



CHAPTER 1

Incidence of Kidney Failure with Replacement Therapy

Summarising the number of incident patients with kidney failure with replacement therapy in Australia and New Zealand, the rate per million population and the demographic and clinical characteristics of incident patients.

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SUMMARY AND HIGHLIGHTS

The number of people with kidney failure commencing treatment with kidney replacement therapy (KRT) was stable from last year in Australia and in New Zealand continues to increase (Table 1.1, Figure 1.1), with 128 and 142 people initiating KRT per million population (pmp) in 2024 in Australia and New Zealand, respectively. The incidence of kidney failure treated with KRT is highest in the Northern Territory (439 pmp), over three-times higher than that of the next Australian state (Table 1.2).

A higher proportion of those initiating KRT are male - almost two-thirds (Table 1.5). The highest age-specific rates of KRT initiation are among those 75-85 years, followed by those 65-74 years in Australia (Figure 1.3.1); and among those 65-74 years in New Zealand. One exception is in the Northern Territory, where the highest age-specific rate of KRT initiation was among those 45-64 years (Figure 1.4.1).

In both Australia and New Zealand, the most common cause of kidney failure treated with KRT is diabetic kidney disease, followed by glomerular disease (Table 1.11). Accordingly, the most common comorbidity is diabetes mellitus - present in approximately 50% of people initiating KRT (Table 1.10), followed by coronary artery disease (Table 1.8).

The median estimated glomerular filtration rate (eGFR) at initiation of KRT has remained stable in Australia (Figure 1.12.1), and follows a similar trend nationwide, except in the NT where eGFR at KRT initiation is lower (Figure 1.13). Late referral (defined as <3 months from referral to a nephrologist and KRT start) has declined in Australia from a peak in 2019; in New Zealand, the late referral rate has increased since a nadir in 2020 (Figure 1.5). Late referral in New Zealand is dominated by those 0-24 years, almost double the late referral rate of other age groups (Figure 1.7.2).

Most people initiated KRT with facility haemodialysis (HD) - now over two-thirds of those initiating KRT in both countries. Approximately one-quarter of incident kidney failure in Australia is treated with peritoneal dialysis (PD) which remains roughly stable; there has been a decline in PD as incident KRT modality from 40% to 30% in New Zealand over the last five years (Table 1.1).

SUGGESTED CITATION

D Forcey, C Davies, S Bateman, J Chen, P Clayton, F Kholmurodova, D Lee, K Marshall, H McCarthy, S McDonald, W Mulley, K Polkinghorne, K Richards, M Roberts, B Solomon, G Irish. 48th Report, Chapter 1: Incidence of Kidney Failure with Replacement Therapy. Australia and New Zealand Dialysis and Transplant Registry, Adelaide, Australia. 2025. Available at: <http://www.anzdata.org.au>

INCIDENT PATIENTS

Tables 1.1 and 1.2 show the incidence of kidney failure with replacement therapy by modality, country and state as well as the incidence rates per million population (pmp).

Population estimates for Australia and New Zealand used throughout this chapter for the calculation of incidence per million population were sourced from the Australian Bureau of Statistics (2024)¹ and Stats NZ (2024)². State is based on the state of the treating hospital unless otherwise indicated.*

*NSW population estimates exclude residents of the NSW South Eastern region which includes the local government areas of Bega Valley, Eurobodalla, Goulburn Mulwaree, Hilltops, Queanbeyan-Palerang Regional, Snowy Monaro Regional, Upper Lachlan Shire and Yass Valley. ACT population includes residents of the NSW South Eastern region. The population base for the NSW South Eastern region is based on the estimated resident population by local government area from the Australian Bureau of Statistics (2025)³.

Table 1.1
Incidence of Kidney Failure with Replacement Therapy by Modality 2020-2024 (pmp)

Country	Event	2020	2021	2022	2023	2024
Australia	Total Incident KRT Patients	3335 (130)	3366 (131)	3464 (133)	3491 (131)	3480 (128)
	Pre-emptive Transplant Patients	85 (3)	82 (3)	91 (3)	98 (4)	94 (3)
	Incident KRT Dialysis Patients	3250 (127)	3284 (128)	3373 (130)	3393 (127)	3386 (124)
	Percentage PD	28%	28%	25%	27%	26%
	Percentage Home HD	2%	2%	2%	2%	2%
	Percentage Facility HD	70%	71%	73%	72%	72%
New Zealand	Total Incident KRT Patients	715 (140)	725 (142)	702 (137)	734 (140)	760 (142)
	Pre-emptive Transplant Patients	44 (9)	39 (8)	23 (4)	25 (5)	34 (6)
	Incident KRT Dialysis Patients	671 (132)	686 (134)	679 (133)	709 (135)	726 (136)
	Percentage PD	40%	36%	35%	31%	30%
	Percentage Home HD	3%	2%	3%	2%	2%
	Percentage Facility HD	57%	62%	63%	67%	68%

Table 1.2
Incidence of Kidney Failure with Replacement Therapy by Modality and Jurisdiction (pmp) 2024

State	Total Incident KRT Patients	Incident KRT Dialysis Patients	Pre-emptive Transplant Patients
QLD	731 (131)	721 (129)	10 (2)
NSW*	969 (118)	940 (114)	29 (4)
ACT*	78 (108)	75 (104)	3 (4)
VIC	896 (128)	867 (124)	29 (4)
TAS	63 (109)	62 (108)	1 (2)
SA	248 (132)	234 (125)	14 (7)
NT	112 (439)	110 (431)	2 (8)
WA	383 (129)	377 (127)	6 (2)
Australia	3480 (128)	3386 (124)	94 (3)
New Zealand	760 (142)	726 (136)	34 (6)

*ACT and NSW population estimates adjusted for SE NSW Region.

The total numbers of incident patients per year since kidney replacement therapy commenced in Australia and New Zealand are shown in Figure 1.1. Note the different y axis for each country.

Figure 1.1
New Patients - Australia and New Zealand

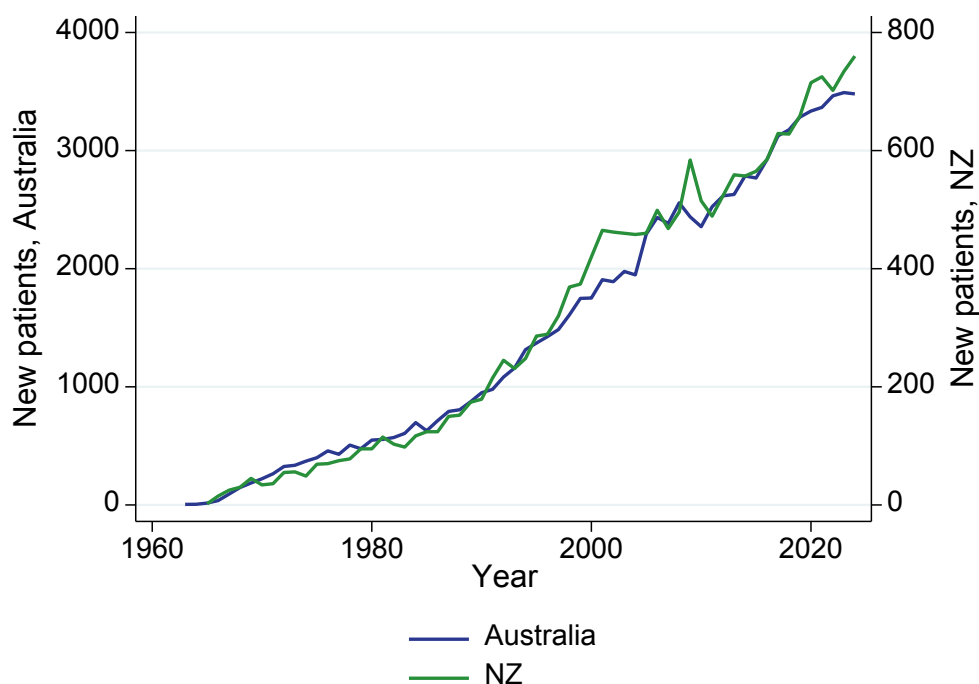


Figure 1.2 presents these data another way, showing the numbers of new patients per year and change in each country compared to the previous year over the last 30 years.

Figure 1.2.1
New Patients and Change - Australia

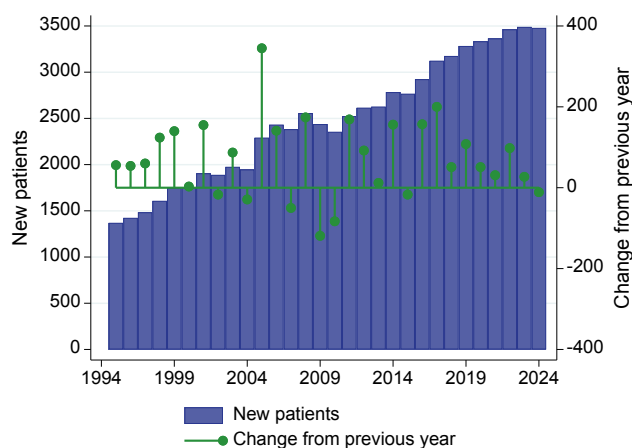


Figure 1.2.2
New Patients and Change - New Zealand

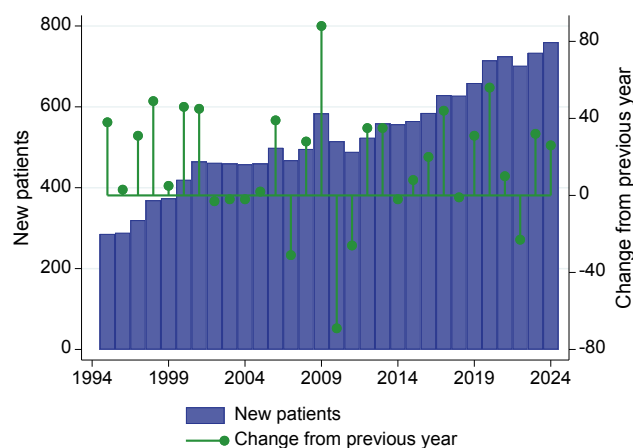


Table 1.3 shows the number of new patients (pmp) by state and country over 2020-2024.

Table 1.3
Kidney Failure with Replacement Therapy Incidence (pmp) 2020-2024

State	2020	2021	2022	2023	2024
QLD	686 (133)	716 (137)	683 (128)	731 (134)	731 (131)
NSW*	995 (126)	986 (125)	1034 (130)	1001 (124)	969 (118)
ACT*	58 (85)	71 (103)	80 (115)	62 (87)	78 (108)
VIC	835 (126)	805 (123)	816 (123)	873 (128)	896 (128)
TAS	43 (77)	61 (108)	69 (121)	48 (84)	63 (109)
SA	242 (135)	237 (131)	241 (132)	246 (133)	248 (132)
NT	102 (412)	120 (484)	146 (583)	134 (530)	112 (439)
WA	374 (138)	370 (135)	395 (141)	396 (137)	383 (129)
Australia	3335 (130)	3366 (131)	3464 (133)	3491 (131)	3480 (128)
New Zealand	715 (140)	725 (142)	702 (137)	734 (140)	760 (142)

*ACT and NSW population estimates adjusted for SE NSW Region.

Figure 1.3 shows incidence rates by age group, and Figure 1.4 by age group and state; the bars represent 95% confidence intervals. Note the different y axes for each Country and Australian State and Territory.

Figure 1.3.1
New Patients - Age Specific Rates - Australia

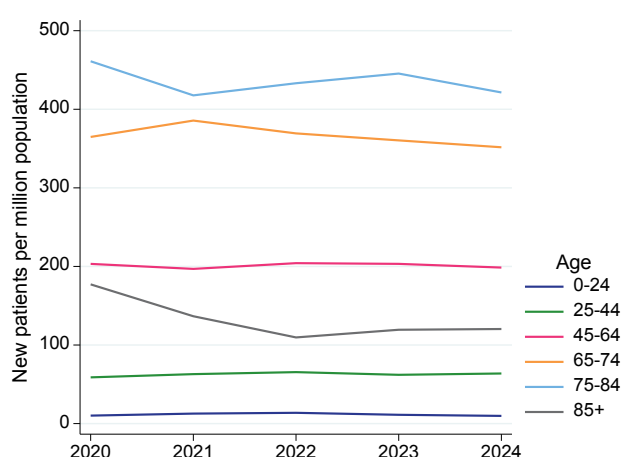
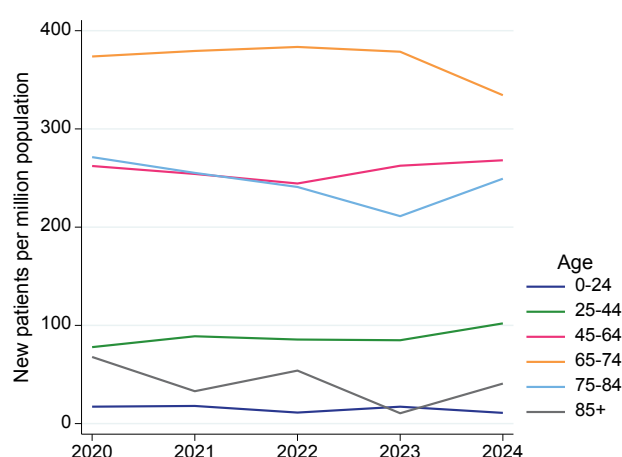


Figure 1.3.2
New Patients - Age Specific Rates - New Zealand



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Figure 1.4.1
New Patients by Age Group - NT

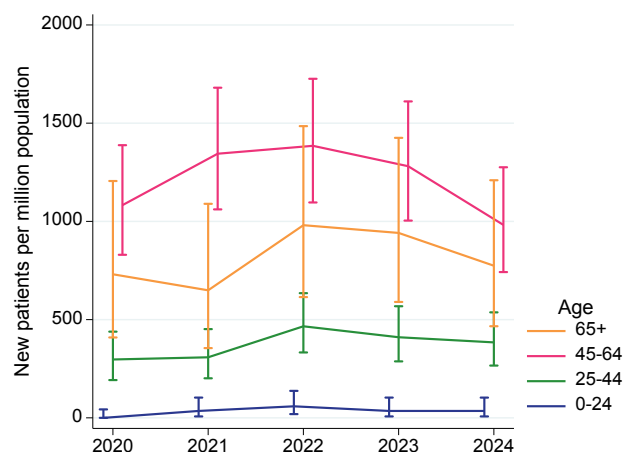


Figure 1.4.2
New Patients by Age Group - NSW

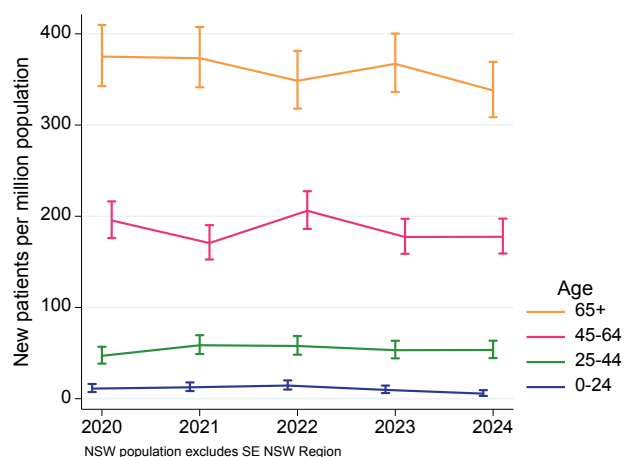


Figure 1.4.3
New Patients by Age Group - VIC

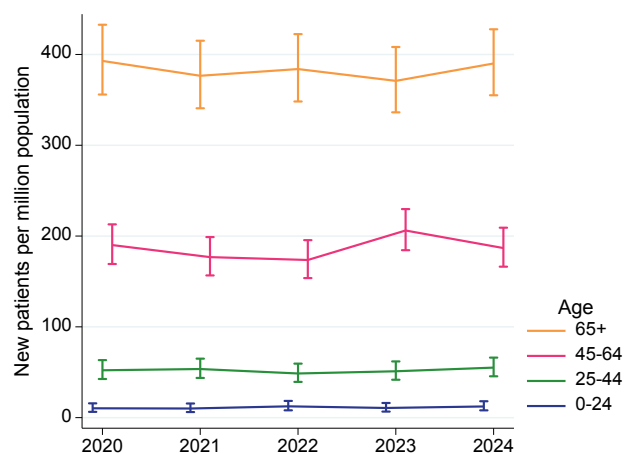


Figure 1.4.4
New Patients by Age Group - QLD

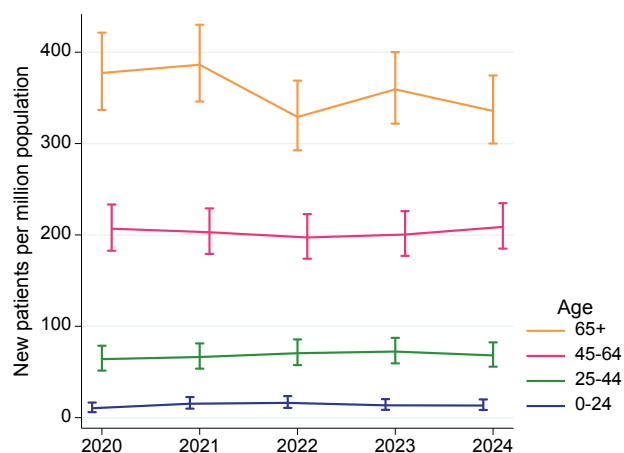


Figure 1.4.5
New Patients by Age Group - SA

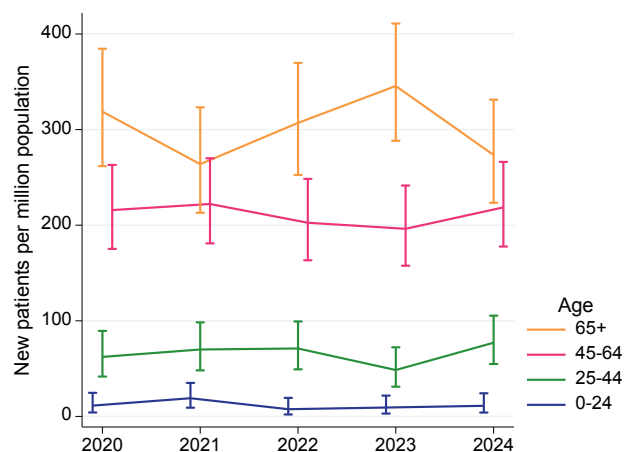
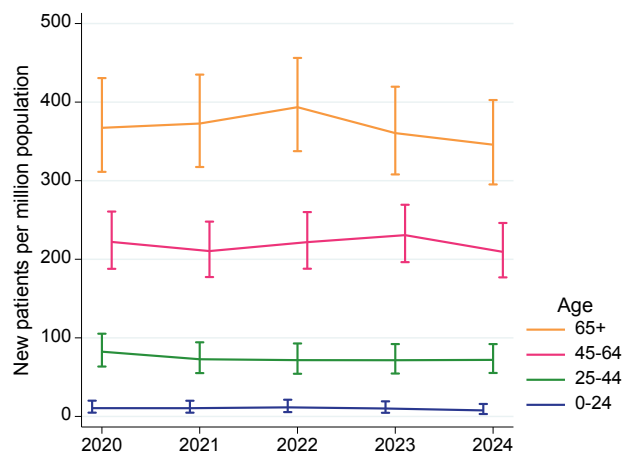


Figure 1.4.6
New Patients by Age Group - WA



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Figure 1.4.7
New Patients by Age Group - TAS

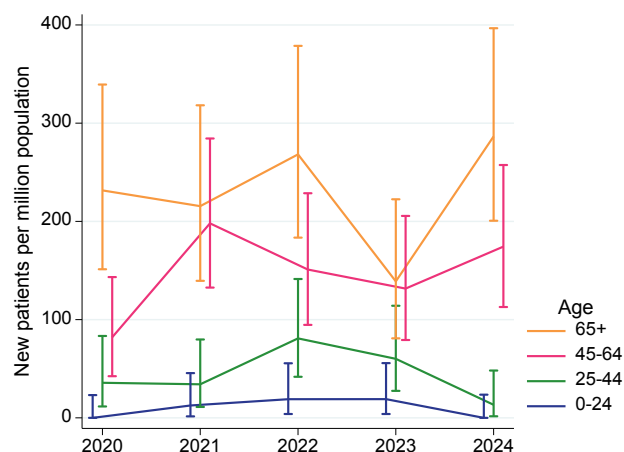
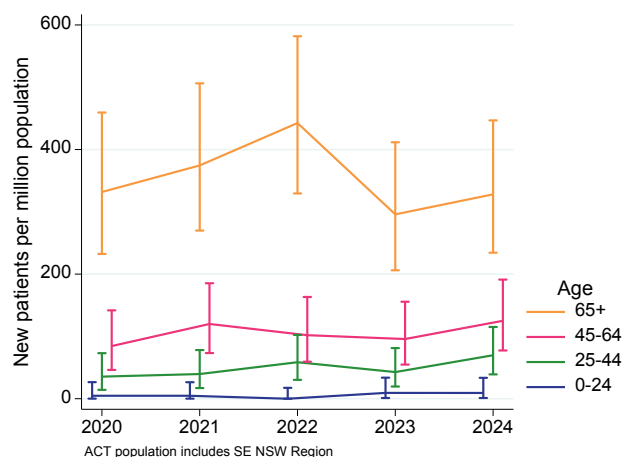


Figure 1.4.8
New Patients by Age Group - ACT



The rates in older patients are shown in Table 1.4. Table 1.5 further categorises the 2024 data by gender.

Table 1.4
Incidence (pmp) of Kidney Failure with Replacement Therapy in Older Patients 2020-2024

Country	Age	2020	2021	2022	2023	2024
Australia	60-64	417 (290)	389 (265)	405 (271)	433 (285)	438 (285)
	65-69	430 (341)	454 (355)	443 (340)	475 (358)	436 (321)
	70-74	436 (392)	482 (420)	461 (403)	421 (364)	455 (388)
	75-79	385 (501)	383 (474)	403 (462)	438 (471)	458 (471)
	80-84	212 (402)	182 (334)	220 (389)	236 (405)	210 (343)
	85+	92 (177)	73 (137)	60 (110)	67 (119)	70 (120)
New Zealand	60-64	94 (323)	95 (320)	100 (329)	101 (324)	117 (372)
	65-69	101 (408)	98 (388)	100 (388)	103 (390)	103 (380)
	70-74	71 (334)	81 (370)	83 (378)	81 (365)	63 (279)
	75-79	50 (341)	42 (278)	45 (281)	46 (267)	56 (309)
	80-84	16 (165)	23 (222)	20 (182)	14 (125)	18 (155)
	85+	6 (68)	3 (33)	5 (54)	1 (11)	4 (41)

Table 1.5
Age and Gender of New Patients 2024

Country	Gender*	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	Total	Mean	Median
Australia	F	6	6	28	88	127	204	265	314	207	21	1266	58.6	62
	M	6	13	22	90	197	319	480	577	461	49	2214	61.7	64
New Zealand	F	1	2	5	23	35	53	72	66	18	1	276	54.9	57
	M	1	0	9	30	66	79	140	100	56	3	484	57.1	59

*The number of persons identifying as a gender other than male or female was too small to be reported

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LATE REFERRAL

The following figures and tables examine late referral, defined as <3 months between initial review by a nephrologist and KRT start. Figure 1.5 shows the overall proportion of new patients referred late in Australia and New Zealand over the last 10 years. In 2024, among those with referral timing reported, 14% of Australian and 15% of New Zealand new patients were referred late. Figure 1.6 shows the variation in late referral rates across Australian states and Figure 1.7 shows late referral rates by age for Australia and New Zealand.

Tables 1.6 shows late referral rates for new patients over 2020-2024 by primary kidney disease.

Figure 1.5
Late Referral Rates - All Incident Patients 2015 - 2024

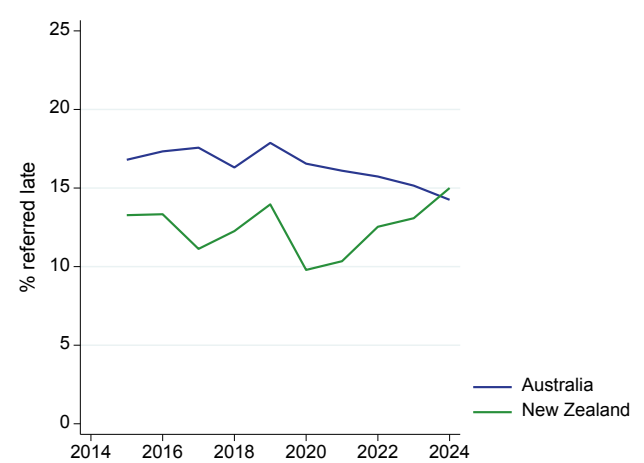


Figure 1.6
Late Referral Rates by State/Territory - Australia 2016 - 2024

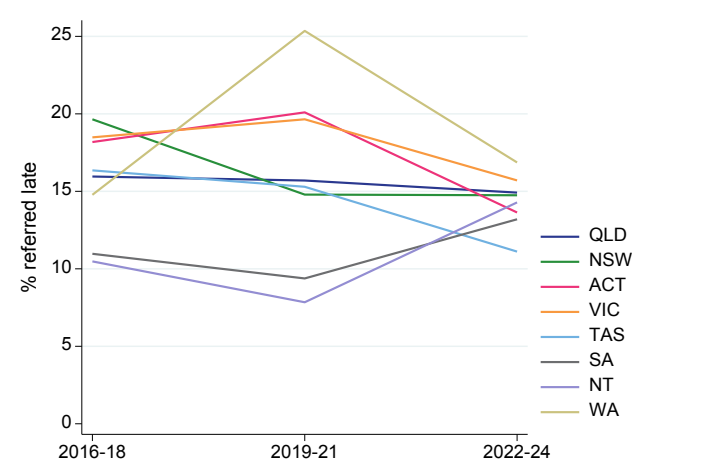


Figure 1.7.1
Late Referral Rates by Age - Australia 2015 - 2024

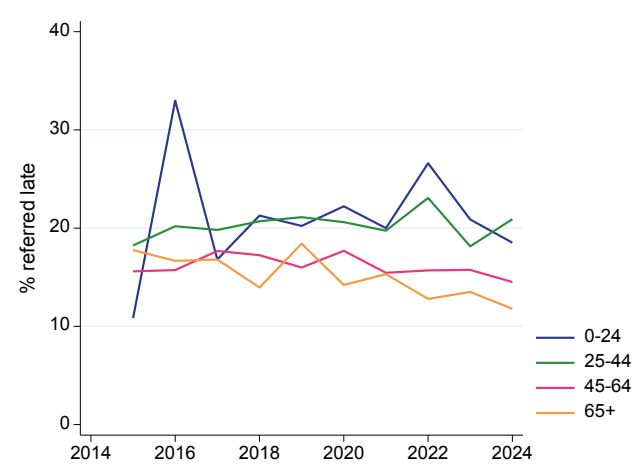


Figure 1.7.2
Late Referral Rates by Age - New Zealand 2015 - 2024

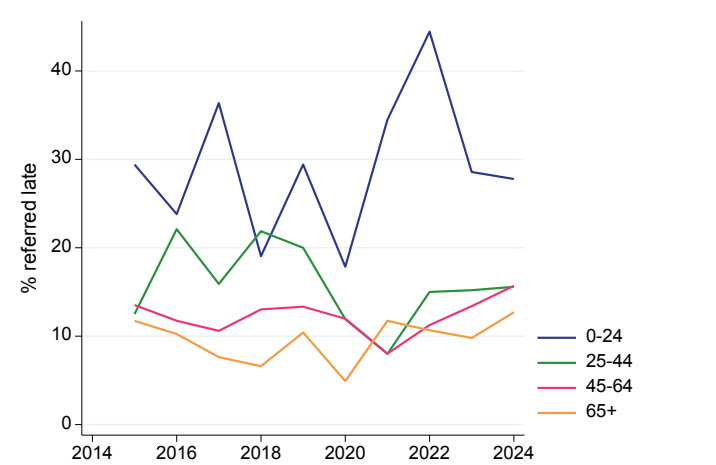


Table 1.6
Late Referral by Country and Primary Kidney Disease 2020-2024

Country	Primary kidney disease	Late	Not Late	Not Reported	Total
Australia	Diabetic kidney disease	873 (13%)	5594 (86%)	43 (1%)	6510
	Glomerular disease	517 (16%)	2680 (83%)	29 (1%)	3226
	Hypertension / Renal vascular disease	275 (13%)	1777 (86%)	10 (0%)	2062
	Familial / hereditary kidney diseases	76 (6%)	1189 (93%)	10 (1%)	1275
	Tubulointerstitial disease	194 (15%)	1123 (84%)	12 (1%)	1329
	Other systemic diseases affecting the kidney	154 (35%)	283 (64%)	2 (0%)	439
	Miscellaneous kidney disorders	558 (26%)	1584 (73%)	16 (1%)	2158
	Not reported	17 (12%)	36 (26%)	84 (61%)	137
	Total	2664 (16%)	14266 (83%)	206 (1%)	17136
New Zealand	Diabetic kidney disease	190 (11%)	1571 (89%)	9 (1%)	1770
	Glomerular disease	83 (12%)	602 (88%)	2 (0%)	687
	Hypertension / Renal vascular disease	41 (12%)	306 (88%)	2 (1%)	349
	Familial / hereditary kidney diseases	9 (4%)	199 (96%)	0 (0%)	208
	Tubulointerstitial disease	24 (10%)	220 (89%)	3 (1%)	247
	Other systemic diseases affecting the kidney	30 (38%)	50 (62%)	0 (0%)	80
	Miscellaneous kidney disorders	64 (22%)	219 (77%)	3 (1%)	286
	Not reported	2 (22%)	5 (56%)	2 (22%)	9
	Total	443 (12%)	3172 (87%)	21 (1%)	3636

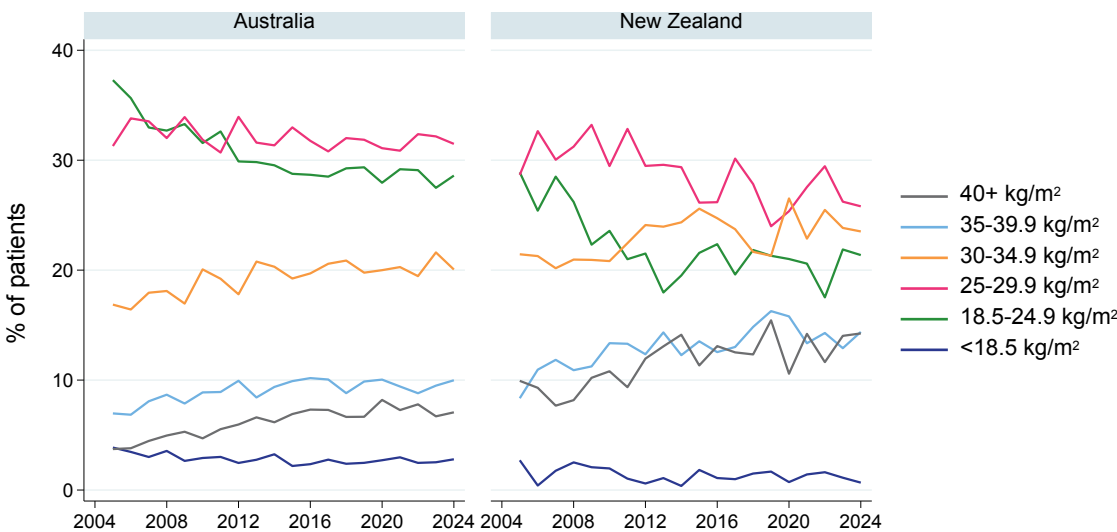
BODY MASS INDEX

Table 1.7 shows the body mass index (BMI, in kg/m²) category at KRT entry of new adult patients in 2024. Trends in the distribution of BMI at KRT entry are shown in Figure 1.8.

Table 1.7
BMI Category at KRT Entry for Adult Patients 2024

Country	BMI Category at KRT Entry	n (%)
Australia	<18.5	95 (3%)
	18.5-24.9	971 (28%)
	25-29.9	1069 (31%)
	30-34.9	681 (20%)
	35-39.9	339 (10%)
	40+	240 (7%)
	Not reported	40 (1%)
New Zealand	<18.5	5 (1%)
	18.5-24.9	159 (21%)
	25-29.9	192 (25%)
	30-34.9	175 (23%)
	35-39.9	107 (14%)
	40+	106 (14%)
	Not reported	9 (1%)

Figure 1.8
BMI Category at KRT Entry for Adult Patients



CO-MORBIDITIES

Tables 1.8-1.10 show the co-morbidities at KRT entry of new patients in 2024. Trends in the prevalence of these co-morbidities at KRT entry are shown in Figures 1.9-1.10, with the bars representing 95% confidence intervals.

Table 1.8
Co-morbidities of New Patients 2024

Country	Status at KRT Entry	Coronary Artery Disease	Peripheral Vascular Disease	Cerebrovascular Disease	Chronic Lung Disease
Australia	No	2265 (65%)	2767 (80%)	3091 (89%)	2948 (85%)
	Suspected	204 (6%)	243 (7%)	58 (2%)	99 (3%)
	Yes	946 (27%)	406 (12%)	268 (8%)	372 (11%)
	Not reported	65 (2%)	64 (2%)	63 (2%)	61 (2%)
New Zealand	No	571 (75%)	675 (89%)	692 (91%)	649 (85%)
	Suspected	33 (4%)	9 (1%)	16 (2%)	15 (2%)
	Yes	147 (19%)	69 (9%)	44 (6%)	88 (12%)
	Not reported	9 (1%)	7 (1%)	8 (1%)	8 (1%)

Table 1.9
Smoking Status of New Patients 2024

Country	Smoking Status at KRT Entry	n (%)
Australia	Current	393 (11%)
	Former	1136 (33%)
	Never	1893 (54%)
	Not reported	58 (2%)
New Zealand	Current	115 (15%)
	Former	268 (35%)
	Never	376 (49%)
	Not reported	1 (0%)

Table 1.10
Diabetic Status of New Patients 2024

Country	Diabetic Status at KRT Entry	n (%)
Australia	No	1675 (48%)
	Type 1	189 (5%)
	Type 2	1555 (45%)
	Not reported	61 (2%)
New Zealand	No	338 (44%)
	Type 1	27 (4%)
	Type 2	387 (51%)
	Not reported	8 (1%)

Figure 1.9.1
Comorbid Conditions at KRT Entry - Australia

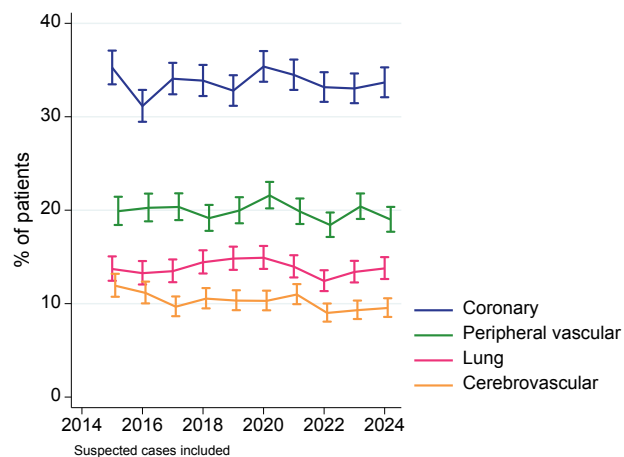


Figure 1.9.2
Comorbid Conditions at KRT Entry - New Zealand

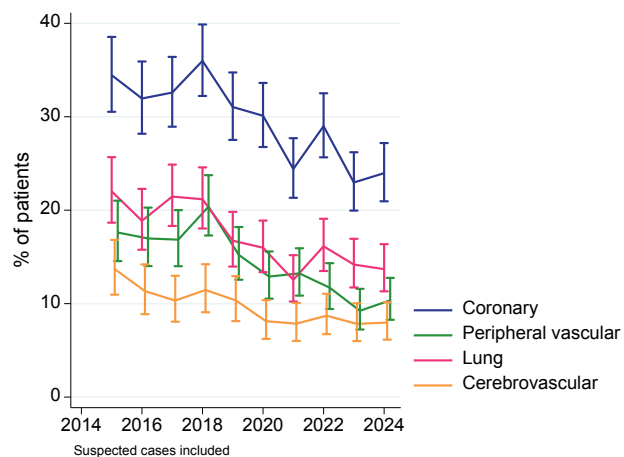
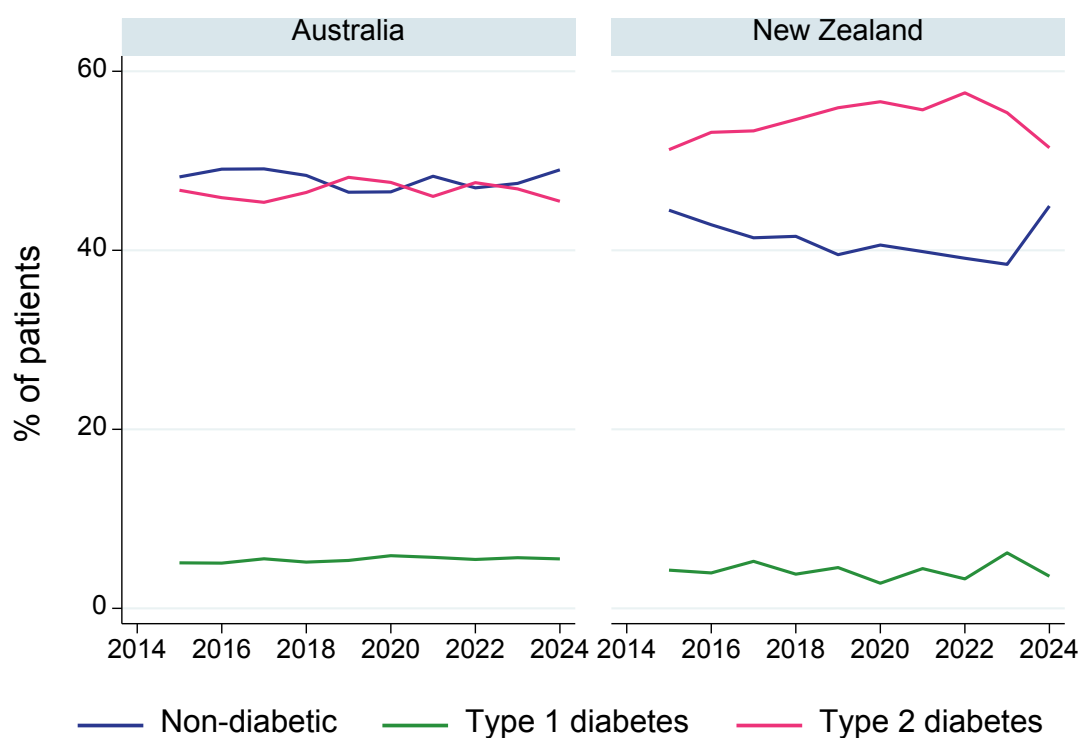


Figure 1.10
Diabetes Status at KRT Entry



PRIMARY KIDNEY DISEASE

The primary kidney disease of new patients over 2021-2024 are shown in Table 1.11. From 2022, primary kidney disease was collected according to the updated European Renal Association/ European Dialysis and Transplantation Association categories, with primary diseases reported prior to 2022 mapped to these categories. Details of the type of glomerular disease reported are shown in Table 1.12. Rates of biopsy confirmation of glomerular disease, hypertension/renal vascular disease, diabetic kidney disease and aetiology uncertain/unknown kidney disease are shown in Figure 1.11.

The “Miscellaneous” causes from Table 1.11 are shown in detail in Table 1.13.

Table 1.11
Primary Kidney Disease of New Patients 2021 - 2024

Country	Primary kidney disease	2021	2022	2023	2024
Australia	Diabetic kidney disease	1282 (38%)	1387 (40%)	1263 (36%)	1258 (36%)
	Glomerular disease	610 (18%)	626 (18%)	669 (19%)	675 (19%)
	Hypertension / Renal vascular disease	446 (13%)	391 (11%)	422 (12%)	396 (11%)
	Familial / hereditary kidney diseases	265 (8%)	244 (7%)	260 (7%)	291 (8%)
	Tubulointerstitial disease	282 (8%)	271 (8%)	266 (8%)	251 (7%)
	Other systemic diseases affecting the kidney	108 (3%)	82 (2%)	82 (2%)	80 (2%)
	Miscellaneous kidney disorders	359 (11%)	430 (12%)	478 (14%)	510 (15%)
	Not reported	14 (<1%)	33 (1%)	51 (1%)	19 (1%)
	Total	3366	3464	3491	3480
New Zealand	Diabetic kidney disease	358 (49%)	353 (50%)	366 (50%)	346 (46%)
	Glomerular disease	157 (22%)	133 (19%)	128 (17%)	126 (17%)
	Hypertension / Renal vascular disease	77 (11%)	64 (9%)	64 (9%)	74 (10%)
	Familial / hereditary kidney diseases	35 (5%)	42 (6%)	48 (7%)	45 (6%)
	Tubulointerstitial disease	46 (6%)	43 (6%)	40 (5%)	57 (8%)
	Other systemic diseases affecting the kidney	9 (1%)	15 (2%)	22 (3%)	23 (3%)
	Miscellaneous kidney disorders	40 (6%)	52 (7%)	66 (9%)	85 (11%)
	Not reported	3 (<1%)	0 (0%)	0 (0%)	4 (1%)
	Total	725	702	734	760

Table 1.12
Glomerular Disease (GN) as Primary Kidney Disease 2024

Primary kidney disease	Australia	New Zealand
Adult nephrotic syndrome	15	5
Anti-Glomerular basement membrane (GBM) disease / Goodpasture's syndrome	13	1
Congenital nephrotic syndrome (CNS)	11	2
Congenital nephrotic syndrome (CNS) - Finnish type	2	0
Congenital nephrotic syndrome (CNS) - diffuse mesangial sclerosis	2	0
Congenital nephrotic syndrome (CNS) - focal segmental glomerulosclerosis (FSGS)	12	2
Denys-Drash syndrome	1	1
Diffuse endocapillary glomerulonephritis	2	0
Familial IgA nephropathy	6	1
Familial focal segmental glomerulosclerosis (FSGS) - autosomal dominant	6	2
Familial focal segmental glomerulosclerosis (FSGS) - autosomal recessive	14	3
Focal and segmental proliferative glomerulonephritis	11	0
Focal segmental glomerulosclerosis (FSGS) secondary to lithium	2	0
Focal segmental glomerulosclerosis (FSGS) secondary to obesity	9	11
Glomerulonephritis	62	11
Glomerulonephritis - secondary to systemic disease	11	6
Granulomatosis with polyangiitis	4	1
Henoch-Schönlein purpura / nephritis	4	2
Idiopathic rapidly progressive (crescentic) glomerulonephritis	9	0
IgA nephropathy	220	37
IgA nephropathy secondary to liver cirrhosis	3	0
Membranous nephropathy - drug induced	4	1
Membranous nephropathy - idiopathic	17	2
Membranous nephropathy - infection associated	7	0
Membranous nephropathy - malignancy associated	2	0
Mesangial proliferative glomerulonephritis	14	2
Mesangiocapillary glomerulonephritis type 1	8	3
Mesangiocapillary glomerulonephritis type 2 (dense deposit disease)	1	0
Mesangiocapillary glomerulonephritis type 3	1	0
Minimal change nephropathy	1	1
Nephrotic syndrome of childhood - no trial of steroids	1	0
Nephrotic syndrome of childhood - steroid resistant	4	0
Polyarteritis nodosa	1	0
Primary focal segmental glomerulosclerosis (FSGS)	89	23
Renal scleroderma / systemic sclerosis	4	1
Systemic lupus erythematosus / nephritis	47	4
Systemic vasculitis - ANCA negative	9	0
Systemic vasculitis - ANCA positive	46	4
Total	675	126

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Table 1.13
Miscellaneous Primary Kidney Diseases 2024

Primary kidney disease	Australia	New Zealand
Acute cortical necrosis	3	0
Acute kidney injury	80	4
Acute kidney injury due to circulatory failure	10	2
Acute kidney injury due to hypovolaemia	12	1
Acute kidney injury due to nephrotoxicity	10	0
Acute kidney injury due to rhabdomyolysis	8	2
Acute kidney injury due to sepsis	14	4
Acute pyelonephritis	2	1
Chronic kidney disease (CKD) / chronic renal failure (CRF) - aetiology uncertain / unknown	221	45
Chronic kidney disease (CKD) / chronic renal failure (CRF) caused by tumour nephrectomy	12	3
Chronic kidney disease (CKD) / chronic renal failure (CRF) due to donor nephrectomy	0	1
Chronic renal failure	76	15
Chronic renal failure due to systemic infection	3	0
Haematuria and proteinuria	3	0
Isolated proteinuria	1	0
Kidney tumour	2	0
Renal cell carcinoma	21	2
Renal failure	24	1
Single kidney identified in adulthood	6	4
Transitional cell carcinoma	1	0
Wilms tumour	1	0

Figure 1.11.1
Biopsy Rates - Australia

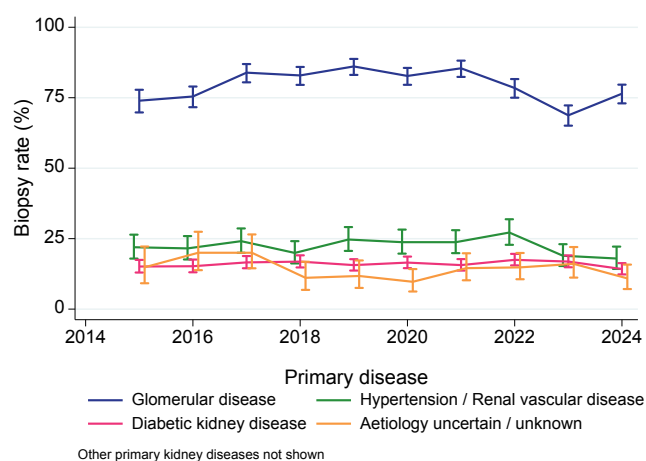
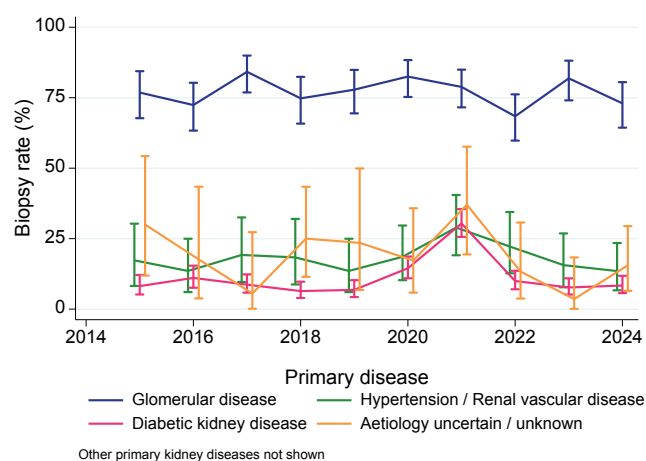


Figure 1.11.2
Biopsy Rates - New Zealand



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TIMING OF KIDNEY REPLACEMENT THERAPY START

The median eGFR for adult patients (calculated using the CKD-EPI formula) at KRT start over time is shown in Figure 1.12. In 2024 this was 7.5mL/min/1.73m² in Australia and 5.7mL/min/1.73m² in New Zealand. The median eGFR for adult patients at KRT start over 2022-2024 by Australian State/Territory is shown in Figure 1.13.

Figure 1.12.1
eGFR at KRT Start for Adult Patients - Australia

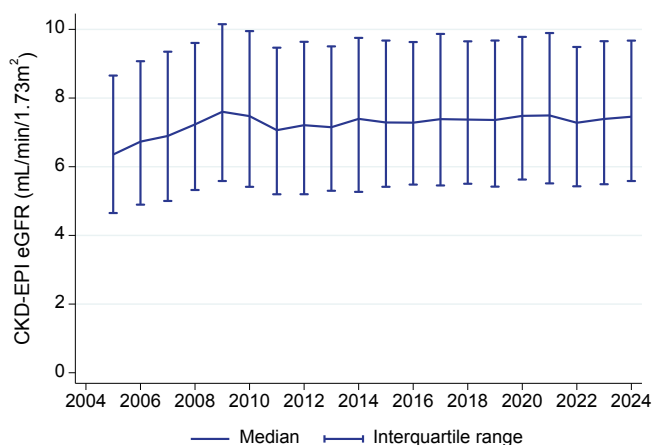


Figure 1.12.2
eGFR at KRT Start for Adult Patients - New Zealand

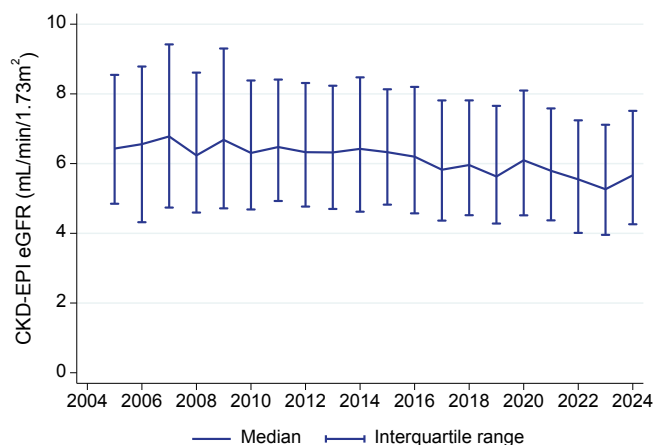
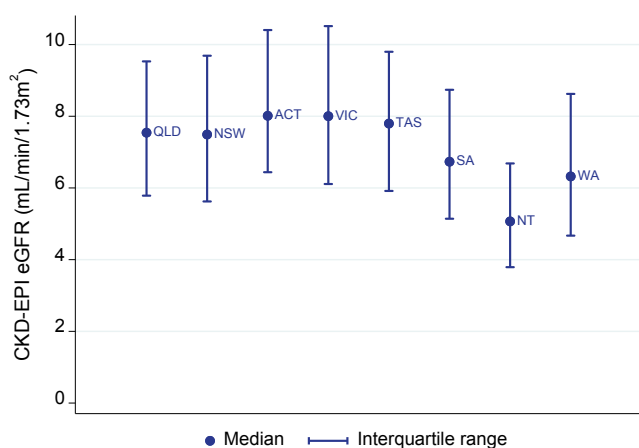


Figure 1.13
eGFR at KRT Start for Adult Patients - By State/Territory, Australia 2022-2024



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CHAPTER 1

Incidence of Kidney Failure with
Replacement Therapy