios higher in regional areas than in their capital cities (Darwin 4.13, rest of the Northern Territory 4.23; Hobart 2.13, rest of Tasmania 2.67).

Although inclusion of people receiving 'acute' dialysis in ratio calculations increased ratios in all regions, the change in ratio was less pronounced in the regions than in capital cities. This is likely attributable to the higher number of hospital-based haemodialysis centres in capital cities providing 'acute' dialysis; dialysis facilities in regional areas are typically 'satellite' facilities that provide planned treatment to maintenance dialysis patients. Lack of available local facilities can have significant impacts for individuals who require transfer to capital cities when acute dialysis is required if this service is not available closer to home, as well as for neighbouring health services to provide the 'acute' dialysis that other health services do not.

"Without an acute haemodialysis unit [to provide dialysis to hospitalised inpatients] our patients requiring acute dialysis are transferred elsewhere, shifting the demand onto surrounding hospitals."
Nephrologist, Victoria

"The lack of acute dialysis causes significant distress to patients and families – patients requiring acute dialysis have to travel to other hospitals, some of which are three or four hours away."
Nephrologist, New Zealand

Table 6
Ratio of individuals receiving haemodialysis to haemodialysis machines outside of Australian capital cities

Jurisdiction	Individuals treated*	Haemodialysis machines	Ratio	Range
New South Wales				
Maintenance	1,271	475	2.68	1.33-3.95
Maintenance and acute	1,340		2.82	1.33-3.95
Northern Territory				
Maintenance	482	114	4.23	N/A
Maintenance and acute	516		4.53	N/A
Queensland				
Maintenance	1,540	519	2.97	1.98-4.00
Maintenance and acute	1,635		3.15	1.98-4.00
South Australia				
Maintenance	174	52	3.35	2.89-4.11
Maintenance and acute	175		3.36	2.89-4.15
Tasmania				
Maintenance	96	36	2.67	2.27-2.95
Maintenance and acute	104		2.89	2.67-3.33
Victoria				
Maintenance	695	218	3.19	2.39-4.31
Maintenance and acute	701		3.22	2.42-4.44
Western Australia				
Maintenance	393	103	3.82	2.76-4.18
Maintenance and acute	394		3.83	2.76-4.19
Total				
Maintenance	**4,651**	**1,517**	**3.07**	**1.33-4.31**
Maintenance and acute	**4,865**		**3.21**	**1.33-4.53**

*Number of individuals receiving maintenance haemodialysis on 31st December 2024 (2024 ANZDATA annual survey), excluding individuals receiving home haemodialysis.

8. Maps

To visually represent the variation in ratios of people receiving haemodialysis to haemodialysis machines across Australia, the postcode of each haemodialysis unit was mapped to a Statistical Area (SA) 4 level.[11] Ratios of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines was divided into groups and colour coded. Areas shaded grey do not contain a haemodialysis unit. Patients residing in these regions are required to travel to other regions to receive haemodialysis treatment.

Ratios in each SA4 level across Australia are presented in Figure 5. Ratios in capital cities are presented in Figures 6-12.

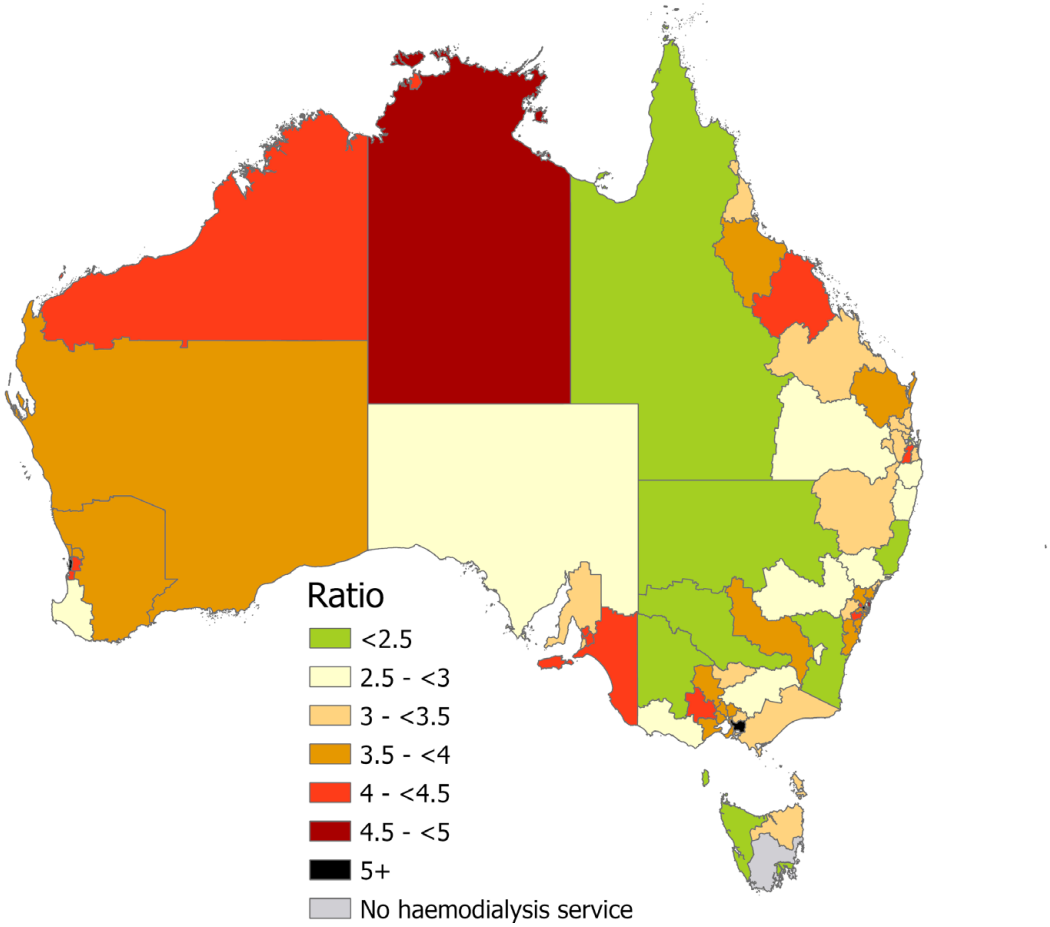

Figure 5
Map of Australia with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

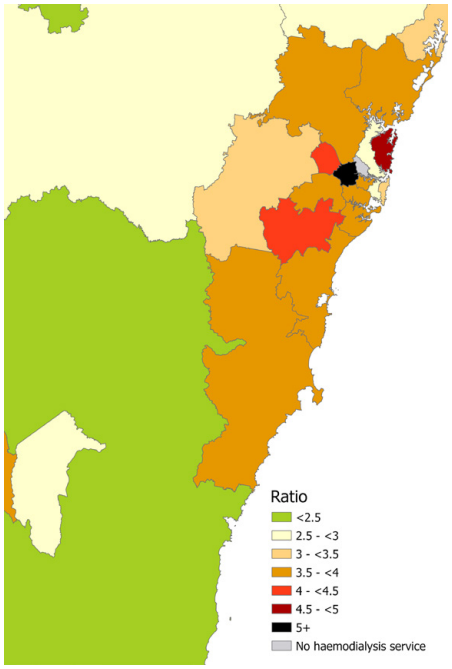

Figure 6
Map of Sydney and Canberra regions with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

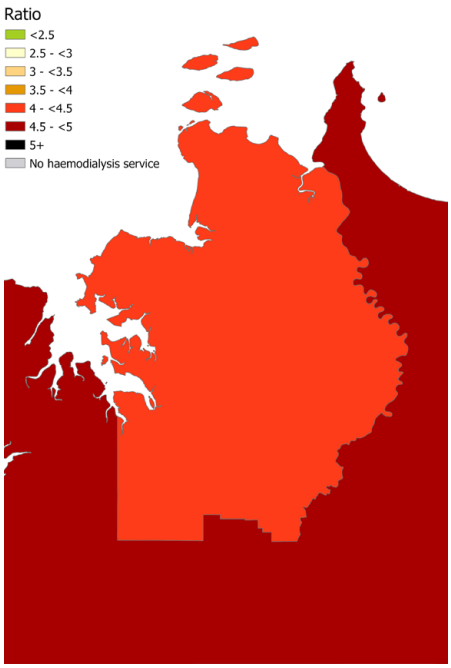

Figure 7
Map of Darwin region with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

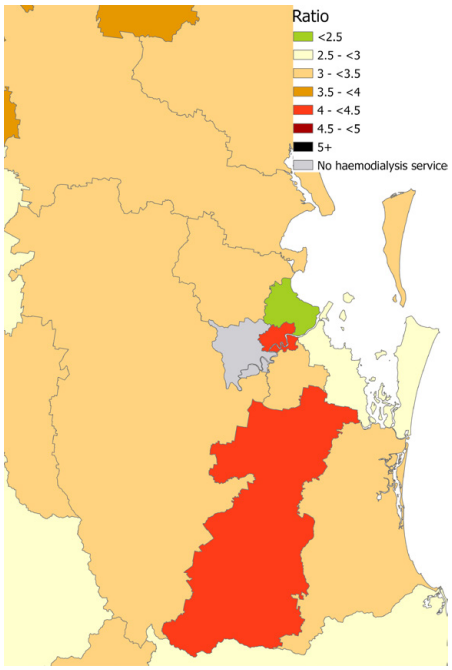

Figure 8
Map of Brisbane region with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

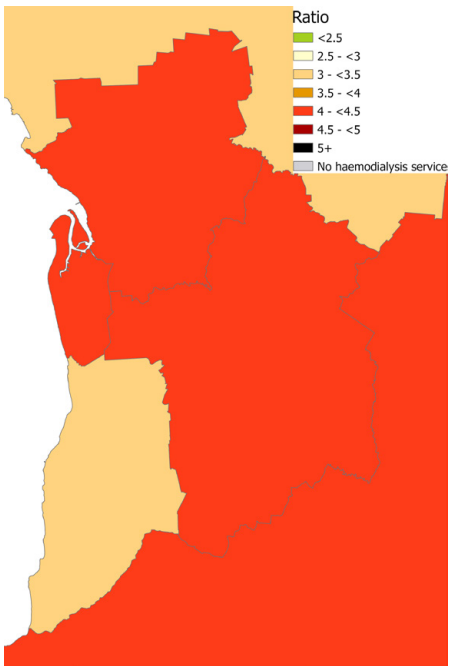

Figure 9
Map of Adelaide region with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

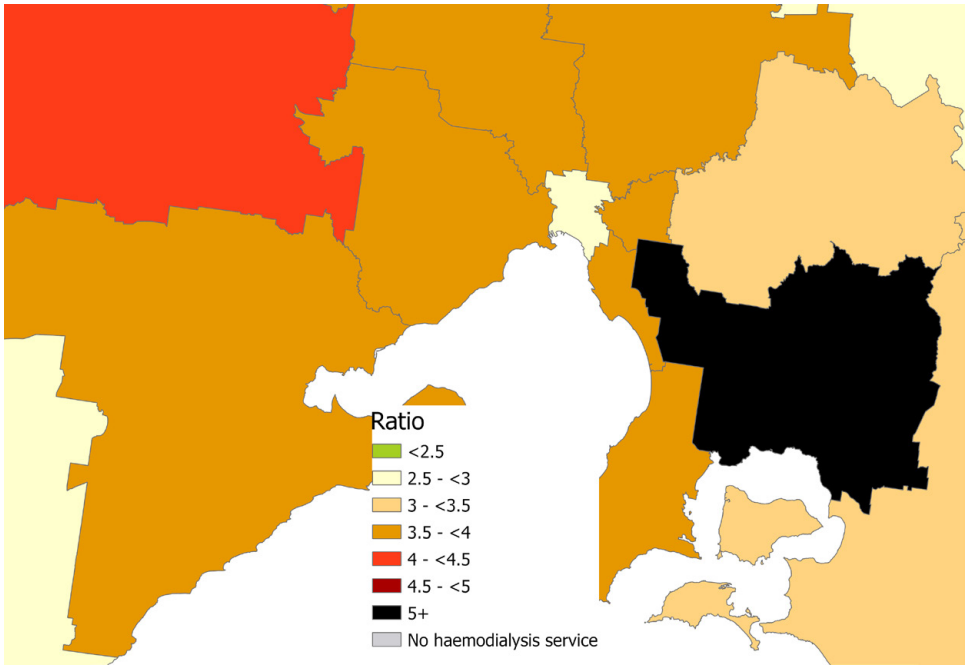

Figure 10
Map of Melbourne region with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

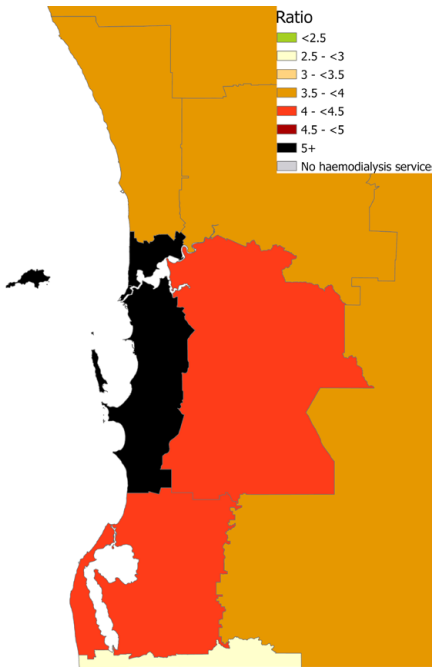

Figure 11
Map of Perth region with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

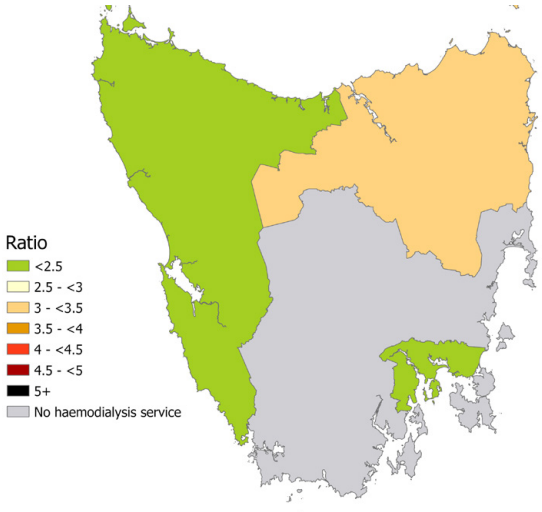

Figure 12
Map of Tasmania with the ratio of individuals receiving maintenance or 'acute' haemodialysis to haemodialysis machines presented for each Australian Statistical Geography Standard Statistical Area 4 level

9. Impacts of haemodialysis capacity constraints

a) Overflow use of home therapies haemodialysis facilities

Seven units (2%) reported use of home therapies haemodialysis machines to provide dialysis for people receiving maintenance haemodialysis due to capacity shortfall in their units. These numbers could be higher however, as this was not specifically surveyed (see Discussion). Home therapies haemodialysis machines were not included in ratio calculation in this report.

"We have to put overflow of patients we cannot fit into our unit into the home training unit."
Nurse Unit Manager, Queensland

b) Staffing ratios

Although not specifically requested, many respondents provided staffing ratios for their unit. These ranged from one nurse caring for two people receiving haemodialysis, up to ratios of one nurse caring for six people. Respondents commented on the impact of high ratios on staff wellbeing and patient safety.

"Nursing staff have >6 patients in one shift. This is affecting staff performance and morale."
Nurse Unit Manager, New South Wales

"Staff to patient ratio is very high. It is exhausting. Issues are getting missed."
Nurse Unit Manager, New South Wales

c) Waiting lists

Ratios of individuals receiving haemodialysis to haemodialysis machines does not include the number of people whose commencement on haemodialysis is delayed (newly commencing dialysis or transitioning to haemodialysis from peritoneal dialysis or with a failing kidney transplant) due to capacity constraints. Units were questioned about the presence of people waiting to commence haemodialysis or transfer care to their service. It is generally accepted that the commonest reason for transfer of care to another haemodialysis unit is to receive treatment closer to home. Although not surveyed directly, free text comments indicated this was the case. Comments also indicated that need for specialist medical care and cultural reasons were additional reasons for requests to transfer individuals' haemodialysis care to another unit.

The number of people waiting to transfer to our unit is four times the number of available [haemodialysis machines], and we have already tried to increase capacity with extra shifts. The waiting time to transfer [to our unit] can be three years."
Nephrologist, Victoria

"We have a patient who travels over 100km to dialyse with us as his local unit is at full capacity."
Nurse Unit manager, Victoria

"Patients are forced to travel two hours each way, three times a week for haemodialysis at another centre."
Nurse Unit Manager, Queensland

82% of SA4 areas contained haemodialysis units with waiting lists to initiate or transfer haemodialysis care to another unit, including 100% of units in the ACT, Northern Territory, Victoria and Western Australia (Table 7).

Table 7
Number of Statistical Area 4 areas with waiting lists to start or transfer haemodialysis care

State/Territory	Responses *n* (%)
Australian Capital Territory	1 (100.0)
New South Wales	23 (85.2)
Northern Territory	2 (100.0)
Queensland	12 (66.7)
South Australia	5 (71.4)
Tasmania	0 (0.0)
Victoria	17 (100.0)
Western Australia	10 (100.0)
Total	**70 (82.4)**

"There are 40 patients in our unit who cannot get a permanent dialysis spot at our service [due to capacity]."

Nurse Unit Manager, (location withheld)

Figure 13 demonstrates how widespread the issue of haemodialysis waiting lists are across Australia.

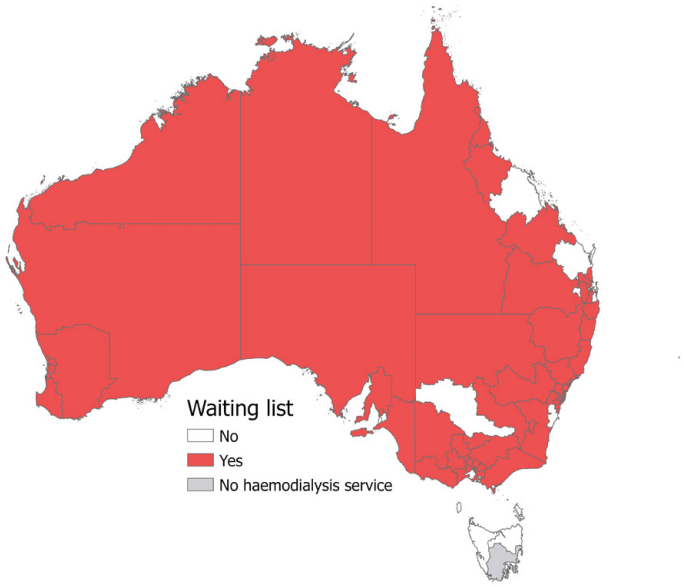

Figure 13
Waiting lists to commence or transfer haemodialysis care across Australia by Statistical Area 4 areas

NEW ZEALAND: METHODS

New Zealand Unit data were collected in collaboration with the New Zealand National Clinical Renal Network. The Network has undertaken work to quantify the number of haemodialysis machines in each renal service as part of a project to develop infrastructure demand modelling for dialysis services across New Zealand. In addition, members of the National Clinical Network Team met with Heads of Nephrology Units and Charge Nurse Managers to determine individual service delivery models. These results were summarized by the network with validation by Heads of Units and Charge Nurse Managers. Data collection is complete, with coverage of all units in New Zealand.

Information gathered covered:

- Number of operational haemodialysis machines utilised for maintenance haemodialysis.
    - Haemodialysis machines utilised primarily for 'acute' dialysis were not included.

Numbers of people receiving maintenance haemodialysis was obtained from the 2024 ANZDATA Annual Survey,[2] excluding children and adolescents and those treated with home dialysis. Community house dialysis is provided in partnership with the Kidney Society for people otherwise able to perform home haemodialysis, but whose home is not suitable. No on-site nursing or medical support is provided. Community house dialysis is considered equivalent to home haemodialysis, hence individuals receiving treatment in this setting are not included in this survey. Individuals receiving maintenance haemodialysis were divided by the number of haemodialysis machines reported by each unit. Ratios were combined into Te Whatu Ora – Health New Zealand Districts and Regions to present ratios by region.

Data were analysed using Microsoft Excel.[13]

NEW ZEALAND: RESULTS

1. Unit practices

Most units (>95%, n=26) provided dialysis services on six or seven days per week.

2. Unit funding structure

All Hospital and Satellite haemodialysis units in New Zealand are publicly funded.

3. Dialysis infrastructure and staffing

a) Non-utilised haemodialysis machines

Two units (16.7%) had non-utilised haemodialysis machines due to being surplus to need; all other units were fully utilised. Two units also had the ability to open a fourth shift per day utilising a limited number of their usual haemodialysis machines.

4. Haemodialysis capacity by Nephrology service and overall

Overall, there were 4.53 people receiving maintenance haemodialysis for each utilised haemodialysis machine in New Zealand. Ratios were highest in Auckland, which operated at 150% of usual capacity. **Ratios were exceeded in half of New Zealand Renal services.** The number of people receiving maintenance haemodialysis in hospital and satellite units, haemodialysis machines and ratios across New Zealand Renal services is shown in Table 8, and by district in Table 9.

Eleven of 12 Nephrology services provide 'acute' dialysis in one of their centres; haemodialysis machines designated for 'acute' dialysis are not included in the total machine count for ratio calculation as people receiving 'acute' dialysis are not included in overall treatment numbers (see **Methods**).

Table 8
Ratio of individuals receiving maintenance haemodialysis to haemodialysis machines, by Renal service

	Individuals treated in hospital	Individuals treated in satellite	Individuals treated (total)	Haemodialysis machines	Ratio
Auckland Hospital	187	131	318	53	6.00
Bay of Plenty Renal Unit	0	81	81	20	4.05
Christchurch Hospital	58	0	58	17	3.41
Dunedin Hospital	25	0	25	8	3.13
Hawkes Bay Hospital	71	0	71	20	3.55
Middlemore Hospital	548	37	585	106	5.52
Palmerston North Hospital	132	15	147	35	4.20
Taranaki Hospital	28	0	28	10	2.80
Waikato Hospital	170	75	245	60	4.08
Waitemata Renal Service	134	149	283	54	5.24
Capital and Coast	54	142	196	49	4.00
Whangarei Hospital	70	48	118	44	2.68
New Zealand (total)	**1,477**	**678**	**2,155**	**476**	**4.53**

Table 9
Ratio of individuals receiving maintenance haemodialysis to haemodialysis machines, by district

	Individuals treated in hospital	Individuals treated in satellite	Individuals treated (total)	Haemodialysis machines (total)	Ratio
Northern	939	365	1304	257	5.07
Te Manawa Taki (Midland)	198	156	354	90	3.93
Te Ikaroa (Central)	269	145	414	104	4.31
Te Waipounamu (South Island)	83	0	83	25	3.32

5. Maps

To present ratios across geographical areas, ratios of individuals receiving maintenance haemodialysis to haemodialysis machines was divided into colour coded groups and mapped to a Te Whatu Ora – Health New Zealand Renal services region (Figure 14). Areas are grey where the statistical areas do not contain a haemodialysis unit.

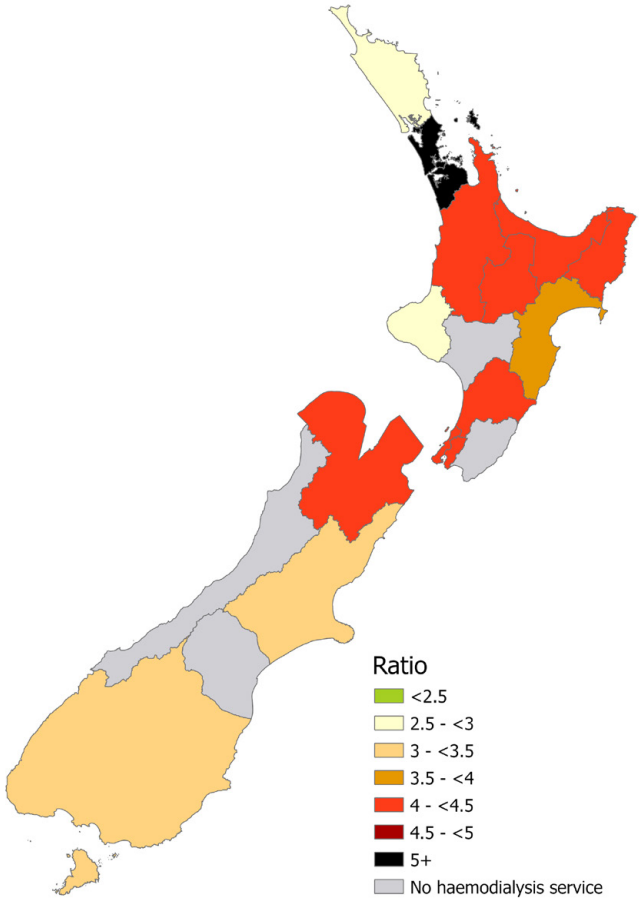

Figure 14
Map of New Zealand with the ratio of individuals receiving maintenance haemodialysis to haemodialysis machines presented for each services region

6. Capacity impacts

Units manage their own waiting lists to commence haemodialysis. This was not specifically surveyed but has been reported previously.[8] Some units reported maintaining individuals on peritoneal dialysis for longer than clinically appropriate due to lack of local capacity for patients to change dialysis modality.

DISCUSSION

By detailing the ratios of people with kidney failure treated with haemodialysis to available haemodialysis machines, this Special Report examines a key component of haemodialysis capacity in Australia and New Zealand. For the first time, ratios for Australia also include individuals receiving 'acute' dialysis, therefore providing a more accurate representation of the workload of haemodialysis provision. Findings in this report indicate widespread haemodialysis capacity constraints, with significant geographic variation impacting equity of access bi-nationally. This report also demonstrates how the provision of 'acute' dialysis compounds already significant capacity constraints for units providing this service. High ratios have resulted in significant waiting lists to commence or transfer haemodialysis care. Despite these demands, there are widespread funding and staffing shortages resulting in non-utilised haemodialysis machines, indicating challenges increasing haemodialysis capacity to meet demand. This report provides crucial insights for people living with kidney failure, their families and communities, as well as health services and governments seeking to address the needs of this growing population.

Haemodialysis ratios across Australia and New Zealand

In Australia, the ratio of people receiving maintenance haemodialysis to haemodialysis machines is 3.34. This is higher than the ratio reported in the 2022 ANZSN/ANZDATA Haemodialysis Capacity Report (3.33), however these ratios are not directly comparable as this current report surveyed a greater number of haemodialysis units across Australia compared to 2022. In 2025, ratios exceed the usual capacity of four individuals receiving maintenance haemodialysis to one haemodialysis machine in Western Australia (4.3) and the Northern Territory (4.22). South Australia (3.6) and Victoria (3.32) additionally approached usual capacity limits. Ratios were higher again in capital cities, with **almost every capital city in Australia containing regions operating above usual capacity** even before 'acute' haemodialysis is factored into calculations. Where the provision of 'acute' haemodialysis is included, the overall Australian ratio rises to 3.49, and approaches or exceeds usual capacity in Perth (4.65), Darwin (4.23), Adelaide (3.84), Sydney (3.64) and Melbourne (3.62). Australian data also reveal important regional variations. In the Northern Territory and Tasmania, ratios are higher in regional areas than in their capital cities (Darwin 4.20, rest of the Northern Territory 4.53; Hobart 2.13, rest of Tasmania 2.89), an important reminder that capacity pressures are not confined to metropolitan centres and that regional areas may also experience significant strain on their services.

In New Zealand, the ratio of people receiving maintenance haemodialysis to haemodialysis machines is 4.53, substantially higher than the 3.93 reported from the same units in the 2022 ANZSN/ANZDATA Haemodialysis Capacity Report. Capacity constraints are widespread, with **every region in New Zealand reporting ratios at or exceeding usual capacity, indicating significant system-wide pressures on haemodialysis services.** When examined by district, the Northern region had the highest ratio (5.07), followed by Te Ikaroa/Central (4.31). **Half of all Renal services in New Zealand operate above usual capacity**, with Auckland Renal service operating at 150% of usual capacity (ratio 6.0).

> "Due to chronic demand our ability to give patients extra dialysis is limited. We are having to choose who is the sickest and dialyse them rather than treating all patients who would benefit."
>
> *Nephrologist, New Zealand*

There is no consensus definition on what constitutes appropriate haemodialysis capacity. For a satellite unit, a ratio of four people receiving maintenance haemodialysis to one haemodialysis machine might be ideal 'usual' capacity. This assumes there is no unexpected delays or changes to schedules, no technical or maintenance issues and no 'acute' workload. In reality, ratios substantially less than four are likely to be required for optimal delivery of safe care in an efficient manner. This report presents data from one weeks' 'acute' dialysis provision. As such, these data do not reflect the workload of this dialysis type throughout the year, which can vary significantly. However, even this snapshot of 'acute' dialysis provides insights into how the provision of this treatment can significantly increase ratios for units providing this service. The 'usual' ratio described in this

report may be inappropriately high for units providing 'acute' dialysis, as reserve capacity is required in order to flex to meet 'acute' dialysis demand. This underscores the limitations of relying solely on a single ratio to define haemodialysis capacity. Lower ratios may be considered more appropriate to provide safe and adequate haemodialysis depending on the clinical context.

How haemodialysis capacity can increase

'Usual' haemodialysis capacity can only reasonably expand where there is staffing and funding to open additional shifts to provide treatment to more people. Some ratios presented in this report are high due to these measures. This may be suitable in some instances, and some individuals may prefer to receive dialysis outside of usual maintenance haemodialysis scheduling (for example, in the evening or overnight) to preserve their daytime activities. These shifts may be costly for health services however, and may be unsuitable for individuals who are elderly, frail, or medically complex. Opening additional haemodialysis shifts without a commensurate increase in staffing can have significant negative impacts on staff.

"Recently, we introduced an [extra shift] to accommodate increased dialysis patient activity at our hospital. This has also additional strain on our staff, as we have not increased staffing numbers to match the expanded schedule. This has led to increased workloads, reduced recovery time between shifts, and heightened fatigue among team members. It's important to monitor staff well-being and consider long-term solutions for patient care quality and staff sustainability."

Nurse Unit Manager, Western Australia

"Our unit is open 6 days a week, 24 hours a day. Night shift is an extra shift due to capacity issues."

Registered nurse, New South Wales

"Opening evening shifts impacts. The times are late and we have concerns regarding their transport and safety [in the evening]."

Nurse Unit Manager, Western Australia

"Some patients are dialysing only 2x/ week due to capacity issues."

Nursing Manager, Victoria

"Haemodialysis capacity constraints have resulted in delays to commencing haemodialysis and patients receiving less than their prescribed haemodialysis dose."

Nephrologist, Western Sydney

"We are required to reduce individuals' dialysis treatments to accommodate numbers. We also have patients inappropriately managed on [peritoneal dialysis] as a stopgap measure."

Nephrologist, Queensland

Haemodialysis capacity can increase by other means, but many of these are considered inappropriate or even unsafe for patient care. Some units reported the appropriation of home training haemodialysis machines to provide maintenance haemodialysis, although this was not specifically surveyed. Other units reported increasing capacity by providing shorter or less frequent haemodialysis treatments even if not medically appropriate.[8] Neither of these measures are recommended and in many instances, should be actively discouraged. Appropriating home haemodialysis training facilities for maintenance haemodialysis compounds dialysis capacity constraints in the long-term by delaying individuals' transition to a home-based treatment that may reduce ratios in facilities, and in the short-term utilizes resources that cannot then be used for people who require haemodialysis treatment in a dialysis centre. Shortening or providing less frequent haemodialysis than is clinically indicated directly contravenes the ANZSN Position Statement on Haemodialysis Capacity, as it risks delivering inadequate treatment and adverse outcomes.

Factors limiting growth in haemodialysis capacity

For someone travelling hundreds of kilometres from home to receive haemodialysis, the reported 'usual' ratios in their home region may seem difficult to reconcile with their lived experience of local access to care. Health services may similarly question the apparently low ratios observed in some areas.

There are several factors that should be considered when interpreting the results presented in this report.

Although there exists a theoretical 'capacity' for regions with low ratios of people receiving haemodialysis to haemodialysis machines to treat more people in their unit, individuals must reside in reasonable proximity for these units to be a practical location in which to receive treatment. Where distance, transport limitations, personal or cultural responsibilities make regular travel unsuitable, this apparent capacity does not translate into meaningful access to care. **Accurate predictive modelling and careful planning is required to align investment (and in Australia, National Weight Activity Unit allocation) in haemodialysis infrastructure and staffing with areas of current and future demand.**

"The closes units are more than 40 minutes away and there is no public transport that aligns with dialysis times."
Clinical Nurse Consultant, Victoria

"Transport is an issue for all patients, especially those with limited access to subsidised services such as community transport. Patients that can drive themselves are always pushed to afternoon [treatments] or weekend shifts to allow others [who cannot drive] to access services."
Clinical Nurse Consultant, New South Wales

Almost half of Australia, including two-thirds of Victoria and more than half of New South Wales and the Northern Territory have non-operational haemodialysis machines due to funding and staffing shortfalls. This potential capacity cannot be utilised without the workforce and financial resources to increase service provision. The latter can be particularly challenging in rural and remote areas where finding and retaining adequately trained dialysis staff, rather than the actual haemodialysis infrastructure, is often a limiting factor for service expansion. Further work will investigate the factors influencing workforce shortages.

"Due to the shortage of nurses, the unit runs in full capacity in the morning, and then the staff do overtime [shifts]."
Nurse Unit Manager, Northern Territory

"Staffing can be challenging due to being located in a rural area."
Clinical Nurse Specialist, Victoria

All hospital and satellite haemodialysis units in New Zealand and almost 90% in Australia are publicly funded. Although some people receive haemodialysis treatments and Nephrology care solely through the private healthcare system in Australia, due to haemodialysis capacity constraints in the public health system, individuals who otherwise receive their care in the public health system are increasingly receiving haemodialysis in private haemodialysis units. This is occurring in every region in Australia except the ACT and Tasmania. **In some states and territories, all private dialysis units provide haemodialysis to people otherwise cared for in the public health system, such is the demand in these regions.** There are many different funding agreements under which these arrangements have developed, with many unique to their state/ territory/ regional context.

These public-private arrangements are not reflected as increased haemodialysis to machine ratios and may indeed lower overall ratios where private companies build and staff new haemodialysis centres. This reliance on private providers however indicates that the demand for haemodialysis services within the public health system substantially and increasingly exceeds the capacity of publicly operated units.

Haemodialysis capacity constraints: Impacts on treatments and services

This report demonstrated the significant geographic disparities in the ratios of individuals receiving haemodialysis to haemodialysis machines across both countries, between capital cities and regional areas. In Australia, high ratios are often co-located with areas of high rate of incident haemodialysis growth.[5] These 'hot spot' areas where dialysis demand has risen in excess of population growth unequally stresses regions' provision of Nephrology care and results in inequities in access to treatment.

Due to capacity constraints, people may commence haemodialysis (either as the initial commencement of KRT or as a transition to haemodialysis from peritoneal dialysis or with a failing kidney transplant) later than is medically appropriate. Others may commence haemodialysis at geographically distant centres and be placed on a waitlist to eventually access treatment closer to home. In some cases, there may no option for transfer closer to home where no closer haemodialysis units. For example, in New Zealand's South Island there are only three haemodialysis units and patients may need to travel long distances, or relocate, to access haemodialysis care on an ongoing basis. Others may be commenced on a 'floating' schedule, receiving treatment at different centres on different days of their haemodialysis schedule. The negative impacts of these models of care are substantial. **Clinical care can become fragmented across multiple health services.** Due to the duration and frequency of haemodialysis treatments, **the financial, social and cultural impacts of regular long-distance travel or unpredictable 'floating' schedules for haemodialysis are considerable.** These burdens may additionally restrict opportunities for paid employment, compounding disadvantage for people living with complex chronic illnesses. Despite these significant impacts, it is important to note that waitlists and 'floating' dialysis schedules are not reflected as high ratios. Ratios may be 'normal' because the haemodialysis units that individuals are waiting to access cannot increase capacity. Significant concern regarding the impacts of these arrangements featured prominently in comments and feedback from survey respondents. Further work will be undertaken to more comprehensively describe and quantify waitlists and 'floating' dialysis schedules and the harms associated with these responses to capacity constraints.

"There are no current unit vacancies. Patients are having to move around to several satellite units with longer travel time and are struggling financially."

Nurse Unit Manager, Victoria

"Almost 20% of our patients travel to our unit from [X] for their dialysis as [X] does not have the dialysis capacity to meet the needs of people in their area."

Nurse Unit Manager (Location withheld)

"Patients who dialyse here currently still have to present to hospital for one dialysis session/week as we have not been approved to open an extra day. One of the patients has to stay in a motel the night before to be able to have his dialysis at the hospital."

Nurse Unit Manager, Queensland

"[Patients have] fragmented care with changes of [haemodialysis location], taking them away from face-to-face care."

Nurse Unit Manager, Victoria

"The lack of haemodialysis machine numbers has unmeasured consequences that affect quality of life. Patients cannot travel [to our region] to visit a dying relative or meet a newborn child [because they cannot access haemodialysis due to capacity constraints]. Shifts are cut short to accommodate more shifts. These are not consequences that are adequately represented numerically."

Nephrologist, Sydney

"For many remote patients, starting dialysis becomes a one-way journey – not just to Alice Springs, but away from home, family and Country."

Nephrologist, Central Australia

"Patients are petitioning their [Members of Parliament] that service be expanded."

Clinical Nurse Consultant, New South Wales

Conclusion

Haemodialysis services in Australia and New Zealand face significant capacity constraints. Many jurisdictions operate at, or exceed, usual capacity of haemodialysis provision per haemodialysis machine. There are flow-on inequities in access to care and unequal burdens on health services. Although these ratios alone cannot fully represent the challenges facing haemodialysis services in Australia and New Zealand, these findings nevertheless indicate inadequacies of funding and infrastructure development commensurate with individual and health service needs. Further work is required to quantify these constraints and their impacts on the lives and outcomes of people living with kidney failure. With future dialysis demand projected to rise, there is urgent need for advocacy and planning to address these critical issues.

In addition to the information presented in this report, maps and more detailed data are available on request. Please submit enquiries to: anzdata@anzdata.org.au.

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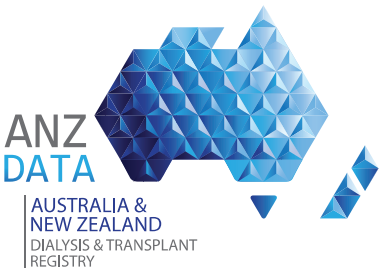

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