UK Kidney Association
UK Renal Registry

Chapter 4

Adults with a kidney transplant (Tx) in the UK at the end of 2024

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Introduction

This chapter describes the population of patients with end-stage kidney disease (ESKD) who had a functioning kidney transplant (Tx) in the UK at the end of 2024 (figure 4.1). Patients can receive their first Tx either pre-emptively, i.e. without spending any time on dialysis, or while on dialysis. Donors in both pathways may be either a living kidney donor (LKD) or a deceased kidney donor – receiving a kidney from a donor after brain death (DBD) or a donor after circulatory death (DCD). If a Tx begins to fail a patient may be considered for a second (or subsequent) Tx, which again can come from a living or deceased donor.

Potential Tx recipients who pass rigorous assessments are listed ont the Tx waiting list, which can occur before or after they have started dialysis. The majority of kidneys received through listing are from deceased donors. The cohort of patients living with a kidney Tx in a centre not only reflects differences in underlying population case-mix, but also differences in the rates of acceptance onto kidney replacement therapy (KRT).This includes listing rates and live donor programmes, survival of the Tx graft and its recipient, as well as the care and survival of patients on dialysis therapies, as described in other chapters of this report.

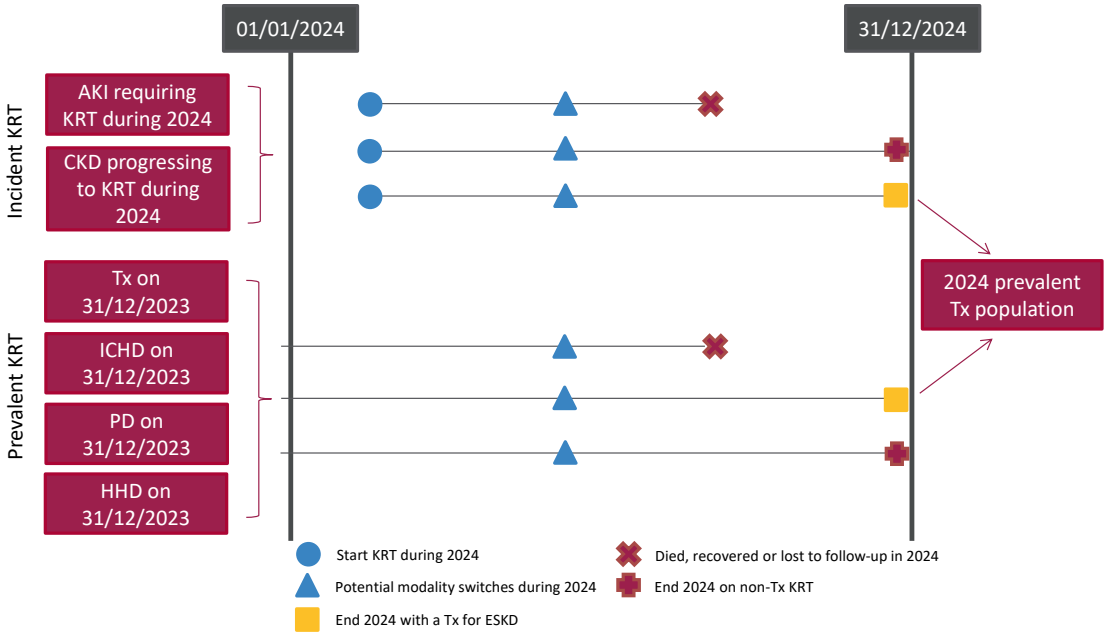


Figure 4.1 Pathways adult patients could follow to be included in the UK 2024 prevalent Tx population

Note that patients receiving dialysis for acute kidney injury (AKI) are only included in this chapter if they had a timeline or KRT modality code for Tx at the end of 2024 or if they had been on KRT for ≥90 days and were on Tx at the end of 2024
AKI – acute kidney injury; CKD – chronic kidney disease; HHD – home haemodialysis; ICHD – in-centre haemodialysis; PD – peritoneal dialysis; Tx - Transplantation

Patient survival, graft survival and cause of death analyses were undertaken on historic incident and prevalent cohorts to allow sufficient follow-up time.

The analyses were undertaken using UK Renal Registry (UKRR) data combined with NHS Blood and Transplant (NHSBT) data through a data sharing agreement.

This chapter addresses the following key aspects of the care of patients with a functioning kidney Tx for which there are UK Kidney Association guidelines (table 4.1):

- **Complications associated with CKD and kidney transplantation:** these include anaemia, mineral bone disorders and dyslipidaemia.
- **Blood pressure:** attainment of blood pressure targets are reported, although data completeness does not allow differentiation based on levels of proteinuria.

Rationale for analyses

The analyses begin with a brief summary of the number and type of kidney Tx undertaken in recent years in the UK as well as early graft and patient survival. More detailed results are available at organdonation.nhs.uk/helping-you-to-decide/about-organ-donation/statistics-about-organ-donation. The 2024 prevalent adult Tx population is described, including the number transplanted per million population (pmp).

The UK Kidney Association guidelines (ukkidney.org/health-professionals/guidelines/guidelines-commentaries) provide audit measures relevant to the care of patients with a Tx, and where data permit, their attainment by UK kidney centres in 2024 is reported in this chapter (table 4.1). Audit measures in guidelines that have been archived are not included.

Some audit measures in current guidelines cannot be reported because the completeness of the required data items is too low. Further detail about the completeness of data returned to the UKRR is available through the UKRR data portal (ukkidney.org/audit-research/data-portals). Audit measures that cannot be reported because the required data items were not collected by the UKRR are omitted. The chapter includes analyses carried out by Getting It Right First Time (GIRFT), a national programme designed to reduce unwarranted variation in medical care provided by the NHS by sharing best practice. The GIRFT metrics for kidney services, analysed in collaboration with the UKRR, were based on data derived from multiple sources and included equity of access to services, outcomes and pathways in nephrology, dialysis and transplantation.

Table 4.1 The UK Kidney Association audit measures relevant to Tx that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
Post-operative care in the kidney Tx recipient (2017)	Proportion of patients receiving a target blood pressure of 140/90 mmHg or 130/80 mmHg in the presence of proteinuria – protein:creatinine ratio >100 mg/mmol or albumin:creatinine ratio >70 mg/mmol	Table 4.9, figures 4.13–4.14 (proteinuria was not adequately collected)
	Proportion of patients achieving dyslipidaemia targets	Table 4.9
	Incidence of hyperparathyroidism	Table 4.9
	Prevalence of anaemia	Table 4.9, figures 4.11–4.12
Anaemia (2020)	Treatment guidelines for anaemia in kidney Tx patients should be similar to those for CKD patients not on dialysis	Table 4.9, figures 4.11–4.12

In 2024, 23 of the 67 adult kidney centres in the UK were Tx centres – 19 in England, two in Scotland and one in each of Northern Ireland and Wales.

For definitions and methods relating to this chapter see appendix A. Centres were excluded from caterpillar plots and cells were blanked in tables where data completeness for a biochemical variable was <70% and/or the number of patients reported was <10. The number preceding the centre name in each caterpillar plot indicates the percentage of missing data for that centre.

As Colchester kidney centre did not have any Tx patients they were excluded from some of the analyses, although their dialysis patients were included in the relevant dialysis population denominators.

Key findings

- 41,523 adult patients had a kidney Tx for ESKD in the UK on 31/12/2024, which represented 56.0% of the KRT population.
- The median age of kidney Tx patients was 57.3 years and 60.9% were male.
- There was a 4% reduction in overall kidney Tx performed in 2024 compared to 2023, with a increase in kidney Tx from LKDs by 1%, a 5% decrease in DCDs and a 4% decrease in DBDs. Transplant activity has not yet recovered to pre-pandemic levels.
- The median eGFR for kidney Tx patients 1 year after transplantation, for transplants occurring in 2023, was 56.2 mL/min/1.73m^2 from LKD, 48.6 mL/min/1.73m^2 from DBD and 44.3 mL/min/1.73m^2 from DCD.
- 17.3% of kidney Tx patients had eGFR <30 mL/min/1.73m^2.
- The median decline in eGFR slope beyond the first year after transplantation was 0.95 mL/min/1.73m^2/year for patients receiving their first transplant in 2014-2022.
- The leading cause of death for Tx patients was infection at 19.7%.

For information on data quality issues relating to the following centres see Appendix A section 2.2: Antrim, Belfast, Cambridge, Ipswich, Manchester Royal Infirmary, and Ulster.

Analyses

Kidney Tx activity

NHSBT provided the UKRR with summary data on kidney Tx activity (table 4.2). More detailed results are available at organdonation.nhs.uk/helping-you-to-decide/about-organ-donation/statistics-about-organ-donation. The number of patients receiving a pre-emptive Tx is reported by centre in chapter 2.

Table 4.2 Number of kidney and kidney plus other organ Tx (adult and paediatric) in the UK, 2021-2024 calendar years

Organ	2021	2022	2023	2024	% change 2023-2024
Kidney DBD[1]	1,208	1,185	1,147	1,104	-4
Kidney DCD[2]	845	1020	1128	1074	-5
Kidney LKD	801	865	936	950	1
Kidney and liver[3]	9	6	11	8	-
Kidney and heart	2	0	1	0	-
Kidney and pancreas[4]	111	120	143	104	-27
Kidney and pancreas islets[5]	7	5	8	8	-
Small bowel (inc kidney)	0	1	0	1	-
Total kidney Tx	**2,983**	**3,202**	**3,374**	**3,249**	**-4**

[1] Includes en bloc kidney transplants (2 in 2023 and 3 in 2024) and double kidney transplants (12 in 2022, 17 in 2023 and 16 in 2024)

[2] Includes en bloc kidney transplants (3 in 2022, 2 in 2023 and 4 in 2024) and double kidney transplants (14 in 2022, 18 in 2023 and 13 in 2024)

[3] Includes DCD transplants (1 in 2022, 3 in 2023 and 3 in 2024)

[4] Includes DCD transplants (41 in 2022, 61 in 2023 and 31 in 2024)

[5] Includes DCD transplants (1 in 2022 and 5 in 2023)

DBD - donor after brain death; DCD - donor after circulatory death; LKD - living kidney donor

Variation in the proportion of patients who received an LKD Tx or were on the Tx waiting list within two years of KRT start, is shown for patients incident to KRT in 2022, adjusted by sex, age and primary renal disease (PRD) (figure 4.2). The analysis for LKD transplantation only is shown separately (figure 4.3). Centres can be identified in the funnel plots using the number of patients in the centre in table 4.3.

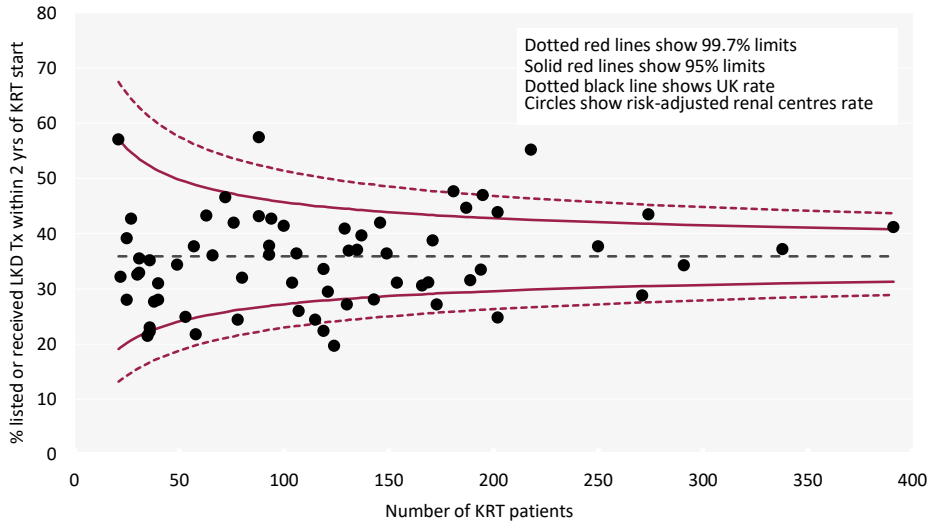


Figure 4.2 Percentage of adult patients incident to KRT in 2022 (analysis adjusted by age, sex, PRD) who were listed or received a living kidney donor (LKD) Tx within 2 years of KRT start by centre

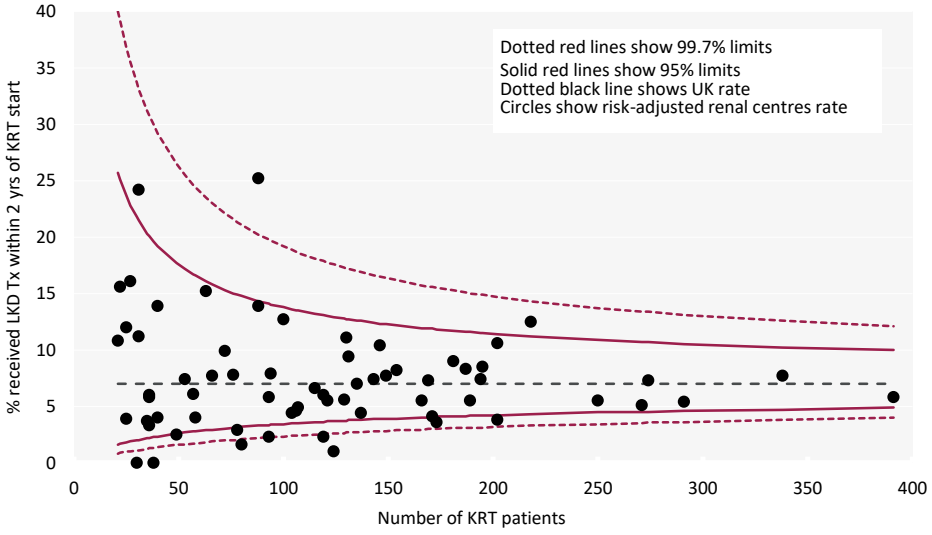


Figure 4.3 Percentage of adult patients incident to KRT in 2022 (analysis adjusted by age, sex, PRD) who received a living kidney donor (LKD) Tx within 2 years of KRT start by centre

Table 4.3 Percentage of adult patients incident to KRT in 2022 who were listed or received a living kidney donor (LKD) Tx within 2 years of KRT start adjusted by age, sex and primary renal disease (PRD) by centre

		Listing/LKD Tx by 2 years from KRT start			LKD Tx by 2 years from KRT start		
			Limits for funnel plot			Limits for funnel plot	
Centre	N on KRT	Adjusted percentage	Lower 95% limit	Upper 95% limit	Adjusted percentage	Lower 95% limit	Upper 95% limit
TX CENTRES							
Belfast	88	57.5	26.7	46.4	25.2	3.3	14.3
Bham	409	31.1	31.4	40.7	3.1	4.9	9.9
Bristol	149	36.4	28.7	43.9	7.7	3.9	12.3
Camb	119	33.6	27.9	44.9	6	3.6	13.1
Cardff	194	33.5	29.5	42.9	7.4	4.2	11.5
Covnt	137	39.7	28.4	44.3	4.4	3.8	12.6
Edinb	100	41.4	27.2	45.7	12.7	3.4	13.8
Glasgw	202	43.9	29.6	42.8	10.6	4.2	11.4
L Barts	291	34.3	30.6	41.6	5.4	4.6	10.5
L Guys	154	31.1	28.8	43.8	8.2	3.9	12.2
L Rfree	250	37.7	30.3	42.1	5.5	4.5	10.9
L St.G	106	36.4	27.4	45.4	4.6	3.5	13.5
L West	391	41.2	31.3	40.8	5.8	4.9	10
Leeds	181	47.7	29.3	43.2	9	4.1	11.7
Leic	338	37.2	31	41.2	7.7	4.7	10.2
Liv UH	189	31.6	29.4	43	5.5	4.2	11.6
M RI	129	40.9	28.2	44.5	5.6	3.7	12.8
Newc	131	36.9	28.2	44.5	9.4	3.8	12.7
Nottm	115	24.4	27.8	45	6.6	3.6	13.2
Oxford	218	55.2	29.9	42.5	12.5	4.3	11.2
Plymth	72	46.6	25.8	47.5	9.9	3	15.3
Ports	274	43.5	30.5	41.8	7.3	4.5	10.7
Sheff	173	27.2	29.2	43.3	3.6	4.1	11.8
DIALYSIS CENTRES							
Abrdn	57	37.7	24.7	48.9	6.1	2.8	16.7
Airdrie	63	43.3	25.2	48.3	15.2	2.9	16.1
Antrim	31	32.9	21.5	53.5	11.2	2	21.5
Bangor	25	28	20.2	55.4	3.9	1.8	23.7
Bradfd	93	36.2	26.9	46.1	5.8	3.3	14.1
Brightn	104	31.1	27.4	45.5	4.4	3.5	13.6
Carlis	36	35.2	22.3	52.3	5.8	2.2	20.1
Carsh	271	28.8	30.5	41.8	5.1	4.5	10.7
Clwyd	36	22.3	22.3	52.3	6	2.2	20.1
Colchr	40	28	22.9	51.4	4	2.3	19.2
D&Gall	21	57.1	19.1	57.1	10.8	1.6	25.7
Derby	121	29.5	27.9	44.8	5.5	3.7	13
Donc	78	24.4	26.2	47	2.9	3.1	14.9
Dorset	93	37.8	26.9	46.1	2.3	3.3	14.1
Dudley	58	21.8	24.8	48.8	4	2.8	16.6
Dundee	30	32.6	21.3	53.8	0	2	21.8
EssexMS	166	30.6	29	43.5	5.5	4	11.9
Exeter	130	27.2	28.2	44.5	11.1	3.7	12.7
Glouc	88	43.2	26.7	46.4	13.9	3.3	14.3
Hull	107	26	27.5	45.4	4.9	3.5	13.5
Inverns	27	42.7	20.7	54.7	16.1	1.9	22.8
Ipswi	35	21.5	22.2	52.5	3.7	2.2	20.3
Kent	169	31.2	29.1	43.4	7.3	4	11.9
Klmarnk	49	34.4	24	49.9	2.5	2.6	17.7
Krkcldy	40	31	22.9	51.4	13.9	2.3	19.2
L Kings	202	24.8	29.6	42.8	3.8	4.2	11.4

Table 4.3 Continued

Centre	N on KRT	Listing/LKD Tx by 2 years from KRT start			LKD Tx by 2 years from KRT start		
			Limits for funnel plot			Limits for funnel plot	
		Adjusted percentage	Lower 95% limit	Upper 95% limit	Adjusted percentage	Lower 95% limit	Upper 95% limit
Middlbr	94	42.7	27	46	7.9	3.4	14
Newry	22	32.2	19.4	56.7	15.6	1.7	25.1
Norwch	124	19.7	28	44.7	1	3.7	12.9
Prestn	187	44.7	29.4	43	8.3	4.1	11.6
Redng	146	42	28.6	44	10.4	3.9	12.3
Salford	195	47	29.5	42.9	8.5	4.2	11.5
Shrew	53	24.9	24.4	49.4	7.4	2.7	17.2
Stevng	171	38.8	29.1	43.4	4.1	4.1	11.9
Stoke	135	37.1	28.3	44.3	7	3.8	12.6
Sund	80	32	26.3	46.9	1.6	3.2	14.8
Swanse	143	28.1	28.5	44.1	7.4	3.9	12.4
Truro	66	36.1	25.4	48	7.7	2.9	15.8
Ulster	25	39.2	20.2	55.4	12	1.8	23.7
West NI	31	35.5	21.5	53.5	24.2	2	21.5
Wirral	36	23	22.3	52.3	3.3	2.2	20.1
Wolve	119	22.4	27.9	44.9	2.3	3.6	13.1
Wrexm	38	27.7	22.6	51.8	0	2.3	19.6
York	76	42	26.1	47.2	7.8	3.1	15

LKD - Living kidney donor

Early kidney Tx outcomes

Kidney Tx recipient outcome data from NHSBT were reported against the Tx centre rather than the referring centre (table 4.4). Note that the survival rates were risk-adjusted and used financial year cohorts as per NHSBT methodology (see table footnote).

Table 4.4 Risk-adjusted first adult kidney-only Tx, graft and patient survival by Tx type and Tx centre (cohorts detailed in footnote)

	Deceased donor				Living donor			
	Adj 1 yr survival (%)		Adj 5 yr survival (%)		Adj 1 yr survival (%)		Adj 5 yr survival (%)	
Centre	Graft	Patient	Graft	Patient	Graft	Patient	Graft	Patient
Bham	91	96	82	87	98	100	93	89
Belfast			82	86			90	89
Bristol	96	97			96	99	95	94
Camb	96	97	86	86	98	100	96	93
Cardff	94	99	90	90	100	99	91	95
Covnt								
Edin	95	97	88	91	99	99	97	97
Glasgw	94	94	86	81	98	98	94	94
L Barts	96	94	83	81	96	98	91	91
L Guy's	97	98	87	85	99	99	95	94
L Rfree	98	97	89	93	98	100	93	96
L St.G	94	96			98	99	93	97
L West								
Leeds	97	96	85	85	98	98	95	97
Leic	98	96	91	77	100	100	89	92
Liv UH	93	93	83	81	98	100	91	91
M RI	93	94	85	84	98	98	96	93
Newc	97	96	83	82	99	99	96	95
Nottm			87	83	97	100		
Oxford	94	97	89	83	100	99	93	94
Plymth	92	94						
Ports	97	96	93	86	100	99	95	92
Sheff	96	96	82	88	100	100	96	93
UK total	**95**	**96**	**86**	**84**	**99**	**99**	**94**	**94**

Cohorts for survival rate estimation: 1 year survival: 1/4/2020-31/03/2024; 5 year survival: 1/4/2016-31/3/2020; first grafts only – re-grafts excluded for patient survival estimation
Since the cohorts to estimate 1 and 5 year survival are different, some centres may appear to have better 5 year survival than 1 year survival
Blank cells - less than 75% of the data were reported
Number of Tx, patients and 95% confidence intervals (CI) for each estimate, and statistical methodology for computing risk-adjusted estimates can be obtained from NHSBT (https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/37225/nhsbt-kidney-transplantation-report-2425.pdf)

Kidney graft function at one year post-Tx was assessed using median eGFR by donor type and by centre using a seven year cohort (patients with graft failure including death with a functioning graft were excluded). The data completeness at one year after Tx (for Tx occurring 2017-2023) was 96.3%. Scotland were excluded from figures 4.4-4.7 and table 4.5 as these data items were not available from the Scottish Renal Registry.

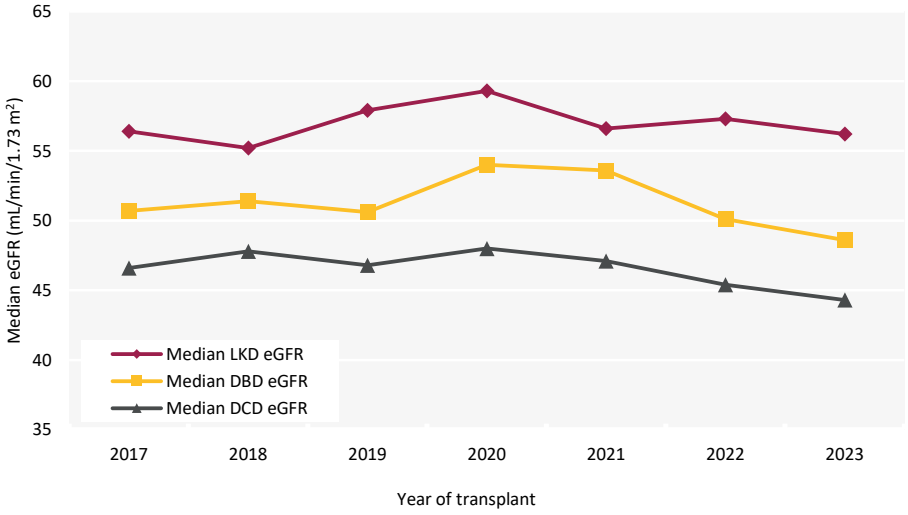


Figure 4.4 Median estimated glomerular filtration rate (eGFR) at 1 year post-Tx by donor type and year of transplantation between 2017 and 2023

DBD – donor after brain death; DCD – donor after circulatory death; LKD – living kidney donor
Excludes Scotland

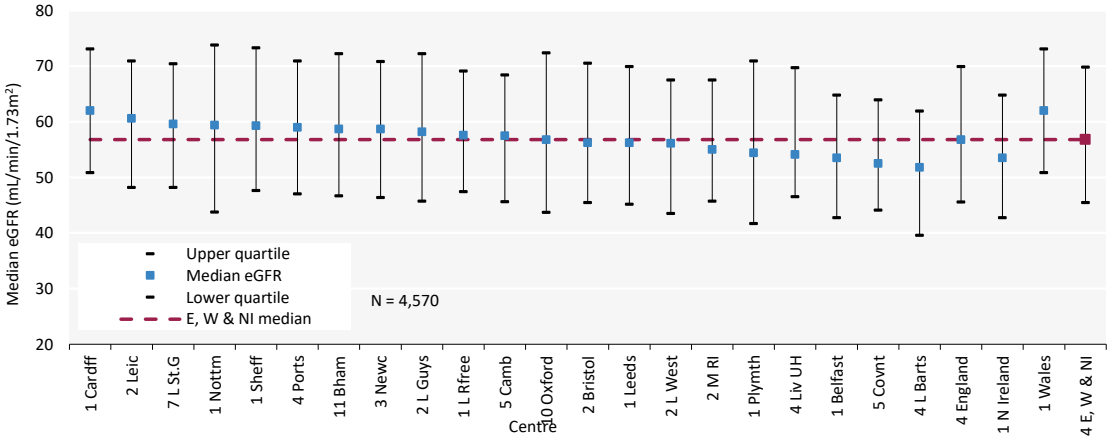


Figure 4.5 Median estimated glomerular filtration rate (eGFR) at 1 year post-living kidney donor (LKD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

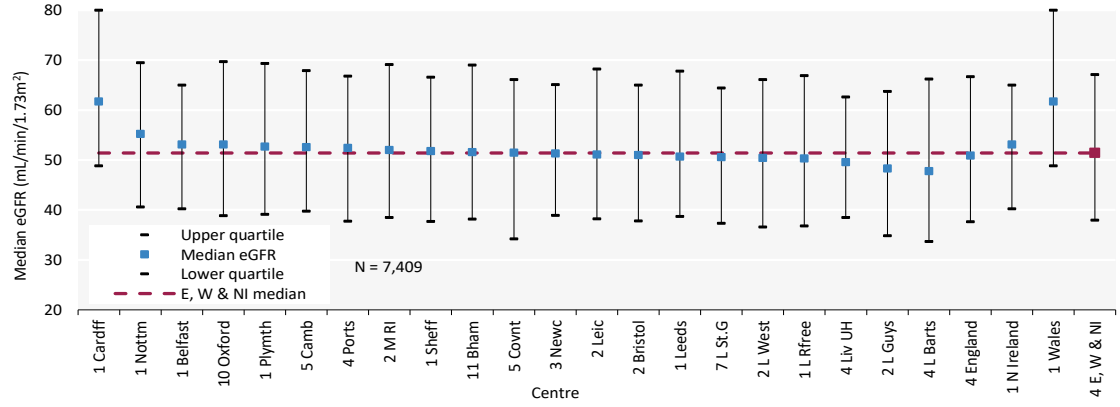


Figure 4.6 Median estimated glomerular filtration rate (eGFR) at 1 year post-donor after brain death (DBD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

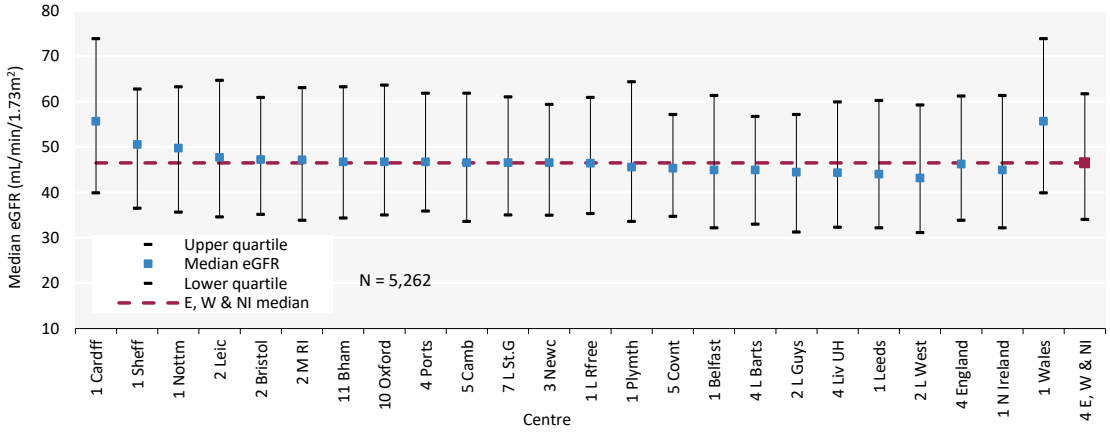


Figure 4.7 Median estimated glomerular filtration rate (eGFR) at 1 year post-donor after circulatory death (DCD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

Changes to the prevalent adult kidney Tx population

Tx recipients are under the care of a Tx centre around the time of transplantation, but the policy of when to repatriate to the referring centre varies. When data entries for patients were received from more than one centre they were attributed to the referring centre.

Table 4.5 Percentage completeness of estimated glomerular filtration rate (eGFR), blood pressure, haemoglobin, total cholesterol, adjusted calcium, phosphate and parathyroid hormone (PTH) by centre for adult patients prevalent to Tx on 31/12/2024

		Data completeness (%)						
Centre	N with Tx	eGFR	Blood pressure	Haemoglobin	Total cholesterol	Adjusted calcium	Phosphate	PTH
TX CENTRES								
Bham	1,687	93.1	84.6	93.0	90.1	92.8	92.6	2.7
Belfast	740	98.7	92.8	98.5	8.8	97.7	97.4	16.1
Bristol	953	99.4	88.3	99.3	93.6	99.3	99.2	99.1
Camb	1,226	93.2	0.0	93.2	84.7	86.2	86.0	83.8
Cardff	1,132	97.8	92.7	97.6	42.5	97.4	97.4	14.3
Covnt	663	95.5	68.3	94.4	63.7	93.5	36.5	31.2
L Barts	1,479	96.8	0.3	96.8	58.2	96.4	96.4	95.3
L Guys	1,491	95.6	95.5	95.2	67.4	94.8	94.6	66.3
L Rfree	1,529	98.4	85.6	98.2	65.0	97.1	97.0	78.4
L St.G	516	97.7	81.6	97.5	89.2	91.3	91.3	80.4
L West	2,054	95.9	0.0	95.7	48.1	95.4	95.9	41.1
Leeds	1,173	98.6	40.2	98.1	95.5	96.3	91.6	38.6
Leic	1,587	96.1	3.0	95.8	94.5	94.8	94.1	50.7
Liv UH	841	94.8	2.5	94.8	66.2	94.3	94.1	1.0
M RI	1,340	90.3	0.0	90.2	50.4	89.6	89.6	0.0
Newc	796	97.6	76.6	97.6	74.9	97.5	97.5	69.1
Nottm	706	98.9	94.9	98.3	78.2	98.3	97.9	74.4
Oxford	1,477	56.7	0.2	90.9	38.7	55.2	55.1	36.2
Plymth	334	97.3	94.6	96.7	66.8	95.8	95.2	38.0
Ports	1,147	81.4	12.3	80.9	50.1	79.6	79.1	35.4
Sheff	764	97.9	91.4	97.6	38.1	97.5	97.4	25.4
DIALYSIS CENTRES								
Antrim	172	97.1	24.4	96.5	96.5	95.9	95.4	28.5
Bangor	109	96.3	41.3	95.4	100.0	94.5	94.5	21.1
Bradfd	440	98.4	0.0	98.2	93.2	98.0	96.8	86.8
Brightn	577	98.6	17.9	98.4	84.1	97.8	97.8	46.6
Carlis	166	78.3	0.0	78.3	41.0	77.7	74.1	30.7
Carsh	920	85.8	3.5	83.9	47.9	84.8	84.2	26.0
Clwyd	94	97.9	0.0	97.9	98.9	96.8	96.8	81.9
Derby	323	97.8	91.0	97.8	95.4	97.8	97.8	97.5
Donc	156	99.4	95.5	98.7	89.7	98.7	98.7	41.7
Dorset	437	87.4	19.0	86.5	78.3	82.4	74.4	51.0
Dudley	128	96.9	19.5	96.9	84.4	96.1	84.4	95.3
EssexMS	365	96.4	0.0	95.6	64.4	90.4	77.3	24.1
Exeter	1,133	96.5	96.2	97.8	83.7	97.7	96.4	69.4
Glouc	304	96.4	57.6	96.1	75.7	95.1	93.4	61.5
Hull	497	98.4	0.6	98.4	57.3	95.2	94.8	31.6
Ipswi	231	93.1	0.4	91.3	69.3	90.9	90.9	52.0
Kent	683	98.4	94.9	98.5	41.3	97.8	97.7	9.8
L Kings	621	96.1	89.1	80.0	71.0	96.0	96.0	74.2
Middlbr	577	79.4	0.2	78.5	45.6	76.3	75.0	12.3
Newry	194	96.9	89.2	95.9	97.9	94.3	94.3	3.1

Table 4.5 Continued

Centre	N with Tx	Data completeness (%)						
		eGFR	Blood pressure	Haemoglobin	Total cholesterol	Adjusted calcium	Phosphate	PTH
Norwch	405	97.5	0.3	97.0	92.8	96.3	96.1	25.4
Prestn	821	95.7	0.0	95.4	72.6	90.5	89.3	19.4
Redng	563	98.2	71.1	98.2	81.7	97.3	97.3	56.5
Salford	739	97.6	0.0	97.0	96.8	97.3	97.3	0.0
Shrew	187	94.7	38.0	93.1	93.6	92.5	92.0	16.6
Stevng	421	94.5	86.5	93.6	46.1	92.4	89.6	18.3
Stoke	452	97.6	0.4	97.6	73.9	97.4	97.1	44.3
Sund	310	99.7	0.3	99.7	90.7	99.7	99.7	94.2
Swanse	411	99.8	93.9	99.3	58.2	98.8	98.8	76.4
Truro	246	97.6	0.0	97.2	87.4	97.2	97.2	75.2
Ulster	106	95.3	2.8	95.3	0.0	95.3	95.3	24.5
West NI	238	99.6	72.7	99.6	98.7	99.2	99.2	93.3
Wirral	215	92.6	4.2	91.2	78.6	67.4	79.1	8.4
Wolve	269	86.6	35.7	86.3	77.3	86.6	52.8	59.9
Wrexm	174	97.7	87.4	98.3	97.7	97.1	96.6	97.7
York	337	98.8	16.3	98.2	74.5	96.7	96.1	31.5
TOTALS								
England	34,286	93.3	38.0	94.2	69.9	91.8	89.7	46.5
N Ireland	1,450	98.1	74.3	97.9	45.2	97.1	96.9	29.1
Wales	1,920	98.1	85.0	97.9	56.9	97.5	97.5	38.9
E, W & NI	**37,656**	**93.7**	**41.8**	**94.5**	**68.3**	**92.3**	**90.4**	**45.4**

Blank cells – no data returned by the centre
Patients who had been on Tx for <3 months were excluded from this analysis, including N with Tx

For the 66 adult kidney centres caring for Tx patients, the number of prevalent patients with a Tx was calculated as both a proportion of the prevalent patients on KRT and as a proportion of the estimated centre catchment population (calculated as detailed in appendix A).

Table 4.6 Number of adult patients prevalent to Tx and proportion of adult KRT patients with a Tx by year and by centre; number of Tx patients as a proportion of the catchment population

	N with Tx					% with Tx					Estimated catchment population (millions)	2024 crude rate (pmp)
Centre	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
TX CENTRES												
Belfast	720	742	757	768	744	81.0	81.7	81.8	82.0	80.7	0.54	1,373
Bham	1,603	1,608	1,624	1,684	1,721	49.2	48.7	47.9	49.4	49.6	2.13	808
Bristol	927	922	951	969	983	62.9	61.7	62.6	63.9	64.5	1.29	763
Camb	1,181	1,212	1,242	1,249	1,279	78.3	74.7	75.0	76.8	74.8	1.00	1,273
Cardff	1,068	1,061	1,086	1,137	1,168	63.5	62.4	61.7	62.2	63.4	1.18	993
Covnt	641	657	660	671	678	57.8	58.2	58.4	58.3	58.5	0.82	828
Edinb	564	603	630	654	701	63.7	65.5	65.4	66.1	67.3	0.86	818
Glasgw	1,239	1,242	1,235	1,280	1,285	67.2	67.0	65.3	67.1	66.7	1.40	919
L Barts	1,339	1,358	1,408	1,479	1,530	50.2	49.9	49.6	49.9	48.8	1.64	932
L Guys	1,513	1,482	1,513	1,523	1,531	65.3	63.7	65.5	66.3	66.6	1.02	1,496
L Rfree	1,425	1,466	1,494	1,520	1,558	61.0	61.2	61.7	61.1	61.5	1.29	1,203
L St.G	481	490	486	504	536	56.2	56.0	56.6	57.3	58.5	0.68	789
L West	2,023	2,005	2,055	2,091	2,095	57.3	56.5	56.9	56.6	56.8	2.06	1,015
Leeds	1,117	1,137	1,154	1,179	1,205	63.8	63.7	62.7	61.8	60.6	1.43	845
Leic	1,494	1,447	1,485	1,552	1,616	57.0	54.9	54.6	55.1	55.3	2.21	730
Liv UH	805	799	803	845	858	55.7	54.7	54.4	56.3	56.0	1.29	667
M RI	1,326	1,378	1,393	1,483	1,340	66.8	66.6	66.1	65.7	63.0	1.39	966
Newc	781	799	809	811	814	65.3	65.2	64.9	63.2	63.8	0.97	838
Nottm	732	723	722	720	716	60.6	59.4	59.8	60.2	57.7	0.95	756
Oxford	1,459	1,459	1,496	1,505	1,535	72.3	72.8	72.1	70.9	70.7	1.56	981
Plymth	357	344	334	344	344	66.2	63.6	62.0	64.2	63.7	0.42	819
Ports	1,108	1,117	1,141	1,165	1,179	58.3	57.5	57.1	57.3	57.0	1.81	650
Sheff	805	804	775	781	785	53.9	53.6	52.1	52.8	52.2	1.14	688
DIALYSIS CENTRES												
Abrdn	350	369	370	378	384	62.0	63.6	62.7	61.9	61.2	0.50	761
Airdrie	295	286	291	311	321	57.4	56.9	56.6	56.6	58.7	0.47	680
Antrim	161	161	170	174	174	56.1	54.4	55.6	56.1	57.6	0.25	696
Bangor	107	108	112	118	113	49.5	49.8	50.9	54.1	49.8	0.16	704
Bradfd	417	417	423	442	456	57.5	56.7	54.2	53.6	54.2	0.52	884
Brightn	556	568	583	595	602	51.6	52.1	53.1	51.8	51.0	1.10	548
Carlis	152	159	162	169	171	51.4	52.0	53.6	55.4	51.5	0.26	650
Carsh	841	860	896	926	944	45.5	45.2	46.3	46.4	45.2	1.71	554
Clwyd	107	102	97	98	95	52.5	50.5	47.6	44.0	42.8	0.18	514
D&Gall	91	93	90	93	88	58.0	60.4	61.2	63.3	55.4	0.12	720
Derby	299	307	305	325	328	44.3	44.4	42.5	44.2	42.3	0.59	561
Donc	140	148	156	159	159	41.1	43.4	41.1	41.0	41.6	0.39	412
Dorset	449	446	431	444	450	56.3	56.7	54.5	54.4	54.1	0.76	590
Dudley	124	130	127	125	129	33.2	32.3	33.2	33.7	35.9	0.36	362
Dundee	250	236	228	215	200	59.0	58.7	58.9	56.1	55.3	0.37	537
EssexMS	350	355	353	366	382	39.6	39.7	39.6	37.6	38.0	1.03	372
Exeter	530	537	543	564	578	48.5	49.6	49.6	49.7	48.9	1.00	576
Glouc	266	282	294	306	311	51.0	51.7	52.8	54.6	53.9	0.53	582
Hull	498	492	503	506	508	54.6	53.7	53.9	52.8	52.3	0.82	616
Inverns	170	171	178	182	183	62.5	62.4	64.3	62.1	65.1	0.23	802
Ipswi	255	248	243	241	235	59.9	58.8	61.4	60.3	58.8	0.32	727
Kent	639	644	651	690	708	55.9	54.0	53.4	55.5	55.4	1.10	642
Klmarnk	182	182	189	184	190	49.5	49.7	50.5	47.7	49.2	0.29	644
Krkcldy	136	120	110	102	94	47.1	41.2	38.6	35.7	33.3	0.28	338
L Kings	512	529	553	613	646	40.9	39.7	39.6	42.8	43.9	0.96	674
Middlbr	573	571	569	574	600	60.6	59.6	59.5	59.1	59.9	0.83	721
Newry	173	179	179	189	196	65.5	63.7	66.5	68.5	66.0	0.24	818
Norwch	460	450	448	425	412	56.8	56.3	55.8	52.7	51.7	0.72	575

Table 4.6 Continued

Centre	N with Tx					% with Tx					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
Prestn	772	778	791	806	853	56.4	56.6	56.5	56.4	56.4	1.29	661
Redng	501	513	516	547	580	57.6	58.4	55.9	55.3	55.6	0.75	769
Salford	689	688	697	747	770	54.4	56.5	54.8	54.3	54.7	1.21	638
Shrew	166	172	187	192	194	38.9	38.9	41.9	41.5	42.8	0.43	451
Stevng	380	410	416	430	441	38.8	40.1	39.0	38.5	38.6	1.17	376
Stoke	430	433	453	462	458	52.7	51.2	49.9	50.2	50.2	0.76	603
Sund	296	284	290	309	319	53.2	52.0	51.3	52.4	50.9	0.55	576
Swanse	353	359	365	387	423	41.5	42.1	43.0	43.1	44.3	0.76	553
Truro	259	251	254	256	250	58.3	54.2	53.9	54.8	55.0	0.37	674
Ulster	102	102	104	109	108	50.8	50.3	50.0	51.9	56.0	0.21	523
West NI	224	226	240	244	244	63.8	66.7	67.6	68.5	66.5	0.25	958
Wirral	199	200	190	201	221	47.6	48.0	47.0	52.1	52.5	0.49	452
Wolve	238	246	249	270	277	36.4	35.4	34.3	34.1	33.3	0.56	492
Wrexm	177	181	178	179	180	55.0	59.7	58.0	54.9	53.6	0.21	848
York	338	348	351	359	347	59.1	59.9	57.6	58.9	56.6	0.50	694
TOTALS												
England	32,446	32,673	33,179	34,124	34,632	56.1	55.5	55.3	55.5	55.1	46.50	745
N Ireland	1,380	1,410	1,450	1,484	1,466	69.3	69.6	70.3	71.0	70.5	1.49	982
Scotland	3,277	3,302	3,321	3,399	3,446	61.6	61.8	61.2	61.2	61.4	4.53	761
Wales	1,812	1,811	1,838	1,919	1,979	55.4	55.3	55.1	54.9	55.3	2.50	792
UK	**38,915**	**39,196**	**39,788**	**40,926**	**41,523**	**56.9**	**56.4**	**56.2**	**56.3**	**56.0**	**55.02**	**755**

Country Tx populations were calculated by summing the Tx patients from centres in each country. Estimated country populations were derived from publicly available sources (see appendix A for details on estimated catchment population by kidney centre)
pmp – per million population

Demographics of prevalent adult kidney Tx patients

The proportion of Tx patients from each ethnic group is shown for patients with ethnicity data – the proportion of patients at each centre with no ethnicity data is shown separately.

Table 4.7 Demographics of adult patients prevalent to Tx on 31/12/2024 by centre

						Ethnicity				
Centre	N on KRT	N with Tx	% with Tx	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing
TX CENTRES										
Belfast	922	744	80.7	57.3	60.5	96.6	2.6	0.3	0.6	5.0
Bham	3,469	1,721	49.6	54.6	58.5	57.4	30.7	8.4	3.6	0.4
Bristol	1,524	983	64.5	57.4	60.6	88.1	4.9	4.8	2.2	0.0
Camb	1,711	1,279	74.8	56.3	63.6	87.2	8.1	2.8	2.0	0.3
Cardff	1,841	1,168	63.4	56.6	63.3	91.4	6.1	1.2	1.4	4.5
Covnt	1,160	678	58.4	56.4	61.8	75.0	19.0	5.2	0.9	0.4
Edinb	1,042	701	67.3	57.4	63.9					
Glasgw	1,928	1,285	66.6	57.5	59.0					
L Barts	3,138	1,530	48.8	54.8	58.9	36.1	36.6	21.1	6.3	0.7
L Guys	2,300	1,531	66.6	55.4	59.8	61.5	10.9	20.9	6.7	0.7
L Rfree	2,533	1,558	61.5	57.3	60.2	43.5	21.9	19.6	15.1	2.8
L St.G	916	536	58.5	58.2	55.2	45.8	23.1	20.6	10.5	3.9
L West	3,688	2,095	56.8	58.5	62.0	39.3	36.9	15.8	8.0	0.0
Leeds	1,987	1,205	60.6	55.8	60.1	76.9	15.8	5.2	2.1	0.2
Leic	2,920	1,616	55.3	58.1	58.3	71.9	20.9	5.1	2.1	1.4
Liv UH	1,531	858	56.0	56.7	62.2	91.2	3.0	3.2	2.6	2.5
M RI	2,128	1,340	63.0	56.1	60.3	72.8	17.3	7.0	2.9	0.6
Newc	1,276	814	63.8	58.3	59.1	92.5	5.5	1.1	0.9	0.0
Nottm	1,240	716	57.7	56.1	58.7	83.2	6.4	5.5	4.9	0.1
Oxford	2,170	1,535	70.7	57.0	60.9	78.9	12.4	4.9	3.8	6.2
Plymth	540	344	63.7	58.3	64.8	95.4	1.7	0.9	2.0	0.0
Ports	2,070	1,179	57.0	58.5	57.6	91.9	4.8	1.1	2.2	6.5
Sheff	1,503	785	52.2	57.5	62.6	87.6	7.2	2.3	2.8	1.3
DIALYSIS CENTRES										
Abrdn	628	384	61.1	55.4	60.2					
Airdrie	547	321	58.7	56.6	57.9					
Antrim	302	174	57.6	59.1	61.5	99.4	0.0	0.6	0.0	9.2
Bangor	227	113	49.8	56.7	63.7	99.1	0.0	0.0	1.0	7.1
Bradfd	841	456	54.2	53.8	60.5	52.0	44.7	2.0	1.3	0.4
Brightn	1,180	602	51.0	58.1	59.5	90.0	5.6	1.9	2.5	1.8
Carlis	332	171	51.5	57.7	62.0	97.0	3.0	0.0	0.0	1.2
Carsh	2,088	944	45.2	59.2	62.1	65.6	19.7	10.6	4.1	0.7
Clwyd	222	95	42.8	57.8	66.3	97.8	2.2	0.0	0.0	4.2
Colchr	181	0	0.0							
D&Gall	159	88	55.3	59.0	64.8					
Derby	775	328	42.3	59.0	62.5	82.3	11.2	3.1	3.4	1.8
Donc	382	159	41.6	57.6	64.8	93.7	3.2	1.3	1.9	0.6
Dorset	832	450	54.1	61.9	61.3	93.8	3.3	1.1	1.8	0.0
Dudley	359	129	35.9	57.4	66.7	79.1	15.5	3.9	1.6	0.0
Dundee	362	200	55.2	59.0	60.0					
EssexMS	1,006	382	38.0	58.4	61.0	84.0	6.3	6.6	3.2	0.5
Exeter	1,183	578	48.9	58.5	60.7	97.8	1.2	0.4	0.7	0.0
Glouc	577	311	53.9	60.3	59.2	91.0	4.8	1.9	2.3	0.3
Hull	971	508	52.3	57.2	64.8	95.8	2.0	1.0	1.2	0.8
Inverns	281	183	65.1	58.4	57.9					
Ipswi	400	235	58.8	59.8	62.1	80.9	2.1	5.1	11.9	0.0
Kent	1,277	708	55.4	57.6	59.9	89.8	4.3	1.9	4.1	0.6

Table 4.7 Continued

Centre	N on KRT	N with Tx	% with Tx	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
Klmarnk	386	190	49.2	58.9	56.8					
Krkcldy	282	94	33.3	57.5	62.8					
L Kings	1,472	646	43.9	58.0	63.5	44.3	17.5	33.0	5.1	0.2
Middlbr	1,002	600	59.9	58.1	61.7	92.8	5.0	0.5	1.7	0.2
Newry	297	196	66.0	58.8	63.3	97.9	1.1	0.5	0.5	3.6
Norwch	797	412	51.7	59.5	60.2	96.6	1.7	1.0	0.7	0.2
Prestn	1,512	853	56.4	57.7	60.0	81.7	16.0	1.1	1.3	0.9
Redng	1,043	580	55.6	58.7	65.5	59.7	25.8	6.0	8.4	7.9
Salford	1,408	770	54.7	58.5	60.4	79.0	15.9	3.2	2.0	1.3
Shrew	453	194	42.8	58.1	65.0	91.2	3.1	3.1	2.6	0.5
Stevng	1,144	441	38.5	58.1	66.9	66.5	20.3	7.7	5.5	0.5
Stoke	913	458	50.2	55.5	64.4	88.8	7.0	2.5	1.8	2.6
Sund	627	319	50.9	57.8	61.1	94.7	3.5	0.6	1.3	0.3
Swanse	956	423	44.2	57.8	62.2	95.9	2.9	0.5	0.7	1.0
Truro	455	250	54.9	58.0	58.8	98.4	0.4	0.0	1.2	0.0
Ulster	193	108	56.0	58.9	63.9	91.6	5.6	2.8	0.0	0.9
West NI	367	244	66.5	56.4	61.5	98.3	1.7	0.0	0.0	4.1
Wirral	421	221	52.5	59.4	63.4	95.5	2.7	0.5	1.4	0.5
Wolve	831	277	33.3	56.8	58.1	73.5	14.2	4.0	8.4	0.7
Wrexm	336	180	53.6	56.8	63.9	94.9	2.3	0.6	2.3	1.7
York	613	347	56.6	59.2	63.4	95.7	1.2	0.3	2.9	0.3
TOTALS										
England	62,879	34,632	55.1	57.3	60.8	73.0	15.3	7.6	4.1	1.3
N Ireland	2,081	1,466	70.4	57.6	61.4	97.0	2.2	0.5	0.4	4.8
Scotland	5,615	3,446	61.4	57.4	60.2					
Wales	3,582	1,979	55.2	57.0	63.3	93.5	4.5	0.8	1.2	3.6
UK	**74,157**	**41,523**	**56.0**	**57.3**	**60.9**	**74.9**	**14.3**	**7.0**	**3.8**	**1.6**

Blank cells – no data returned by the centre or data completeness <70%
Breakdown by ethnicity is not shown for centres with <70% data completeness, but these centres were included in national averages
UK ethnicity distribution and completeness does not include Scotland

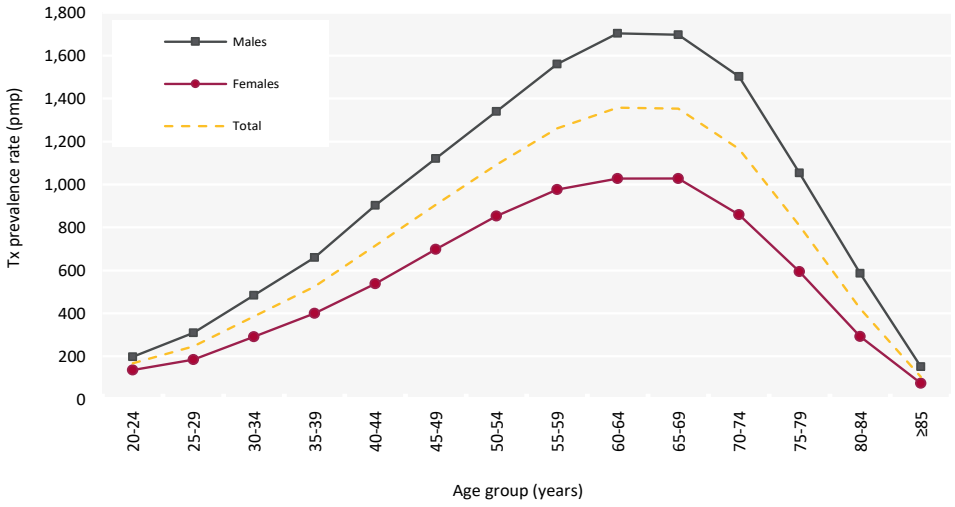


Figure 4.8 Adult Tx prevalence rates on 31/12/2024 by age group and sex
pmp – per million population

The distribution of primary renal diseases (PRDs) as a cause of ESKD in the incident Tx population is compared to the prevalent Tx population (table 4.8). Comparison to dialysis populations is shown in chapter 3. PRDs were grouped into categories, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of Tx patients with each PRD is shown for patients with PRD data and these total 100% of patients with data. The proportion of patients with no PRD data is shown on a separate line.

Table 4.8 Primary renal diseases (PRDs) of adult patients incident to Tx in 2024 and adult patients prevalent to Tx on 31/12/2024

	Incident Tx		Prevalent Tx	
PRD	N	%	N	%
Diabetes	447	16.5	4,841	12.2
Glomerulonephritis	647	23.9	9,444	23.9
Hypertension	209	7.7	2,276	5.7
Polycystic kidney disease	337	12.4	5,420	13.7
Pyelonephritis	126	4.7	3,235	8.2
Renal vascular disease	48	1.8	497	1.3
Other	523	19.3	8,528	21.5
Uncertain aetiology	371	13.7	5,343	13.5
Total (with data)	**2,708**	**100.0**	**39,584**	**100.0**
Missing	146	5.1	859	2.1

Graft function and anaemia in prevalent adult kidney Tx patients

Accepting the limitations of interpreting eGFR in the Tx population, four centre-specific analyses are presented: median eGFR, the percentage of patients with eGFR <30 mL/min/1.73m², and the proportion of patients achieving an adequate haemoglobin level (defined as a haemoglobin ≥100 g/L) separately for those with eGFR <30 mL/min/1.73m² and those with eGFR ≥30 mL/min/1.73m².

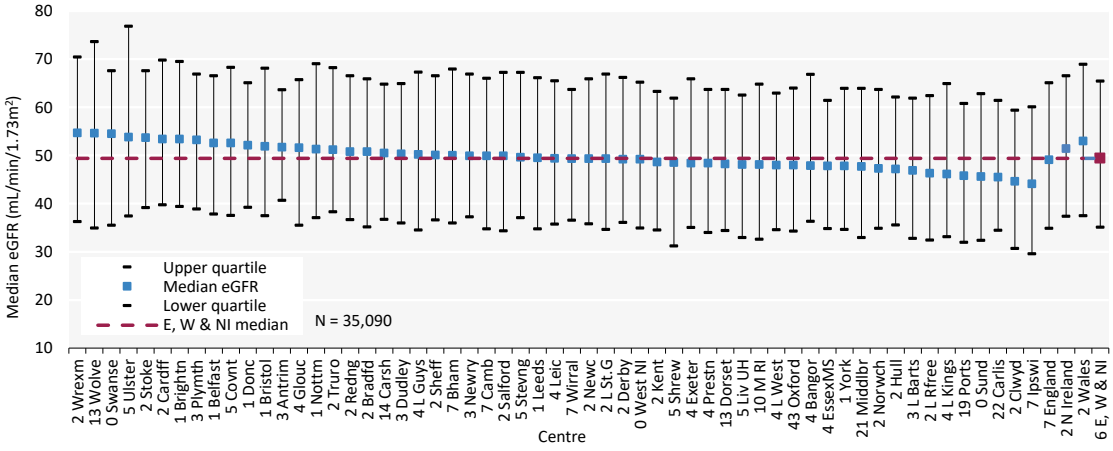


Figure 4.9 Median estimated glomerular filtration rate (eGFR) in adult patients prevalent to Tx on 31/12/2024 by centre

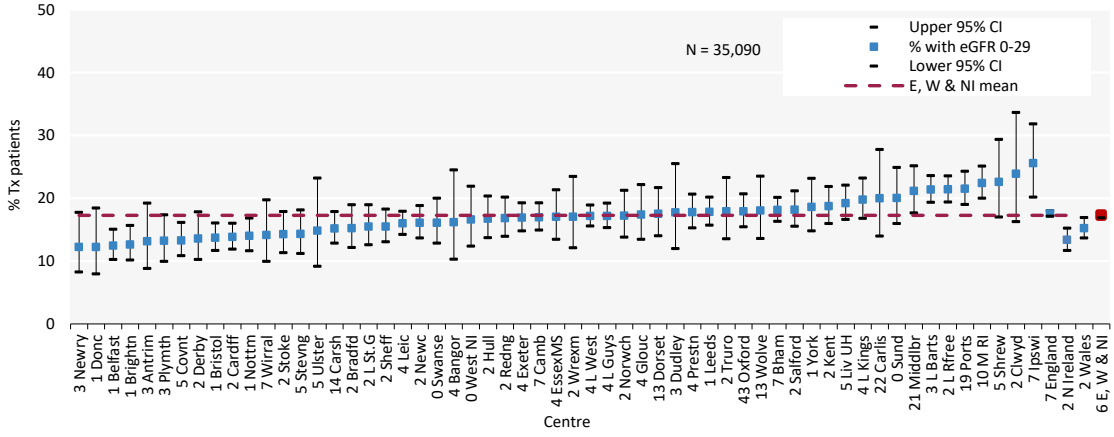


Figure 4.10 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m² by centre
CI – confidence interval

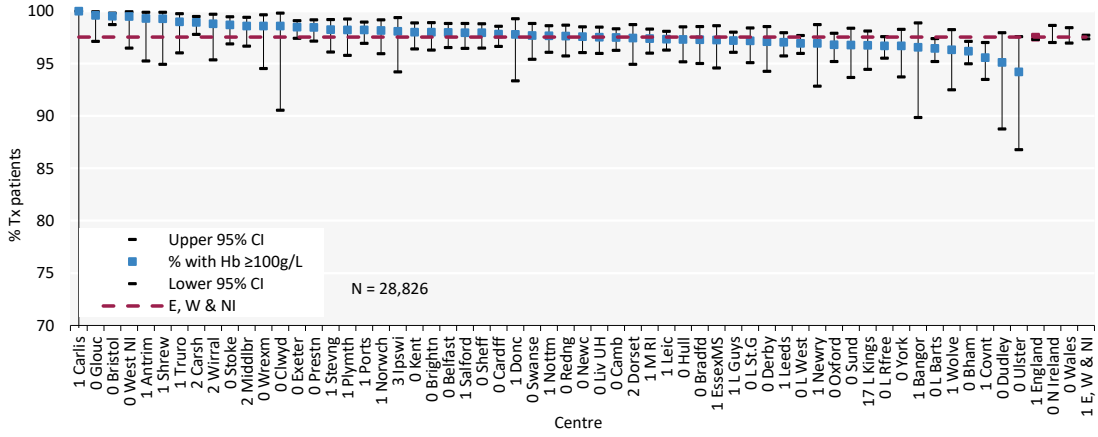


Figure 4.11 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) ≥30 mL/min/1.73m^2 achieving haemoglobin (Hb) ≥100 g/L by centre
CI – confidence interval

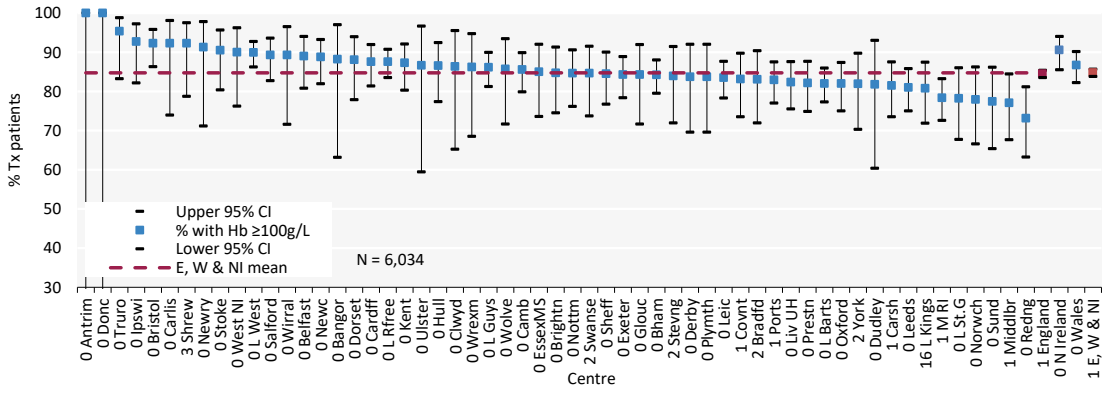


Figure 4.12 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m^2 achieving haemoglobin (Hb) ≥100 g/L by centre
CI – confidence interval

Blood pressure in prevalent adult kidney Tx patients

Blood pressure data completeness was variable (table 4.5) and only centres with ≥70% data completeness were included in the analysis. It is possible that bias may be introduced if blood pressure readings in particular ranges were more frequently reported. A lack of data on proteinuria did not allow differentiation for the purposes of reporting against the audit measure.

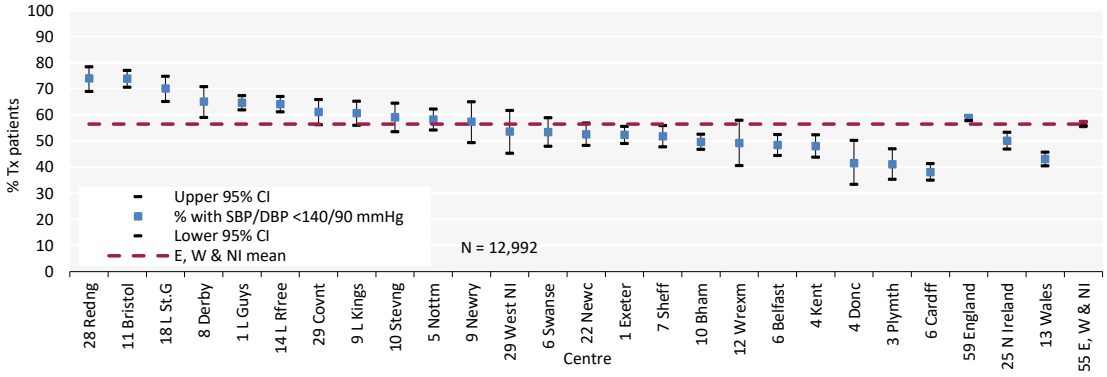


Figure 4.13 Percentage of adult patients prevalent to Tx on 31/12/2024 with estimated glomerular filtration rate (eGFR) ≥30 mL/min/1.73m^2 achieving blood pressure of <140/90 mmHg by centre
CI – confidence interval; DBP – diastolic blood pressure; SBP – systolic blood pressure

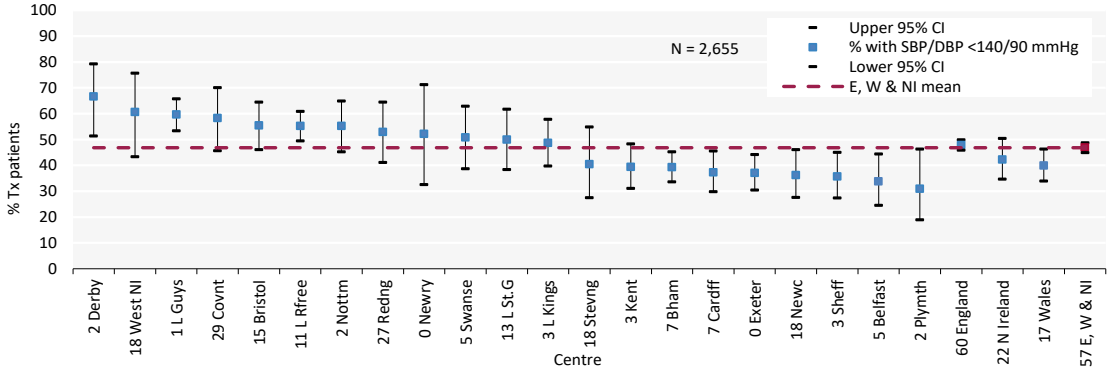


Figure 4.14 Percentage of adult patients prevalent to Tx on 31/12/2024 with estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m^2 achieving blood pressure of <140/90 mmHg by centre
CI – confidence interval; DBP – diastolic blood pressure; SBP – systolic blood pressure

Biochemistry parameters in prevalent adult kidney Tx patients

The attainment of audit standards is shown by stage of Tx kidney function in the prevalent Tx population and by comparing to the prevalent dialysis population.

Table 4.9 Estimated glomerular filtration rate (eGFR), blood pressure and biochemical parameters in adult patients prevalent to Tx on 31/12/2024 compared with adult patients prevalent to dialysis on 31/12/2024 by CKD stage

	Tx CKD stage (eGFR)				
Characteristic	Stage 1-2T (≥60 mL/min/1.73 m²)	Stage 3T (30-59 mL/min/1.73 m²)	Stage 4T (15-29 mL/min/1.73 m²)	Stage 5T (<15 mL/min/1.73 m²)	Prevalent dialysis Stage 5D
N	11,291	17,441	5,087	936	24,989
%	32.5	50.2	14.6	2.7	
eGFR (mL/min/1.73m²)					
mean ± SD	76.6 ± 13.2	45.1 ± 8.4	23.6 ± 4.1	11.6 ± 2.5	
median	73.5	45.2	24.0	12.2	
SBP (mmHg)					
mean ± SD	135 ± 16	137 ± 18	140 ± 19	143 ± 20	137 ± 25
% ≥140 mmHg	35.1	39.9	47.9	54.5	43.4
DBP (mmHg)					
mean ± SD	81 ± 10	80 ± 11	80 ± 11	81 ± 12	72 ± 16
% ≥90 mmHg	18.7	17.9	19.6	20.3	13.2
Total cholesterol (mmol/L)					
mean ± SD	4.3 ± 1.1	4.3 ± 1.1	4.4 ± 1.2	4.4 ± 1.3	3.8 ± 1.1
% ≥4.0 mmol/L	60.9	61.3	60.8	60.8	38.4
Haemoglobin (g/L)					
mean ± SD	138 ± 16	130 ± 17	117 ± 16	106 ± 16	110 ± 14
% <100 g/L	1.3	3.3	11.8	34.6	21.0
Phosphate (mmol/L)					
mean ± SD	0.9 ± 0.2	1.0 ± 0.2	1.1 ± 0.2	1.5 ± 0.4	1.7 ± 0.5
% >1.7 mmol/L	0.1	0.2	1.6	19.4	48.1
Adjusted Ca (mmol/L)					
mean ± SD	2.5 ± 0.1	2.4 ± 0.1	2.4 ± 0.1	2.4 ± 0.2	2.3 ± 0.2
% >2.5 mmol/L	24.9	25.7	20.5	13.8	12.9
% <2.2 mmol/L	1.0	1.7	4.6	12.2	14.7
PTH (pmol/L)					
median	8.4	10.0	15.6	29.1	38.0
% >72 pmol/L	0.5	0.8	3.4	13.4	22.3

Ca – adjusted calcium; DBP – diastolic blood pressure; PTH – parathyroid hormone; SBP – systolic blood pressure; SD – standard deviation

Differences in the median eGFR slope (annual change in eGFR) in Tx patients is reported by patient and Tx graft characteristics. All UK patients aged at least 18 years receiving their first kidney Tx between 01/01/2014 and 31/12/2022 were considered for inclusion in the analysis. A minimum duration of 18 months graft function was required and three or more creatinine measurements from the second year of graft function onwards were used to plot eGFR slope. If a Tx failed, but there were at least three creatinine measurements between one year post-Tx and graft failure, the patient was included, but no creatinine measurements after the quarter preceding the recorded date of Tx failure were analysed.

Table 4.10 Differences in median estimated glomerular filtration rate (eGFR) slope between demographic subgroups of adult patients who received their first kidney Tx between 01/01/2014 and 31/12/2022

		eGFR (mL/min/1.73m^2/year)		
Characteristic	N	Median slope	Lower quartile	Upper quartile
Age at Tx (yrs)				
<40	4,652	-1.51	-4.83	0.60
40-55	8,458	-0.83	-3.10	0.94
>55	6,625	-0.77	-3.09	0.97
Ethnicity				
White	13,607	-0.87	-3.22	0.85
Asian	2,922	-1.08	-3.69	0.82
Black	1,659	-1.47	-4.37	0.82
Other	697	-1.37	-4.30	0.61
Sex				
Male	12,189	-0.73	-3.11	1.03
Female	7,546	-1.33	-4.03	0.57
Diabetes				
No Diabetes	15,904	-0.85	-3.24	0.90
Diabetes	3,466	-1.49	-4.38	0.72
Tx donor				
Deceased	14,080	-0.95	-3.53	0.91
Living	5,655	-0.96	-3.26	0.79
Year of Tx				
2014	2,330	-1.00	-2.89	0.33
2015	2,320	-0.96	-2.86	0.41
2016	2,396	-1.05	-3.20	0.51
2017	2,556	-0.98	-3.28	0.68
2018	2,510	-0.87	-3.24	0.96
2019	2,330	-0.99	-3.41	0.92
2020	1,639	-0.96	-3.80	1.26
2021	1,752	-0.92	-4.21	2.10
2022	1,902	-0.57	-5.85	3.39
Status of Tx patients at end of follow-up				
Died	2,351	-1.35	-4.12	1.09
Graft failed	1,862	-6.00	-11.33	-2.84
Re-transplanted	79	-2.86	-4.71	-1.15
Graft functioning	15,522	-0.58	-2.60	1.05
Total	**19,735**	**-0.95**	**-3.46**	**0.89**

Survival of adult kidney Tx patients

Survival of incident and prevalent KRT patients is described in detail in chapters 2 and 3, respectively. Survival of incident Tx patients is reported in table 4.4. NHSBT reports the survival of Tx recipients.

Cause of death in adult kidney Tx patients

Cause of death was analysed in patients prevalent to KRT on 31/12/2023 and followed-up for one year in 2024, with comparisons between Tx and dialysis presented in table 4.11. The proportion of KRT patients with each cause of death is shown for patients with cause of death data and these total 100% of patients with data. The proportion of patients with no cause of death data is shown on a separate line. Where the cause of death was missing in the UKRR data, cause of death from Civil Registration records was used.

Table 4.11 Cause of death in adult patients prevalent to KRT on 31/12/2023 followed-up in 2024 by modality

	All modalities		Dialysis		Tx	
Cause of death	N	%	N	%	N	%
Cardiac disease	1,076	19.9	892	21.2	184	15.4
Cerebrovascular disease	193	3.6	151	3.6	42	3.5
Infection	921	17.1	686	16.3	235	19.7
Malignancy	499	9.2	273	6.5	226	18.9
Treatment withdrawal	414	7.7	397	9.4	17	1.4
Other	1,859	34.5	1,487	35.4	372	31.2
Uncertain aetiology	434	8.0	316	7.5	118	9.9
Total (with data)	**5,396**	**100.0**	**4,202**	**100.0**	**1,194**	**100.0**
Missing	680	11.2	513	10.9	167	12.3

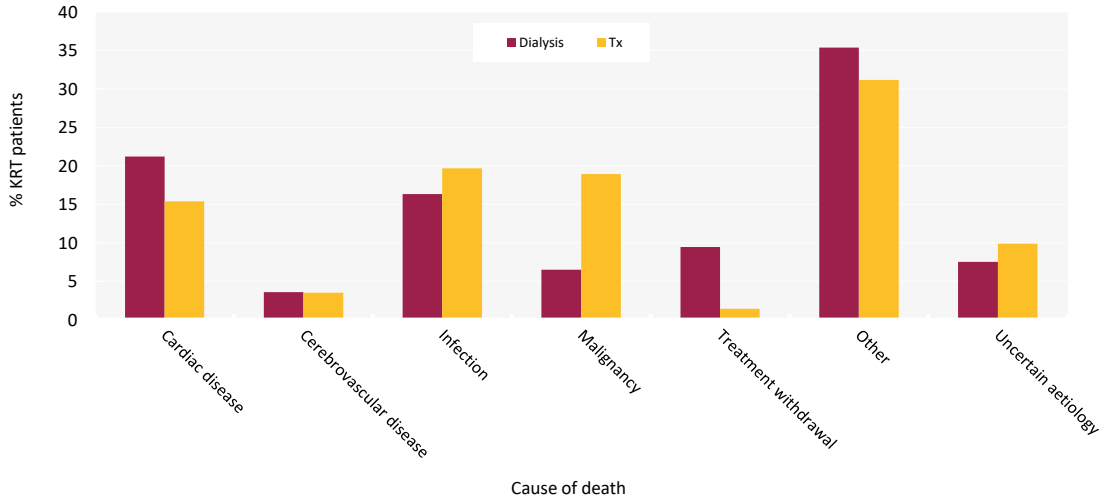


Figure 4.15 Cause of death for adult patients prevalent to KRT on 31/12/2023 followed-up in 2024 by modality

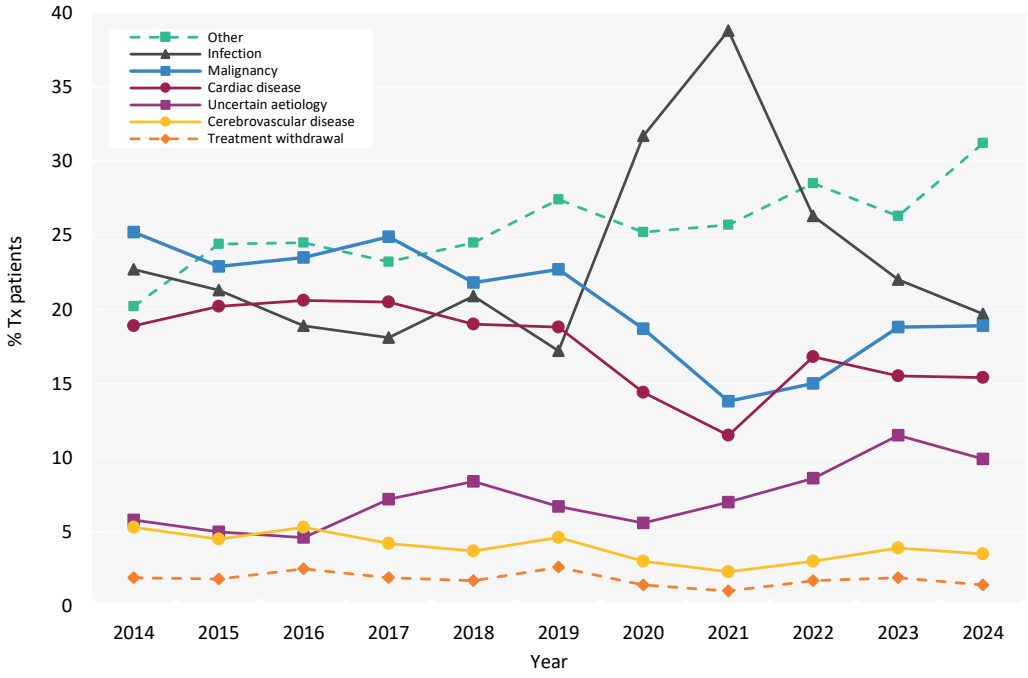


Figure 4.16 Cause of death between 2014 and 2024 for adult patients prevalent to Tx at the beginning of the year