

Chapter 2

Adults starting kidney replacement therapy (KRT) for end-stage kidney disease (ESKD) in the UK in 2024

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Introduction

This chapter describes the population of patients who developed end-stage kidney disease (ESKD) and started kidney replacement therapy (KRT) in the UK in 2024 (figure 2.1). This includes patients starting dialysis therapies – haemodialysis (HD) and peritoneal dialysis (PD) – and patients who received a pre-emptive kidney transplant (Tx). Patients with a failed Tx who returned to dialysis are not included. Patients who received dialysis for acute kidney injury (AKI), as coded by their reporting kidney centre, were only included if their dialysis was subsequently recoded as being for ESKD, when they failed to recover native kidney function. Recoding is automatically applied at 90 days for individuals still on KRT (unless advised otherwise by the kidney centre – see appendix A for details), but can be applied earlier by reporting centres that identify ESKD before day 90. Individuals who commenced dialysis for AKI and subsequently recovered kidney function, died or withdrew from dialysis within the first 90 days of treatment are not included in this chapter (although they are shown in figure 2.1). Patients who died, or withdrew from dialysis after being coded as ESKD are included in this chapter, but patients who recovered kidney function are not included if they recovered before 90 days on dialysis.

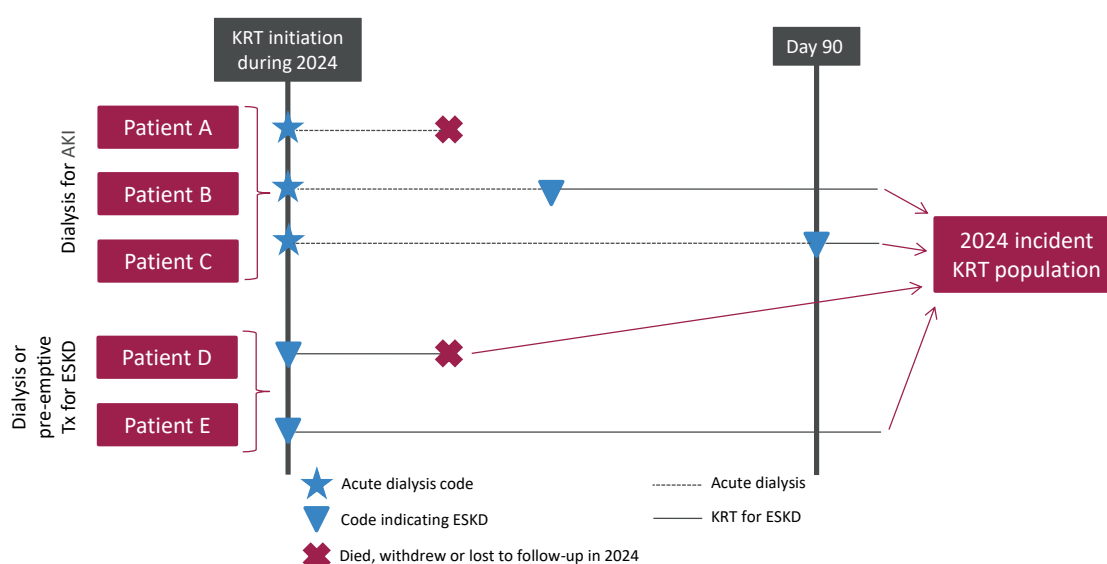


Figure 2.1 Example histories for patients starting KRT, illustrating the use of timeline codes to define dialysis as being ‘acute’ or for ESKD

Patients who recovered kidney function before 90 days on dialysis are not included in this chapter, whether they were coded as AKI or ESKD

Patients who followed patterns B–E received KRT for ESKD and are counted as ‘incident to KRT’ throughout this report. Patients who followed pattern A are not counted as ‘incident to KRT’ and do not feature in this chapter

Several analyses, including survival and cause of death, were undertaken on historic incident cohorts to allow sufficient follow-up time and numbers of patients. For most centres, dialysis access data were collected separately to the main UK Renal Registry (UKRR) data returns via the 2024 Multisite Dialysis Access Audit. For around a quarter of centres with complete data, dialysis access information could be derived from the quarterly return. In future years we hope that data quality will improve such that we can extend this to more centres.

This chapter addresses the following key aspects of the care of patients incident to KRT for which there are UK Kidney Association guidelines (table 2.1):

- **Modality selection, pre-emptive transplantation and Tx wait-listing:** the percentage of patients starting on each KRT modality, including a home therapy – home HD (HHD) or PD – or a kidney Tx, as well as the percentage of patients pre-emptively listed for a Tx, are reported in this chapter.
- **Late presentation:** a patient first seen by kidney services within 90 days of starting KRT for ESKD is defined as a 'late presentation' (in this report 'late presentation' is used interchangeably with 'late referral').
- **Complications associated with ESKD:** these include anaemia and mineral bone disorders.
- **Type of dialysis access:** definitive access – either a surgically created arteriovenous fistula (AVF) or arteriovenous graft (AVG), or a PD catheter. Alternatively, more temporary access can be provided through a central venous catheter – either a tunnelled line (TL) or a non-tunnelled line (NTL).

Rationale for analyses

The analyses begin with a description of the 2024 incident adult KRT population, including the incident number on KRT per million population (pmp). The inclusion of centre-level reports on the survival of KRT patients reflects the need for transparency following the Francis and Keogh enquiries and the ongoing Care Quality Commission inspections of patient care and outcomes at a number of hospital trusts. Survival analyses have been adjusted for age, sex and comorbidity using kidney centre data. Comorbidity data have been augmented using Hospital Episode Statistics (HES) for English kidney centres and Patient Episode Database for Wales (PEDW) for Welsh kidney centres.

The UK Kidney Association guidelines (ukkidney.org/health-professionals/guidelines/guidelines-commentaries) provide audit measures relevant to the care of patients incident to KRT and, where data permit, their attainment by UK kidney centres in 2024 is reported in this chapter (table 2.1). Audit measures in guidelines that have been archived are not included, and neither are guidelines which took effect after data collection.

Some audit measures – for example, the target for glycated haemoglobin (HbA1c) in those on hypoglycaemia-inducing treatment – cannot be reported because the completeness of the required data 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.

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 fell <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, unless specified to the contrary.

Manchester also submitted data to the 2024 Multisite Dialysis Access Audit allowing inclusion in Table 2.17 and Figures 2.16 and 2.17. Manchester is excluded from all other analyses.

Table 2.1 The UK Kidney Association audit measures relevant to KRT incidence that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
Planning, initiating and withdrawing KRT (2014)	Proportion of patients commencing PD or HHD	Table 2.3
	Proportion of patients remaining on initial treatment modality 3 and 12 months post initiation of KRT	Tables 2.6–2.8, figures 2.6–2.7
	Percentage of patients commencing KRT referred <3 months and <12 months before date of starting KRT	Tables 2.9–2.12, figure 2.8
	Proportion of patients on UK Tx waiting list at KRT initiation	Table 2.3
	Proportion of KRT patients transplanted pre-emptively from living and deceased donors	Table 2.3, figure 2.5 (partly addressed)
	Estimated glomerular filtration rate (eGFR) at start of KRT and at time of pre-emptive Tx	Figure 2.9
	Proportion of planned initiations with established access or pre-emptive Tx	Table 2.16, figure 2.16
	Number of patients withdrawing from dialysis as a proportion of all deaths on dialysis	Table 2.22
Anaemia (2020)	Proportion of patients initiating KRT with haemoglobin <100 g/L not on erythropoiesis stimulating agent (ESA)	Table 2.13, figure 2.10–2.11 (ESA not included)
Chronic kidney disease (CKD) mineral bone disorder (2018)	Percentage of KRT patients with serum calcium above the normal reference range of 2.2–2.5 mmol/L	Table 2.14, figure 2.12
Vascular access (2023)	Access outcome for all new access in all patients at 3 and 12 months	Table 2.16 (partly addressed)
	Proportion of patients with each access/modality, of those starting kidney replacement therapy who were known to kidney services for at least 12 months	Table 2.17
Peritoneal access (2009)	>80% of catheters should be patent at 1 year (censoring for death and elective modality change)	Figure 2.7 shows the KRT modality of PD patients at 1 year

Key findings

- 8,775 adult patients started KRT for ESKD in the UK in 2024, an increase of 2.0% from the previous year.
- KRT incidence in adults was 160 pmp.
- The median age of incident KRT patients was 63.7 years, but this was dependent on ethnicity (White 65.7 years, Asian 59.9 years and Black 57.0 years).
- 64.8% of incident KRT patients were male.
- Diabetes remained the most common identifiable primary renal disease (PRD), accounting for 29.3% of incident patients.
- By 90 days after KRT start 5.4% of patients had died or stopped treatment.
- In 2024 19.0% of patients started KRT on PD, compared to 17.7% in 2023.
- In 2024, 6.3% of patients started KRT with a transplant, slightly lower than previous year.
- The mean eGFR at the start of KRT was 7.0 mL/min/1.73m² (HD 6.7 mL/min/1.73m², PD 7.3 mL/min/1.73m² and pre-emptive Tx 10.5 mL/min/1.73m²). In 2023, the mean eGFR at the start of KRT was 6.9 mL/min/1.73m².
- Late presentation was 17.1% which is lower than the past two years.
- Of the 7,885 incident dialysis patients with dialysis access data, 49.9% started dialysis with definitive access (21.3% PD and 28.6% HD with an AVF or AVG), 32.8% with a TL and 17.3% with an NTL.
- A slightly lower proportion of patients started haemodialysis with definitive access this year at 36.3% compared to 36.9% in 2023.
- Short-term (90 day) age-adjusted survival of incident KRT patients in a combined 2 year cohort (2022-2023) was 96.5%, which was unchanged from survival in the 2021-2022 cohort.
- 1 year after 90 day age-adjusted survival for incident KRT patients in a combined 2 year cohort (2022-2023) was 90.6% (similar to previous survival in the 2021-2022 cohort).
- There were 2 outlying centres in the funnel plot showing 1 year after 90 day case-mix-adjusted survival for incident KRT patients in a combined 4 year cohort (2020-2023): 2 centres were above the upper 95% limit.
- The leading causes of death in the first 90 days in incident KRT patients were cardiac disease (20.5%) and infection (23.5%).

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

Changes to the incident adult KRT population

For the 67 adult kidney centres, the number of incident patients on KRT was calculated as a proportion of the estimated centre catchment population (calculated as detailed in appendix A).

Table 2.2 Number of adult patients incident to KRT by year and centre, and as a proportion of the catchment population.

Centre	N on KRT					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024		
ENGLAND							
Bham	329	364	409	368	413	2.13	194
Bradfd	83	81	93	104	83	0.52	161
Brightn	143	131	104	158	153	1.10	139
Bristol	130	154	149	170	143	1.29	111
Camb	138	149	119	131	128	1.00	127
Carlis	34	44	36	45	63	0.26	239
Carsh	295	296	271	319	293	1.71	172
Colchr	39	38	40	50	53	0.30	175
Covnt	141	147	138	133	129	0.82	157
Derby	72	89	121	108	112	0.59	191
Donc	47	44	78	71	49	0.39	127
Dorset	87	79	93	101	102	0.76	134
Dudley	61	62	58	51	42	0.36	118
EssexMS	127	132	166	204	180	1.03	175
Exeter	138	123	130	159	161	1.00	161
Glouc	85	81	88	84	89	0.53	166
Hull	106	95	107	119	107	0.82	130
Ipswi	44	60	35	42	45	0.32	139
Kent	140	182	169	164	167	1.10	152
L Barts	321	286	291	348	405	1.64	247
L Guys	160	191	154	162	152	1.02	149
L Kings	159	220	202	191	188	0.96	196
L Rfree	231	281	250	266	259	1.29	200
L St.G	85	93	106	88	140	0.68	206
L West	364	419	391	388	381	2.06	185
Leeds	152	169	181	181	215	1.43	151
Leic	337	308	338	358	409	2.21	185
Liv UH	149	169	189	159	182	1.29	141
M RI	172	212	129	205	204	1.39	147
Middlbr	96	109	94	110	107	0.83	129
Newc	125	132	131	155	125	0.97	129
Norwch	101	103	124	77	117	0.72	163
Nottm	121	130	115	110	171	0.95	181
Oxford	203	189	218	215	229	1.56	146
Plymth	57	83	72	60	53	0.42	126
Ports	219	239	274	239	258	1.81	142
Prestn	165	197	187	198	188	1.29	146
Redng	100	109	146	133	131	0.75	174
Salford	173	140	195	201	194	1.21	161
Sheff	175	170	173	164	171	1.14	150
Shrew	45	60	53	63	63	0.43	146
Stevng	171	182	171	179	196	1.17	167
Stoke	121	139	135	121	105	0.76	138

Table 2.2 Continued

Centre	N on KRT					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024		
Sund	68	74	80	78	88	0.55	159
Truro	45	70	66	58	59	0.37	159
Wirral	48	55	36	39	61	0.49	125
Wolve	110	131	119	144	124	0.56	220
York	47	50	76	46	64	0.50	128
N IRELAND							
Antrim	29	39	31	40	20	0.25	107
Belfast	78	101	90	82	23	0.54	85
Newry	31	40	22	34	40	0.24	167
Ulster	28	25	25	37	6	0.21	58
West NI	38	34	31	38	42	0.25	165
SCOTLAND							
Abrdn	62	57	57	69	72	0.50	143
Airdrie	57	72	63	86	75	0.47	159
D&Gall	21	14	21	13	22	0.12	180
Dundee	27	40	30	49	32	0.37	86
Edinb	78	87	100	86	95	0.86	111
Glasgw	178	209	202	182	196	1.40	140
Inverns	19	36	27	39	23	0.23	101
Klmarnk	57	46	49	54	44	0.29	149
Krkldy	41	45	40	44	52	0.28	187
WALES							
Bangor	29	18	25	26	31	0.16	193
Cardff	135	153	194	203	213	1.18	181
Clwyd	27	30	36	41	36	0.18	195
Swanse	121	126	143	160	161	0.76	211
Wrexm	37	30	38	38	41	0.21	193
TOTALS							
England	6559	7061	7100	7317	7551	46.50	162
N Ireland	204	239	199	231	131	1.49	124
Scotland	540	606	589	622	611	4.53	135
Wales	349	357	436	468	482	2.50	193
UK	7652	8263	8324	8638	8775	55.02	160

Country KRT populations were calculated by summing the KRT 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). Individual level data for Manchester (M RI) incident patients could not be calculated for this report, as a new data feed was still undergoing testing, preventing full validation. Aggregate numbers were provided by the centre for 2023 and 2024, and numbers for 2022 cover January-September only.

Three units in Northern Ireland provided data only for part of 2024. Numbers shown are therefore an underestimate of their incident population, while the estimated catchment population is correct. Appropriate adjustments were made when calculating the crude incidence rate for those centres and at national level for N Ireland and UK.

See Appendix A section 2.2 for more detailed information on data quality issues relating to the following units: Antrim, Belfast, Cambridge, Ipswich, Manchester (M RI), and Ulster.

pmp – per million population

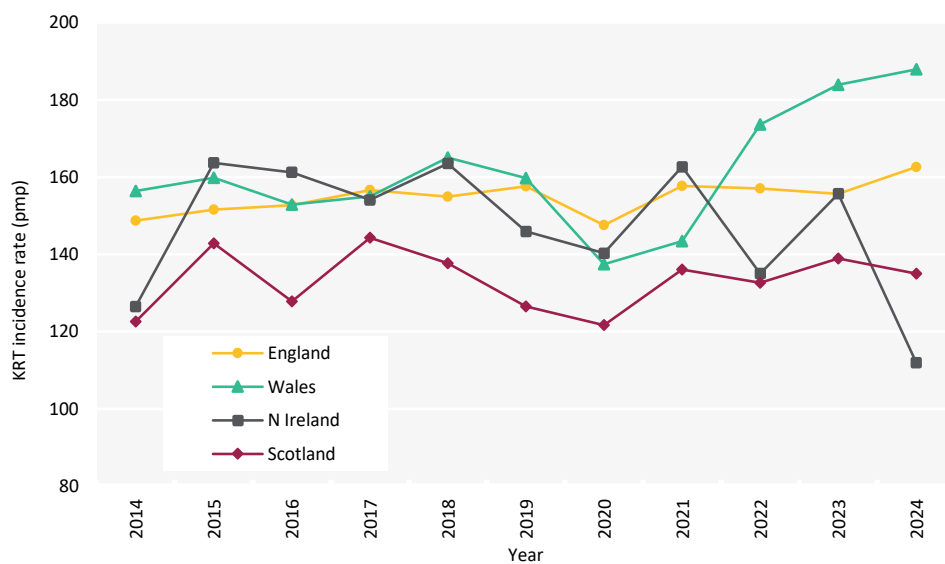


Figure 2.2 Adult KRT incidence rates by country between 2014 and 2024
pmp – per million population

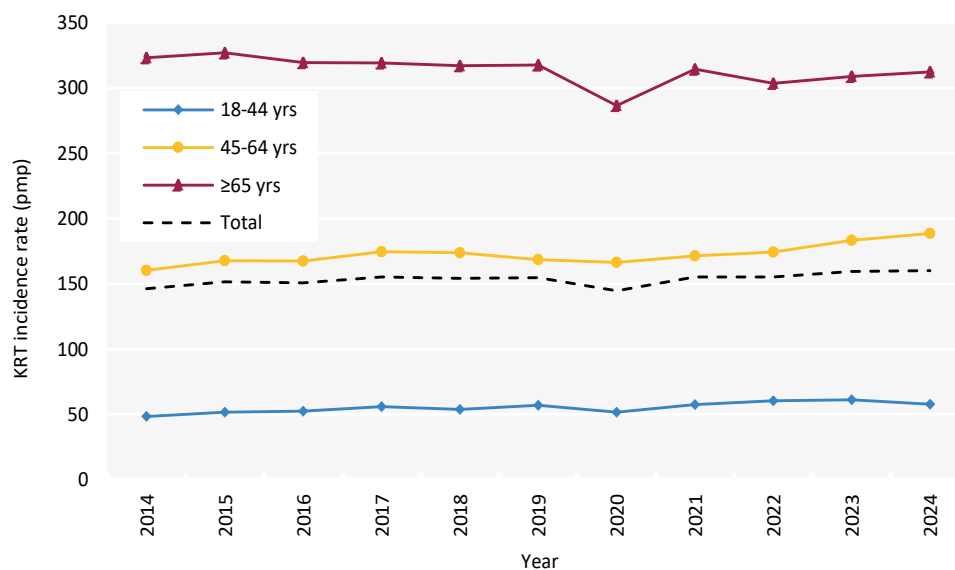


Figure 2.3 Adult KRT incidence rates by age group between 2014 and 2024
pmp – per million population

Demographics and start modality of incident adult KRT patients

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

Table 2.3 Demographics and start modality of adult patients incident to KRT in 2024 by centre

Centre	N on KRT	% on ICHD	% on PD	% on HHD	% on Tx	% pre-emptive listing/Tx	Median age (yrs)	% male	Ethnicity				
									% White	% Asian	% Black	% Other	% missing
ENGLAND													
Bham	413	77.5	20.1	0.2	2.2	13.8	64.3	65.1	61.1	24.3	11.3	3.3	5.3
Bradfd	83	83.1	8.4	0.0	8.4	20.5	57.5	72.3	42.5	52.5	2.5	2.5	3.6
Brightn	153	65.4	26.8	0.0	7.8	20.3	67.7	63.4	90.4	1.5	4.4	3.7	11.1
Bristol	143	67.1	24.5	0.0	8.4	22.4	60.3	64.3	82.4	5.6	9.9	2.1	0.7
Camb	128	70.3	9.4	0.0	20.3	27.3	64.4	67.2	93.4	3.3	2.5	0.8	5.5
Carlisle	63	71.4	27.0	0.0	1.6	12.7	69.7	61.9	96.5	0.0	0.0	3.5	9.5
Carsh	293	78.5	15.7	0.3	5.5	15.7	64.3	63.8	65.3	17.0	12.7	5.0	11.6
Colchr	53	100.0	0.0	0.0	0.0	7.5	71.8	83.0					88.7
Covnt	129	77.5	17.8	0.8	3.9	17.1	65.5	61.2	77.4	13.7	4.8	4.0	3.9
Derby	112	76.8	17.0	2.7	3.6	24.1	68.2	72.3	83.0	12.5	1.1	3.4	21.4
Donc	49	87.8	10.2	0.0	2.0	18.4	62.8	67.3					55.1
Dorset	102	68.6	29.4	0.0	2.0	19.6	64.8	64.7	94.1	1.0	1.0	4.0	1.0
Dudley	42	78.6	21.4	0.0	0.0	23.8	67.9	69.0	85.7	4.8	7.1	2.4	0.0
EssexMS	180	76.7	21.1	0.6	1.7	5.6	68.2	69.4	88.8	5.0	5.0	1.2	10.6
Exeter	161	79.5	16.2	0.6	3.7	19.9	64.9	71.4	98.0	1.3	0.0	0.7	6.8
Glouc	89	62.9	29.2	0.0	7.9	24.7	68.0	61.8	91.0	2.2	3.4	3.4	0.0
Hull	107	76.6	19.6	0.0	3.7	10.3	62.3	61.7	92.0	2.0	3.0	3.0	6.5
Ipswi	45	97.8	2.2	0.0	0.0	6.7	66.8	68.9	94.9	2.6	0.0	2.6	13.3
Kent	167	76.1	18.0	0.0	6.0	14.4	62.1	61.1	82.5	0.6	5.4	11.4	0.6
L Barts	405	61.5	31.4	0.0	7.2	19.3	59.9	58.5	31.6	36.7	25.3	6.3	2.5
L Guys	152	83.6	9.2	0.0	7.2	15.1	62.6	59.9	46.1	13.5	33.3	7.1	7.2
L Kings	188	68.6	26.6	0.5	4.3	13.3	59.9	67.0	41.8	8.9	44.9	4.4	16.0
L Rfree	259	68.7	22.4	0.0	8.9	27.0	63.5	64.1	37.8	20.7	16.3	25.2	5.0
L St.G	140	71.4	22.1	0.0	6.4	20.7	64.0	60.0	40.8	19.2	24.2	15.8	14.3
L West	381	72.2	20.5	0.3	7.1	20.7	61.9	66.1	32.8	39.9	21.5	5.8	0.0
Leeds	215	73.0	16.3	0.0	10.7	31.2	62.3	64.7	74.0	18.6	5.6	1.9	0.0
Leic	409	76.8	18.1	0.0	5.1	18.3	63.6	66.7	71.7	19.1	7.0	2.2	9.3
Liv UH	182	76.9	13.2	2.8	7.1	16.5	63.2	70.3	83.2	5.6	4.9	6.3	21.4
M RI	204	58.3	25.5	5.4	10.8								
Middlbr	107	86.9	4.7	0.0	8.4	18.7	63.8	60.7	92.6	2.1	2.1	3.2	12.2
Newc	125	76.8	14.4	0.0	8.8	24.0	62.9	61.6	90.4	4.8	2.4	2.4	0.0
Norwch	117	79.5	20.5	0.0	0.0	4.3	68.9	72.7					70.9
Nottm	171	52.1	40.9	0.0	7.0	19.9	62.3	56.7	75.8	8.7	9.3	6.2	5.8
Oxford	229	63.3	22.3	0.0	14.4	36.7	61.4	71.6	72.5	11.9	7.8	7.8	15.7
Plymth	53	77.4	18.9	0.0	3.8	13.2	65.4	66.0	98.0	0.0	2.0	0.0	3.8
Ports	258	75.2	18.6	1.9	4.3	19.8	63.5	67.4					32.6
Prestn	188	77.1	13.8	1.1	8.0	21.8	64.2	69.1					35.6
Redng	131	73.3	16.0	1.5	9.2	20.6	65.1	64.1	64.9	14.4	7.2	13.4	26.0
Salford	194	74.2	13.9	0.5	11.3	26.8	58.4	65.5	69.5	18.2	7.8	4.5	20.6
Sheff	171	81.9	11.7	0.6	5.9	19.9	61.5	63.7	81.9	10.2	4.2	3.6	2.9
Shrew	63	47.6	47.6	0.0	4.8	23.8	67.0	73.0	91.5	1.7	3.4	3.4	6.3
Stevng	196	78.1	14.3	5.6	2.0	11.2	64.7	65.3	67.8	16.4	8.8	7.0	12.8
Stoke	105	70.5	26.7	1.9	1.0	9.5	66.1	64.8	89.5	7.4	0.0	3.2	9.5
Sund	88	65.9	29.6	0.0	4.6	15.9	64.2	73.9	94.3	4.5	0.0	1.1	0.0
Truro	59	83.1	10.2	0.0	6.8	11.9	66.0	59.3	100.0	0.0	0.0	0.0	0.0
Wirral	61	88.5	11.5	0.0	0.0	16.4	64.4	50.8	90.2	6.6	3.3	0.0	0.0
Wolve	124	76.6	20.2	0.0	3.2	11.3	66.2	63.7	65.5	21.6	4.3	8.6	6.5

Table 2.3 Continued

Centre	N on KRT	% on ICHD	% on PD	% on HHD	% on Tx	% pre-emptive listing/Tx	Median age (yrs)	% male	Ethnicity				
									% White	% Asian	% Black	% Other	% missing
York	64	75.0	20.3	0.0	4.7	17.2	69.9	73.4	98.4	0.0	0.0	1.6	0.0
N IRELAND													
Antrim	20	80.0	20.0	0.0	0.0	10.0	63.4	60.0					100.0
Belfast	23	65.2	30.4	0.0	4.4	26.1	66.0	60.9					95.7
Newry	40	62.5	30.0	0.0	7.5	15.0	68.5	62.5					57.5
Ulster	6	83.3	16.7	0.0	0.0	0.0	77.5	100.0					100.0
West NI	42	69.1	9.5	0.0	21.4	26.2	63.3	64.3					73.8
SCOTLAND													
Abrdn	72	83.3	9.7	0.0	6.9	25.0	58.8	63.9					
Airdrie	75	76.0	17.3	0.0	6.7	18.7	66.8	61.3					
D&Gall	22	81.8	13.6	4.6	0.0	13.6	62.7	40.9					
Dundee	32	84.4	3.1	0.0	12.5	21.9	64.8	62.5					
Edinb	95	72.6	14.7	0.0	12.6	35.8	58.1	65.3					
Glasgw	196	78.6	12.2	1.0	8.2	31.6	62.5	53.1					
Inverns	23	73.9	13.0	0.0	13.0	21.7	61.5	78.3					
Klmarnk	44	77.3	15.9	2.3	4.6	18.2	61.0	56.8					
Krkldy	52	80.8	13.5	0.0	5.8	11.5	67.0	61.5					
WALES													
Bangor	31	71.0	16.1	12.9	0.0	9.7	66.9	61.3					54.8
Cardff	213	78.9	14.1	0.0	7.0	15.5	64.3	64.3	94.7	3.3	0.7	1.3	29.6
Clwyd	36	66.7	33.3	0.0	0.0	8.3	67.7	58.3	96.2	3.8	0.0	0.0	27.8
Swanse	161	77.6	13.7	0.0	8.7	17.4	66.3	64.0	94.4	2.8	1.4	1.4	10.6
Wrexhm	41	65.9	29.3	0.0	4.9	4.9	64.0	63.4	97.4	2.6	0.0	0.0	7.3
TOTALS													
England	7,551	73.7	19.6	0.5	6.1	18.8	63.6	65.3	70.2	14.7	9.9	5.2	11.2
N Ireland	131	68.7	21.4	0.0	9.9	19.1	65.4	64.1					77.9
Scotland	611	78.2	12.9	0.7	8.2	25.7	62.6	59.2					
Wales	482	75.9	16.8	0.8	6.4	14.3	65.1	63.5	94.9	3.0	1.1	1.1	22.8
UK	8,775	74.1	19.0	0.6	6.3	19.1	63.7	64.8	71.7	14.0	9.4	4.9	13.0

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.

Individual level data for Manchester incident patients could not be calculated for this report, as a new data feed was still undergoing testing, preventing full validation.

Three units in Northern Ireland were able to provide data only for part of 2024.

See Appendix A section 2.2 for more detailed information on data quality issues relating to the following units: Antrim, Belfast, Cambridge, Ipswich, Manchester Royal Infirmary, and Ulster.

UK ethnicity distribution and completeness do not include Scotland.

Transplant waiting list data are provided by NHSBT.

Table 2.4 Demographics, primary renal diseases (PRDs), referral time and start modality of adult patients incident to KRT in 2024 by age group

Characteristic	Age group (yrs)							Total	Median age (yrs)
	18-34	35-44	45-54	55-64	65-74	75-84	≥85		
Total									
N	608	759	1,272	1,924	2,046	1,732	230	8,571	63.7
%	7.1	8.9	14.8	22.4	23.9	20.2	2.7		
Sex (%)									
Male	56.6	63.4	62.6	65.7	64.3	67.8	75.7	64.8	64.2
Female	43.4	36.6	37.4	34.3	35.7	32.2	24.3	35.2	62.9
Ethnicity (%)									
White	63.2	62.4	63.2	68.1	75.0	83.3	83.4	71.7	65.7
Asian	18.3	16.3	16.9	14.7	14.2	9.1	10.6	14.0	59.9
Black	12.3	12.7	14.2	11.9	6.7	4.3	3.5	9.4	57.0
Other	6.2	8.5	5.7	5.3	4.1	3.3	2.5	4.9	58.7
Missing	13.0	14.0	11.7	12.1	13.1	14.3	11.9	13.0	64.6
PRD (%)									
Diabetes	19.2	27.4	29.5	35.8	30.9	26.6	14.8	29.3	62.9
Glomerulonephritis	25.2	19.9	13.3	12.8	9.0	7.8	4.9	12.4	56.7
Hypertension	5.8	8.5	9.7	5.9	8.0	7.4	9.8	7.6	63.6
Polycystic kidney disease	3.4	10.2	14.2	8.3	5.7	1.9	1.6	7.0	56.0
Pyelonephritis	4.5	3.6	2.5	4.9	6.2	6.4	4.9	5.0	67.7
Renal vascular disease	0.5	0.4	1.2	2.4	4.9	7.1	9.3	3.6	73.9
Other	25.4	17.6	15.2	16.2	17.0	19.3	18.0	17.7	63.6
Uncertain aetiology	15.8	12.4	14.3	13.7	18.3	23.5	36.6	17.4	68.0
Missing	9.4	8.6	11.6	12.6	13.3	13.7	20.4	12.5	65.9
Referral time (%)									
<90 days	27.0	19.9	17.0	14.8	16.0	14.2	22.2	16.8	61.8
≥90 days	73.0	80.1	83.0	85.2	84.0	85.8	77.8	83.2	64.3
Missing	6.1	5.5	4.1	5.3	4.4	4.3	4.4	4.7	62.0
Start modality (%)									
ICHD	64.1	61.4	68.2	73.9	78.2	81.6	83.0	74.1	65.2
HHD	0.3	0.8	0.6	0.8	0.5	0.3	0.0	0.5	61.2
PD	24.7	28.6	20.4	18.5	15.2	17.3	17.0	19.0	60.1
Tx	10.9	9.2	10.8	6.9	6.0	0.8	0.0	6.3	54.9

Scotland was excluded from analysis of ethnicity and referral time as these two data items are not available from the Scottish Renal Registry

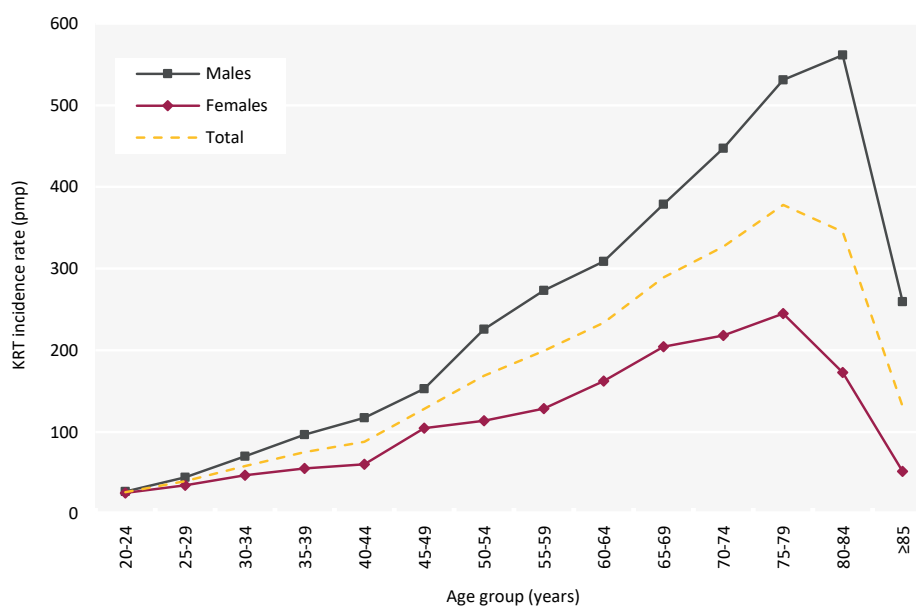


Figure 2.4 Incidence rates for adult patients starting KRT in 2024 by age group and sex
pmp – per million population

Table 2.5 Change in primary renal disease (PRD) of adult patients incident to KRT from 2015 to 2024

PRD	Year of KRT start									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Diabetes	27.6	27.9	29.0	30.1	30.7	30.6	31.0	29.5	30.2	29.3
Glomerulonephritis	13.6	13.5	13.9	13.2	13.1	12.3	13.4	12.6	12.1	12.4
Hypertension	6.8	6.3	6.6	6.9	7.5	7.1	7.0	7.2	7.8	7.6
Polycystic kidney disease	7.3	6.9	6.9	7.1	6.9	6.7	6.3	6.6	6.8	7.0
Pyelonephritis	5.8	6.0	5.7	5.2	5.5	5.5	4.8	5.2	5.5	5.0
Renal vascular disease	6.0	6.2	5.7	5.6	5.5	5.0	4.6	4.6	4.3	3.6
Other	18.3	18.4	18.0	18.0	16.8	18.0	17.5	18.5	17.6	17.7
Uncertain aetiology	14.6	14.8	14.3	13.9	14.0	14.8	15.3	15.9	15.6	17.4
Missing	2.5	2.9	5.1	3.9	5.6	7.0	9.2	9.6	9.2	12.5

The percentages in each PRD category add up to 100% in each year; the percentages with missing PRD data are shown separately

The audit of pre-emptive listing and pre-emptive transplantation was merged as a single metric. Figure 2.5 shows the percentage of patients at each centre who were either pre-emptively listed or pre-emptively transplanted on day one of their KRT treatment in 2024. Please visit the UKRR data portal (ukkidney.org/audit-research/data-portals) to identify individual kidney centres.

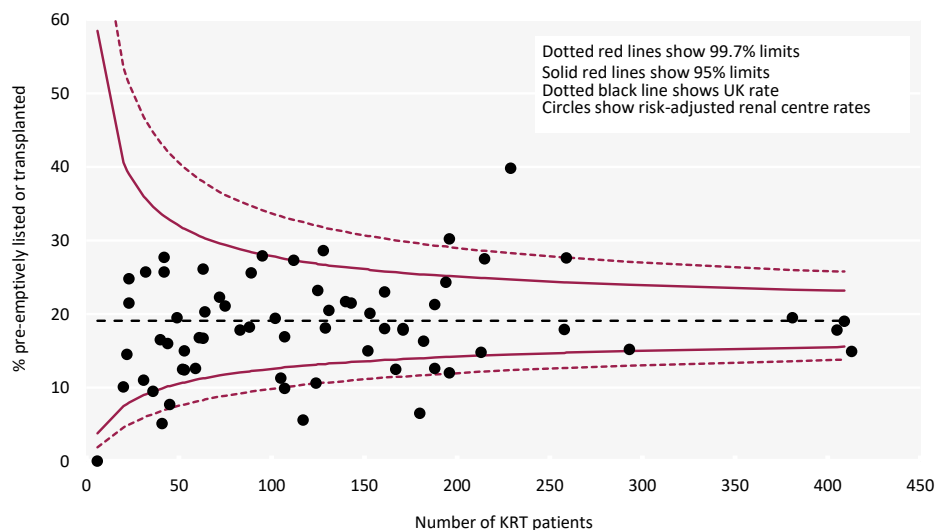


Figure 2.5 Transplant-status (listed or transplanted) at the start of KRT for adult patients incident to KRT in 2024 by centre
Analysis is adjusted for age, sex and PRD (diabetes versus non-diabetes)
Transplant waiting list data were provided by NHSBT

Modality changes of incident adult KRT patients

Many patients start on HD, but then switch to other modalities, so the modality in use at 90 days may be more representative of the first elective modality. The analysis of the proportion of patients by treatment modality at three months post-KRT initiation is shown over time (table 2.6) and by UK country (table 2.7). Changes from start modality and deaths during the first five years are shown by start modality (table 2.8). Due to small numbers, the percentage of incident patients on HHD and ICHD (in-centre haemodialysis) at start and 90 days after start of KRT is shown at a UK level (table 2.6), but all HD patients are combined for other analyses.

Table 2.6 KRT modality at start and 90 days after start of KRT for adult patients incident to KRT by year of start

KRT start year	% on ICHD	% on HHD	% on PD	% with Tx
Day 0 modality				
2019	71.0	0.4	20.2	8.4
2020	72.0	0.4	21.7	6.0
2021	72.9	0.7	20.7	5.8
2022	74.3	0.4	18.9	6.4
2023	75.3	0.5	17.7	6.5
2024	74.1	0.6	19.0	6.3
Day 90 modality				
Oct 2018 - Sep 2019	68.3	1.0	20.8	9.9
Oct 2019 - Sep 2020	69.8	1.0	21.5	7.8
Oct 2020 - Sep 2021	70.5	1.1	21.3	7.1
Oct 2021 - Sep 2022	71.6	0.9	20.0	7.5
Oct 2022 - Sep 2023	73.0	0.8	18.3	7.8
Oct 2023 - Sep 2024	72.7	1.0	18.9	7.4

For 90 day analyses, the incident cohort from the 12 months starting 1 October of the previous year was used, so that follow-up to 90 days was possible for all patients

Table 2.7 KRT modality at 90 days for adult patients incident to KRT between 01/10/2023 and 30/09/2024 by country

Country	N	Patients who started KRT					Patients still on KRT at 90 days		
		% on HD ¹	% on PD	% with Tx	% discontinued ²	% died	% on HD ¹	% on PD	% with Tx
England	7,354	69.2	18.7	6.7	1.1	4.3	73.1	19.7	7.1
N Ireland	150	67.3	16.0	12.0	4.0	0.7	70.6	16.8	12.6
Scotland	579	73.4	10.7	8.8	2.1	5.0	79.0	11.5	9.5
Wales	479	73.7	14.6	7.7	0.6	3.3	76.7	15.2	8.0
UK	8,562	69.7	17.9	7.0	1.2	4.2	73.7	18.9	7.4

¹HD includes ICHD and HHD

²'Discontinued' is defined as people who stopped treatment without recovery of kidney function. Those who recovered function within 90 days were not included in the incident cohort

Table 2.8 Start and subsequent KRT modalities for adult patients incident to KRT in 2019 by time after start

Start modality	N	Later modality	Time after start (%)			
			90 days	1 yr	3 yrs	5 yrs
HD	5,822	HD	90.4	74.3	45.0	24.9
		PD	2.4	2.7	1.0	0.4
		Tx	1.0	5.0	13.7	17.5
		Other	1.1	2.1	2.2	2.7
		Died	5.1	15.9	38.0	54.5
PD	1,644	HD	6.0	17.0	23.2	16.4
		PD	89.7	63.0	21.1	6.9
		Tx	2.6	12.4	28.7	36.3
		Other	0.7	1.2	1.3	1.6
		Died	1.0	6.5	25.7	38.7
Tx	687	HD	0.1	0.6	1.9	3.1
		PD	0.0	0.3	0.4	0.7
		Tx	98.0	96.1	91.0	85.9
		Other	1.2	1.2	1.9	2.2
		Died	0.7	1.9	4.8	8.2

Shading indicates proportion of individuals maintained on their initial modality

HD includes ICHD and HHD

Other is discontinued, recovered, moved away or currently transferring between centres

'Discontinued' is defined as people who stopped treatment without recovery of kidney function. Those who recovered function within 90 days were not included in the incident cohort.

The modality at one year after starting KRT is shown in figure 2.6 for all KRT starters and in figure 2.7 for those starting on PD by centre, using incident patients starting KRT in 2023 to allow one year follow-up time.

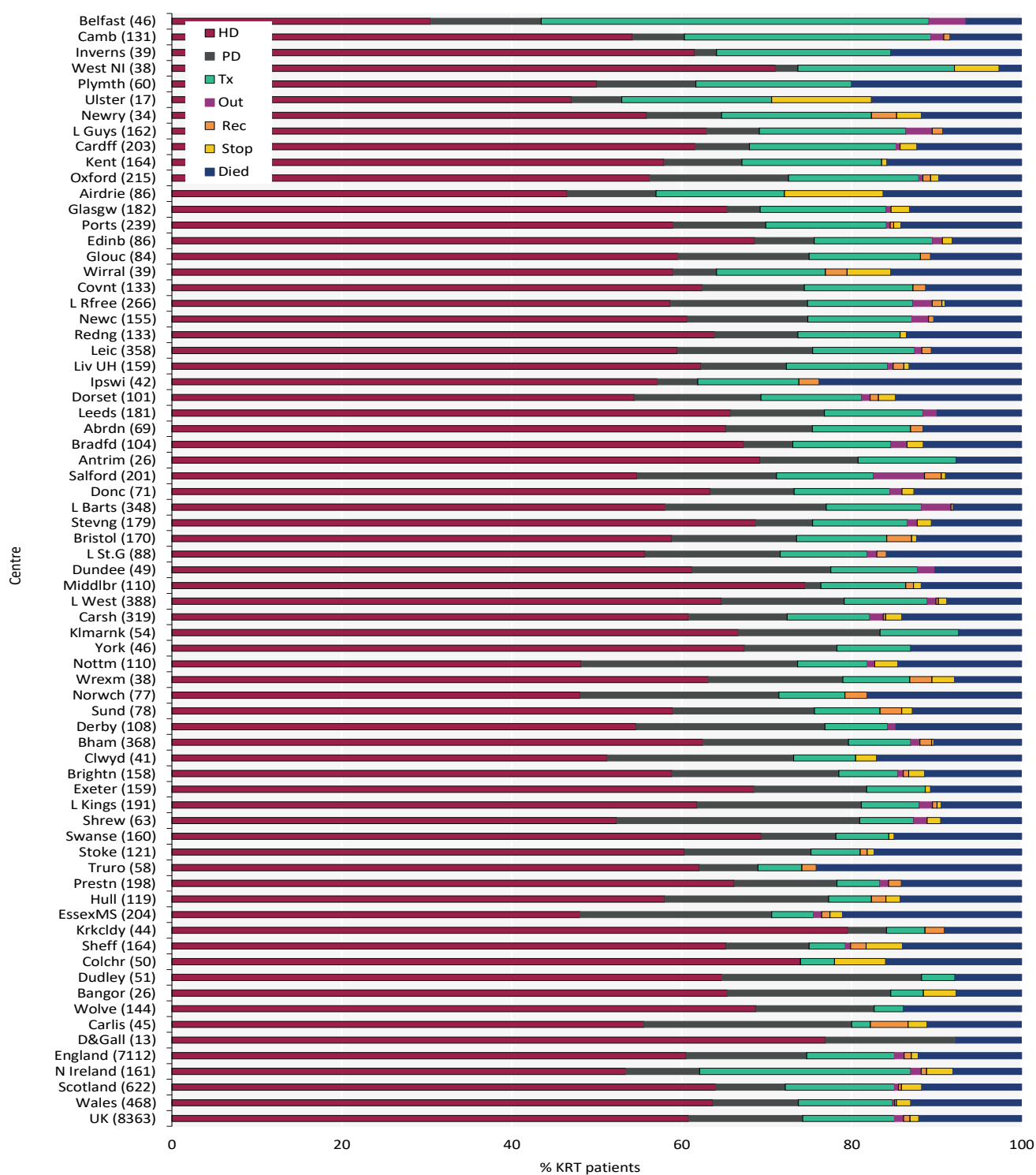


Figure 2.6 KRT modality at 1 year for adult patients incident to KRT in 2023 by centre

Number of patients in a centre in brackets

Out – moved out of a centre but did not reappear in another centre; Rec – recovered kidney function; Stop – treatment withdrawal

Centres are ordered by decreasing use of Tx at 1 year

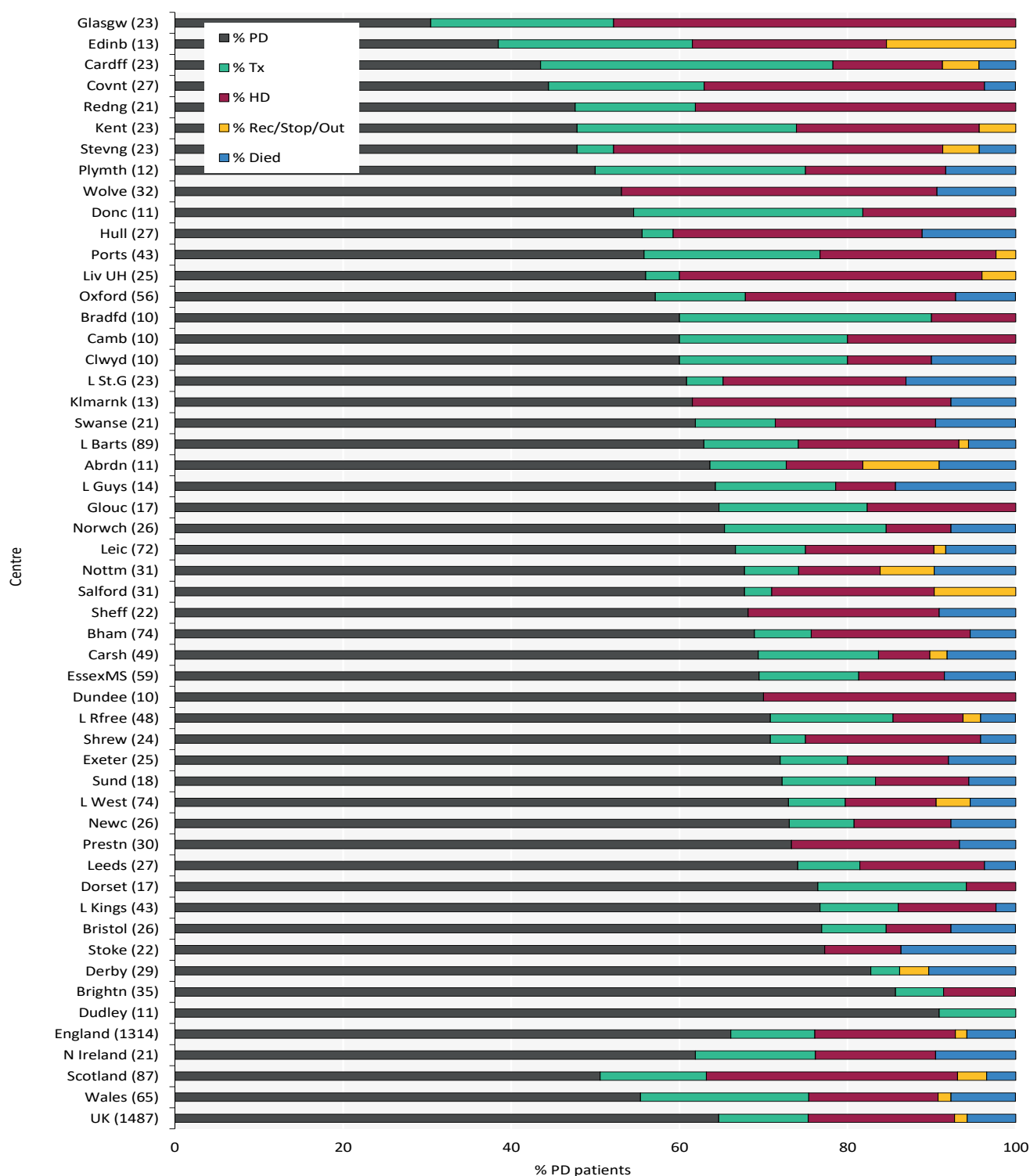


Figure 2.7 KRT modality at 1 year for adult patients incident to PD in 2023 by centre

Number of patients in a centre in brackets

Out – moved out of a centre but did not reappear in another centre; Rec – recovered kidney function; Stop – treatment withdrawal

Centres are ordered by increasing use of PD at 1 year

Late presentation to kidney services of incident adult KRT patients

Late presentation is defined as a patient being seen by the kidney service for the first time within 90 days of starting KRT and is used interchangeably with referral time in this report. Due to small numbers, a two year cohort (2023-2024) was used at a centre level to estimate late referral to a nephrologist and centres with a completeness of <70% were excluded. A seven year cohort was used to show national longitudinal trends (table 2.12).

Table 2.9 Referral times of adult patients incident to KRT by centre 2023-2024, 2-year cohort

Centre	N on KRT		N with referral data	% data completeness		% presenting <90 days before KRT start		% presenting <1 yr before KRT start
	2023	2024		2023	2024	All PRDs	Non-diabetes PRDs	All PRDs
ENGLAND								
Bham	368	413	778	100.0	99.3	19.4	20.1	32.4
Bradfd	104	83	187	100.0	100.0	12.8	16.3	24.1
Brightn	158	153	311	100.0	100.0	11.6	13.1	23.5
Bristol	170	143	311	100.0	98.6	17.4	21.3	27.3
Camb	131	128	256	100.0	97.7	17.2		37.5
Carlisle	45	63	90	93.3	76.2	20.0	39.4	26.7
Carsh	319	293	607	99.4	99.0	20.1	19.3	31.1
Colchr	50	53		10.0	7.5			
Covnt	133	129	256	97.7	97.7	20.3	21.1	29.3
Derby	108	112	220	100.0	100.0	14.5	20.8	24.1
Donc	71	49	120	100.0	100.0	10.8	15.1	24.2
Dorset	101	102	203	100.0	100.0	18.2	19.0	28.6
Dudley	51	42	93	100.0	100.0	10.8	13.0	22.6
EssexMS	204	180	375	97.1	98.3	25.6	27.7	37.9
Exeter	159	161	308	95.6	96.9	12.7	9.8	23.1
Glouc	84	89	170	98.8	97.8	11.2	12.8	18.8
Hull	119	107	226	100.0	100.0	20.4	25.8	36.7
Ipswi	42	45	70	85.7	75.6	24.3	20.5	45.7
Kent	164	167	331	100.0	100.0	12.1	13.1	18.4
L Barts	348	405	740	96.6	99.8	21.9	25.0	35.3
L Guys	162	152	281	93.8	84.9	17.8	18.0	31.0
L Kings	191	188	154	80.6	3.7	13.0	17.4	22.7
L Rfree	266	259	506	94.7	98.1	14.4	16.0	25.3
L St.G	88	140	228	100.0	100.0	28.5	33.8	49.6
L West	388	381	769	100.0	100.0	16.9	19.4	32.2
Leeds	181	215	396	100.0	100.0	13.9	16.0	26.3
Leic	358	409	764	99.4	99.8	19.0	16.7	30.6
Liv UH	159	182	337	98.1	99.5	24.9	28.6	40.4
M RI								
Middlbr	110	107	215	99.1	99.1	17.2	14.5	33.0
Newc	155	125	279	100.0	99.2	15.4	18.6	25.8
Norwch	77	117	155	76.6	82.1	23.9	41.5	32.3
Nottm	110	171	281	100.0	100.0	11.7	14.0	18.9
Oxford	215	229	433	98.1	96.9	11.8		23.3
Plymth	60	53	110	96.7	98.1	8.2	10.1	20.9
Ports	239	258	496	99.6	100.0	11.9		24.4
Prestn	198	188	386	100.0	100.0	15.3	17.6	26.4
Redng	133	131	264	100.0	100.0	19.3	21.0	29.9
Salford	201	194	390	100.0	97.4	17.2	23.7	27.9
Sheff	164	171	332	98.8	99.4	19.0	24.4	31.0
Shrew	63	63	126	100.0	100.0	15.1	20.2	19.0
Stevng	179	196	371	99.4	98.5	20.2	25.7	29.6

Table 2.9 Continued

Centre	N on KRT		N with referral data	% data completeness		% presenting <90 days before KRT start		% presenting <1 yr before KRT start
	2023	2024		2023	2024	All PRDs	Non-diabetes PRDs	All PRDs
Stoke	121	105	204	96.7	82.9	25.0		30.9
Sund	78	88	166	100.0	100.0	15.1	20.4	34.9
Truro	58	59	116	100.0	98.3	7.8	11.1	18.1
Wirral	39	61	100	100.0	100.0	31.0	33.8	41.0
Wolve	144	124	262	97.9	97.6	19.5	18.1	30.9
York	46	64	110	100.0	100.0	9.1	10.1	27.3
N IRELAND								
Antrim	40	20	60	100.0	100.0	16.7	14.3	26.7
Belfast	82	23	100	93.9	100.0	11.0	11.3	16.0
Newry	34	40	71	97.1	95.0	8.5	9.6	23.9
Ulster	37	6	43	100.0	100.0	20.9	28.1	32.6
West NI	38	42	78	100.0	95.2	21.8	31.4	34.6
WALES								
Bangor	26	31	55	92.3	100.0	10.9	15.8	23.6
Cardff	203	213	416	100.0	100.0	14.7	16.3	25.7
Clwyd	41	36	77	100.0	100.0	15.6	16.7	26.0
Swanse	160	161	321	100.0	100.0	11.5	14.9	21.2
Wrexm	38	41	78	100.0	97.6	16.7	20.4	20.5
TOTALS								
England	7,112	7,347	13,899	97.4	94.9	17.4	19.3	29.4
N Ireland	231	131	352	97.4	96.9	15.1	17.7	25.6
Wales	468	482	947	99.6	99.8	13.6	16.2	23.7
E, W & NI	7,811	7,960	15,198	97.5	95.3	17.1	19.1	28.9

Blank cells – no data returned by the centre or data completeness <70%

If a centre had low referral completeness (<70%) for 1 of the 2 years, only a 1 year cohort was included in the analysis

For the analysis of late referral in people without diabetes, patients with missing PRD were excluded from the analysis and the results not shown if the completeness of PRD was <70%

PRD – primary renal disease

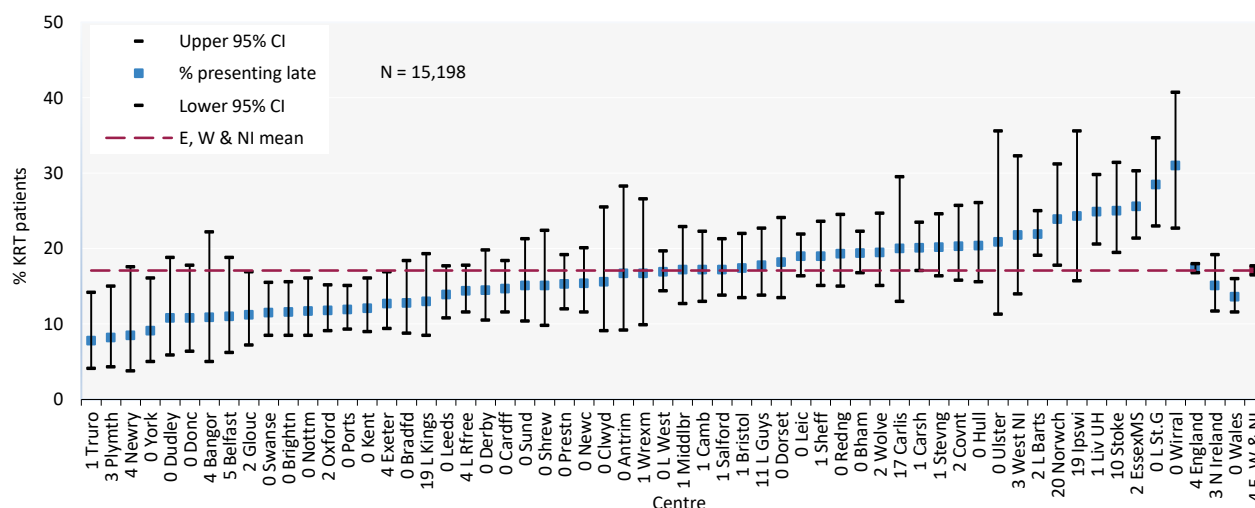


Figure 2.8 Percentage of adult patients incident to KRT presenting late (<90 days) to a nephrologist 2023-2024, 2 year cohort

CI – confidence interval

If a centre had low referral completeness (<70%) for 1 of the 2 years, only a 1 year cohort was included in the analysis

Table 2.10 Characteristics of adult patients incident to KRT by referral time 2023-2024, 2 year cohort

Characteristic	Referral time	
	<90 days	≥90 days
Median age (yrs)	61.5	64.1
% male	66.2	63.7
% starting on PD	7.1	21.3
% on PD at 90 days	10.0	21.0
Mean haemoglobin at KRT start (g/L)	91	99
Mean eGFR at KRT start (mL/min/1.73m ²) ¹	6.2	7.2

¹Data available for approximately 38% of patients. Geometric mean reported.

eGFR – estimated glomerular filtration rate

Late presentation is shown by PRDs, which were grouped into categories as shown in table 2.11, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of patients with each PRD presenting late is shown for patients with PRD data. The number of patients with no PRD data is shown on a separate line.

Table 2.11 Referral time of adult patients incident to KRT by primary renal disease (PRD) 2023-2024, 2 year cohort

PRD	N with data	Referral time			
		<90 days		≥90 days	
		N	%	N	%
Diabetes	4,043	391	9.7	3,652	90.3
Glomerulonephritis	1,651	206	12.5	1,445	87.5
Hypertension	1,045	199	19.0	846	81.0
Polycystic kidney disease	930	39	4.2	891	95.8
Pyelonephritis	722	115	15.9	607	84.1
Renal vascular disease	521	68	13.1	453	86.9
Other	2,399	821	34.2	1,578	65.8
Uncertain aetiology	2,320	381	16.4	1,939	83.6
Total (with data)	13,631	2,220	16.3	11,411	83.7
Missing	1,567	378	24.1	1,189	75.9

Table 2.12 Referral time of adult patients incident to KRT by year of start (restricted to centres reporting continuous data for 2018-2024)

Referral time	KRT start year (%)						
	2018	2019	2020	2021	2022	2023	2024
<90 days	15.4	15.5	15.5	17.6	17.6	17.1	16.9
3-6 mths	4.4	4.3	3.7	4.5	4.8	4.2	4.3
6-12 mths	7.4	7.7	7.6	6.7	7.4	7.9	7.7
≥12 mths	72.7	72.6	73.1	71.3	70.2	70.8	71.1

Start estimated glomerular filtration rate in incident adult KRT patients

Start eGFR was calculated using the CKD Epidemiology Collaboration method for incident KRT patients by age group and by start modality. Care needs to be taken in interpreting these data because (i) start eGFR data completeness is poor (38% overall), (ii) if the date of KRT start is incorrect, the documented start eGFR may have been taken after the patient had started KRT.

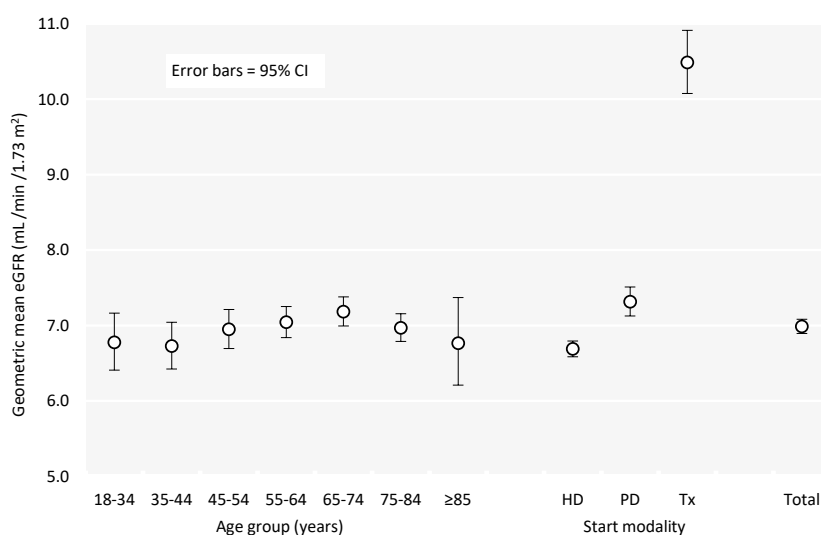


Figure 2.9 Geometric mean estimated glomerular filtration rates (eGFR) for adult patients incident to KRT in 2024 by age group and start modality
CI – confidence interval

Anaemia in incident adult KRT patients

The analyses of haemoglobin (Hb) by modality and timing of presentation used haemoglobin measurements from after the start of KRT but still within the same quarter.

Table 2.13 Haemoglobin (Hb) data for adult patients incident to KRT in 2024 by centre

Centre	All KRT patients		Median Hb (g/L) by modality			Median Hb (g/L) by presentation time		% data completeness
	Median Hb (g/L)	% Hb ≥100 g/L	Tx	PD	HD	≥90 days	<90 days	
	ENGLAND							
Bham	97	42.5		107	93	98	89	91.8
Bradfd	93	38.3			92	93		97.6
Brightn	106	68.1	110	109	102	107	100	92.2
Bristol	106	76.6	120	108	104	106	95	98.6
Camb	102							64.8
Carlis	103	60.7		110	100	110		96.8
Carsh	95	37.9	103	104	95	97	92	97.3
Colchr	98							67.9
Covnt	99	48.3		104	97	101	88	93.0
Derby	101	54.8		103	101	103	90	92.9
Donc	90	31.3			88	90		98.0
Dorset	106	67.7		111	105	107		94.1
Dudley	100							64.3
EssexMS	97	41.7		109	92	100	90	97.2
Exeter	97	45.9		109	94	100	88	97.5
Glouc	101	56.2		116	97	102		100.0
Hull	100	51.0		101	99	100	98	93.5
Ipswi	90	26.7			90	89		100.0
Kent	94	36.4		97	93	95	85	98.8
L Barts	96	39.2	101	102	92	96	92	97.0
L Guys	95	38.7	92	98	93	97	92	90.1
L Kings	97	41.7		101	95			70.2
L Rfree	98	47.8	105	105	96	98	100	96.1
L St.G	92	27.3		98	88	94	83	99.3
L West	99	47.6	112	99	97	99	97	71.1
Leeds	95	38.4	104	105	92	95	88	94.4
Leic	97	44.5	122	111	94	100	89	90.7
Liv UH	96	42.3	120	108	93	98	91	96.2
M RI								
Middlbr	100	52.0			98	102	86	95.3
Newc	97	42.0	108	103	96	98		95.2
Norwch	98	44.4		109	89	100	92	92.3
Nottm	96	43.5	124	101	93	96	104	94.2
Oxford	97	43.6	113	104	93	97	89	85.2
Plymth	97	40.0		108	97	97		94.3
Ports	98	45.8	118	110	94	99	92	96.5
Prestn	97	41.7		112	94	97	91	89.4
Redng	93	32.0	106	100	90	96	87	95.4
Salford	97	45.4		107	95	99	90	84.0
Sheff	94	35.3	120	111	92	96	81	97.7
Shrew	103	58.3		106	102	102		95.2
Stevng	96	39.4		101	94	97	87	89.3
Stoke	104	60.9		103	105	104	96	87.6
Sund	105	60.3		110	100	105		88.6
Truro	101	58.8			100	102		86.4

Table 2.13 Continued

Centre	All KRT patients		Median Hb (g/L) by modality			Median Hb (g/L) by presentation time		% data completeness
	Median Hb (g/L)	% Hb ≥100 g/L	Tx	PD	HD	≥90 days	<90 days	
Wirral	98	45.6			95	101	91	93.4
Wolve	97	43.0		106	96	97		80.7
York	93	35.0		100	90	94		93.8
N IRELAND								
Antrim	105	63.2			104	110		95.0
Belfast	109	73.9			105	112		100.0
Newry	100	52.6		106	94	100		95.0
Ulster								100.0
West NI	102	52.8			96	107		85.7
SCOTLAND								
Abrdn	96							65.3
Airdrie	102	52.5		106	99			81.3
D&Gall	104	61.1			104			81.8
Dundee	93	25.9			93			84.4
Edinb	97							48.4
Glasgw	95	38.9		108	94			82.7
Inverns	98	50.0			96			78.3
Klmarnk	95	41.7			93			81.8
Krkldy	103							53.9
WALES								
Bangor	102	58.1			101	104		100.0
Cardff	99	48.5	106	111	96	101	88	93.0
Clwyd	100	50.0		109	92	101		94.4
Swanse	98	45.6	108	109	96	99	92	92.6
Wrexm	98	42.5		109	96	98		97.6
TOTALS								
England	98	45.0	110	106	95	99	91	91.0
N Ireland	104	57.4	120	113	98	106	88	93.1
Scotland	97	43.1		106	96			72.5
Wales	99	47.8	107	109	96	100	88	93.8
UK	98	45.2	110	106	95	99	91	89.8

Blank cells – no data returned by the centre, data completeness (including referral time) <70% or N<10

CI – confidence interval

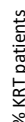


Figure 2.11 Distribution of haemoglobin (Hb) in adult patients incident to KRT by year of start between 2015 and 2024

Biochemistry parameters in incident adult KRT patients

The latest UK Kidney Association guideline on CKD mineral bone disease contains only one audit measure, which applies to patients with CKD and patients on KRT. It is the percentage of patients with adjusted calcium above the target range.

Table 2.14 Median adjusted calcium (Ca) and percentage with adjusted Ca within and above the target range (2.2–2.5 mmol/L) in adult patients incident to KRT in 2024 by centre

Centre	Median adj Ca (mmol/L)	% adj Ca 2.2–2.5 mmol/L	% adj Ca >2.5 mmol/L	% data completeness
ENGLAND				
Bham	2.3	81.2	4.9	99.3
Bradfd	2.4	87.8	7.3	98.8
Brightn	2.3	83.4	8.0	98.7
Bristol	2.3	86.7	11.2	100.0
Camb	2.3	84.7	8.9	96.9
Carlis	2.2	64.5	3.2	98.4
Carsh	2.3	80.7	5.3	97.3
Colchr	2.3	91.3	2.2	86.8
Covnt	2.3	82.4	1.6	96.9
Derby	2.3	87.3	7.3	98.2
Donc	2.3	77.6	10.2	100.0
Dorset	2.3	82.4	9.8	100.0
Dudley	2.4	80.5	14.6	97.6
EssexMS	2.3	79.2	3.4	98.9
Exeter	2.2	73.6	3.1	98.8
Glouc	2.3	76.4	12.4	100.0
Hull	2.4	80.8	8.7	97.2
Ipswi	2.2	68.9	2.2	100.0
Kent	2.3	79.6	6.6	100.0
L Barts	2.3	82.0	5.3	98.8
L Guys	2.3	79.6	4.4	90.1
L Kings	2.4	79.1	8.5	81.4
L Rfree	2.3	83.4	4.3	100.0
L St.G	2.4	83.2	8.8	97.9
L West	2.3	76.9	7.5	73.8
Leeds	2.3	80.9	5.1	100.0
Leic	2.3	83.3	5.8	97.8
Liv UH	2.4	85.8	11.4	96.7
M RI				
Middlbr	2.3	70.5	5.7	98.1
Newc	2.3	81.6	7.2	100.0
Norwch	2.3	80.9	10.4	98.3
Nottm	2.3	86.6	2.9	100.0
Oxford	2.2	54.6	4.8	90.4
Plymth	2.2	77.4	1.9	100.0
Ports	2.3	75.9	5.8	99.6
Prestn	2.3	81.4	2.1	100.0
Redng	2.3	84.6	4.6	99.2
Salford	2.4	82.5	9.6	91.2
Sheff	2.3	75.0	4.2	98.3
Shrew	2.3	84.1	9.5	100.0
Stevng	2.3	76.3	8.8	99.0
Stoke	2.4	82.0	13.0	95.2
Sund	2.4	80.7	12.5	100.0
Truro	2.3	88.1	6.8	100.0
Wirral	2.3	75.5	7.6	86.9

Table 2.14 Continued

Centre	Median adj Ca (mmol/L)	% adj Ca 2.2–2.5 mmol/L	% adj Ca >2.5 mmol/L	% data completeness
Wolve	2.3	77.6	9.5	93.6
York	2.4	92.2	4.7	100.0
N IRELAND				
Antrim	2.3	80.0	5.0	100.0
Belfast	2.3	78.3	13.0	100.0
Newry	2.3	77.5	5.0	100.0
Ulster				100.0
West NI	2.4	88.1	7.1	100.0
WALES				
Bangor	2.4	87.1	12.9	100.0
Cardff	2.4	80.8	11.7	100.0
Clwyd	2.3	91.7	0.0	100.0
Swanse	2.3	77.0	8.7	100.0
Wrexma	2.3	87.8	9.8	100.0
TOTALS				
England	2.3	80.1	6.5	96.1
N Ireland	2.3	82.4	6.9	100.0
Wales	2.3	81.3	9.8	100.0
E, W & NI	2.3	80.2	6.7	96.4

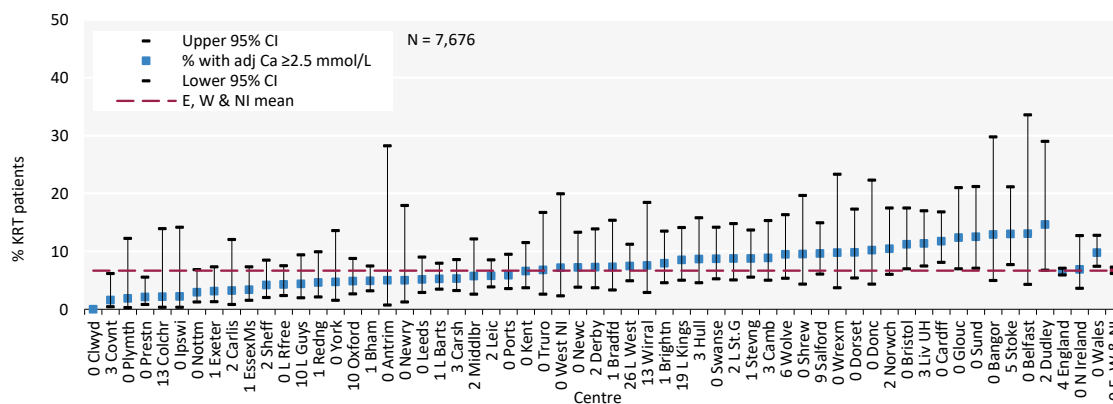


Figure 2.12 Percentage of adult patients incident to KRT in 2024 with adjusted calcium (Ca) above the normal range (>2.5 mmol/L) by centre
CI – confidence interval

Dialysis access in incident adult dialysis patients

Incident dialysis access data are primarily collected separately to the main UKRR data returns via the Multisite Dialysis Access Audit. In addition to the audit, some incident dialysis access data are collected through the dialysis sessions and access at start information in the main returns. For more details please see Appendix A. Patients who did not start dialysis for the first time in 2024 based on main UKRR data returns were excluded. Data are not included in this section from any centres with <70% completeness for type of access at dialysis start.

Due to data completeness, incident numbers in this section may be less than those seen earlier in the chapter.

Table 2.15 Demographics and characteristics of patients incident to dialysis in 2024 by first dialysis access type

Characteristic		HD – first dialysis access type				PD	Total
		N	AVF/AVG	TL	NTL	N	
Total							
N		6,208	2,256	2,588	1,364	1,677	7,885
%			36.3	41.7	22.0		
Age (%)	Median (yrs)	65	67	63	66	60	64
	IQR (yrs)	54,75	57,76	51,73	54,76	47,73	53,75
	<45 yrs	827	20.8	55.1	24.1	377	1,204
	45–54 yrs	844	35.9	44.7	19.4	262	1,106
	55–64 yrs	1,399	36.3	42.9	20.8	366	1,765
	65–74 yrs	1,575	40.4	38.5	21.1	323	1,898
	≥75 yrs	1,563	40.8	35.1	24.2	349	1,912
PRD (%)	Diabetes	1,675	37.2	45.1	17.7	384	2,059
	Glomerulonephritis	524	33.4	47.1	19.5	260	784
	Hypertension	387	37.0	42.1	20.9	117	504
	Polycystic kidney disease	282	67.7	26.6	5.7	130	412
	Pyelonephritis	271	42.8	35.8	21.4	72	343
	Renal vascular disease	212	42.9	37.3	19.8	43	255
	Other	963	22.9	40.7	36.3	206	1,169
	Uncertain aetiology	940	40.0	41.2	18.8	264	1,204
Missing		954	33.5	41.1	25.4	201	1,155
Referral time (%)	<90 days	1,210	4.7	48.6	46.7	112	1,322
	90–179 days	256	18.8	60.5	20.7	63	319
	180–364 days	439	29.6	52.4	18.0	129	568
	≥365 days	3,653	49.1	36.6	14.3	1,235	4,888
	Missing	650	34.8	42.9	22.3	138	788
Sex (%)	Male	3,976	36.7	41.1	22.2	1,024	5,000
	Female	2,069	36.2	40.9	22.9	604	2,673
	Missing	163	28.2	66.3	5.5	49	212
Ethnicity (%)	White	3,442	38.7	37.5	23.8	984	4,426
	Asian	687	33.8	44.4	21.8	192	879
	Black	458	23.1	50.0	26.9	137	595
	Other	243	36.2	42.0	21.8	67	310
	Missing	1,378	36.1	48.0	15.9	297	1,675
eGFR at start¹	Median	7	7	7	6	8	7
	IQR	5,8	6,8	5,8	5,9	6,9	5,9
Diabetes² (%)	Yes	2,155	38.2	42.5	19.3	488	2,643
	No	1,201	39.3	36.3	24.4	454	1,655
	Missing	2,852	33.7	43.3	23.0	735	3,587

¹eGFR units are mL/min/1.73m²²Diabetes at start of dialysis as a comorbidity or PRD

AVF – arteriovenous fistula; AVG – arteriovenous graft; eGFR – estimated glomerular filtration rate; IQR – interquartile range; NTL – non-tunnelled line; PRD – primary renal disease; TL – tunnelled line

Dialysis access data are described in relation to age, PRD and timing of presentation. Dialysis access is best interpreted in the context of all patients starting KRT, so data were supplemented with pre-emptive Tx numbers.

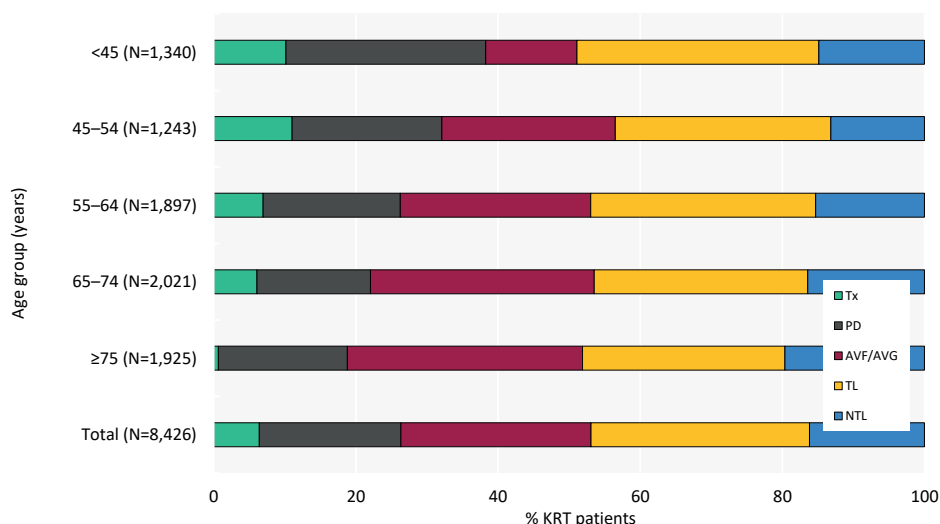


Figure 2.13 Dialysis access used for adult patients incident to KRT in 2024 by age group
 AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

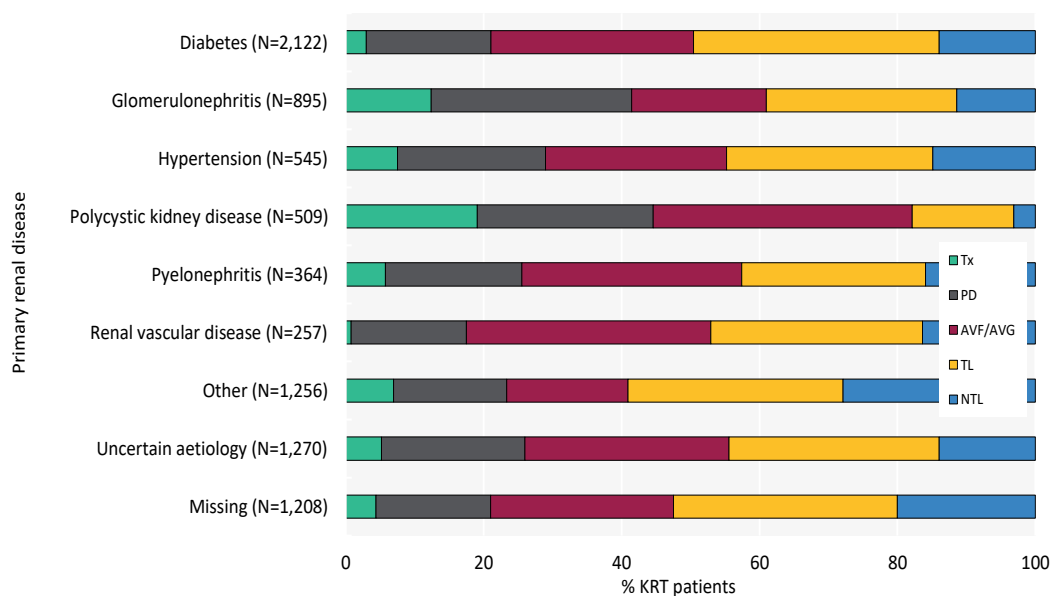


Figure 2.14 Dialysis access used for adult patients incident to KRT in 2024 by primary renal disease
 AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

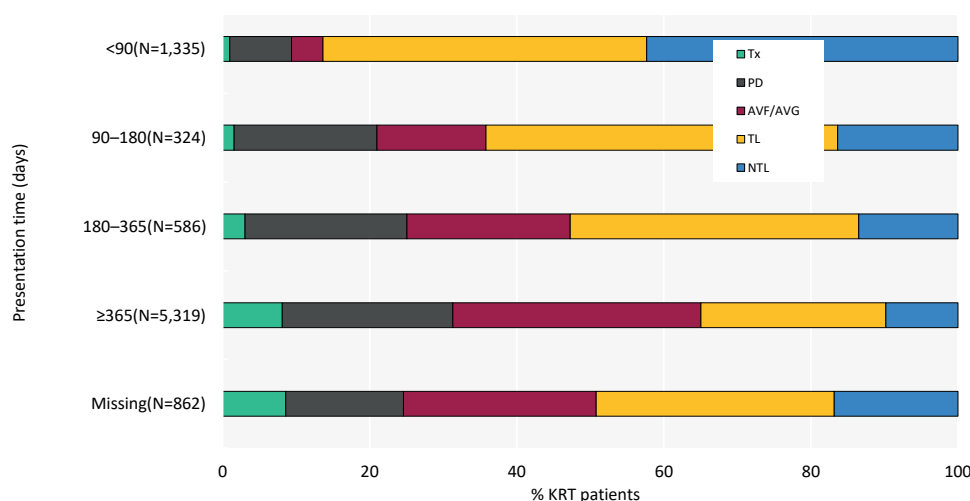


Figure 2.15 Dialysis access used for adult patients incident to KRT in 2024 by presentation time
AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

The audit measures related to dialysis access for incident KRT patients have been updated following publication of the UK Kidney Association Vascular Access Guideline in 2024. Modality and access at 90 days and 1 year after KRT start are reported nationally in Table 2.16, but this is only possible for centres submitting adequate HD sessions data. The proportion of patients starting with each modality and access type is reported split by those presenting before and after 365 days prior to KRT start in Table 2.17. This was changed from 90 days in concordance with the guideline.

Table 2.16 KRT modality and access at 90 days and 1 year after KRT start for 2023 incident HD patients

Access at start	N	Later modality	Time after start (%)	
			90 days	1 yr
AVF/AVG	1,109	HD access unknown	3.9	3.6
		HD - AVF/AVG	85.0	74.2
		HD - TL/NTL	6.6	7.1
		PD	0.1	0.5
		Tx	0.9	4.1
		Died	2.6	8.6
		Out/Rec/Stop	0.9	2.0
TL	1,138	HD access unknown	5.4	4.3
		HD - AVF/AVG	4.3	23.7
		HD - TL/NTL	82.4	46.7
		PD	1.4	2.8
		Tx	1.2	4.2
		Died	4.0	14.9
		Out/Rec/Stop	1.3	3.3
NTL	684	HD access unknown	3.7	1.9
		HD - AVF/AVG	5.7	17.3
		HD - TL/NTL	70.6	42.0
		PD	6.3	6.1
		Tx	0.3	2.2
		Died	11.3	25.0
		Out/Rec/Stop	2.2	5.6

Restricted to 27 centres that submitted adequate sessional data to determine access at 90 days and 1 year

Out - moved out of a centre but did not reappear in another centre; Rec - recovered kidney function (1 yr only, as patients recovering within 90 days were not included in the incident cohort); Stop - treatment withdrawal

AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

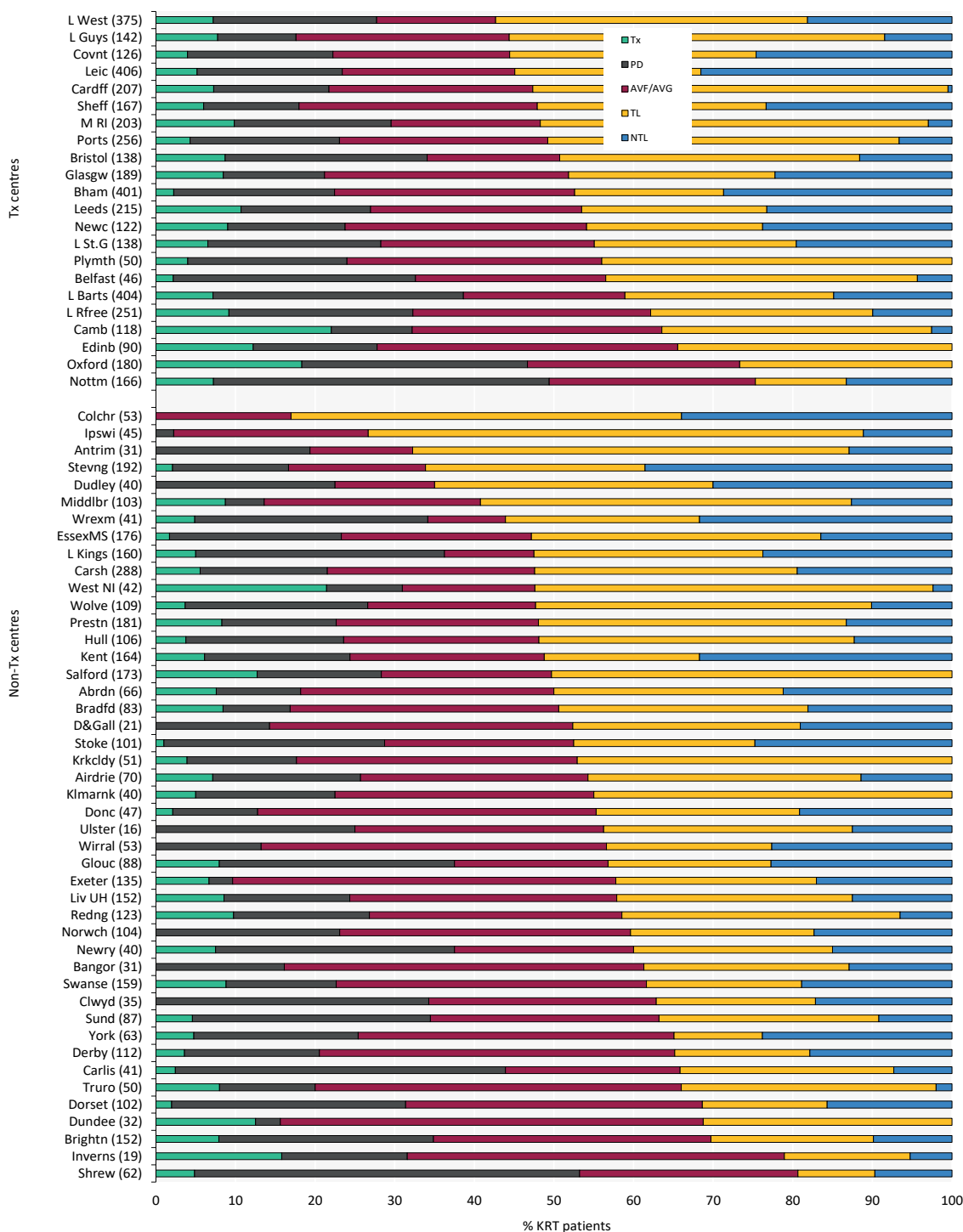


Figure 2.16 First dialysis access used for adult patients incident to KRT in 2024 by centre

Number of incident patients on KRT in a centre in brackets

Centres are ordered by decreasing use of lines

The percentage of pre-emptive transplants is underestimated for Antrim, Belfast and Ulster (see Appendix A section 2.2)

AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

Table 2.17 Start modality and dialysis access used for adult patients incident to dialysis in 2024 by presentation before start of dialysis by centre

Centre	Presenting ≥365 days (%)					Presenting <365 days (%)					Start modality (%)		
	N	PD	AVF/ AVG	TL	NTL	N	PD	AVF/ AVG	TL	NTL	HD	PD	Tx
ENGLAND													
Bham	251	27.1	39.4	12.7	20.7	139	9.4	15.8	30.2	44.6	77.6	20.2	2.2
Bradfd	58	12.1	44.8	31.0	12.1	18	0.0	11.1	44.4	44.4	83.1	8.4	8.4
Brightn	107	30.8	44.9	17.8	6.5	33	24.2	15.2	36.4	24.2	65.1	27.0	7.9
Bristol	94	29.8	23.4	38.3	8.5	31	22.6	3.2	51.6	22.6	65.9	25.4	8.7
Camb	72	16.7	41.7	40.3	1.4	20	0.0	35.0	55.0	10.0	67.8	10.2	22.0
Carlisle	29	51.7	27.6	17.2	3.4	9					56.1	41.5	2.4
Carsh	182	23.1	35.7	29.7	11.5	88	3.4	11.4	46.6	38.6	78.5	16.0	5.6
Colchr	2					3	0.0	33.3	33.3	33.3	100.0	0.0	0.0
Covnt	85	21.2	31.8	30.6	16.5	36	13.9	2.8	36.1	47.2	77.8	18.3	4.0
Derby	80	21.3	58.8	15.0	5.0	28	7.1	10.7	25.0	57.1	79.5	17.0	3.6
Donc	37	10.8	51.4	24.3	13.5	9					87.2	10.6	2.1
Dorset	73	34.2	45.2	13.7	6.8	27	18.5	18.5	22.2	40.7	68.6	29.4	2.0
Dudley	29	24.1	17.2	31.0	27.6	11	18.2	0.0	45.5	36.4	77.5	22.5	0.0
EssexMS	95	29.5	35.8	26.3	8.4	77	13.0	10.4	50.6	26.0	76.7	21.6	1.7
Exeter	104	21.2	55.8	17.3	5.8	43	9.3	16.3	34.9	39.5	79.2	16.9	3.9
Glouc	68	35.3	25.0	23.5	16.2	12	16.7	0.0	16.7	66.7	62.5	29.5	8.0
Hull	62	30.6	35.5	30.6	3.2	40	5.0	10.0	57.5	27.5	76.4	19.8	3.8
Ipswi	18	0.0	55.6	44.4	0.0	20	5.0	5.0	70.0	20.0	97.8	2.2	0.0
Kent	103	18.4	33.0	22.3	26.2	51	21.6	11.8	17.6	49.0	75.6	18.3	6.1
L Barts	244	34.8	29.9	24.6	10.7	130	32.3	6.2	35.4	26.2	61.4	31.4	7.2
L Guys	84	13.1	40.5	45.2	1.2	47	6.4	8.5	61.7	23.4	82.4	9.9	7.7
L Kings	4					1					63.8	31.3	5.0
L Rfree	162	28.4	42.0	21.6	8.0	63	19.0	7.9	54.0	19.0	67.7	23.1	9.2
L St.G	55	30.9	40.0	23.6	5.5	74	17.6	20.3	29.7	32.4	71.7	21.7	6.5
L West	231	26.4	21.2	40.3	12.1	117	13.7	6.0	46.2	34.2	72.3	20.5	7.2
Leeds	141	21.3	38.3	25.5	14.9	51	9.8	5.9	27.5	56.9	73.0	16.3	10.7
Leic	253	25.3	29.2	20.9	24.5	131	7.6	10.7	32.1	49.6	76.6	18.2	5.2
Liv UH	97	19.6	47.4	24.7	8.2	42	11.9	11.9	50.0	26.2	75.7	15.8	8.6
M RI	102	23.5	24.5	48.0	3.9	79	17.7	16.5	63.3	2.5	79.0	21.0	0.0
Middlbr	58	8.6	46.6	41.4	3.4	36	0.0	2.8	66.7	30.6	86.4	4.9	8.7
Newc	84	16.7	40.5	21.4	21.4	27	14.8	11.1	33.3	40.7	76.2	14.8	9.0
Norwch	71	23.9	49.3	19.7	7.0	27	22.2	7.4	33.3	37.0	76.9	23.1	0.0
Nottm	127	46.5	33.9	8.7	11.0	27	40.7	0.0	29.6	29.6	50.6	42.2	7.2
Oxford	111	38.7	37.8	23.4	0.0	36	22.2	16.7	61.1	0.0	53.3	28.3	18.3
Plymth	35	22.9	37.1	40.0	0.0	13	15.4	23.1	61.5	0.0	76.0	20.0	4.0
Ports	184	22.8	30.4	41.3	5.4	61	9.8	18.0	60.7	11.5	77.0	18.8	4.3
Prestn	113	16.8	38.1	37.2	8.0	53	13.2	5.7	52.8	28.3	77.3	14.4	8.3
Redng	79	22.8	40.5	29.1	7.6	32	9.4	21.9	62.5	6.3	73.2	17.1	9.8
Salford	101	18.8	36.6	44.6	0.0	45	17.8	0.0	82.2	0.0	71.7	15.6	12.7
Sheff	104	16.3	42.3	26.9	14.4	53	5.7	11.3	37.7	45.3	82.0	12.0	6.0
Shrew	50	48.0	34.0	6.0	12.0	9					46.8	48.4	4.8
Stevng	120	19.2	24.2	31.7	25.0	67	7.5	6.0	20.9	65.7	83.3	14.6	2.1
Stoke	61	32.8	34.4	21.3	11.5	23	17.4	13.0	30.4	39.1	71.3	27.7	1.0
Sund	53	32.1	35.8	26.4	5.7	30	30.0	20.0	33.3	16.7	65.5	29.9	4.6
Truro	39	12.8	56.4	28.2	2.6	7					80.0	12.0	8.0
Wirral	37	18.9	59.5	16.2	5.4	16	0.0	6.3	31.3	62.5	86.8	13.2	0.0
Wolve	77	26.0	28.6	40.3	5.2	28	17.9	3.6	53.6	25.0	73.4	22.9	3.7
York	43	20.9	48.8	11.6	18.6	17	23.5	23.5	11.8	41.2	74.6	20.6	4.8
N IRELAND													
Antrim	12	33.3	16.7	41.7	8.3	8					80.6	19.4	0.0
Belfast	32	34.4	28.1	34.4	3.1	13	23.1	15.4	53.8	7.7	67.4	30.4	2.2
Newry	26	34.6	34.6	26.9	3.8	10	20.0	0.0	30.0	50.0	62.5	30.0	7.5
Ulster	13	23.1	38.5	30.8	7.7	3					75.0	25.0	0.0
West NI	19	15.8	31.6	52.6	0.0	14	7.1	7.1	78.6	7.1	69.0	9.5	21.4

Table 2.17 Continued

Centre	Presenting ≥365 days (%)					Presenting <365 days (%)					Start modality (%)		
	N	PD	AVF/ AVG	TL	NTL	N	PD	AVF/ AVG	TL	NTL	HD	PD	Tx
WALES													
Bangor	24	20.8	58.3	12.5	8.3	7					83.9	16.1	0.0
Cardff	126	21.4	38.9	38.9	0.8	66	4.5	6.1	89.4	0.0	78.3	14.5	7.2
Clwyd	27	40.7	37.0	14.8	7.4	8					65.7	34.3	0.0
Swansea	112	15.2	50.9	20.5	13.4	33	15.2	15.2	24.2	45.5	77.4	13.8	8.8
Wrexham	28	42.9	14.3	28.6	14.3	10	0.0	0.0	20.0	80.0	65.9	29.3	4.9
TOTALS													
England	4,469	25.4	36.5	27.1	11.1	2,037	14.1	10.8	42.7	32.4	73.3	20.5	6.2
N Ireland	102	29.4	30.4	36.3	3.9	48	14.6	10.4	56.3	18.8	69.7	22.9	7.4
Wales	317	22.7	42.3	27.4	7.6	124	7.3	7.3	62.1	23.4	76.3	17.1	6.6
E, W & NI	4,888	25.3	36.7	27.3	10.7	2,209	13.8	10.6	44.0	31.6	73.4	20.4	6.3

Start modality breakdown includes patients with missing presentation time

Blank cells - referral data completeness <70% or N<10; breakdown by access type not presented but these centres were included in the totals
 AVF - arteriovenous fistula; AVG - arteriovenous graft; NTL - non-tunnelled line; TL - tunnelled line

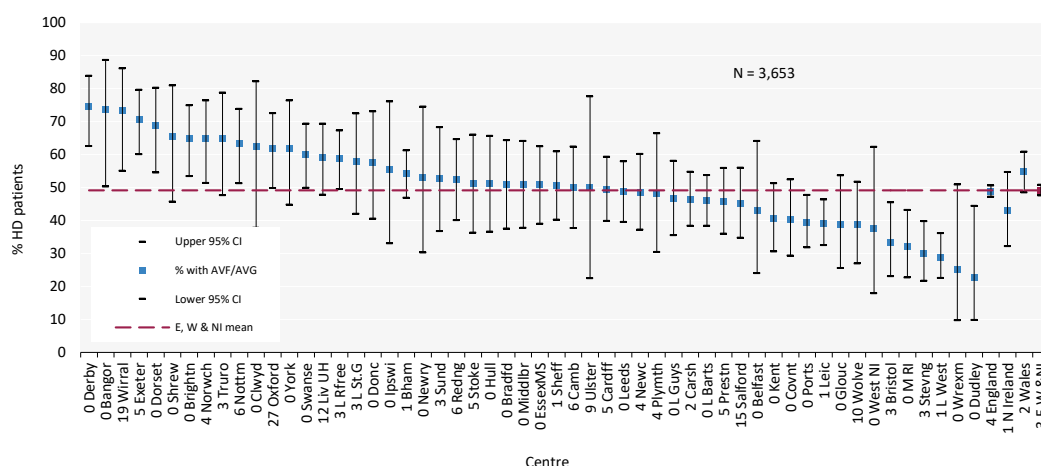


Figure 2.17 Percentage of adult patients incident to HD in 2024 who started dialysis using either an arteriovenous fistula (AVF) or an arteriovenous graft (AVG) by centre, excluding those presenting less than 365 days before KRT start

CI - confidence interval

Survival in incident adult KRT patients

The survival of patients who started KRT for ESKD is described, with primary focus on the one year incident to KRT in the 2023 cohort, followed up for a year. Some analyses used rolling incident cohorts over several years (two years or more as stated) to increase cohort patient numbers and more reliably identify survival differences between compared countries or centres. Analyses included patients who were coded as being on chronic dialysis for ESKD who died during the first 90 days (unless stated otherwise), provided that data were returned to the UKRR. Analyses were often adjusted to age 60 years to allow comparisons between centres with different age distributions and one analysis was also adjusted for sex and comorbidity. However, analyses were not generally adjusted for differences in ethnicity, PRD, socioeconomic status or comorbidity.

To enable comparisons with international registries, survival was described to day 90, one year, and one year after the first 90 days. The UKRR defines day 0 as the first day of KRT, but some countries define day 90 of KRT as day 0 and do not include patients who died in the first 90 days. Analyses were not censored for Tx unless stated (for more details see appendix A).

Table 2.18 90 days and 1 year after 90 days survival (adjusted to age 60 years) of adult patients incident to KRT (2022-2023 2 year cohort) by country

Survival	England	N Ireland	Scotland	Wales	UK
Survival at 90 days (%)	96.4	98.5	97.1	97.3	96.5
95% CI	96.0-96.7	97.4-99.5	96.2-97.9	96.3-98.2	96.2-96.8
Survival 1 year after 90 days (%)	90.7	91.7	90.6	89.3	90.6
95% CI	90.1-91.2	89.2-94.4	89.0-92.2	87.4-91.2	90.1-91.1

CI – confidence interval

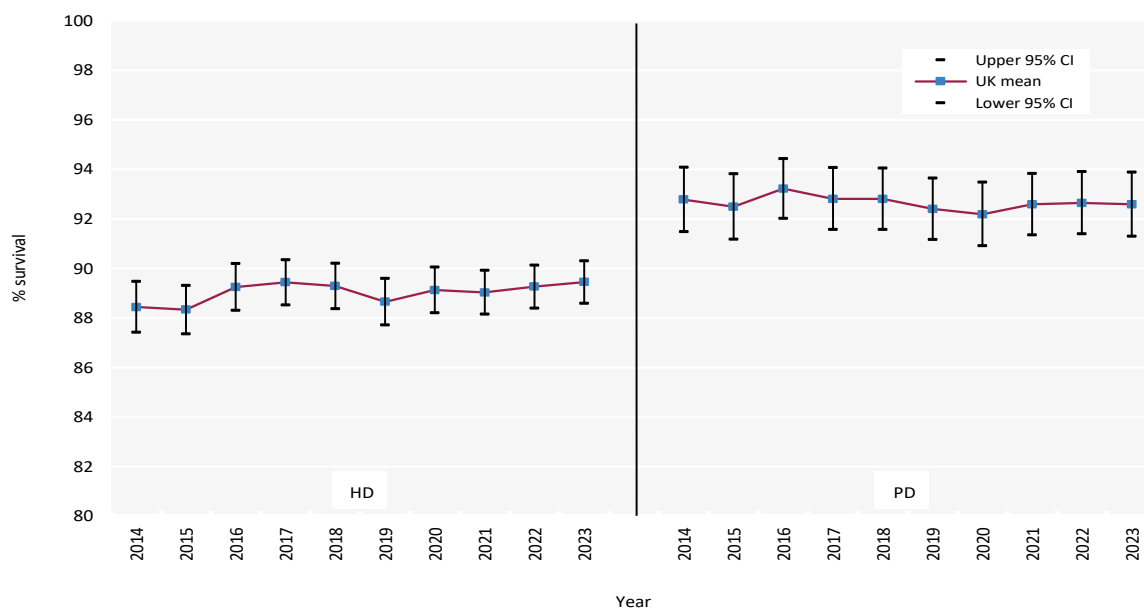


Figure 2.18 1 year after 90 days survival (adjusted to age 60 years) of adult patients incident to KRT by start modality between 2014 and 2023

CI – confidence interval

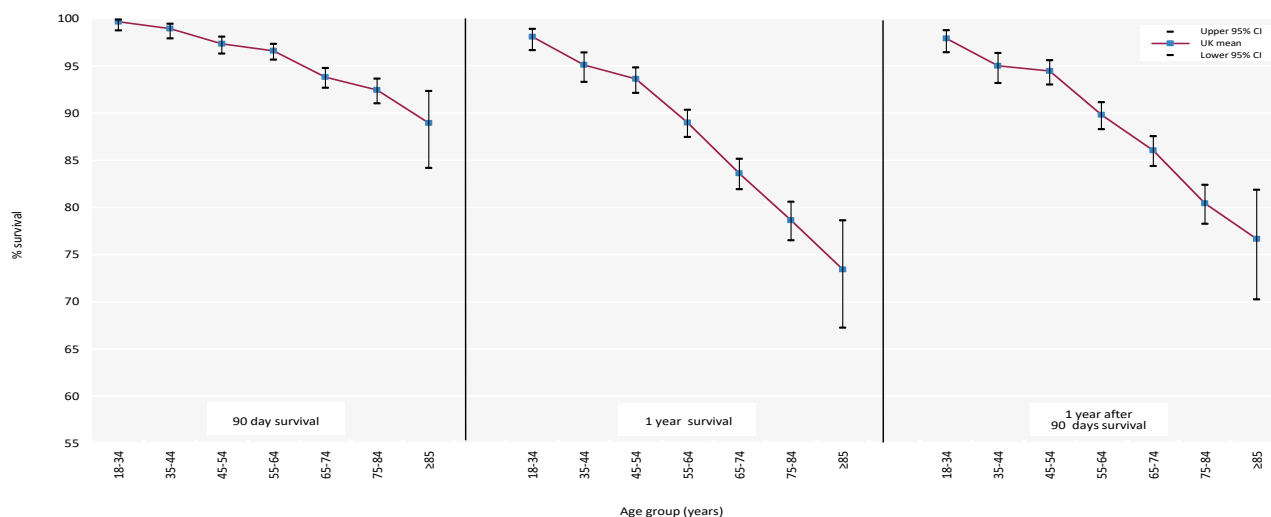


Figure 2.19 90 days, 1 year and 1 year after 90 days survival of adult patients incident to KRT by age group (2023 cohort)

CI – confidence interval

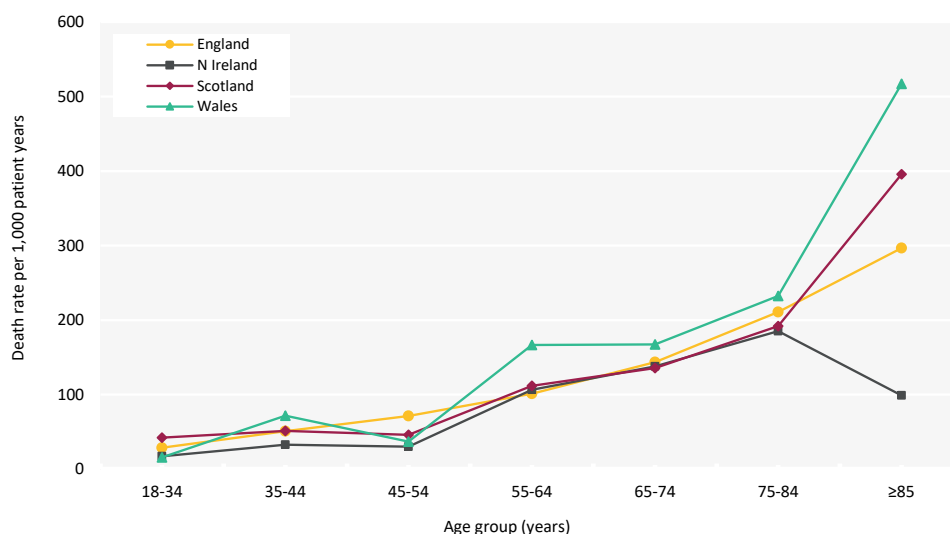


Figure 2.20 1 year after 90 days death rate per 1,000 incident KRT adult patient years by age group and country (2020-2023 4 year cohort)

A ten year rolling cohort was used to analyse the long term survival of incident patients from start of KRT (day 0), according to age at KRT start (figure 2.21), with median survival identifiable from the y-axis. The same cohort was used in analyses of the monthly and six monthly hazard of death on KRT by age group (figures 2.22 and 2.23).

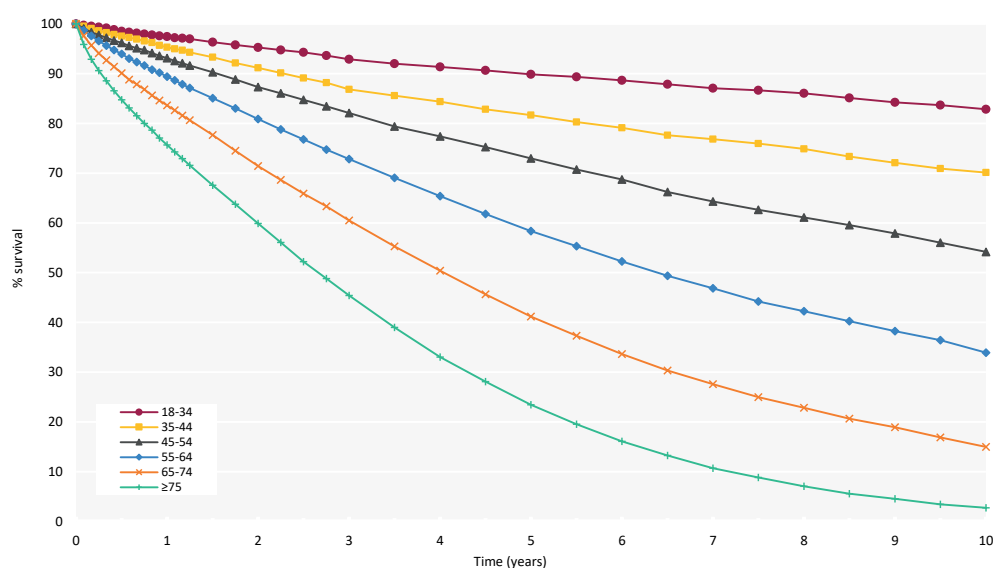


Figure 2.21 Survival (unadjusted) of adult patients incident to KRT from day 0 by age group (2014-2023 10 year cohort)

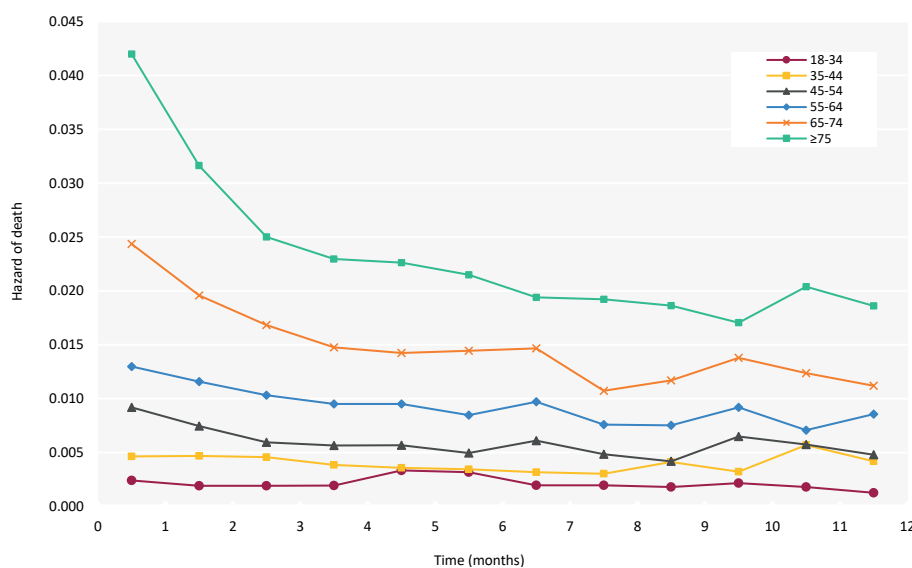


Figure 2.22 Monthly hazard of death (unadjusted) of adult patients incident to KRT from day 0 to 1 year by age group (2014-2023 10 year cohort)

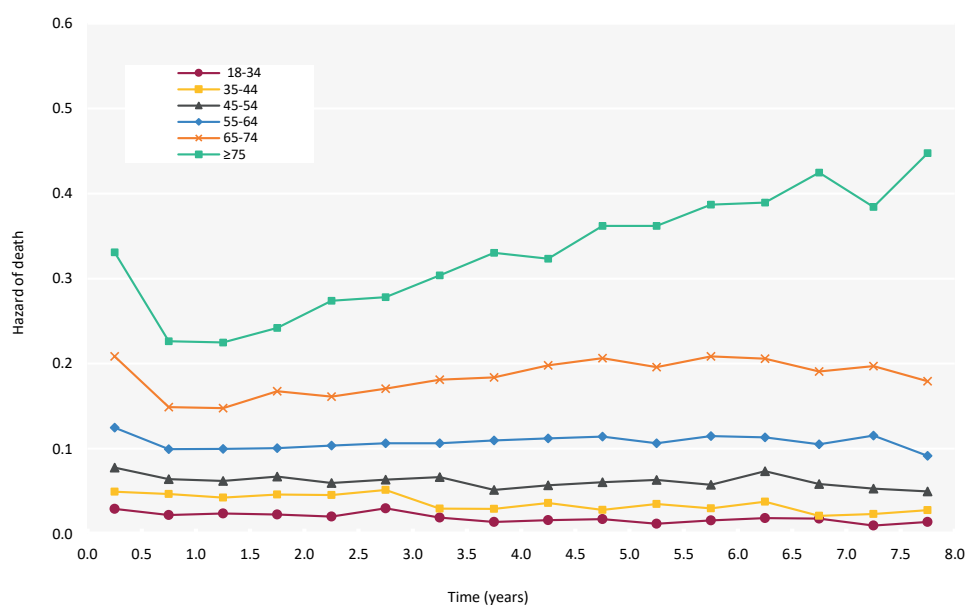


Figure 2.23 6 monthly hazard of death (unadjusted) of adult patients incident to KRT from day 0 to 8 years by age group (2014-2023 10 year cohort)

Table 2.19 Survival (unadjusted) of adult patients incident to KRT aged <65 years (2004-2023)

Cohort	Unadjusted survival (%)										95% CI for longest survival	N
	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr		
2023	92.6										91.8-93.4	4,535
2022	92.4	86.6									85.6-87.6	4,332
2021	92.0	85.6	79.8								78.5-81.0	4,260
2020	92.2	84.9	79.0	73.9							72.5-75.3	4,082
2019	93.2	86.4	80.0	74.4	69.4						68.0-70.8	4,126
2018	92.9	86.9	80.0	74.7	70.0	66.0					64.6-67.5	4,200
2017	93.0	87.2	81.6	76.5	71.7	67.2	63.5				62.0-64.9	4,191
2016	92.9	87.5	82.1	77.2	71.4	66.5	62.2	59.1			57.5-60.6	3,940
2015	92.3	86.5	81.4	76.9	72.7	68.4	63.4	59.7	56.1		54.5-57.7	3,871
2014	92.8	86.8	81.5	77.0	73.4	69.3	65.1	61.4	58.1	54.2	52.6-55.9	3,628
2013	93.7	88.2	83.1	77.7	73.3	68.6	64.6	60.3	56.5	53.5	51.9-55.2	3,520
2012	93.1	87.4	81.9	76.8	72.6	68.6	64.9	60.9	57.5	54.0	52.3-55.6	3,451
2011	93.2	88.6	83.6	79.0	74.5	70.9	67.7	64.7	60.7	57.5	55.8-59.2	3,287
2010	92.2	86.6	81.7	77.3	72.8	69.6	66.4	62.5	59.5	56.6	54.9-58.3	3,362
2009	91.2	85.0	80.4	76.3	71.1	67.0	63.8	60.4	57.4	54.6	52.9-56.3	3,393
2008	91.5	86.0	81.2	76.9	73.2	69.6	65.7	62.4	59.5	56.6	54.9-58.3	3,455
2007	92.5	86.9	81.7	76.7	72.9	69.2	65.8	62.5	59.1	56.1	54.4-57.8	3,265
2006	90.6	85.0	80.0	75.5	71.8	67.9	63.8	60.9	57.8	55.1	53.4-56.9	3,151
2005	89.7	83.5	78.5	73.8	69.1	65.5	62.4	59.4	56.4	53.9	52.0-55.7	2,833
2004	89.6	83.4	78.0	72.5	67.9	64.1	60.9	57.1	54.7	53.0	51.0-55.0	2,537

CI - confidence interval

Table 2.20 Survival (unadjusted) of adult patients incident to KRT aged ≥65 years (2004-2023)

Cohort	Unadjusted survival (%)										95% CI for longest survival	N
	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr		
2023	81.0										79.7-82.2	3,849
2022	80.6	67.1									65.6-68.6	3,870
2021	81.4	68.0	55.1								53.5-56.7	3,819
2020	79.3	65.0	52.6	41.1							39.5-42.7	3,630
2019	80.0	64.4	52.9	42.2	32.7						31.2-34.2	3,889
2018	79.3	65.3	51.8	41.8	32.5	24.2					22.9-25.6	3,776
2017	79.3	67.5	53.6	42.1	33.0	25.1	19.4				18.2-20.7	3,779
2016	80.1	65.2	52.9	40.4	30.9	24.1	18.4	14.7			13.5-15.9	3,686
2015	78.2	64.9	52.2	42.0	32.0	24.9	19.5	14.5	11.5		10.5-12.6	3,752
2014	78.5	64.2	52.2	41.3	32.9	26.2	19.8	15.4	11.6	8.5	7.6-9.5	3,546
2013	78.5	64.6	53.1	42.9	34.5	27.6	20.7	15.5	11.3	8.4	7.5-9.4	3,373
2012	77.2	65.1	54.2	44.0	35.4	27.7	21.8	17.1	13.3	10.7	9.7-11.8	3,273
2011	77.2	62.7	51.2	41.1	32.3	24.7	18.9	14.5	11.1	8.0	7.0-8.9	3,300
2010	76.0	63.0	51.1	41.8	32.1	25.4	19.7	14.5	11.3	8.4	7.4-9.4	3,282
2009	76.4	63.0	52.4	41.4	32.8	26.1	20.0	15.3	11.2	8.2	7.3-9.2	3,376
2008	74.6	61.0	49.7	40.3	32.0	25.6	20.4	16.1	12.1	9.0	8.0-10.0	3,180
2007	74.9	61.1	49.5	40.3	31.8	25.2	20.1	15.4	11.8	9.1	8.1-10.2	3,155
2006	72.0	58.1	46.8	37.1	28.8	22.9	17.4	13.2	10.5	8.3	7.4-9.4	3,111
2005	71.2	57.3	45.5	36.3	27.9	21.2	16.6	12.5	9.9	7.7	6.8-8.8	2,943
2004	68.9	53.9	42.2	33.8	26.6	20.8	16.1	12.8	9.7	7.4	6.4-8.5	2,598

CI - confidence interval

Due to small numbers of incident patients in a given year, centre one year after the first 90 days survival is compared using a rolling four year cohort (table 2.21). Centre-specific one year survival rates were adjusted for not only age (figure 2.24), but also sex and comorbidities for centres with at least 85% completeness (figure 2.25). UKRR comorbidity data have been augmented using diagnostic and procedure codes from HES in England and PEDW in Wales (see appendix A for details). Centres can be identified in the funnel plots using the number of patients in the centre in table 2.21. Given there are 66 centres with data for age adjusted survival, it would be expected that three centres would fall outside the 95% (1 in 20) confidence limit, entirely by chance.

Table 2.21 1 year after 90 days adjusted survival (60 years, male and median comorbidity score) of adult patients incident to KRT by centre (2020-2023 4 year cohort)

Centre	Age adjusted survival				Case-mix adjusted survival ¹			
	N on KRT	Adj 1 yr after 90 days survival (%)	Limits for funnel plot		N on KRT	Adj 1 yr after 90 days survival (%)	Limits for funnel plot	
			Lower 95% limit	Upper 95% limit			Lower 95% limit	Upper 95% limit
D&Gall	66	87.8	80.7	95.6				
Ulster	92	88.7	82.6	95.0	84	88.9	84.8	96.7
Bangor	95	91.9	82.7	95.0	95	93.8	85.4	96.5
Inverns	114	94.3	83.6	94.7				
Newry	125	86.3	84.0	94.5				
Clwyd	126	87.2	84.0	94.5	126	89.5	86.7	96.1
Antrim	131	93.9	84.2	94.5				
Dundee	137	94.3	84.3	94.4				
West NI	138	90.7	84.4	94.4	130	88.9	86.8	96.1
Wrexm	142	89.1	84.5	94.3	142	91.5	87.1	96.0
Carlisle	145	90.7	84.5	94.3	144	92.2	87.2	96.0
Colchr	146	90.5	84.6	94.3	138	92.9	87.0	96.0
Krkcldy	163	94.2	84.9	94.1				
Wirral	166	88.0	85.0	94.1	166	91.6	87.6	95.8
Ipswi	176	89.2	85.2	94.0	169	91.4	87.7	95.8
Klmarnk	188	87.4	85.4	93.9				
York	190	91.4	85.4	93.9	190	93.3	88.0	95.6
Shrew	216	87.5	85.8	93.8	213	90.4	88.4	95.5
Truro	216	91.5	85.8	93.8	208	93.9	88.3	95.5
Dudley	228	93.1	85.9	93.7	228	94.7	88.5	95.4
Donc	229	89.8	86.0	93.7	227	92.0	88.5	95.4
Abrdn	230	89.1	86.0	93.7				
Plymth	250	89.8	86.2	93.6	248	92.7	88.7	95.4
Airdrie	266	90.4	86.3	93.5				
Belfast	287	95.4	86.5	93.4				
Sund	298	86.9	86.6	93.3	297	90.1	89.1	95.2
Glouc	307	89.5	86.7	93.3	298	91.8	89.1	95.2
Bradfd	322	89.5	86.8	93.3	322	92.3	89.3	95.1
Dorset	332	92.9	86.8	93.2	331	94.2	89.4	95.1
Edinb	346	92.9	86.9	93.2				
L St.G	353	91.0	87.0	93.1	345	92.7	89.4	95.0
Derby	361	91.8	87.0	93.1	359	93.6	89.5	95.0
Norwch	374	90.2	87.1	93.1	362	92.4	89.5	95.0
Middlbr	393	92.0	87.2	93.0	392	93.8	89.7	94.9
Hull	402	89.8	87.2	93.0	402	92.4	89.7	94.9
Wolve	456	88.2	87.4	92.9	455	91.7	89.9	94.8
Nottm	469	88.5	87.5	92.8	469	92.0	90.0	94.7
Redng	476	92.2	87.5	92.8	474	94.0	90.0	94.7
Stoke	480	87.0	87.5	92.8	470	90.1	90.0	94.7
Brightn	503	89.3	87.6	92.8	502	91.9	90.1	94.7
Covnt	507	90.7	87.6	92.8	493	92.8	90.1	94.7

Table 2.21 Continued

Centre	Age adjusted survival				Case-mix adjusted survival ¹			
	N on KRT	Adj 1 yr after 90 days survival (%)	Limits for funnel plot		N on KRT	Adj 1 yr after 90 days survival (%)	Limits for funnel plot	
			Lower 95% limit	Upper 95% limit			Lower 95% limit	Upper 95% limit
Newc	509	91.2	87.6	92.8	508	93.6	90.1	94.7
Camb	516	93.6	87.6	92.7	516	94.8	90.1	94.7
M RI	520	89.9	87.7	92.7	496	92.6	90.1	94.7
Exeter	521	90.7	87.7	92.7				
Swanse	522	88.7	87.7	92.7	522	91.4	90.1	94.6
Bristol	561	89.5	87.8	92.7	540	92.2	90.2	94.6
EssexMS	564	90.3	87.8	92.7	552	92.9	90.2	94.6
Kent	612	87.3	87.9	92.6	608	90.5	90.4	94.5
Liv UH	626	90.2	87.9	92.6	615	93.2	90.4	94.5
Leeds	641	91.6	88.0	92.5	641	93.6	90.4	94.5
L Guys	644	91.5	88.0	92.5	644	93.0	90.4	94.5
Sheff	655	91.5	88.0	92.5	653	93.5	90.4	94.5
Salford	659	87.9	88.0	92.5	652	91.1	90.4	94.5
Cardff	662	88.7	88.0	92.5	662	90.9	90.5	94.5
Stevng	686	91.7	88.1	92.5	673	93.6	90.5	94.4
Prestn	707	88.1	88.1	92.4	703	91.5	90.5	94.4
L Kings	757	91.5	88.2	92.4	730	93.6	90.6	94.4
Glasgw	760	89.6	88.2	92.4				
Oxford	792	92.0	88.2	92.4	781	94.0	90.7	94.3
Ports	908	90.0	88.4	92.2	879	92.4	90.8	94.3
L Rfree	981	88.4	88.5	92.2	950	91.4	90.9	94.2
Carsh	1,020	89.5	88.5	92.2	970	92.2	90.9	94.2
L Barts	1,201	93.7	88.7	92.0	1,132	95.1	91.0	94.1
Leic	1,254	91.4	88.7	92.0	1,234	93.5	91.1	94.0
Bham	1,421	91.8	88.9	91.9	1,396	93.8	91.2	94.0
L West	1,496	91.0	88.9	91.9	1,439	92.7	91.2	93.9

¹Centres excluded if <85% comorbidity data were available – this included Belfast, Antrim, Newry and all Scottish kidney centres

¹Survival adjusted to age 60 years, male and median comorbidity score

The Scottish Renal Registry reports survival adjusted for age, sex, primary renal disease and deprivation in its annual report <https://www.publichealthscotland.scot/publications/scottish-renal-registry/scottish-renal-registry-annual-report-2025/>

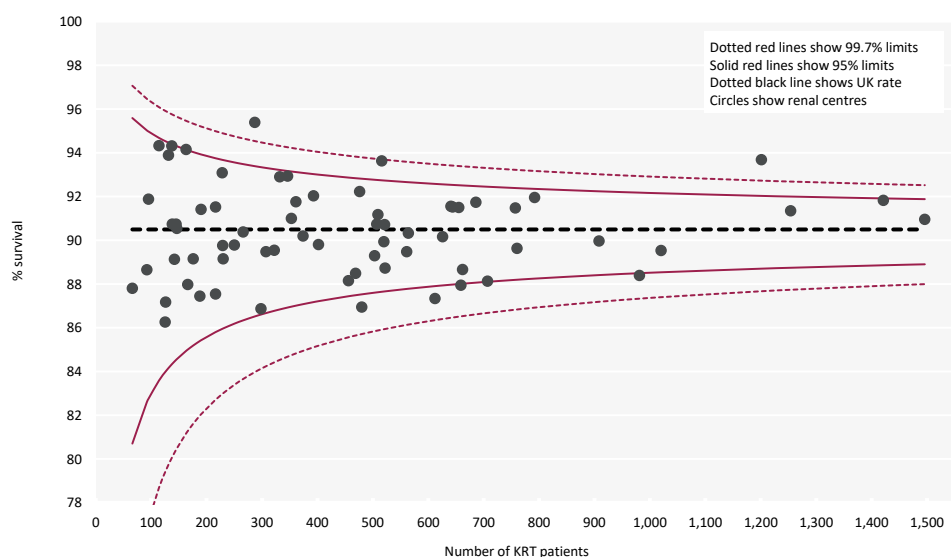


Figure 2.24 1 year after 90 days survival (adjusted to age 60 years) of adult patients incident to KRT by centre (2020-2023 4 year cohort)

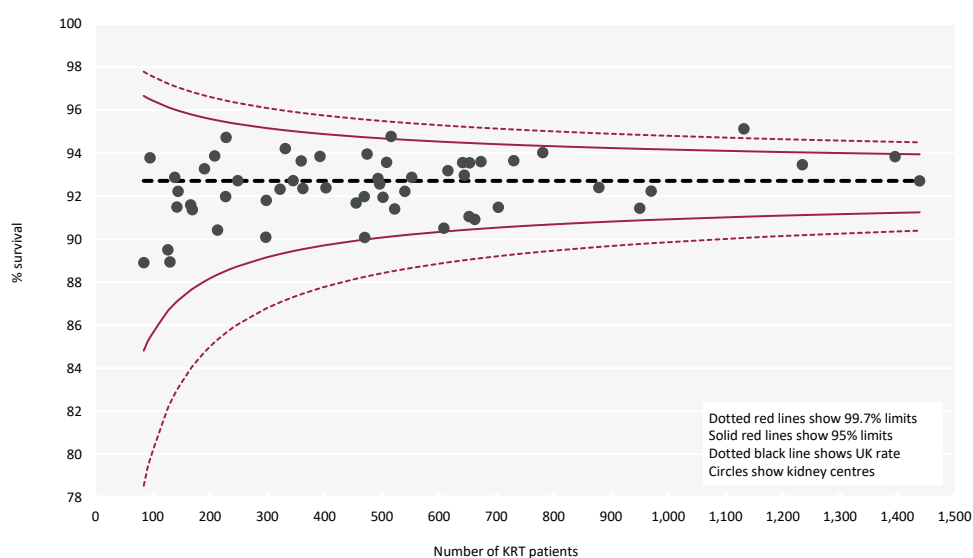


Figure 2.25 1 year after 90 days survival (adjusted to age 60 years, male and median comorbidity score) of adult patients incident to KRT by centre (2020-2023 4 year cohort)

Cause of death in incident adult KRT patients

Cause of death was analysed in incident KRT patients using a four year incident cohort followed up for 90 days and 1 year after 90 days. The proportion of incident adult 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 2.22 Cause of death in the first 90 days and one year after 90 days in adult patients incident to KRT by age group (2020-2023 4 year cohort)

Cause of death	First 90 days				1 year after 90 days			
	All ages		<65 yrs (%)	≥65 yrs (%)	All ages		<65 yrs (%)	≥65 yrs (%)
	N	%			N	%		
Cardiac disease	299	20.5	22.5	19.7	623	20.0	23.2	18.3
Cerebrovascular disease	36	2.5	3.6	2.1	126	4.0	4.9	3.6
Infection	343	23.5	23.3	23.6	596	19.1	19.5	18.9
Malignancy	133	9.1	7.8	9.6	286	9.2	7.3	10.1
Treatment withdrawal	110	7.5	4.4	8.7	320	10.3	6.9	12.0
Other	459	31.4	32.0	31.2	958	30.7	31.8	30.1
Uncertain aetiology	81	5.5	6.5	5.2	212	6.8	6.4	7.0
Total (with data)	1,461	100.0	100.0	100.0	3,121	100.0	100.0	100.0
Missing	138	8.6	10.2	8.1	333	9.6	10.7	9.1