ANNUAL REPORT 2023

Department of Renal Medicine
St George & Sutherland Hospitals

Website: stgrenal.org.au

NSW GOVERNMENT Health
South Eastern Sydney
Local Health District

1. CONTENTS

2. INTRODUCTION

It is with immense pride that I present the 2023 Annual Report of the Department of Renal Medicine, St George & Sutherland Hospitals. I wish to thank everyone in our department for their contributions to this report and to the ongoing care of our patients.

The following pages highlight the key findings from our report. In brief, we are meeting most of our targets and exceed several, including our very low peritoneal dialysis and haemodialysis infection rates.

We have demonstrated good patient survival for all dialysis patients. The commissioning of our new satellite dialysis unit in Kogarah, managed by Fresenius Medical Care, has been a success and is now a model for public-private partnerships. Our transplant patient outcomes have improved and are above Australian comparators. This coincides with the appointment of Dr Karen Keung to the SESLHD as Transplant Nephrologist to both POWH and STGH. Our department is immensely grateful to the Renal team at POWH with whom we manage these patients collaboratively. We have been able to control or improve symptoms well for patients on dialysis and non-dialysis pathways with our Renal Supportive Care service.

Preparation for dialysis through our pre-dialysis education program is increasingly successful and necessary for patient-centred goals in the management of ESKD. The vascular access program has achieved primary access rates that remain higher rate than the national average. These data are discussed regularly within our department to ensure we maintain the highest standards of care. The M&M process is formalised as a regular quality improvement activity.

It should be noted that many of our teams and programs are headed by inspired, highly trained, dedicated, and caring Clinical Nurse Consultants and other Senior Nurses, to whom I am very grateful.

I welcome any feedback.

A/Prof George Mangos

Head of Department, Renal Medicine

3. ESKD ACTIVITY OVERVIEW –ANZDATA

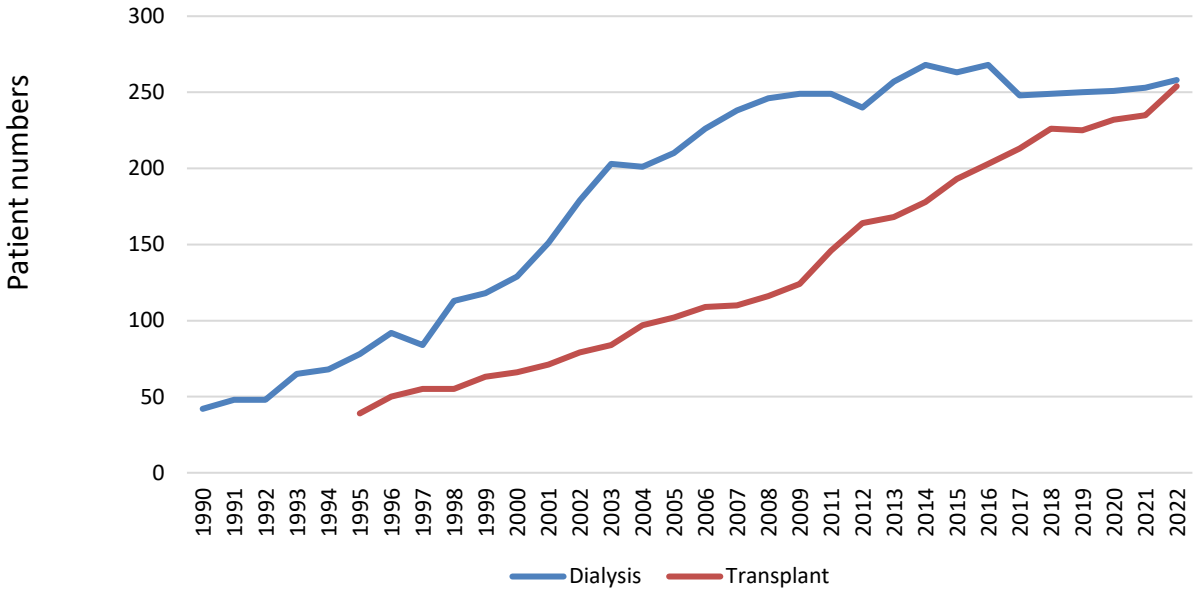


Figure 1. All Dialysis & transplant patients 1990-2022 (ANZDATA 31/12/2022).

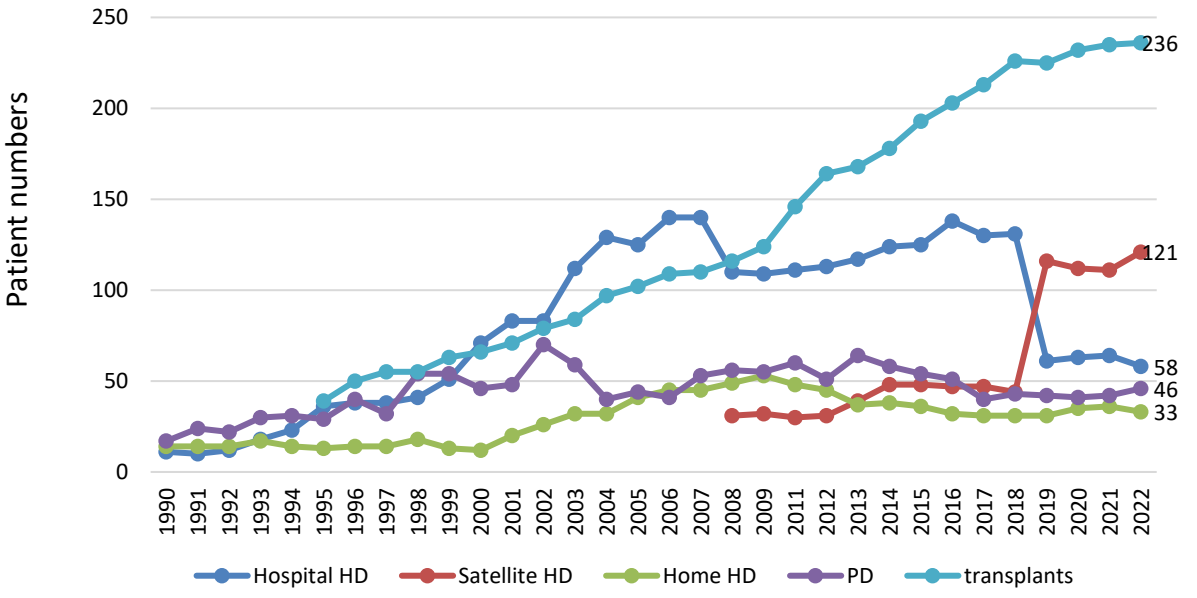


Figure 2. Dialysis & transplant patients 1990-2022 (ANZDATA 31/12/2022) NB. Sutherland Satellite unit opened in 2008, St George Satellite unit opened 2019.

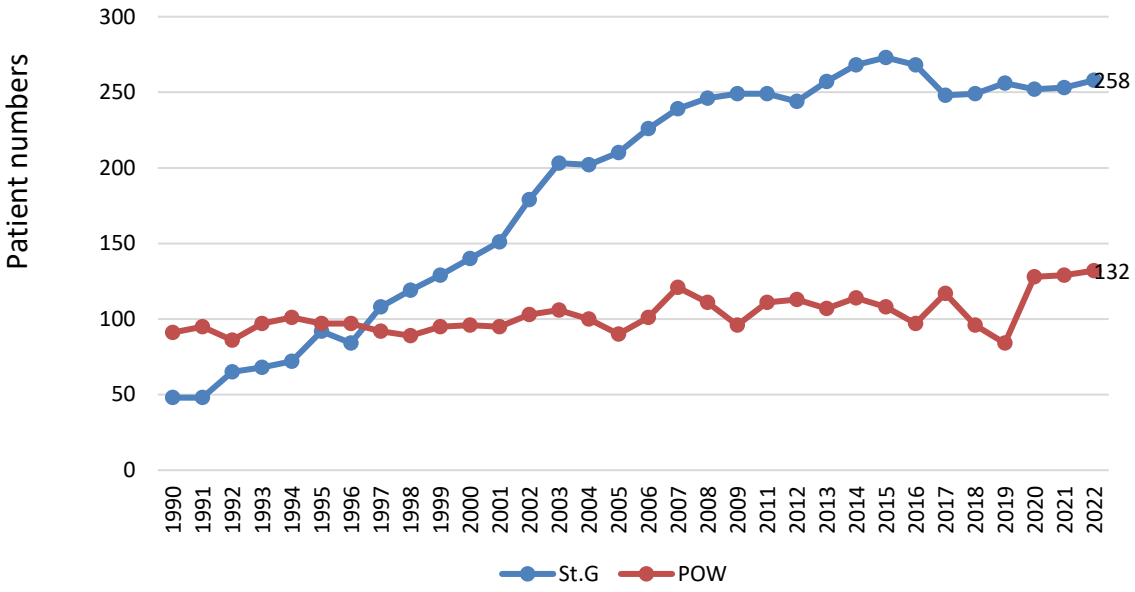


Figure 3. Dialysis patients South East Sydney LHD (ANZDATA 31/12/2022).

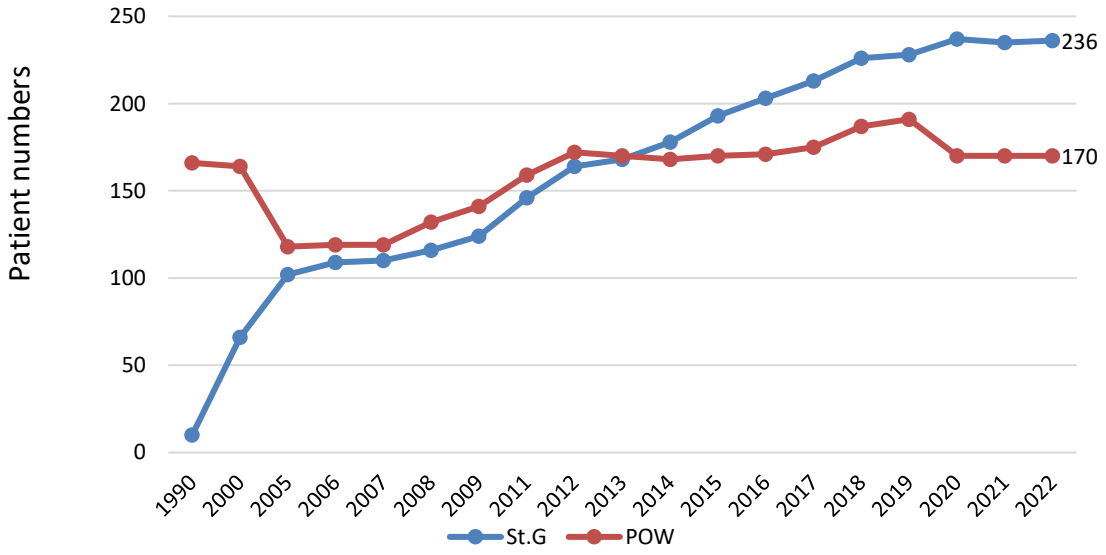


Figure 4. Functioning Transplants South East Sydney LHD (ANZDATA 31/12/2022).

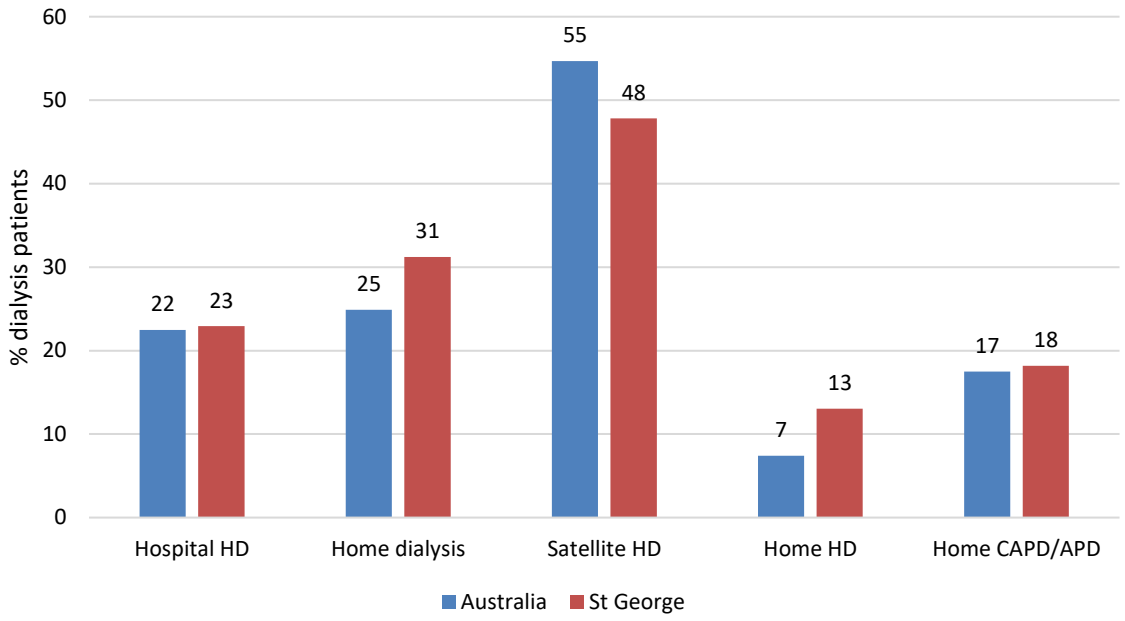


Figure 5. Mode of dialysis Australia & St George 2020 (ANZDATA 31/12/2022).

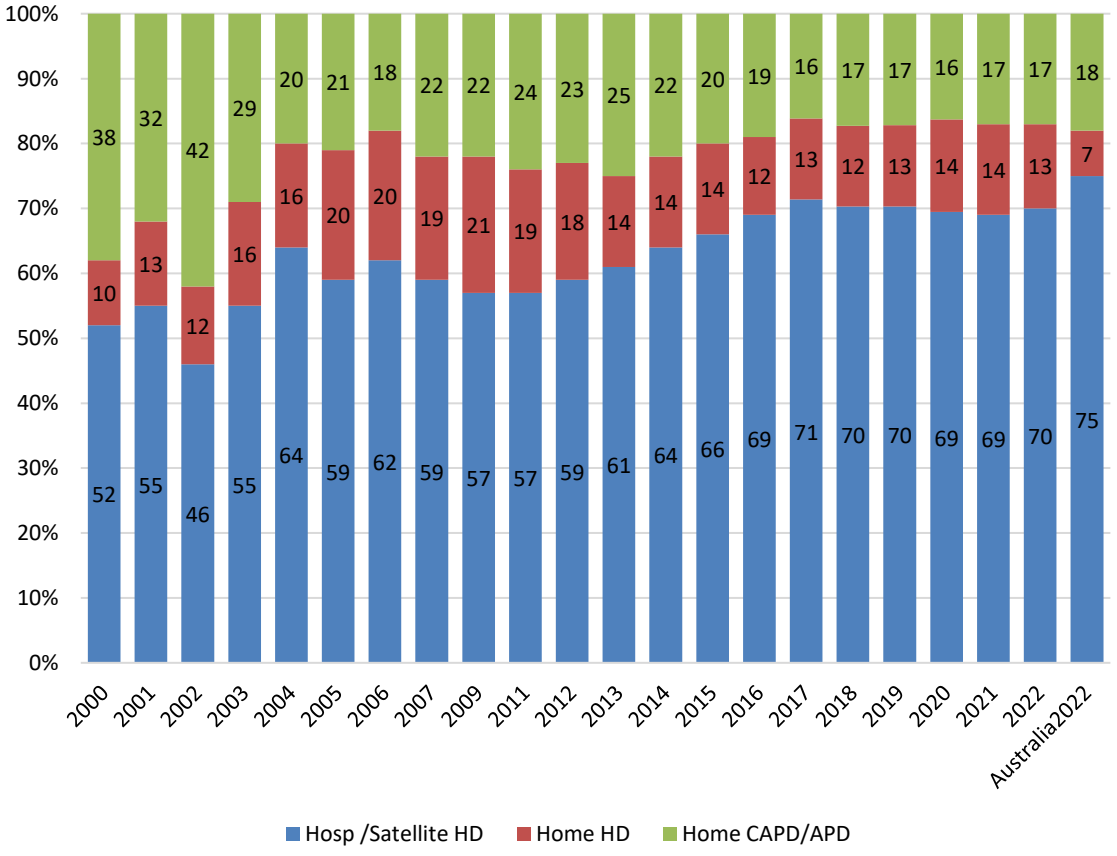
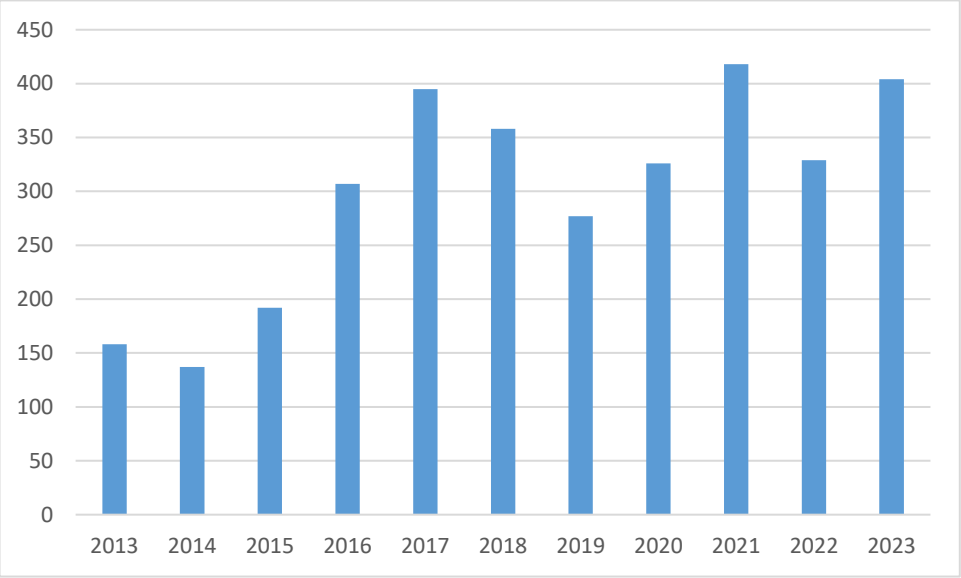


Figure 6. Mode of dialysis Australia & St George 2022 (ANZDATA 31/12/2022).

4. CHRONIC KIDNEY DISEASE

Kylie Turner, Saiyini Pirabhahar, A/Prof Ivor Katz

In 2023, a total of 404 new referrals were received to the renal outpatient department which was 23% increase than from the previous year.



New Patients seen in Renal Outpatient Clinics 2013-2023

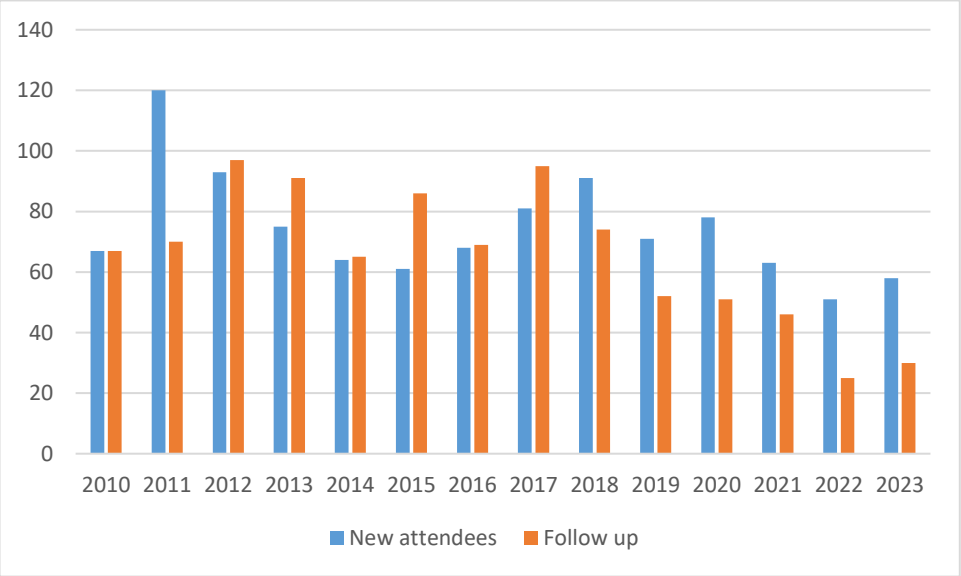
5. ADVANCED KIDNEY DISEASE AND PRE-DIALYSIS EDUCATION CLINIC

Kylie Turner, A/Prof Ivor Katz

Activity summary

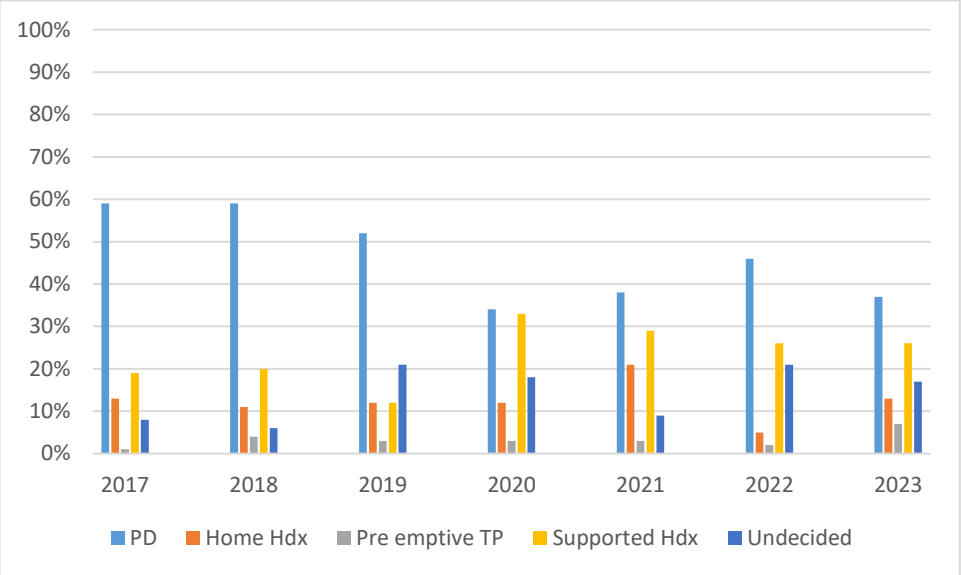
The Renal Department guideline for referral to the multidisciplinary Kidney Disease Education Clinic is eGFR ≤ 15 or dialysis predicted in the following year. As of December 31st, 2023, there were ***100 patients active within the Kidney Disease Education Clinic with a plan for renal replacement therapy***. This was a 16% increase from the previous year.

Since April 2002 there have been 1389 people who have attended the clinic. In 2023 fifty-eight new patients attended the Kidney Disease Education Clinic compared to 51 new attendees in 2022. There were 30 follow up appointments compared to 25 follow up appointments in 2022.



New attendees and follow up numbers for 2010-2023.

The age range of new patients seen in 2023 was 20-81 years. The average age was 61 years. There were 54 (54% Patients with eGFR <15 active in the Kidney Disease Education Clinic at the end of 2023, with 43 patients at the end of 2022. Below are the percentages of those patients and their chosen treatment pathways.



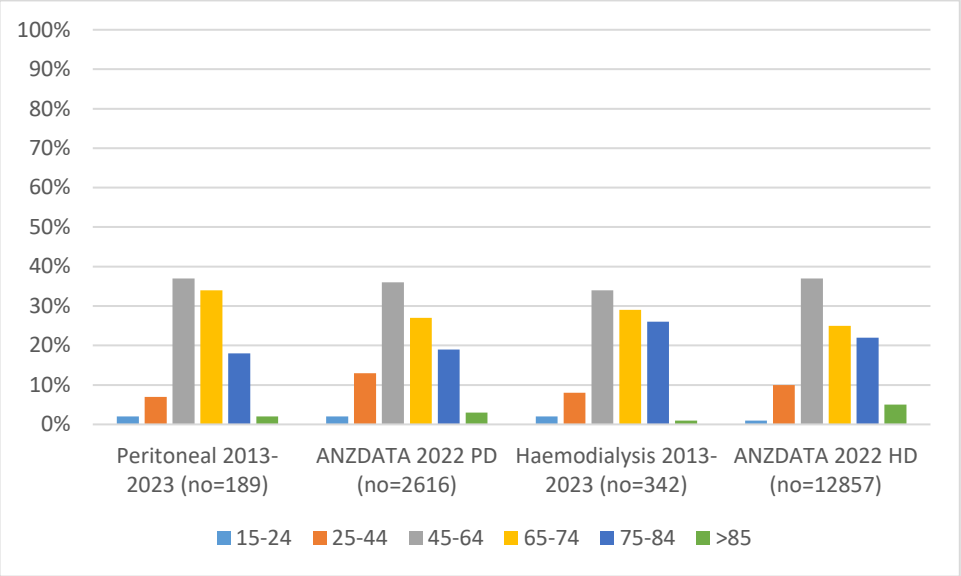
Percent of patients with eGFR <15 active in Pre-Dialysis Education Clinic and chosen treatment pathways.

6. ACCEPTANCE ONTO DIALYSIS

Kylie Turner, A/Prof Ivor Katz

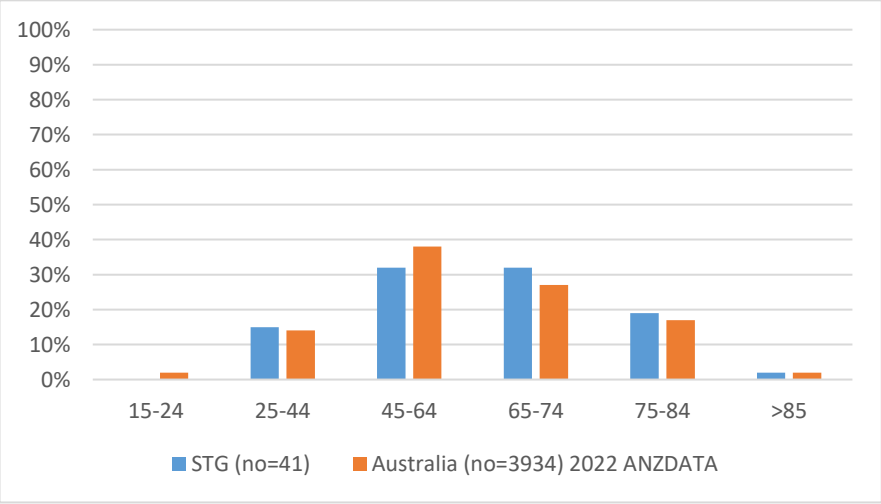
Out of 41 new patients who started dialysis in 2023, 12 (29%) patients commenced peritoneal dialysis, 29 (71%) started haemodialysis. Patients were analysed according to their first mode of dialysis.

- There were 4 (10%) late referrals, and this was below the National average 2022 (15%).
- Mean age at commencement in 2023 was 63 years for peritoneal dialysis and 65 years for haemodialysis. The average age of patients starting haemodialysis and peritoneal dialysis was the same as the previous year. The average age of patients national commencing HD is 61yrs and for PD 57yrs (ANZDATA 2022).



Age Groups of New Patients 2013-2023 compared to ANZDATA 2022.

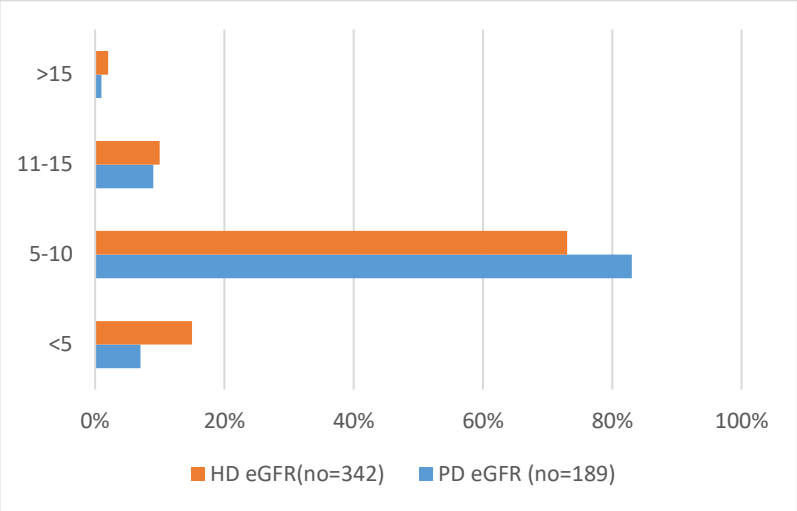
We start more patients nationally on haemodialysis in the 75-84 age groups but are lower than national average with starting Haemodialysis in the 85+ age group.



New Patients St George 2023 compared to ANZDATA 2022.

Glomerular filtration rate (GFR)

An eGFR is obtained from the serum biochemistry results taken immediately prior to commencing dialysis. The data are consistent with general recommendations following the IDEAL study, with the vast majority of our patients commencing at an eGFR below 10ml/min.



PD and Haemodialysis eGFR at commencement 2013-2023 (% in each range).

Baseline characteristics of new patients- Body mass index.

St George Hospital new patients	#Body Mass Index (kg/m)	PD 2013 – 2023 (%)	HD 2013 – 2023 (%)
		N=189	N=342
	<18.5	1%	2%
	18.5-24.9	33%	23%
	25-29.9	30%	27%
	30-34.9	26%	28%
	≥35	10%	20%

BMI for St George Hospital new patients starting 2013-2023
*Aaccording to ANZDATA, BMI <18.5 indicates underweight, 18.5-24.9 normal, 25-29.9 overweight, 30-34.9 is obese and ≥35 morbidly obese. *Excludes patients who had haemodialysis prior to peritoneal dialysis.*

		St George HD 2013-2023 (n=342*)	ANZDATA HD 2022 (n=15249)	St George PD 2013-2023 (n=189*)	ANZDATA PD 2022 (n=3425)
Average Age	(displayed as age in years)	65	61	63	57
Gender	Male	65%	60%	70%	61%
	Female	35%	40%	30%	39%
Late Referral (ANZDATA incidence HD=25390 (2013-2022) PD=10357 (2013-2022)	(< 3 months before first treatment)	15%	20%	10%	9%
Co -morbidities	Smoking (Current and former)	42%	46%	46%	42%
	Chronic Lung Disease (yes and suspected)	11%	19%	17%	13%
	Cerebrovascular Disease	6%	15%	11%	10%
	Coronary Artery Disease	36%	44%	43%	30%
	Peripheral Vascular Disease	11%	25%	15%	18%
	Diabetes	51%	56%	51%	45%

Baseline characteristics compared with ANZDATA- Excludes patients who had previous mode of dialysis.

KPIs for Advanced Kidney Disease and Kidney Disease Education Clinic and acceptance onto dialysis

The four benchmarks for pre-dialysis have been established on historical Renal Department data.

1. **Timely Referral to Pre-Dialysis Education Clinic – 100% of patients referred with eGFR ≤20 or KFRE ≥20% at 2years and 3mths prior to commencing RRT**

   In 2023, there were 69 patients referred for kidney disease clinic education, this was an increase from 66 in 2022. Eighty seven percent of patients were referred according to the department referral guidelines. The 13% of patients referred not meeting the referral criteria were thought to benefit from early education.
   In 2023, 41 patients commenced kidney replacement therapy (KRT). Of these new patients, 93% received education if not prior to starting but within one month after commencing.

2. **70% of patients start planned modality within 18mths of commencing RRT**

   For patients commencing dialysis in 2023, 95% started their planned dialysis choice compared with 93% in 2022. One patient was on a transplant pathway and unfortunately their renal function deteriorated rapidly, and their donor was not suitable. One patient could not decide on a treatment pathway and ended up with an acute deterioration and started in ICU.

3. **60% of patients starting KRT have vaccinated immunity.**

   This benchmark means 60% of patients starting KRT had 'vaccinated immunity' defined as 'anti-HBs ≥10 International units/L'. Those with natural immunity and chronic infection were excluded in this analysis. 39% of patients who commenced dialysis in 2023 had vaccinated immunity. This is a increase from the 36% in 2022.
   In 2023 every patient seen in the Kidney Disease Education clinic were verbally screened for HepB vaccination. The nephrologists were notified by the CKD Clinical Nurse Consultant of the patient screening via the kidney disease education clinic letter.
   Patients where a serology result was not current or available, were provided with a pathology form referred to a lab. If their Hep B levels were <10 IU a letter was faxed to the GP requesting initiation of Hep B immunization. We will likely need to review and change this practice to achieve our benchmark. Records of prior vaccination history to ascertain if a patient is a non-responder has proven to be difficult.

4. **100% of patients commencing dialysis with a signed consent**

   In 2023, 98% of patients consented within 1 month of the patient commencing dialysis. This was an increase from 2022 where there were 93%. By the end of 2023 of the new patients commencing dialysis there were 100% of patients with a signed consent which was an increase from 93% in 2022. Patients attending the Kidney Disease Education Clinic (KDEC) in 2023 received a consent for dialysis form and information handout about dialysis and non-dialysis treatments. At their next nephrologist appointment, patients were encouraged to present this documentation for further discussion. We are also attempting to have the consent completed when patients are at eGFR <10% and have a known pathway. Of the 17 patients at the end of 2023 with eGFR </=10%, 2 were excluded as hadn't received education or were undecided 60% had a valid consent for dialysis form.

Summary and Recommendations

The Kidney Disease Education Clinic (KDEC) continues to work extremely well, capturing most patients prior to needing to commence renal replacement therapy, providing good education and allowing the department to plan its resources accordingly.

All patients continue to be seen prior to commencing RRT or within one month of commencing (where appropriate).

In 2024 we will be focusing on:

- Ensuring patients have a signed consent prior to commencing dialysis
- Ongoing review of the current practice for Hep B screening and vaccination of pre dialysis patients in the hope of achieving our benchmark.
- Encouraging home therapy first attitude where possible to increase our home therapy numbers.

7. CKD VIRTUAL MEDICAL CLINIC (VMC)

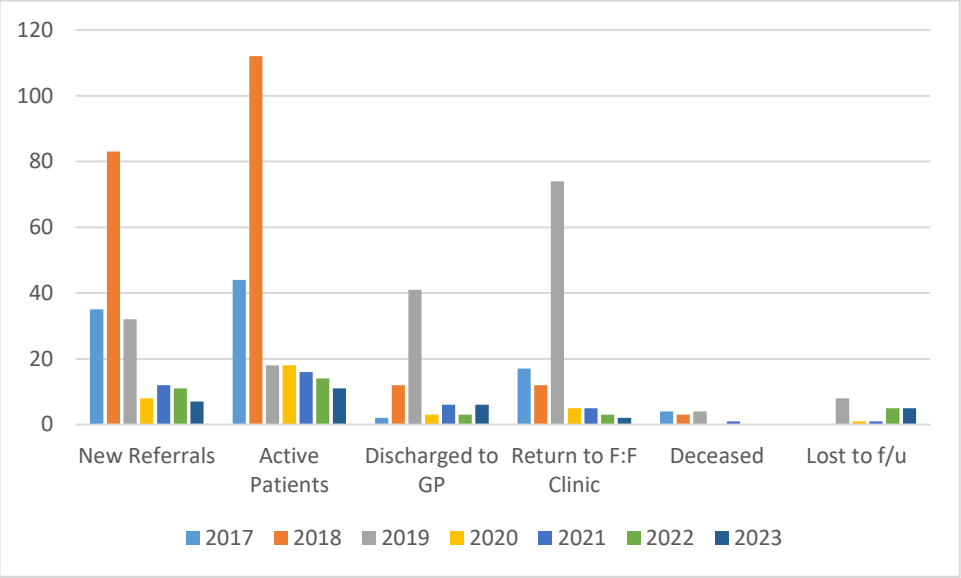
Kylie Turner, A/Prof Ivor Katz

The St George Hospital Renal Department initiated a virtual medical consulting (VMC) service in 2013, and due to its positive outcomes continues to remain an active component of our service. Aspects which made VMC attractive included:

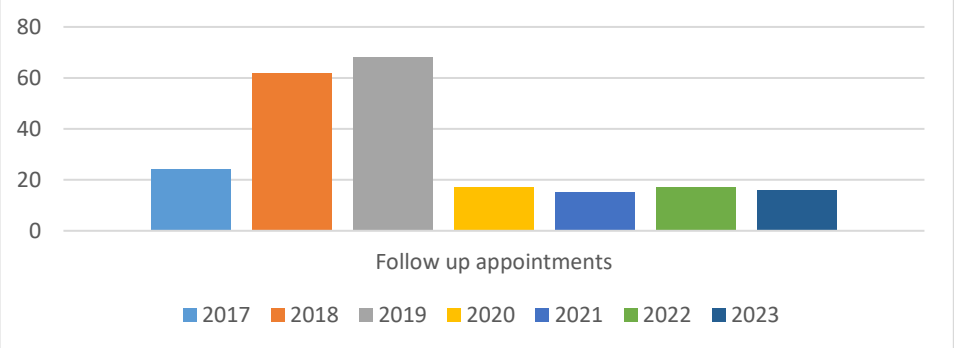
- High level of satisfaction within the GP community
- Saved the patient time travelling to the hospital, cost, and difficulty of finding parking.
- Patients were happy with 'virtual' model of care.
- It improved the speed to a specialist review.

As the outcomes were positive, and at very least no different to 'standard' face to face clinic care, it was adopted as a model of care in our department.

Patients were referred to this form of consultation were those deemed by their nephrologist to be stable CKD patients whose blood pressure was controlled and simply require more 'active' tracking.



Virtual Medical Clinic 2017-2023.



Follow-up appointments 2017-2023

Active VMC patients as at 31st Dec 2023

	Active patients 2019 (no=16)	Active patients 2020 (no=17)	Active patients 2021 (no=16)	Active patients 2022 (n=14)	Active patients 2023 (n=11)
Age (Average)	74yrs	77yrs	72yrs	74yrs	72yrs
Female	31%	50%	56%	50%	45%
Male	69%	50%	44%	50%	55%
eGFR (average)	45mL/min/1.73m²	45mL/min/1.73m²	52mL/min/1.73m²	48 mL/min/1.73m²	56 mL/min/1.73m²
ACR (average)	8.4mg/mmol	14.7mg/mmol	16.04mg/mmol	14.56 mg/mmol	21.27 mg/mmol
KFRE (Average)	0.41% 2yr / 1.54% 5yr	0.38% 2yr / 1.46% 5yr	0.24% 2yr / 0.98% 5yr	0.20% 2yr / 0.77% 5yr	0.21% 2yr / 0.80% 5yr

KPIs for Virtual Medical Clinic (VMC)

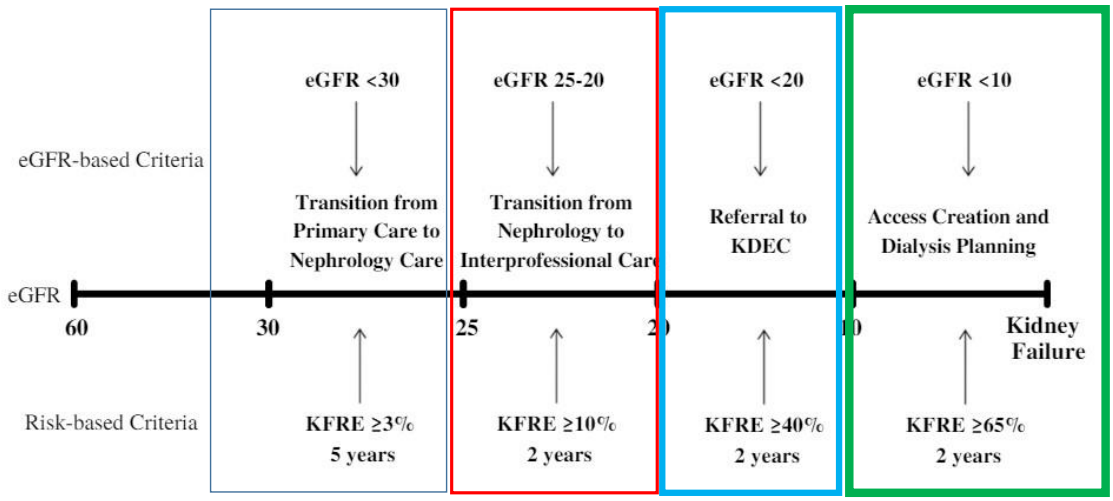
Two benchmarks for the virtual medical clinic have been established.

1. **Patients' referral in line with clinic criteria 5yr risk <3%**

   In 2023 out of the 7 patients who were referred to the VMC 100% met the clinic criteria of a KFRE 5yr risk of less than 3% this is the same as 2022. Out of those 7 patients 86% were referred with an ACR result.

2. **Patients meeting criteria for decision making as per guidelines outlined in the Kidney Failure Risk Equation Score**

   a. Renal Department data evaluating KFRE versus eGFR for clinical decision-making timeline. (Reference; Li et al. Renal Department data evaluating KFRE versus eGFR for clinical decision-making timeline. Journal Internal Medicine; In Press.. 2024



Summary and Recommendations

- Yearly review of tracking spreadsheet to ensure active patients currently meet the criteria to remain active in the virtual medical clinic.
- Continue to ensure patients are having ACR collected and provided at the time of referral to the VMC.
- Increase the uptake of patients being referred to the program by promoting this service further in the SGH renal department.
- Currently we are reviewing the impact of the KFRE score in assisting us with predicting decline in renal function and when transition points in service are needed e.g., pre-dialysis care and vascular access.

8. RENAL VASCULAR ACCESS

Yanella Martinez-Smith, Jayson Catiwa

BACKGROUND AND PERFORMANCE INDICATORS

Native arteriovenous (AV) fistula remains the preferred vascular access for haemodialysis due to prolonged patency, minimum risk of infection, and maintenance.

The Renal Vascular Access Clinical Nurse Consultants aim to monitor all fistulae from creation until the commencement of dialysis to ensure maturity, perform access surveillance before and after dialysis has commenced, and ensure a low level of access-related complications are maintained.

DATA BENCHMARK

Data is benchmarked against ANZDATA 46th Annual Report 2023, KDOQI 2006, KDOQI 2019, and KHA-CARI 2013 guidelines.

The key performance measures for renal vascular access are:

- > 39% of patients commencing haemodialysis have functioning access (ANZDATA Registry 2023).
- > 80% of prevalent patients dialysing through a native fistula (ANZDATA Registry 2023).
- < 1.5 episodes/1000 catheter days of tunnelled or non-tunnelled catheter infection rate (KDOQI 2006).

EXECUTIVE SUMMARY

Almost all vascular access performance measures are within the national and international benchmark; primary AVF & AVG rates are above the national average. Haemodialysis access-related infectious complications remain below the benchmark, and access survival remains excellent.

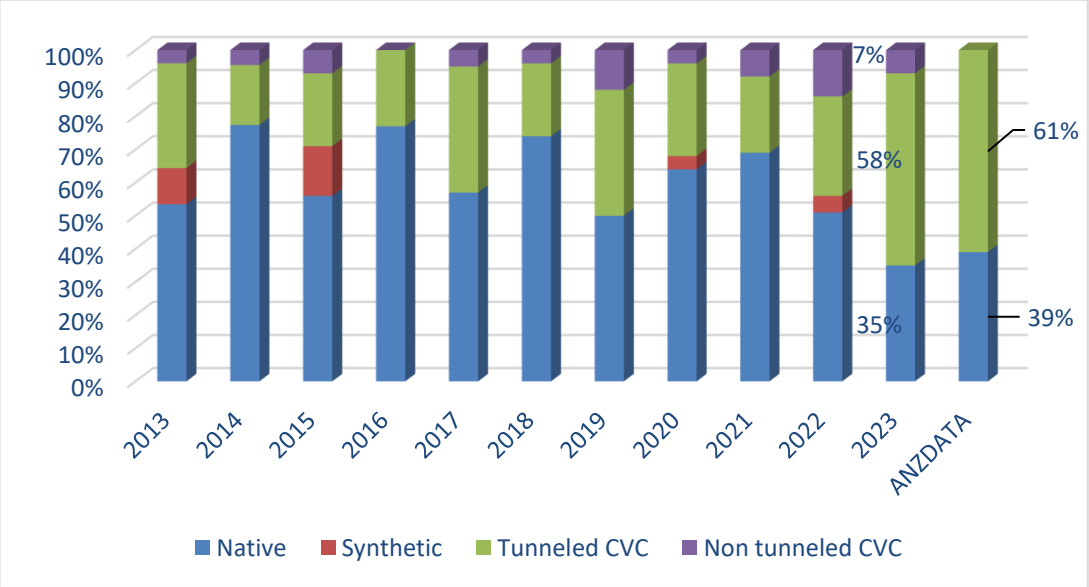
Table 1. Incident Haemodialysis Patients in 2023

Incident HD patients, *N* = 43	
AV access created before initial HD (n, %))	20, 47
Mature at first HD	15, 35
Additional interventions before use	5, 12
CVC inserted for initial HD (n, %)	28, 65
Transfer from PD	9, 21
Acute presentation	3, 7
Undecided	3, 7
No access prepared	3, 7
Rapid eGFR decline	2, 5
Transfer from another service	2, 5
Planned transplant	1, 2
Late referral	6, 14

Comments

- There were 43 incident haemodialysis (HD) patients in 2023 at St George Hospital (SGH) Renal Department. Of those 43, 28 (65%) patients commenced HD with a central venous catheter (CVC).
- 15/20 (75%) arteriovenous (AV) access created in 2023 reached maturity at the first HD.
- Late referrals at SGH Renal Department have increased to 14% (n = 6) in 2023 from 8% in 2022. This remains below the 16% of late referrals nationwide according to the ANZDATA Registry (2023). Excluding late referrals, 15/37 (41%) patients commenced HD with a mature access.

Incident Vascular Access



Comment

- The frequency of incident AV fistula at entry of patients into HD at SGH Renal Department was slightly below the national benchmark of 39% in 2023, while the frequency of CVC (both tunneled and non-tunneled) as initial access (65%) was contrastingly higher than the benchmark of 61% across Australia.

PREVALENT HAEMODIALYSIS PATIENTS

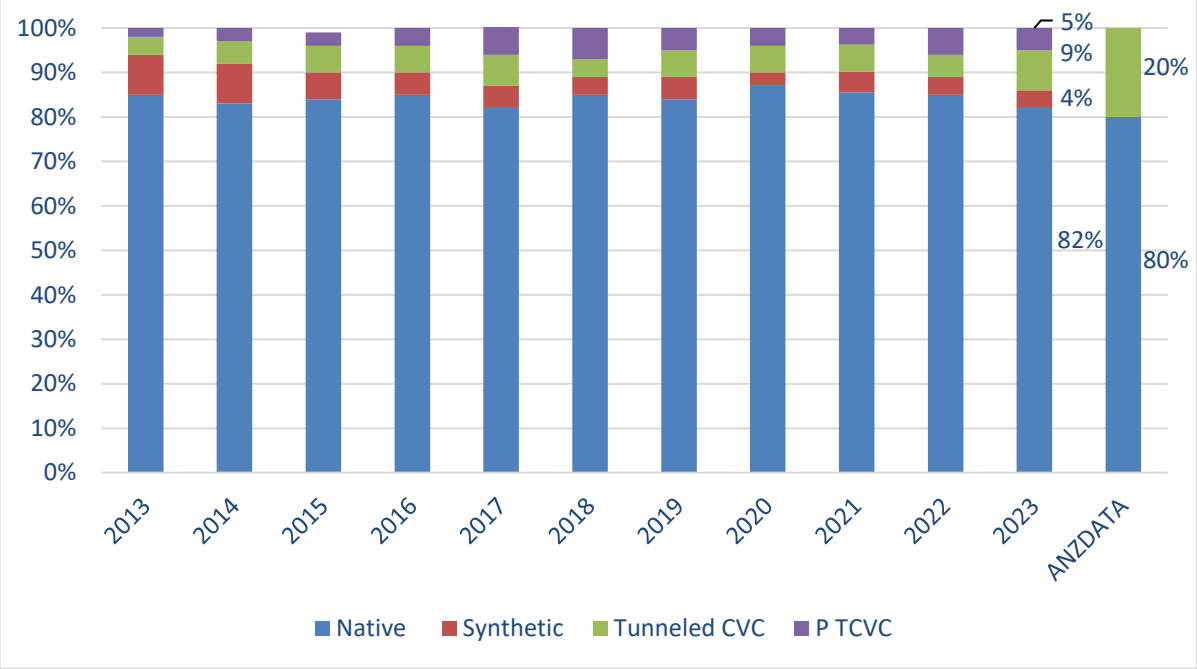


Figure 1. Prevalent vascular access 2013 to 2023.

Comments

- There were 208 prevalent patients on haemodialysis at SGH Department as of 31st December 2023.
- 86% (n = 179) patients on maintenance haemodialysis were using AV fistula or graft, which exceeds the 2023 ANZDATA benchmark of 80%.
- 14% (n = 29) of patients at SGH Renal Department were using a tunneled catheter for maintenance haemodialysis, which exceeds the 2006 KDOQI benchmark of <10% for catheter use in haemodialysis patients. Of the 29,10 patients are using catheters as the permanent HD access due to limited arteriovenous access option.

AV ACCESS COMPLICATIONS AND SURVIVAL

Infectious Complications

- There was no episode of bloodstream infection for both AV fistula and grafts in SGH Renal Department. This data does not include home haemodialysis patients.

Table 2. Arteriovenous Access Bloodstream Infection

Year	Fistula		Graft	
	Episode	Rate BSI/100 patient-months	Episode	Rate BSI/100 patient-months
2023	0	0	0	0
2022	0	0	0	0
2021	0	0	0	0
2020	1	0.7	0	0
2019	2	0.69	0	0
2018	0	0	0	0
2017	3	0.27	0	0
2016	1	0.08	0	0
2015	2	0.15	0	0
2014	0	0	0	0
2013	1	0.15	2	2.3
2012	1	0.07	1	5.9
2011	2	0.53	4	4.5

Thrombotic Complications

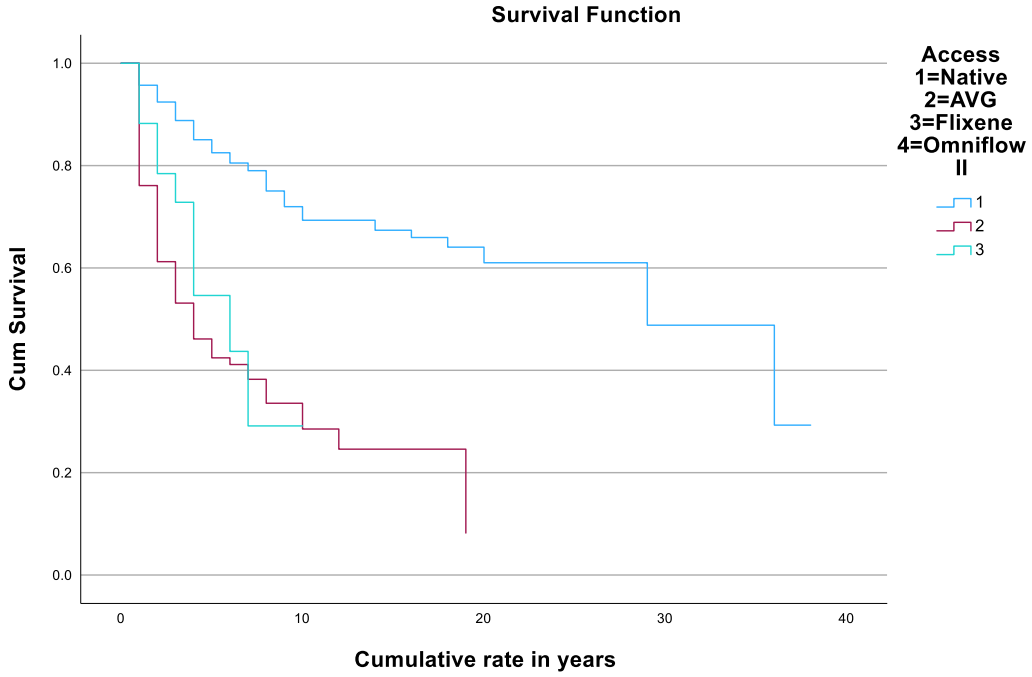
- The average thrombosis events across both arteriovenous access types are 0.92 episodes per month due to delayed vascular intervention, patient's haemodynamic instability, lost follow-up with a vascular surgeon, patient's nonadherence to vascular clinic, and post-procedural complications.
- Early detection of the dysfunctional access through physical assessment and transonic surveillance has resulted in timely intervention.

Table 3. Arteriovenous Access Thrombosis Events

Year	Native		Grafts		Monthly average
	Episode	*N* patients	Episode	*N* patients	
2023	9	7	2	2	0.92
2022	8	8	3	3	0.92
2021	11	11	2	1	1.1
2020	9	9	3	3	1.0
2019	10	10	5	3	1.25
2018	7	7	2	1	0.75
2017	9	9	6	5	1.25
2016	15	14	3	3	1.5
2015	20	17	16	5	2.5
2014	14	13	13	8	2.3
2013	8	8	12	7	1.7

Access Survival

- KDOQI (2006) recommends AVF patency > 3.0 years and AVG patency > 2.0 years.
- Cumulative assisted patency is defined as the number of accesses that remain patent regardless of the number of interventions during a specific period.
- Data includes current and deceased patients since 2004 and excludes primary failure. The endpoint was access lost. Data were censored for deaths, current functioning access, transplantation, or transfer to another unit.
- Cumulative proportion of arteriovenous access surviving at the end of the following period: AVF at 5 years = 81%, at 10 years = 69%; AVG at 1 year = 61%, 2 years = 53%, 3 years = 46%; Flixene grafts at 1 year = 78%, 3 years = 55%.
- Access survival continues to be relatively similar to the previous year's results.

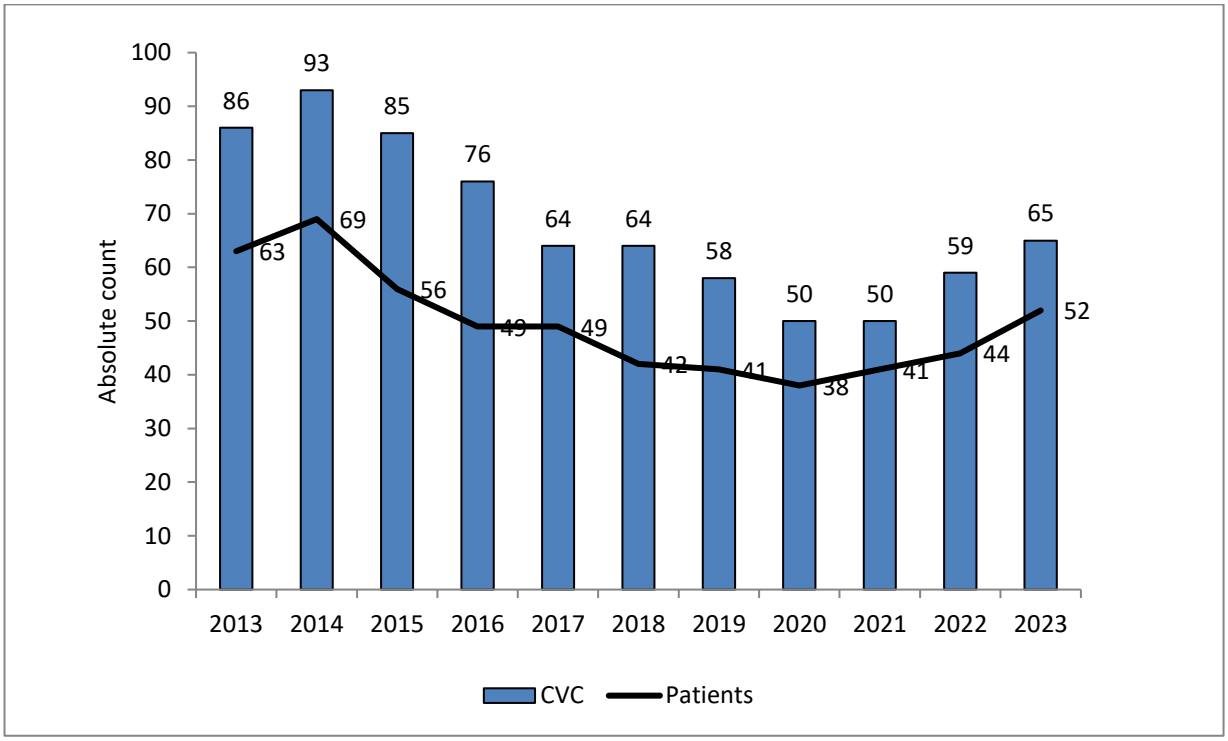


Survival of the Arteriovenous Access

CENTRAL VENOUS CATHETERS (CVC)

CVC Activity Level

- Tunnelled cuffed catheters provide temporary access for acute and chronic haemodialysis patients, including those with a primary AVF still to mature (KDOQI 2006). In addition, where the creation of arteriovenous access is not feasible, HD can commence with the use of CVC (Polkinghorne, Chin et al. 2013).



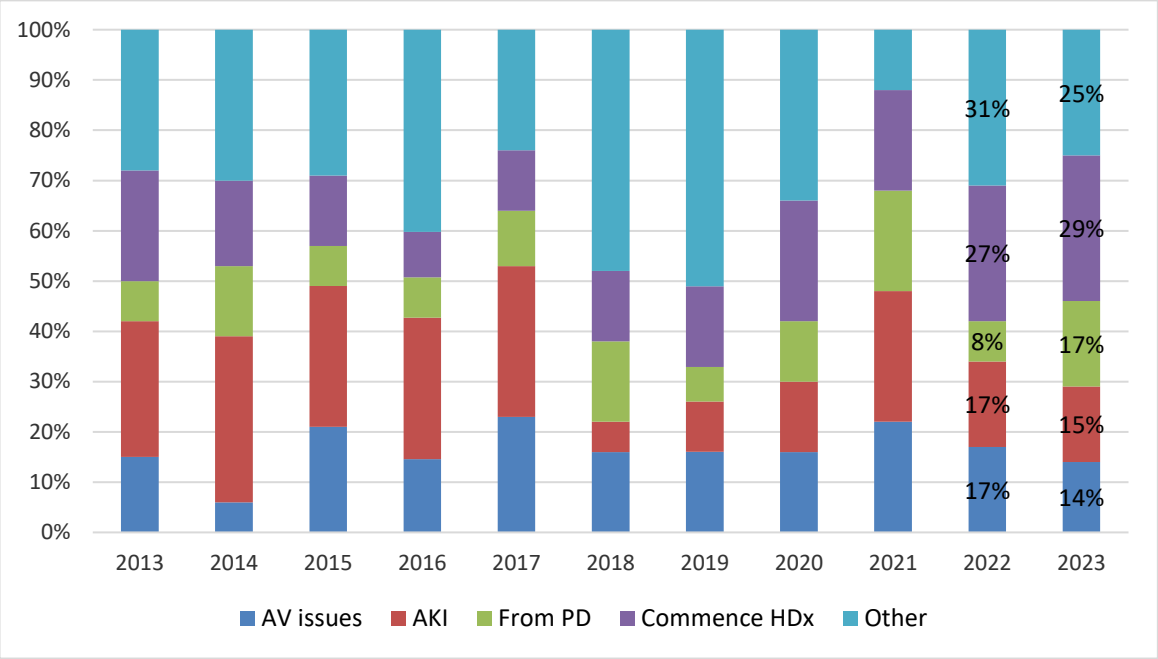
Number of Catheters Inserted in 2023

Comments

- The number of CVCs inserted for AKI & CKD is higher than the previous year.
- The total number of catheter exposure has decreased from 7,867 catheter days in 2022 to 5,732 catheter days in 2023. Catheter remains in situ within a mean duration of 88 days in 2023, which is relatively lower compared to 131 days in 2022.

Catheter Insertion

- The ICU Department continues to manage patients with AKI using a catheter as the dialysis access type despite the lesser number of catheters inserted for this purpose.



Reasons for Catheter Insertion. Fistula group includes immature, revision or thrombosed access. Other includes replacing a non-tunnelled with a tunnelled catheter, incorrect placement, malfunction, thrombotic and infectious complications.

Catheter-related Infectious Events

- KDOQI 2006 recommends <1.5 episodes/1000 catheter days of tunnelled or non-tunnelled catheter infection rate (KDOQI 2006).
- Current literature suggests exit site catheter infection rate varies from 8.2 to 16.75 episodes/1000 catheter days for non-tunnelled catheters and 0.35 to 8.3 episodes/1000 catheter days for tunnelled catheters (McCann and Moore 2010).

Table 4. Catheter-related Infection Summary

Year	Exit site infection		Catheter-related bacteraemia	
	Freq %	Rate *episodes/1000 catheter days*	Freq %	Rate *episodes/1000 catheter days*
2023	3	0.35	5	0.52
2022	9	0.64	7	0.25
2021	2	0.1	2	0.10
2020	2	0.07	2	0.07
2019	5	0.43	2	0.14
2018	9	0.67	10	0.78
2017	7	0.44	7	0.35
2016	4	0.27	6	0.45
2015	5	0.41	1	0.1
2014	5	0.54	2	0.22
2013	2	0.31	1	0.15

Comments

- Among the 65 catheters inserted in 2023, there were 2 (3%) episodes of exit site infection and 3 (5%) episodes of catheter-related bloodstream infectious events reported.
- The gentamicin/heparin lock continues to be utilised in SGH Renal Department as a recommended means to reduce catheter-related infectious events. The KHA-CARI guideline suggests that antibiotic locks be considered to salvage catheters (Chin 2012).
- The potential for the emergence of antimicrobial resistance remains a significant concern (Chin 2012); however, random gentamicin levels of <0.5 mg/L indicate toxicity is unlikely. Bi-annual audits of the gentamicin level are being held in the department.

FUTURE PLANS

- Nurse-led vascular access clinic continues twice weekly.
- The combined Nephrologist/Vascular Surgeon meeting will continue quarterly.
- The VA professional development group will continue monthly in St George Renal Department to keep staff involved in the collective decision-making in improving vascular access care of patients. Regular in-service education sessions will be provided to the staff.
- Vascular access workshops incorporating ultrasound for point-of-care access-guided cannulation will be carried out bi-annually.
- Vascular access monitoring through the revised Vascular Access Risk Assessment Tool will be performed on admission, each dialysis (when necessary), and monthly by the nursing staff.
- Vascular access surveillance through the nurse-led clinic, Transonic, and ultrasound machines in the dialysis unit will remain to aid in the timely detection of the dysfunctional signs of the AV access.
- Vascular access reporting will be integrated into the electronic platform.

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9. HAEMODIALYSIS

A/Prof Ivor Katz, Evelyn Graf, Tracey Blow, Elizabeth Hogan, Louise Jordan, Dr. Brendan Smyth, Xiaobing Ma

Haemodialysis continues to be provided at 3 centres supported by the St George hospital and Sutherland hospital in the South Eastern Sydney Local Health District (SESLHD). An In-Centre dialysis unit at St George Hospital on the 4 West ward and two satellite dialysis units at Sutherland Hospital and at the Fresenius Medical Care (FMC) unit in Kogarah.

Activity

The **St George Hospital 4 West In-centre** unit operates a 17-chair haemodialysis service including two isolation rooms. The unit has a total of 23 dialysis machines. There are 4 portable reverse osmosis (RO) machines to provide acute haemodialysis in outlier areas as required. The unit provides high level care haemodialysis for inpatients and frail outpatients. On average in 2023, 54 patients were dialysed each month and a total of 8424 treatments were completed.

The St George Satellite Dialysis Clinic outsourced to Fresenius Medical Care (FMC) operates 17 chairs, with capacity to expand to 25 if required. On average in 2023, 76 patients were dialysed each month and a total of 11046 treatments were completed.

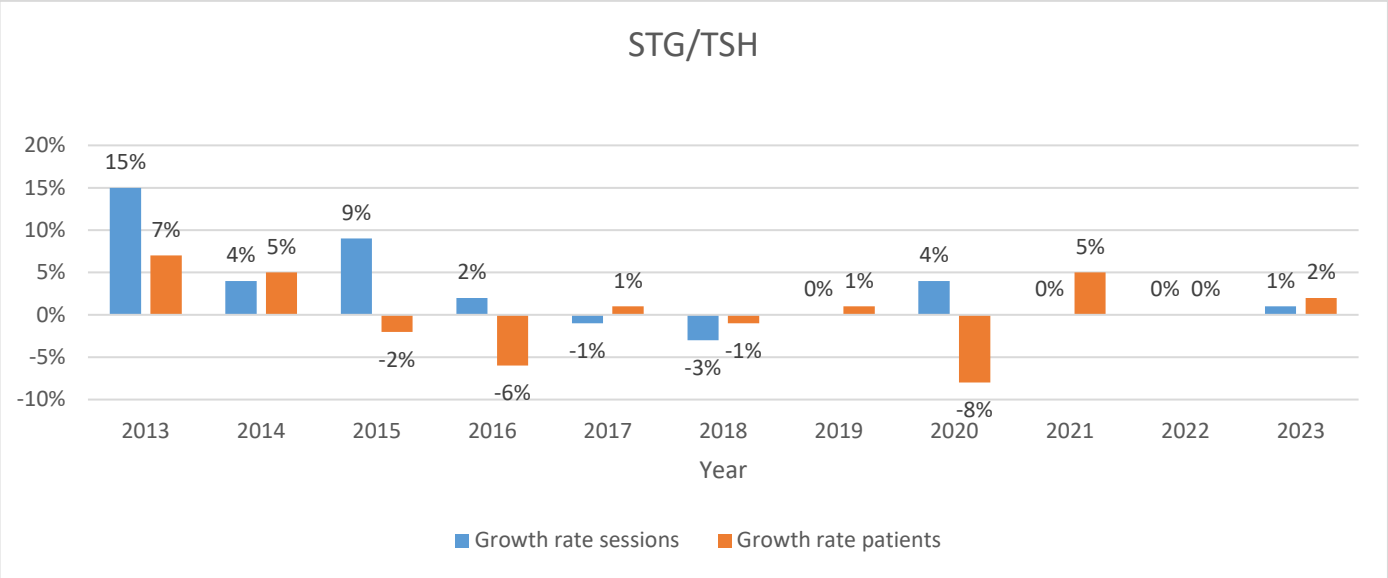
Home training was quiet in 2023 at the FMC Satellite clinic, with respite dialysis and sessions to change patients from heparin to clexane provided, instead of training. The total number of home patients dropped from 34 to 24 due to moving interstate (1), failed training (1), transplantation (7) and deaths (3). Four (4) patients remained on the home supported dialysis program, managed by Dialysis Australia. Respite and clexane sessions were provided for thirteen (13) patients. Reasons for respite included, assistance with cannulation (2 patients), support following hospital admission (2 patients), family away/partner hospitalisation (1), fluid assessment (1), clexane changeover (10). Respite stays ranged from two to eleven days.

The FMC Satellite clinic also operates a nocturnal dialysis shift and throughout 2023 eight patients (10%) were dialysing on the overnight (nocturnal) dialysis program, with capacity for 12 patients.

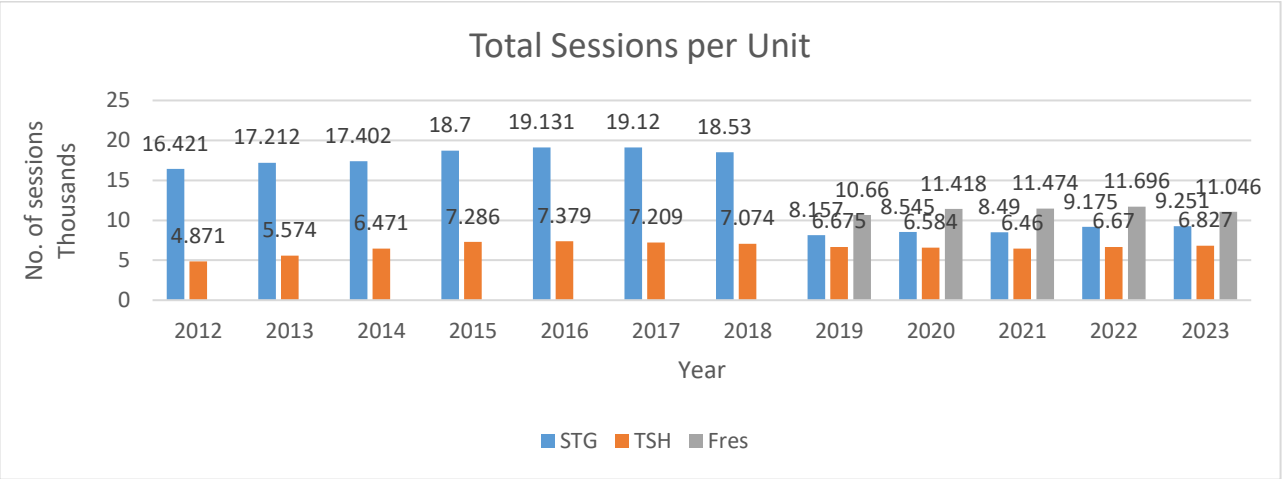
The Sutherland Hospital satellite unit operates twelve chairs for low care patients. In 2023, 6828 treatments were performed, and on average, 46 patients dialysed each month.

COVID-19 continued to affect all 3 services in 2023 with the in-centre unit dialysing Satellite patients until June and following this, COVID-19 patients were then dialysed at the respective Satellite facility. Eighteen (18) patients tested positive for COVID-19 at FMC with four (4) patients sent to incentre during the isolation period. There were no deaths attributed to COVID-19 across all three services in 2023. For the year 2023 4 West dialysed approximately 22 COVID positive patients.

Activity by Dialysis Centre



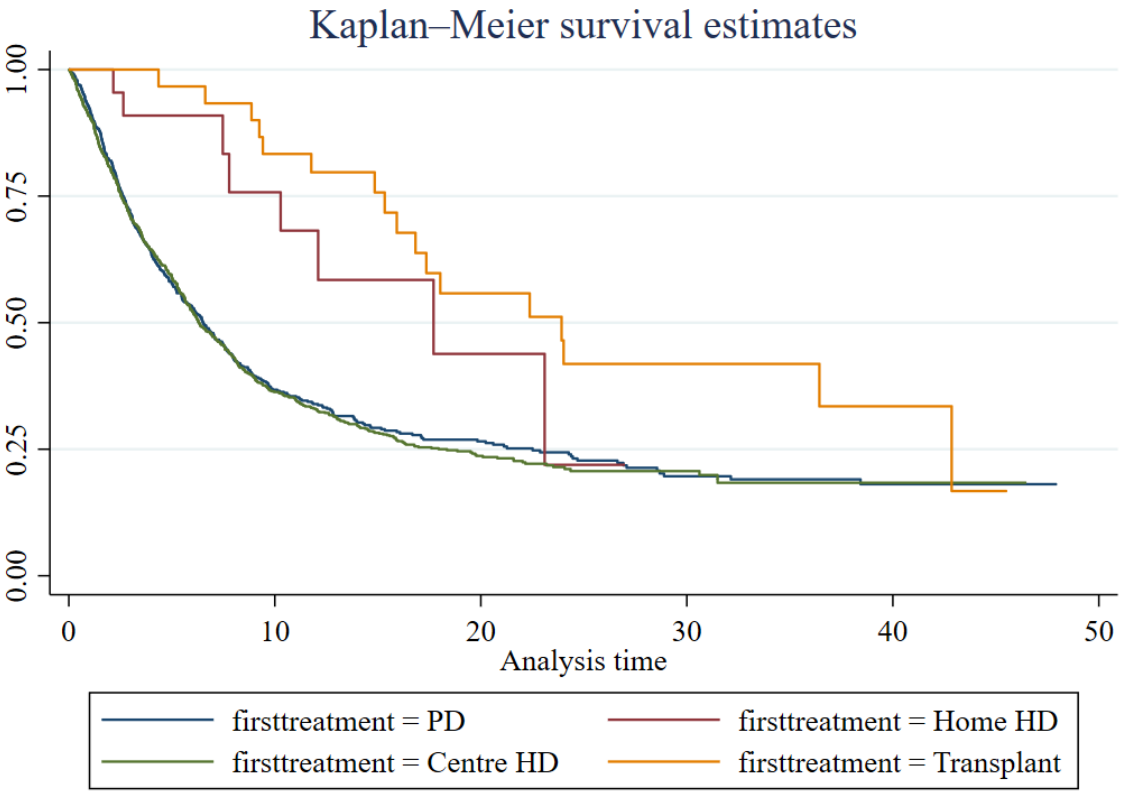
Growth Rates in Haemodialysis at St George (In-Centre and Satellite) and Sutherland Dialysis Units.



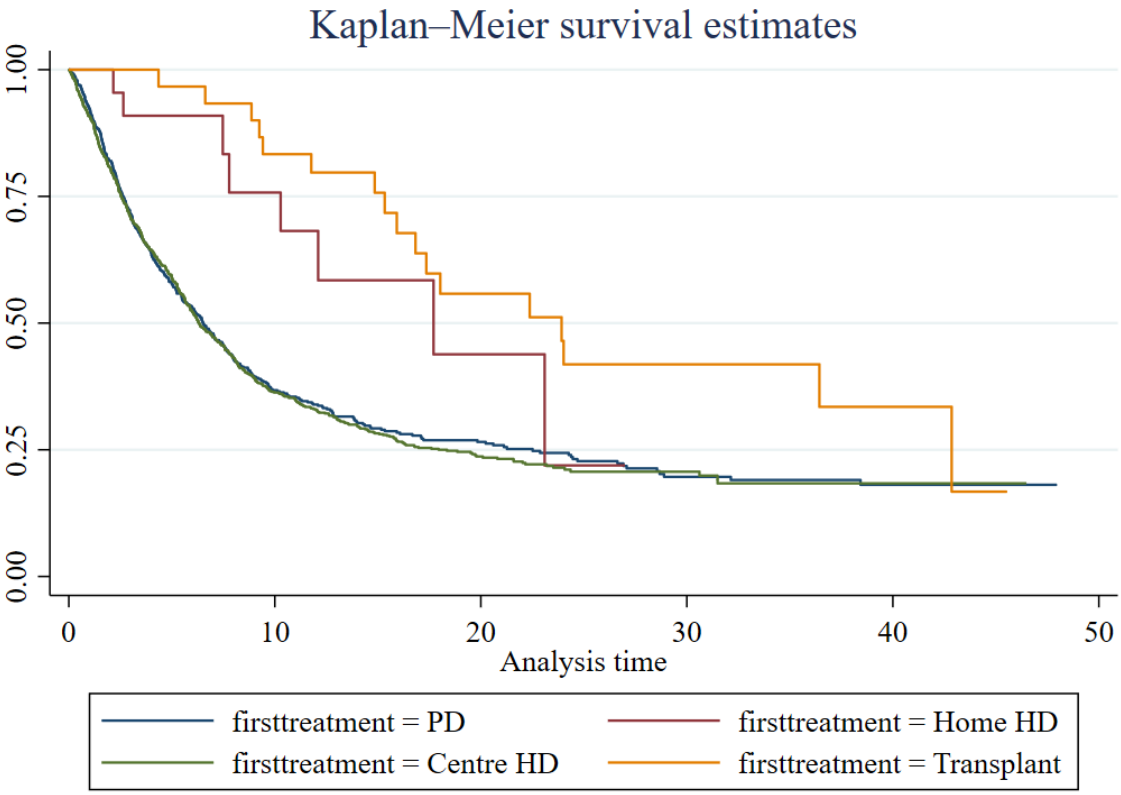
Haemodialysis growth rates by session and patients from 2012 to 2023 at St George Hospital and the Sutherland and Fresenius Satellite units (Note: Fresenius Satellite in Unit opened in 2018-2019).

Survival analyses (PD patients included in the following survival analysis)

As expected, survival is greater among patients initiating KRT with home hemodialysis or kidney transplant. There is no appreciable difference in survival between patients initiating hemodialysis or peritoneal dialysis. These observations remain true when classifying patients by modality at 90 days after KRT start.



Overall survival by initial KRT modality



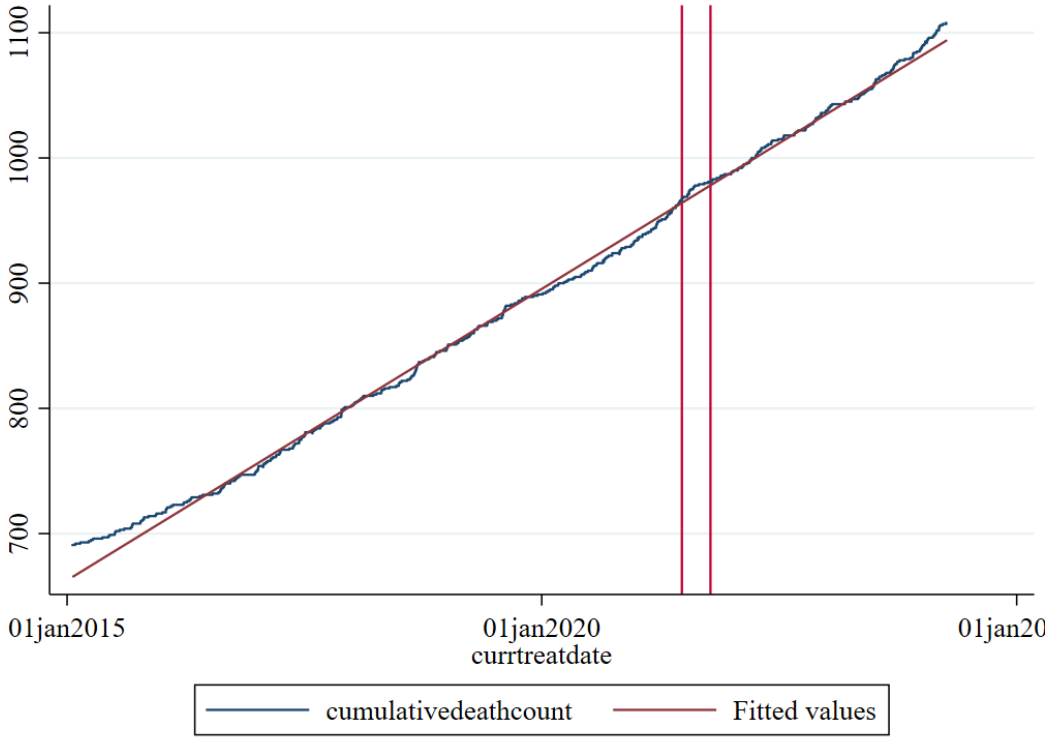
Overall survival by KRT modality at 90 days

Mortality rate by vintage

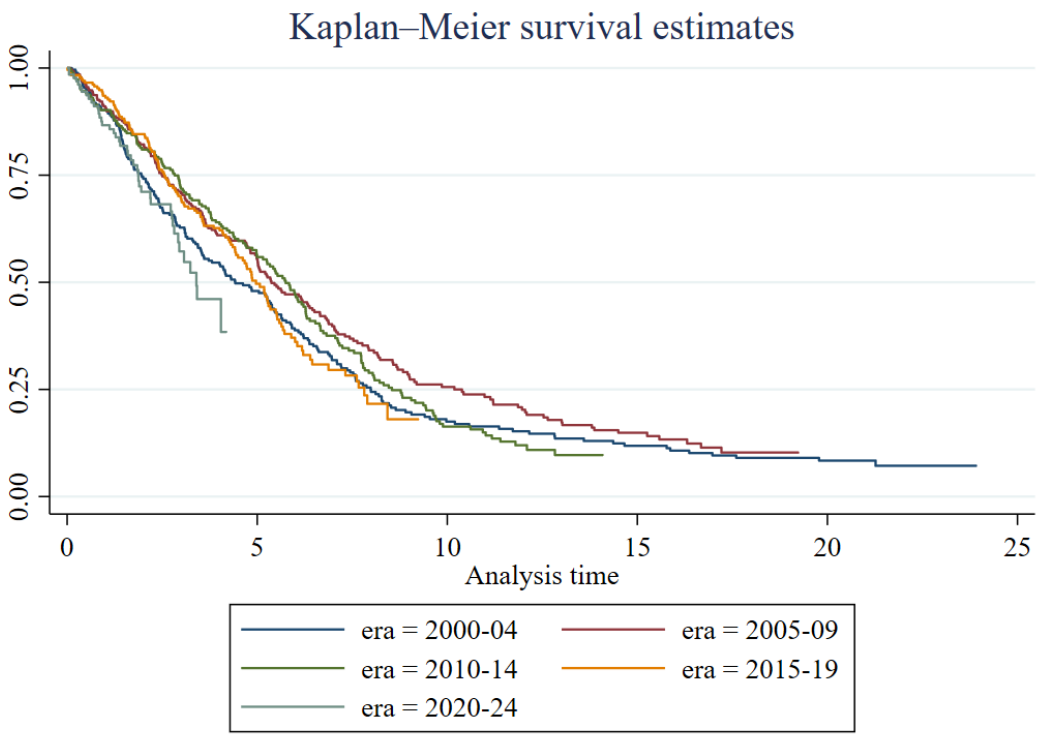
The mortality rate among all patients receiving KRT is gradually increasing, which may be in line with increasing comorbidity of patients at commencement of KRT.

Vintage	Number of patients	Mean age (years)	Mortality (per 100 patient years)	Median survival (years)
Pre-2000	455	50.8	5.5	8.1
2000-04	267	59.4	8.4	5.9
2005-09	276	61.2	8.5	7
2010-14	269	60.2	9.6	7.2
2015-19	239	62.3	11.8	5.6
2020-24	132	62.9	15.6	4
Total	1638	57.3	7.7	6.7

COVID-19 had, at most, a modest effect on mortality as demonstrated by the figure below where the number of deaths per unit time remains stable over the past 15 years.



Cumulative deaths between 1 Jan 2015 and 1 Jan 2025. Red lines mark start and end of delta-wave lockdown in Sydney



Survival in patients commencing dialysis (censored for transplant) since 2000

Age alone does not fully explain the rise in risk of mortality among dialysis patients, as demonstrated by the age-adjusted risk of mortality.

Vintage	**HR (95% CI)** *Reference = 2005-09*	**P-value**
2000-04	1.36 (1.11-1.65)	0.002
2010-14	1.07 (0.87-1.31)	0.51
2015-19	1.20 (0.95-1.50)	0.12
2020-14	1.79 (1.27-2.53)	0.001

Cox-model of mortality by KRT vintage (2005-09 as reference), adjusted for age at KRT start and stratified by KRT modality.

Table 1. *Movement in and out of Ward 4 West In-Centre haemodialysis unit from 2018 to 2023.*

4W Incentre haemodialysis	**2018**	**2019 4W**	**2019 FMC**	**2020 4W**	**2021 4W**	**2022 4W**	**2023 4W**
In-centre haemodialysis patients at beginning of year	133	130*					
Remained in 4W / Transferred to FMC (January 2019)		61	69	*61	66	52	56
IN							
1. New Patients	20	19	7	15	15	17	19
2. Transfers from other units	18	8	5	20	0	12	10
3. Transfers from PD	6	7	4	3	0	3	6
4. Failed transplants	3	3	1	0	0	0	2
5. Transfers from Home Hdx/Satellite/incentre	4	5	14	6	14	7	14
6. Acute Kidney Injury*	11	2	1	0	0	0	3
7. Other	1	1	0	0	0	0	0
Subtotal	***63***	***45***	***28***	***44***	***29***	***39***	***54***
OUT							
7. Transplants	2	0	5	0	0	1	0
8. Transfers to other units/overseas	6	6	2	17	2	3	6
9. Transfers to Home Hdx		0	6	4	1	3	0
10. Transfers to PD	1	0	0	0	2	0	1
11. Transfers to Satellite/incentre	7	6	8	0	8	10	16
12. Regain Function	8	0	1	0	2	2	3
13. Deaths (medical)	17	14	1	8	11	3	9
14. Deaths (withdrawal)	15	7	1	10	17	13	15
Subtotal	***56***	***33***	***24***	***39***	***43***	***35***	***56***
NET GAIN/ LOSS	-14	+12	+4	+5	-14	+4	-2
In-centre haemodialysis patients at end of year		73	73	66	52	56	54

Table 2. *Movement in and out of the Sutherland Satellite haemodialysis unit from 2018 to 2023.*

Sutherland satellite HD unit summary report to 2023	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Satellite haemodialysis patients at beginning of year	**48**	**48**	**45**	**45**	**43**	**46**
IN						
1. New Patients	0	0	4	2	2	0
2. Transfers from other units	2	2	1	2	2	2
3. Transfer from PD	4	1	0	1	1	2
4. Transfer from Incentre	11	11	6	6	10	7
5. Transfer from home/training	6	1	1	1	0	1
Subtotal	***23***	***15***	***12***	***12***	***15***	***12***
OUT						
5. Transplants	4	3	1	1	2	2
6. Transfers to Home Hdx	1	3	1	1	0	1
7. Transfers to PD	1	0	0	1	0	0
8. Transfers to Incentre	11	3	7	2	0	1
9. Transfer to other units	0	2	1	3	2	2
10. Deaths (medical)	5	2	1	2	6	5
11. Deaths (withdrawal)	1	3	1	4	2	2
12. Regain Function	0	2	0	0	0	0
Subtotal	***23***	***18***	***12***	***14***	***12***	***13***
NET GAIN/ LOSS	**0**	**-3**	**0**	**-2**	**3**	**-1**
Satellite haemodialysis patients at end of year	**48**	**45**	**45**	**43**	**46**	**45**

Table 3. *Movement in and out of the Fresenius Medical Care haemodialysis unit from 2019 to 2023.*

Fresenius Medical Care satellite HD summary report to 2023	**2019**	**2020**	**2021**	**2022**	**2023**
No. patients at the start of the year	69	73	71	75	76
IN					
1. New Patients	7	15	12	12	6
2. Transfers from other units	5	2	2	0	1
3. Transfers from PD or home	4	3	1	5	2
4. Failed transplants	1	0	0	0	0
5. Permanent transfers from In-centre or TSH Satellite	14	6	7	11	15
6. Acute Kidney Injury*	1	1	0	0	0
7. In-centre/TSH backfill		11	19		-
8. Respite			21	8	17
9. Holiday patients	0		8	0	19
Subtotal	*28*		22	23	24
OUT					
7. Transplants	5		1	8	8
8. Transfers to other units/overseas	2		0	3	2
9. Transfers to Home Hdx/MBP	6		1	0	0
10. Transfers to PD	0		0	2	0
11. Transfer to Incentre/Satellite	8		14	6	10
12. Regain Function	1		0	0	0
13. Deaths (medical)	1		**3**	**1**	**3**
14. Deaths (withdrawal)	1	0	0	2	0
15. Others out - Return to Inc /TSH/home or parent hospital		24	40	22	23
Subtotal	***24***	***53***	***18***	***16***	***1***
NET GAIN/ LOSS	**4**	**-2**	**5**	**1**	**0**
Haemodialysis patients at end of year	**73**	**71**	**75**	**76**	**77**

Table 4. *Movement in and out of the Home training haemodialysis unit from 2019 to 2023.*

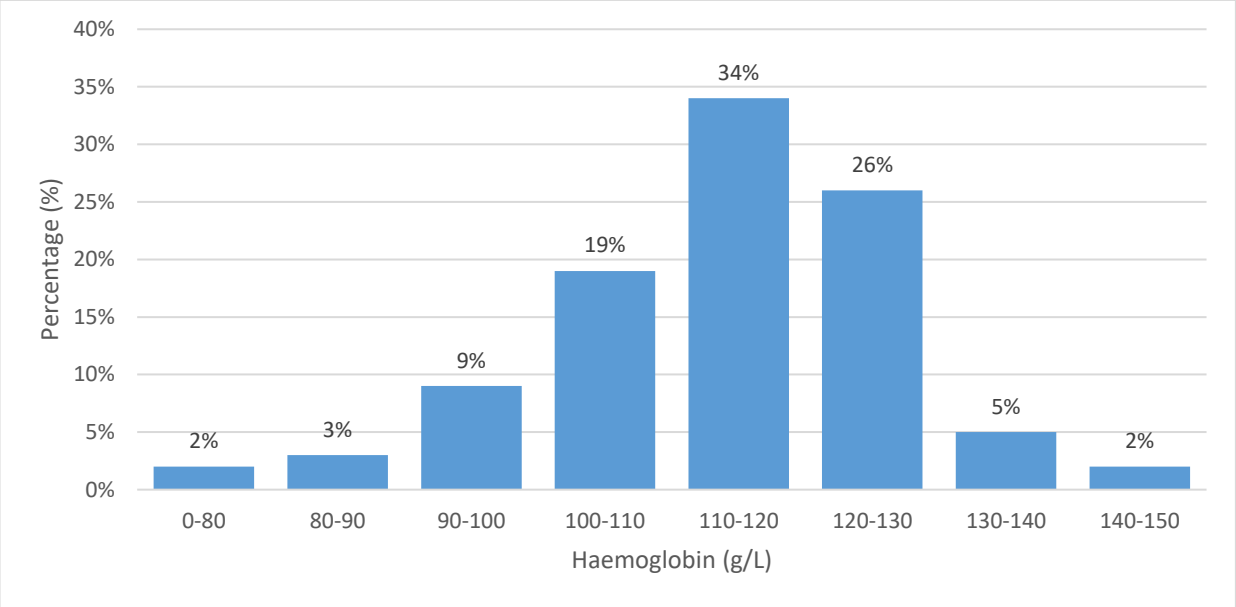
Home haemodialysis 2023 summary report	**2019**	**2020**	**2021**	**2022**	**2023**
Home haemodialysis patients at beginning of year	**29**	**34**	**36**	**33**	**34**
IN					
1. New Patients	3	0	4	3	1
2. Transfer from PD	0	0	0	0	0
3. Transfers from other units	0	2	0	0	2
4. Transfer from Satellite	6	7	1	0	0
5. Failed transplants	0	0	0	0	0
6. Transfer from Incentre Hdx	0	0	0	0	0
Subtotal	***9***	***9***	***5***	***3***	***3***
OUT					
Transplants	2	3	3	2	7
Transfers to MPB	0	1	1	0	0
Transfers to Incentre Hdx	0	1	1	0	1
Transfers to Satellite	1	1	1	1	2
Deaths	2	0	2	3	3
Subtotal	*5*	*6*	*8*	*6*	*13*
NET GAIN/ LOSS	5	3	-3	-3	-10
Home haemodialysis patients at end of year	**34**	**36**	**33**	**34**	**24**

Anaemia, biochemistry and adequacy

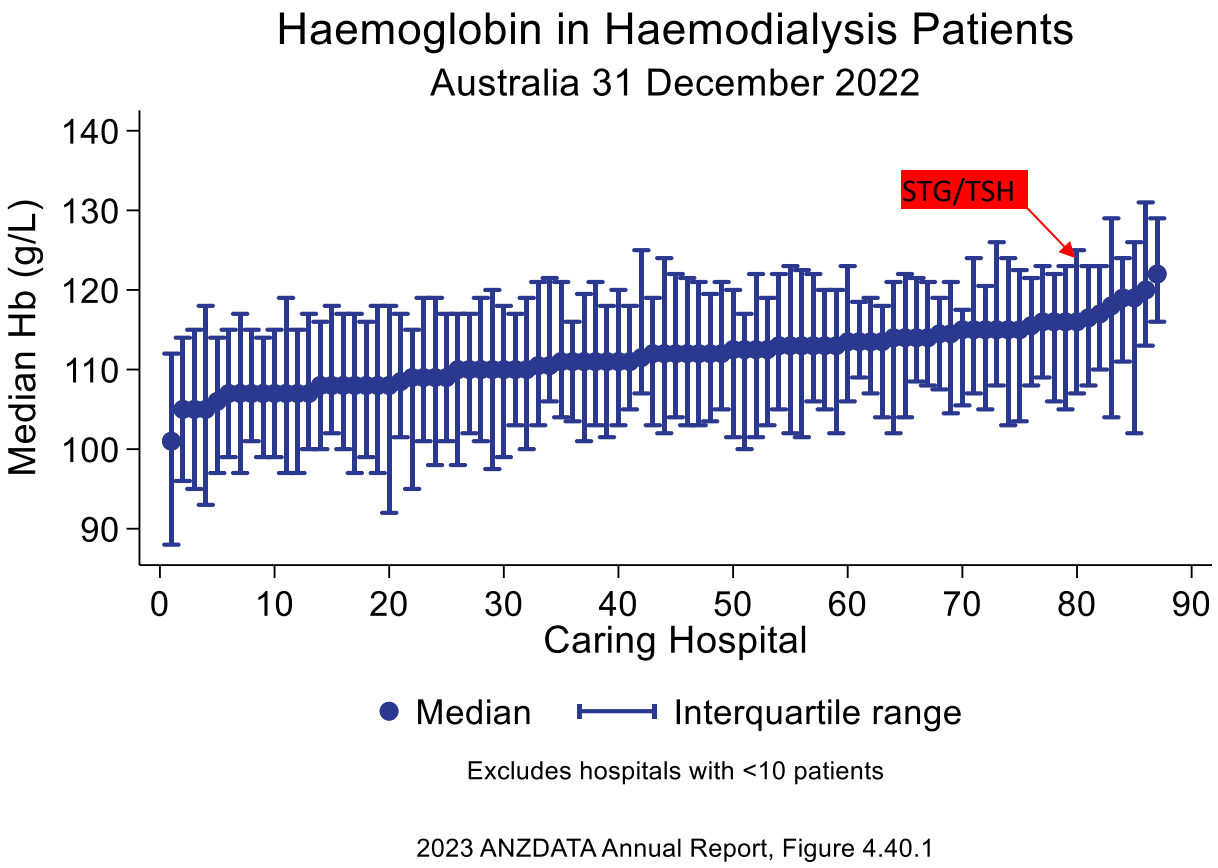
Key biochemical, haematopoietic and dialysis adequacy values are recorded on all in-centre haemodialysis patients in April and October. The data is pooled to derive mean or median values. Where confidence intervals are reported, these have been adjusted for intra-patient correlation. Where possible, local results have been compared to the most recently available ANZDATA report.

Anaemia management

The median haemoglobin was 116/L (STD 13.4) and the proportion of patients with haemoglobin between 110 and 129 was 52% . At the time of data collection, on average, 75 % of patients were on erythropoietin stimulating agents (ESA), 4% currently had ESA withheld and 7% were not on ESA. Data for the remaining 14% was not known.

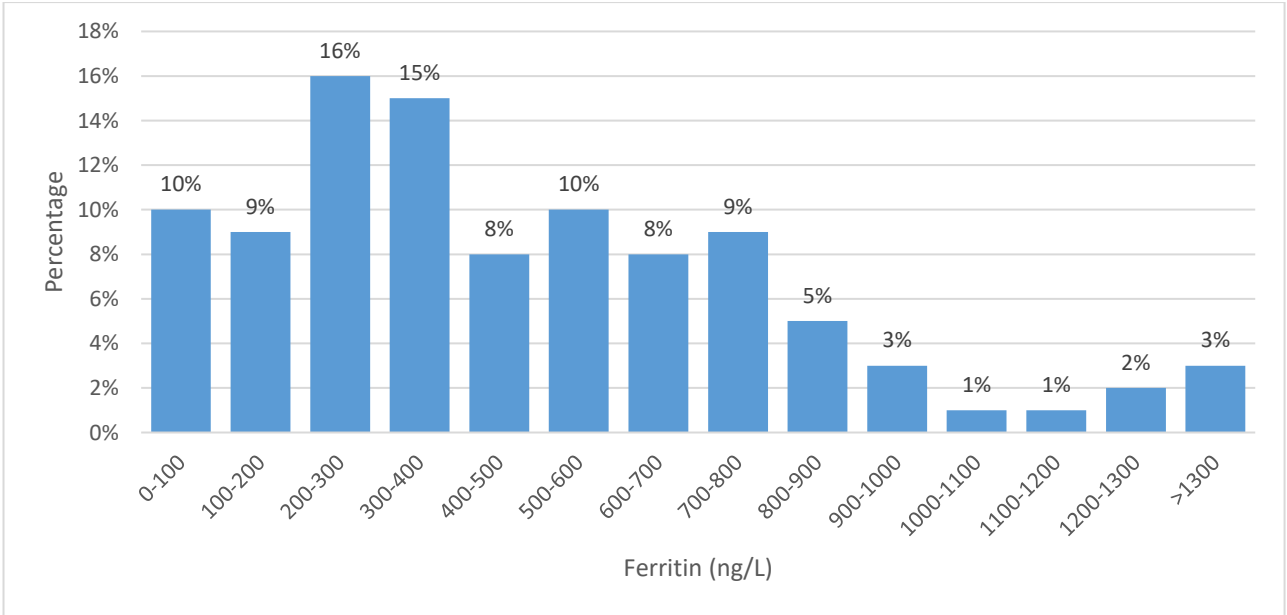


Hemoglobin values in g/L of all dialysis patients (median 116; mean 114; STD 13.4)

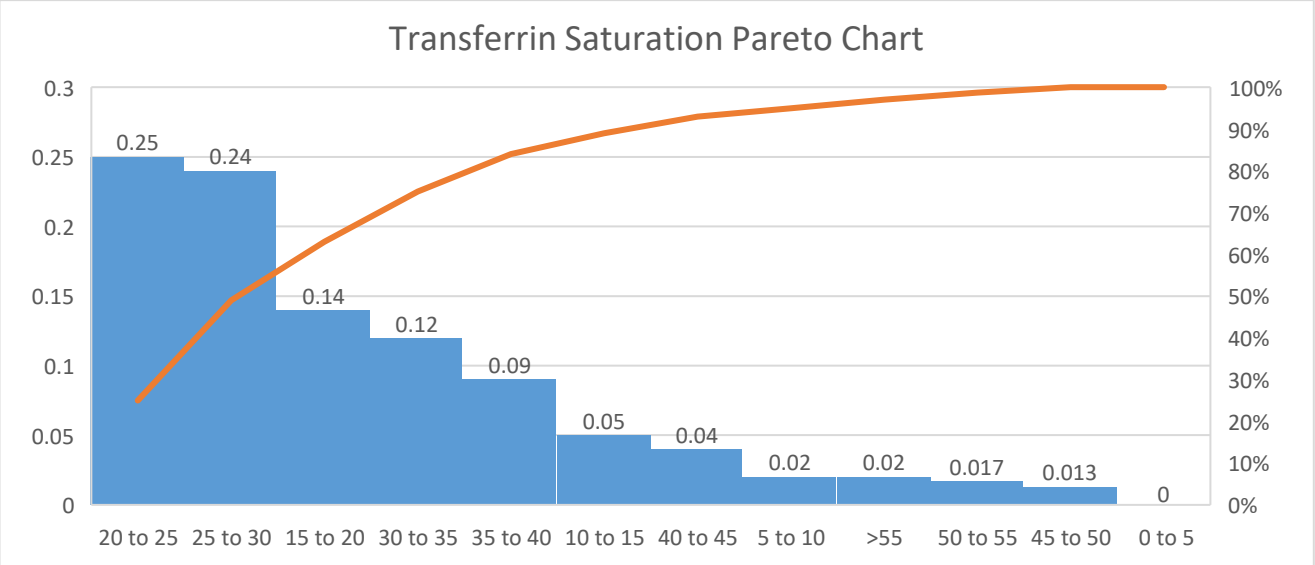


St George/Sutherland (red) and National Anaemia parameters (ANZDATA, 2023 Report)

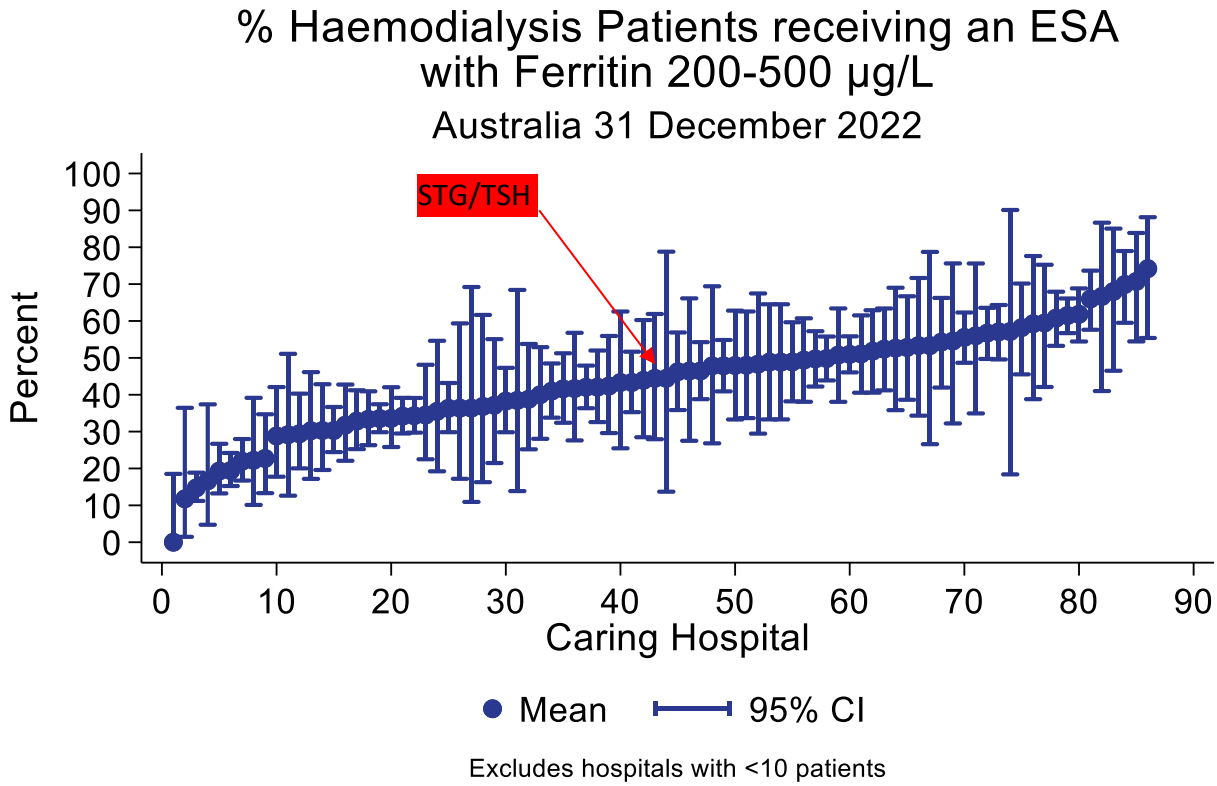
The mean ferritin value was 488ng/L (STD, 358) and median value was 412ng/L. Thirty eight percent (38%) of patients had a ferritin between 200 and 500ng/L. The mean transferrin saturation was 27% (STD, 10.3) and 75% had a transferrin saturation between 20 and 50%. Sixty six percent (66%) tests revealed ferritin between 200 and 800. Nineteen percent (19.3%) of tests revealed a ferritin level <200 and for transferrin saturation below 20%, this was only 21%.



Ferritin values ng/L.

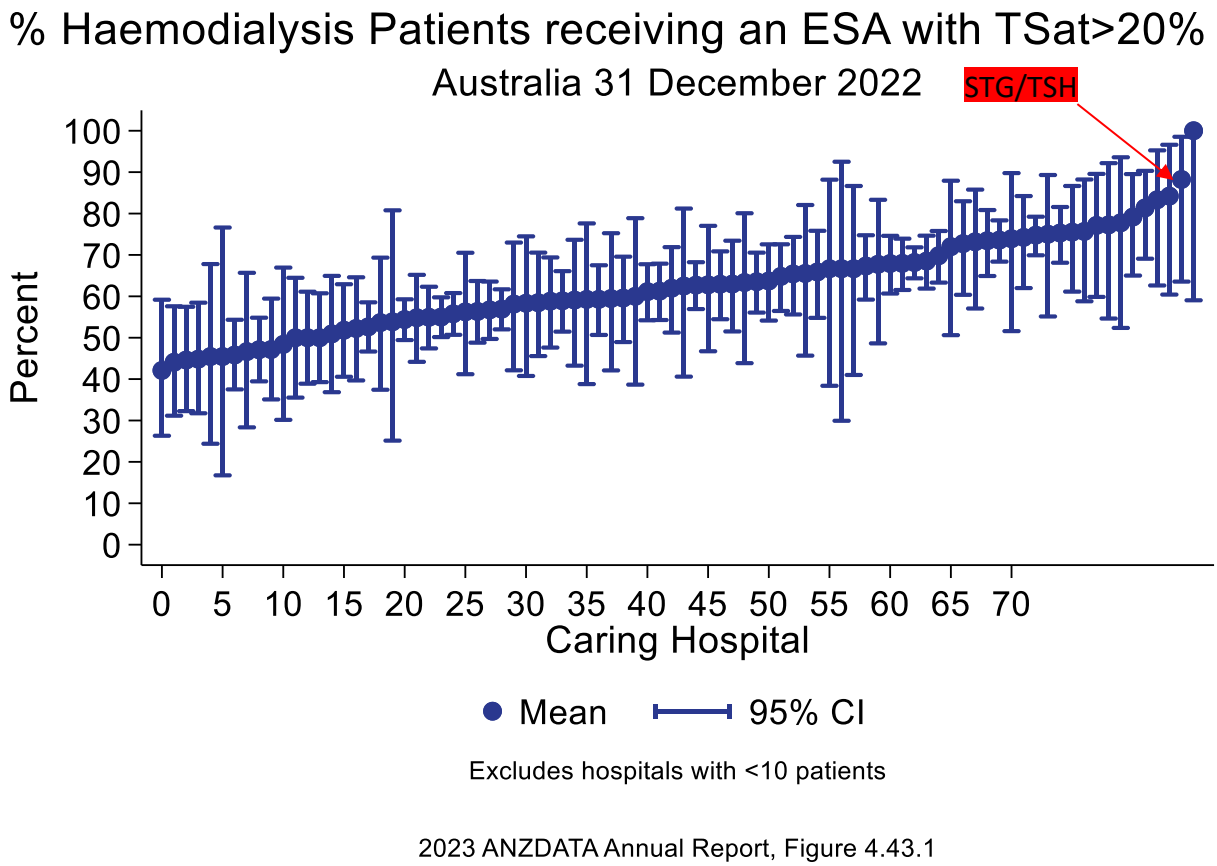


Transferrin Saturation values (%).



Excludes hospitals with <10 patients

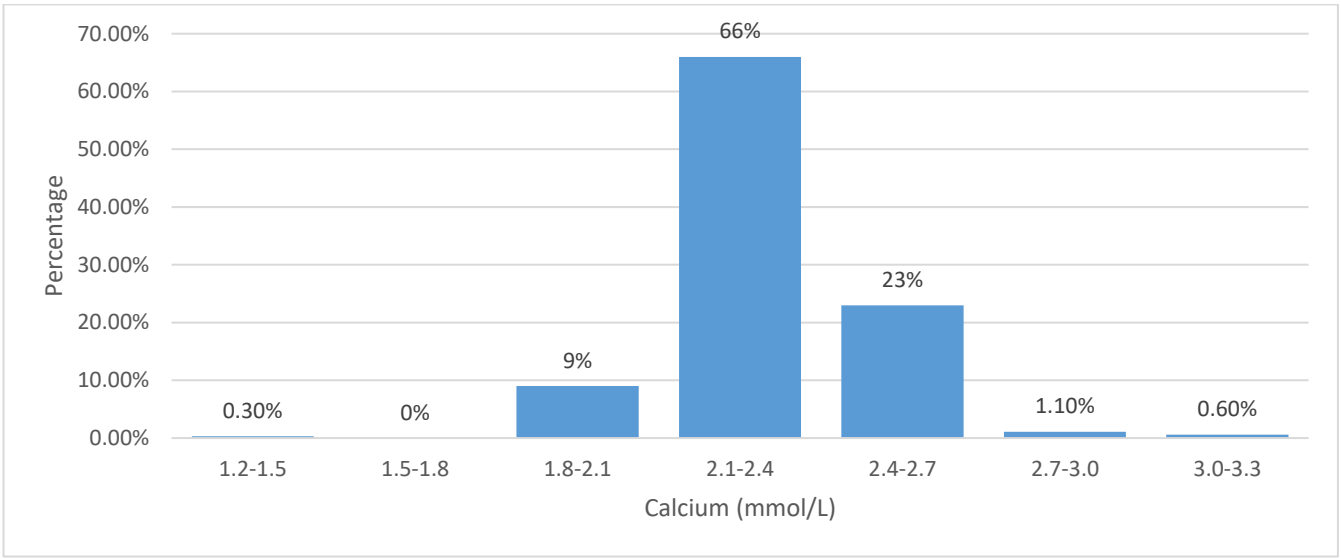
2023 ANZDATA Annual Report, Figure 4.42.1



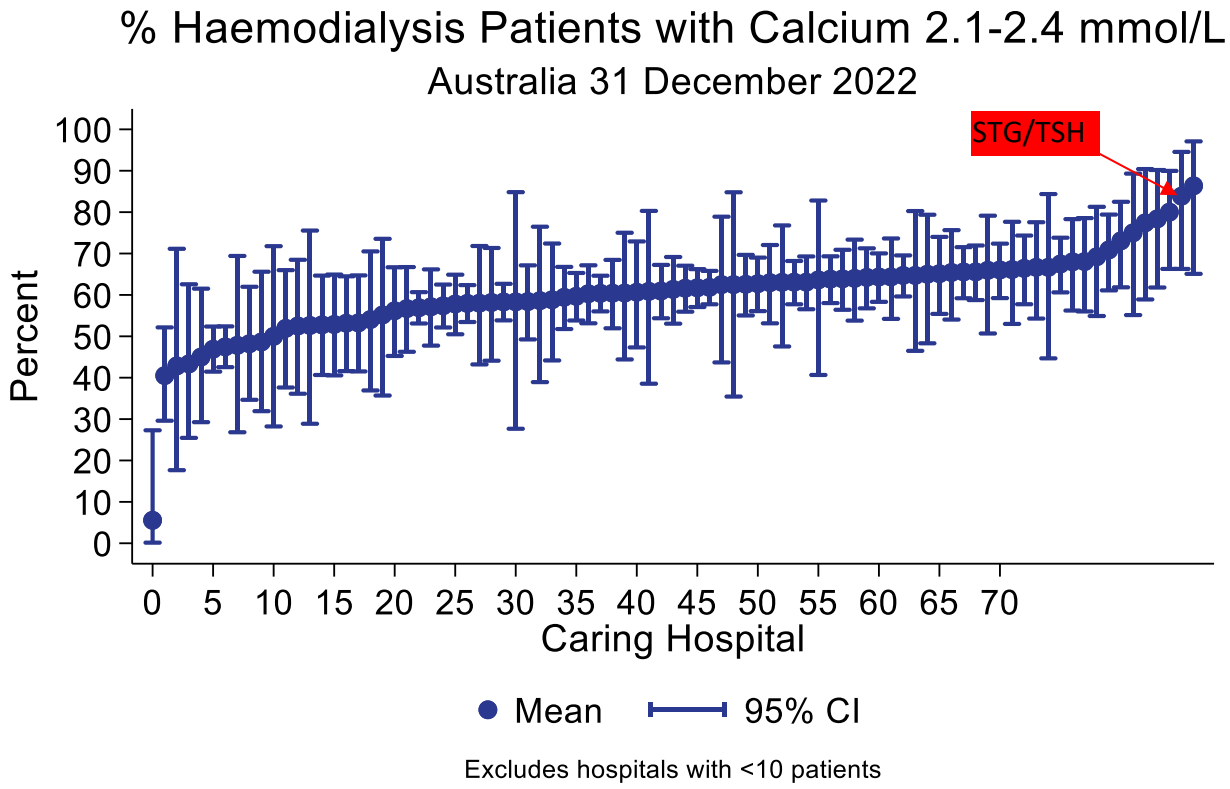
St George/Sutherland (red) and National iron parameters (ANZDATA, 2023 Report).

Calcium, Phosphate and Parathyroid Hormone (PTH)

The mean calcium was 2.31mmol/L (STD 0.18), with 66% of tests in the target range of 2.1 to 2.4mmol/L. The mean phosphate was 1.75mmol/L (STD 0.52) and 41% had phosphate in the range of 0.8 to 1.60mmol/L. The median PTH was 23.2mmol/L (STD 51.1) and there were 91% with a Parathyroid hormone level less than 95mmol/L.

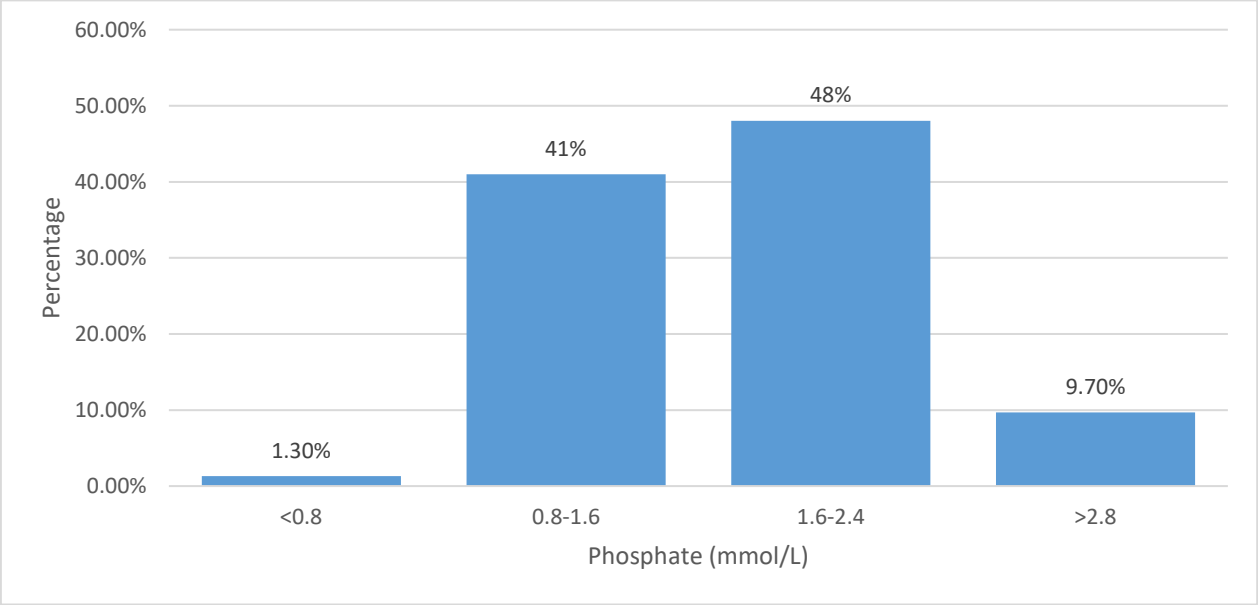


Calcium levels for all patients on dialysis.

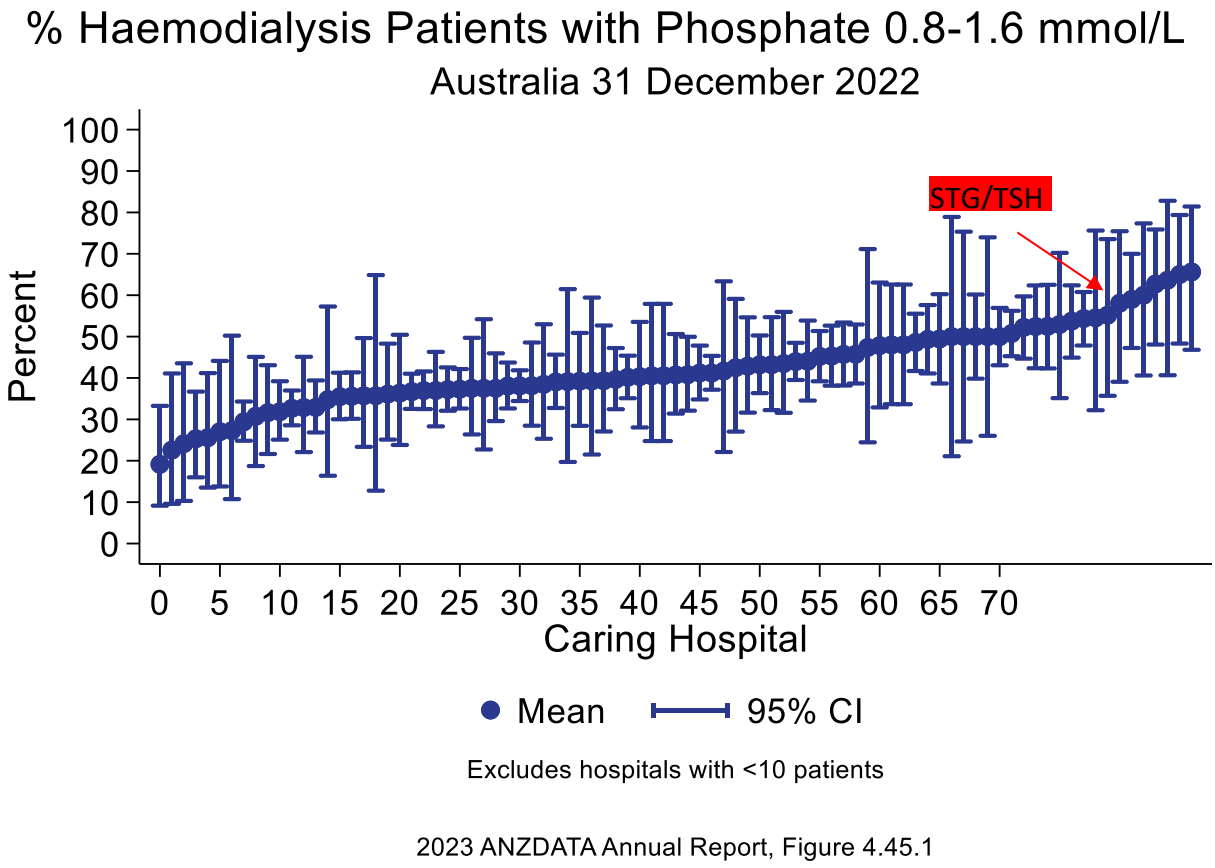


Excludes hospitals with <10 patients

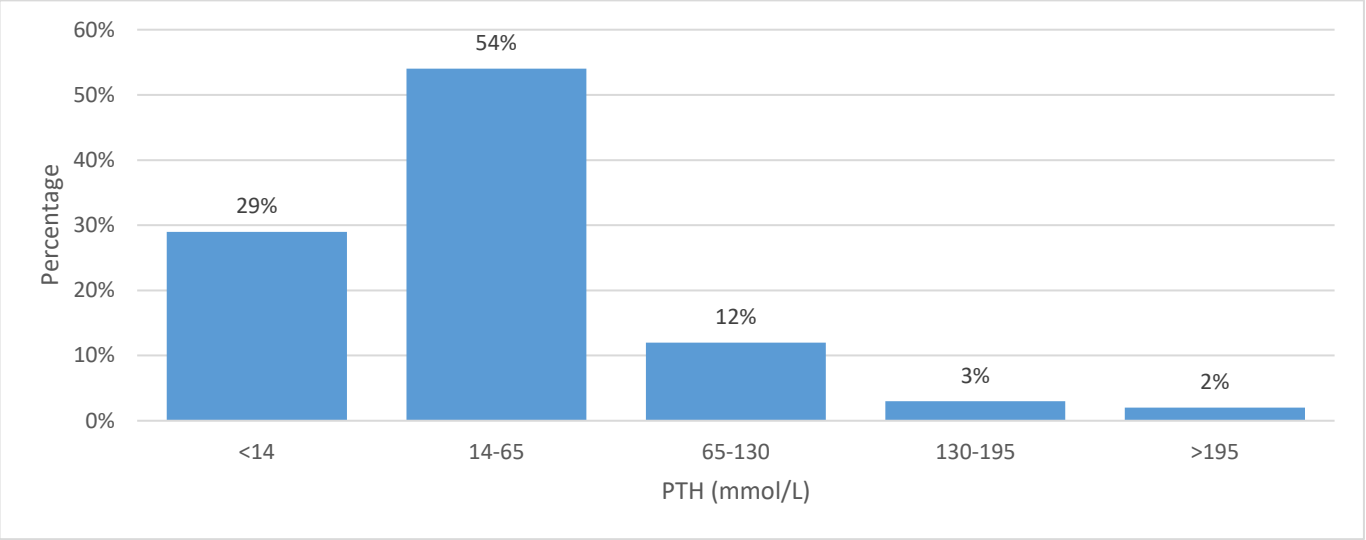
2023 ANZDATA Annual Report, Figure 4.44.1



Serum Phosphate levels for all patients on dialysis.



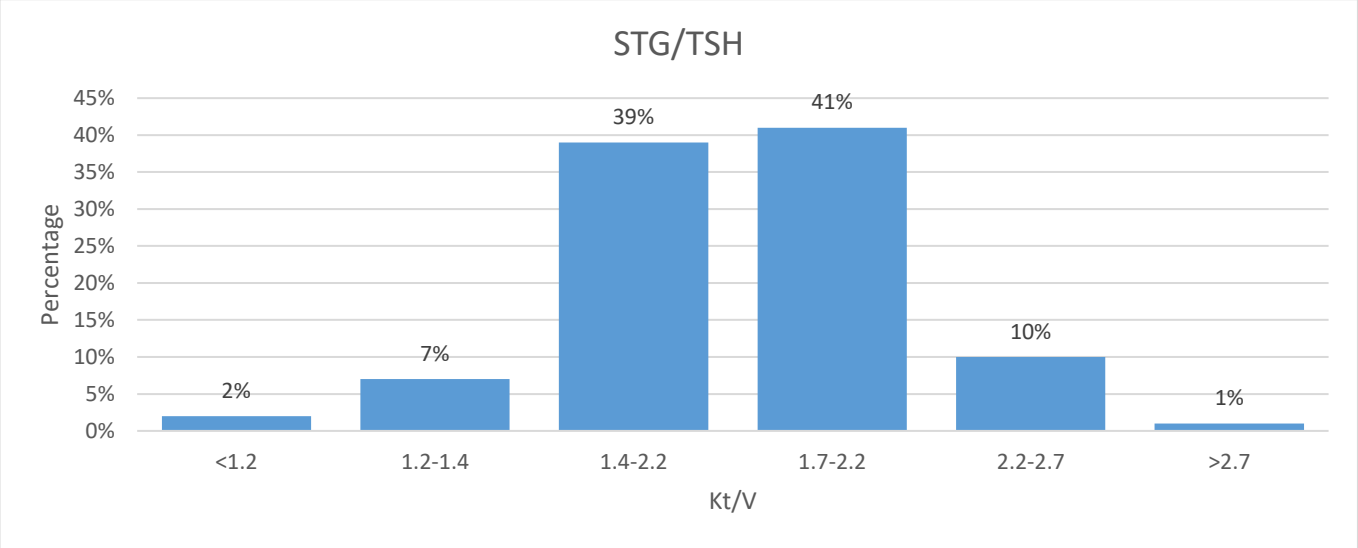
St George/Sutherland (red) and National calcium and phosphate parameters (ANZDATA, 2023 Report).



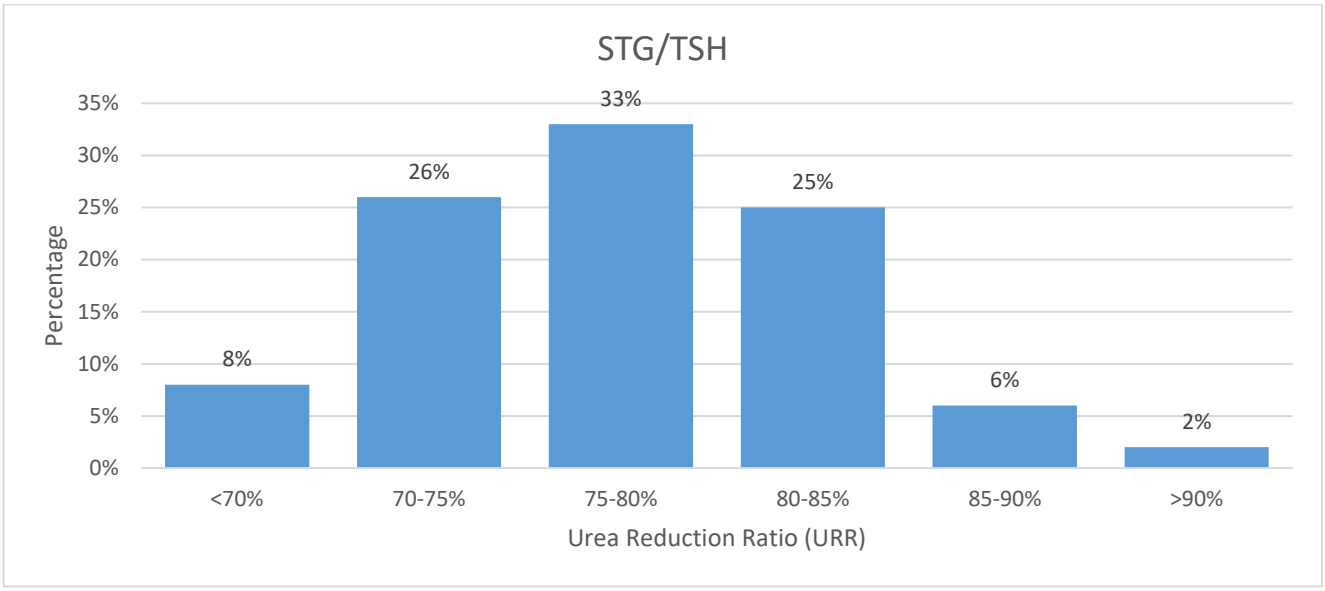
Serum Parathyroid levels for all patients on dialysis.

Dialysis adequacy

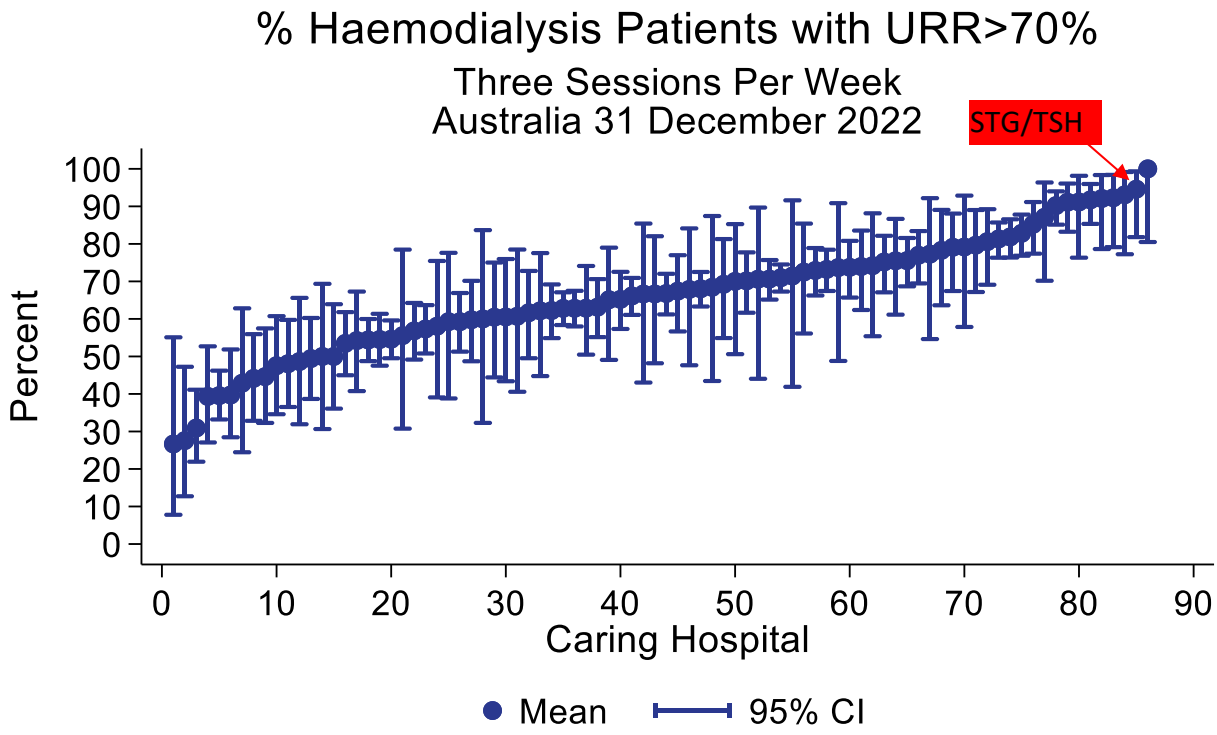
The mean urea reduction ratio was 77.1% (STD 7.3) and 92% of tests were 70% or greater. Mean Kt/V was 1.74 (STD 0.3476). 91% of Kt/V results have a value > 1.4.



The Kt/v measure of adequacy for all dialysis – Mean of 1.74 (Target >1.4).



Urea Reduction Rate (URR) as a measure of dialysis adequacy – Mean 77.1% (Target >70%).



2023 ANZDATA Annual Report, Figure 4.49.1

St George/Sutherland (red) and National URR (ANZDATA, 2023Report)

Table 5. *Dialysis duration per individual dialysis session at St George and Sutherland Hospitals.*

Duration (hours)	St George Hospital In-Centre HD (%)	Sutherland Hospital Satellite HD (%)	Fresenius Medical Centre Satellite HD (%)
< 4	0	0	1
4	35	26	26
4.5 – 4.75	35	41	22
5-6.5	30	33	42.6
7-7.5	0	0	6
8	0	0	0

- Almost 100% of in centre or satellite haemodialysis achieved the KPI of >15 hours on dialysis per week i.e. In-Centre 97%, Sutherland 100% and FMC 66% respectively.

Home Haemodialysis 2023

Table 6. *Home haemodialysis dose (hours on dialysis)*

Duration (hours per week)	Home haemodialysis (n)	Frequency of dialysis
8 hrs	0	
12 -14 hrs	3	3 x week = 14
15-18 hrs	9	Alternate days = 10
18-20 hrs	8	Nocturnal = 3
20-22 hrs	2	
24-28 hrs	2	Total no. 27
40-42.5 hrs week	2	
HDF 15 hrs week	1	

- Eleven patients (37%) dialysed >15 hours week.
- Three patients performed overnight (nocturnal) dialysis.
- Thirteen patients (48%) dialysed on alternate days or more.

  Seventeen patients (63%) were prescribed an ESA.

Summary

- The number of delivered treatments continues to increase, albeit at a slower rate than previously.
- Our haemodialysis units were able to continue to offer the full gambit of options including in-centre, satellite, nocturnal and home haemodialysis
- With the addition of the Fresenius Medical Centre we have been able to ensure a smaller in-centre dialysis population in keeping with other large city centres around the country

- Patient survival, biochemical and dialysis adequacy parameters remain consistent with or above the national averages.

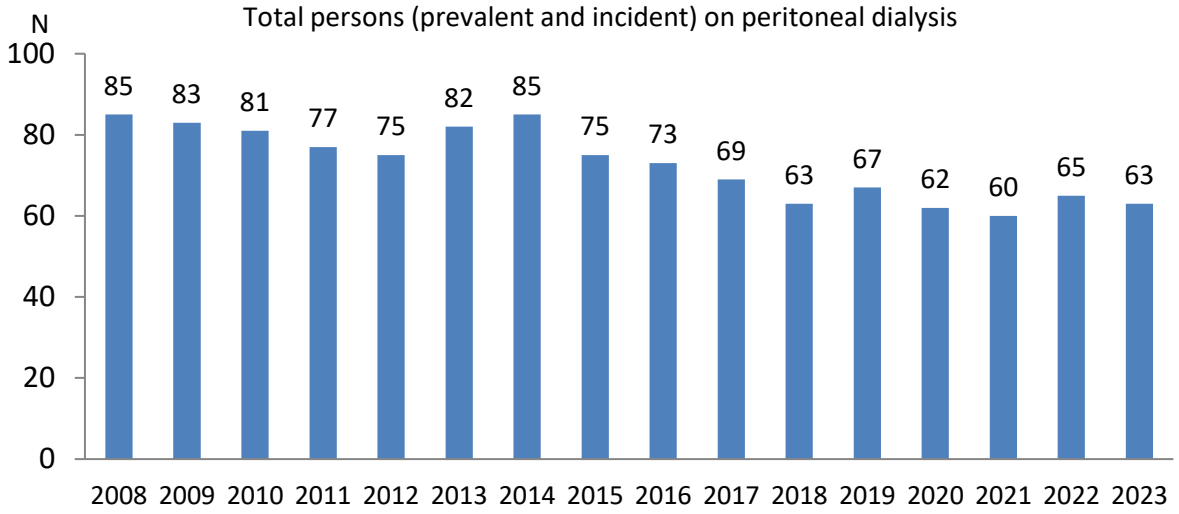
10. PERITONEAL DIALYSIS

Claire Cuesta, Dr. Franziska Pettit

Activity

Peritoneal dialysis was used to treat 14.5% of all dialysis patients in St George compared to 18% reported in the 46th Annual ANZDATA report (2023).

A total of 63 patients were on PD in 2023 compared to 65 in 2022. In December 2023, the proportion of patients receiving automated peritoneal dialysis (APD) was 77% and 23% for continuous ambulatory peritoneal dialysis (CAPD). Our APD population continues to be above the proportion reported by ANZDATA (2023) of 67%.



Total persons (prevalent and incident) on peritoneal dialysis.

Automated peritoneal dialysis (APD) and continuous ambulatory peritoneal dialysis (CAPD) proportions compared to ANZDATA.

APD	*ANZDATA 67% (1780/2657)*	*St George 77% (26/34)*
CAPD	*ANZDATA 33% (877/2657)*	*St George 23% (8/34)*

PD patient flow

PD Patient Flow.

	PD patients December 31st 2022		**46**
In	New Patients	13	
	Transfer from HD	4	
	Return from HD	1	
	In Subtotal		**18**
Out	Transplants	3	
	Planned transfer to Haemodialysis (w/AVF)	4	
	Permanent transfer to Haemodialysis	11	
	Temporary transfer to Haemodialysis	3	
	Return to Haemodialysis	1	
	Withdrawal from dialysis	5	
	Deaths on PD	3	
	Out Subtotal		**30**
	Net loss	12	
	PD patients December 31st 2023		**34**

KPIs

The benchmarks for peritoneal dialysis were mostly set or established by ANZDATA, CARI, KDOQI and ISPD. For outcomes without set benchmark, results were compared to previous year's audits.

1. **Dialysis Adequacy**
   - Peritoneal dialysis adequacy is determined using solute clearance measurements:
   - Kt/V – Benchmarked against the KDOQI and ISPD target of at least 1.7 per week. In 2023, 83% of tested patients had Kt/V ≥ 1.7 per week. The average Kt/V was 2.4 (min 1.36, max 4.29)
   - Creatinine clearance – Benchmarked against the CARI target of 60 L/week/1.73 m2 in high and high-average peritoneal transporters and 50 L/week/1.73 m2 in low-average and low peritoneal transporters. In 2023, 79% of tested patients achieved this target, better than last year at 65%. ISPD set a different creatinine clearance target of >45 L/week/1.73m2 for patients on APD, 86% of tested APD patients achieved this target in 2023, also better than last year at 75%. Ave creatinine clearance was 83.7 L/week/1. 73 m2 (min 37.9, max 152.7).

Dialysis adequacy

Parameter	Target	2017	2018	2019	2020	2021	2022	2023
KT/V	≥ 1.7	80%	73%	79%	77%	84%	71%	83%
CCL	>50L (L & LA) or >60L (H & HA)	75%	73%	77%	75%	66%	65%	79%
CCL (ISPD)	>45L (for APD patients)	84%	95%	89%	82%	79%	75%	86%

2. Patient and Technique Survival

Survival is analysed from the 90th day of treatment until death. Censoring occurs at first transplant, loss to follow-up or recovery of renal function lasting >30 days. Graphs and tables are from ANZDATA Individual Hospital Report 2017-2022. The 5-year patient and technique survival rate for Australia and New Zealand is comparable to SGH in 2023.

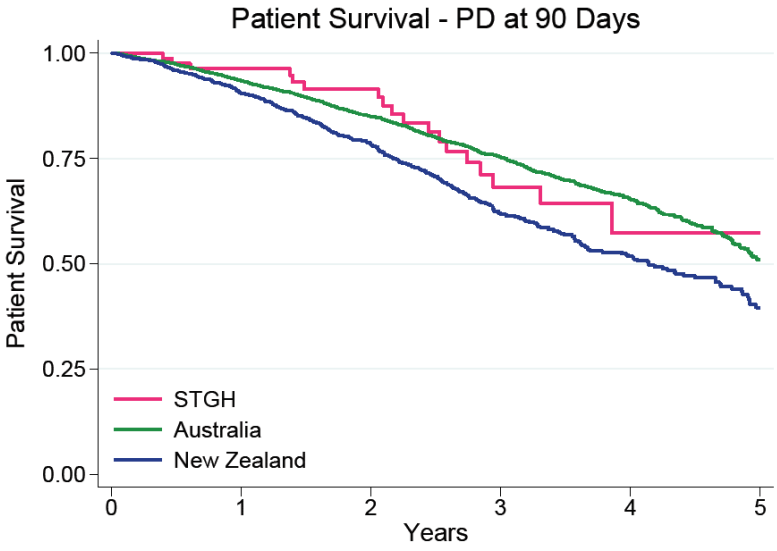
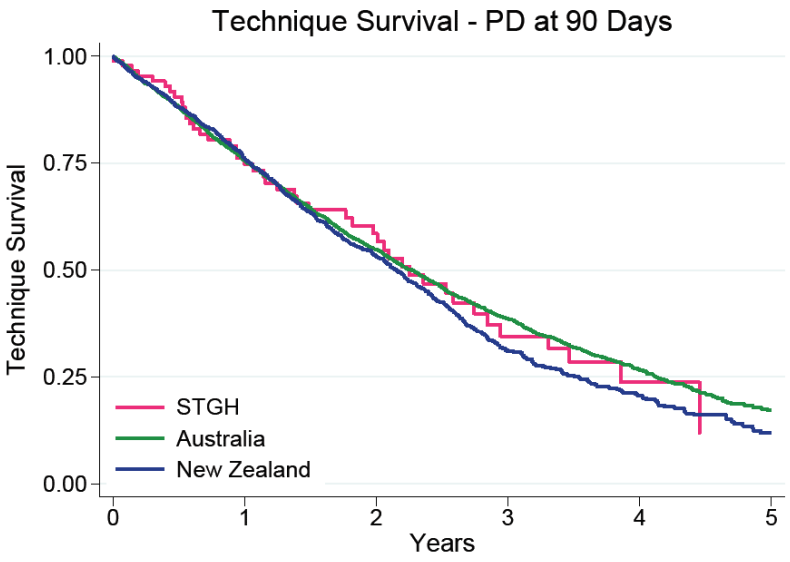


Table 23: PD patient survival

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	90	100.0	4794	100.0	1467	100.0
3 months	83	100.0	4421	98.6 (98.2-98.9)	1364	98.5 (97.7-99.0)
6 months	79	97.5 (90.5-99.4)	4062	97.4 (96.9-97.8)	1234	95.9 (94.7-96.8)
1 year	66	96.3 (88.9-98.8)	3297	93.5 (92.7-94.2)	994	90.5 (88.7-92.0)
2 years	48	91.5 (81.9-96.1)	2024	85.0 (83.7-86.2)	629	78.2 (75.5-80.6)
3 years	22	68.2 (52.4-79.7)	1124	75.3 (73.5-76.9)	320	61.9 (58.3-65.2)
4 years	8	57.2 (36.8-73.3)	558	65.3 (62.9-67.5)	154	51.7 (47.6-55.7)
5 years	2	57.2 (36.8-73.3)	168	51.1 (47.5-54.5)	56	39.6 (34.3-44.9)

PD Patient survival – PD at 90 days. ANZDATA individual hospital report 2017-2022



Technique survival – PD at 90 days

Table 19: PD technique survival

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	90	100.0	4794	100.0	1467	100.0
3 months	79	95.4 (88.1-98.2)	4190	93.5 (92.8-94.2)	1303	93.9 (92.5-95.0)
6 months	73	90.5 (81.8-95.1)	3671	88.1 (87.1-89.0)	1134	88.1 (86.2-89.7)
1 year	52	74.7 (63.5-82.9)	2663	75.5 (74.2-76.8)	833	75.9 (73.5-78.2)
2 years	31	58.5 (45.9-69.2)	1298	54.8 (53.0-56.4)	423	53.0 (49.9-56.0)
3 years	13	34.5 (21.8-47.6)	562	38.6 (36.6-40.5)	156	31.0 (27.7-34.4)
4 years	5	23.7 (11.5-38.4)	227	26.6 (24.5-28.8)	67	20.7 (17.4-24.2)
5 years			56	17.3 (14.8-19.9)	18	11.9 (8.6-15.7)

PD Technique Survival – PD at 90 days. ANZDATA individual hospital report 2017-2022

3. Technique Failure

- ANZDATA 2023 reported the commonest cause of technique failure (ceasing peritoneal dialysis apart from deaths and transplant) was "total dialysis/technical failure" at 35%, followed by infection at 26%. At St George Hospital, the primary cause of technique failure in 2023 was similar to ANZDATA with "total dialysis/technical failure" being the main cause at 75%, mostly due to blocked catheter, followed by withdrawal at 21%.
- Sixteen patients were transferred to haemodialysis permanently in 2023. Average age of patients at time of transfer to haemodialysis was 61 years (min 28, max 81) and average time on PD at time of transfer to haemodialysis was 17 months (min 0, max 48).

Primary reason for technique failure

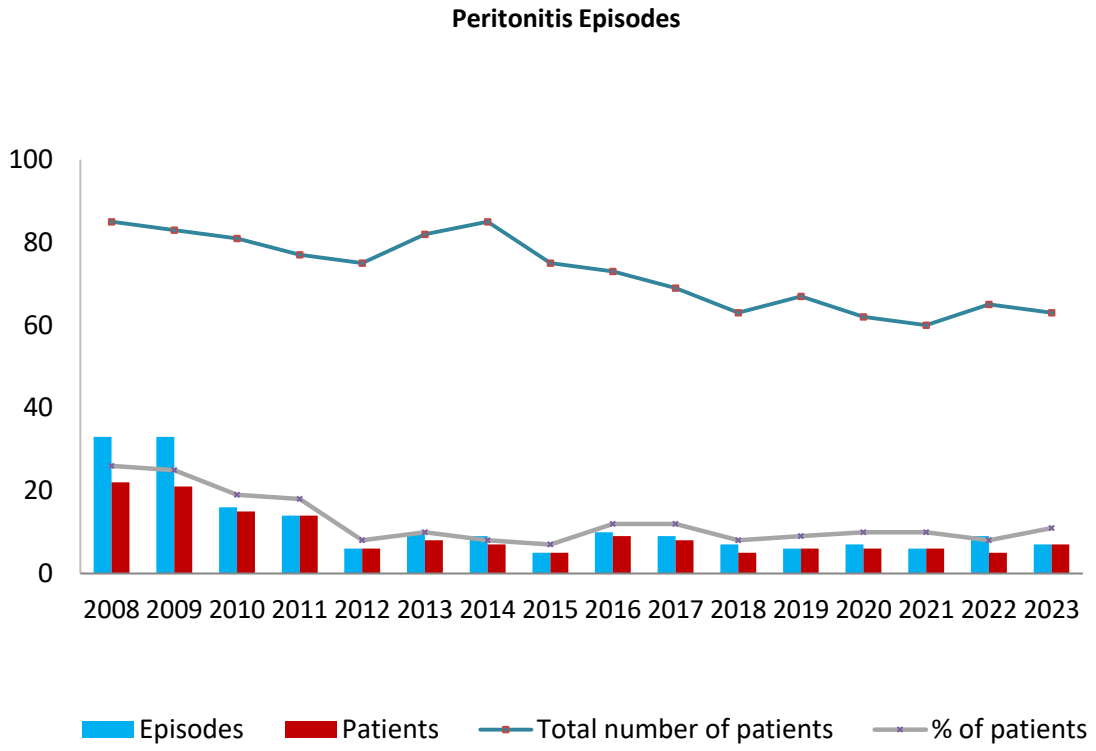
Primary reason for technique failure	2012 n=9	2013 n=12	2014 n=17	2015 n=9	2016 n=14	2017 n=13	2018 n=11	2019 n=10	2020 n=14	2021 n=18	2022 n=13	2023 n=24	ANZDATA 2023
Infective	22%	30%	23%	0%	18%	21%	18%	10%	14%	10%	0%	4%	26%
Total Dialysis/Technical Failure (catheter blockage, leaks and inadequate dialysis)	78%	60%	60%	89%	64%	65%	64%	50%	57%	60%	61%	75%	35%
Social/Withdrawal (psychosocial and malignancy)	0%	10%	17%	11%	18%	14%	9%	10%	14%	20%	31%	21%	27%
Other causes (cardiovascular)	0%	0%	0%	0%	0%	0%	9%	30%	14%	10%	8%	0%	7%
Reason not reported	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%

4. PD-related Infection rates

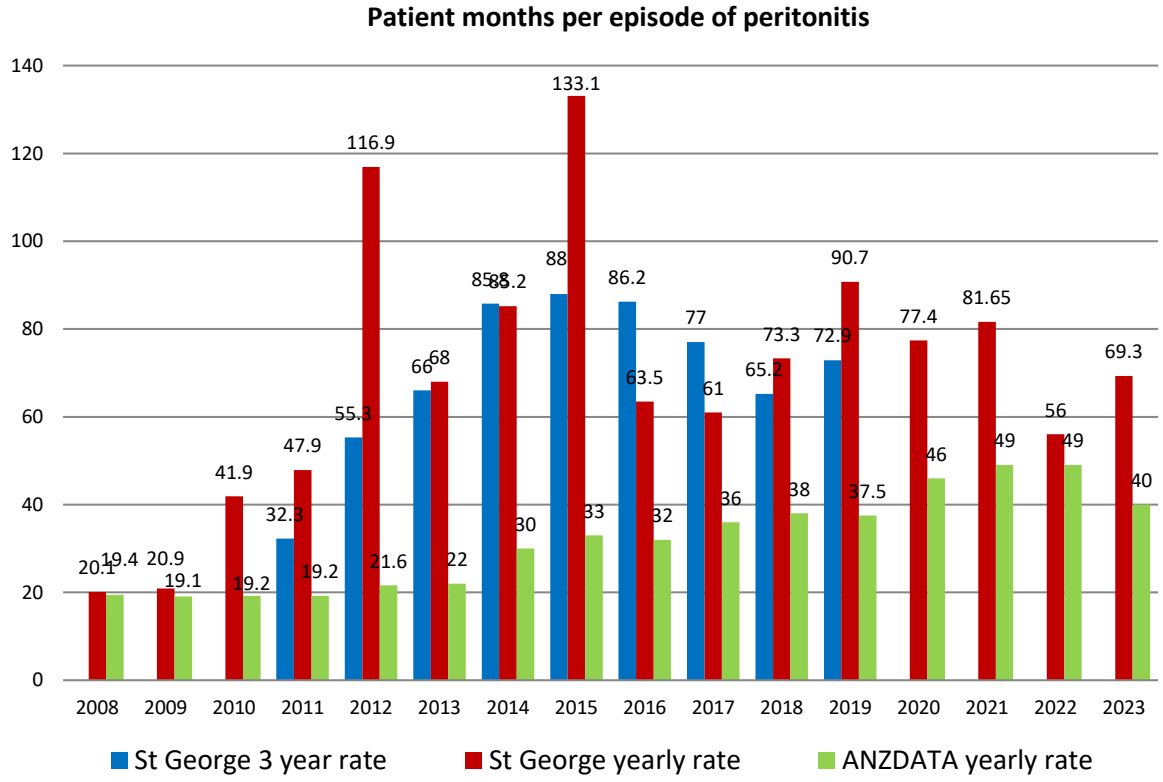
- Peritonitis episodes and rates
  - 2023 peritonitis rate results continue to surpass the national benchmark. The St George peritonitis rate is 69.3 patient months compared to ANZDATA at 40 patient months.
  - 88% (30/34) of patients on peritoneal dialysis in 2023 were peritonitis-free, better than last year at 81%.
  - In 2023, 13% (8/63) of our patients could expect peritonitis in any one year, better than ANZDATA 2023 at 22%
  - The proportion of peritoneal dialysis patients who were 3 years peritonitis-free in 2023 was 78%, better than last year at 75% and better than ANZDATA 2023 at 52%.
  - Most of the peritonitis episodes in 2023 for SGH were from gram positive organisms, mostly from Staphylococcus epidermidis.
  - There were no MRSA peritonitis infections since 2011 and no fungal peritonitis since 2021.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total patients	81	77	75	82	85	75	73	69	63	67	62	60	65	63
Peritonitis episodes	16	14	6	10	9	5	10	9	7	6	7	6	9	7
Patients with at least 1 episode of peritonitis	n=15 19%	n=14 18%	n=6 8%	n=8 10%	n=7 8%	n=5 7%	n=9 12%	n=8 12%	n=5 8%	n=6 9%	n=6 10%	n=6 10%	n=5 8%	n=7 11%
Patients with at least 1 episode of Exit site infection	n=16 20%	n=16 21%	n=11 15%	n=3 4%	n=8 9%	n=4 5%	n=4 5%	n=5 7%	n=4 6%	n=5 7%	n=6 10%	n=3 5%	n=4 6%	n=7 11%

Peritonitis episodes



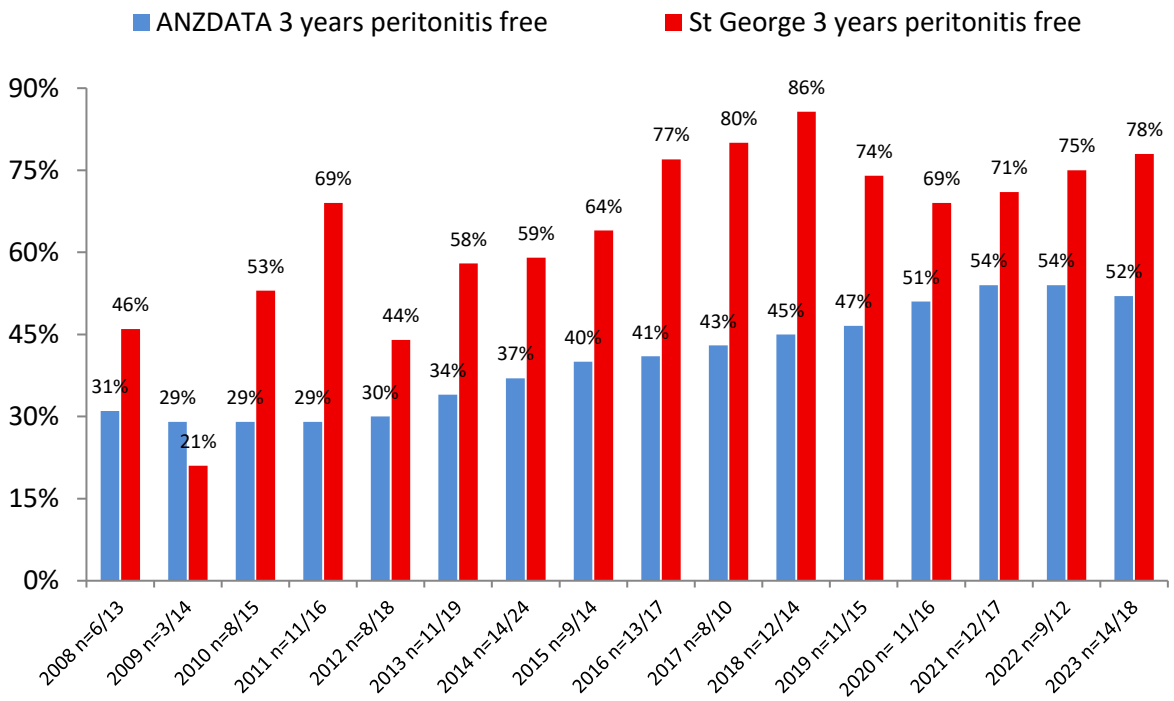
Peritonitis Episodes



Patient months per episode of peritonitis

Proportion of patients 3 years peritonitis free

Proportion of patients 3 years peritonitis free

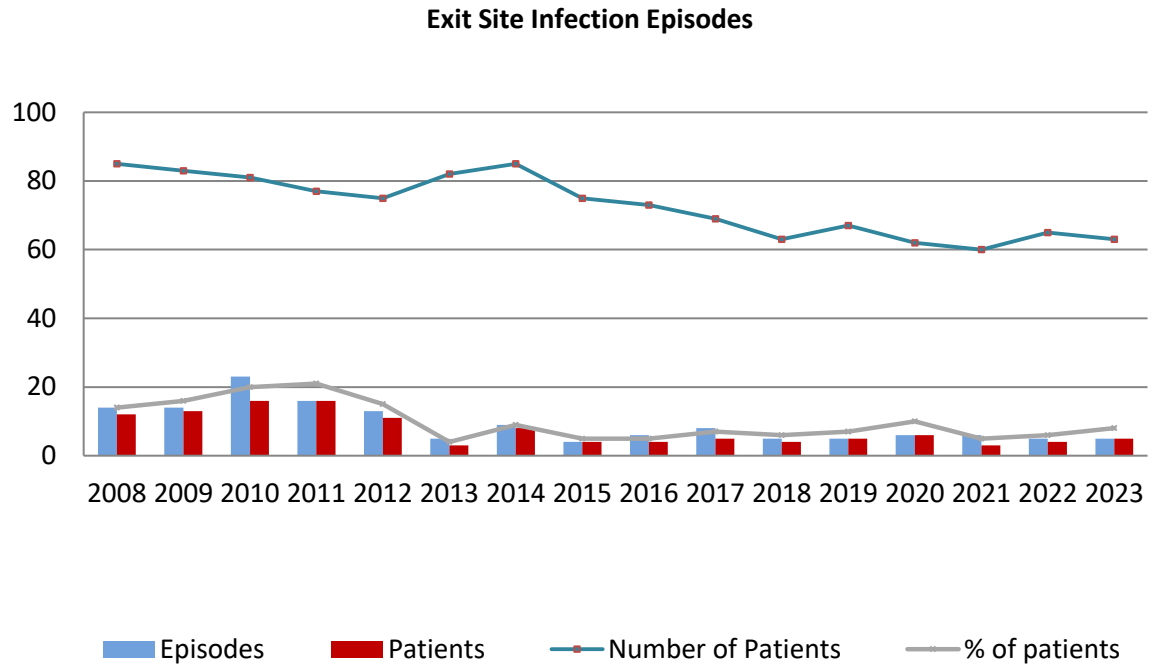


- Change of treatment as a result of peritonitis
  - The peritonitis data was measured to determine the rate of transfer to haemodialysis as a direct result of peritonitis. 2 patients transferred to haemodialysis permanently because of peritonitis in 2023.

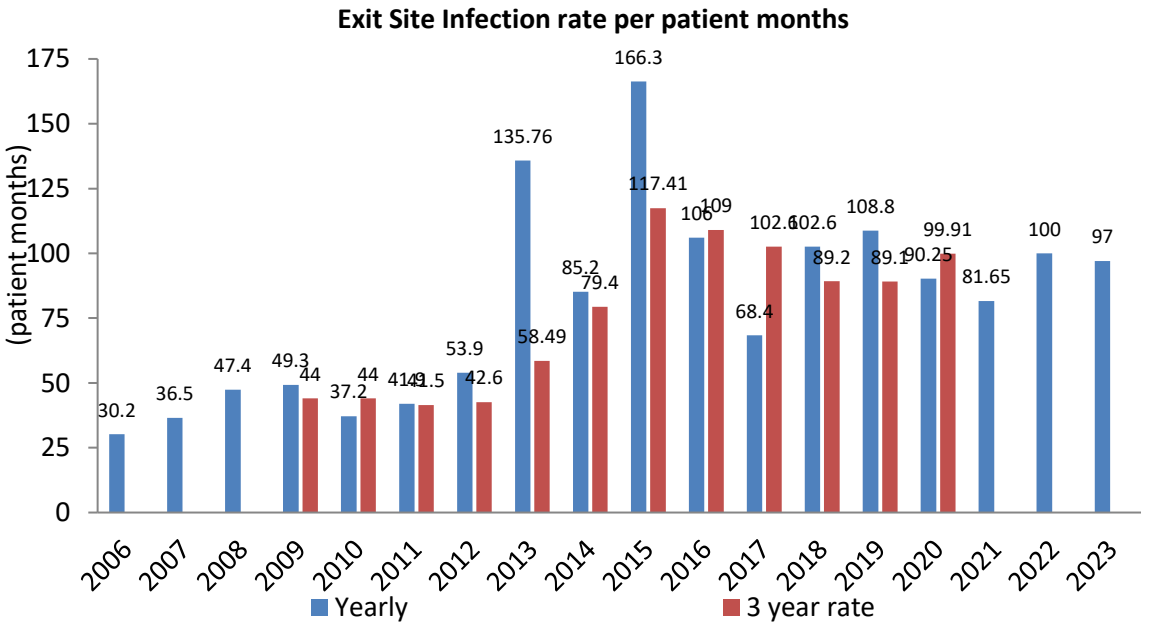
Change in treatment as a direct result of peritonitis (%)	2010*	2011*	2012*	2013*	2014*	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interim Haemodialysis	6	0	0	0	0	0	0	0	0	0	0	0	0	0
Permanent Haemodialysis	24 (4/17)	14 (2/14)	16 (1/6)	30 (3/10)	33 (3/9)	0	10 (1/10)	44 (4/9)	28 (2/7)	17 (1/6)	14 (1/7)	17 (1/6)	0	28 (2/7)
Catheter removed	41 (7/17)	14 (2/14)	16 (1/6)	30 (3/10)	33 (3/9)	0	10 (1/10)	44 (4/9)	28 (2/7)	17 (1/6)	14 (1/7)	17 (1/6)	0	28 (2/7)

Change of treatment as a result of peritonitis

- Exit Site Infections (ESI)
  - ANZDATA does not collect data on exit site infections, we can only compare to previous year's result.
  - 2023 exit site infection rate was 1/97 months, comparable to last year at 1/100 months.
  - The commonest organism of exit site infection in 2023 is Staphylococcus Aureus and Gram negative (pseudomonas aeruginosa) organisms.
  - 8% of PD patients had exit site infection in 2023.



Exit Site Infection Episodes



Exit site infection rate per patient months

5. Change of Modality and Deaths

- Our death and kidney transplant rate is at 9%, similar to the national average in 2023. Commonest cause of death is cerebrovascular and cardiovascular diseases.

- We have more patients transferred to haemodialysis than the national average in 2023.

- Average age of our patients at time of death was 71 years (min 69, max 73) and average time on PD at time of death was 45 months (min 25, max 68).

	SGH 2012 (%)	SGH 2013 (%)	SGH 2014 (%)	SGH 2015 (%)	SGH 2016 (%)	SGH 2017 (%)	SGH 2018 (%)	SGH 2019 (%)	SGH 2020 (%)	SGH 2021 (%)	SGH 2022 (%)	SGH 2023 (%)	ANZDATA 2023 (%)
Transplants	5	4	11	17	4	10	14	5	2	0	5	9	9
Changed to haemodialysis	16	15	26	17	19	40	23	16	17	24	22	56	21
Deaths	9	8	5	4	12	25	7	20	17	19	9	9	9

Change of Modality and deaths

Note: The rates were calculated using the total number of patients on peritoneal dialysis at 31.12.2023 (n=34), the method used by ANZDATA to calculate their rates.

Summary

1. ANZDATA results are the benchmark used for comparison with St George results.
2. APD remains the preferred PD therapy.
3. St George continue to have low rates of peritonitis and exit site infections:
    a. Peritonitis rates continue to be better than the national data.
    b. The percentage of patients who were peritonitis-free at 3 years remains higher than ANZDATA.
    c. 88% patients on peritoneal dialysis at the end of 2023 were peritonitis – free.
    d. 2 patients were transferred to haemodialysis as a result of peritonitis.
    e. There were no MRSA peritonitis infections since 2011 and no fungal peritonitis since 2021.
4. Consistently similar to the national data and the previous years was "total dialysis and technical failure" as the primary reason for PD technique failure, mostly due to PD catheter blockage.
5. Our death and kidney transplant rates are similar to the national average at 9%. Commonest cause of death is cerebrovascular and cardiovascular diseases.

6. Improvements in dialysis adequacy results (Kt/V and creatinine clearance) in 2023.

Research activities and Publication

- St George PD unit participates in the TEACH – PD trial (Targeted Education ApproaCH to improve Peritoneal Dialysis outcomes).

    - This is a pragmatic phase 4, multi-centre, multinational, cluster-randomised trial (CRCT), randomising PD units to implement TEACH-PD training modules targeted at PD trainers and incident PD patients versus standard existing practices.

    - It aims to determine whether implementation of standardised training modules based on the ISPD guidelines, targeting both PD trainers and patients, results in a longer time to the composite end-point of exit site infections, tunnel infections, and peritonitis in incident PD patients compared with existing training practices.

- Approved by NHMRC for $2.38M from MRSS fund. Site ethics (HREC & SSA) approval received in 2020.

- St George PD training curriculum was converted to the TEACH – PD curriculum in 2021 and for the duration of the study as St George has been randomised to the intervention group.

- Recruitment commenced in April 2021 and ended in April 2023. A total of 25 patients were recruited. Data and survey collection will continue until end of 2024.

Management: Clinical and QA activities

- All patient monitoring activities will continue:
  - Flag patients with poor biochemistry, haematology and dialysis clearance results through renal clinic, multi-disciplinary team (MDT) patient review meetings and electronic communication to nephrologists;
  - HbA1c screening for patients with diabetes and lipid screening for high risk patients;
  - Daily APD remote monitoring & management through Sharesource platform;
  - 2 yearly Patient Satisfaction survey.
- All effective initiatives and projects will continue:
  - Clinic review checklist project
  - Nurse-facilitated iron management
  - Patient newsletters
  - PD retraining program
  - Pre PD assessment and education program for PD pathway patients
- All education programs for nursing staff aimed to improve peritoneal dialysis care in the acute or inpatient setting will continue:
  - Progressive competency – based training program for renal ward nurses in:
    - CAPD and APD including Sharesource remote patient monitoring
    - Back to basic PD knowledge and skills
    - 5 – yearly PD competency re – assessment and re – training
  - Mentorship program to advance the PD knowledge and skills of identified PD champions in the renal ward and emergency department
  - Monthly CAPD inservice and competency – based training for emergency department nurses
  - Monthly PDC care and management inservice and competency – based training was commenced in early 2023 and will continue until 2024 for the nursing staff in 6 West - Rehabilitation Ward nurses

- Despite providing a structured PD support, training and retraining program to the nursing staff of 12 residential aged care facilities (RACF) in the past, only 2 RACF (1 within the SGH catchment area and 1 out of area) in 2023 are willing to accept PD patients requiring assisted PD. Staffing and workload issues are the predominant concerns from RACF. The lack of RACF discharge option contributes to patients' protracted length of hospital stay and reduced specialty ward bed capacity.

- Continue the 3-yearly review of PD policies to keep in line with national (CARI) and international (ISPD) clinical practice guidelines.

11. TRANSPLANTATION

Tania Burns

Aim

The aim of this report is to provide data about patients who have had a renal transplant and are under the care of a St George Hospital (SGH) nephrologist. It will also provide data about patients who are potential renal transplant recipients currently listed on the transplant waiting list and about living renal donors under the care of a SGH nephrologist.

Highlights

- A total of 267 kidney transplant recipients and 77 living kidney donors were under the care of the SGH team during 2023.
- Twenty-three people received a kidney transplant during 2023. Twenty-two of those were from deceased donors and one was a pre-emptive kidney transplant with a living donor through the paired kidney exchange.
- One person donated a kidney.
- Sixty-three people waiting for a transplant were reviewed at the SGH transplant assessment clinic by a nephrologist from the transplanting unit.
- At 31/12/23 thirty-seven SGH dialysis patients were active on the transplant waiting list and fourteen were interim making a total of fifty-one people. Another eight people were fully assessed and ready to be activated on the list once they start dialysis.
- Eighteen people on dialysis and sixteen people who had not yet started dialysis were going through the process of being assessed to for their suitability to receive a transplant.

Transplant patient flow

1/1/2023 SGH transplant recipients registered with ANZDATA		**240**
Out	Transferred care out	2
	Died	6
	Graft failure returned to dialysis	4
Subtotal out		**-12**
In	Transplanted	23

	Transferred care in	4
Subtotal in		**27**
Net change		+15
31/12/23 total SGH transplant patients		**255**

Post-transplant follow up

Of the 267 kidney transplant recipients cared for at SGH in 2023:

- 248 were primary grafts, 14 are second grafts and 3 are third grafts.
- 86 of these patients received grafts from live donors.
- 30 were pre-emptive transplants.

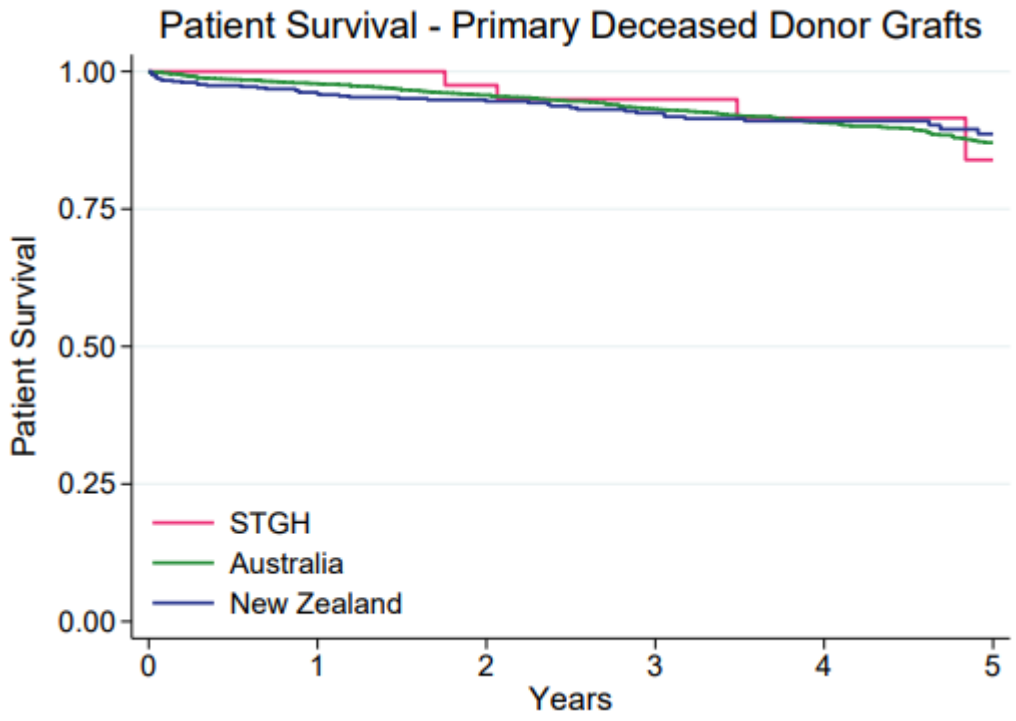
Graft and Patient Survival ANZDATA report for transplants 2016-2022; n=84

Benchmarks are against the national average

1. **Deceased Donors**
   Compared with national data SGH recipients of deceased donor organs have better than national patient and graft survival.

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	50	100.0	3631	100.0	556	100.0
3 months	49	100.0	3451	99.2 (98.8-99.4)	525	98.0 (96.4-98.9)
6 months	48	100.0	3307	98.6 (98.1-98.9)	494	97.4 (95.7-98.5)
1 year	43	100.0	3011	97.8 (97.2-98.2)	446	96.0 (93.9-97.4)
2 years	38	97.5 (83.5-99.6)	2471	95.7 (94.9-96.4)	362	94.6 (92.2-96.3)
3 years	31	94.9 (81.2-98.7)	1891	93.2 (92.2-94.1)	277	92.5 (89.5-94.6)
4 years	24	91.5 (75.7-97.2)	1210	90.7 (89.4-91.8)	174	91.0 (87.7-93.5)
5 years	9	83.9 (58.1-94.5)	534	87.1 (85.3-88.6)	96	88.6 (84.2-91.9)

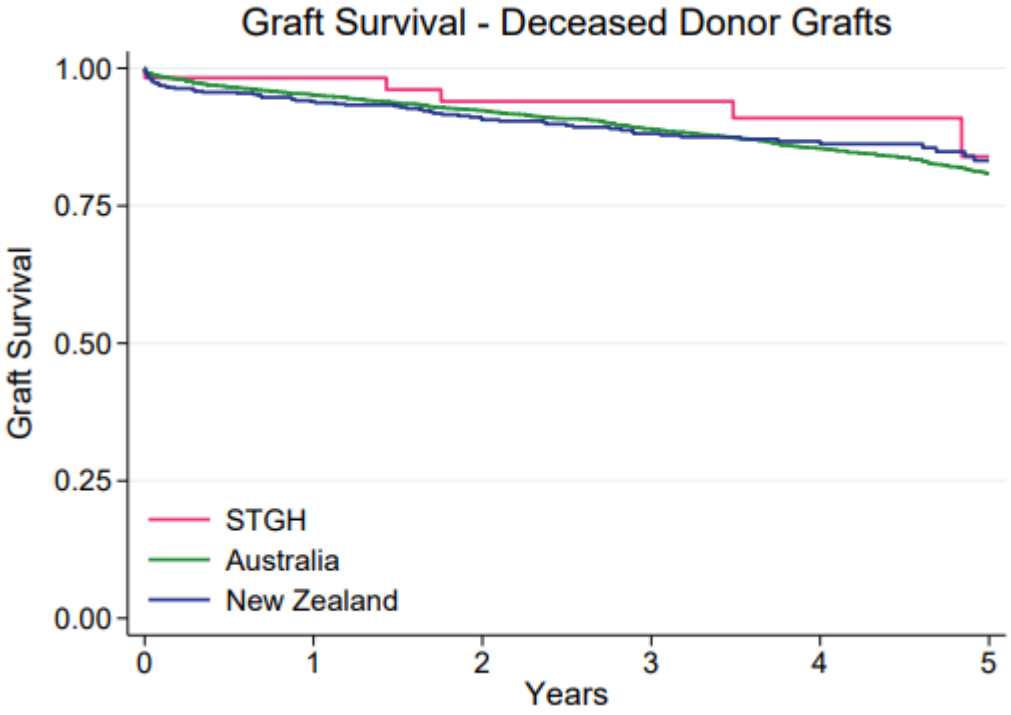
Patient survival for primary deceased donor grafts (ANZDATA Individual Hospital Report 2017-2022)



Patient survival – Primary deceased donor grafts (ANZDATA Individual Hospital Report 2017-2022)

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	57	100.0	4180	100.0	603	100.0
3 months	55	98.2 (88.2-99.8)	3907	97.7 (97.2-98.1)	562	96.3 (94.5-97.6)
6 months	54	98.2 (88.2-99.8)	3718	96.6 (96.0-97.1)	530	95.6 (93.7-97.0)
1 year	49	98.2 (88.2-99.8)	3367	95.2 (94.4-95.8)	479	93.9 (91.6-95.6)
2 years	43	94.0 (82.4-98.0)	2719	92.3 (91.4-93.1)	384	90.6 (87.8-92.8)
3 years	35	94.0 (82.4-98.0)	2080	89.0 (87.9-90.0)	289	88.1 (84.9-90.7)
4 years	26	90.9 (77.1-96.6)	1332	85.4 (84.1-86.7)	180	86.2 (82.5-89.2)
5 years	10	83.9 (60.7-94.1)	590	80.8 (79.0-82.6)	96	83.2 (78.4-87.1)

Graft survival for deceased donor grafts (ANZDATA Individual Hospital Report 2017-2022 (Table 16))



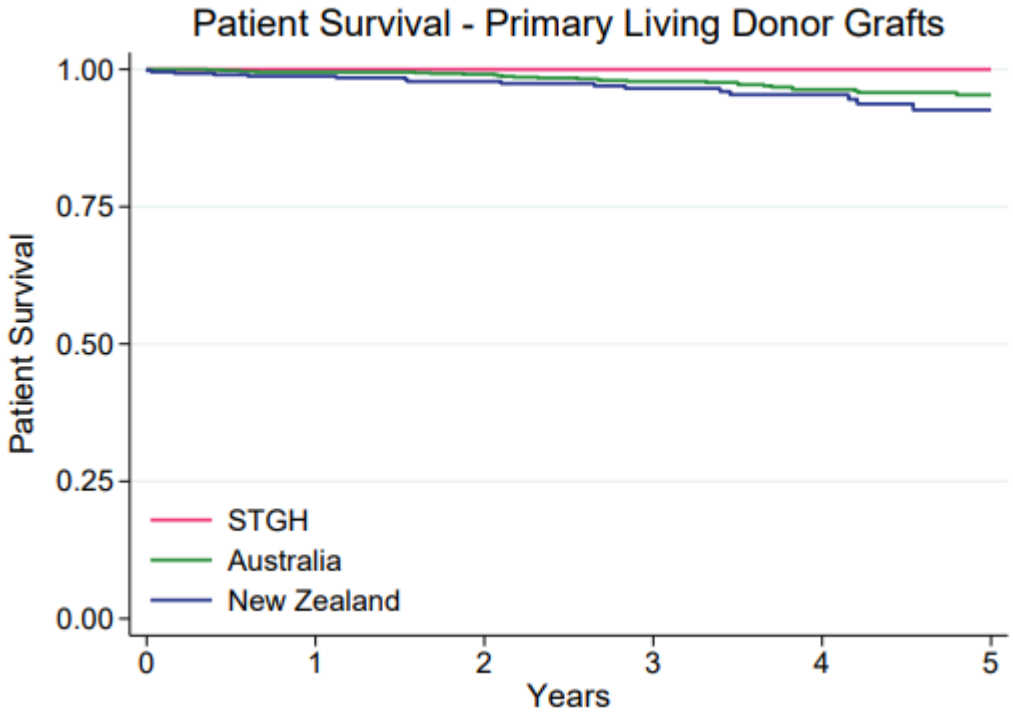
Graft survival - Primary deceased donor grafts (ANZDATA Individual Hospital Report 2017-2022)

2. <u>Live Donors</u>

- Compared with national data SGH recipients of living donor organs have better than national patient and graft survival.

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	26	100.0	1106	100.0	418	100.0
3 months	26	100.0	1041	100.0	395	99.3 (97.8-99.8)
6 months	24	100.0	989	99.8 (99.2-100.0)	378	99.0 (97.4-99.6)
1 year	23	100.0	913	99.5 (98.8-99.8)	350	98.8 (97.0-99.5)
2 years	21	100.0	747	99.1 (98.2-99.6)	273	97.8 (95.6-98.9)
3 years	17	100.0	589	97.8 (96.5-98.6)	197	96.5 (93.7-98.1)
4 years	12	100.0	391	96.3 (94.5-97.6)	126	95.4 (92.0-97.4)
5 years	10	100.0	197	95.3 (93.1-96.9)	53	92.6 (87.3-95.7)

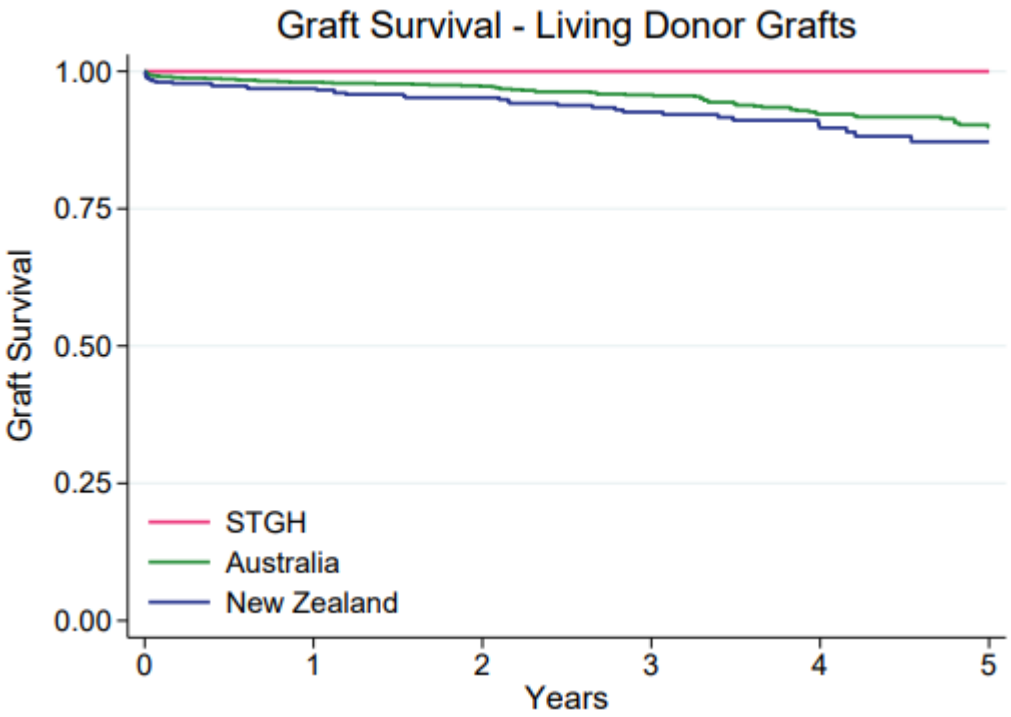
Patient survival for primary living donor grafts (ANZDATA Individual Hospital Report 2017-2022



Patient survival - primary living donor grafts (ANZDATA Individual Hospital Report 2017-2022)

	STGH		Australia		New Zealand	
Time	n	% Survival (95% CI)	n	% Survival (95% CI)	n	% Survival (95% CI)
0	27	100.0	1235	100.0	458	100.0
3 months	27	100.0	1142	98.8 (98.0-99.3)	429	97.8 (96.0-98.8)
6 months	25	100.0	1087	98.6 (97.7-99.1)	411	97.3 (95.4-98.5)
1 year	24	100.0	1004	98.0 (97.0-98.7)	379	96.9 (94.8-98.1)
2 years	22	100.0	815	97.3 (96.1-98.1)	293	95.2 (92.7-96.9)
3 years	18	100.0	646	95.7 (94.2-96.8)	211	92.6 (89.2-94.9)
4 years	12	100.0	418	92.2 (89.9-94.0)	130	89.7 (85.3-92.8)
5 years	10	100.0	214	89.8 (86.9-92.2)	58	87.2 (81.8-91.1)

Graft survival for living donor grafts (ANZDATA Individual Hospital Report 2017-2022

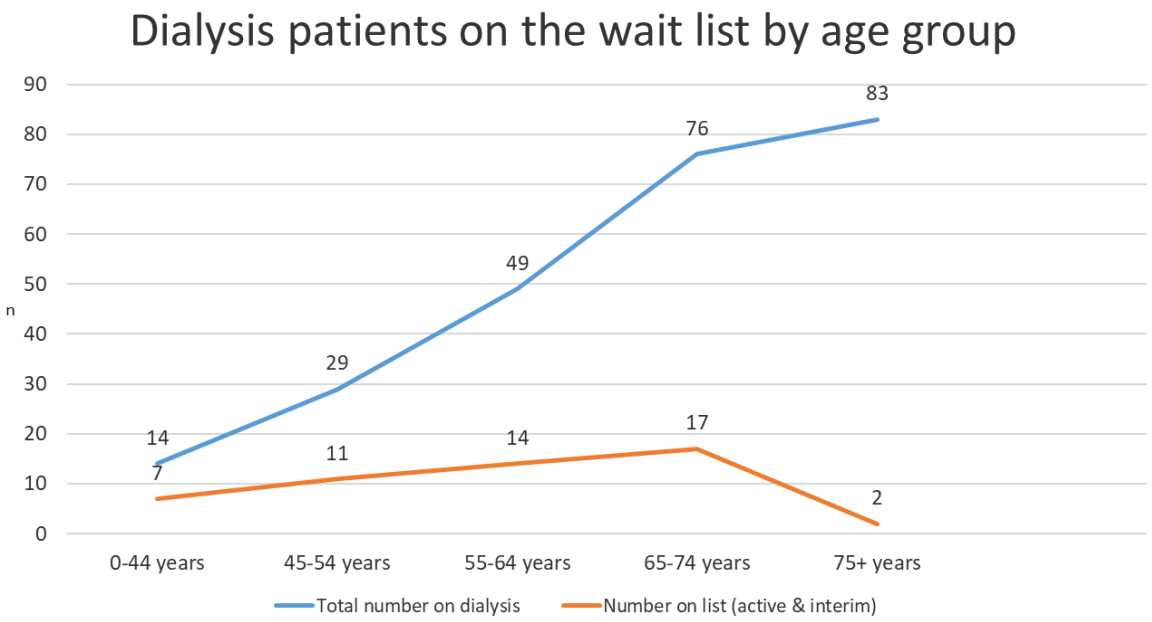


Graft survival for living donor grafts (ANZDATA Individual Hospital Report 2017-2022

3. <u>Waiting list data</u>

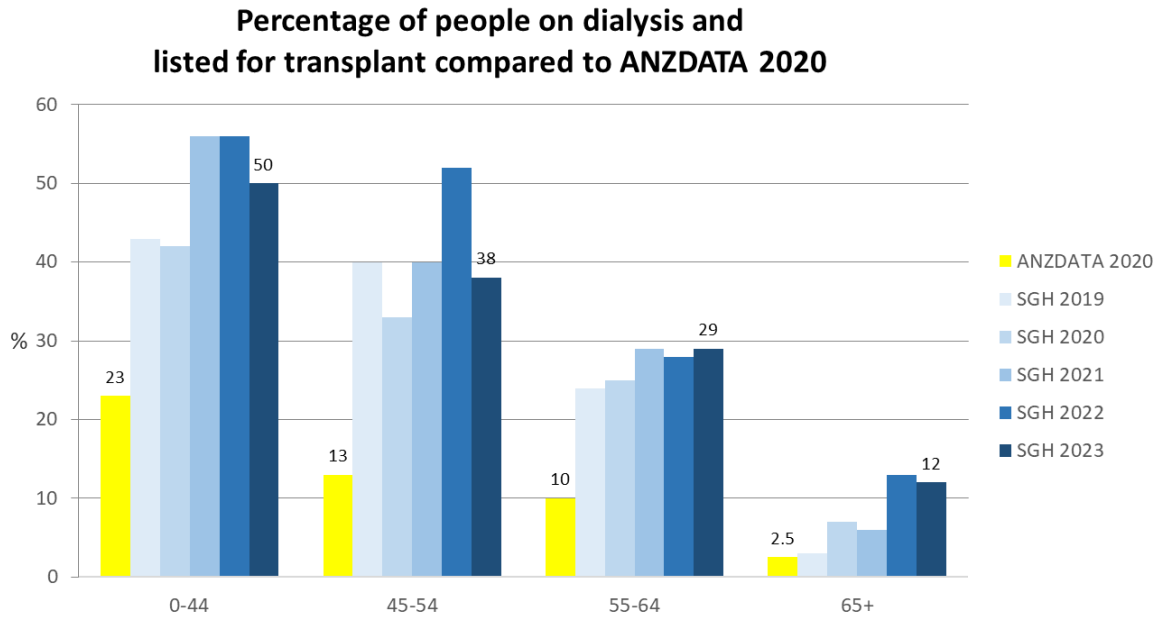
<u>KPI</u>:

- All dialysis patients under 75years to have their suitability for transplant assessment reviewed.



Number of people on dialysis and on the transplant waiting list June 2023

Although the numbers are small, the percentage of SGH dialysis patients listed for transplant in each age group continues to exceed the national figures reported in ANZDATA. Reasons for dialysis patients not being listed include comorbidities such as obesity, coronary artery disease, peripheral vascular disease, chronic infection, or malignancy. Some patients have also expressed their preference to remain on dialysis and not pursue a transplant.



Percentage of SGH dialysis patients listed for transplant compared to ANZDATA 2020

4. Donor Data

KPIs:

- All living kidney donors to be reviewed annually.
- Living donor assessment to be completed in <12months.

At 31/12/23 there were seventy-three living kidney donors under the care of SGH nephrologists.

- During 2023 sixty-one donors (84%) attended for review.
- Donors who did not attend for review in 2023 were followed up by letter.
- One donor moved away, and three donors were lost to follow up after multiple attempts to contact them.
- Among the donors there were no deaths and no one on dialysis.
- Creatinine ranged from 50-155umol/L, eGFR from 32->90mL/min/1.73m^2 and albumin creatinine ratio from 0–4.0mg/mmol.
- Twenty SGH renal donors reviewed in 2023 have CKD stage 3A (GFR 45-59) and four have CKD stage 3B (GFR 30-44).
- Twenty-three donors had hypertension requiring treatment, with fourteen requiring one agent, four requiring two agents and three requiring three agents.

Renal Donor patient flow

1/1/2023 SGH living kidney donors registered with ANZDATA		**76**
Out	Transferred care out	1
	Died	0
	Lost to follow up	3
Subtotal out		**-4**
In	Donated	1
	Transferred care in	0
Subtotal in		**+1**
Net change		-3
31/12/23 total SGH living kidney donors		**73**

One person under the care of SGH donated a kidney during 2023. The process of donor assessment from referral to the coordinator to kidney donation took 57 weeks.

Thirty-six people contacted the unit in 2023 to enquire about being assessed as living kidney donors. Ten started the assessment and were unsuitable to proceed due to medical reasons. Three potential donors did not make any progress after the initial phone call. At 31/12/23 a total of thirty-three people were in donor assessment at SGH with four of those fully assessed and ready to donate.

There have been three formal transplant education sessions in 2023 with a total of 46 attendees.

12. KIDNEY SUPPORTIVE CARE SERVICE

Dr. Frank Brennan, Dr. Kelly Li, Dr Daniel O'Hara, Elizabeth Josland, Alison Smyth, Jessica Dawson, Danielle Horne, Allysha Stibbard, Xiaobing Ma

Overview

- Details of current research, guidelines, patient information, education and presentations can all be found on the Kidney Supportive Care section of the Renal Department website: https://stgrenal.org.au/

RSC Service Activity

- There is an average of 4 new inpatient referrals per month.

KSC Activity 2009-2023

Year	STG CLINIC Visits	(% new referrals)	TSH CLINIC TOTAL	(% new referrals)	CNC OOS	Dietitian OOS	SW OOS
2009	115	33%			115		
2010	224	19%			258		
2011	409	13%			746		
2012	482	10%			988		
2013	383	12%			1173		
2014	300	9%	99	12%	1090		
2015	268	10%	81	9%	1505	24	6
2016	305	6%	137	12%	1728	92	77
2017	281	14%	141	15%	1722	78	50
2018	366	11%	133	12%	2222	179	128
2019	349	10%	136	8%	1957	238	255
2020	499	7%	92	4%	1828	352	231
2021	588	5%	108	9%	1136	339	404
2022	474	8%	185	6%	1041	337	413
2023	419	9%	125	8%	1050	227	309
TOTAL	**5462**	**10%**	**1237**	**10%**	**18559**	**1866**	**1873**

Patient Demographics and Outcomes

Demographics of patients seen by the KSC service (at their first visit/ consult) are tabled below.

Patient demographics on first visit/ consult 2009-2023.

	Conservative	Dialysis	Transplant	Pre-Dialysis/ undecided	Total
No. of patients (count)	834	524	60	114	1532
Age (average, years)	82	71	61	74	77
Age (range, years)	(23, 99)	(23, 94)	(33, 88)	(28, 90)	(23, 99)
eGFR (average)	15		28	28	16
Diabetes (%)	43%	49%	52%	39%	45%
IHD (%)	49%	54%	35%	40%	50%
Dementia (%)	9%	5%	0%	3%	7%
2 or more co-morbidities* (%)	76%	79%	63%	73%	77%
Current or former smokers (%)	15%	30%	18%	13%	20%

Inpatient services

- Inpatients are predominantly seen by the CNCs. Most new inpatient referrals continue to be for pain and symptom management.

Outpatient services

- Clinic are returning to pre COVID-19 face to face consultations, but Telehealth is available to patients who are too frail to physically attend the clinic and to manage patients who require frequent follow up.

Palliative Care Outcome Scale Clinic outcome

- Symptom surveys are conducted at each KSC Clinic visit. The most prevalent symptoms reported as severe/ overwhelming were lack of energy, poor mobility, pain, difficulty sleeping and itch.
- Of all patients that have been seen in the KSC Clinic since 2009, 59% had a reduction in their total symptom score by the 3rd clinic visit.
- 26% of patients with at least 3 visits reported severe/ overwhelming pain at their first visit, 72% had a reduction in their scores by visit 3.

Advance Care Plans

Advance care plans are standard practice within the clinic, this includes yearly reviews. The table below shows figures for patients as of Dec 2023.

NFD - KSC clinic	**107**	
With ACP	47	
Without ACP - Suitable	13	
Discussed	9	
ACPs to do	4	
Without ACP- not suitable	**47**	
Unable due to Dementia/ Incompetent/ Social	8	
Nursing home patients	24	
Less than 3 Clinic appointments	15	
% Completed	78%	(47/60)
% Completed/ Discussed	93%	(56/60)

Performance indicators and outcomes for 2023

1. **Symptom and functional state assessment in clinic**
    - 100% of consenting or competent patients had an IPOS (renal) symptom survey and Karnofsky performance scale measured in the KSC clinic on each visit. These assessments are used to identify individual issues and monitor change.

2. **Symptom assessment in dialysis**.
    - All dialysis and transplant patients have been given an opportunity to complete an IPOS (renal) symptom survey and a QOL-EQ-5D-5L every 6 months. The Karnovsky performance scale is completed by staff every 6 months. These clinical tools are used twice a year for each patient to monitor progress and identify issues.

3. **Advance Care Plans**:

    - 78% of competent NFD patients who are seen in the KSC clinic have a completed an ACP.

4. **Nutritional assessment**

    - 75% of KSC dietetic consultations were for patients attending for conservative management, with 100% of conservative patients being reviewed one or more times in clinic.
    - 25% of KSC dietetic consultations were for patients attending for symptoms support (e.g. pre-dialysis, dialysis-dependent, transplant), with 99% of symptom support patients being reviewed one or more times in clinic.

Publications

- Dawson J, Hoffman A, Josland E, Smyth A, Brennan F, Brown, M. Evaluation of health literacy in end-stage kidney disease using a multi-dimensional tool. Renal Society of Australasia Journal. 2020; Vol.16(2), p.36-43
- Brennan F, Stevenson JK, Brown MA. The pathophysiology and management of taste changes in chronic kidney disease: A Review. Journal of Renal Nutrition. 2020; 30(5); 368-379
- Brennan F. Spirituality, Poetry and Palliative Care. The Blog of the European Association for Palliative care. Published February 17, 2020 Spirituality, poetry and palliative care | EAPC Blog (wordpress.com)
- Dawson J, Brennan F, Hoffman A, Josland E, Li Chenlei-Kelly, Smyth A, Brown MA. Prevalence of taste changes and association with other nutrition-related symptoms in end-stage kidney disease. Journal of Renal Nutrition. 2021, 31(1); 80-84
- Brennan FP, Dawson J, Brown MA. *A novel clinical tool for the management of taste changes in patients with chronic kidney disease: The CKD Taste Plate.* J Ren Nutr,2021 32(4):483-488
- Dawson J, Randall AM, Ryan M, et al. *The association of frailty and malnutrition with dietary intake and gastrointestinal symptoms in people with kidney failure 2-year prospective study*. J Ren Nutr. Accepted Oct 2023
- Dawson J, McLean C. *Nutrition in Conservative Kidney Management: From Evidence to Practice*. Semin Nephrol. 2023; 43(1): 151399

Education Days and Teaching

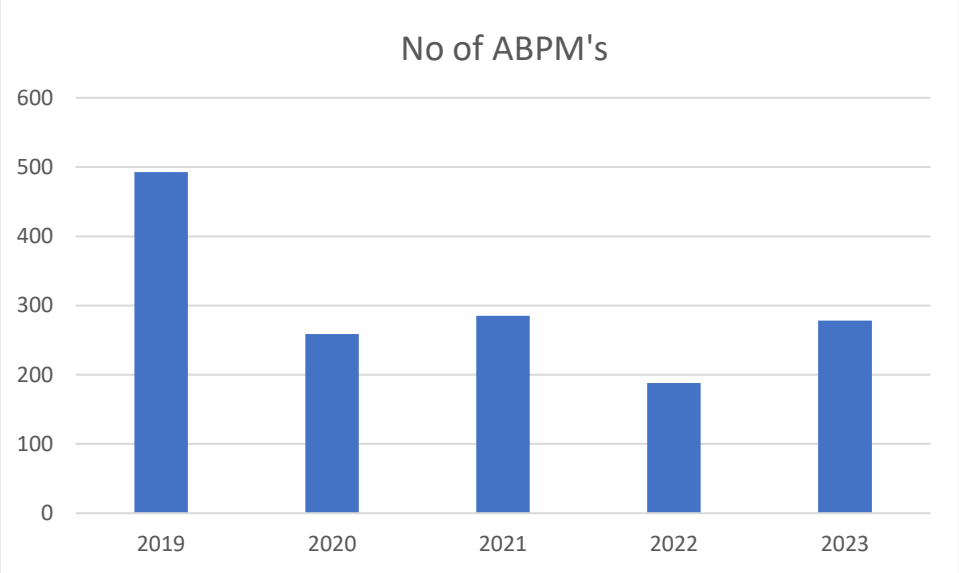
- The KSC Masterclass was held at St George Hospital on 18 November 2023. This day included presentations from multiple national speakers from NSW, QLD and VIC resulting in productive discussions.

13. HYPERTENSION

Dr. George Mangos, Jennifer Beddoe

Twenty-four-hour ABPM monitoring

2023 saw an increase in the demand for 24hr ABPM's. Two hundred and seventy eight monitors been performed. Twenty three of these were for study purposes, Sixteen were pregnant and the remaining two hundred and thirty nine were for general clinical purposes.



Total number of ABPMS 2019-2023.

Home monitor checks

During 2023 thirteen monitor checks were competed.

14. HYPERTENSION IN PREGNANCY

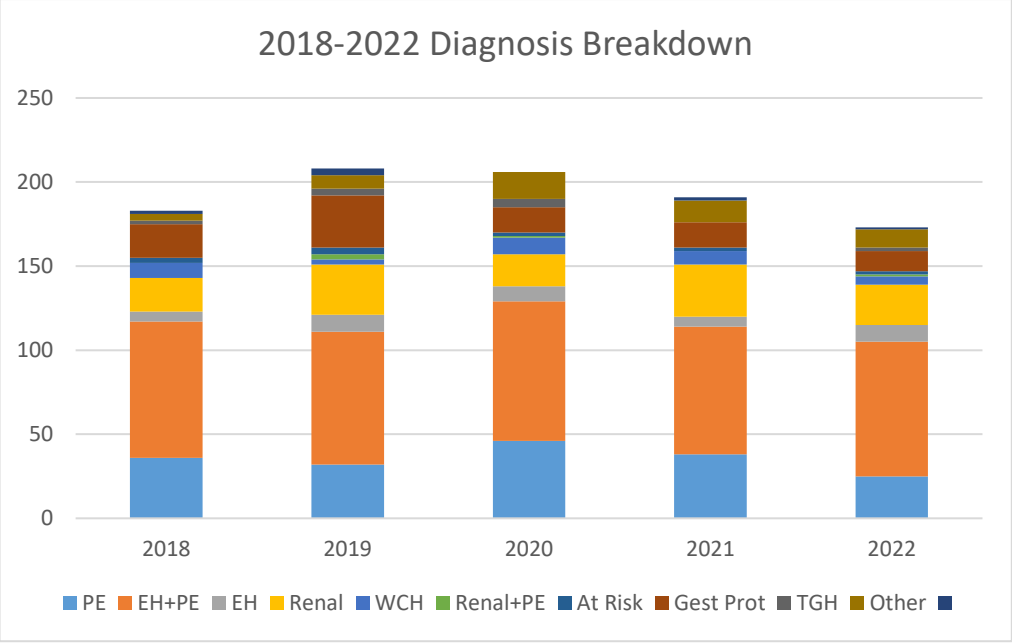
Dr. Franziska Pettit, Jennifer Beddoe

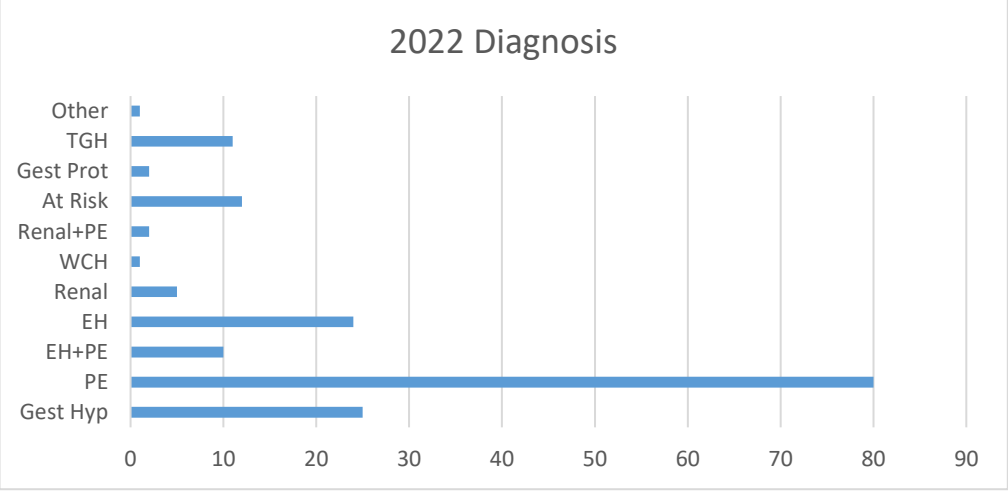
Aims

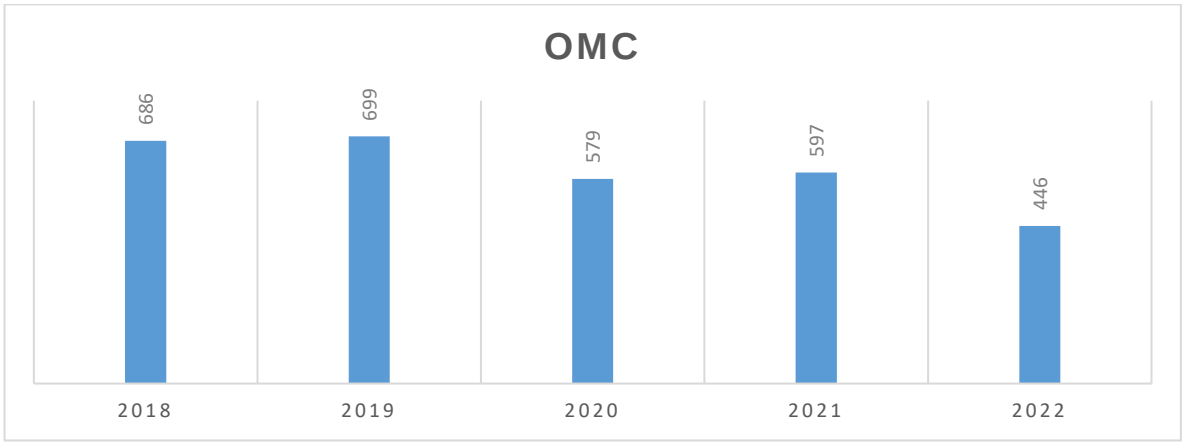
The aim of this report is to review the maternal and fetal outcomes of women presenting with a hypertensive disorder of pregnancy.

Activity

- In 2022 there were 2220 births at St George hospital (down from 2532 in 2021). This included 36 sets of twins, of which only 8 sets had a documented HDP.
- (8%) of all pregnancies were complicated by a HDP here at St George. In 2021 the Australian Mothers and Babies report the overall rate of hypertension in pregnancy was 5%.
- Of the 173 pregnancies with a HDP, 143(83%) were consulted to the renal team, the remaining 30(17%) were managed by the obstetric team.
- There were 446 encounters at the obstetric medicine clinic.
- There were no maternal or fetal deaths recorded here at St George.






OMC
686
699
579
597
446
2018
2019
2020
2021
2022

15. RENAL BIOPSY REVIEW – AUDIT OF COMPLICATIONS

Dr. Partha Shanmugasundaram

Data for the year 2023

	Total	Transplant biopsies
Number	147	58
Total complications	12 (8.2%)	2 (3.4%)
Macroscopic haematuria	8(5.4%)	0 (0%)
Symptomatic Perinephric haematoma	4(2.7%)	1 (1.7%)
Transfusion	1 (0.7%)	None

Comparison of complication rates over the last 5 years expressed as percentage (number)

Year N	2019 N=125	2020 N=115	2021 N=94	2022 N=94	2023 N=147	Last 5 years N=584
Total complications	6.4(8)	7.8(9)	7.4(7)	5.8(6)	8.2(12)	7.2(42)
Macroscopic Haematuria, %(n)	3.2(4)	4.3(5)	4.3(4)	2.9(3)	5.4(8)	3.9(23)
Perinephric Haematoma, %(n)	3.2(4)	4.3(5)	4.3(4)	1.9(2)	2.7(4)	3.3(19)
Perinephric bleed – angioebolisation, %(n)	0(0)	0.9(1)	0(0)	1(1)	2(3)	0.9(5)
Required blood transfusion	1.6(2)	1.7(2)	2.1(2)	2.1(2)	0.7(1)	1.4(8)

Our benchmarks (Am J Kidney Dis 60(1):62-73. 2012) are:

- Macroscopic hematuria 3.5% - unmet
- Blood transfusion 1%- met
- Angio-embolisation 0.6%- unmet

The rate of all complications over the last 5 years was 7.2%. This seems to be stable and in keeping with the rates noted in the international literature and in standard practice. The average rate of macroscopic hematuria following a renal biopsy was slightly higher in 2023 compared to the benchmark. There were three patients who needed angioembolisation, one of them following a renal transplant biopsy The renal transplant biopsies were well tolerated and the complication rates were well within our set benchmark.

16. NUTRITION SERVICES

Maria Chan, and Amber Raco and Emma Boyes (SGH campus). Please refer to Jessica Dawson's dietitian report for KSC

Referrals to dietetics outpatient – clinic and day-stay dialysis (non-ward or inpatient) in 2022

DATA	**eMR Referrals (outpatient and day-stay)**	• CKD (Non-dialysis and conservative care) • Kidney disease education clinic (KDEC) • 4 West Dialysis Ward (In-centre) • Fresenius Medical Care (FMC) • Peritoneal Dialysis (PD) • Transplant (TP) Total	286
	Referrals by other means* (outpatient and day-stay)	• Email/ fax/ letter (from above modalities) • handover from ward for follow-up Total	104 75 179

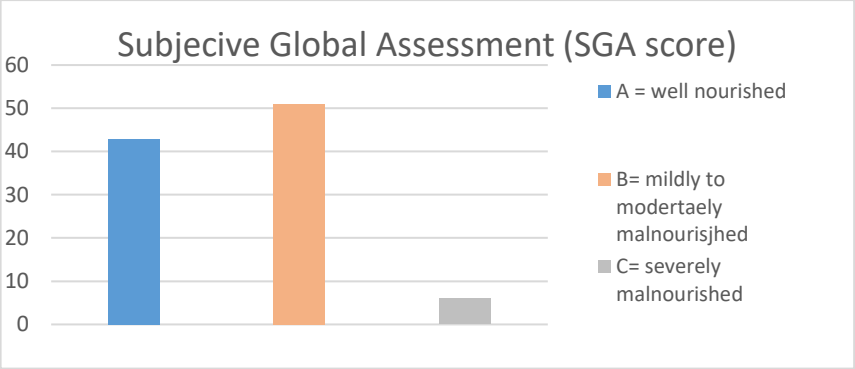
Remark:

- 286/286+179 (62%) referrals were made via eMR/scheduling. Improvement in eMR documentation is required to capture service requirements.
- Inpatient data not extracted for current report due to time constraints.

Occasions of service

Occ. of service	Inpatient (Wards)	Outpatient (outpatient clinics, day-stay dialysis)
2021	345 (Dietitian Assistant Data n/a)	489
2022	364 (~16% from Dietitian Assistant)	565

Prevalence of malnutrition in outpatient and day-stay areas (inpatient data n/a)



Comments: prevalence of malnutrition (score B + C) is high, ~57% in the referred population

Service type, referrals, and dietitian staffing levels for 2022

Year 2022		NDD- CKD stage 4-5 (Pre-Dx and conservative care -CC)	RRT					Total	Current Staffing (FTE) *minimal staffing level required*
Outpatient/day-stay patient			Home HD	In-centre	FMC	PD	TP		
	New	~90 (~66 from KDEC)	3	19	12	24	15	163	1.0
	# **Total** at any time point	~130 (including ~90 from KDEC)	37	50	75	40	253	585	3.1, ranged from 3.5-4.0 in previous years
Inpatient								n/a	0.6

Abbreviations: NDD-CKD = Non-Dialysis Dependent Chronic Kidney Disease, Pre-Dx = Predialysis, RRT = Renal Replacement Therapy, FTE = Full Time Equivalent, FMC = Fresenius Medical Centre, PD = Peritoneal Dialysis, TP = Transplant, KDEC = Kidney Disease Education Clinic

Remarks:

- ~5 new early CKD and stable TP patients were referred to General Nutrition Clinic
- unusually low number compared to previous years during period of COVID isolation.
- # Denotes the total number of patients who should be reviewed regularly and for long term follow-up as per best practice guidelines.
- These data suggested minimal contact time, not including re-referrals, post-admission handovers for new issues and complex cases. Patient flow and displacement is ~ 40-50% in the dialysis population. The actual dietetic services requirement is much higher than the above estimation.
- Current dietitian staffing for non-admitted (outpatient) + day stay haemodialysis, dietitian: patient ratio – 1:600 (MC) or 1.0 FTE at St George Hospital for the estimated clinical load of 3.1 FTE dietitian OR 1.6FTE dietitian for 3.7 FTE's total workload according to the Dietitians Association Renal Dietitians Workforce Recommendation: *Workforce recommendations for*

renal dietitians in Australia and New Zealand, The Australian and New Zealand Renal Dietitians Workforce Planning Group, February, 2018

- Current staffing level is just adequate for one initial assessment and one review for new patients + one follow-up session for handover - discharge from inpatient (ward). To provide regular follow-up for established patients as per best practice guideline has been challenging.

In Summary: Dietitian staffing level continues to be inadequate to implement best practice to ensure patient safety and quality care (for >> 12 years).

Key performance indicator: % new patients received initial diet intervention.

Modality	CKD (from KDEC)	HD at 4W	HD at DIACC	PD	Transplant
No of **new** patients	51 (in clinic)	18 (long term)	12	24	15
% seen one or more times	85%	100%	66%	96%	100%

Key achievements

Key Achievements

Quality Improvement

1) Usage of haemodialysis and peritoneal dialysis diet codes (for inpatient meal ordering) reviewed to improve oral intake and patient experience on the 4 South ward, in-service provided (ongoing)

2) Making "dry weight" of 4W HDx patients available in eMR (ongoing issue): An audit was performed in ~ Sept 2022, 0% "dry weight" was available in eMR; After QI activity with 4W NUM and staff, by 15/12/2022, ~ 100% compliance was observed in a random sample of ~30 patients

Research

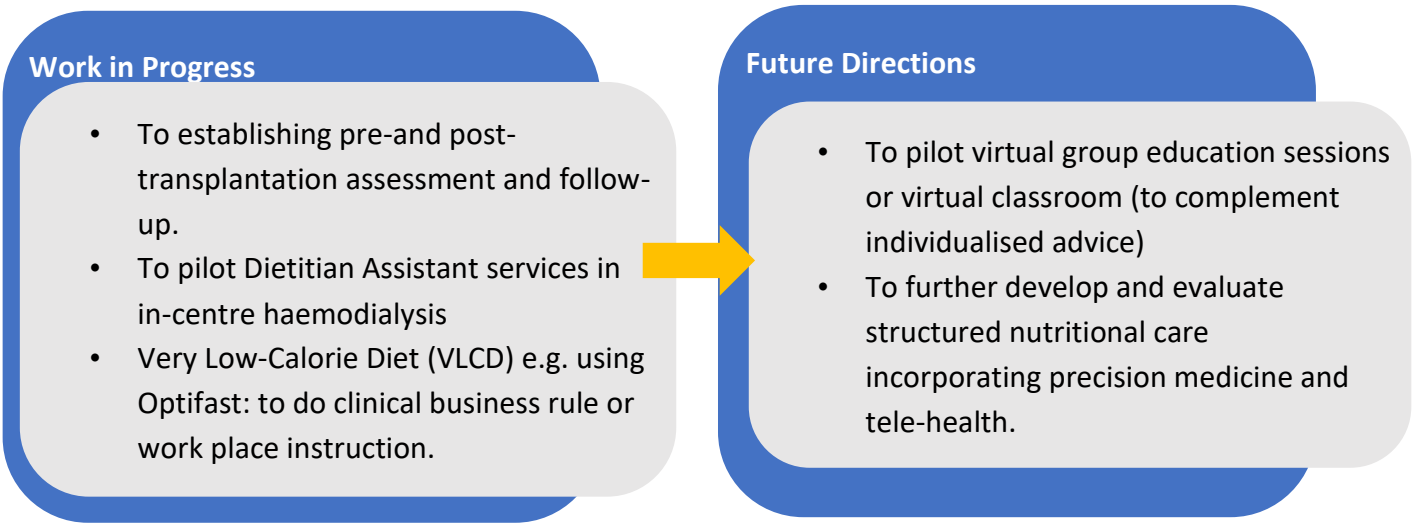
DAMPER study: Dietary Approaches to Manage Progress and End Stage Renal Disease study. Aim: health service evaluation of the nutrition component of the Kidney disease education clinic (KDEC), 2002-2019. During this period, ~1130 patients came through the clinic with 677 has commenced dialysis.

Teaching

Collaborated with NKF, USA to commission Global Renal Internet course for Dietitians (GRID) to train specialist dietitians in renal Care, Module II was launched at the end of 2021. https://cme.kidney.org/spa/courses/resource/global-renal-nutrition-course-for-dietitians-module-2/mooc/home/default. Currently progressing with module III

Publications: 3

Work in progress and future directions



17. SUSTAINABILITY INITIATIVES

Dr. Brendan Smyth, Dr. Franziska Pettit, Dr Alexandra Gallagher

Staff at St George Hospital have been investigating ways to reduce water consumption at the dialysis unit. Fresenius and hospital engineering and plumbing staff have been consulted and a working group established. A grant from Baxter healthcare for $5,000 has been secured to support the implementation of a water recycling program. Hospital plumbing and engineering teams have been consulted and a plan to divert RO reject water from the drain to a productive use (flushing toilets) has been agreed. Cost estimates are being sought with a view to commencing work early 2023.