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UK Kidney Association
UK Renal Registry

UK Renal Registry
28th Annual Report

Data to 31/12/2024

- Chronic kidney disease
- Incidence of KRT
- Prevalence of KRT
- Transplant
- In-centre haemodialysis
- Peritoneal dialysis
- Home haemodialysis
- Paediatrics

UK Renal Registry 28th Annual Report

Data to 31/12/2024

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Patient summary of the UKRR 28th Annual Report – adults

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Patient summary of the UKRR 28th Annual Report – children and young people

UK Renal Registry (2026) UK Renal Registry Summary of Annual report – analyses of paediatric data to the end of 2024, Bristol, UK.
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Contact information

For more information about this report or the UKRR, please contact us:


ukka@ukkidney.org


www.ukkidney.org


@UKKidney

Foreword

Welcome to the 28th Annual Report of the UK Renal Registry (UKRR). This report describes people who started kidney replacement therapy (KRT) during 2024, the number of people receiving KRT and the treatment they were receiving on 31 December 2024.



Professor James Medcalf
Medical director, The UK Kidney Association

The number of centres with UK Renal Data Collaboration (UKRDC) daily audit feeds continues to gain pace, in August 2026 we are publicly visualising data from 20 adult, and 4 paediatric centres for the first time. That data is significantly more contemporary (up till 30 March 2026), but has not had the same degree of painstaking data-validation as the data contained in this annual report. For the moment therefore, we believe both have their place in understanding variation and stimulating improvement.

The number of people receiving in-centre haemodialysis (ICHD), and the crude rate, rose again in England to 505 per million population. In the other UK countries, the figures were stable or slightly lower than in 2023.

The incidence of peritoneal dialysis (PD) as a first KRT increased this year, from 17.7% to 19% , but the incidence of PD fell among people of Black and Asian ethnicity. The proportion of prevalent KRT patients on PD rose fractionally from 5.1% to 5.2%. With advice from UK PD experts for the first time, this report includes rates of transition (Table 6.8) from PD to haemodialysis using a method consistent with international reporting. In this first year of reporting, transfers between treatment modalities are not distinguished by reason or if they were planned. Like any new measure please interpret the findings with care.

Disappointingly, the number of kidney transplants performed fell by approximately 4% compared with 2023: living donor transplants rose by around 1%, while deceased donor transplants fell by around 5%. The proportion of prevalent dialysis patients waitlisted for transplantation has increased, but it is hard to determine if this means greater access to kidney transplantation or a larger proportion of people waiting. People considered suitable for a kidney transplant at the start of KRT (one of the new UKRR care-planning measures adopted from 'Transplant First' and visible in the new August 2026 data portal) might help us understand this better. The number of people living with a functioning transplant rose again in absolute terms, while the proportion of the KRT population with a transplant slightly declined from 56.3% to 56.0% - the transplant population grew, but the dialysis population grew faster.

The number of centres submitting data on CKD stages 4 and 5 increased to 30 from 24, and as last year, some paediatric CKD data are also included. Information from the updated 'UKRDC' daily feeds mean we are gradually more confident in this data (for example limiting analysis to only patients with CKD5 under follow-up). However, the large variation in the numbers of people with CKD seen in neighbouring kidney services in this report means we are not there yet.

The number of children (<16) on KRT has dropped this year from 861 to 816 while the young people (17-18) on KRT has increased from 225 to 274. Over the last 5-year period, glomerular disease as primary renal disease (PRD) has increased and the children starting KRT on PD has increased whilst HD has fallen consequently.

This report exists because clinical teams across the UK continue to submit data of high quality, often under considerable service pressure. Our thanks go to the teams, to the patients whose data make the report possible.

Professor James Medcalf



Medical director, The UK Kidney Association, August 2026

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Introduction: The UK Renal Registry's 28th Annual Report

The UK Renal Registry (UKRR) collects and reports data annually on approximately 75,000 kidney patients on kidney replacement therapy (KRT) in the UK. The annual report is an audit of the care provided to these patients at each of the 67 adult and 13 paediatric centres against national standards, in particular, the UK Kidney Association's (UKKA) guidelines – ukkidney.org/health-professionals/guidelines/guidelines-commentaries.

The 28th Annual report includes patients incident and prevalent to KRT as well as those with chronic kidney disease (CKD) stages 4 and 5 by the end of 2024. The chapters are split by treatment modality (transplant, in-centre haemodialysis, peritoneal dialysis, home haemodialysis and CKD), as well as by adults and children. The online appendices cover the methodologies, including how data are collected and coded (appendix A) and include basic analyses at Integrated Care Board and Health Board level (appendix B) – ukkidney.org/audit-research/annual-report. Plain English summaries of the annual report have been developed in partnership with the UKKA's Patient Council and all figures used in the report are available for use in presentations – ukkidney.org/audit-research/annual-report.

How to interpret centre analyses and outlying centres

The UKRR advises caution when comparing centre-specific attainment of clinical audit measures, because for many of these analyses no adjustment can be made for the range of factors known to influence the measured variable. The UKRR does not test for significant differences between centres – arbitrary 95% and 99% confidence intervals are created from the data to illustrate variability between centres and highlight outlying centres.Identifiable centre-specific analyses on the survival of KRT patients are published in the annual report. Although the UKRR has no statutory powers, the UKRR senior management team communicates survival outlier status with kidney centres prior to publication. Centres are asked to report their outlying status internally at trust level and to follow-up with robust mortality and morbidity meetings. They are also asked to provide evidence that the clinical governance department and chief executive of the trust housing the service have been informed. In the event that no such evidence is provided, the chief executive officer or medical director of the UKRR informs the president of the UK Kidney Association, who then takes action to ensure that the findings are properly investigated.

UK Kidney Association
UK Renal Registry

Chapter 1

Adults with chronic kidney disease (CKD) and estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m² in the UK at the end of 2024

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Introduction

This chapter describes data about adult patients with chronic kidney disease (CKD) outside the context of kidney replacement therapy (KRT) or acute kidney injury (AKI) (see table 8.26 in Chapter 8 for data on under 18s with CKD). The primary aim of this chapter is to present the demographic and clinical features of patients receiving treatment for CKD stages G4 and G5 at UK kidney centres at the end of 2024 (figure 1.1). A 2024 prevalent CKD population is described, comprising individuals who:

- were reported by an adult kidney centre as receiving treatment for CKD at the end of 2024, and
- had an estimated glomerular filtration rate (eGFR) of <30 mL/min/1.73m^2 on their last recorded creatinine measurement.

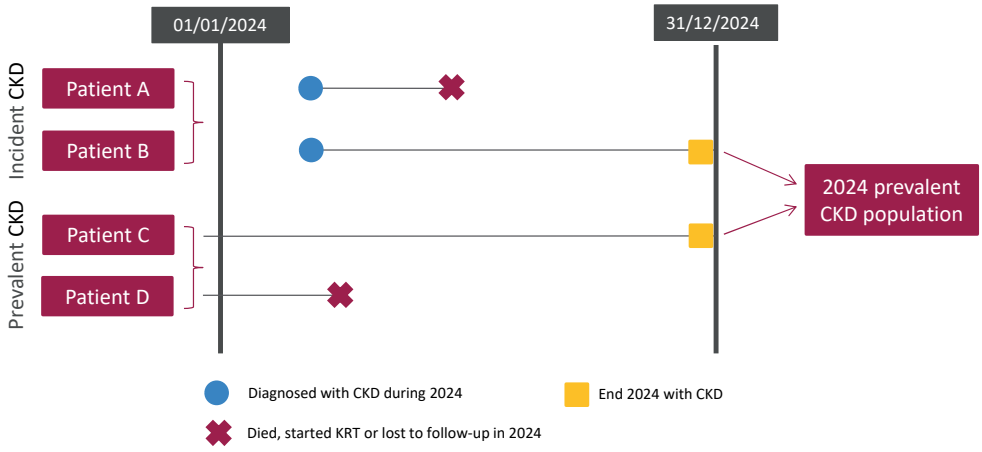


Figure 1.1 Pathways adult patients could follow to be included in the UK 2024 prevalent CKD population

Auditable aspects of care for this population are highlighted and described. For the purpose of this chapter, individuals are categorised as having CKD stage G5 (eGFR <15 mL/min/1.73m^2) or CKD stage G4 (eGFR 15–29 mL/min/1.73m^2). The eGFR was calculated using the CKD-EPI 2009 equation, without racial adjustment, using their last recorded creatinine from the last two years. Further categorisation, e.g. by eGFR trend or albuminuria is not possible using UKRR data.

Information about completeness of primary renal disease (PRD) data are presented. Whilst PRD data are known to be incomplete, no triangulation was performed using other datasets available to the UKRR, e.g. Hospital Episode Statistics (HES).

It is important to highlight that the individuals described in this chapter represent a sub-population of those with CKD in the UK. Many individuals with diagnosed CKD receive care without referral to a kidney centre, particularly those with earlier stages. Furthermore, not all kidney centres are yet submitting CKD data to the UKRR. For this reason, it is not appropriate to generalise findings from this chapter to the wider CKD population, even to those cared for in kidney centres.

Consequently, this CKD chapter asks simple questions:

- Which individuals with CKD are currently reported to the UKRR?
- What data are captured and which aspects of CKD care can be audited using them?

Rationale for analyses

Since 2016, kidney centres in England and Wales have been asked by the National Clinical Reference Group to report individuals with CKD under their care to the UKRR. In 2024 the UKRR received data from 30 of the 53 adult centres in England and Wales (six more than in 2023).

Reliable estimates of CKD prevalence in secondary care are required to inform CKD management and policy planning. The presented analyses are performed annually to help clinicians and policy makers in this task and will be expanded as data quality and quantity improve. The UK Kidney Association guidelines (ukkidney.org/health-professionals/guidelines/guidelines-commentaries) provide audit measures relevant to the care of patients with CKD, and where data permit, their attainment by UK kidney centres in 2024 is reported in this chapter (table 1.1). Audit measures in guidelines that have been archived are not included. Some audit measures cannot be reported because the completeness of the required data items is too low. However, data completeness is poor even for some of the analyses presented, necessitating caution in interpretation.

Table 1.1 The UK Kidney Association audit measures relevant to CKD that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
Commentary on the Kidney Disease Improving Global Outcomes (KDIGO) guideline on the diagnosis, evaluation, prevention and treatment of CKD mineral bone disorder (2018)	Percentage of adult CKD G5 patients with serum calcium above the normal reference range 2.2–2.5 mmol/L	Figure 1.3
Cardiovascular disease in CKD (2008)	Blood pressure in CKD stages G1–4 should be managed according to National Institute for Health and Care Excellence (NICE) guidance: <140/90 mmHg in patients without significant proteinuria and <130/80 mmHg in those with proteinuria or with diabetes	Table 1.4 (partly addressed)
Anaemia of CKD (updated 2020)	Proportion of CKD patients with eGFR <30 mL/min/1.73m^2 (using CKD-EPI equation) and a 6 monthly haemoglobin level measurement	Figure 1.4 (number next to the centre name in x-axis indicates the % missing)
	Proportion of CKD stage G4–5 patients with haemoglobin 100–120 g/L	Figures 1.5–1.6
Commentary on the National Institute for Health and Care Excellence (NICE) guideline on KRT and conservative management (2020)	The number of patients with stage G5 CKD who were reported as being under conservative care	Table 1.2

For definitions and methods relating to this chapter see appendix A. The number preceding the centre name in each caterpillar plot indicates the percentage of missing data for that centre.

Key findings

- Data about patients with CKD stages G4 and G5 who were not on KRT was reported by 30 of the UK's adult kidney centres compared to 24 centres in the previous year.
- The 2024 prevalent CKD population comprised 34,933 patients, with a median age of 77.1 years, compared to a median age of 60.3 years for those on KRT.
- CKD prevalence was 1,236 per million population (pmp) overall, but ranged from 80 to 2,776 pmp between centres. There were also substantial differences in the median ages and distribution of disease stages between centres. Such large variation suggests differences between centres in the definitions used for processes of care or reporting of people with CKD.
- The data reported in this chapter highlight the need for improved capture and reporting of CKD data to enable national quality assurance. Concordance with audit measures for the CKD not on KRT population cannot be fully addressed until this is achieved.

For information on data quality issues relating to Cambridge and Manchester Royal Infirmary see Appendix A section 2.2.

Analyses

Stage and demographics of adult CKD patients

For the 30 adult kidney centres with CKD data, the number of prevalent patients with CKD and eGFR ≤30 mL/min/1.73m^2 was calculated as a proportion of the estimated centre catchment population (details in appendix A). Only a few centres reported patients with kidney failure as undergoing conservative care (CC). It is not clear whether a CC code means the same thing at all centres and for each patient. In particular, it is unclear which CC codes represent planned KRT for the eventuality of kidney failure, and which represent active treatment for an individual who might otherwise have started KRT. As such, people coded as receiving CC are included throughout this chapter.

Table 1.2 Number of adult patients prevalent to CKD stages G4 and G5 on 31/12/2024, including those on conservative care (CC), by stage and centre; completeness of proteinuria, number of CKD and KRT patients as a proportion of the adult catchment population

Centre	N with CKD	N on CC	Total	% stage G4	% stage G5	% with proteinuria data (either PCR or ACR)	Estimated catchment population (millions)	CKD 2024 crude rate (pmp)	KRT 2024 crude rate (pmp)
Bangor	18	13	31	48.4	51.6	16.1	0.16	193	1,414
Bham[1]	1,738	2	1,740	75.5	24.5	0.1	2.13	817	1,629
Bradfd	800	0	800	76.5	23.5	66.9	0.52	1,551	1,631
Camb	80	0	80	66.3	33.8	2.5	1.00	80	1,704
Cardff	1,682	29	1,711	81.0	19.1	49.4	1.18	1,455	1,566
Carlis	493	58	551	80.0	20.0	73.7	0.26	2,094	1,262
Clwyd	15	1	16	37.5	62.5	87.5	0.18	87	1,202
Derby	577	0	577	81.3	18.7	0.0	0.59	986	1,324
Exeter	859	0	859	84.1	16.0	0.0	1.00	856	1,180
Glouc	1,192	1	1,193	86.8	13.2	0.2	0.53	2,231	1,079
Hull	583	0	583	68.4	31.6	46.7	0.82	707	1,178
L Rfree	2,532	382	2,914	75.3	24.7	61.0	1.29	2,251	1,956
Leeds	2,291	0	2,291	78.1	21.9	83.2	1.43	1,606	1,393
Leic	4,603	0	4,603	84.0	16.0	64.5	2.21	2,079	1,319
M RI	1,218	0	1,218	70.9	29.1	0.0	1.39	878	1,535
Middlbr	648	0	648	65.9	34.1	0.0	0.83	778	1,204
Nottm	627	4	631	46.8	53.3	56.9	0.95	666	1,309
Oxford	1,431	0	1,431	77.9	22.1	63.7	1.56	915	1,387
Plymth	948	0	948	86.9	13.1	51.0	0.42	2,256	1,285
Ports	2,009	1	2,010	75.4	24.6	46.9	1.81	1,107	1,141
Prestn	3,145	25	3,170	82.5	17.5	63.4	1.29	2,455	1,171
Redng	577	1	578	62.3	37.7	58.5	0.75	766	1,382
Salford	876	33	909	84.5	15.5	65.1	1.21	753	1,167
Sheff	311	37	348	53.7	46.3	61.5	1.14	305	1,317
Stevng	949	93	1,042	69.3	30.7	65.8	1.17	889	976
Swanse	2,048	74	2,122	86.2	13.9	56.3	0.76	2,776	1,251
Truro	845	55	900	84.4	15.6	64.9	0.37	2,426	1,227
Wolve	72	42	114	55.3	44.7	31.6	0.56	203	1,477
Wrexm	159	19	178	73.6	26.4	33.7	0.21	838	1,582
York	737	0	737	73.5	26.5	65.4	0.50	1,474	1,226
Total	**34,063**	**870**	**34,933**	**78.2**	**21.8**	**50.5**	**28.26**	**1,236**	**1,364**

[1]The catchment population and 2024 crude rate for KRT reflect the combined Bham population (QEH and Heartlands kidney centres), but CKD patients were only reported from QEH (although the extracts include some Heartlands patients)
CC - conservative care; PCR - protein creatinine ratio; ACR - albumin creatinine ratio; QEH - Queen Elizabeth Hospital

The percentage of patients with missing ethnicity data is shown. For those with data, the percentage who are in each ethnic group is shown. The completeness of PRD data varies greatly between centres, making interpretation difficult. PRD completeness is shown overall and by CKD stage.

Table 1.3 Demographics and completeness of primary renal disease (PRD) data of adult patients prevalent to CKD stages G4 and G5 on 31/12/2024 by centre

				Ethnicity					PRD completeness		
Centre	N with CKD	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing	% all stages	% stage G4	% stage G5
Bangor	31	79.8	58.1	100.0	0.0	0.0	0.0	80.7	22.6	20.0	25.0
Bham	1,740	72.0	55.1	58.3	27.4	11.5	2.9	12.4	13.2	7.2	31.6
Bradfd	800	74.6	58.6	60.1	35.8	1.9	2.1	28.5	26.9	17.7	56.9
Camb	80	77.3	60.0	92.2	2.6	3.9	1.3	3.8	51.3	41.5	70.4
Cardff	1,711	75.2	57.3	94.4	3.4	1.7	0.5	34.1	65.3	62.6	76.7
Carlis	551	79.5	57.4	99.7	0.3	0.0	0.0	45.9	14.2	10.4	29.1
Clwyd	16	78.0	62.5	100.0	0.0	0.0	0.0	43.8	37.5	50.0	30.0
Derby	577	78.3	52.5	91.1	5.5	2.8	0.6	12.1	96.7	96.6	97.2
Exeter	859	78.7	59.1	98.2	1.2	0.1	0.5	2.6	16.7	16.2	19.0
Glouc	1,193	79.1	58.6	94.7	2.0	1.8	1.5	7.4	52.7	51.4	61.4
Hull	583	75.3	51.6	93.7	1.8	0.9	3.6	81.0	23.2	19.8	30.4
L Rfree	2,914	77.2	58.1	55.1	17.3	13.4	14.3	12.2	35.9	32.5	46.2
Leeds	2,291	75.8	56.0	82.5	11.7	4.6	1.2	12.0	9.2	6.5	18.6
Leic	4,603	78.1	54.5	78.5	16.7	3.0	1.8	25.1	52.6	50.9	61.4
M RI	1,218	74.0	54.8	70.0	16.5	9.8	3.7	6.5	9.4	7.4	14.1
Middlbr	648	73.4	58.3	93.9	3.0	1.1	2.0	17.0	27.8	18.5	45.7
Nottm	631	73.7	57.5	83.2	6.5	5.3	5.0	4.9	84.8	83.7	85.7
Oxford	1,431	76.0	60.5	86.5	7.5	3.6	2.4	16.6	21.5	16.9	38.0
Plymth	948	79.3	53.5	97.9	0.3	0.6	1.2	4.1	13.4	11.2	28.2
Ports	2,010	76.6	60.1	97.3	1.4	0.6	0.8	41.2	24.5	21.7	32.9
Prestn	3,170	78.5	54.8	91.0	6.4	1.4	1.2	50.7	3.1	2.7	5.2
Redng	578	76.3	64.9	69.2	12.2	5.1	13.5	46.0	67.0	51.1	93.1
Salford	909	75.6	57.2	83.9	9.6	4.1	2.4	54.2	8.1	6.5	17.0
Sheff	348	70.3	55.8	87.2	6.9	3.3	2.7	3.7	99.4	99.5	99.4
Stevng	1,042	75.3	60.5	77.1	11.0	7.5	4.5	35.6	26.8	22.0	37.5
Swanse	2,122	79.7	54.2	98.5	0.6	0.5	0.4	40.7	34.0	31.6	48.6
Truro	900	80.0	56.2	98.9	0.8	0.1	0.2	0.6	22.8	16.8	55.0
Wolve	114	79.6	57.0	80.6	9.2	2.0	8.2	14.0	47.4	46.0	49.0
Wrexm	178	77.3	62.9	98.5	1.5	0.0	0.0	62.4	24.2	18.3	40.4
York	737	77.2	58.9	98.0	0.4	0.7	0.9	25.0	13.3	7.0	30.8
Total	**34,933**	**77.1**	**56.7**	**82.4**	**10.2**	**4.3**	**3.1**	**25.8**	**31.2**	**27.7**	**43.7**

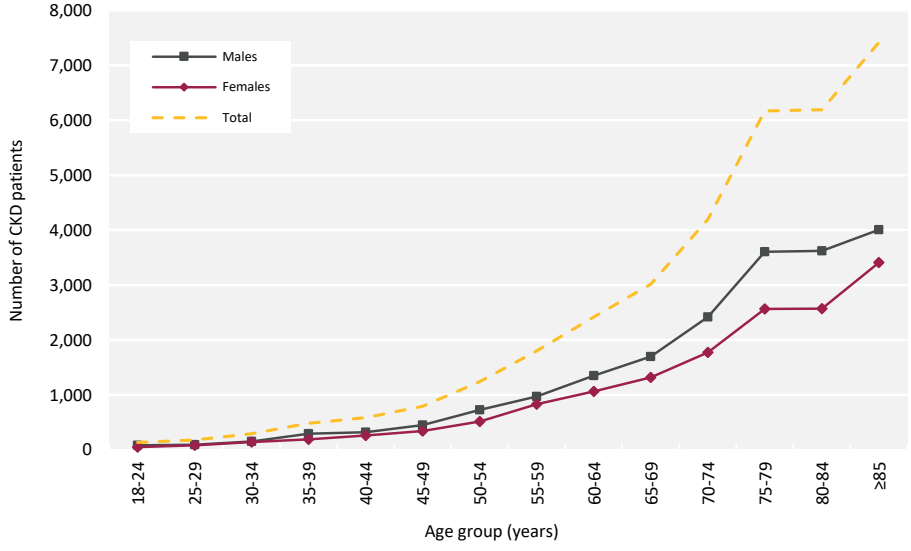


Figure 1.2 Number of adult patients prevalent to CKD stages G4 and G5 on 31/12/2024 by age group and sex

Blood pressure in adult CKD patients

Only five centres submitted blood pressure data for over 70% of people. A further five centres had completeness between 50% and 70%, seven between 20% and 50%, seven above 0% but less than 20% and six submitted no data. All of the available data has been used in the table below.

Table 1.4 Blood pressures in adult patients prevalent to CKD stages G4 and G5 on 31/12/2024 by stage

	All stages				Stage G4				Stage G5			
	N (%) with data	Median SBP	Median DBP	N (%) <140/90[1]	N (%) with data	Median SBP	Median DBP	N (%) <140/90[1]	N (%) with data	Median SBP	Median DBP	N (%) <140/90[1]
All	10,287 (29.4)	141	75	4,643 (45.1)	7,021 (25.7)	140	75	3,363 (47.9)	3,266 (42.9)	145	76	1,280 (39.2)
Age group (yrs)												
18-29	142 (45.1)	132	82	89 (62.7)	101 (45.1)	127	81	71 (70.3)	41 (45.1)	142	85	18 (43.9)
30-39	304 (39.0)	137	85	152 (50.0)	198 (34.6)	134	84	114 (57.6)	106 (51.5)	142	86	38 (35.8)
40-49	555 (40.2)	138	84	261 (47.0)	327 (33.6)	135	85	166 (50.8)	228 (56.0)	143	84	95 (41.7)
50-59	1,090 (35.8)	138	81	541 (49.6)	701 (31.4)	136	81	375 (53.5)	389 (47.7)	142	81	166 (42.7)
60-64	867 (35.9)	142	78	393 (45.3)	561 (31.4)	139	78	275 (49.0)	306 (48.4)	145	78	118 (38.6)
65-69	976 (32.3)	141	77	440 (45.1)	675 (28.6)	140	77	312 (46.2)	301 (46.0)	142	75	128 (42.5)
70-74	1,294 (30.8)	142	74	563 (43.5)	894 (26.9)	140	74	421 (47.1)	400 (45.7)	146	75	142 (35.5)
75-79	1,784 (28.9)	143	73	779 (43.7)	1,271 (25.7)	140	73	599 (47.1)	513 (41.9)	147	74	180 (35.1)
80-84	1,649 (26.6)	142	71	737 (44.7)	1,192 (23.9)	142	71	546 (45.8)	457 (38.1)	144	71	191 (41.8)
≥85	1,626 (21.9)	144	70	688 (42.3)	1,101 (18.7)	143	70	484 (44.0)	525 (34.7)	146	70	204 (38.9)
Sex												
Male	5,945 (30.0)	141	75	2,706 (45.5)	4,000 (26.1)	139	75	1,955 (48.9)	1,945 (43.7)	145	76	751 (38.6)
Female	4,342 (28.7)	142	75	1,937 (44.6)	3,021 (25.3)	140	75	1,408 (46.6)	1,321 (41.7)	144	76	529 (40.0)

[1]N, % <140/90 mmHg of patients with complete blood pressure data
DBP - diastolic blood pressure; SBP - systolic blood pressure (both measured in mmHg)

Biochemistry parameters in adult CKD patients

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

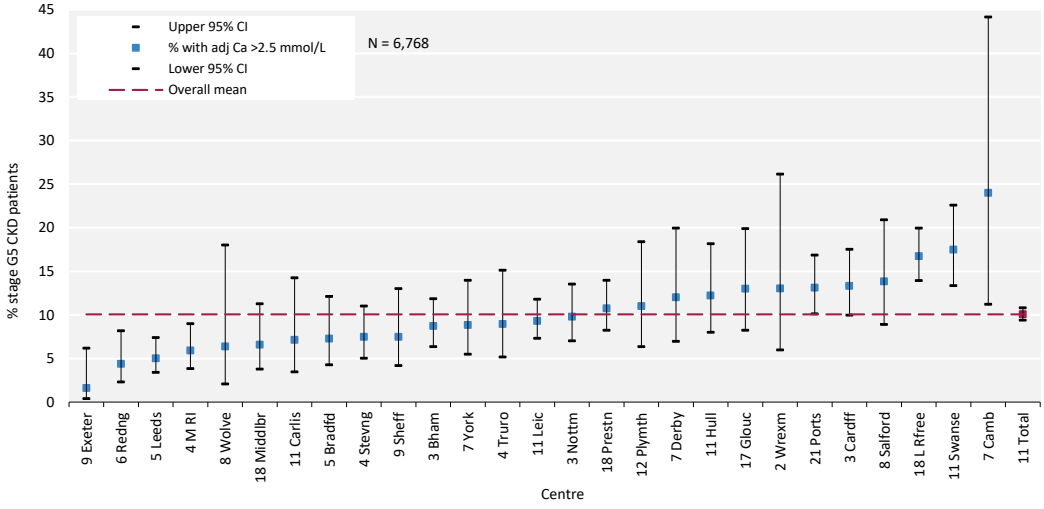


Figure 1.3 Percentage of adult patients prevalent to CKD stage G5 on 31/12/2024 with adjusted calcium (Ca) >2.5 mmol/L by centre
CI - confidence interval

Anaemia in adult CKD patients

The percentage of patients with haemoglobin (Hb) 100–120 g/L is presented overall and by CKD stage.

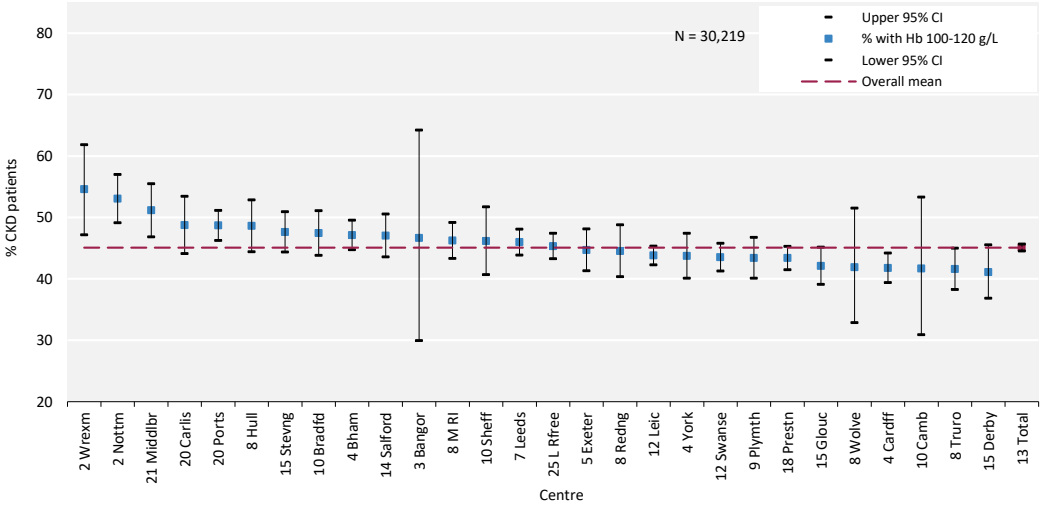


Figure 1.4 Percentage of adult patients prevalent to CKD stages G4 and 5 on 31/12/2024 with haemoglobin (Hb) 100–120 g/L by centre

CI - confidence interval

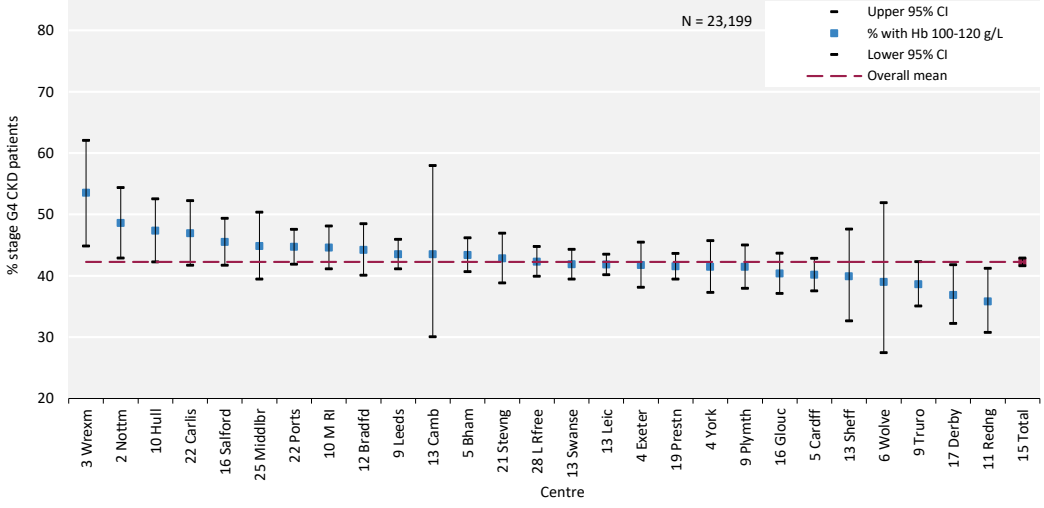


Figure 1.5 Percentage of adult patients prevalent to CKD stage G4 on 31/12/2024 with haemoglobin (Hb) 100–120 g/L by centre

CI - confidence interval

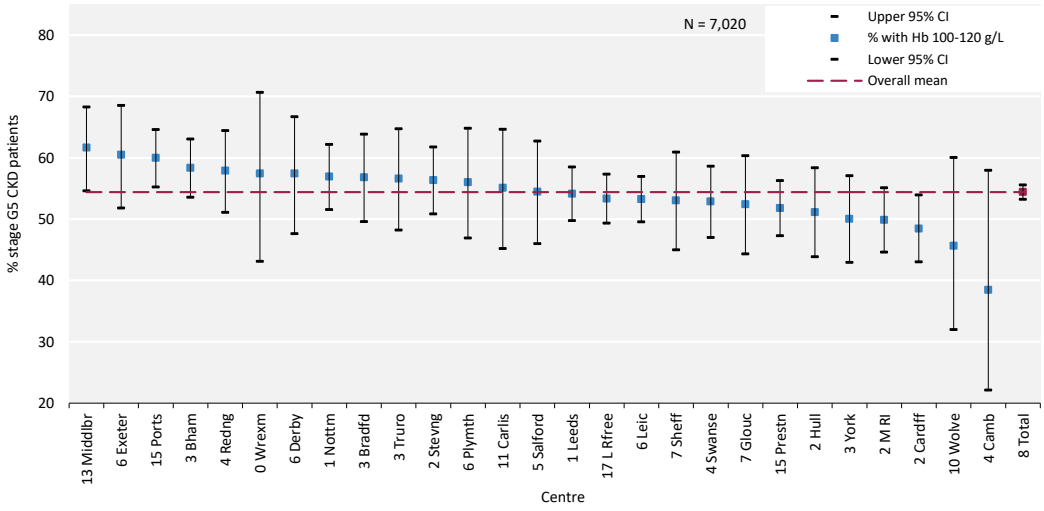


Figure 1.6 Percentage of adult patients prevalent to CKD stage G5 on 31/12/2024 with haemoglobin (Hb) 100-120 g/L by centre

CI - confidence interval

UK Kidney Association
UK Renal Registry

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.

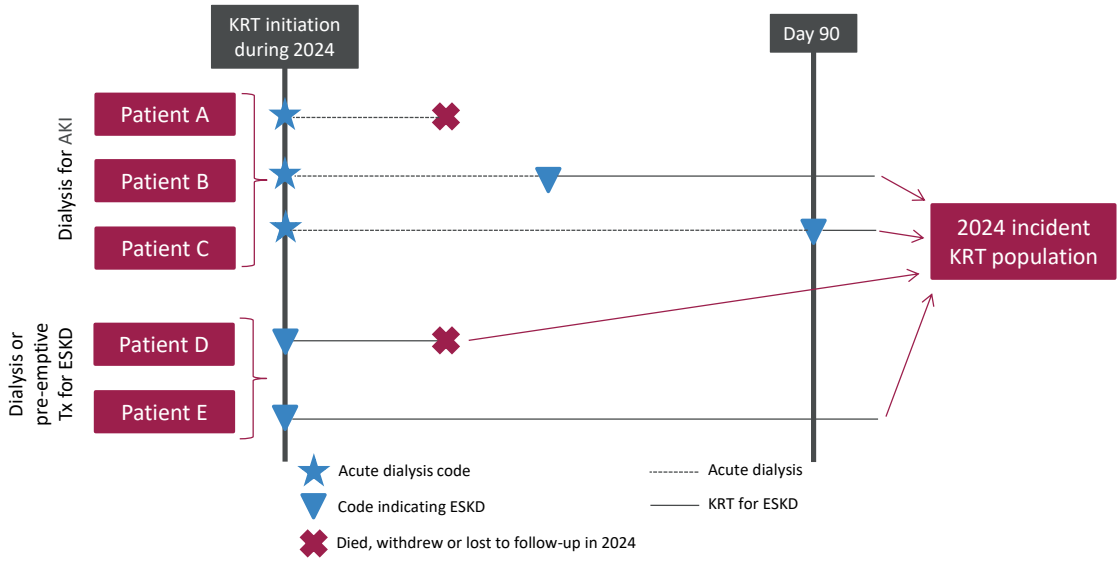


Figure 2.1 Example histories for patients starting KRT, illustrating the use of timeline codes to define dialysis as being 'acute' or for ESKD

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 exluded 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/1.73m^2 (HD 6.7 mL/min/1.73m^2, PD 7.3 mL/min/1.73m^2 and pre-emptive Tx 10.5 mL/min/1.73m^2). In 2023, the mean eGFR at the start of KRT was 6.9 mL/min/1.73m^2.
- 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
Krkcldy	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

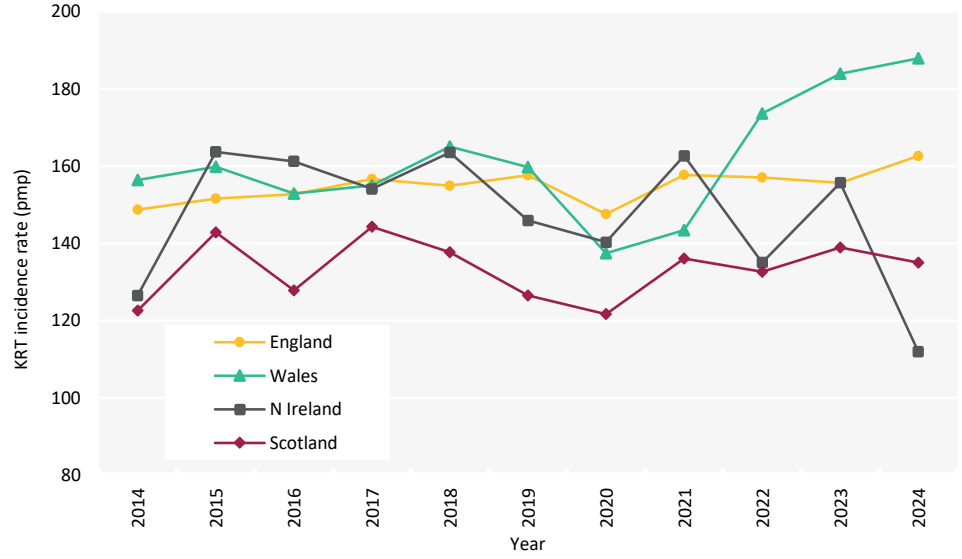


Figure 2.2 Adult KRT incidence rates by country between 2014 and 2024
pmp – per million population

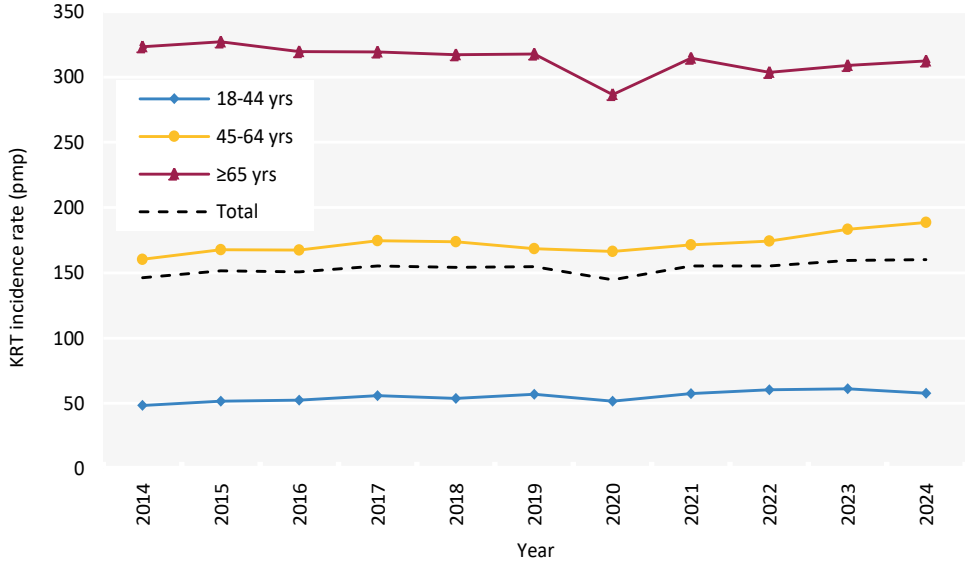


Figure 2.3 Adult KRT incidence rates by age group between 2014 and 2024
pmp – per million population

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
Carlis	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					
Krkcldy	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
Wrexm	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 retuned 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

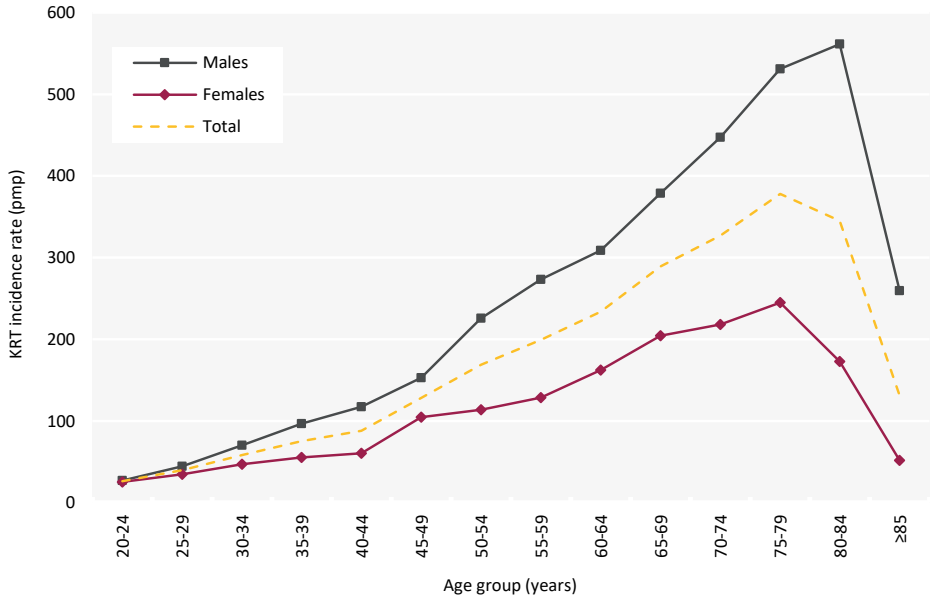


Figure 2.4 Incidence rates for adult patients starting KRT in 2024 by age group and sex
pmp – per million population

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

	Year of KRT start									
PRD	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.

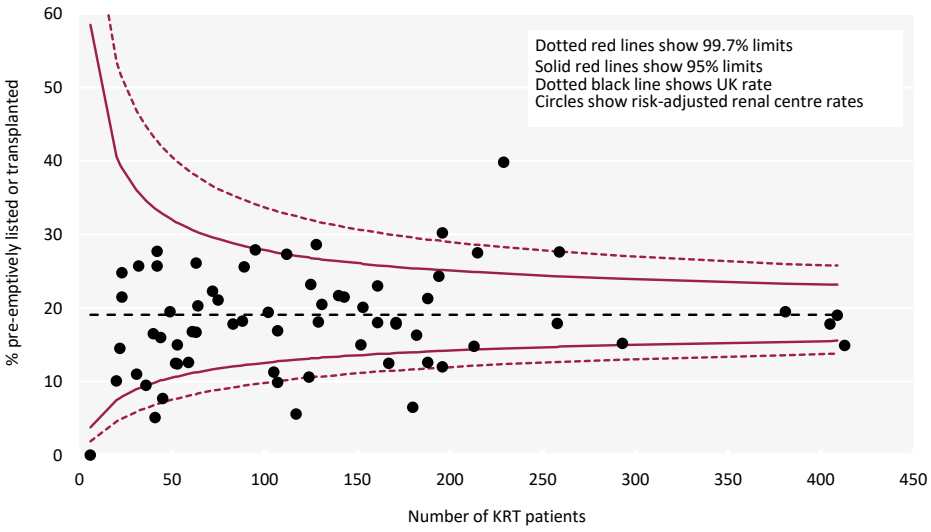


Figure 2.5 Transplant-status (listed or transplanted) at the start of KRT for adult patients incident to KRT in 2024 by centre
Analysis is adjusted for age, sex and PRD (diabetes versus non-diabetes)
Transplant waiting list data were provided by NHSBT

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

		Patients who started KRT					Patients still on KRT at 90 days		
Country	N	% 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**

[1]HD 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.

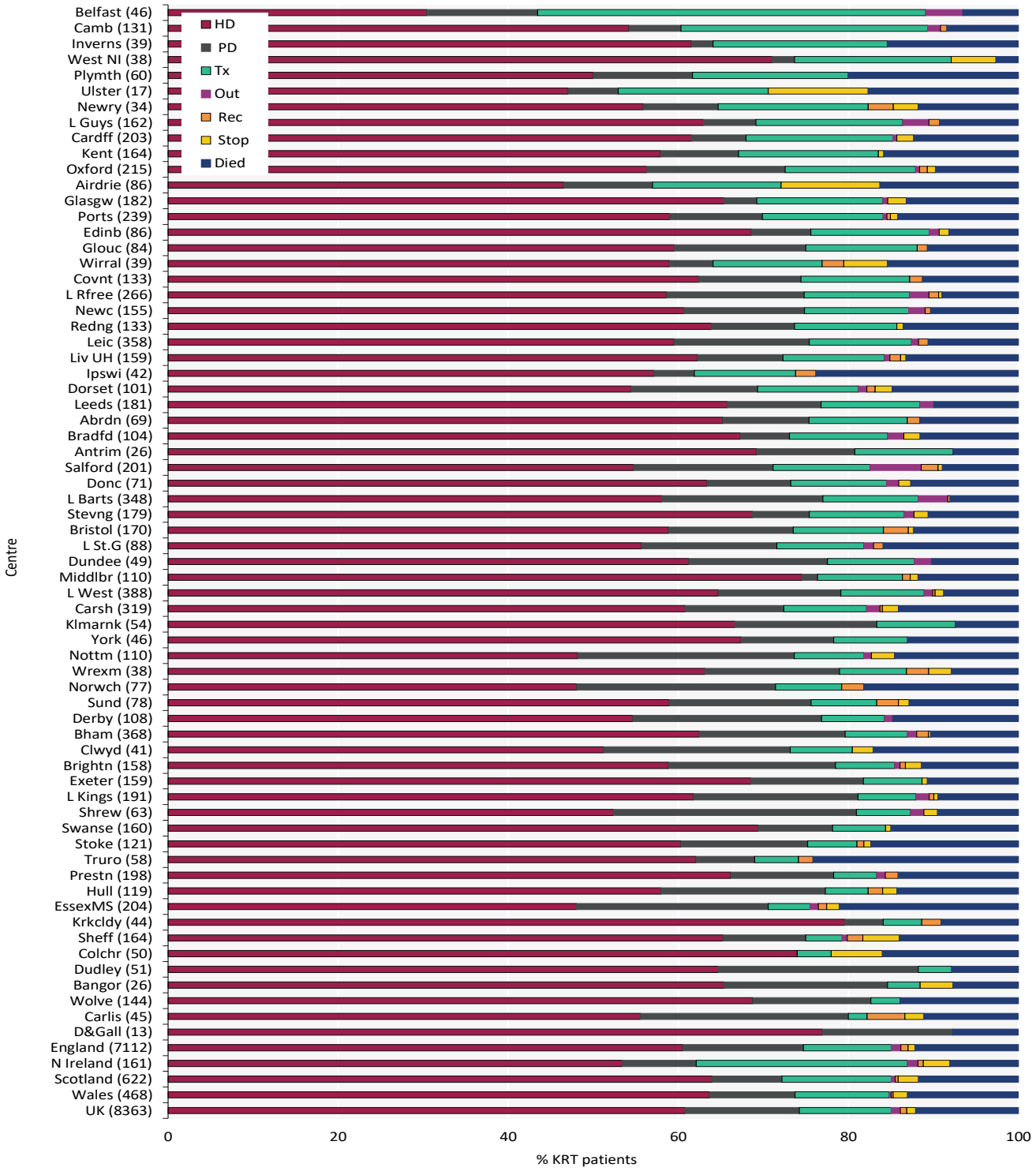


Figure 2.6 KRT modality at 1 year for adult patients incident to KRT in 2023 by centre

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

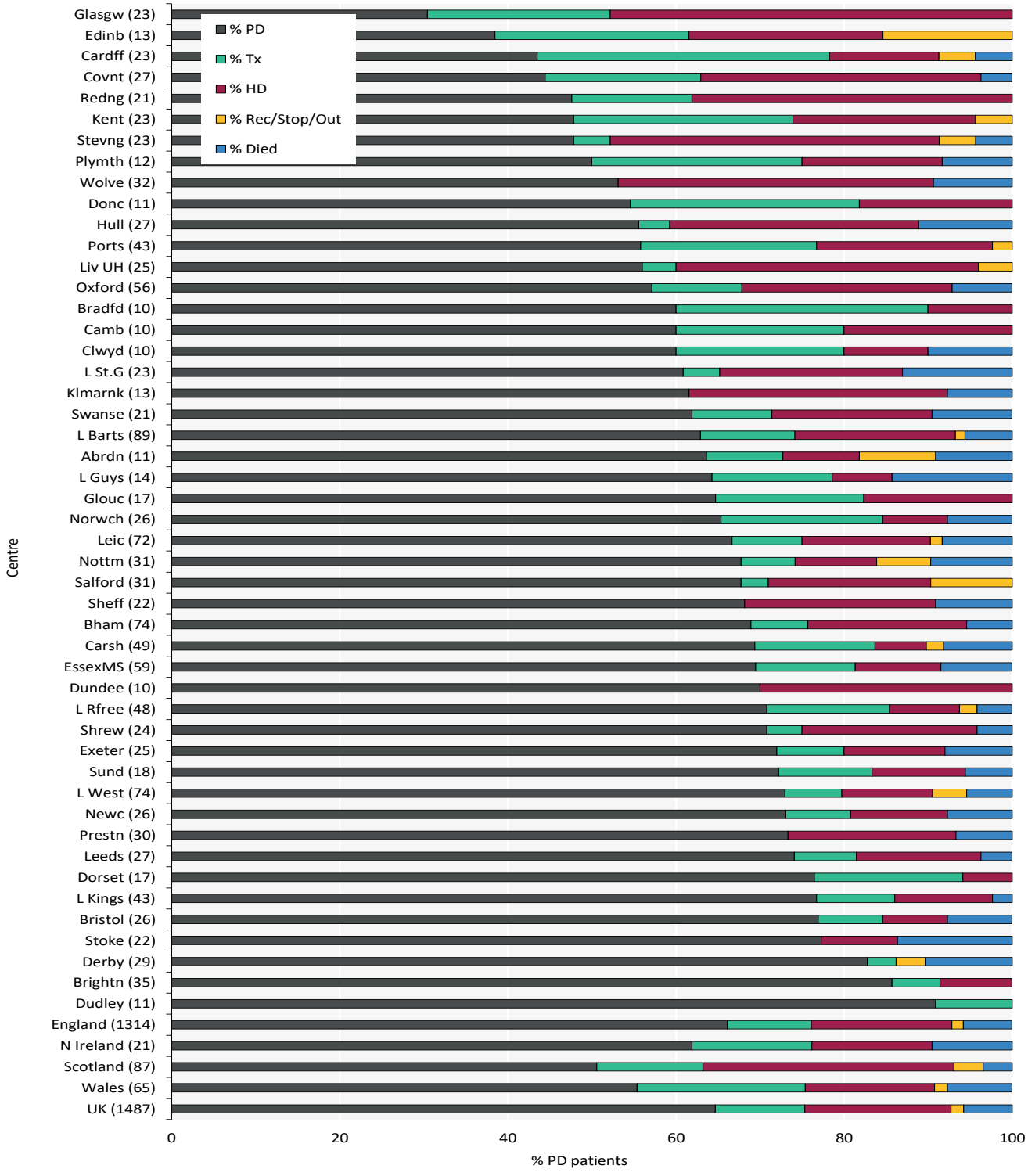


Figure 2.7 KRT modality at 1 year for adult patients incident to PD in 2023 by centre

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

	N on KRT		N with referral data	% data completeness		% presenting <90 days before KRT start		% presenting <1 yr before KRT start
Centre	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
Carlis	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 M RI	159	182	337	98.1	99.5	24.9	28.6	40.4
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 2023	N on KRT 2024	N with referral data	% data completeness 2023	% data completeness 2024	% presenting <90 days before KRT start: All PRDs	% presenting <90 days before KRT start: Non-diabetes PRDs	% presenting <1 yr before KRT start: 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

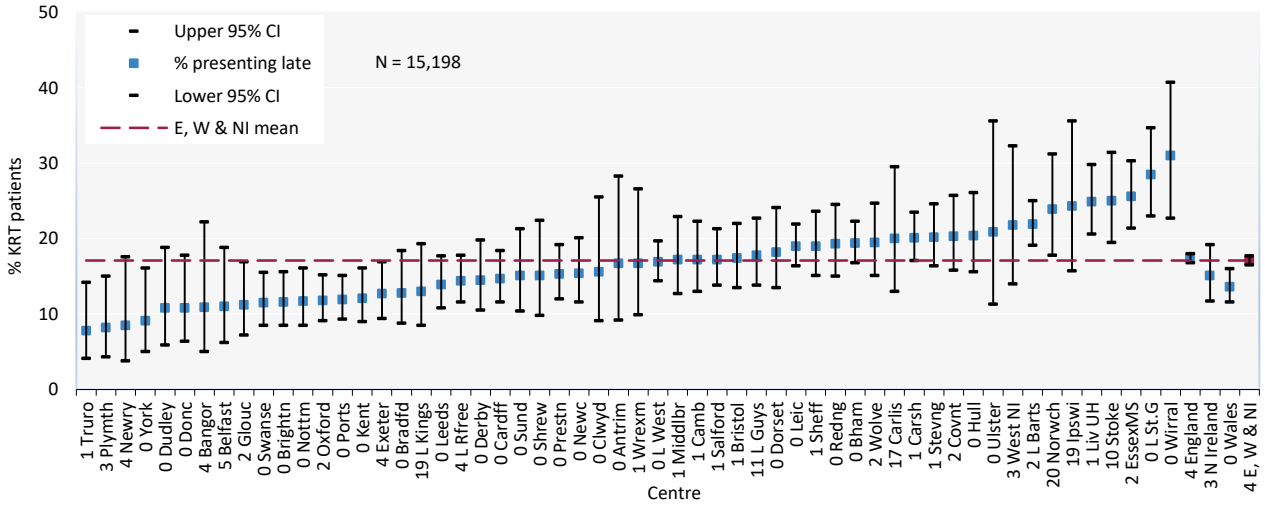


Figure 2.8 Percentage of adult patients incident to KRT presenting late (<90 days) to a nephrologist 2023-2024, 2 year cohort

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

	Referral time	
Characteristic	<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/1.73m2)[1]	6.2	7.2

[1]Data 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

		Referral time			
		<90 days		≥90 days	
PRD	N with data	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)

	KRT start year (%)						
Referral time	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.

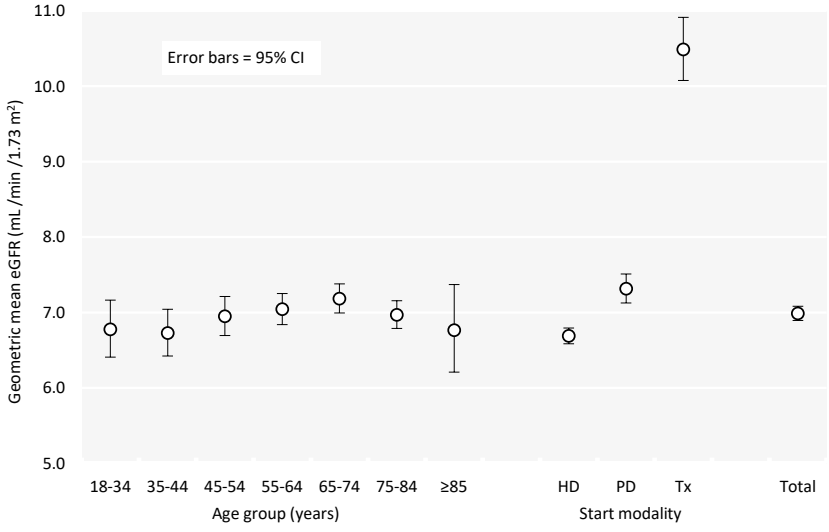


Figure 2.9 Geometric mean estimated glomerular filtration rates (eGFR) for adult patients incident to KRT in 2024 by age group and start modality

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

	All KRT patients		Median Hb (g/L) by modality			Median Hb (g/L) by presentation time		
Centre	Median Hb (g/L)	% Hb ≥100 g/L	Tx	PD	HD	≥90 days	<90 days	% data completeness
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 M RI	96	42.3	120	108	93	98	91	96.2
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
Krkcldy	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

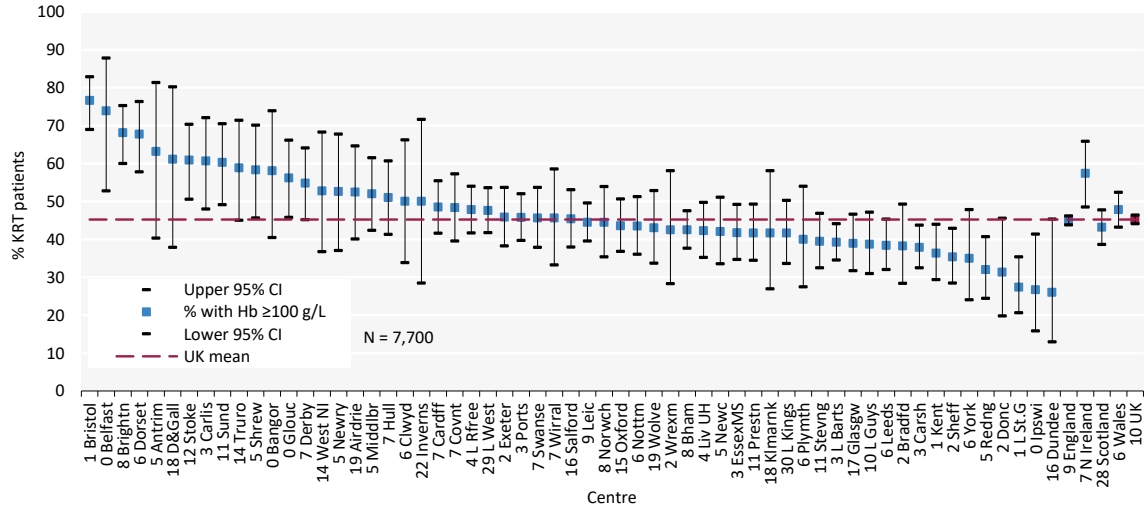


Figure 2.10 Percentage of adult patients incident to KRT in 2024 with haemoglobin (Hb) ≥100 g/L at start of KRT treatment by centre
CI – confidence interval

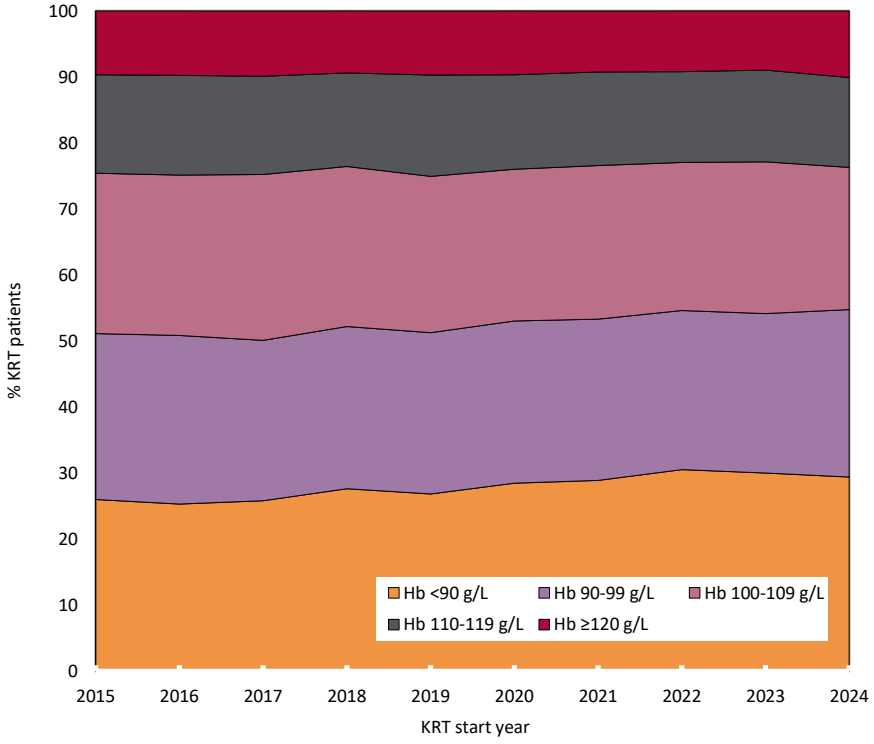


Figure 2.11 Distribution of haemoglobin (Hb) in adult patients incident to KRT by year of start between 2015 and 2024

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
Wrexm	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**

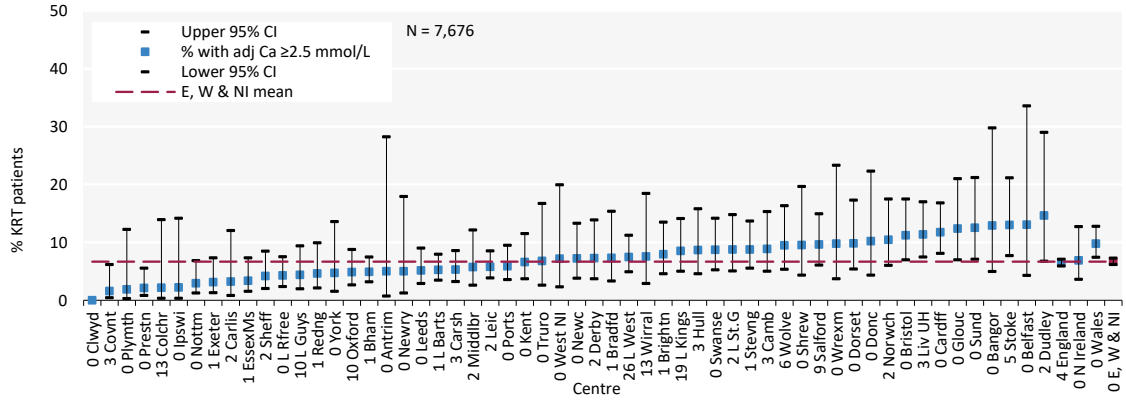


Figure 2.12 Percentage of adult patients incident to KRT in 2024 with adjusted calcium (Ca) above the normal range (>2.5 mmol/L) by centre
CI – confidence interval

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 that 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 start[1]	Median	7	7	7	6	8	7
	IQR	5,8	6,8	5,8	5,9	6,9	5,9
Diabetes[2] (%)	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

[1]eGFR units are mL/min/1.73m^2

[2]Diabetes 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.

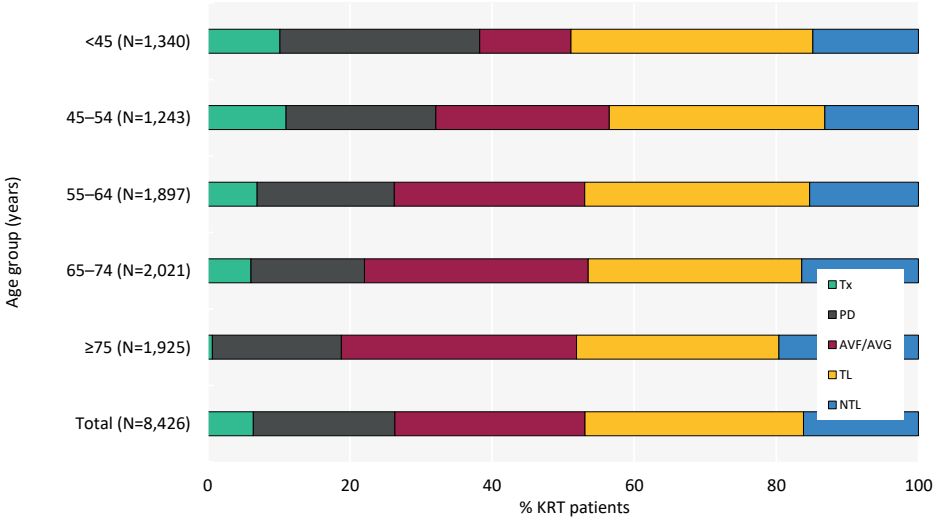


Figure 2.13 Dialysis access used for adult patients incident to KRT in 2024 by age group
AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

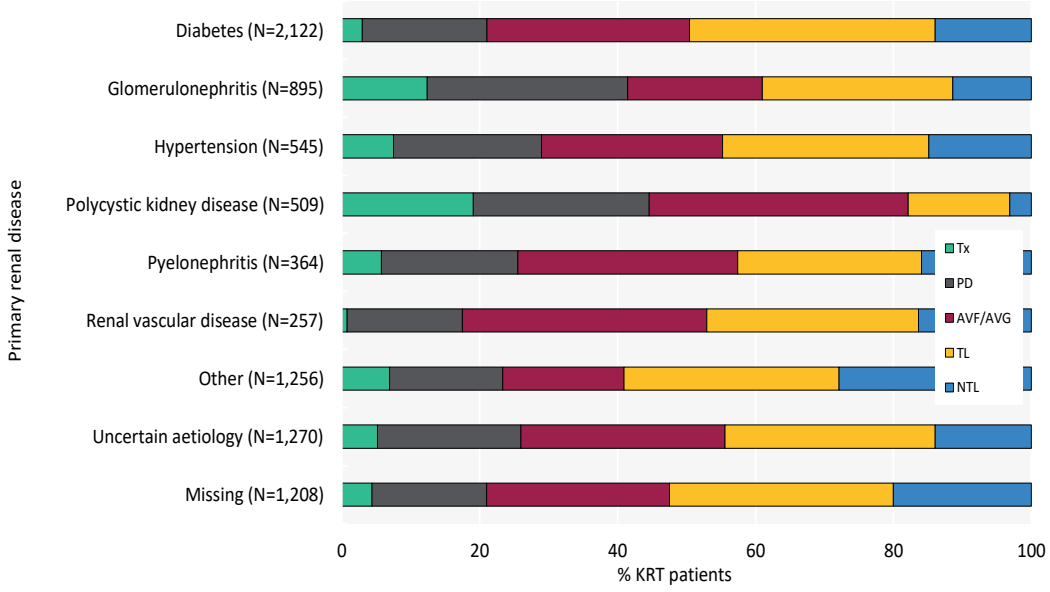


Figure 2.14 Dialysis access used for adult patients incident to KRT in 2024 by primary renal disease
AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

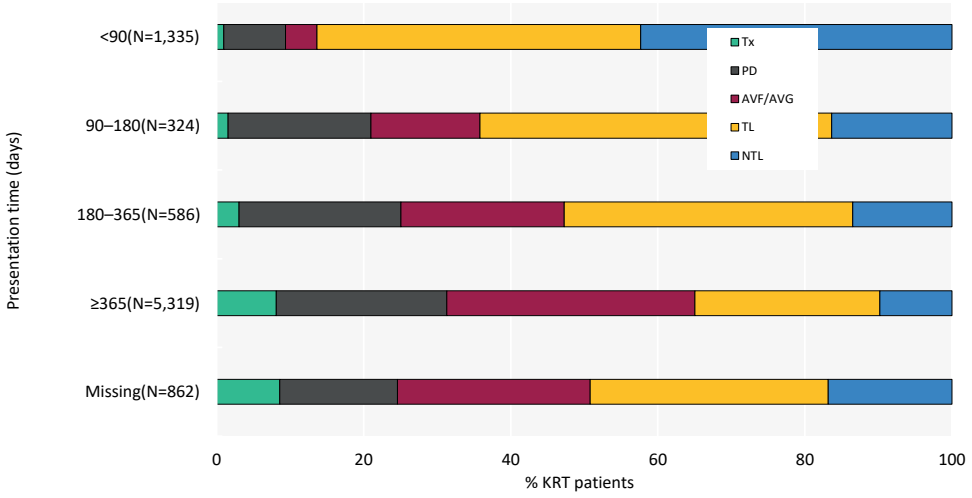


Figure 2.15 Dialysis access used for adult patients incident to KRT in 2024 by presentation time
AVF – arteriovenous fistula; AVG – arteriovenous graft; NTL – non-tunnelled line; TL – tunnelled line

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

			Time after start (%)	
Access at start	N	Later modality	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

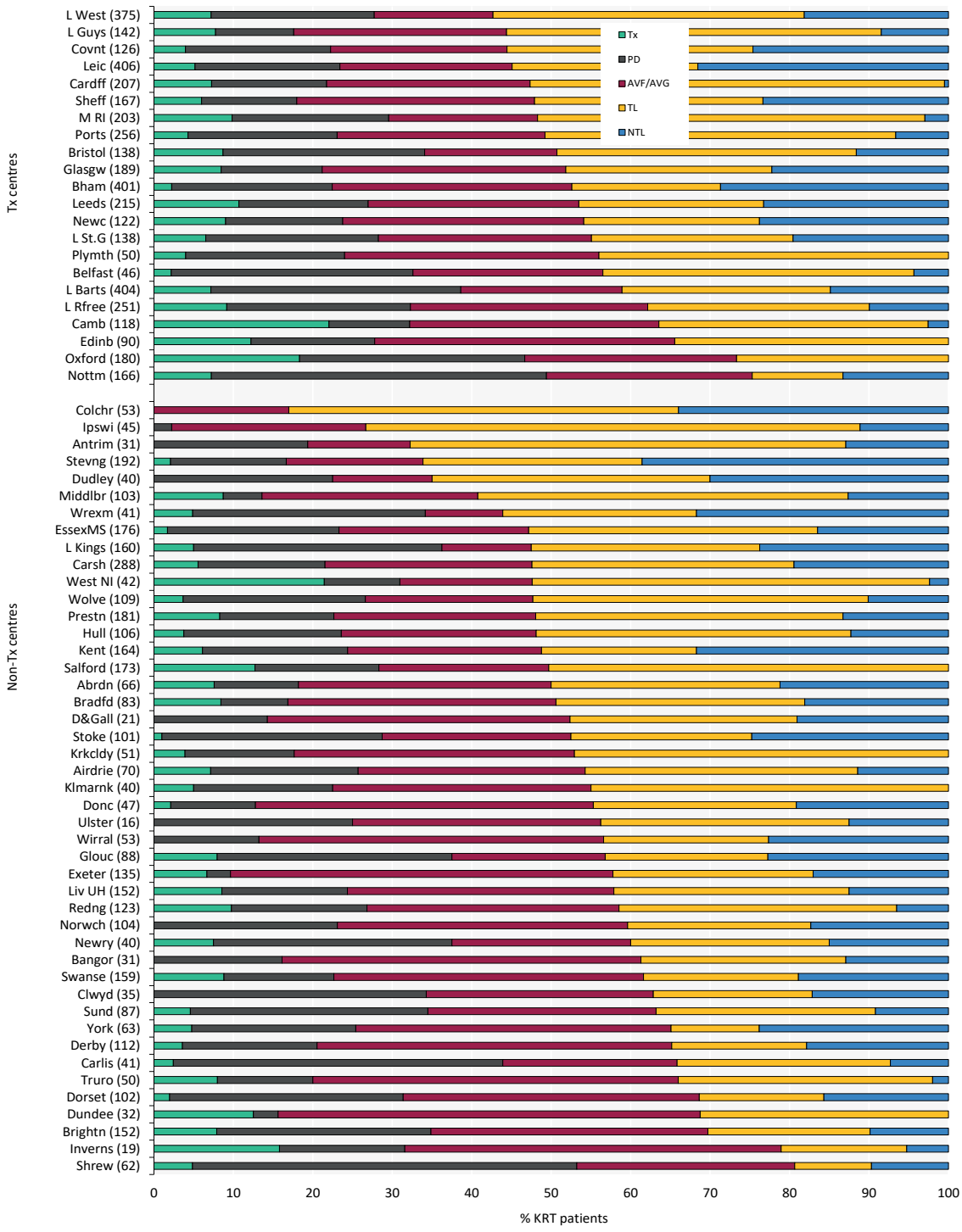


Figure 2.16 First dialysis access used for adult patients incident to KRT in 2024 by centre

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

	Presenting ≥365 days (%)					Presenting <365 days (%)					Start modality (%)		
Centre	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
Carlis	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
Swanse	112	15.2	50.9	20.5	13.4	33	15.2	15.2	24.2	45.5	77.4	13.8	8.8
Wrexm	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 - arteriovenus graft; NTL - non-tunnelled line; TL - tunnelled line

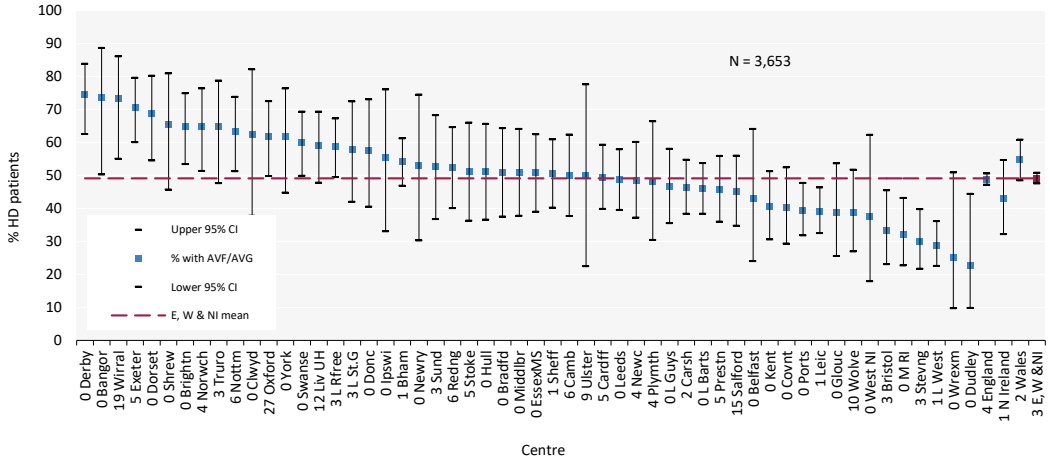


Figure 2.17 Percentage of adult patients incident to HD in 2024 who started dialysis using either an arteriovenous fistula (AVF) or an arteriovenous graft (AVG) by centre, excluding those presenting less than 365 days before KRT start
CI - confidence interval

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

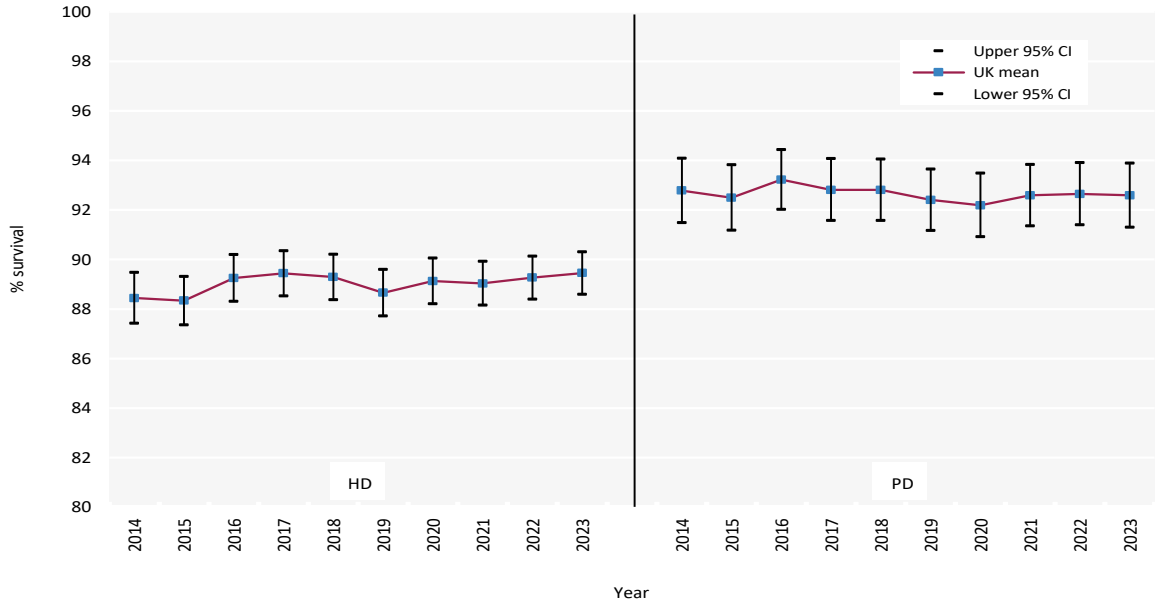


Figure 2.18 1 year after 90 days survival (adjusted to age 60 years) of adult patients incident to KRT by start modality between 2014 and 2023
CI – confidence interval

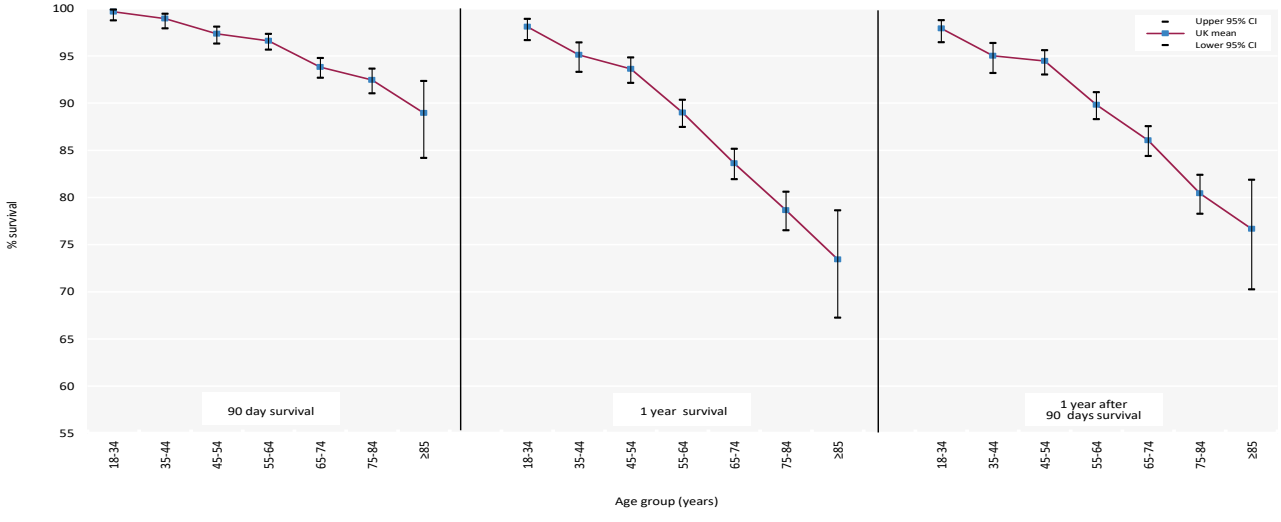


Figure 2.19 90 days, 1 year and 1 year after 90 days survival of adult patients incident to KRT by age group (2023 cohort)
CI – confidence interval

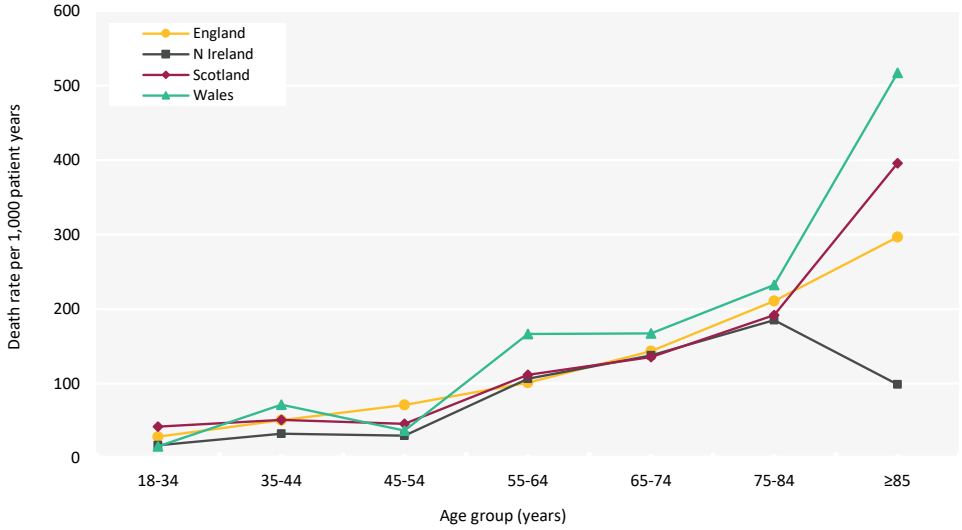


Figure 2.20 1 year after 90 days death rate per 1,000 incident KRT adult patient years by age group and country (2020-2023 4 year cohort)

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).

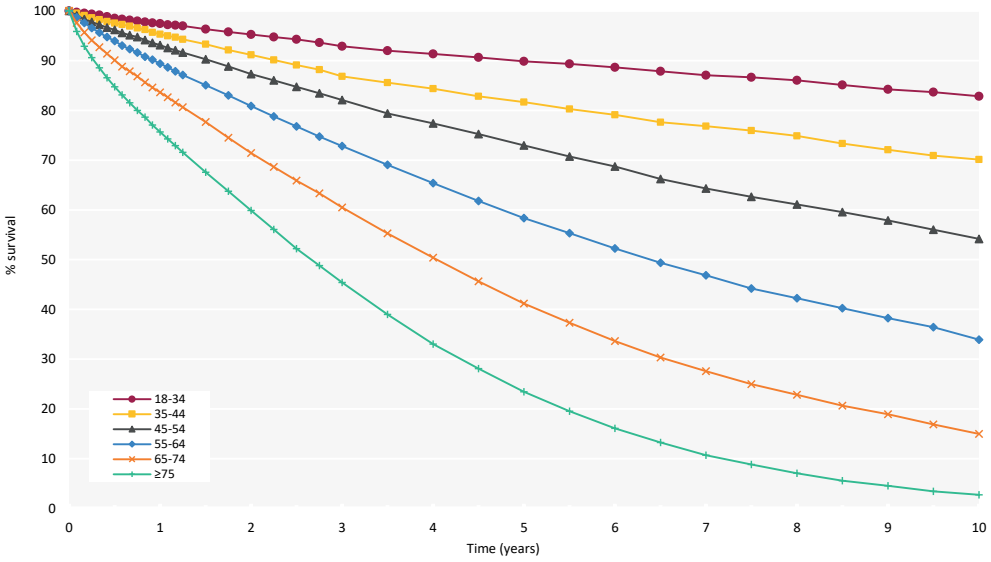


Figure 2.21 Survival (unadjusted) of adult patients incident to KRT from day 0 by age group (2014-2023 10 year cohort)

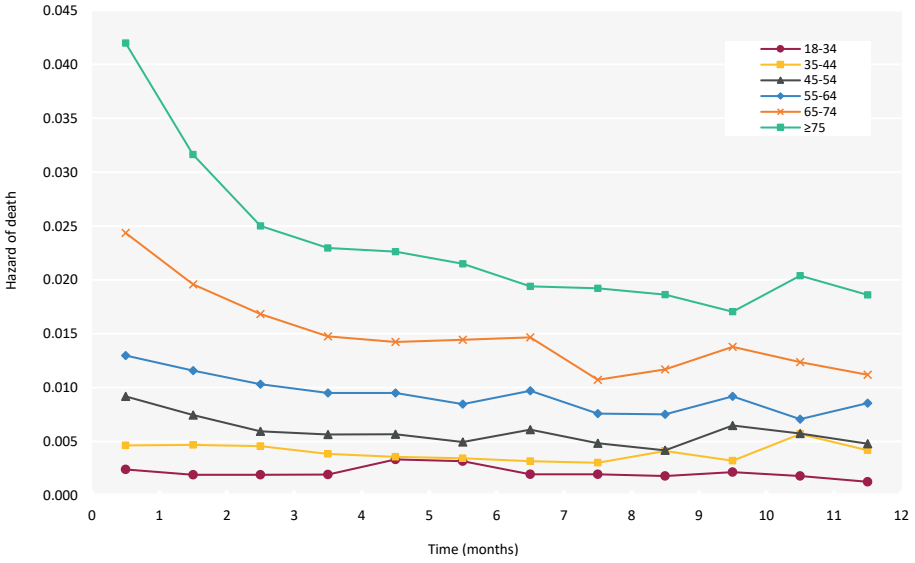


Figure 2.22 Monthly hazard of death (unadjusted) of adult patients incident to KRT from day 0 to 1 year by age group (2014-2023 10 year cohort)

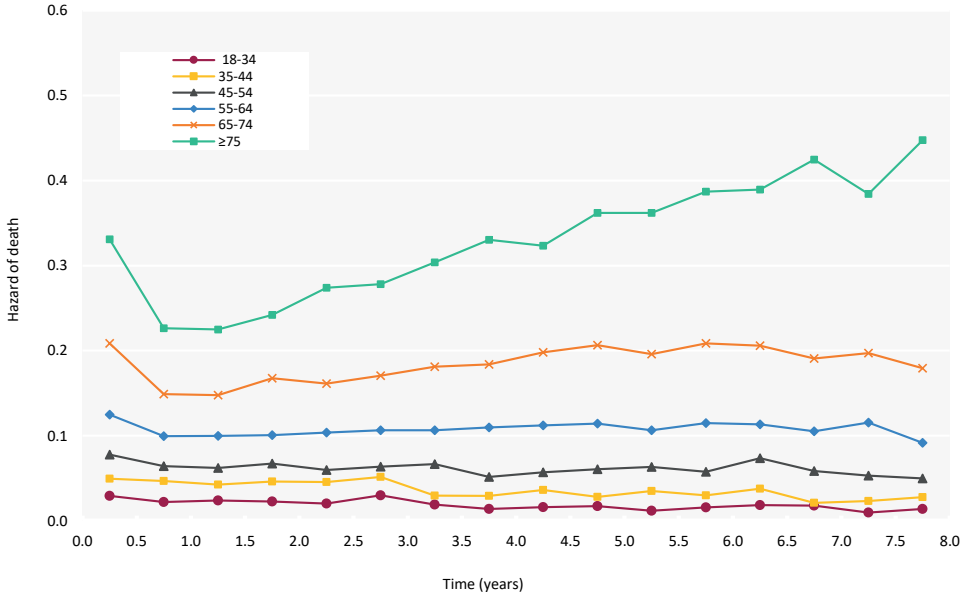


Figure 2.23 6 monthly hazard of death (unadjusted) of adult patients incident to KRT from day 0 to 8 years by age group (2014-2023 10 year cohort)

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

	Unadjusted survival (%)										95% CI for longest	
Cohort	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr	survival	N
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)

	Unadjusted survival (%)										95% CI for longest	
Cohort	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr	7 yr	8 yr	9 yr	10 yr	survival	N
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)

	Age adjusted survival				Case-mix adjusted survival[1]			
			Limits for funnel plot				Limits for funnel plot	
Centre	N on KRT	Adj 1 yr after 90 days survival (%)	Lower 95% limit	Upper 95% limit	N on KRT	Adj 1 yr after 90 days survival (%)	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
Carlis	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]			
			Limits for funnel plot				Limits for funnel plot	
	N on KRT	Adj 1 yr after 90 days survival (%)	Lower 95% limit	Upper 95% limit	N on KRT	Adj 1 yr after 90 days survival (%)	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

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

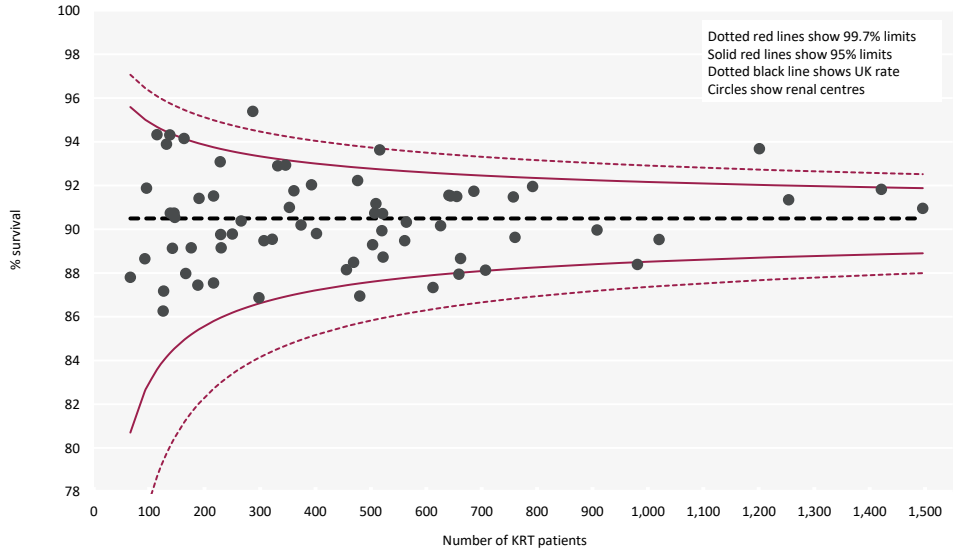


Figure 2.24 1 year after 90 days survival (adjusted to age 60 years) of adult patients incident to KRT by centre (2020-2023 4 year cohort)

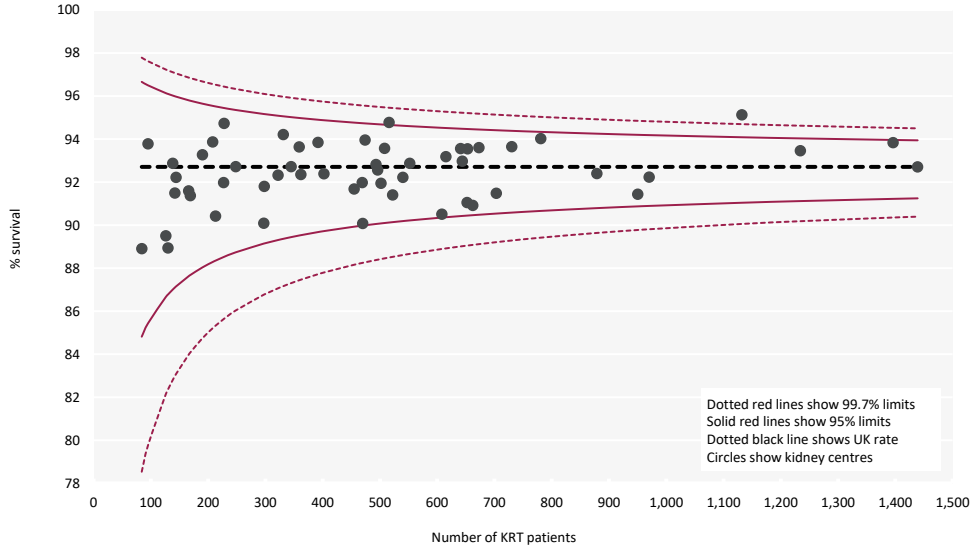


Figure 2.25 1 year after 90 days survival (adjusted to age 60 years, male and median comorbidity score) of adult patients incident to KRT by centre (2020-2023 4 year cohort)

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)

	First 90 days				1 year after 90 days			
	All ages				All ages			
Cause of death	N	%	<65 yrs (%)	≥65 yrs (%)	N	%	<65 yrs (%)	≥65 yrs (%)
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

UK Kidney Association
UK Renal Registry

Chapter 3

Adults on kidney replacement therapy (KRT) in the UK at the end of 2024

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Introduction

This chapter describes the population of adult patients with end-stage kidney disease (ESKD) who were on kidney replacement therapy (KRT) in the UK at the end of 2024 (figure 3.1). Patients may have started KRT prior to 2024 or during 2024. Three KRT modalities are available to patients with ESKD – haemodialysis (HD), peritoneal dialysis (PD) and kidney transplantation (Tx). HD may be undertaken in-centre (ICHD) or at home (HHD).

The size of the prevalent population on each KRT modality reflects uptake to the modality by new KRT patients (chapter 2); the number of patients switching from one modality to another; and the length of time patients remain on a modality before they switch to another, withdraw from KRT or die.

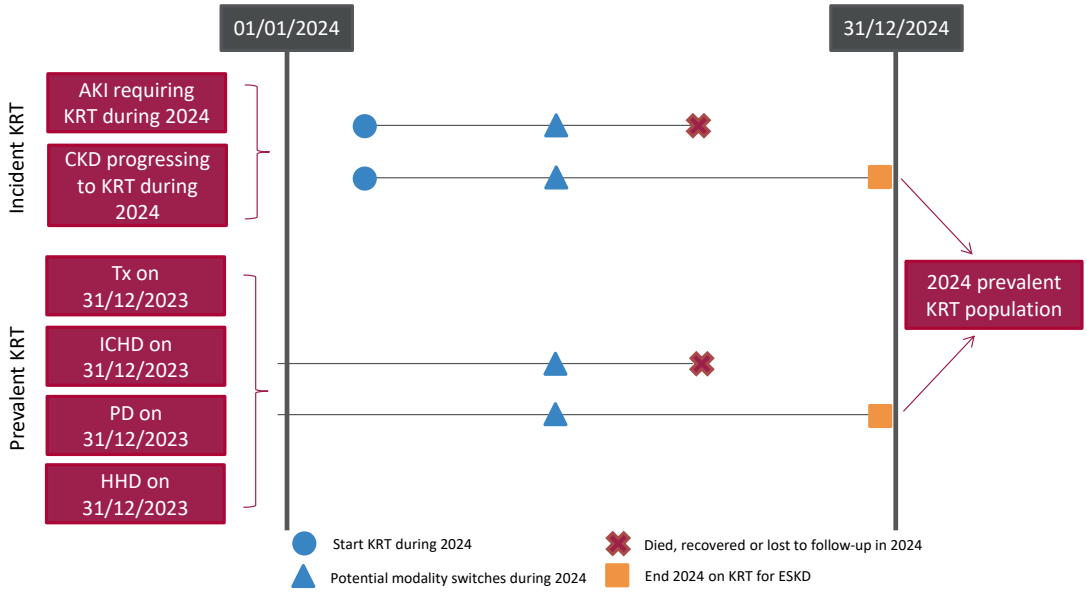


Figure 3.1 Pathways adult patients could follow to be included in the UK 2024 prevalent KRT population

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 chronic KRT at the end of 2024 or if they had been on KRT for ≥90 days and were on KRT at the end of 2024
CKD – chronic kidney disease; Tx – transplant

Survival and cause of death analyses were undertaken on historic prevalent cohorts to allow sufficient follow-up time.

Rationale for analyses

The analyses begin with a description of the 2024 prevalent adult KRT population, including the number on KRT per million population (pmp). These analyses are performed annually to help clinicians and policy makers plan future KRT requirements in the UK. Variation in case-mix is also reported to aid understanding of how to improve equity of KRT provision in the UK.

The UK Kidney Association guidelines (ukkidney.org/health-professionals/guidelines/guidelines-commentaries) provide audit measures relevant to the care of patients on KRT, but these are treatment-specific – for further details see the guideline tables in each chapter.

For definitions and methods relating to this chapter see appendix A.

Key findings

- 74,157 adult patients were receiving KRT for ESKD on 31/12/2024. This represents a 2.0% increase from 2023, in line with the 2-2.5% increase that was seen in the years before the pandemic.
- KRT prevalence was 1,348 per million population compared to 1,341 per million population in 2023, an increase of 0.51%.
- The median age of KRT patients was 60.3 years (ICHD 65.5 years, HHD 56.3 years, PD 63.5 years and Tx 57.3 years). In 2020 the median age was 59.6 years (ICHD 66.5 years, HHD 55.3 years, PD 63.5 years and Tx 56.0 years).
- 61.6% of KRT patients were male.
- Tx continued as the most common treatment modality (56.0%) – ICHD comprised 36.8%, PD 5.2% and HHD 2.0% of the KRT population.
- The most common identifiable primary renal disease (PRD) was glomerulonephritis (19.8%), followed by diabetes (19.0%).
- There were 4 centres above the upper 95% limit and 1 centre below the lower 95% limit in the funnel plots showing 1 year age-, sex- and comorbidity-adjusted survival for patients prevalent to dialysis on 31/12/2023. It is expected that 3 centres would be outside the limits by chance.
- The leading cause of death was cardiac disease in both younger (<65 years) and older (≥65 years) patients at 24.2% and 18.0% respectively.

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 prevalent adult KRT population

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

Table 3.1 Number of adult patients prevalent to KRT by year and by 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	3,261	3,304	3,388	3,408	3,469	2.13	1,629
Bradfd	725	736	781	825	841	0.52	1,631
Brightn	1,078	1,091	1,097	1,148	1,180	1.10	1,074
Bristol	1,475	1,494	1,519	1,516	1,524	1.29	1,184
Camb	1,509	1,623	1,656	1,627	1,711	1.00	1,704
Carlis	296	306	302	305	332	0.26	1,262
Carsh	1,848	1,903	1,936	1,997	2,088	1.71	1,224
Colchr	150	146	155	165	181	0.30	599
Covnt	1,109	1,129	1,130	1,152	1,160	0.82	1,416
Derby	675	691	718	735	775	0.59	1,324
Donc	341	341	380	388	382	0.39	990
Dorset	797	787	791	817	832	0.76	1,092
Dudley	374	403	383	371	359	0.36	1,006
EssexMS	885	895	891	973	1,006	1.03	979
Exeter	1,092	1,082	1,095	1,135	1,183	1.00	1,180
Glouc	522	545	557	561	577	0.53	1,079
Hull	913	917	934	958	971	0.82	1,178
Ipswi	426	422	396	400	400	0.32	1,238
Kent	1,144	1,192	1,220	1,244	1,277	1.10	1,159
L Barts	2,669	2,723	2,838	2,965	3,138	1.64	1,912
L Guys	2,317	2,326	2,311	2,299	2,300	1.02	2,248
L Kings	1,253	1,333	1,395	1,432	1,472	0.96	1,535
L Rfree	2,336	2,395	2,423	2,486	2,533	1.29	1,956
L St.G	856	875	858	880	916	0.68	1,349
L West	3,530	3,547	3,612	3,694	3,688	2.06	1,787
Leeds	1,752	1,785	1,841	1,909	1,987	1.43	1,393
Leic	2,622	2,634	2,722	2,816	2,920	2.21	1,319
Liv UH	1,445	1,461	1,477	1,502	1,531	1.29	1,189
M RI	1,985	2,068	2,108	2,258	2,128	1.39	1,535
Middlbr	946	958	956	972	1,002	0.83	1,204
Newc	1,197	1,225	1,247	1,284	1,276	0.97	1,313
Norwch	810	800	803	807	797	0.72	1,112
Nottm	1,208	1,217	1,208	1,196	1,240	0.95	1,309
Oxford	2,019	2,004	2,075	2,123	2,170	1.56	1,387
Plymth	539	541	539	536	540	0.42	1,285
Ports	1,900	1,943	1,999	2,032	2,070	1.81	1,141
Prestn	1,368	1,374	1,400	1,429	1,512	1.29	1,171
Redng	870	879	923	990	1,043	0.75	1,382
Salford	1,267	1,217	1,271	1,376	1,408	1.21	1,167
Sheff	1,495	1,501	1,488	1,479	1,503	1.14	1,317
Shrew	427	442	446	463	453	0.43	1,053
Stevng	980	1,023	1,067	1,118	1,144	1.17	976

Table 3.1 Continued

Centre	N on KRT 2020	2021	2022	2023	2024	Estimated catchment population (millions)	2024 crude rate (pmp)
Stoke	816	845	907	921	913	0.76	1,202
Sund	556	546	565	590	627	0.55	1,133
Truro	444	463	471	467	455	0.37	1,227
Wirral	418	417	404	386	421	0.49	860
Wolve	654	695	725	791	831	0.56	1,477
York	572	581	609	610	613	0.50	1,226
N IRELAND							
Antrim	287	296	306	310	302	0.25	1,208
Belfast	889	908	925	937	922	0.54	1,702
Newry	264	281	269	276	297	0.24	1,240
Ulster	201	203	208	210	193	0.21	934
West NI	351	339	355	356	367	0.25	1,442
SCOTLAND							
Abrdn	565	580	590	611	628	0.50	1,245
Airdrie	514	503	514	550	547	0.47	1,159
D&Gall	157	154	147	147	159	0.12	1,301
Dundee	424	402	387	383	362	0.37	972
Edinb	886	921	964	989	1,042	0.86	1,216
Glasgw	1,843	1,853	1,890	1,908	1,928	1.40	1,379
Inverns	272	274	277	293	281	0.23	1,232
Klmarnk	368	366	374	386	386	0.29	1,309
Krkcldy	289	291	285	286	282	0.28	1,014
WALES							
Bangor	216	217	220	218	227	0.16	1,414
Cardff	1,681	1,701	1,759	1,829	1,841	1.18	1,566
Clwyd	204	202	204	223	222	0.18	1,202
Swanse	850	852	848	899	956	0.76	1,251
Wrexm	322	303	307	326	336	0.21	1,582
TOTALS							
England	57,871	58,825	60,017	61,536	62,879	46.50	1,352
N Ireland	1,992	2,027	2,063	2,089	2,081	1.49	1,394
Scotland	5,318	5,344	5,428	5,553	5,615	4.53	1,240
Wales	3,273	3,275	3,338	3,495	3,582	2.50	1,434
UK	**68,454**	**69,471**	**70,846**	**72,673**	**74,157**	**55.02**	**1,348**

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)
pmp – per million population

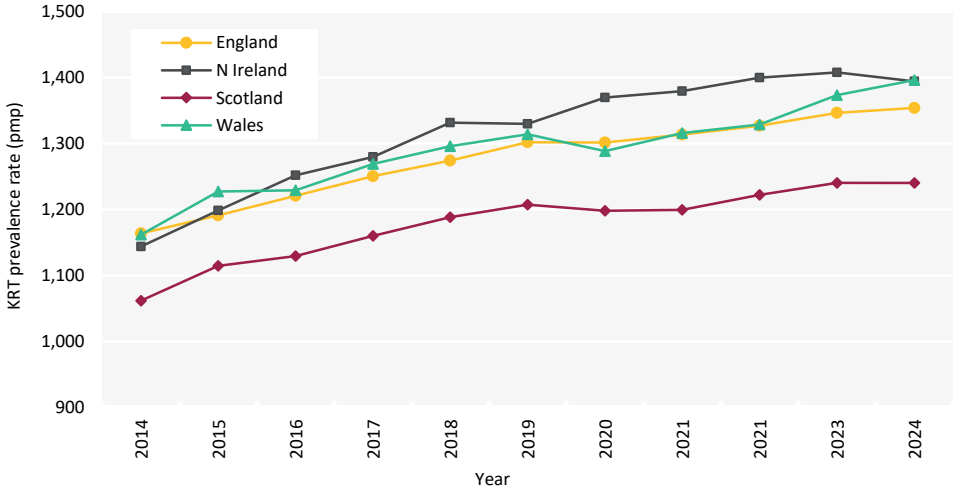


Figure 3.2 Adult KRT prevalence rates by country between 2014 and 2024
pmp – per million population

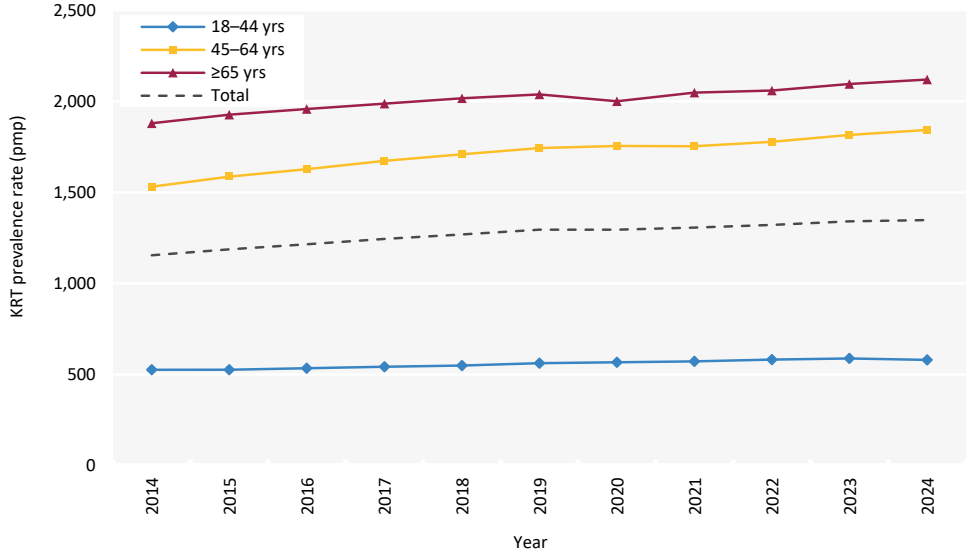


Figure 3.3 Adult KRT prevalence rates by age group between 2014 and 2024
pmp – per million population

Demographics and treatment modality of prevalent 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.

Variation between centres in the proportion of dialysis patients on home therapies (PD and HHD combined) is shown in figure 3.4.

Table 3.2 Demographics and treatment modality of adult patients prevalent to KRT on 31/12/2024 by centre

								Ethnicity				
Centre	N on KRT	% on ICHD	% on PD	% on HHD	% with Tx	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing
ENGLAND												
Bham	3,469	41.3	7.1	2.0	49.6	59.1	59.8	54.1	30.7	12.0	3.2	1.2
Bradfd	841	42.3	3.0	0.5	54.2	56.4	60.2	48.0	47.4	2.5	2.0	0.5
Brightn	1,180	40.9	5.6	2.5	51.0	61.5	61.5	88.0	5.7	2.8	3.4	3.9
Bristol	1,524	30.2	4.5	0.9	64.5	59.0	62.1	85.5	5.1	7.2	2.2	0.3
Camb	1,711	22.4	1.6	1.3	74.8	59.2	64.2	88.4	6.8	2.8	2.0	1.4
Carlis	332	38.6	8.7	1.2	51.5	61.4	60.8	96.9	2.2	0.6	0.3	2.7
Carsh	2,088	47.4	6.2	1.2	45.2	62.6	61.6	61.2	20.5	13.1	5.1	4.4
Colchr	181	100.0	0.0	0.0	0.0	70.5	68.0	88.9	1.5	3.7	5.9	25.4
Covnt	1,160	33.5	6.1	1.9	58.4	59.9	62.2	75.0	18.1	5.7	1.2	0.8
Derby	775	41.7	8.4	7.6	42.3	61.9	63.0	80.9	13.1	3.2	2.8	8.1
Donc	382	51.3	4.5	2.6	41.6	63.3	63.9	91.7	3.1	2.3	2.9	8.4
Dorset	832	38.8	5.4	1.7	54.1	64.3	62.3	94.1	2.8	1.0	2.2	0.1
Dudley	359	51.5	10.0	2.5	35.9	63.6	64.9	77.7	15.3	6.1	0.8	0.0
EssexMS	1,006	49.4	11.4	1.2	38.0	63.3	64.0	82.4	5.9	7.5	4.2	5.0
Exeter	1,183	42.9	6.5	1.7	48.9	63.1	64.4	97.5	1.3	0.5	0.7	1.6
Glouc	577	38.3	7.5	0.3	53.9	63.8	60.8	89.8	4.3	2.8	3.1	0.2
Hull	971	39.5	6.4	1.8	52.3	60.2	62.9	94.7	1.9	1.6	1.9	1.5
Ipswi	400	38.5	2.8	0.0	58.8	63.5	63.3	82.7	2.0	4.6	10.7	1.8
Kent	1,277	38.5	4.2	1.9	55.4	60.0	60.5	89.1	3.7	2.8	4.4	1.3
L Barts	3,138	41.2	8.3	1.8	48.8	58.6	58.2	30.6	37.4	26.2	5.7	1.1
L Guys	2,300	30.0	2.0	1.4	66.6	57.8	59.7	54.1	10.5	28.0	7.4	2.3
L Kings	1,472	46.2	7.2	2.7	43.9	60.2	63.0	39.5	14.5	40.8	5.2	2.4
L Rfree	2,533	32.6	5.3	0.6	61.5	59.6	60.7	40.0	21.4	22.0	16.6	3.8
L St.G	916	34.1	6.7	0.8	58.5	60.7	57.6	39.1	25.2	25.5	10.3	5.2
L West	3,688	37.0	5.0	1.2	56.8	60.9	62.5	34.5	39.0	19.2	7.3	0.0
Leeds	1,987	34.5	3.6	1.3	60.6	58.3	61.1	73.8	18.1	6.2	2.0	0.2
Leic	2,920	37.2	6.1	1.3	55.3	60.6	61.4	71.7	20.3	5.7	2.2	4.8
Liv UH	1,531	36.9	3.1	3.9	56.0	59.5	63.1	89.8	3.4	3.4	3.4	6.7
M RI	2,128	29.3	4.6	3.1	63.0	58.5	60.6	67.3	18.6	10.3	3.8	1.6
Middlbr	1,002	37.0	1.3	1.8	59.9	60.7	62.1	91.6	5.4	1.2	1.8	1.5
Newc	1,276	29.9	4.3	2.0	63.8	59.9	59.7	91.8	5.3	1.6	1.3	0.0
Norwch	797	38.9	7.7	1.8	51.7	63.5	63.5	95.2	2.4	1.3	1.1	10.4
Nottm	1,240	30.2	9.7	2.3	57.7	59.1	60.1	79.1	7.0	8.3	5.6	1.4
Oxford	2,170	23.3	4.8	1.2	70.7	59.1	61.8	76.7	12.8	6.2	4.3	7.2
Plymth	540	28.3	7.0	0.9	63.7	61.5	63.3	96.1	1.7	0.7	1.5	0.4
Ports	2,070	34.3	4.9	3.9	57.0	60.8	60.8	91.5	4.8	1.3	2.5	13.3
Prestn	1,512	36.5	4.0	3.0	56.4	59.9	61.6	81.9	15.7	1.4	1.1	6.6
Redng	1,043	37.9	4.6	1.9	55.6	61.2	64.6	60.5	23.1	6.9	9.4	11.3
Salford	1,408	36.4	6.5	2.4	54.7	58.7	61.1	74.2	18.3	4.8	2.7	2.8
Sheff	1,503	40.3	4.7	2.8	52.2	59.9	63.0	85.0	8.5	3.7	2.8	1.8
Shrew	453	34.9	14.1	8.2	42.8	62.7	65.6	89.3	4.3	2.9	3.4	2.6
Stevng	1,144	53.9	3.3	4.2	38.5	61.8	64.2	64.3	19.3	9.8	6.6	2.7
Stoke	913	36.8	9.5	3.5	50.2	60.5	63.4	88.9	6.0	2.5	2.6	4.6

Table 3.2 Continued

Centre	N on KRT	% on ICHD	% on PD	% on HHD	% with Tx	Median age (yrs)	% male	Ethnicity				
								% White	% Asian	% Black	% Other	% missing
Sund	627	40.5	7.0	1.6	50.9	61.5	61.7	94.9	3.2	0.6	1.3	0.2
Truro	455	39.1	3.5	2.4	54.9	61.9	61.3	98.5	0.4	0.2	0.9	0.0
Wirral	421	42.5	3.1	1.9	52.5	61.8	61.8	94.3	3.1	1.9	0.7	0.2
Wolve	831	54.6	7.3	4.7	33.3	60.7	60.6	67.4	16.3	4.4	12.0	0.8
York	613	35.6	5.1	2.8	56.6	62.5	63.5	95.9	1.3	0.3	2.5	1.5
N IRELAND												
Antrim	302	37.1	5.0	0.3	57.6	63.7	61.3	99.2	0.0	0.4	0.4	13.9
Belfast	922	15.8	2.6	0.9	80.7	59.3	60.2	96.5	2.6	0.3	0.6	6.5
Newry	297	29.0	4.4	0.7	66.0	62.5	60.9	97.7	0.8	1.2	0.4	12.8
Ulster	193	42.0	2.1	0.0	56.0	64.2	64.8	94.1	4.3	1.6	0.0	3.6
West NI	367	31.1	1.6	0.8	66.5	59.2	61.0	98.5	1.5	0.0	0.0	10.9
SCOTLAND												
Abrdn	628	35.0	2.7	1.1	61.1	58.3	59.2					
Airdrie	547	35.6	5.7	0.0	58.7	59.8	56.9					
D&Gall	159	39.6	4.4	0.6	55.3	62.3	61.6					
Dundee	362	38.7	5.5	0.6	55.2	62.2	61.9					
Edinb	1,042	29.5	2.3	1.0	67.3	59.1	65.1					
Glasgw	1,928	30.7	1.7	1.0	66.6	59.8	59.3					
Inverns	281	31.7	1.8	1.4	65.1	60.4	60.1					
Klmarnk	386	40.2	6.7	3.9	49.2	61.6	60.4					
Krkcldy	282	62.1	3.9	0.7	33.3	63.7	62.1					
WALES												
Bangor	227	35.7	5.7	8.8	49.8	62.1	63.9	97.3	0.0	1.1	1.6	19.8
Cardff	1,841	31.2	3.2	2.2	63.4	59.4	62.5	90.7	6.1	1.7	1.5	8.6
Clwyd	222	44.1	8.1	5.0	42.8	62.1	66.2	97.9	1.6	0.5	0.0	14.9
Swanse	956	46.3	5.0	4.4	44.2	62.5	61.6	95.6	2.5	0.9	1.1	3.3
Wrexm	336	35.1	8.6	2.7	53.6	60.3	62.8	96.3	1.6	0.6	1.6	4.5
TOTALS												
England	62,879	37.3	5.5	2.0	55.1	60.3	61.6	70.0	15.9	9.7	4.4	3.1
N Ireland	2,081	25.9	3.0	0.7	70.4	61.0	61.0	97.1	2.0	0.5	0.4	9.0
Scotland	5,615	34.5	3.1	1.1	61.4	60.1	60.6					
Wales	3,582	36.7	4.6	3.4	55.2	60.5	62.6	93.4	4.1	1.2	1.3	7.9
UK	**74,157**	**36.8**	**5.2**	**2.0**	**56.0**	**60.3**	**61.6**	**72.0**	**14.9**	**9.0**	**4.1**	**3.6**

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

PRDs were grouped into categories as shown in table 3.3, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of KRT patients in each ethnic group and with each PRD is shown for patients with ethnicity and PRD data, respectively, and these total 100% of patients with data. The proportions of patients with no ethnicity and no PRD data are shown on separate lines.

Table 3.3 Demographics, primary renal diseases (PRDs) and prevalent treatment modality of adult patients prevalent to KRT on 31/12/2024 by age group

	Age group (yrs)								
Characteristic	18–34	35–44	45–54	55–64	65–74	75–84	≥85	Total	Median age (yrs)
Total									
N on KRT	5,624	8,540	13,096	19,002	15,991	10,104	1,800	74,157	60.3
% on KRT	7.6	11.5	17.7	25.6	21.6	13.6	2.4		
Sex (%)									
Male	7.4	11.4	17.4	25.7	21.5	13.9	2.6	61.6	60.5
Female	7.9	11.6	18.1	25.5	21.7	13.1	2.1	38.4	59.9
Ethnicity (%)									
White	7.4	11.1	16.7	25.6	21.5	15.0	2.7	72.4	60.9
Asian	8.8	13.1	20.1	22.2	23.8	10.2	1.7	14.7	58.5
Black	6.4	11.3	21.8	32.9	18.0	7.4	2.3	8.9	58.4
Other	10.8	15.5	20.6	25.8	17.0	8.7	1.6	4.0	56.4
Missing	7.0	10.4	15.8	24.4	24.0	16.3	2.2	8.5	62.3
PRD (%)									
Diabetes	2.8	9.0	17.1	28.3	26.5	14.1	2.2	19.0	62.6
Glomerulonephritis	9.0	14.6	20.1	26.8	18.6	9.7	1.3	19.8	57.4
Hypertension	3.6	8.9	18.9	26.4	21.6	16.8	3.7	6.7	61.7
Polycystic kidney disease	2.0	5.7	18.4	34.1	26.5	12.3	1.0	10.6	62.2
Pyelonephritis	6.9	13.4	18.0	26.6	19.4	13.1	2.6	7.4	59.3
Renal vascular disease	2.2	3.9	6.7	15.4	27.6	34.6	9.5	2.3	73.4
Other	16.4	15.4	17.3	20.8	17.5	10.9	1.8	19.9	55.5
Uncertain aetiology	6.9	11.4	16.8	22.4	21.1	17.4	4.1	14.3	61.8
Missing	8.4	10.1	14.8	23.1	22.2	17.7	3.7	4.0	62.3
Modality (%)									
ICHD	5.0	7.8	13.6	22.4	23.7	22.2	5.4	36.8	65.5
HHD	7.9	16.5	21.8	29.5	17.0	6.4	1.0	2.0	56.3
PD	7.6	10.8	14.0	21.0	21.6	21.4	3.6	5.2	63.5
Tx	9.3	13.8	20.6	28.0	20.3	7.5	0.4	56.0	57.3

Variation between centres in the proportion of patients prevalent to dialysis on 31/12/2024 and on home therapies is shown in figure 3.4 . Please visit the UKRR data portal (ukkidney.org/audit-research/data-portals) to identify individual kidney centres.

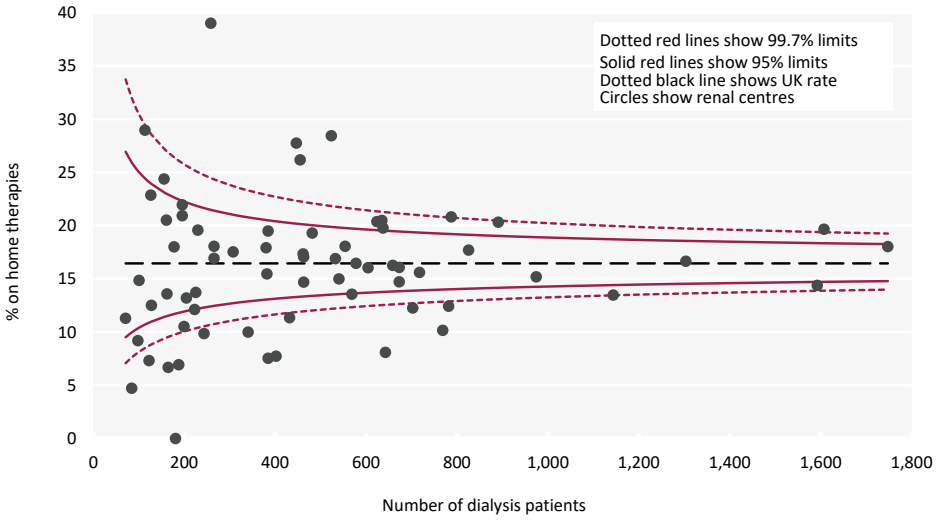


Figure 3.4 Percentage of adult patients prevalent to dialysis on 31/12/2024 on home therapies (PD and HHD) by centre

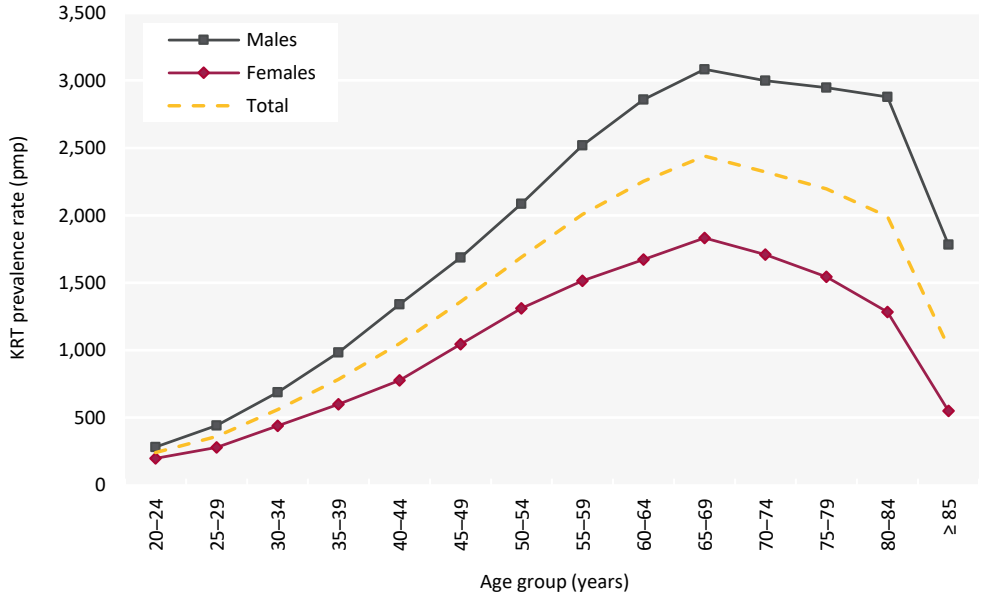


Figure 3.5 Adult KRT prevalence rates on 31/12/2024 by age group and sex
pmp – per million population

For each modality, the percentage of patients of each age (in years) is shown in figure 3.6.

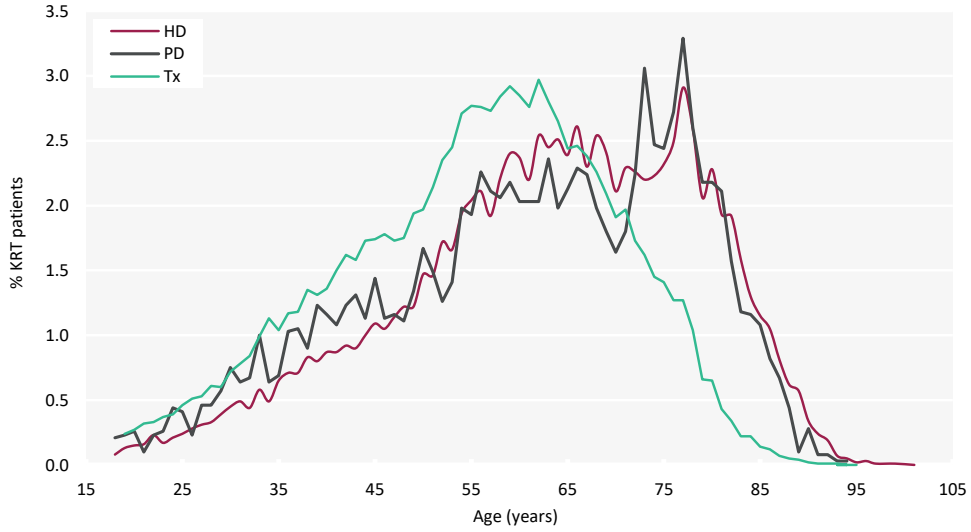


Figure 3.6 Age profile of adult patients prevalent to KRT on 31/12/2024 by KRT modality

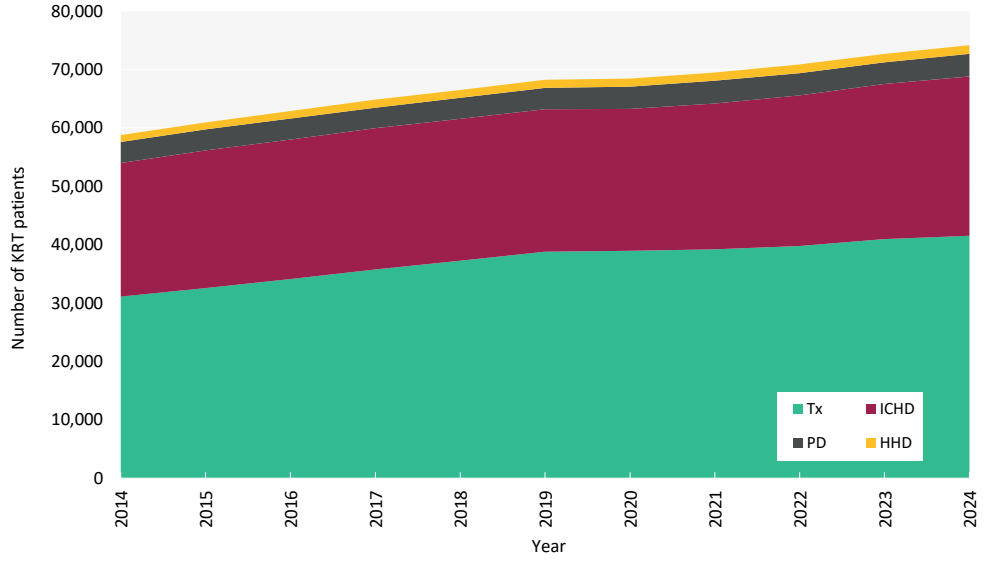


Figure 3.7 Growth in numbers of adult patients prevalent to KRT by treatment modality between 2014 and 2024

Table 3.4 Change in adult KRT prevalence rates by modality between 2020 and 2024

	Prevalence (pmp)					% growth in prevalence				
Year	HD	PD	Dialysis	Tx	KRT	HD	PD	Dialysis	Tx	KRT
2020	486	72	558	736	1,294					
2021	496	73	569	737	1,306	2.0	1.1	1.9	0.2	0.9
2022	508	71	579	741	1,320	2.4	-2.9	1.7	0.6	1.1
2023	518	68	586	755	1,341	1.9	-4.0	1.2	1.8	1.6
2024	522	71	593	755	1,348	0.9	3.8	1.3	-0.1	0.5
Average annual growth 2020-2024						**1.8**	**-0.5**	**1.5**	**0.6**	**1.0**

pmp – per million population

In table 3.5, for each PRD category, the proportion of patients on each treatment modality 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 3.6 shows changes in PRDs between 2015 and 2024, in particular the increase in diabetes.

Table 3.5 Treatment modality of adult patients prevalent to KRT on 31/12/2024 by primary renal disease (PRD)

PRD	N on KRT	% KRT population	Modality (%)		
			HD	PD	Tx
Diabetes	13,534	19.0	57.0	6.4	36.6
Glomerulonephritis	14,107	19.8	26.9	4.4	68.7
Hypertension	4,784	6.7	46.7	5.4	47.9
Polycystic kidney disease	7,528	10.6	21.8	3.9	74.3
Pyelonephritis	5,296	7.4	32.1	4.3	63.5
Renal vascular disease	1,648	2.3	60.9	8.3	30.8
Other	14,145	19.9	33.9	4.1	62.0
Uncertain aetiology	10,172	14.3	40.2	6.2	53.6
Total (with data)	**71,214**	**100.0**	**37.9**	**5.1**	**57.1**
Missing	2,943	4.0	59.8	9.9	30.2

Table 3.6 Change in primary renal disease (PRD) of adult patients prevalent to KRT between 2015 and 2024

PRD	Year									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Diabetes	17.5	17.7	18.1	18.5	18.7	18.8	18.9	18.8	19.0	19.0
Glomerulonephritis	19.7	19.7	19.8	19.8	19.8	19.9	19.9	19.9	19.8	19.8
Hypertension	6.4	6.3	6.4	6.4	6.5	6.5	6.5	6.5	6.6	6.7
Polycystic kidney disease	10.4	10.4	10.4	10.5	10.5	10.6	10.6	10.5	10.6	10.6
Pyelonephritis	8.8	8.7	8.5	8.3	8.1	8.0	7.8	7.7	7.6	7.4
Renal vascular disease	3.1	3.1	3.0	3.0	2.9	2.8	2.7	2.6	2.5	2.3
Other	19.5	19.6	19.7	19.8	19.7	19.8	19.9	20.1	19.9	19.9
Uncertain aetiology	14.6	14.4	14.1	13.9	13.7	13.7	13.7	13.9	14.0	14.3
Missing	0.9	1.0	1.2	1.2	1.5	1.8	2.4	2.7	2.9	4.0

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

The treatment modality distribution for prevalent adult KRT patients was further divided by treatment location for HD patients – hospital unit, satellite unit or home – and for PD patients by type of PD – automated PD (APD) and continuous ambulatory PD (CAPD).

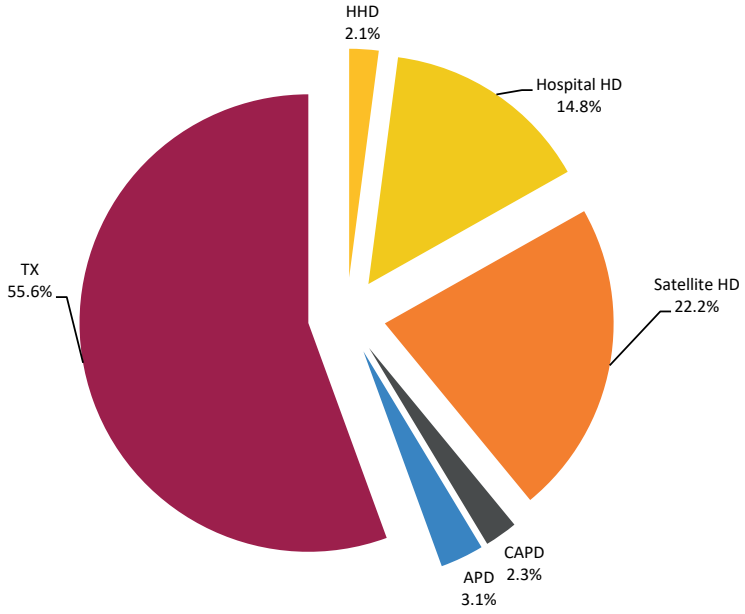


Figure 3.8 Detailed treatment modality of adult patients prevalent to KRT on 31/12/2024

No Scottish centres were included because data on satellite HD were not available

APD – automated PD; CAPD – continuous ambulatory PD

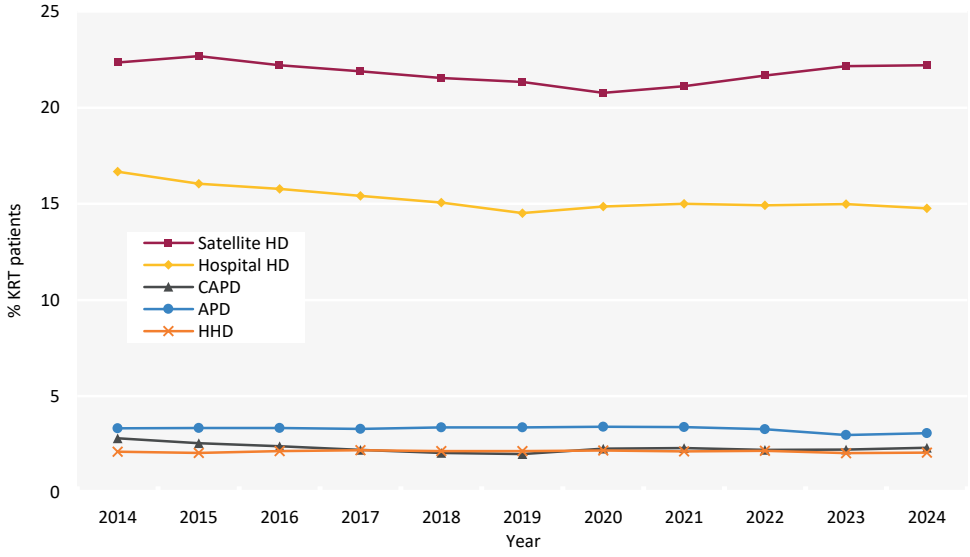


Figure 3.9 Detailed dialysis modality changes in adult patients prevalent to KRT between 2014 and 2024

No Scottish centres were included because data on satellite HD were not available
The denominator includes patients with a Tx
APD – automated PD; CAPD – continuous ambulatory PD

Table 3.7 Adult patients prevalent to dialysis on 31/12/2024 by detailed dialysis modality and centre

Centre	N on dialysis	% Tx wait-listed <65 yrs	% Tx wait-listed ≥65 yrs	% on HD				% on PD		
				All HD	HHD	Hospital	Satellite	All PD	CAPD	APD
ENGLAND										
Bham	1,748	38.1	5.4	85.9	3.9	27.6	54.4	14.1	2.6	11.5
Bradfd	385	43.7	12.3	93.5	1.0	78.7	13.8	6.5	4.2	2.3
Brightn	578	35.4	2.6	88.6	5.0	38.2	45.3	11.4	10.4	1.0
Bristol	541	38.8	7.4	87.4	2.4	15.9	69.1	12.6	8.1	3.9
Camb	432	26.4	0.8	93.8	5.1	39.6	49.1	6.3	3.9	1.6
Carlis	161	39.2	11.0	82.0	2.5	51.6	28.0	18.0	1.2	16.8
Carsh	1,144	33.3	3.9	88.7	2.2	21.6	65.0	11.3	3.9	7.3
Colchr	181	26.5	0.9	100.0	0.0	65.8	34.3	0.0	0.0	0.0
Covnt	482	46.7	13.7	85.3	4.6	28.8	51.9	14.7	4.8	10.0
Derby	447	39.0	6.3	85.5	13.2	64.9	7.4	14.5	12.1	2.2
Donc	223	39.0	8.1	92.4	4.5	60.5	27.4	7.6	0.9	6.7
Dorset	382	41.3	9.0	88.2	3.7	22.3	62.3	11.8	5.5	6.0
Dudley	230	39.4	9.2	84.4	3.9	21.3	59.1	15.7	7.8	7.8
EssexMS	624	32.2	5.2	81.6	1.9	72.8	6.9	18.4	3.2	14.9
Exeter	605	39.7	4.0	87.3	3.3	32.6	51.4	12.7	4.0	8.8
Glouc	266	39.8	11.1	83.8	0.8	72.9	10.2	16.2	3.0	13.2
Hull	463	24.2	5.1	86.6	3.7	39.5	43.4	13.4	11.0	2.4
Ipswi	165	25.4	0.9	93.3	0.0	87.3	6.1	6.7	3.6	1.2
Kent	569	29.3	4.2	90.7	4.2	30.1	56.4	9.3	7.2	2.1
L Barts	1,608	39.6	5.7	83.8	3.5	37.9	42.4	16.2	7.0	9.2
L Guys	769	30.5	3.3	94.2	4.3	13.7	76.2	5.9	1.4	4.4
L Kings	826	27.3	4.3	87.2	4.8	20.1	62.2	12.8	2.8	10.1
L Rfree	975	33.1	9.7	86.3	1.4	4.5	80.3	13.7	5.2	8.5
L St.G	380	42.7	6.4	84.0	1.8	20.3	61.8	16.1	3.4	12.4
L West	1,593	51.4	13.5	88.5	2.8	21.6	64.0	11.6	10.9	0.7
Leeds	782	42.6	19.6	90.8	3.2	15.5	72.1	9.2	2.3	6.9
Leic	1,304	41.3	10.3	86.3	2.9	1.2	82.1	13.7	3.8	10.0
Liv UH	673	29.7	5.7	92.9	8.9	22.3	61.7	7.1	1.2	5.9
M RI	788	27.5	9.6	87.7	8.5	16.9	62.3	12.3	5.0	7.4
Middlbr	402	35.0	8.7	96.8	4.5	35.3	57.0	3.2	3.2	0.0
Newc	462	42.6	12.6	88.1	5.4	56.5	26.2	11.9	1.7	10.2
Norwch	385	18.8	3.8	84.2	3.6	15.8	64.7	15.8	9.9	6.0
Nottm	524	29.4	7.2	77.1	5.5	29.2	42.4	22.9	21.0	1.9
Oxford	635	47.8	17.3	83.6	4.1	34.2	45.4	16.4	5.8	10.6
Plymth	196	39.5	12.7	80.6	2.6	76.5	1.5	19.4	4.6	14.8
Ports	891	38.7	11.5	88.7	9.0	27.4	52.3	11.3	6.5	4.8
Prestn	659	44.1	11.1	90.7	7.0	16.8	66.9	9.3	5.8	3.5
Redng	463	46.8	5.2	89.6	4.3	35.0	50.3	10.4	8.6	1.7
Salford	638	44.9	19.4	85.6	5.3	27.4	52.8	14.4	6.6	7.8
Sheff	718	34.6	9.1	90.3	5.9	49.4	35.0	9.8	3.2	6.6
Shrew	259	32.5	7.7	75.3	14.3	61.0	0.0	24.7	5.8	18.9
Stevng	703	37.3	6.7	94.6	6.8	22.2	65.6	5.4	1.7	3.7
Stoke	455	33.5	7.9	80.9	7.0	51.4	22.4	19.1	5.9	13.2
Sund	308	38.0	9.6	85.7	3.3	46.1	36.4	14.3	3.3	11.0
Truro	205	34.9	9.8	92.2	5.4	42.9	43.9	7.8	3.9	3.9
Wirral	200	36.6	11.1	93.5	4.0	36.0	53.5	6.5	0.5	6.0
Wolve	554	27.5	3.5	89.0	7.0	81.6	0.4	11.0	2.4	8.7
York	266	43.0	15.7	88.4	6.4	33.1	48.9	11.7	6.0	5.6
N IRELAND[1]										
Antrim	128	18.2	2.4	88.3	0.8	87.5	0.0	11.7	3.1	7.8
Belfast	178	22.6	4.3	86.5	4.5	82.0	0.0	13.5	0.0	11.8
Newry	101	25.7		87.1	2.0	85.2	0.0	12.9	2.0	5.0

Table 3.7 Continued

Centre	N on dialysis	% Tx wait-listed <65 yrs	% Tx wait-listed ≥65 yrs	% on HD				% on PD		
				All HD	HHD	Hospital	Satellite	All PD	CAPD	APD
Ulster	85	32.0	3.3	95.3	0.0	95.3	0.0	4.7	0.0	3.5
West NI	123	23.2	1.5	95.1	2.4	92.7	0.0	4.9	0.0	1.6
SCOTLAND[2]										
Abrdn	244	34.7	12.5	93.0	2.9	90.2	0.0	7.0	1.6	4.1
Airdrie	226	45.9	23.1	86.3	0.0	86.3	0.0	13.7	6.2	7.5
D&Gall	71	44.1	5.4	90.1	1.4	88.7	0.0	9.9	0.0	9.9
Dundee	162	45.2	6.7	87.7	1.2	86.4	0.0	12.4	4.9	6.2
Edinb	341	41.1	11.5	93.0	2.9	90.0	0.0	7.0	2.6	4.4
Glasgw	643	51.4	17.2	94.9	3.0	91.9	0.0	5.1	1.6	3.6
Inverns	98	33.3	10.2	94.9	4.1	90.8	0.0	5.1	3.1	2.0
Klmarnk	196	39.3	11.2	86.7	7.7	79.1	0.0	13.3	3.1	10.2
Krkcldy	188	31.8	9.0	94.2	1.1	93.1	0.0	5.9	0.0	5.9
WALES										
Bangor	114	32.7	4.8	88.6	17.5	53.5	17.5	11.4	7.0	4.4
Cardff	673	28.8	4.2	91.4	6.1	19.5	65.8	8.6	3.3	5.4
Clwyd	127	25.9	2.9	85.8	8.7	77.2	0.0	14.2	8.7	5.5
Swanse	533	30.6	6.0	91.0	7.9	50.3	32.8	9.0	5.1	3.9
Wrexm	156	28.2	5.1	81.4	5.8	50.0	25.6	18.6	0.0	18.6
TOTALS										
England	28,247	37.2	8.2	87.7	4.5	31.7	51.5	12.4	5.4	7.0
N Ireland	615	23.4	2.4	89.9	2.3	87.6	0.0	10.1	1.0	6.7
Scotland	2,169	43.0	13.6	92.0	2.8	89.2	0.0	8.0	2.5	5.3
Wales	1,603	29.4	4.8	89.6	7.7	39.7	42.3	10.4	4.2	6.1
UK	**32,634**	**37.0**	**8.3**	**88.1**	**4.5**	**36.9**	**46.6**	**11.9**	**5.0**	**6.8**

Blank cells – no data returned by the centre
[1]There were no satellite units in Northern Ireland
[2]All HD patients in Scotland were shown as receiving treatment at home or in hospital because no data were available regarding satellite dialysis
APD – automated PD; CAPD – continuous ambulatory PD
Transplant waiting list data were provided by NHSBT

The proportion of patients on HHD versus satellite HD is shown in figure 3.10, with the remaining patients on hospital HD.

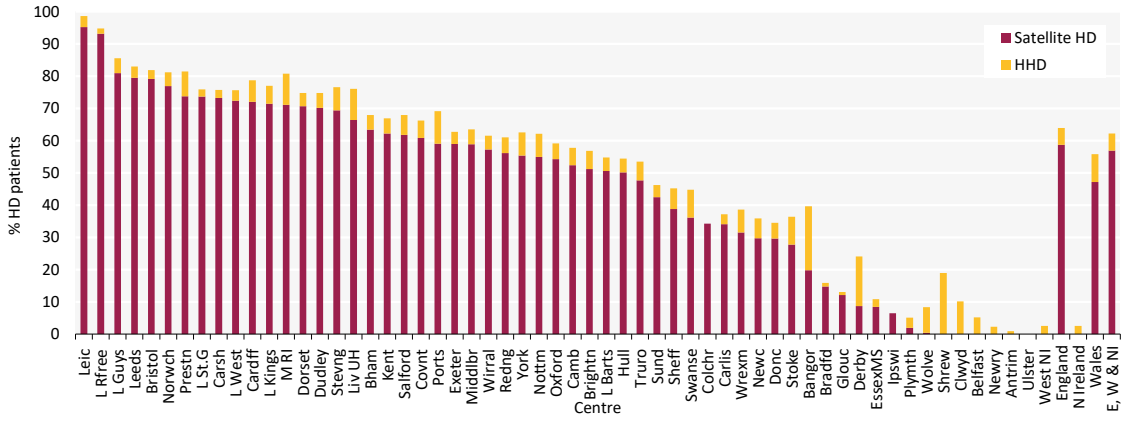


Figure 3.10 Adult patients prevalent to HD on 31/12/2024 treated with satellite HD or HHD by centre

There were no satellite units in Northern Ireland and Scottish centres were excluded because data on satellite HD were not available

Dialysis access in prevalent adult dialysis patients

The type of dialysis access used by the prevalent dialysis population is described in chapter 5.

Survival in adult dialysis patients

Survival was analysed in prevalent patients receiving dialysis on 31/12/2023 and followed-up for one year in 2024. Survival in patients with a Tx is presented in chapter 4.

Survival analyses, where stated, were adjusted to age 60 years to allow comparisons between centres with different age distributions. Centre-specific survival rates were further adjusted for not only age (figure 3.11), but also sex and comorbidities for centres with at least 85% completeness (figure 3.12). UKRR comorbidity data were augmented using diagnostic and procedure codes from Hospital Episode Statistics (HES) in England and Patient Episode Database for Wales (PEDW) in Wales (see appendix A for details). Centres are identifiable from the x-axis by using the number of prevalent dialysis patients by centre in table 3.8.

Table 3.8 1 year adjusted survival (age and case-mix) of adult patients prevalent to dialysis on 31/12/2023 by centre

	Age-adjusted survival				Case-mix adjusted survival[1]			
Centre	N on dialysis	1 yr (%)	Lower 95% limit	Upper 95% limit	N on dialysis	1 yr (%)	Lower 95% limit	Upper 95% limit
D&Gall	54	89.5	75.8	94.0				
Newry	89	89.3	78.9	92.9	74	86.5	79.7	94.4
Bangor	100	89.9	79.5	92.7	99	90.4	81.3	93.9
Inverns	104	85.8	79.7	92.6				
Clwyd	121	82.8	80.4	92.3	121	83.6	82.2	93.5
Carlis	124	83.4	80.5	92.3	121	83.4	82.2	93.5
West NI	130	89.3	80.7	92.2	114	84.1	81.9	93.6
Wrexm	139	89.3	80.9	92.1	139	89.9	82.7	93.3
Ipswi	152	90.1	81.3	91.9	145	90.6	82.9	93.2
Colchr	158	90.8	81.4	91.8	153	92.4	83.1	93.1
Dundee	160	87.9	81.5	91.8				
Krkcldy	172	90.4	81.7	91.7				
Wirral	180	85.5	81.9	91.6	180	87.9	83.6	92.9
Plymth	180	86.5	81.9	91.6	177	88.2	83.6	92.9
Klmarnk	185	83.0	81.9	91.6				
Truro	198	85.3	82.2	91.5	191	87.9	83.8	92.8
Abrdn	221	88.4	82.5	91.3				
Donc	225	88.0	82.5	91.2	223	88.8	84.3	92.6
Glouc	229	85.4	82.6	91.2	223	86.7	84.3	92.6
Airdrie	230	79.9	82.6	91.2				
Dudley	234	85.7	82.6	91.2	234	87.2	84.4	92.5
York	241	92.1	82.7	91.1	241	92.5	84.5	92.4
Shrew	260	85.0	82.9	91.0	257	86.8	84.7	92.4
Sund	269	90.6	83.0	91.0	268	91.9	84.8	92.3
Edinb	341	90.7	83.6	90.6				
Norwch	361	86.0	83.7	90.6	354	86.9	85.4	91.9
Bradfd	364	88.9	83.7	90.5	364	90.4	85.5	91.9
Dorset	364	88.9	83.7	90.5	364	89.8	85.5	91.9
L St.G	365	87.7	83.7	90.5	360	89.6	85.4	91.9
Middlbr	374	86.3	83.8	90.5	373	88.2	85.5	91.9
Derby	392	90.0	83.9	90.5	389	91.1	85.6	91.8
Camb	401	88.6	83.9	90.4	397	89.0	85.6	91.8
Redng	418	88.3	84.0	90.4	416	89.9	85.7	91.7
Hull	428	87.0	84.0	90.3	428	87.6	85.8	91.7
Newc	438	83.0	84.1	90.3	438	85.9	85.8	91.7
Stoke	442	88.4	84.1	90.3	436	90.0	85.8	91.7
Covnt	442	86.5	84.1	90.3	430	87.3	85.8	91.7
Swanse	475	84.2	84.2	90.2	476	86.2	86.0	91.6
Nottm	476	87.1	84.2	90.2	476	89.0	86.0	91.6
Wolve	493	89.2	84.3	90.2	491	90.4	86.0	91.6
Brightn	512	87.9	84.4	90.1	506	89.2	86.1	91.5
Bristol	513	85.9	84.4	90.1	499	88.3	86.0	91.5
Kent	522	85.4	84.4	90.1	522	87.1	86.1	91.5
Exeter	546	89.1	84.5	90.0				
EssexMS	566	89.1	84.5	90.0	560	90.1	86.2	91.4
Oxford	569	85.0	84.6	90.0	560	87.4	86.2	91.4
Salford	597	85.7	84.6	89.9	591	88.4	86.3	91.4
Prestn	605	85.1	84.7	89.9	603	87.9	86.3	91.3
Glasgw	607	84.5	84.7	89.9				
Liv UH	622	86.7	84.7	89.9	613	89.4	86.4	91.3
Stevng	654	88.2	84.8	89.9	641	89.9	86.4	91.3
Cardff	660	83.8	84.8	89.8	658	84.9	86.5	91.3
Leeds	678	87.7	84.8	89.8	676	89.5	86.5	91.2
Sheff	679	88.4	84.8	89.8	678	89.2	86.5	91.2

Table 3.8 Continued

Centre	Age-adjusted survival				Case-mix adjusted survival[1]			
	N on dialysis	1 yr (%)	Lower 95% limit	Upper 95% limit	N on dialysis	1 yr (%)	Lower 95% limit	Upper 95% limit
L Guys	753	88.0	85.0	89.7	751	89.3	86.7	91.1
L Kings	784	90.0	85.0	89.7	759	91.4	86.7	91.1
Ports	816	86.6	85.1	89.6	794	89.0	86.7	91.1
L Rfree	914	90.2	85.2	89.5	886	91.9	86.9	91.0
Carsh	986	88.9	85.3	89.5	949	89.8	86.9	90.9
Leic	1,171	85.6	85.5	89.3	1,160	87.2	87.2	90.8
L Barts	1,397	90.9	85.7	89.2	1,352	92.2	87.3	90.6
L West	1,505	87.5	85.8	89.1	1,449	89.2	87.4	90.6
Bham	1,668	89.1	85.9	89.0	1,638	90.6	87.5	90.5

Centres are ordered by increasing number of patients
[1]Centres excluded if comorbidity data <85% - all Scottish kidney centres, Exeter, M RI, Belfast, Antrim, Ulster
For information on data quality issues for these centres, see Appendix A, section 2.2

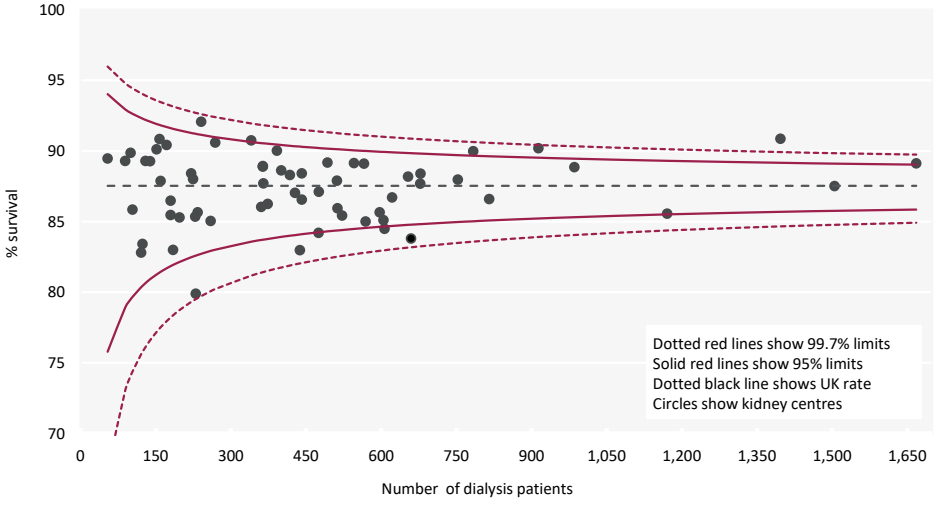


Figure 3.11 1 year survival (adjusted to age 60 years) of adult patients prevalent to dialysis on 31/12/2023 by centre

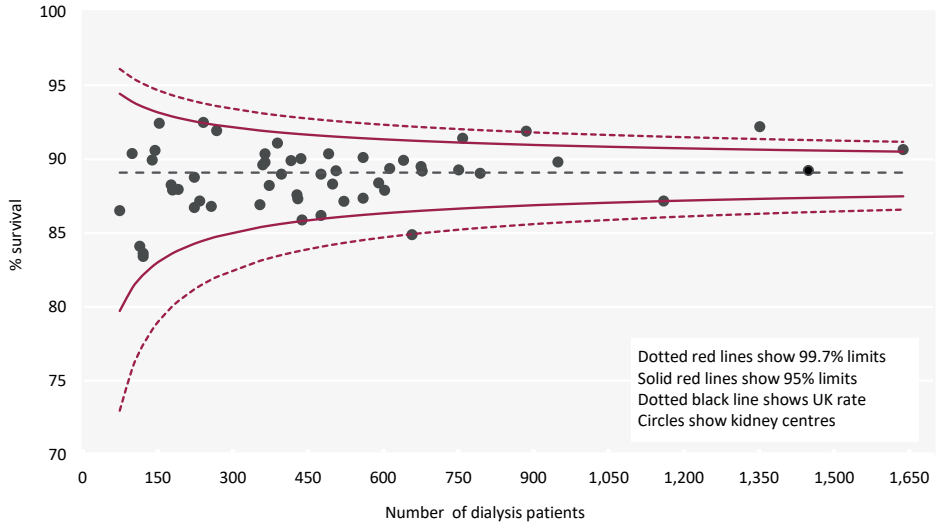


Figure 3.12 1 year survival (adjusted to 60 years, male and median comorbidity score) of adult patients prevalent to dialysis on 31/12/2023 by centre

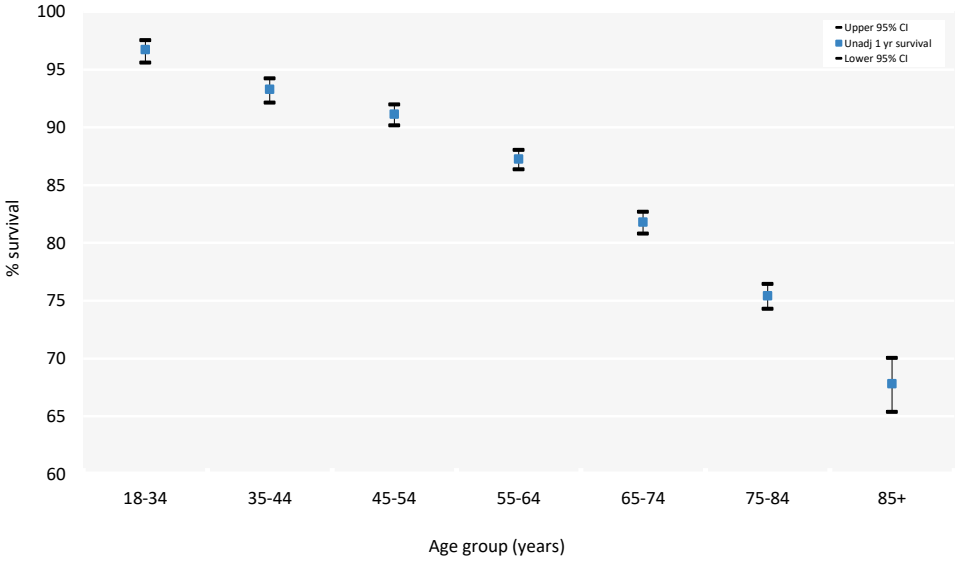


Figure 3.13 1 year survival (unadjusted) of adult patients prevalent to dialysis on 31/12/2023 by age group
CI – confidence interval

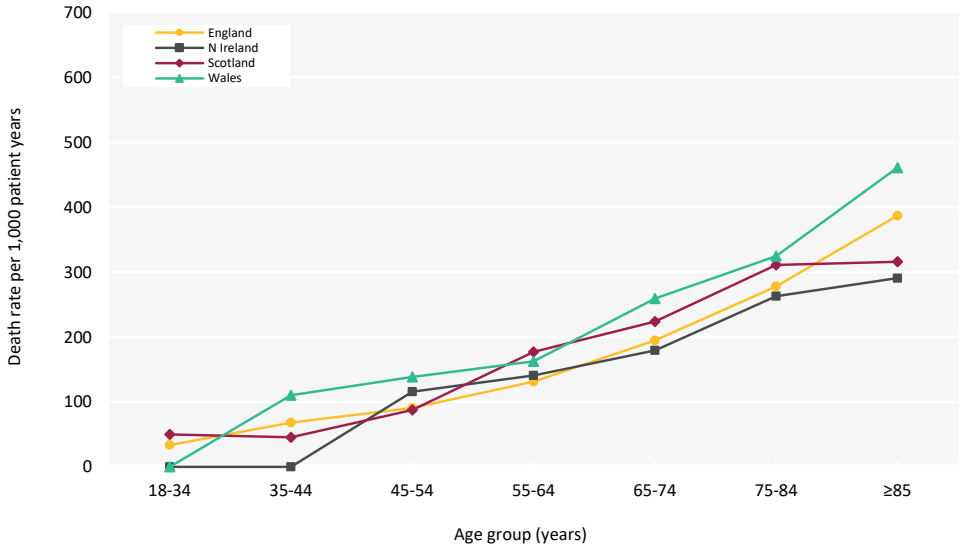


Figure 3.14 1 year death rate per 1,000 patient years for adult patients prevalent to dialysis on 31/12/2023 by country and age group

The serial one year death rate in prevalent adult dialysis patients by country is shown in figure 3.15, adjusted to age 60 years.

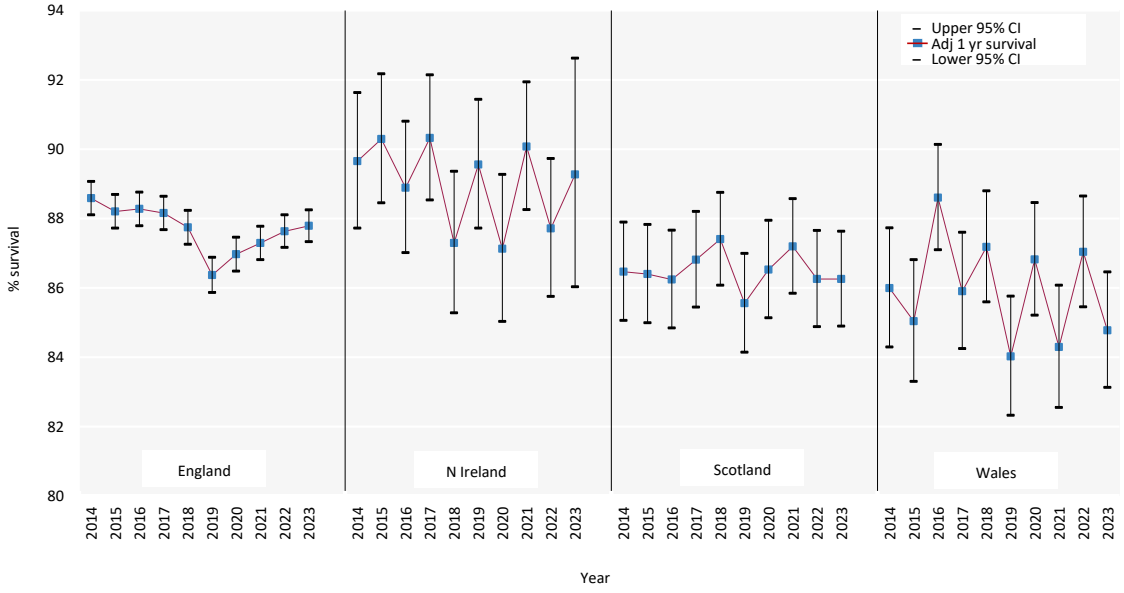


Figure 3.15 1 year survival (adjusted to age 60 years) for adult patients prevalent to dialysis by country between 2014 and 2023
CI – confidence interval

The relative risk of death by age group for prevalent KRT patients compared to the general population's risk of death, calculated using Office for National Statistics UK population and deaths data, is shown in table 3.9.

Table 3.9 Death rate by age group for adult patients prevalent to KRT on 31/12/2022 followed-up for 1 year compared with the general population and with previous analyses in the 1998–2001 cohort

Age group (yrs)	UK population mid-2024 (thousands)	UK deaths in 2024	Death rate per 1,000 population	Expected number of deaths in UKRR population	UKRR deaths in 2024	UKRR death rate per 1,000 prevalent KRT patients	Relative risk of death in 2024	Relative risk of death 1998-2001 cohort
20-24	4,166	1,553	0.4	0	7	7	19.5	41.1
25-29	4,549	2,034	0.4	1	17	11	23.9	41.8
30-34	4,797	3,101	0.6	2	46	18	28.2	31.2
35-39	4,776	4,740	1.0	4	87	24	24.5	26.0
40-44	4,529	6,829	1.5	7	118	26	17.5	22.6
45-49	4,093	9,142	2.2	12	172	33	14.8	19.0
50-54	4,420	15,331	3.5	25	335	46	13.3	12.8
55-59	4,617	23,580	5.1	44	531	62	12.2	10.1
60-64	4,288	32,084	7.5	65	621	72	9.6	10.4
65-69	3,573	42,488	11.9	91	782	102	8.6	7.9
70-74	3,097	59,253	19.1	125	937	144	7.5	7.2
75-79	2,902	90,047	31.0	171	1,088	197	6.3	5.3
80-84	1,840	102,894	55.9	167	831	279	5.0	4.0
≥85	1,750	250,971	143.4	210	546	373	2.6	3.0
Total	**53,397**	**644,047**	**12.1**	**922**	**6,118**	**91**	**6.6**	**7.7**

Cause of death in adult KRT patients

Cause of death was analysed in prevalent patients receiving KRT on 31/12/2023 and followed-up for one year in 2024. 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 3.10 Cause of death in adult patients prevalent to KRT on 31/12/2023 followed-up in 2024 by age group

	KRT all ages		KRT <65 yrs		KRT ≥65 yrs	
Cause of death	N	%	N	%	N	%
Cardiac disease	1,076	19.9	408	24.2	668	18.0
Cerebrovascular disease	193	3.6	56	3.3	137	3.7
Infection	921	17.1	270	16.0	651	17.6
Malignancy	499	9.3	149	8.8	350	9.4
Treatment withdrawal	414	7.7	78	4.6	336	9.1
Other	1,859	34.5	588	34.9	1,271	34.3
Uncertain aetiology	434	8.0	137	8.1	297	8.0
Total (with data)	**5,396**	**100.0**	**1,686**	**100.0**	**3,710**	**100.0**
Missing	680	11.2	236	12.3	444	10.7

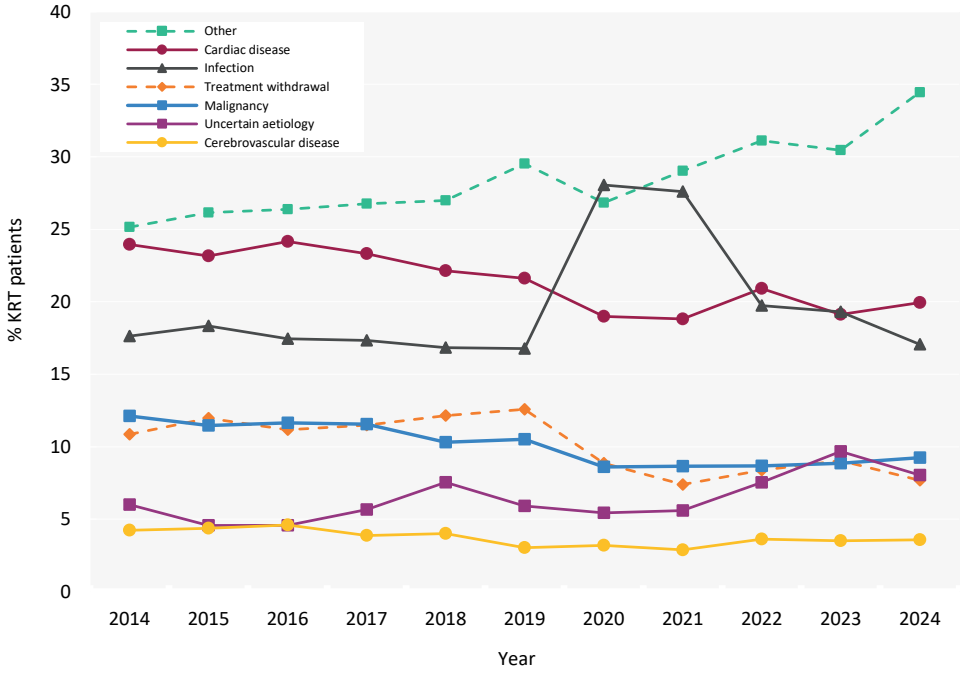


Figure 3.16 Cause of death between 2014 and 2024 for adult patients prevalent to KRT at the beginning of the year

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.

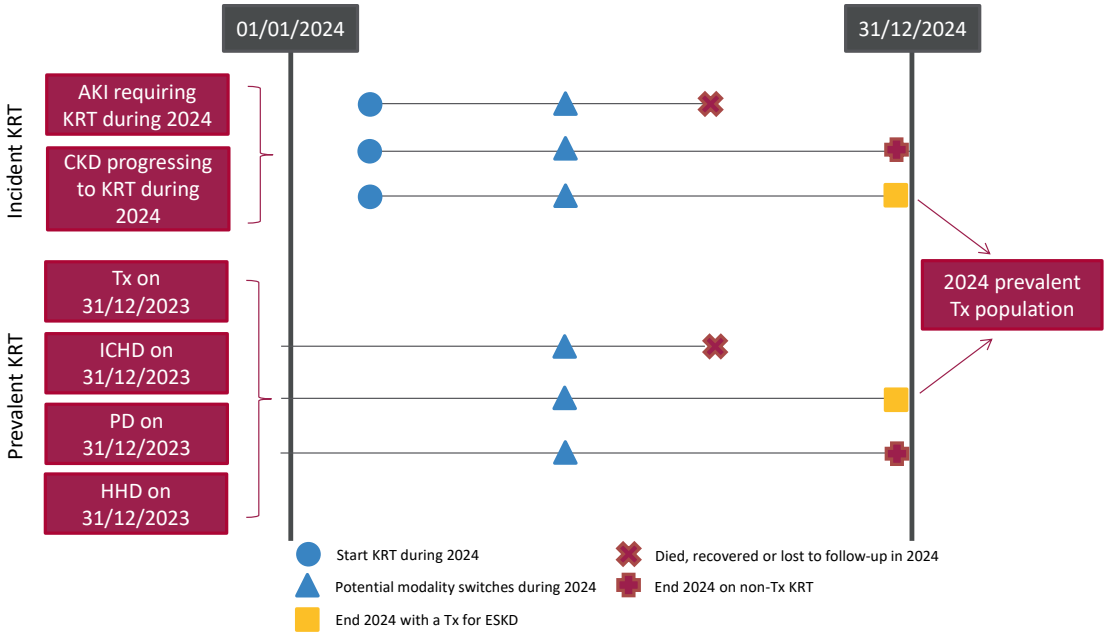


Figure 4.1 Pathways adult patients could follow to be included in the UK 2024 prevalent Tx population

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.

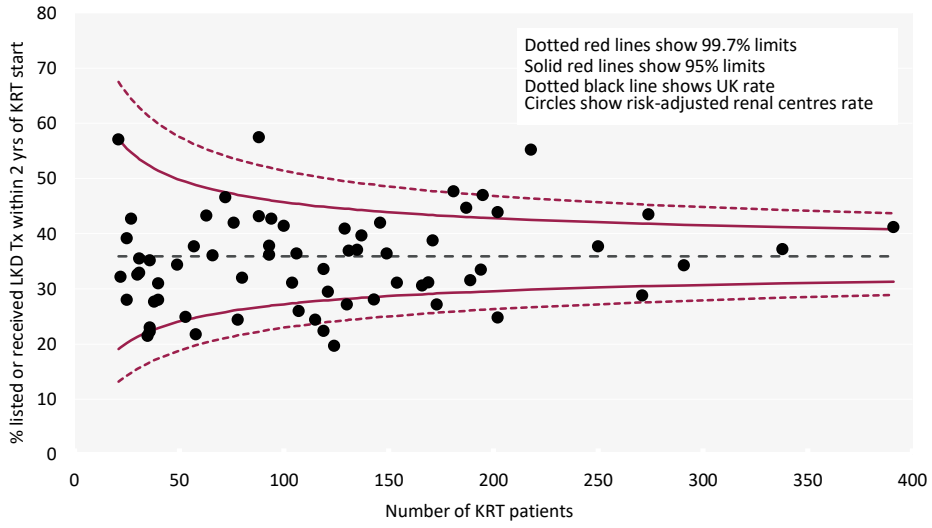


Figure 4.2 Percentage of adult patients incident to KRT in 2022 (analysis adjusted by age, sex, PRD) who were listed or received a living kidney donor (LKD) Tx within 2 years of KRT start by centre

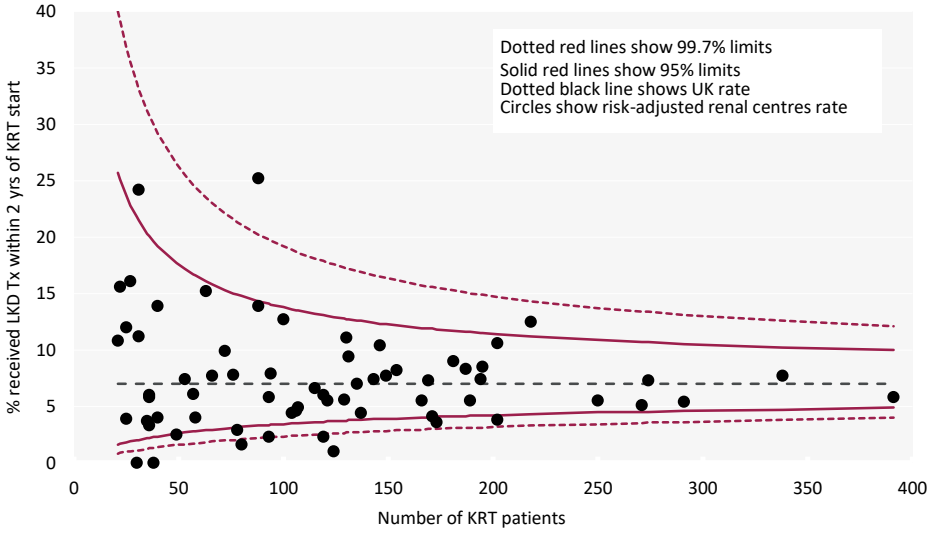


Figure 4.3 Percentage of adult patients incident to KRT in 2022 (analysis adjusted by age, sex, PRD) who received a living kidney donor (LKD) Tx within 2 years of KRT start by centre

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.

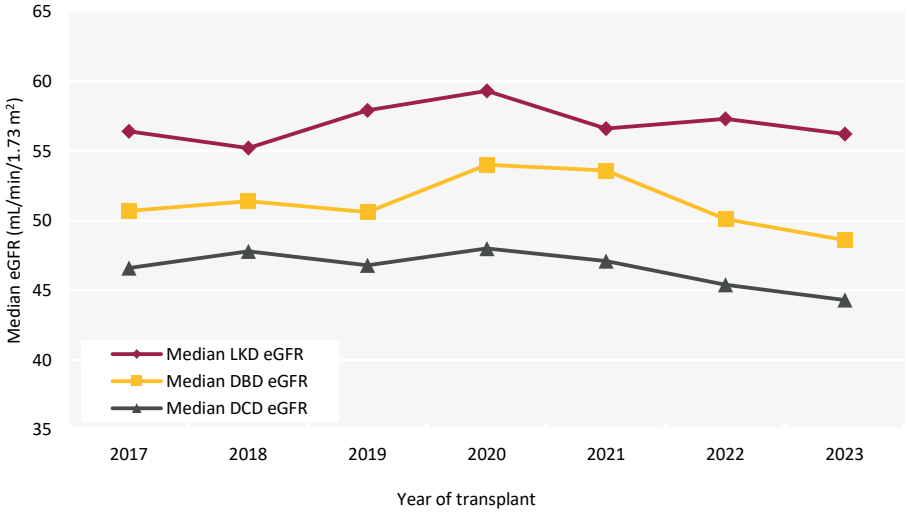


Figure 4.4 Median estimated glomerular filtration rate (eGFR) at 1 year post-Tx by donor type and year of transplantation between 2017 and 2023

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

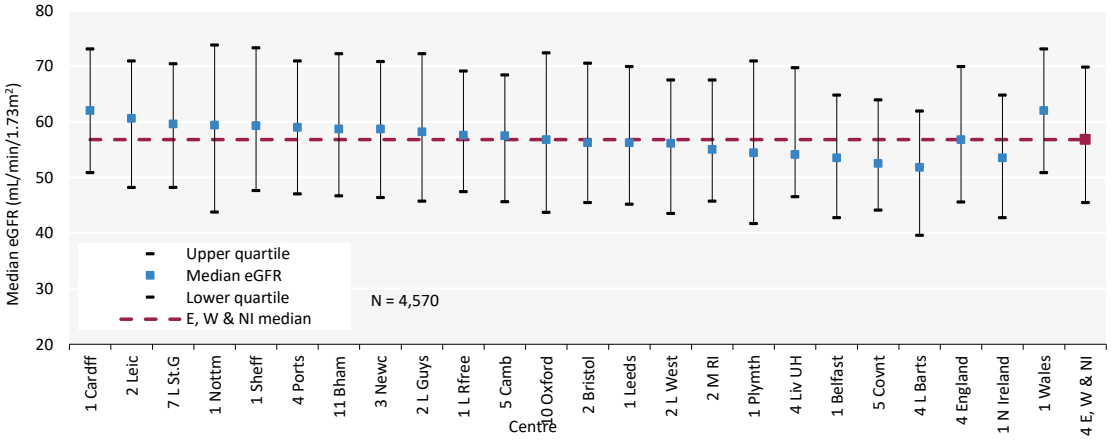


Figure 4.5 Median estimated glomerular filtration rate (eGFR) at 1 year post-living kidney donor (LKD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

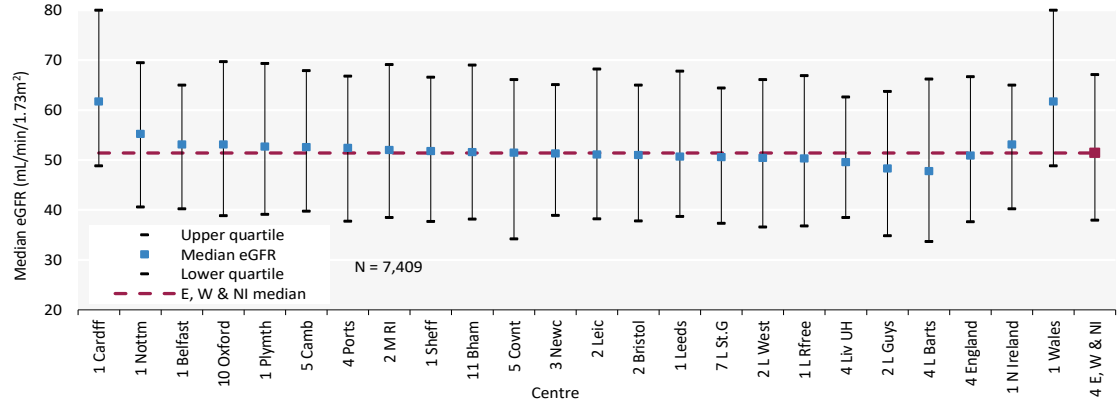


Figure 4.6 Median estimated glomerular filtration rate (eGFR) at 1 year post-donor after brain death (DBD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

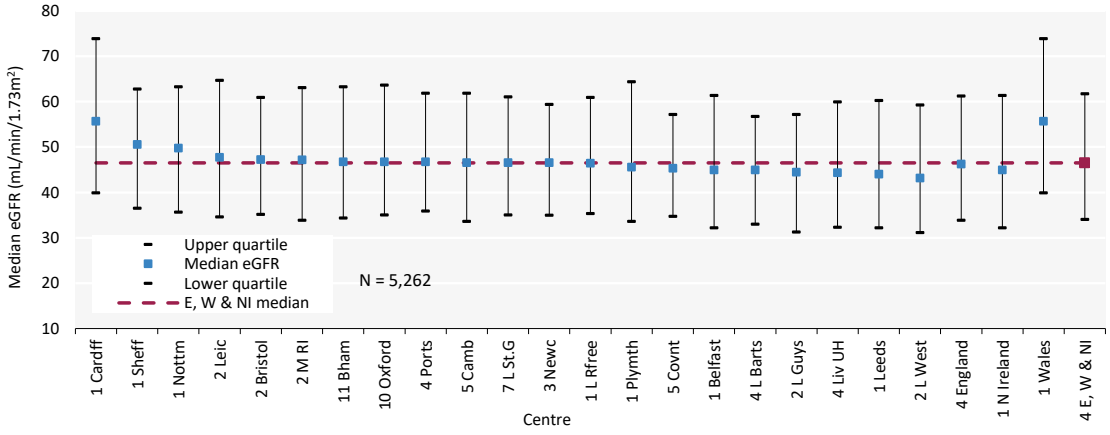


Figure 4.7 Median estimated glomerular filtration rate (eGFR) at 1 year post-donor after circulatory death (DCD) Tx by transplanting centre for transplantation that occured between 2017 and 2023

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

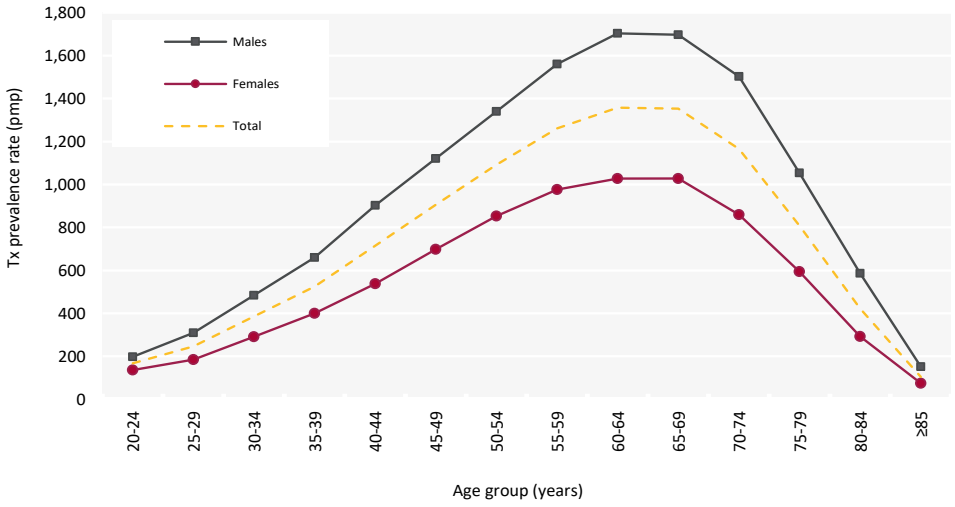


Figure 4.8 Adult Tx prevalence rates on 31/12/2024 by age group and sex
pmp – per million population

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.

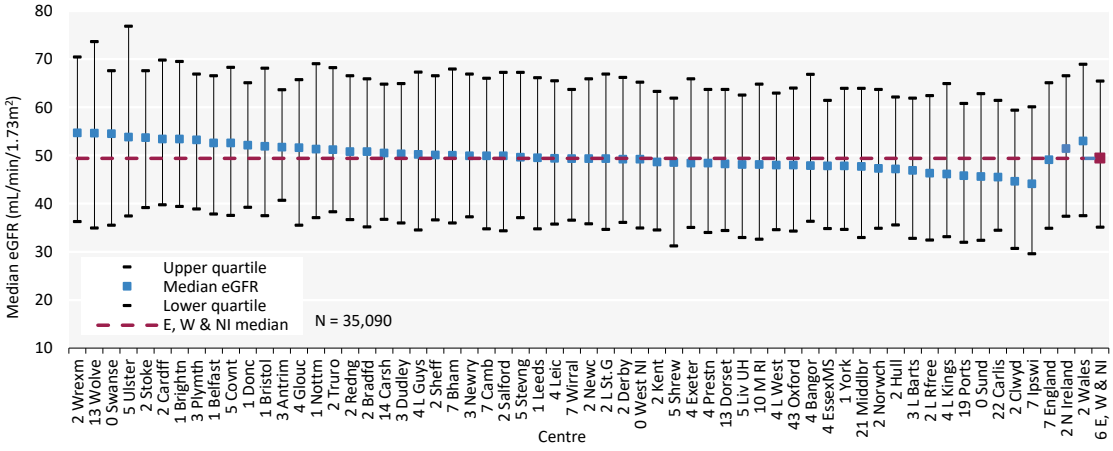


Figure 4.9 Median estimated glomerular filtration rate (eGFR) in adult patients prevalent to Tx on 31/12/2024 by centre

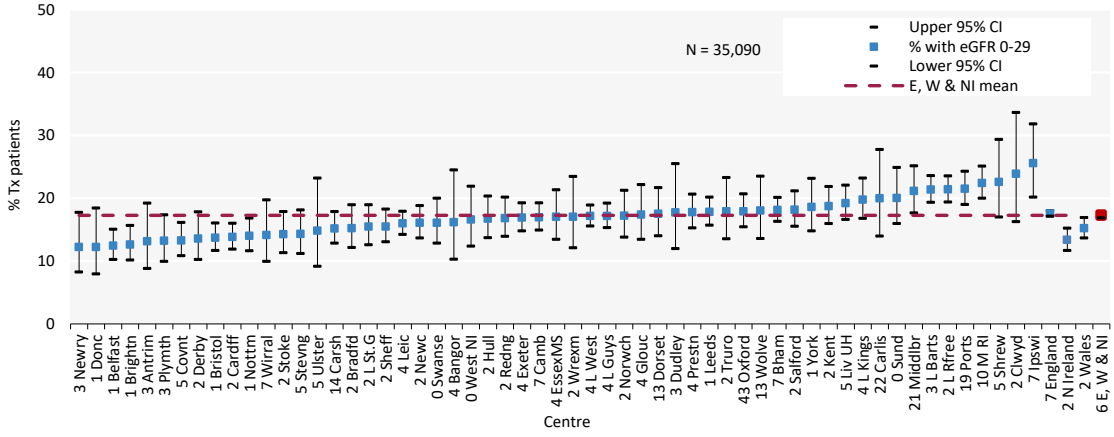


Figure 4.10 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m² by centre
CI – confidence interval

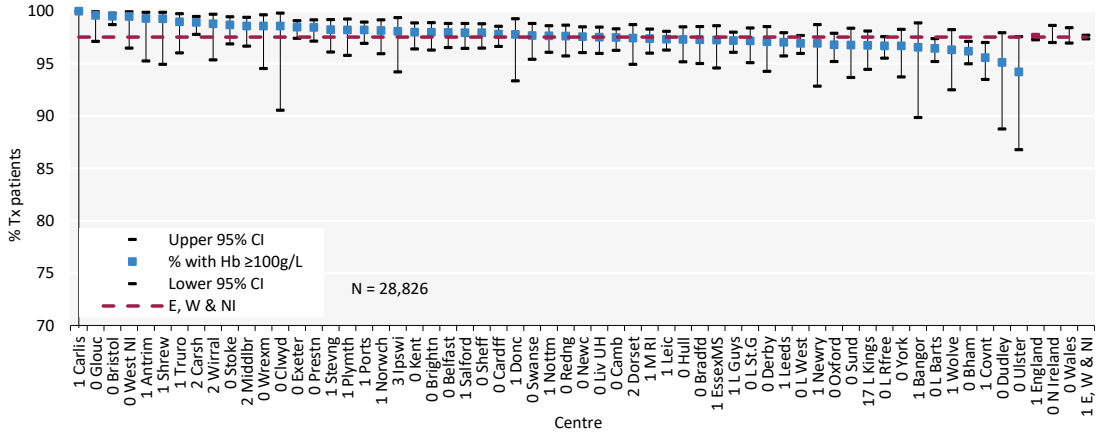


Figure 4.11 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) ≥30 mL/min/1.73m^2 achieving haemoglobin (Hb) ≥100 g/L by centre
CI – confidence interval

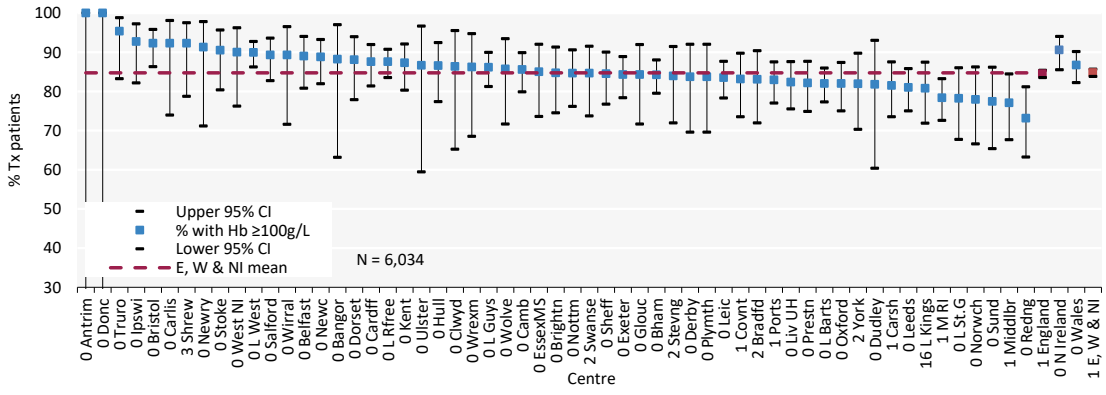


Figure 4.12 Percentage of adult patients prevalent to Tx on 31/12/2024 with an estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m^2 achieving haemoglobin (Hb) ≥100 g/L by centre
CI – confidence interval

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.

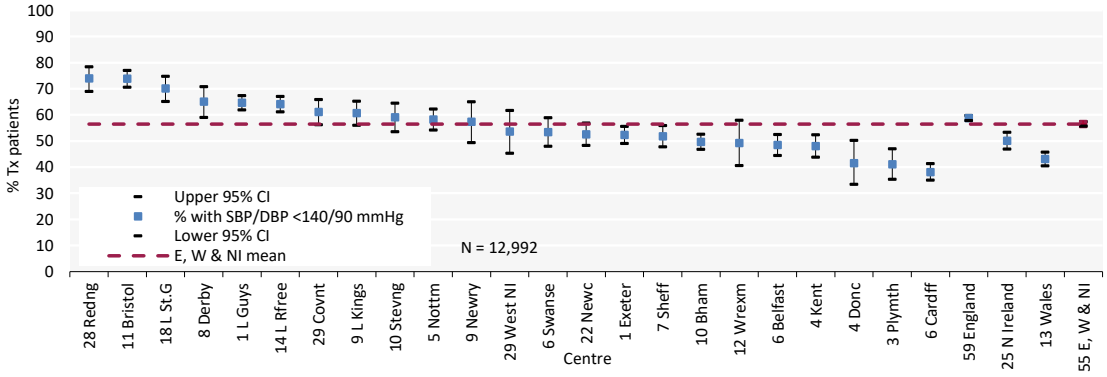


Figure 4.13 Percentage of adult patients prevalent to Tx on 31/12/2024 with estimated glomerular filtration rate (eGFR) ≥30 mL/min/1.73m^2 achieving blood pressure of <140/90 mmHg by centre
CI – confidence interval; DBP – diastolic blood pressure; SBP – systolic blood pressure

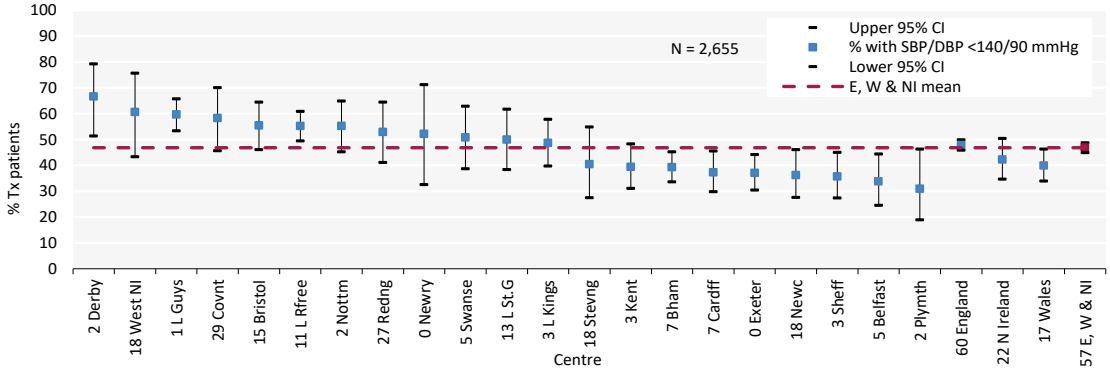


Figure 4.14 Percentage of adult patients prevalent to Tx on 31/12/2024 with estimated glomerular filtration rate (eGFR) <30 mL/min/1.73m^2 achieving blood pressure of <140/90 mmHg by centre
CI – confidence interval; DBP – diastolic blood pressure; SBP – systolic blood pressure

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

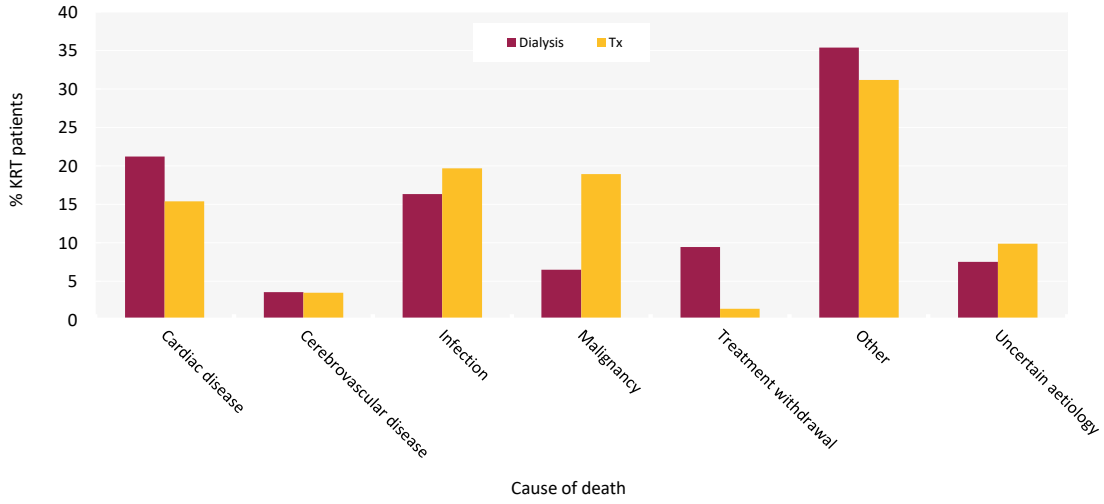


Figure 4.15 Cause of death for adult patients prevalent to KRT on 31/12/2023 followed-up in 2024 by modality

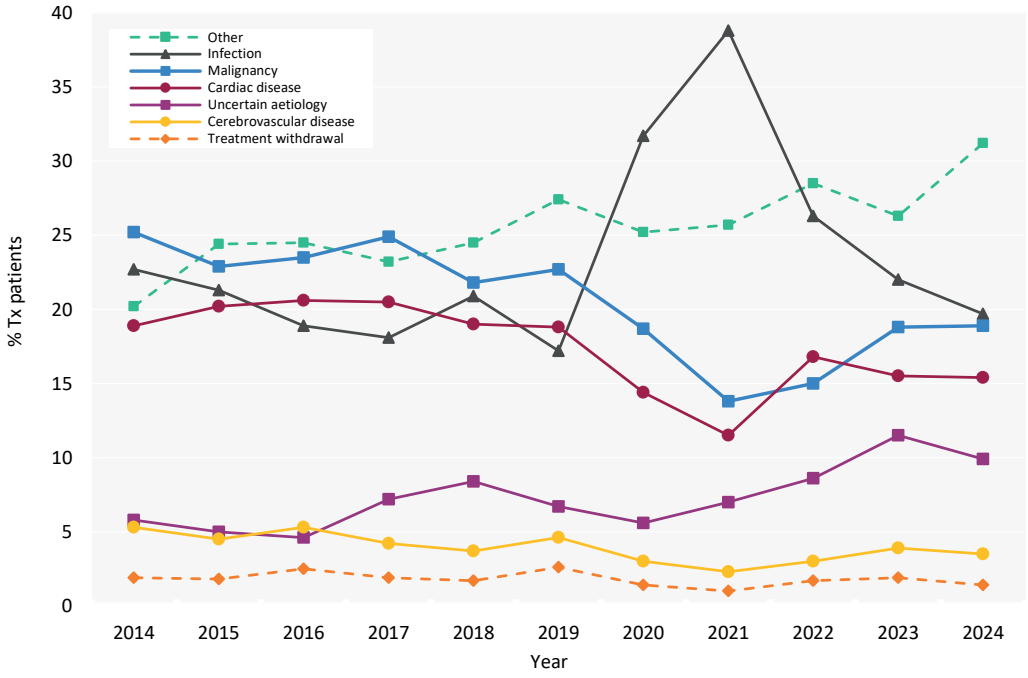


Figure 4.16 Cause of death between 2014 and 2024 for adult patients prevalent to Tx at the beginning of the year

UK Kidney Association
UK Renal Registry

Chapter 5

Adults on in-centre haemodialysis (ICHD) in the UK at the end of 2024

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Introduction

This chapter describes the population of adult patients with end-stage kidney disease (ESKD) who were receiving regular in-centre haemodialysis (ICHD) in the UK at the end of 2024 (figure 5.1). This population comprises patients who were on ICHD at the end of 2023 and remained on ICHD throughout 2024, as well as patients who commenced/re-commenced ICHD in 2024. This latter group includes both incident kidney replacement therapy (KRT) patients who ended 2024 on ICHD and prevalent KRT patients who switched to ICHD from home haemodialysis (HHD), peritoneal dialysis (PD), or a transplant (Tx) in 2024. Consequently, the cohort of patients receiving ICHD in a centre not only reflects differences in underlying population case-mix, but also differences in the rates of acceptance onto KRT, survival on ICHD, transplantation and home therapies (HHD and PD), and the care of patients on those other modalities, as described in other chapters of this report.

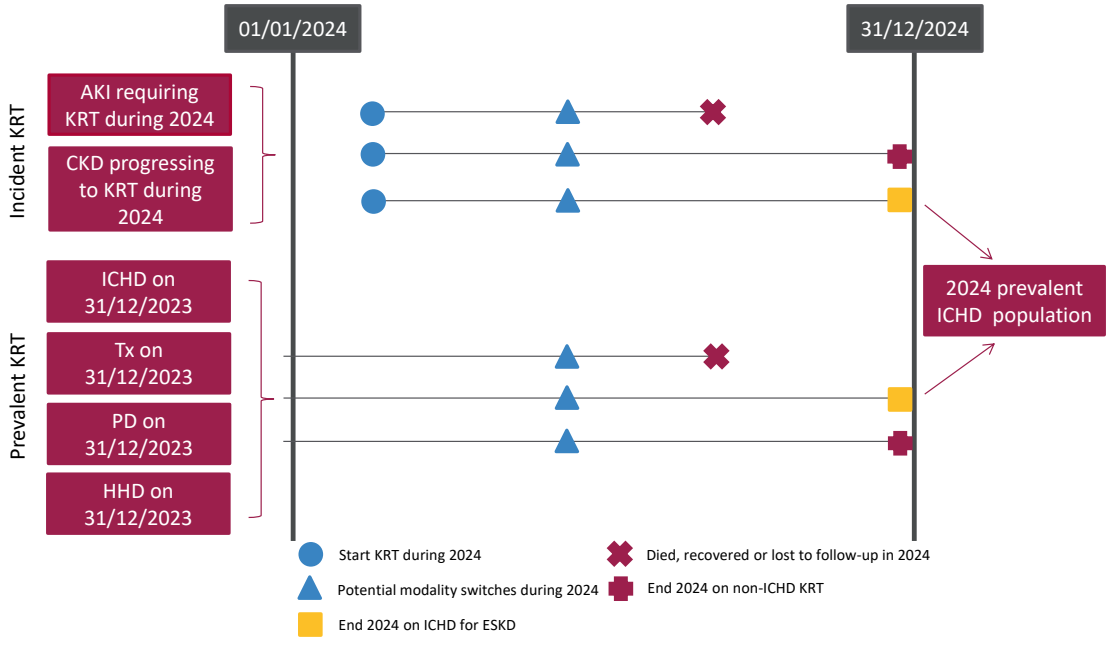


Figure 5.1 Pathways adult patients could follow to be included in the UK 2024 prevalent ICHD population

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 chronic ICHD at the end of 2024 or if they had been on KRT for ≥90 days and were on ICHD at the end of 2024

CKD – chronic kidney disease

The cause of death analyses were undertaken on historic prevalent cohorts to allow sufficient follow-up time.

This chapter addresses the following key aspects of the care of patients on ICHD for which there are UK Kidney Association guidelines (table 5.1):

- **Complications associated with ESKD and ICHD:** these include anaemia and mineral bone disorders.
- **Adequacy of ICHD:** measures of dialysis care include urea clearance and frequency and length of dialysis sessions. Currently, the urea reduction ratio (URR) is the only urea clearance measure routinely reported to the UK Renal Registry (UKRR).
- **Type of ICHD access:** definitive access – either a surgically created arteriovenous fistula (AVF) or arteriovenous graft (AVG). Alternatively, more temporary access can be provided through a central venous catheter – either a tunnelled line (TL) or a non-tunnelled line (NTL).
- **Infections associated with haemodialysis (ICHD and HHD):** analysis of infections is presented for ICHD and HHD combined because kidney centres are not required to submit changes in dialysis modality that last <30 days. It is therefore not possible to attribute accurately an infection to HHD or ICHD. Rates of the four infections subject to mandatory reporting to the UK Health Security Agency (UKHSA) – methicillin-resistant *Staphylococcus aureus* (MRSA), methicillin-sensitive *Staphylococcus aureus (MSSA), Escherichia coli* bacteraemia and *Clostridium difficile* - will be added to the UKRR data portal (ukkidney.org/audit-research/data-portals) as new data become available.

Rationale for analyses

The analyses begin with a description of the 2024 prevalent adult ICHD population, including the number on ICHD per million population (pmp), dialysis duration and frequency.

The UK Kidney Association guidelines (ukkidney.org/health-professionals/guidelines/guidelines-commentaries) provide audit measures relevant to the care of patients on ICHD, and the guidelines available during 2024 were used for this audit. Where data permit, attainment of these measures by UK kidney centres in 2024 is reported in this chapter (table 5.1). Audit measures in guidelines that have been archived are not included.

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 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.

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.

Table 5.1 The UK Kidney Association audit measures relevant to ICHD that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
CKD mineral bone disorder (2018)	Percentage of patients with serum calcium above the normal reference range of 2.2–2.5 mmol/L	Table 5.6, figure 5.6
HD (2019)	Proportion of patients with pre-dialysis bicarbonate 18–26 mmol/L	Table 5.7, figure 5.8
	Proportion of patients with pre-dialysis potassium 4.0–6.0 mmol/L	Table 5.7, figure 5.9
Anaemia (2020)	Proportion of patients who are not iron replete with a serum ferritin <200 µg/L	Table 5.8, figure 5.13
	Proportion of patients with haemoglobin 100–120 g/L	Table 5.8, figure 5.14
Vascular access (2023)	Amongst all patients receiving haemodialysis for at least 3 months, the proportion dialysing with each access type	Figure 5.16 (partly addressed)
Commentary on the NICE Guideline on Renal Replacement Therapy and Conservative Management (2020)	Number of patients withdrawing from ICHD as a proportion of all deaths on ICHD	Table 5.9, figure 5.17

AVF – arteriovenous fistula; AVG – arteriovenous graft

Key findings

- 27,266 adult patients were receiving ICHD for ESKD in the UK on 31/12/2024, which represented 36.8% of the KRT population. The number of people on ICHD has increased by 2.5% since 2023.
- The number and crude prevalence rate of ICHD patients are increasing in England, but remain stable in other UK countries compared with 2023.
- The median age of ICHD patients was 65.5 years, and 62.7% were male.
- 80.0% of ICHD patients achieved a dialysis adequacy of URR >65%. This has been declining since 2020.
- 89.1% of ICHD patients had dialysis 3 times a week and a further 1.1% had dialysis more frequently than this.
- 63.0% of ICHD patients had dialysis for 4-5 hours per session, same as last year and lower than previously, 63.5% in 2023, 66.6% in 2021, 66.4% in 2020 and 70.9% in 2019.
- The median adjusted calcium for ICHD patients was 2.3 mmol/L and 8.4% were above the target range 2.2-2.5 mmol/L.
- The median pre-dialysis bicarbonate for ICHD patients was 23 mmol/L and 83.0% were within the target range 18-26 mmol/L.
- The median pre-dialysis potassium for ICHD patients was 4.8 mmol/L and 5.3% had a pre-dialysis potassium of >6 mmol/L.
- The median haemoglobin and ferritin for ICHD patients was 111 g/L and 539 µg/L, respectively.
- 21.5% of ICHD patients had a haemoglobin <100 g/L and 21.5% had a haemoglobin >120 g/L.
- The leading cause of death in patients under 65 years was cardiac disease at 25.8%, with infection accounting for 15.9% of deaths. In those older than 65 years, the leading cause of death was cardiac disease (18.7%) and infection (16.8%).

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 prevalent adult ICHD population

For the 67 adult kidney centres, the number of prevalent patients on ICHD 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 5.2 Number of adult patients prevalent to ICHD and proportion of adult KRT patients on ICHD by year and by centre; number of ICHD patients as a proportion of the catchment population

	N on ICHD					% on ICHD					Estimated catchment population (millions)	2024 crude rate (pmp)
Centre	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
ENGLAND												
Bham	1,314	1,349	1,417	1,409	1,433	40.3	40.8	41.8	41.3	41.3	2.13	673
Bradfd	276	275	309	346	356	38.1	37.4	39.6	41.9	42.3	0.52	690
Brightn	426	425	423	456	483	39.5	39.0	38.6	39.7	40.9	1.10	440
Bristol	463	477	491	473	460	31.4	31.9	32.3	31.2	30.2	1.29	357
Camb	276	358	363	329	383	18.3	22.1	21.9	20.2	22.4	1.00	381
Carlis	110	114	106	108	128	37.2	37.3	35.1	35.4	38.6	0.26	487
Carsh	858	883	886	923	990	46.4	46.4	45.8	46.2	47.4	1.71	580
Colchr	150	146	155	165	181	100.0	100.0	100.0	100.0	100.0	0.30	599
Covnt	365	371	372	393	389	32.9	32.9	32.9	34.1	33.5	0.82	475
Derby	244	262	291	285	323	36.1	37.9	40.5	38.8	41.7	0.59	552
Donc	177	175	200	199	196	51.9	51.3	52.6	51.3	51.3	0.39	508
Dorset	298	304	327	332	323	37.4	38.6	41.3	40.6	38.8	0.76	424
Dudley	209	223	212	202	185	55.9	55.3	55.4	54.4	51.5	0.36	519
EssexMS	423	427	433	474	497	47.8	47.7	48.6	48.7	49.4	1.03	484
Exeter	462	450	453	482	508	42.3	41.6	41.4	42.5	42.9	1.00	507
Glouc	222	223	231	222	221	42.5	40.9	41.5	39.6	38.3	0.53	413
Hull	351	361	358	381	384	38.4	39.4	38.3	39.8	39.5	0.82	466
Ipswi	135	138	131	144	154	31.7	32.7	33.1	36.0	38.5	0.32	477
Kent	425	458	474	477	492	37.2	38.4	38.9	38.3	38.5	1.10	446
L Barts	1,041	1,087	1,150	1,213	1,292	39.0	39.9	40.5	40.9	41.2	1.64	787
L Guys	692	733	714	693	691	29.9	31.5	30.9	30.1	30.0	1.02	675
L Kings	618	672	701	685	680	49.3	50.4	50.3	47.8	46.2	0.96	709
L Rfree	722	747	773	821	827	30.9	31.2	31.9	33.0	32.6	1.29	639
L St.G	320	325	305	313	312	37.4	37.1	35.5	35.6	34.1	0.68	459
L West	1,272	1,292	1,321	1,368	1,364	36.0	36.4	36.6	37.0	37.0	2.06	661
Leeds	549	580	611	648	685	31.3	32.5	33.2	33.9	34.5	1.43	480
Leic	957	1,001	1,038	1,061	1,087	36.5	38.0	38.1	37.7	37.2	2.21	491
Liv UH	523	549	558	539	565	36.2	37.6	37.8	35.9	36.9	1.29	439
M RI	504	510	542	588	624	25.4	24.7	25.7	26.0	29.3	1.39	450
Middlbr	327	350	344	368	371	34.6	36.5	36.0	37.9	37.0	0.83	446
Newc	355	350	376	401	382	29.7	28.6	30.2	31.2	29.9	0.97	393
Norwch	290	292	304	314	310	35.8	36.5	37.9	38.9	38.9	0.72	432
Nottm	349	363	362	358	375	28.9	29.8	30.0	29.9	30.2	0.95	396
Oxford	475	460	478	509	505	23.5	23.0	23.0	24.0	23.3	1.56	323
Plymth	145	160	157	152	153	26.9	29.6	29.1	28.4	28.3	0.42	364
Ports	608	651	674	696	710	32.0	33.5	33.7	34.3	34.3	1.81	391
Prestn	499	499	512	528	552	36.5	36.3	36.6	36.9	36.5	1.29	428
Redng	300	307	338	374	395	34.5	34.9	36.6	37.8	37.9	0.75	524
Salford	432	414	450	501	512	34.1	34.0	35.4	36.4	36.4	1.21	424
Sheff	552	561	577	584	606	36.9	37.4	38.8	39.5	40.3	1.14	531
Shrew	174	183	171	172	158	40.7	41.4	38.3	37.1	34.9	0.43	367
Stevng	543	535	572	607	617	55.4	52.3	53.6	54.3	53.9	1.17	526

Table 5.2 Continued

Centre	N on ICHD					% on ICHD					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
Stoke	252	266	320	335	336	30.9	31.5	35.3	36.4	36.8	0.76	442
Sund	219	215	228	230	254	39.4	39.4	40.4	39.0	40.5	0.55	459
Truro	158	185	198	189	178	35.6	40.0	42.0	40.5	39.1	0.37	480
Wirral	194	191	192	165	179	46.4	45.8	47.5	42.7	42.5	0.49	366
Wolve	326	347	376	416	454	49.8	49.9	51.9	52.6	54.6	0.56	807
York	192	189	196	206	218	33.6	32.5	32.2	33.8	35.6	0.50	436
N IRELAND												
Antrim	110	115	115	120	112	38.3	38.9	37.6	38.7	37.1	0.25	448
Belfast	144	131	139	138	146	16.2	14.4	15.0	14.7	15.8	0.54	270
Newry	78	86	77	77	86	29.5	30.6	28.6	27.9	29.0	0.24	359
Ulster	96	98	99	96	81	47.8	48.3	47.6	45.7	42.0	0.21	392
West NI	118	105	107	109	114	33.6	31.0	30.1	30.6	31.1	0.25	448
SCOTLAND												
Abrdn	192	190	190	209	220	34.0	32.8	32.2	34.2	35.0	0.50	436
Airdrie	190	189	198	215	195	37.0	37.6	38.5	39.1	35.6	0.47	413
D&Gall	56	53	48	45	63	35.7	34.4	32.7	30.6	39.6	0.12	516
Dundee	155	144	134	141	140	36.6	35.8	34.6	36.8	38.7	0.37	376
Edinb	287	279	287	297	307	32.4	30.3	29.8	30.0	29.5	0.86	358
Glasgw	548	563	607	584	591	29.7	30.4	32.1	30.6	30.7	1.40	423
Inverns	92	92	84	100	89	33.8	33.6	30.3	34.1	31.7	0.23	390
Klmarnk	145	135	142	157	155	39.4	36.9	38.0	40.7	40.2	0.29	526
Krkcldy	145	163	160	171	175	50.2	56.0	56.1	59.8	62.1	0.28	629
WALES												
Bangor	78	76	76	68	81	36.1	35.0	34.5	31.2	35.7	0.16	505
Cardff	512	531	571	589	574	30.5	31.2	32.5	32.2	31.2	1.18	488
Clwyd	78	84	85	97	98	38.2	41.6	41.7	43.5	44.1	0.18	531
Swanse	394	404	392	434	443	46.4	47.4	46.2	48.3	46.3	0.76	580
Wrexm	114	103	106	118	118	35.4	34.0	34.5	36.2	35.1	0.21	556
TOTALS												
England	20,772	21,433	22,170	22,834	23,478	35.9	36.4	36.9	37.1	37.3	46.50	505
N Ireland	546	535	537	540	539	27.4	26.4	26.0	25.8	25.9	1.49	361
Scotland	1,810	1,808	1,850	1,919	1,935	34.0	33.8	34.1	34.6	34.5	4.53	427
Wales	1,176	1,198	1,230	1,306	1,314	35.9	36.6	36.8	37.4	36.7	2.50	526
UK	**24,304**	**24,974**	**25,787**	**26,599**	**27,266**	**35.5**	**35.9**	**36.4**	**36.6**	**36.8**	**55.02**	**496**

Country ICHD populations were calculated by summing the ICHD 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 ICHD patients

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

Table 5.3 Demographics of adult patients prevalent to ICHD on 31/12/2024 by centre

Centre	N on KRT	N on ICHD	% on ICHD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
ENGLAND										
Bham	3,469	1,433	41.3	65.6	61.8	49.1	31.6	16.5	2.8	2.0
Bradfd	841	356	42.3	61.8	61.0	42.1	52.0	3.4	2.5	0.6
Brightn	1,180	483	40.9	67.6	62.1	84.7	6.4	4.2	4.6	6.4
Bristol	1,524	460	30.2	62.0	67.0	78.8	5.9	12.9	2.4	0.7
Camb	1,711	383	22.4	71.1	65.3	93.7	1.9	2.8	1.7	5.2
Carlis	332	128	38.6	65.2	60.2	96.7	0.8	1.7	0.8	5.5
Carsh	2,088	990	47.4	65.7	60.8	55.8	21.2	16.3	6.7	7.9
Colchr	181	181	100.0	70.5	68.0	88.9	1.5	3.7	5.9	25.4
Covnt	1,160	389	33.5	67.2	63.8	72.8	18.0	7.3	1.8	1.5
Derby	775	323	41.7	67.0	64.4	74.7	18.4	4.3	2.5	14.2
Donc	382	196	51.3	68.8	63.8	88.7	3.6	3.6	4.2	14.3
Dorset	832	323	38.8	70.9	62.5	94.4	2.2	0.9	2.5	0.3
Dudley	359	185	51.5	71.6	63.8	76.8	15.1	7.6	0.5	0.0
EssexMS	1,006	497	49.4	66.5	66.2	81.1	5.4	8.2	5.2	7.2
Exeter	1,183	508	42.9	71.7	68.5	97.0	1.6	0.6	0.8	3.1
Glouc	577	221	38.3	69.7	61.5	87.3	4.1	4.1	4.5	0.0
Hull	971	384	39.5	64.1	60.9	93.9	1.6	2.1	2.4	2.6
Ipswi	400	154	38.5	69.8	64.9	86.5	2.0	3.4	8.1	3.9
Kent	1,277	492	38.5	64.6	61.0	88.7	3.1	3.3	4.8	2.6
L Barts	3,138	1,292	41.2	63.1	57.6	22.8	39.2	32.5	5.5	1.5
L Guys	2,300	691	30.0	63.5	60.8	37.2	9.5	45.3	8.0	5.5
L Kings	1,472	680	46.2	63.0	61.2	34.9	11.7	48.0	5.5	3.1
L Rfree	2,533	827	32.6	64.0	61.4	34.6	19.5	27.3	18.6	5.7
L St.G	916	312	34.1	65.3	60.3	26.6	28.3	35.5	9.6	6.1
L West	3,688	1,364	37.0	64.9	64.4	27.0	42.2	24.3	6.6	0.0
Leeds	1,987	685	34.5	63.0	63.1	67.5	23.0	7.8	1.8	0.3
Leic	2,920	1,087	37.2	64.6	64.9	70.2	20.5	7.3	2.0	9.4
Liv UH	1,531	565	36.9	63.7	64.6	86.5	4.6	3.8	5.0	11.9
M RI	2,128	624	29.3	63.8	62.7	55.7	21.4	17.2	5.6	3.4
Middlbr	1,002	371	37.0	65.2	63.1	89.9	6.4	2.2	1.4	3.5
Newc	1,276	382	29.9	64.0	62.3	90.6	4.7	2.6	2.1	0.0
Norwch	797	310	38.9	70.8	65.5	93.9	2.4	2.0	1.6	20.6
Nottm	1,240	375	30.2	63.8	62.7	72.6	7.7	13.4	6.3	2.7
Oxford	2,170	505	23.3	65.5	64.0	69.7	14.4	10.3	5.6	7.9
Plymth	540	153	28.3	68.0	60.8	98.0	1.3	0.0	0.7	0.7
Ports	2,070	710	34.3	66.0	66.2	90.2	5.0	1.8	3.0	21.0
Prestn	1,512	552	36.5	65.0	64.5	81.1	16.2	2.1	0.6	13.9
Redng	1,043	395	37.9	66.6	64.8	60.2	20.4	8.4	11.1	15.4
Salford	1,408	512	36.4	59.5	64.6	64.8	23.8	7.7	3.7	4.1
Sheff	1,503	606	40.3	64.5	64.0	80.5	10.8	5.8	2.9	2.6
Shrew	453	158	34.9	70.0	66.5	87.7	6.5	3.9	1.9	1.9
Stevng	1,144	617	53.9	66.2	63.2	62.5	19.0	11.7	6.8	4.5
Stoke	913	336	36.8	68.8	60.7	87.6	5.7	2.9	3.8	6.3
Sund	627	254	40.5	67.4	63.4	94.9	3.1	0.8	1.2	0.0
Truro	455	178	39.1	69.5	66.9	98.9	0.6	0.6	0.0	0.0
Wirral	421	179	42.5	64.0	59.2	92.2	3.9	3.9	0.0	0.0
Wolve	831	454	54.6	65.0	61.9	62.2	19.1	4.9	13.8	0.9

Table 5.3 Continued

Centre	N on KRT	N on ICHD	% on ICHD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
York	613	218	35.6	73.0	59.6	96.2	1.9	0.0	1.9	2.8
N IRELAND										
Antrim	302	112	37.1	72.3	60.7	98.9	0.0	0.0	1.1	16.1
Belfast	922	146	15.8	67.7	58.9	95.4	3.1	0.8	0.8	10.3
Newry	297	86	29.0	71.8	59.3	96.9	0.0	3.1	0.0	25.6
Ulster	193	81	42.0	75.1	65.4	98.7	1.3	0.0	0.0	4.9
West NI	367	114	31.1	69.8	62.3	100.0	0.0	0.0	0.0	25.4
SCOTLAND										
Abrdn	628	220	35.0	66.0	58.6					
Airdrie	547	195	35.6	64.5	54.4					
D&Gall	159	63	39.6	66.5	63.5					
Dundee	362	140	38.7	66.0	63.6					
Edinb	1,042	307	29.5	63.7	68.1					
Glasgw	1,928	591	30.7	66.0	59.7					
Inverns	281	89	31.7	68.8	61.8					
Klmarnk	386	155	40.2	64.9	65.8					
Krkcldy	282	175	62.1	68.0	60.0					
WALES										
Bangor	227	81	35.7	71.1	66.7					33.3
Cardff	1,841	574	31.2	65.8	61.7	88.2	7.0	2.9	1.9	15.7
Clwyd	222	98	44.1	67.8	62.2	97.6	1.2	1.2	0.0	16.3
Swanse	956	443	46.3	68.0	59.1	95.5	2.1	1.0	1.4	5.0
Wrexm	336	118	35.1	65.7	62.7	99.1	0.0	0.0	0.9	5.9
TOTALS										
England	62,879	23,478	37.3	65.4	63.0	65.0	17.2	13.1	4.8	5.2
N Ireland	2,081	539	25.9	71.5	61.0	97.8	1.1	0.7	0.4	16.3
Scotland	5,615	1,935	34.5	65.5	61.4					
Wales	3,582	1,314	36.7	66.7	61.3	93.0	3.8	1.6	1.6	12.3
UK	**74,157**	**27,266**	**36.8**	**65.5**	**62.7**	**67.0**	**16.2**	**12.3**	**4.5**	**5.8**

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

Primary renal diseases (PRDs) were grouped into categories as shown in table 5.4, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of ICHD 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 5.4 Primary renal diseases (PRDs) of adult patients prevalent to ICHD on 31/12/2024

PRD	N on ICHD	% ICHD population	Age <65 yrs		Age ≥65 yrs		M/F ratio
			N	%	N	%	
Diabetes	7,513	29.4	3,639	29.1	3,874	29.6	1.7
Glomerulonephritis	3,432	13.4	2,029	16.2	1,403	10.7	2.1
Hypertension	2,146	8.4	1,079	8.6	1,067	8.2	2.5
Polycystic kidney disease	1,506	5.9	826	6.6	680	5.2	1.0
Pyelonephritis	1,575	6.2	698	5.6	877	6.7	1.7
Renal vascular disease	990	3.9	180	1.4	810	6.2	1.7
Other	4,495	17.6	2,407	19.2	2,088	16.0	1.3
Uncertain aetiology	3,929	15.4	1,646	13.2	2,283	17.5	1.7
Total (with data)	**25,586**	**100.0**	**12,504**	**100.0**	**13,082**	**100.0**	
Missing	1,680	6.2	791	5.9	889	6.4	1.9

Adequacy of dialysis in prevalent adult ICHD patients

URR and session duration were calculated only for patients who were undertaking ICHD three times per week. Patients who had missing data for the number of dialysis sessions per week were assumed to be dialysing three times per week for the purposes of calculating the median URR.

Table 5.5 Median urea reduction ratio (URR) and distribution of session frequency and time for adult patients prevalent to ICHD on 31/12/2024 using end of third quarter data (30/09/2024)

Centre	Median URR (%)	% URR >65%	% session frequency/week			% session time			% data completeness		
			<3 sessions	3 sessions	>3 sessions	<4 hours	4–5 hours	>5 hours	URR	Session frequency	Session time
ENGLAND											
Bham	77	91.3	15.3	83.4	1.2	24.3	75.0	0.7	99.0	98.9	99.0
Bradfd	73	79.2	23.1	74.5	2.4				99.4	99.4	0.0
Brightn	74	88.9	8.6	90.9	0.4	13.1	86.9	0.0	98.8	99.6	99.8
Bristol	72	77.6	8.0	91.3	0.7	26.1	73.9	0.0	100.0	99.1	100.0
Camb			4.2	94.9	0.8	43.3	56.7	0.0	0.0	95.4	95.2
Carlis	68	59.8	18.3	81.7	0.0	26.3	73.7	0.0	98.0	99.2	100.0
Carsh			9.3	89.5	1.2	6.1	93.8	0.1	60.8	99.6	99.9
Colchr	73	86.6	3.0	97.0	0.0	19.5	80.5	0.0	100.0	100.0	100.0
Covnt			15.1	82.4	2.6	48.1	51.9	0.0	66.6	97.5	98.0
Derby	76	89.9	0.7	99.0	0.3				87.0	99.7	6.0
Donc	74	84.3	7.7	91.7	0.6	38.9	61.1	0.0	95.2	99.5	100.0
Dorset	74	93.2	5.9	94.1	0.0	11.8	87.8	0.3	82.2	100.0	100.0
Dudley	75	85.1	4.4	95.1	0.5	12.6	86.3	1.1	97.3	97.8	97.9
EssexMS	71	75.9	24.9	73.8	1.4	54.9	45.1	0.0	90.6	99.1	98.8
Exeter			5.3	94.3	0.4	77.9	22.1	0.0	0.0	98.3	92.4
Glouc	72	79.9	11.0	87.0	2.0				100.0	100.0	0.0
Hull	77	92.0	6.0	92.3	1.7	20.9	79.1	0.0	100.0	99.7	99.7
Ipswi	68	67.1	25.4	73.9	0.7	19.0	81.0	0.0	78.1	95.7	95.2
Kent	69	68.7	5.7	93.9	0.5	78.9	21.1	0.0	89.0	99.6	100.0
L Barts			4.7	95.0	0.3	74.9	25.1	0.0	0.0	99.1	99.1
L Guys									0.0	0.0	0.0
L Kings									0.0	0.0	0.0
L Rfree			18.0	81.7	0.3	69.2	30.8	0.0	0.0	99.1	98.9
L St.G			5.9	93.7	0.4	24.0	76.0	0.0	9.4	89.4	98.1
L West									68.0	0.0	34.7

Table 5.5 Continued

Centre	Median URR (%)	% URR >65%	% session frequency/week			% session time			% data completeness		
			<3 sessions	3 sessions	>3 sessions	<4 hours	4–5 hours	>5 hours	URR	Session frequency	Session time
Leeds	72	81.8	11.7	87.4	0.9	33.5	66.5	0.0	100.0	98.9	98.6
Leic	73	82.0	3.9	95.2	0.8	15.2	82.0	2.8	99.5	99.5	99.5
Liv UH			0.6	97.2	2.2	10.5	89.5	0.0	0.0	98.3	97.9
M RI			13.2	86.8	0.0	8.1	88.1	3.8	67.0	70.0	72.5
Middlbr	71	75.2	3.8	95.3	0.9	28.3	68.4	3.3	98.2	99.4	74.4
Newc	71	84.1	23.6	76.1	0.3	50.4	49.6	0.0	100.0	98.3	100.0
Norwch	72	79.7	12.1	87.1	0.7	56.6	43.4	0.0	96.0	98.2	98.2
Nottm			5.4	91.2	3.3	46.7	53.3	0.0	0.0	99.7	99.7
Oxford			17.5	82.1	0.4				69.8	99.8	0.0
Plymth	71	72.2	2.9	97.1	0.0				99.3	99.3	0.0
Ports			10.5	88.9	0.6	52.3	47.7	0.0	0.0	99.3	99.2
Prestn			17.1	81.5	1.4				0.0	99.8	31.4
Redng			5.2	94.3	0.5	33.9	66.1	0.0	64.5	99.7	99.7
Salford	68	62.5	3.9	95.4	0.7	25.8	74.2	0.0	70.4	99.8	97.3
Sheff	70	71.3	8.4	89.5	2.1	83.7	16.3	0.0	99.0	99.1	99.0
Shrew	73	88.2	2.6	92.9	4.5	12.5	87.5	0.0	100.0	100.0	100.0
Stevng	70	73.3	12.7	84.0	3.2	45.3	54.7	0.0	78.1	98.1	97.7
Stoke	76	94.9	15.2	82.9	1.9	25.3	74.7	0.0	92.4	99.7	100.0
Sund	74	88.0	7.3	89.3	3.4	31.6	68.4	0.0	100.0	100.0	100.0
Truro	71	82.9	8.6	90.8	0.6				100.0	100.0	0.0
Wirral			9.2	88.2	2.6	28.9	71.1	0.0	0.0	100.0	100.0
Wolve			6.5	93.5	0.0	7.2	92.5	0.3	0.0	98.4	98.2
York	77	95.6	8.5	90.0	1.5	19.9	80.1	0.0	100.0	99.5	99.5
N IRELAND											
Antrim	71	73.3	1.0	98.1	1.0	13.6	86.4	0.0	96.2	98.1	98.1
Belfast	75	85.0	6.2	89.2	4.6	11.7	86.7	1.7	98.4	95.6	98.4
Newry	75	90.2	20.0	80.0	0.0	59.0	41.0	0.0	82.3	97.4	98.4
Ulster	68	61.6	4.0	94.7	1.3	26.7	73.3	0.0	91.3	93.8	93.8
West NI	70	73.5	8.0	87.5	4.5	41.8	58.2	0.0	100.0	100.0	100.0
SCOTLAND											
Abrdn	69	68.9							99.5		
Airdrie	68	65.4							98.9		
D&Gall	71	71.4							100.0		
Dundee	69	70.9							99.2		
Edinb	71	78.5							98.6		
Glasgw	68	63.3							97.5		
Inverns	69	73.6							100.0		
Klmarnk	72	71.9							97.9		
Krkcldy	71	75.0							98.8		
WALES											
Bangor	74	91.2	1.5	87.9	10.6	44.8	53.4	1.7	98.3	100.0	100.0
Cardff	73	83.6							99.8	0.0	0.4
Clwyd	73	88.0							100.0	0.0	14.5
Swanse	74	81.2	4.9	94.6	0.5	37.1	62.7	0.3	99.5	99.5	99.5
Wrexm	73	72.7	0.0	100.0	0.0	24.8	75.2	0.0	99.2	99.2	99.2
TOTALS											
England	73	81.4	10.0	88.9	1.1	36.9	62.7	0.4	58.8	86.8	78.5
N Ireland	72	76.5	7.2	90.0	2.8	27.4	72.2	0.4	94.9	98.0	97.9
Scotland	69	69.6							98.5		
Wales	73	82.4	3.5	94.9	1.6	34.9	64.7	0.4	99.6	47.1	47.0
UK	**73**	**80.0**	**9.8**	**89.1**	**1.1**	**36.6**	**63.0**	**0.4**	**64.6**	**85.1**	**77.2**

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

UK National averages for session frequency and time do not include Scotland

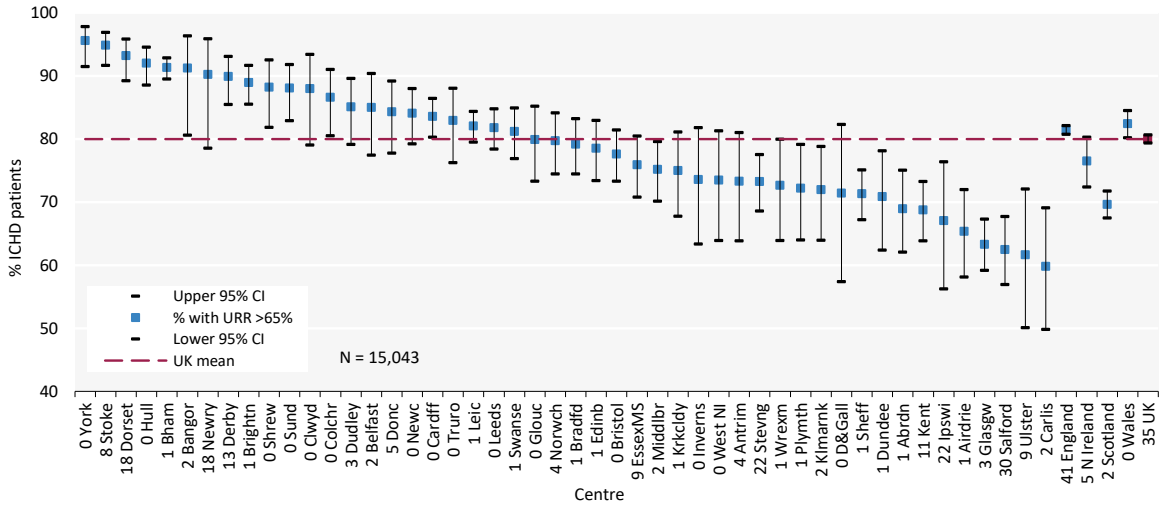


Figure 5.2 Percentage of adult patients prevalent to ICHD on 31/12/2024 with urea reduction ratio (URR) >65% by centre
CI – confidence interval

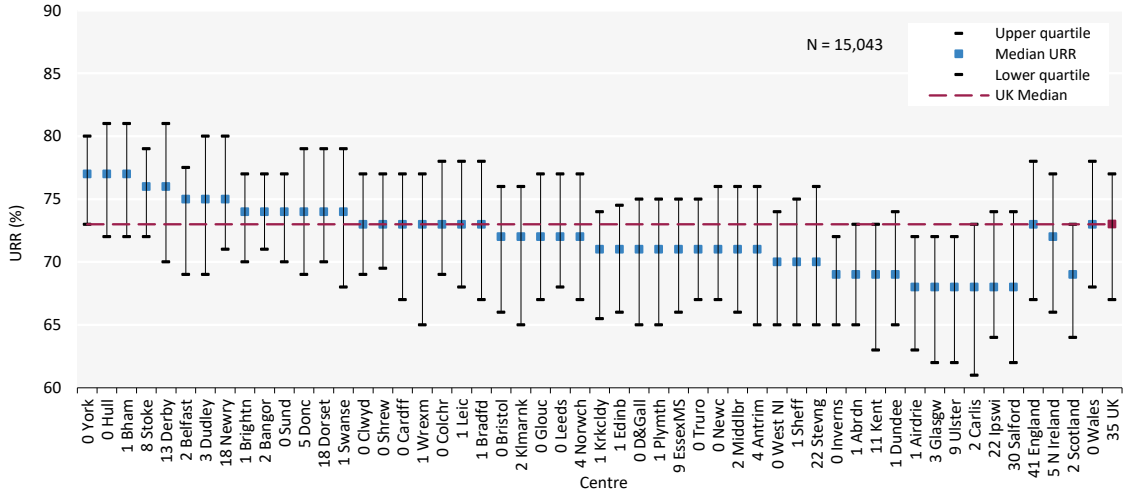


Figure 5.3 Median urea reduction ratio (URR) achieved in adult patients prevalent to ICHD on 31/12/2024 by centre

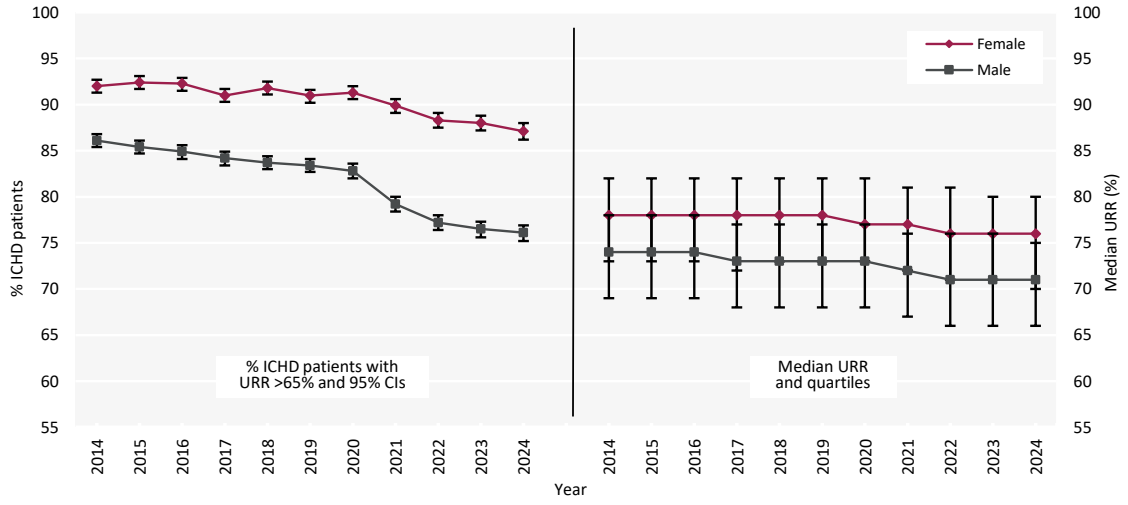


Figure 5.4 Change in the percentage of adult patients prevalent to ICHD with urea reduction ratio (URR) >65% and the median URR by sex between 2014 and 2024
CI – confidence interval

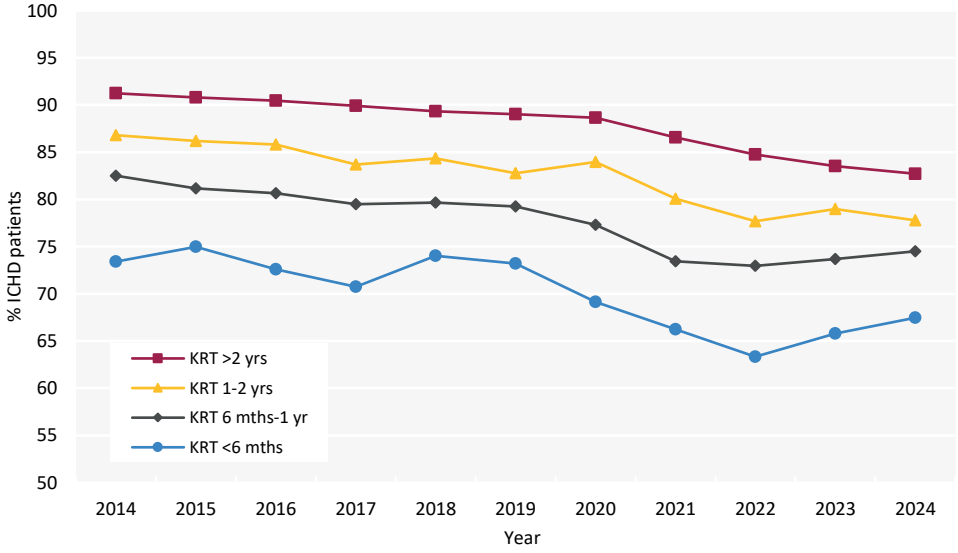


Figure 5.5 Percentage of adult patients prevalent to ICHD achieving urea reduction ratio (URR) >65% by time on KRT between 2014 and 2024

Biochemistry parameters in prevalent adult ICHD patients

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

Table 5.6 Median adjusted calcium (Ca) and percentage with adjusted Ca within and above the target range (2.2–2.5 mmol/L) in adult patients prevalent to ICHD on 31/12/2024 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	79.7	7.5	99.4
Bradfd	2.4	81.3	11.8	99.4
Brightn	2.3	81.0	7.8	100.0
Bristol	2.4	88.8	9.3	100.0
Camb	2.3	87.7	8.0	94.3
Carlis	2.3	75.4	2.5	100.0
Carsh	2.3	74.7	7.0	99.6
Colchr	2.3	80.8	5.6	99.4
Covnt	2.3	76.6	10.6	98.6
Derby	2.3	90.1	2.0	99.7
Donc	2.3	84.4	8.4	100.0
Dorset	2.3	78.1	8.6	100.0
Dudley	2.3	81.0	10.3	100.0
EssexMS	2.3	79.1	8.5	99.6
Exeter	2.3	78.9	6.7	99.8
Glouc	2.4	88.9	6.1	100.0
Hull	2.4	77.3	13.9	99.7
Ipswi	2.2	70.2	7.8	97.2
Kent	2.4	81.4	11.3	100.0
L Barts	2.3	78.5	5.6	99.9
L Guys				
L Kings				
L Rfree	2.3	82.0	8.4	99.7
L St.G	2.4	74.0	12.1	98.9
L West	2.3	75.8	11.4	72.8
Leeds	2.3	83.8	6.5	100.0
Leic	2.3	79.8	8.8	99.8
Liv UH	2.4	80.3	12.8	97.9
M RI	2.3	81.1	9.8	86.5
Middlbr	2.3	82.3	6.4	99.4
Newc	2.3	73.8	10.8	100.0
Norwch	2.3	82.6	10.7	100.0
Nottm	2.3	83.6	9.1	100.0
Oxford	2.2	67.5	3.8	95.1
Plymth	2.3	81.0	3.7	100.0
Ports	2.3	78.9	5.7	99.9
Prestn	2.4	84.6	7.5	100.0
Redng	2.3	83.2	3.8	99.7
Salford	2.4	82.6	10.2	100.0
Sheff	2.3	76.7	6.7	99.8
Shrew	2.4	75.2	18.6	99.3
Stevng	2.4	84.1	8.5	98.8
Stoke	2.4	83.2	11.7	88.1
Sund	2.3	78.5	11.0	100.0
Truro	2.4	84.6	12.4	100.0
Wirral	2.3	79.8	6.7	75.3
Wolve	2.3	83.1	5.2	98.6
York	2.3	83.3	7.1	100.0
N IRELAND				
Antrim	2.4	84.8	11.4	100.0
Belfast	2.4	79.4	15.4	100.0
Newry	2.3	67.1	5.1	98.8
Ulster	2.4	86.3	11.3	100.0

Table 5.6 Continued

Centre	Median adj Ca (mmol/L)	% adj Ca 2.2-2.5 mmol/L	% adj Ca >2.5 mmol/L	% data completeness
West NI	2.4	86.5	10.6	100.0
WALES				
Bangor	2.4	82.9	10.0	100.0
Cardff	2.4	83.3	11.2	100.0
Clwyd	2.3	93.2	2.3	100.0
Swanse	2.3	86.7	5.5	100.0
Wrexm	2.3	90.9	2.7	99.1
TOTALS				
England	2.3	80.0	8.4	94.0
N Ireland	2.4	81.2	11.3	99.8
Wales	2.4	85.9	7.8	99.9
E, W & NI	**2.3**	**80.3**	**8.4**	**94.5**

Blank cells = No data returned by the centre or data completeness <70%

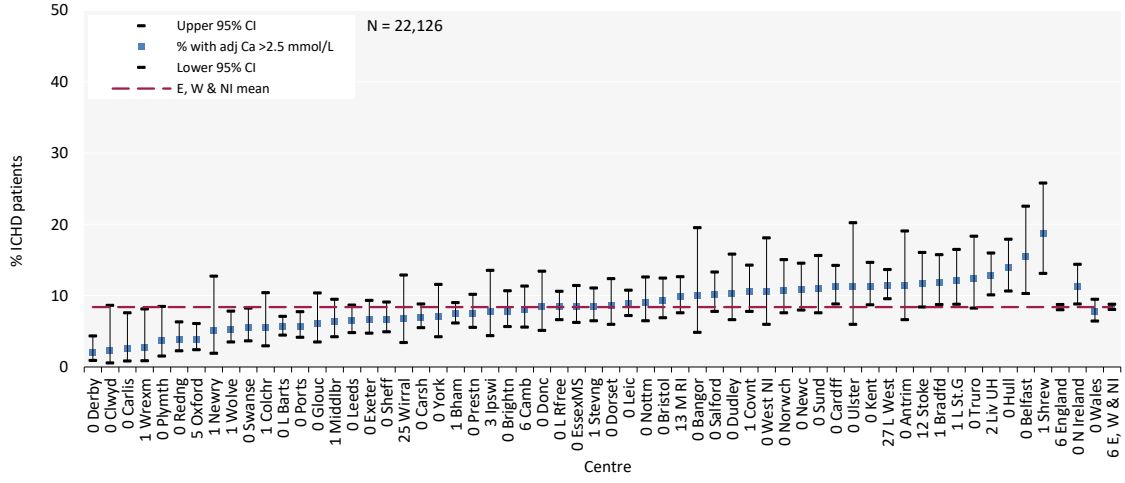


Figure 5.6 Percentage of adult patients prevalent to ICHD on 31/12/2024 with adjusted calcium (Ca) above the target range (>2.5 mmol/L) by centre
CI – confidence interval

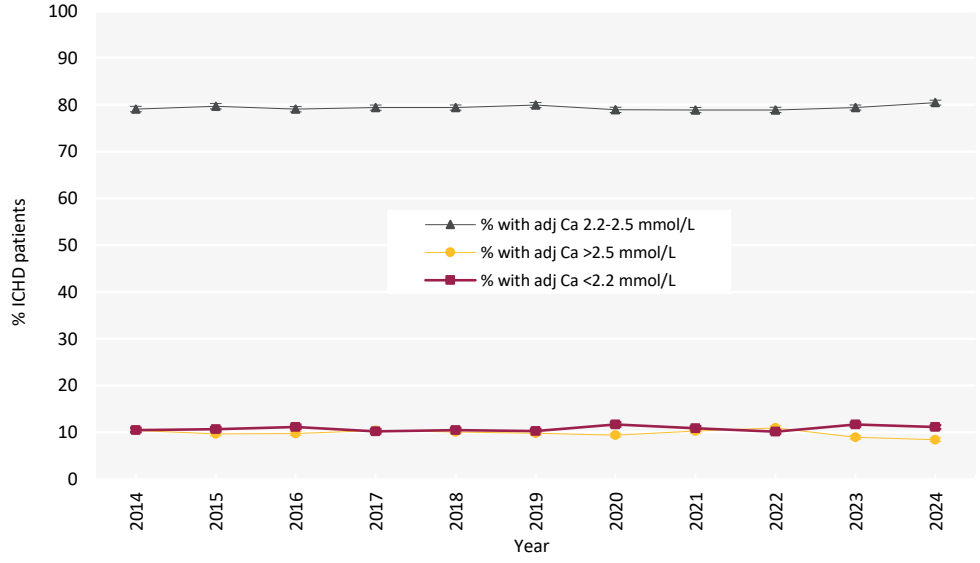


Figure 5.7 Change in percentage of adult patients prevalent to ICHD within, above and below the target range for adjusted calcium (Ca 2.2–2.5 mmol/L) between 2014 and 2024

Table 5.7 Median pre-dialysis potassium and bicarbonate and percentage attaining target ranges in adult patients prevalent to ICHD on 31/12/2024 by centre

	Pre-dialysis potassium					Pre-dialysis bicarbonate				
Centre	Median (mmoI/L)	% <4.0 mmol/L	% 4.0–6.0 mmol/L	% >6.0 mmol/L	% data completeness	Median (mmoI/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% data completeness
ENGLAND										
Bham					50.6	22	5.9	87.3	6.9	99.2
Bradfd	4.9	7.2	87.1	5.7	100.0	24	4.3	82.2	13.5	91.0
Brightn					0.0	23.1	5.1	79.2	15.6	100.0
Bristol	4.5	29.8	67.7	2.6	100.0	24	0.2	84.7	15.1	100.0
Camb	4.9	7.9	88.1	4.0	95.2					21.8
Carlis					0.0	21	5.9	91.5	2.5	100.0
Carsh					0.0					24.1
Colchr	4.8	11.8	84.5	3.7	99.4	21	4.4	91.9	3.7	99.4
Covnt					0.0	26	0.6	60.6	38.9	98.6
Derby	4.7	13.9	83.1	3.0	99.7	21	2.3	95.7	2.0	99.7
Donc	4.8	5.0	88.8	6.2	100.0	21	17.9	76.5	5.6	100.0
Dorset	4.8	8.6	85.4	6.0	100.0	23	2.7	92.7	4.7	100.0
Dudley	4.8	9.8	87.9	2.3	100.0					51.2
EssexMS	4.9	11.6	82.9	5.6	99.6	23	2.2	86.6	11.1	99.6
Exeter	4.6	17.6	80.2	2.2	99.8	24	2.2	80.9	17.0	99.8
Glouc					0.0	24	2.0	87.9	10.1	100.0
Hull	4.8	6.2	88.7	5.1	99.7	23	2.3	87.0	10.8	99.7
Ipswi					0.0	22	7.8	85.8	6.4	97.2
Kent	4.7	22.9	73.7	3.4	100.0	23	3.0	90.3	6.8	100.0
L Barts	4.8	20.6	73.9	5.5	100.0	23	3.7	85.8	10.5	99.9
L Guys	4.8	9.3	86.1	4.7	93.9					27.0
L Kings					59.9					42.8
L Rfree	4.9	19.0	76.3	4.7	99.7	21	7.9	91.4	0.7	97.1
L St.G					0.0	23	8.7	85.5	5.8	96.8
L West					0.0					57.6
Leeds	5.1	3.3	87.2	9.5	100.0	22	2.2	94.0	3.8	100.0

Table 5.7 Continued

Centre	Pre-dialysis potassium					Pre-dialysis bicarbonate				
	Median (mmoI/L)	% <4.0 mmol/L	% 4.0–6.0 mmol/L	% >6.0 mmol/L	% data completeness	Median (mmoI/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% data completeness
Leic	4.9	9.5	83.2	7.3	99.8	24	2.4	79.5	18.1	99.8
Liv UH					0.0	25	1.0	65.1	33.9	97.9
M RI	4.8	11.3	82.9	5.8	88.1	22	5.1	88.4	6.6	85.6
Middlbr	4.7	13.9	83.8	2.3	99.4	29	0.0	18.3	81.7	99.4
Newc					0.0	23	3.1	90.0	6.8	100.0
Norwch	5.2	3.0	86.7	10.4	100.0	22	4.5	88.5	7.1	99.6
Nottm	4.5	31.6	64.9	3.5	100.0	24	2.9	83.9	13.2	99.7
Oxford	4.9	10.2	85.1	4.8	94.9	23	3.7	81.2	15.1	93.8
Plymth	4.8	13.1	81.0	5.8	100.0	20	13.4	86.6	0.0	92.7
Ports	5.0	5.5	87.4	7.1	99.7	22.8	4.5	82.5	13.0	99.7
Prestn	4.9	5.9	88.9	5.2	100.0	23	5.9	86.9	7.1	100.0
Redng	4.8	10.6	85.9	3.5	99.7	22	5.7	91.9	2.4	99.7
Salford	4.7	16.4	80.4	3.2	100.0	24	2.6	80.2	17.2	100.0
Sheff	4.9	7.4	87.1	5.5	99.8	22	5.5	87.5	7.1	99.8
Shrew					0.0	21	9.7	89.0	1.4	99.3
Stevng	5.0	7.3	87.0	5.7	98.8	24	1.7	84.6	13.7	98.8
Stoke					0.0					1.3
Sund					0.0	21	10.1	89.5	0.4	100.0
Truro	4.8	5.3	88.2	6.5	100.0	26	0.0	55.0	45.0	100.0
Wirral					0.0	24	1.3	84.8	13.9	95.6
Wolve					0.0	24.2	7.1	69.8	23.1	98.6
York	5.0	5.1	86.9	8.1	100.0	24	3.5	80.3	16.2	100.0
N IRELAND										
Antrim	4.7	10.5	85.7	3.8	100.0	24	1.0	85.7	13.3	100.0
Belfast	4.8	5.9	91.2	2.9	100.0	22	2.9	96.3	0.7	100.0
Newry	4.7	12.7	83.5	3.8	98.8	23	5.1	79.8	15.2	98.8
Ulster	4.9	7.5	87.5	5.0	100.0	21.5	0.0	100.0	0.0	100.0
West NI	4.7	8.7	86.5	4.8	100.0	22	2.9	95.2	1.9	100.0
WALES										
Bangor	4.8	10.0	90.0	0.0	100.0	24	1.4	90.0	8.6	100.0
Cardff	4.9	8.4	85.8	5.8	100.0	23	1.9	86.3	11.8	98.7
Clwyd	4.9	9.1	85.2	5.7	100.0	23	3.4	90.9	5.7	100.0
Swanse	4.9	11.3	82.5	6.3	100.0	23	3.0	90.2	6.8	100.0
Wrexm	4.7	16.4	80.0	3.6	99.1	24	1.8	81.8	16.4	99.1
TOTALS										
England	4.8	12.6	82.1	5.3	67.9	23	4.6	82.5	13.0	86.1
N Ireland	4.8	8.7	87.3	4.0	99.8	22	2.4	91.9	5.8	99.8
Wales	4.9	10.2	84.4	5.4	99.9	23	2.4	87.8	9.9	99.3
E, W & NI	**4.8**	**12.3**	**82.4**	**5.3**	**70.3**	**23**	**4.4**	**83.0**	**12.6**	**87.1**

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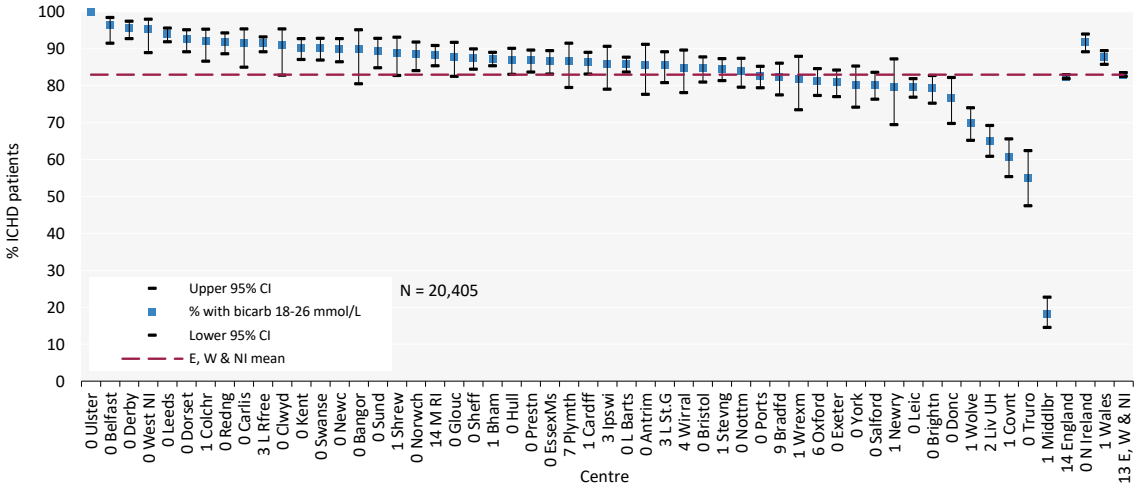


Figure 5.8 Percentage of adult patients prevalent to ICHD on 31/12/2024 with pre-dialysis bicarbonate (bicarb) within the target range (18-26 mmol/L) by centre
CI – confidence interval
Bicarb - bicarbonate

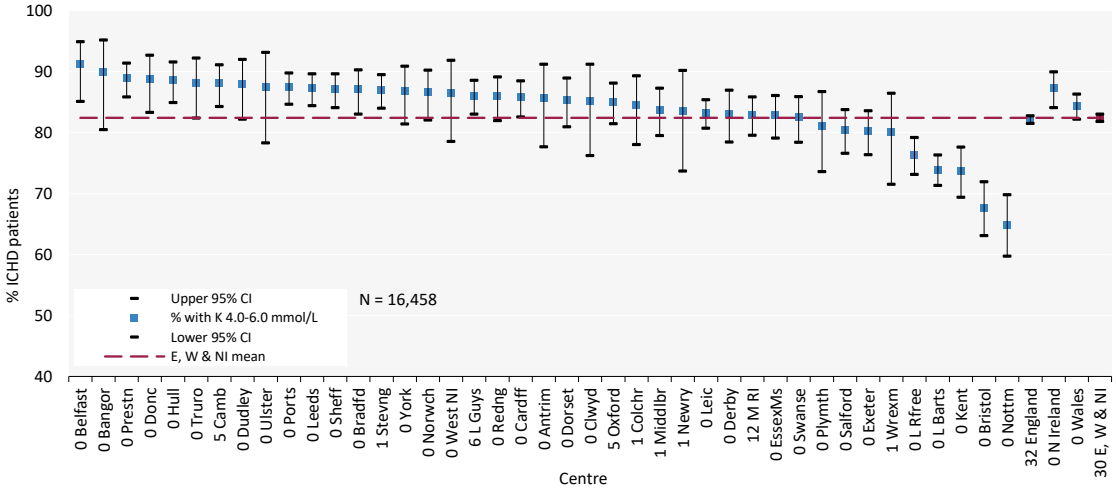


Figure 5.9 Percentage of adult patients prevalent to ICHD on 31/12/2024 with pre-dialysis potassium (K) within the target range (4.0-6.0 mmol/L) by centre
CI – confidence interval
K - Potassium

Pre-dialysis potassium has only been included in the UKRR report in the last few years and therefore longitudinal analyses are not shown.

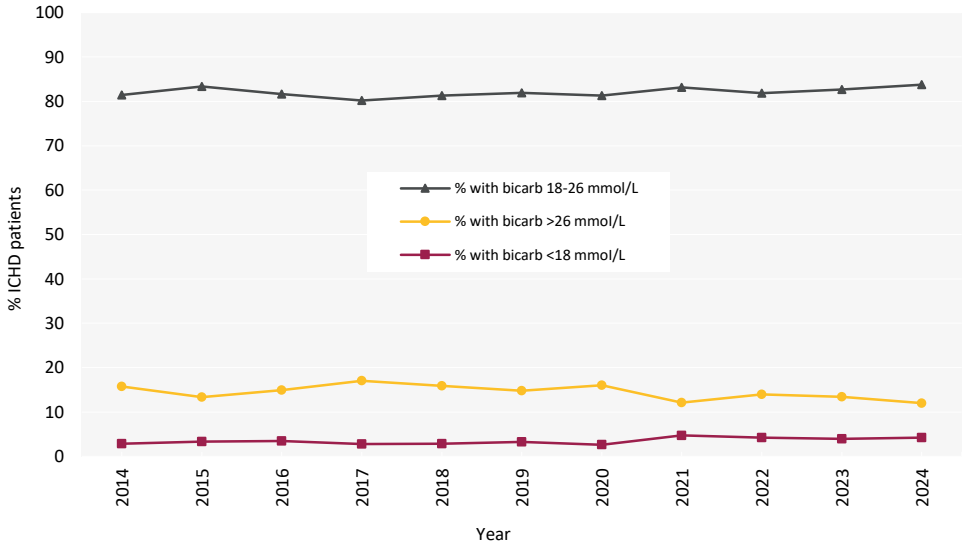


Figure 5.10 Change in percentage of adult patients prevalent to ICHD within, above and below the target range for pre-dialysis bicarbonate (bicarb 18-26 mmol/L) between 2014 and 2024

Anaemia in prevalent adult ICHD patients

UK Kidney Association anaemia guidelines recommend a target haemoglobin of 100-120 g/L. Data regarding target and median haemoglobin and ferritin levels attained are presented in table 5.8.

Table 5.8 Median haemoglobin and ferritin and percentage attaining target ranges in adult patients prevalent to ICHD on 31/12/2024 by centre

	Haemoglobin				Ferritin		
Centre	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <200 µg/L	% data completeness
ENGLAND							
Bham	110	24.0	18.9	99.2	575	13.8	99.4
Bradfd	112	22.5	23.7	100.0	516	11.7	100.0
Brightn	110	18.3	21.3	99.8	464	10.5	99.8
Bristol	114	4.0	30.2	100.0	578	4.0	100.0
Camb	112	21.1	29.3	94.6	419	20.9	90.3
Carlis	114	19.5	25.4	100.0	667	5.1	100.0
Carsh	111	19.3	21.4	99.9	473	9.2	99.9
Colchr	111	15.5	16.8	99.4	576	6.2	99.4
Covnt	107	27.9	12.5	98.9	508	18.2	98.9
Derby	114	13.2	27.5	99.7	579	4.4	98.0
Donc	112	24.0	25.7	100.0	497	9.5	100.0
Dorset	113	14.6	24.9	100.0	720	3.7	100.0
Dudley	115	16.7	21.8	100.0	236	42.5	100.0
EssexMS	111	16.7	17.6	99.6	490	15.6	99.3
Exeter	112	21.1	24.7	99.8	330	17.5	99.1
Glouc	109	26.3	14.6	100.0	377	21.0	98.5
Hull	112	20.6	24.9	100.0	765	3.4	99.7
Ipswi	111	22.0	19.1	97.2	435	16.3	97.2
Kent	107	26.5	17.0	100.0	738	7.5	99.8
L Barts	109	25.7	20.2	99.9	669	5.1	99.8
L Guys	107	28.9	15.2	97.7	553	12.3	96.6
L Kings	111	19.2	23.4	96.7	537	13.4	96.2
L Rfree	110	20.7	20.7	99.7	553	14.3	99.6
L St.G	110	22.8	16.7	98.9	623	5.7	98.9
L West	112	18.5	20.3	76.6	398	15.7	74.2
Leeds	109	23.1	16.9	100.0	405	18.3	100.0
Leic	114	18.5	31.2	99.8	490	8.1	99.8
Liv UH	109	22.7	19.1	98.1	498	13.1	96.9
M RI	111	23.8	27.6	88.3	550	9.0	79.8
Middlbr	111	18.3	24.6	99.4	829	4.4	98.6
Newc	109	24.2	23.6	100.0	720	9.4	100.0
Norwch	110	21.5	17.8	100.0	550	13.8	99.6
Nottm	110	20.8	16.7	100.0	529	12.3	100.0
Oxford	111	21.5	24.4	94.9	645	3.4	94.6
Plymth	113	12.4	20.4	100.0	517	14.6	100.0
Ports	110	21.1	21.9	99.9	369	21.2	99.7
Prestn	113	19.4	27.1	100.0	797	7.9	100.0
Redng	111	23.0	18.4	99.7	578	8.7	99.7
Salford	109	28.7	20.2	100.0	478	16.9	99.4
Sheff	106	32.3	20.0	99.8	472	6.2	99.8
Shrew	113	13.7	21.9	100.0	485	2.8	99.3
Stevng	109	24.6	15.8	98.8	605	2.4	98.8
Stoke	112	16.6	29.2	89.1	527	7.6	92.6
Sund	112	19.4	23.2	100.0	570	9.3	100.0
Truro	110	25.4	20.1	100.0	413	10.1	99.4
Wirral	109	24.0	18.7	94.9	584	6.8	93.7

Table 5.8 Continued

Centre	Haemoglobin				Ferritin		
	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <200 µg/L	% data completeness
Wolve	109	24.0	17.1	98.6	733	6.7	98.6
York	107	29.8	11.1	100.0	468	6.1	100.0
N IRELAND							
Antrim	107	21.0	15.2	100.0	657	4.8	100.0
Belfast	115	14.0	36.0	100.0	555	13.2	100.0
Newry	109	20.3	17.7	98.8	396	17.7	98.8
Ulster	112	25.0	26.3	100.0	612	6.3	100.0
West NI	113	21.2	25.0	100.0	696	2.9	100.0
SCOTLAND							
Abrdn	110	21.4	21.9	99.0			
Airdrie	109	21.7	15.4	98.9			
D&Gall	113	18.5	29.6	98.2			
Dundee	111	20.6	16.8	99.2			
Edinb	113	15.4	22.9	98.9			
Glasgw	111	21.8	20.7	98.0			
Inverns	106	34.1	11.0	100.0			
Klmarnk	111	20.1	29.9	97.1			
Krkcldy	114	17.2	32.5	99.4			
WALES							
Bangor	112	15.7	17.1	100.0	708	0.0	100.0
Cardff	112	17.8	25.5	100.0	535	10.7	100.0
Clwyd	109	26.1	23.9	100.0	783	10.2	100.0
Swanse	109	20.3	15.5	100.0	589	10.8	100.0
Wrexm	107	29.1	16.4	99.1	555	8.2	99.1
TOTALS							
England	110	21.7	21.4	97.5	535	11.0	96.8
N Ireland	112	19.6	25.0	99.8	604	8.9	99.8
Scotland	111	20.6	22.0	98.6			
Wales	111	20.1	20.7	99.9	578	9.8	99.9
UK	**111**	**21.5**	**21.5**	**97.7**	**539**	**10.9**	**97.1**

Blank cells – no data returned by the centre or data completeness <70%
UK National average for ferritin does not include Scotland

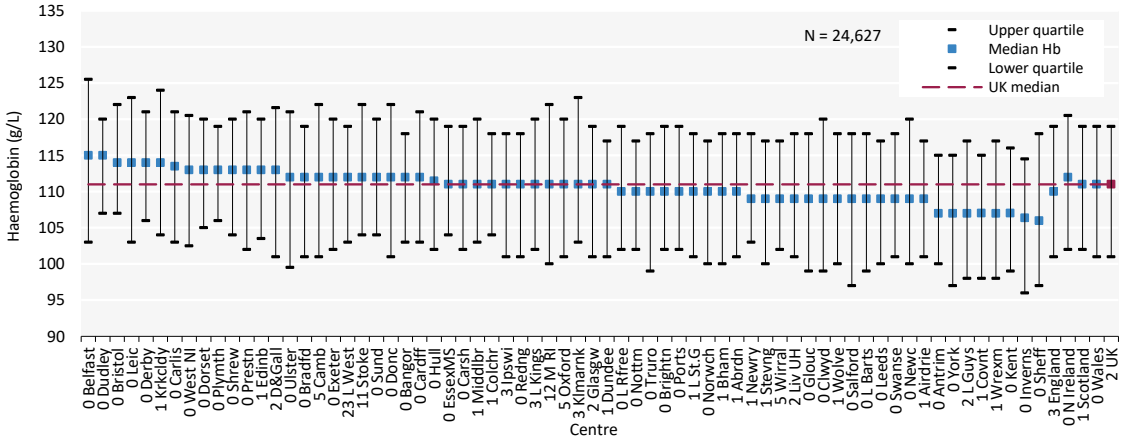


Figure 5.11 Median haemoglobin (Hb) in adult patients prevalent to ICHD on 31/12/2024 by centre

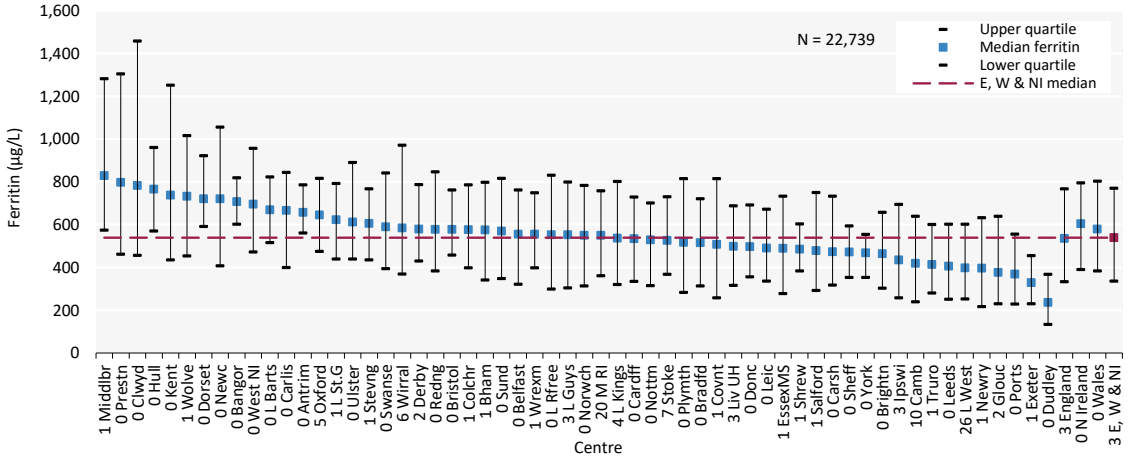


Figure 5.12 Median ferritin in adult patients prevalent to ICHD on 31/12/2024 by centre

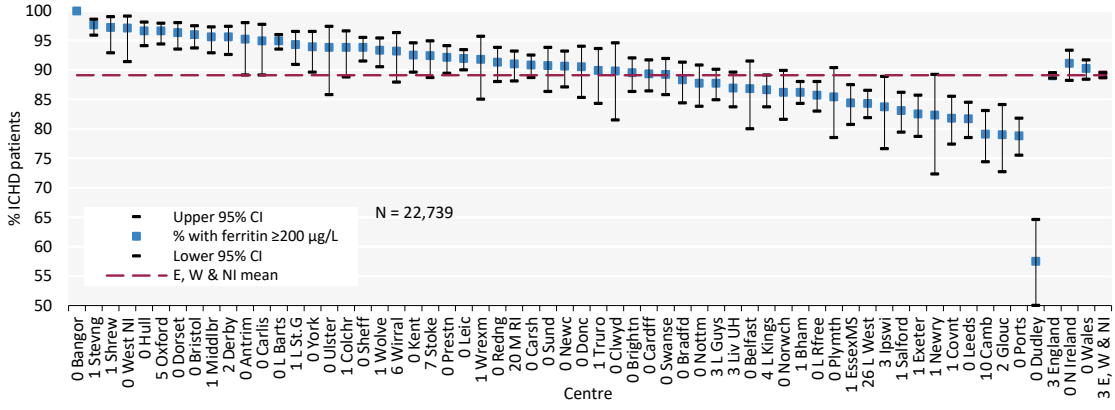


Figure 5.13 Percentage of adult patients prevalent to ICHD on 31/12/2024 with ferritin ≥200 µg/L by centre

CI – confidence interval

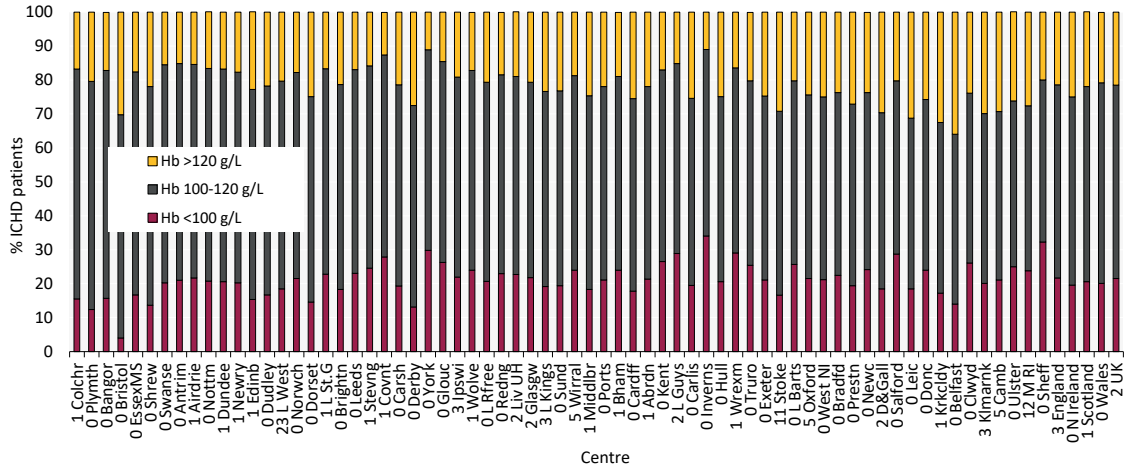


Figure 5.14 Distribution of haemoglobin (Hb) in adult patients prevalent to ICHD on 31/12/2024 by centre

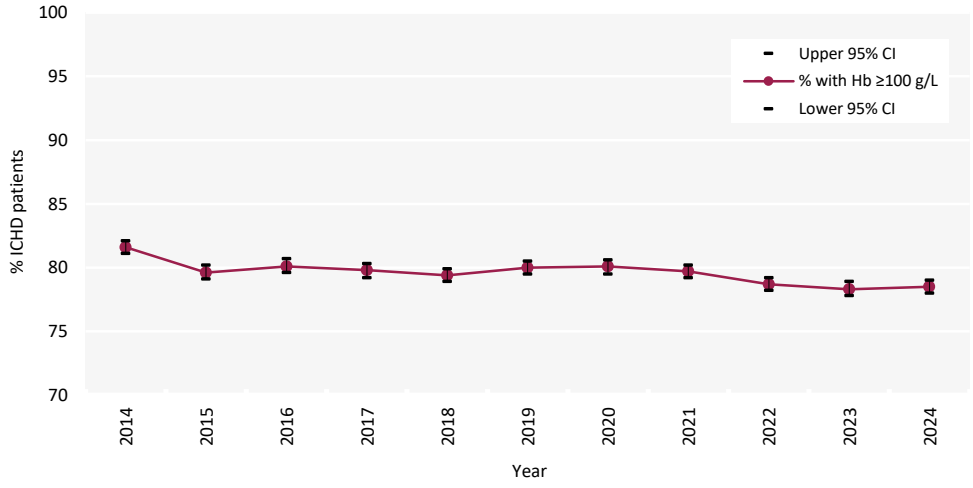


Figure 5.15 Percentage of adult patients prevalent to ICHD with haemoglobin (Hb) ≥100 g/L between 2014 and 2024
CI – confidence interval

Dialysis access in prevalent adult dialysis patients

The type of prevalent dialysis access is presented in figure 5.16 for the 64 centres where vascular access data were available on ≥70% of their prevalent dialysis patients. Rates of PD may impact the types of vascular access used for ICHD and this is reflected in the combined audit measures for dialysis access.

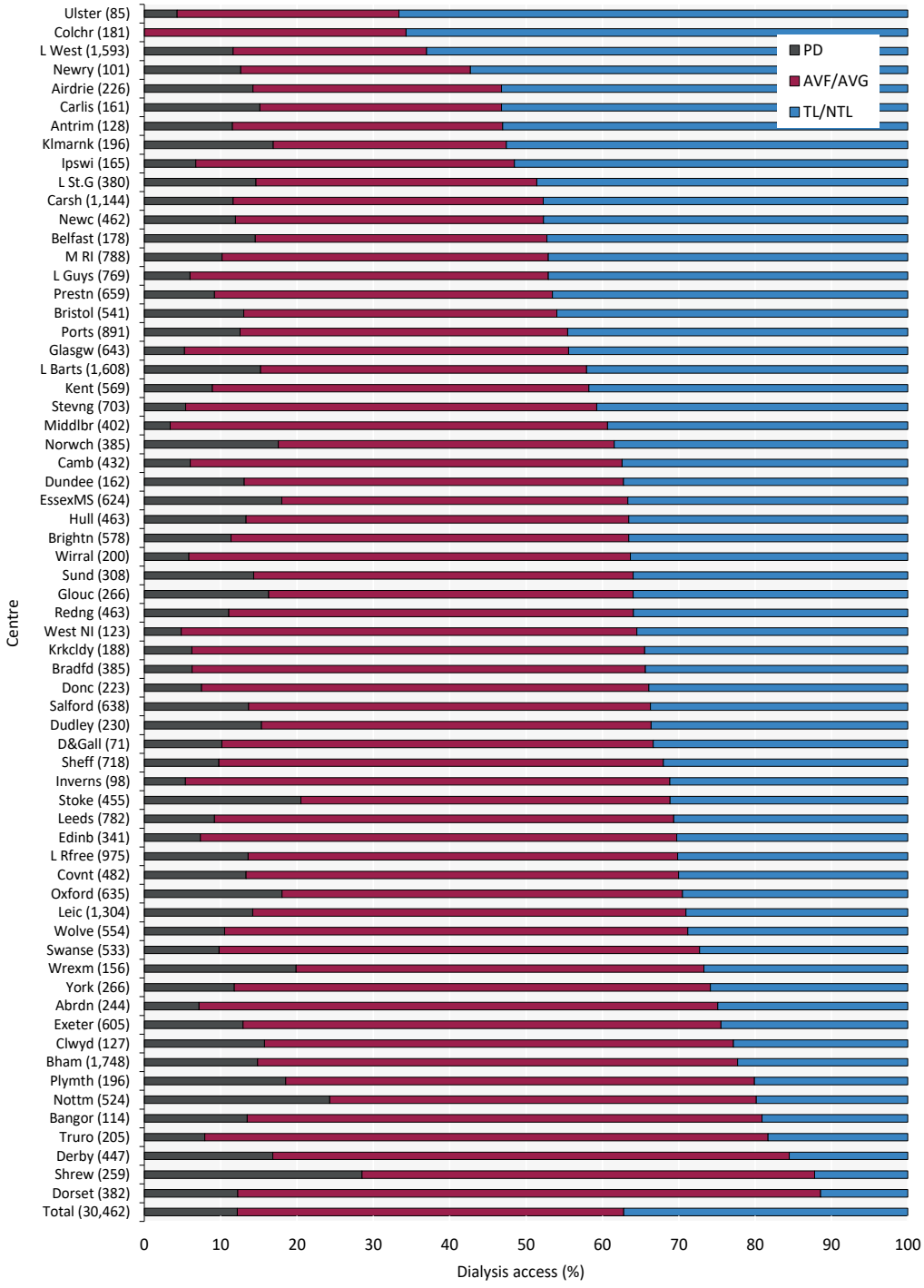


Figure 5.16 Dialysis access in adult patients prevalent to dialysis on 31/12/2024 by centre

Number of patients on dialysis in a centre in brackets (centres with <70% access data for the prevalent dialysis population were excluded)

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

Cause of death in adult ICHD patients

Cause of death was analysed in prevalent patients receiving ICHD on 31/12/2023 and followed-up for one year in 2024. The proportion of ICHD 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 UKRR data, cause of death from Civil Registration records was used. Further detail on the survival of prevalent KRT patients is in chapter 3.

Table 5.9 Cause of death in adult patients prevalent to ICHD on 31/12/2023 followed-up in 2024 by age group

	ICHD all ages		ICHD < 65 years		ICHD ≥ 65 years	
Cause of death	*N*	%	*N*	%	*N*	%
Cardiac disease	766	20.8	275	25.8	491	18.7
Cerebrovascular disease	132	3.6	42	3.9	90	3.4
Infection	609	16.5	170	15.9	439	16.8
Malignancy	239	6.5	42	3.9	197	7.5
Treatment withdrawal	359	9.7	67	6.3	292	11.1
Other	1,303	35.3	392	36.7	911	34.8
Uncertain aetiology	280	7.6	79	7.4	201	7.7
Total (with data)	**3,688**	**100.0**	**1,067**	**100.0**	**2,621**	**100.0**
Missing	465	11.2	144	11.9	321	10.9

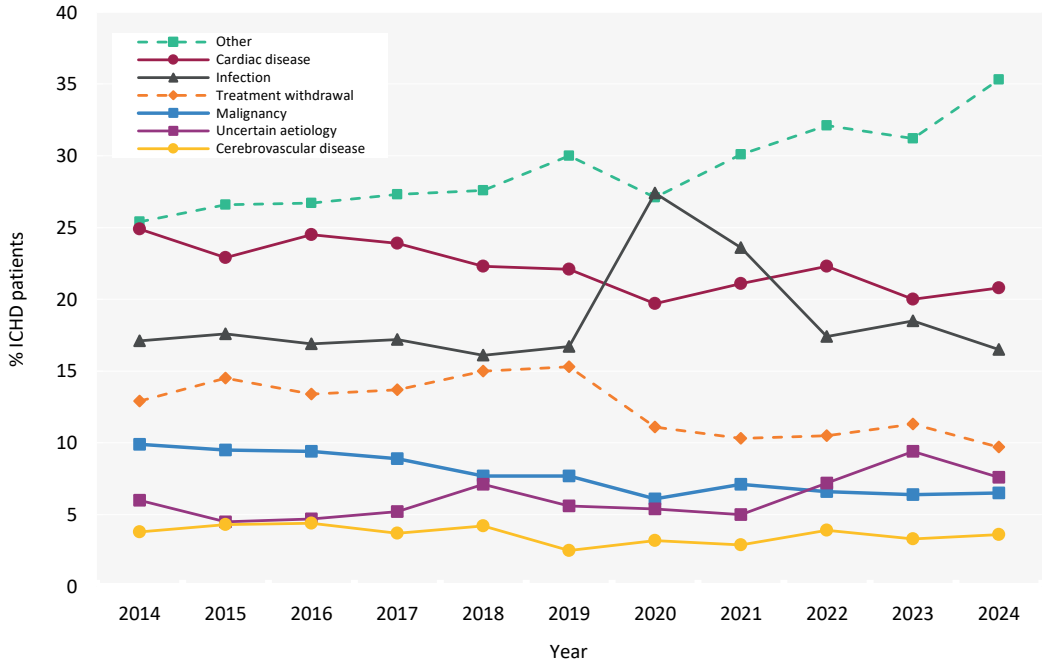


Figure 5.17 Cause of death between 2014 and 2024 for adult patients prevalent to ICHD at the beginning of the year

UK Kidney Association
UK Renal Registry

Chapter 6

Adults on peritoneal dialysis (PD) in the UK at the end of 2024

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Introduction

This chapter describes the population of adult patients with end-stage kidney disease (ESKD) who were receiving regular peritoneal dialysis (PD) in the UK at the end of 2024 (figure 6.1). This population comprises patients who were on PD at the end of 2023 and remained on PD throughout 2024, as well as patients who commenced/re-commenced PD in 2024. This latter group includes both incident kidney replacement therapy (KRT) patients who ended 2024 on PD and prevalent KRT patients who switched to PD from in-centre haemodialysis (ICHD), home haemodialysis (HHD) or a transplant (Tx) in 2024. Consequently, the cohort of patients receiving PD in a centre not only reflects differences in underlying population case-mix, but also differences in the rates of acceptance onto KRT, survival on PD, transplantation and haemodialysis (ICHD and HHD), and the care of patients on those other modalities, as described in other chapters of this report.

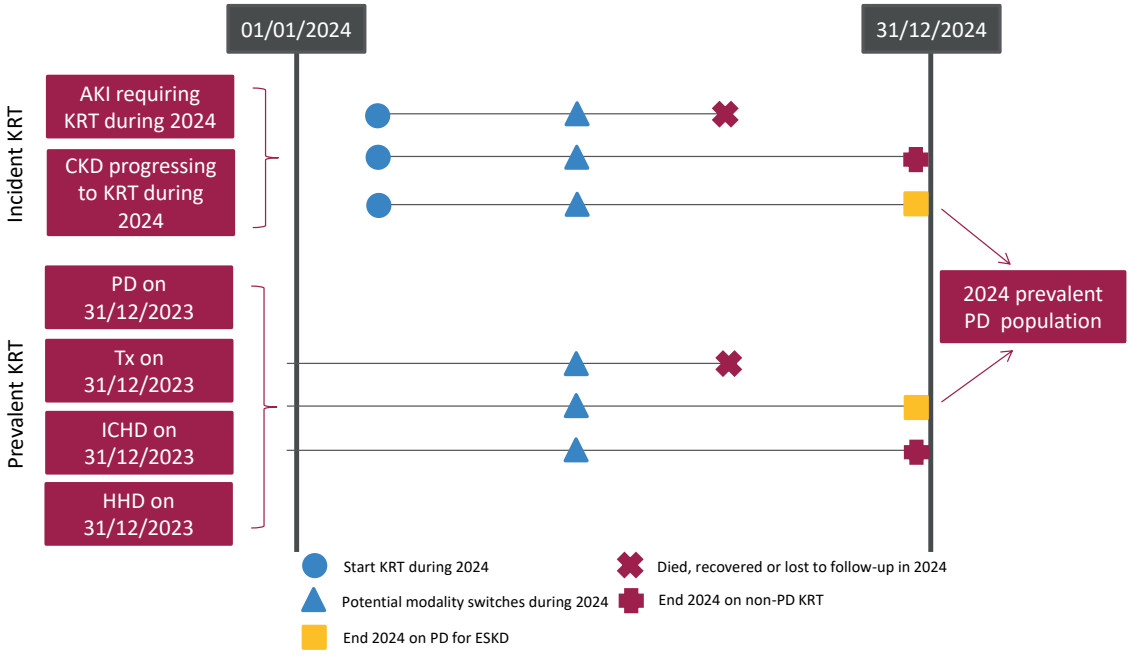


Figure 6.1 Pathways adult patients could follow to be included in the UK 2024 prevalent PD population

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 chronic PD at the end of 2024 or if they had been on KRT for ≥90 days and were on PD at the end of 2024
CKD – chronic kidney disease

The cause of death analyses were undertaken on historic prevalent cohorts to allow sufficient follow-up time.

This chapter addresses the following key aspects of the care of patients on PD for which there are UK Kidney Association guidelines (table 6.1):

- **Complications associated with ESKD and PD:** these include anaemia, mineral bone disorders and metabolic acidosis.
- **Infections associated with PD:** rates of PD peritonitis are reported in this chapter. The four infections subject to mandatory reporting to the UK Health Security Agency (UKHSA) - methicillin-resistant *Staphylococcus aureus* (MRSA), methicillin-sensitive *Staphylococcus aureus* (MSSA), *Escherichia coli* bacteraemia and *Clostridium difficile* - will be added to the UKRR data portal (ukkidney.org/audit-research/data-portals) as new data become available.

Rationale for analyses

The analyses begin with a description of the 2024 prevalent adult PD population, including the number on PD 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 on PD, and the guidelines available during 2024 were used for this audit. Where data permit, attainment of these measures by UK kidney centres in 2024 is reported in this chapter (table 6.1). Audit measures in guidelines that have been archived are not included.

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 items is too low. Detail about the completeness of data returned to the UK Renal Registry (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 exluded 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 PD patients they were excluded from some of the analyses, although their dialysis patients were included in the relevant dialysis population denominators.

Table 6.1 The UK Kidney Association audit measures relevant to PD that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
CKD mineral bone disorder (2018)	Percentage of patients with serum calcium above the normal reference range of 2.2–2.5 mmol/L	Table 6.5, figure 6.3
PD (2017)	Plasma bicarbonate should be maintained in the normal reference range 22–30 mmol/L – 100%	Table 6.5, figure 6.5
Anaemia (2020)	Proportion of patients with serum ferritin <100 µg/L at start of treatment with erythropoiesis stimulating agent (ESA)	Table 6.6, figure 6.9 (the UKRR does not hold treatment with ESA start dates)
	Proportion of patients with haemoglobin 100–120 g/L	Table 6.6
Commentary on the NICE Guideline on Renal Replacement Therapy and Conservative Management (2020)	Number of patients withdrawing from PD as a proportion of all deaths on PD	Table 6.8, figure 6.13

ESA – erythropoiesis stimulating agent

Key findings

- 3,891 adult patients were receiving PD for ESKD in the UK on 31/12/2024, compared to 3,692 in 2023, which represented 5.2% of the KRT population.
- The median age of PD patients was 63.5 years and 60.9% were male.
- The median adjusted calcium for PD patients was 2.4 mmol/L and 12.2% were above the target range of 2.2–2.5 mmol/L.
- The median bicarbonate for PD patients was 24 mmol/L and 73.6% were within the target range of 22–30 mmol/L.
- The median haemoglobin for PD patients was 110 g/L and 9.6% had a ferritin <100 µg/L.
- The PD peritonitis rate in 2024 (England only) was 0.34/1 PD patient-year.
- The rate of transfer to HD amongst PD patients during 2024 was 0.29 per 1 PD patient-year.
- The leading cause of death was cardiac disease in both younger patients and those ≥65 years at 33.0% and 20.3% respectively. Treatment withdrawal accounted for 8.3% of deaths in those ≥65 years, and infection around 13.8% in younger and 15.0% in older patients.

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 prevalent adult PD population

For the 67 adult kidney centres, the number of prevalent patients on PD 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 6.2 Number of adult patients prevalent to PD and proportion of adult KRT patients on PD by year and by centre; number of PD patients as a proportion of the catchment population

	N on PD					% on PD					Estimated catchment population (millions)	2024 crude rate (pmp)
Centre	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
ENGLAND												
Bham	268	276	280	252	247	8.2	8.4	8.3	7.4	7.1	2.13	116
Bradfd	26	37	40	31	25	3.6	5.0	5.1	3.8	3.0	0.52	48
Brightn	65	68	56	63	66	6.0	6.2	5.1	5.5	5.6	1.10	60
Bristol	68	77	62	65	68	4.6	5.2	4.1	4.3	4.5	1.29	53
Camb	26	29	28	29	27	1.7	1.8	1.7	1.8	1.6	1.00	27
Carlis	32	30	28	21	29	10.8	9.8	9.3	6.9	8.7	0.26	110
Carsh	121	132	128	125	129	6.5	6.9	6.6	6.3	6.2	1.71	76
Colchr	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.30	0
Covnt	83	80	80	73	71	7.5	7.1	7.1	6.3	6.1	0.82	87
Derby	69	67	60	65	65	10.2	9.7	8.4	8.8	8.4	0.59	111
Donc	19	13	15	21	17	5.6	3.8	3.9	5.4	4.5	0.39	44
Dorset	34	23	19	27	45	4.3	2.9	2.4	3.3	5.4	0.76	59
Dudley	32	40	30	33	36	8.6	9.9	7.8	8.9	10.0	0.36	101
EssexMS	83	92	82	115	115	9.4	10.3	9.2	11.8	11.4	1.03	112
Exeter	76	72	77	69	77	7.0	6.7	7.0	6.1	6.5	1.00	77
Glouc	30	36	30	30	43	5.7	6.6	5.4	5.3	7.5	0.53	80
Hull	57	52	56	54	62	6.2	5.7	6.0	5.6	6.4	0.82	75
Ipswi	33	34	22	15	11	7.7	8.1	5.6	3.8	2.8	0.32	34
Kent	62	72	74	57	53	5.4	6.0	6.1	4.6	4.2	1.10	48
L Barts	264	253	233	219	260	9.9	9.3	8.2	7.4	8.3	1.64	158
L Guys	64	70	47	45	45	2.8	3.0	2.0	2.0	2.0	1.02	44
L Kings	101	98	102	101	106	8.1	7.4	7.3	7.1	7.2	0.96	111
L Rfree	179	172	147	139	134	7.7	7.2	6.1	5.6	5.3	1.29	103
L St.G	49	54	62	58	61	5.7	6.2	7.2	6.6	6.7	0.68	90
L West	200	214	197	188	184	5.7	6.0	5.5	5.1	5.0	2.06	89
Leeds	64	52	54	56	72	3.7	2.9	2.9	2.9	3.6	1.43	50
Leic	121	138	151	160	179	4.6	5.2	5.5	5.7	6.1	2.21	81
Liv UH	57	56	60	55	48	3.9	3.8	4.1	3.7	3.1	1.29	37
M RI	84	96	91	101	97	4.2	4.6	4.3	4.5	4.6	1.39	70
Middlbr	28	20	23	14	13	3.0	2.1	2.4	1.4	1.3	0.83	16
Newc	46	58	43	51	55	3.8	4.7	3.4	4.0	4.3	0.97	57
Norwch	47	48	40	58	61	5.8	6.0	5.0	7.2	7.7	0.72	85
Nottm	95	103	94	88	120	7.9	8.5	7.8	7.4	9.7	0.95	127
Oxford	68	66	75	85	104	3.4	3.3	3.6	4.0	4.8	1.56	66
Plymth	33	34	45	35	38	6.1	6.3	8.3	6.5	7.0	0.42	90
Ports	101	90	106	94	101	5.3	4.6	5.3	4.6	4.9	1.81	56
Prestn	50	55	57	56	61	3.7	4.0	4.1	3.9	4.0	1.29	47
Redng	61	50	55	52	48	7.0	5.7	6.0	5.3	4.6	0.75	64
Salford	106	84	93	96	92	8.4	6.9	7.3	7.0	6.5	1.21	76
Sheff	77	80	82	70	70	5.2	5.3	5.5	4.7	4.7	1.14	61
Shrew	51	50	47	55	64	11.9	11.3	10.5	11.9	14.1	0.43	149
Stevng	25	37	43	36	38	2.6	3.6	4.0	3.2	3.3	1.17	32

Table 6.2 Continued

Centre	N on PD					% on PD					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
Stoke	95	107	107	89	87	11.6	12.7	11.8	9.7	9.5	0.76	115
Sund	32	37	36	36	44	5.8	6.8	6.4	6.1	7.0	0.55	80
Truro	23	22	16	13	16	5.2	4.8	3.4	2.8	3.5	0.37	43
Wirral	18	20	16	16	13	4.3	4.8	4.0	4.1	3.1	0.49	27
Wolve	59	64	57	62	61	9.0	9.2	7.9	7.8	7.3	0.56	108
York	24	27	40	27	31	4.2	4.6	6.6	4.4	5.1	0.50	62
N IRELAND												
Antrim	12	18	20	15	15	4.2	6.1	6.5	4.8	5.0	0.25	60
Belfast	15	27	22	23	24	1.7	3.0	2.4	2.5	2.6	0.54	44
Newry	9	13	10	8	13	3.4	4.6	3.7	2.9	4.4	0.24	54
Ulster	3	3	5	5	4	1.5	1.5	2.4	2.4	2.1	0.21	19
West NI	7	6	7	1	6	2.0	1.8	2.0	0.3	1.6	0.25	24
SCOTLAND												
Abrdn	21	19	27	21	17	3.7	3.3	4.6	3.4	2.7	0.50	34
Airdrie	29	28	25	24	31	5.6	5.6	4.9	4.4	5.7	0.47	66
D&Gall	9	7	8	8	7	5.7	4.5	5.4	5.4	4.4	0.12	57
Dundee	13	16	20	23	20	3.1	4.0	5.2	6.0	5.5	0.37	54
Edinb	32	32	38	30	24	3.6	3.5	3.9	3.0	2.3	0.86	28
Glasgw	45	38	37	29	33	2.4	2.1	2.0	1.5	1.7	1.40	24
Inverns	7	9	12	10	5	2.6	3.3	4.3	3.4	1.8	0.23	22
Klmarnk	27	33	31	32	26	7.3	9.0	8.3	8.3	6.7	0.29	88
Krkcldy	5	6	12	11	11	1.7	2.1	4.2	3.8	3.9	0.28	40
WALES												
Bangor	18	12	10	10	13	8.3	5.5	4.5	4.6	5.7	0.16	81
Cardff	67	58	53	59	58	4.0	3.4	3.0	3.2	3.2	1.18	49
Clwyd	13	11	12	19	18	6.4	5.4	5.9	8.5	8.1	0.18	97
Swanse	59	49	52	43	48	6.9	5.8	6.1	4.8	5.0	0.76	63
Wrexm	24	16	20	21	29	7.5	5.3	6.5	6.4	8.6	0.21	137
TOTALS												
England	3406	3485	3,386	3,300	3489	5.9	5.9	5.6	5.4	5.5	46.50	75
N Ireland	46	67	64	52	62	2.3	3.3	3.1	2.5	3.0	1.49	42
Scotland	188	188	210	188	174	3.5	3.5	3.9	3.4	3.1	4.53	38
Wales	181	146	147	152	166	5.5	4.5	4.4	4.3	4.6	2.50	66
UK	**3,821**	**3,886**	**3,807**	**3,692**	**3,891**	**5.6**	**5.6**	**5.4**	**5.1**	**5.2**	**55.02**	**71**

Country PD populations were calculated by summing the PD 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

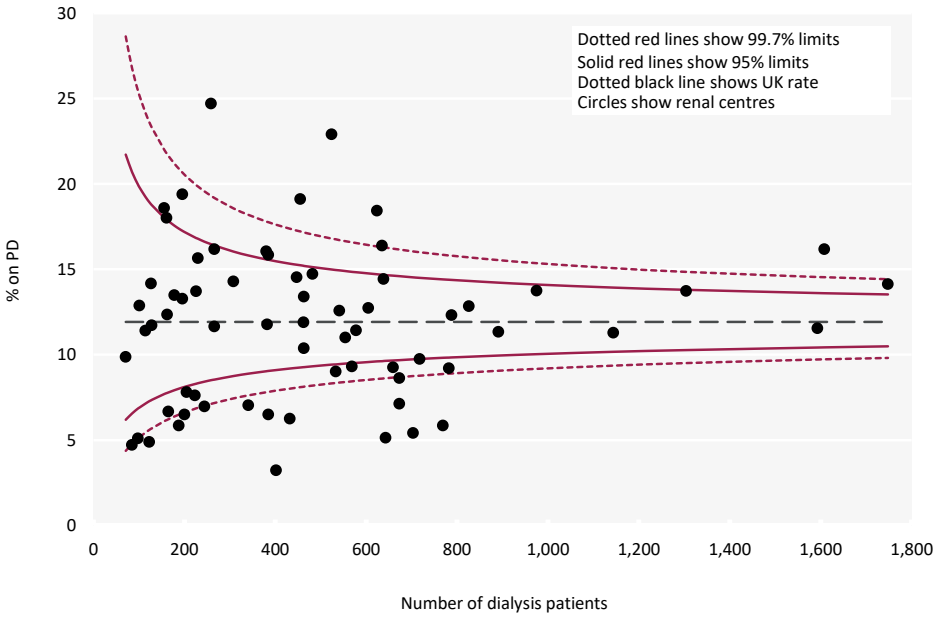


Figure 6.2a Percentage of adult patients prevalent to dialysis on 31/12/2024 who were on PD by centre

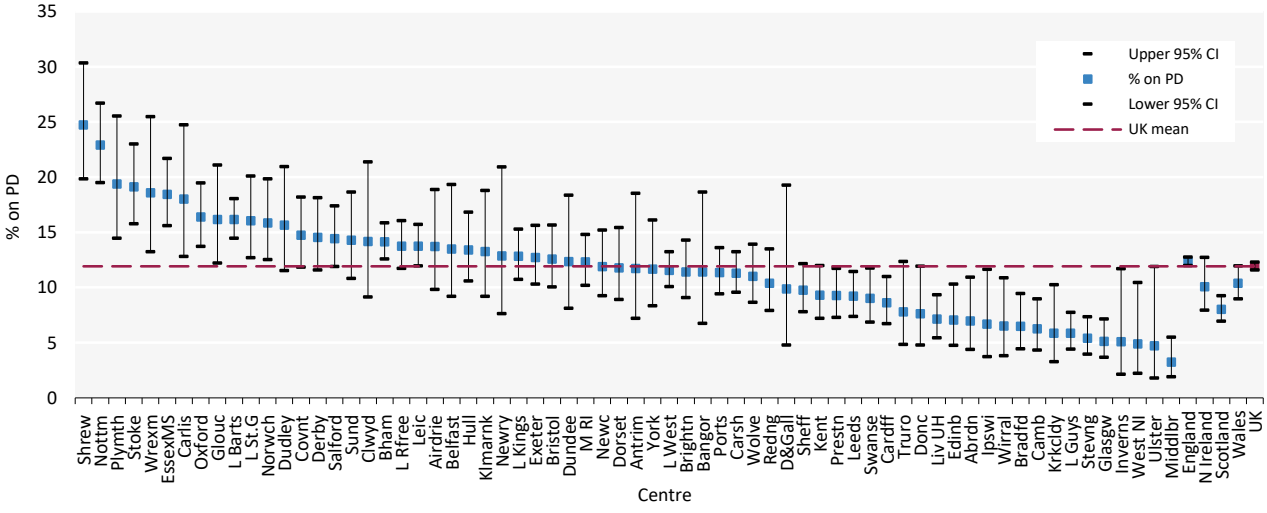


Figure 6.2b Percentage of adult patients prevalent to dialysis on 31/12/2024 who were on PD by centre
CI - confidence interval

Demographics of prevalent adult PD patients

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

Table 6.3 Demographics of adult patients prevalent to PD on 31/12/2024 by centre

Centre	N on KRT	N on PD	% on PD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
ENGLAND										
Bham	3,469	247	7.1	63.4	54.7	56.4	28.8	12.3	2.5	1.6
Bradfd	841	25	3.0	54.9	40.0	52.0	40.0	0.0	8.0	0.0
Brightn	1,180	66	5.6	67.1	72.7	88.7	3.2	3.2	4.8	6.1
Bristol	1,524	68	4.5	66.9	55.9	89.6	4.5	4.5	1.5	1.5
Camb	1,711	27	1.6	56.0	85.2	74.1	18.5	0.0	7.4	0.0
Carlis	332	29	8.7	69.0	58.6	96.6	3.4	0.0	0.0	0.0
Carsh	2,088	129	6.2	65.0	62.0	67.5	22.8	8.1	1.6	4.7
Colchr	181	0	0.0							
Covnt	1,160	71	6.1	63.9	53.5	84.5	12.7	1.4	1.4	0.0
Derby	775	65	8.4	63.0	55.4	93.2	3.4	0.0	3.4	9.2
Donc	382	17	4.5	42.6	52.9	100.0	0.0	0.0	0.0	17.6
Dorset	832	45	5.4	61.1	62.2	95.6	0.0	0.0	4.4	0.0
Dudley	359	36	10.0	58.0	63.9	72.2	19.4	8.3	0.0	0.0
EssexMS	1,006	115	11.4	71.6	65.2	81.6	6.8	8.7	2.9	10.4
Exeter	1,183	77	6.5	67.7	68.8	98.7	0.0	1.3	0.0	2.6
Glouc	577	43	7.5	64.6	69.8	93.0	2.3	2.3	2.3	0.0
Hull	971	62	6.4	64.2	58.1	96.7	1.6	0.0	1.6	1.6
Ipswi	400	11	2.8	78.3	63.6	70.0	0.0	10.0	20.0	9.1
Kent	1,277	53	4.2	57.5	64.2	81.1	1.9	11.3	5.7	0.0
L Barts	3,138	260	8.3	59.9	56.9	34.3	37.0	24.4	4.3	2.3
L Guys	2,300	45	2.0	59.5	51.1	40.5	14.3	19.0	26.2	6.7
L Kings	1,472	106	7.2	60.6	69.8	35.5	15.1	43.0	6.5	12.3
L Rfree	2,533	134	5.3	62.8	60.4	30.5	28.1	17.2	24.2	4.5
L St.G	916	61	6.7	64.1	65.6	38.9	31.5	16.7	13.0	11.5
L West	3,688	184	5.0	66.0	56.0	38.0	40.2	15.8	6.0	0.0
Leeds	1,987	72	3.6	56.3	59.7	80.6	12.5	6.9	0.0	0.0
Leic	2,920	179	6.1	65.0	63.1	78.2	15.2	2.4	4.2	7.8
Liv UH	1,531	48	3.1	59.7	70.8	92.5	2.5	5.0	0.0	16.7
M RI	2,128	97	4.6	64.1	53.6	64.8	22.0	7.7	5.5	6.2
Middlbr	1,002	13	1.3	52.1	61.5	91.7	0.0	0.0	8.3	7.7
Newc	1,276	55	4.3	53.7	61.8	87.3	9.1	1.8	1.8	0.0
Norwch	797	61	7.7	65.0	75.4	88.4	9.3	0.0	2.3	29.5
Nottm	1,240	120	9.7	62.3	65.0	71.9	10.5	8.8	8.8	5.0
Oxford	2,170	104	4.8	63.7	67.3	78.6	11.9	6.0	3.6	19.2
Plymth	540	38	7.0	68.6	63.2	94.6	2.7	2.7	0.0	2.6
Ports	2,070	101	4.9	63.3	59.4					33.7
Prestn	1,512	61	4.0	64.1	63.9	82.4	13.7	2.0	2.0	16.4
Redng	1,043	48	4.6	58.0	58.3	71.4	14.3	4.8	9.5	12.5
Salford	1,408	92	6.5	61.4	46.7	82.1	13.1	1.2	3.6	8.7
Sheff	1,503	70	4.7	64.8	61.4	91.3	5.8	1.4	1.4	1.4
Shrew	453	64	14.1	66.6	70.3	93.0	1.8	1.8	3.5	10.9
Stevng	1,144	38	3.3	59.6	52.6	59.5	24.3	5.4	10.8	2.6
Stoke	913	87	9.5	62.0	63.2	92.5	3.8	1.3	2.5	8.0
Sund	627	44	7.0	67.0	56.8	95.5	2.3	0.0	2.3	0.0
Truro	455	16	3.5	67.4	43.8	93.8	0.0	0.0	6.3	0.0
Wirral	421	13	3.1	70.5	69.2	100.0	0.0	0.0	0.0	0.0
Wolve	831	61	7.3	59.9	59.0	68.3	15.0	5.0	11.7	1.6

Table 6.3 Continued

Centre	N on KRT	N on PD	% on PD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
York	613	31	5.1	63.9	80.6	96.6	0.0	0.0	3.4	6.5
N IRELAND										
Antrim	302	15	5.0	71.0	60.0					53.3
Belfast	922	24	2.6	63.7	58.3					33.3
Newry	297	13	4.4	77.5	46.2					69.2
Ulster	193	4	2.1	79.3	75.0					50.0
West NI	367	6	1.6	63.8	50.0	100.0	0.0	0.0	0.0	16.7
SCOTLAND										
Abrdn	628	17	2.7	62.2	52.9					
Airdrie	547	31	5.7	72.0	61.3					
D&Gall	159	7	4.4	69.7	14.3					
Dundee	362	20	5.5	65.8	65.0					
Edinb	1,042	24	2.3	65.5	62.5					
Glasgw	1,928	33	1.7	61.0	54.5					
Inverns	281	5	1.8	72.0	100.0					
Klmarnk	386	26	6.7	60.8	50.0					
Krkcldy	282	11	3.9	58.7	90.9					
WALES										
Bangor	227	13	5.7	73.0	38.5					46.2
Cardff	1,841	58	3.2	65.3	56.9	97.7	2.3	0.0	0.0	24.1
Clwyd	222	18	8.1	67.0	77.8					50.0
Swanse	956	48	5.0	62.2	75.0	93.0	2.3	2.3	2.3	10.4
Wrexm	336	29	8.6	63.8	65.5	92.3	3.8	3.8	0.0	10.3
TOTALS										
England	62,879	3,489	5.5	63.2	60.9	70.0	16.2	8.7	5.0	6.5
N Ireland	2,081	62	3.0	65.6	56.5					45.2
Scotland	5,615	174	3.1	64.2	59.2					
Wales	3,582	166	4.6	64.5	64.5	94.6	2.3	2.3	0.8	22.3
UK	**74,157**	**3,891**	**5.2**	**63.5**	**60.9**	**71.2**	**15.6**	**8.4**	**4.8**	**7.8**

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

Primary renal diseases (PRDs) were grouped into categories as shown in table 6.4, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of PD 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 6.4 Primary renal diseases (PRDs) of adult patients prevalent to PD on 31/12/2024

PRD	N on PD	% PD population	Age <65 yrs		Age ≥65 yrs		M/F ratio
			N	%	N	%	
Diabetes	861	23.9	458	23.7	403	24.1	1.7
Glomerulonephritis	618	17.2	428	22.2	190	11.4	1.8
Hypertension	260	7.2	113	5.9	147	8.8	2.8
Polycystic kidney disease	292	8.1	192	10.0	100	6.0	1.0
Pyelonephritis	229	6.4	102	5.3	127	7.6	1.4
Renal vascular disease	137	3.8	37	1.9	100	6.0	2.0
Other	575	16.0	331	17.2	244	14.6	1.1
Uncertain aetiology	627	17.4	268	13.9	359	21.5	1.6
Total (with data)	**3,599**	**100.0**	**1,929**	**100.0**	**1,670**	**100.0**	
Missing	292	7.5	146	7.0	146	8.0	2.0

Biochemistry parameters in prevalent adult PD patients

The UK Kidney Association guideline on chronic kidney disease (CKD) mineral bone disease contains only one audit measure, which is the percentage of patients with adjusted calcium above the target range. The UK Kidney Association guideline on PD contains one biochemical audit measure, which is the proportion of patients with bicarbonate in the target range.

Table 6.5 Median adjusted calcium (Ca) and percentage with adjusted Ca within and above the target range (2.2–2.5 mmol/L); and median bicarbonate and percentage with bicarbonate below, within and above the target range (22–30 mmol/L) in adult patients prevalent to PD on 31/12/2024 by centre

Centre	Adjusted calcium				Bicarbonate				
	Median (mmoI/L)	% 2.2-2.5 mmoI/L	% >2.5 mmoI/L	% data completeness	Median (mmoI/L)	% <22 (mmoI/L)	% 22-30 (mmoI/L)	% >30 (mmoI/L)	% data completeness
ENGLAND									
Bham	2.4	83.6	11.4	99.6	21	53.5	46.5	0.0	85.0
Bradfd	2.5	60.9	34.8	100.0	26	4.4	87.0	8.7	100.0
Brightn	2.4	80.3	13.1	100.0	22	47.5	52.5	0.0	100.0
Bristol	2.3	91.9	6.5	100.0	25	19.4	77.4	3.2	100.0
Camb	2.5	73.9	21.7	95.8	25	17.4	78.3	4.4	95.8
Carlis	2.3	73.1	3.9	100.0	24	7.7	88.5	3.9	100.0
Carsh	2.3	77.0	7.1	99.1					0.0
Colchr									
Covnt	2.4	81.4	16.3	71.7	26	3.5	93.0	3.5	95.0
Derby	2.4	72.2	22.2	98.2	23	27.8	72.2	0.0	98.2
Donc	2.4	80.0	20.0	100.0	25	33.3	66.7	0.0	100.0
Dorset	2.4	94.7	5.3	100.0	22	46.0	51.4	2.7	97.4
Dudley	2.4	83.3	13.3	100.0	25	13.3	86.7	0.0	100.0
EssexMS	2.3	88.1	5.9	98.1	26	5.9	84.2	9.9	98.1
Exeter	2.3	71.9	9.4	100.0	24	21.3	78.7	0.0	95.3
Glouc	2.3	90.0	3.3	96.8	23	16.7	83.3	0.0	96.8
Hull	2.4	76.4	21.8	100.0	25	5.5	92.7	1.8	100.0
Ipswi				81.8					81.8
Kent	2.4	78.6	14.3	100.0	26	12.2	80.5	7.3	97.6
L Barts	2.4	82.5	8.1	98.1	25	14.8	81.8	3.4	97.2
L Guys	2.3	84.2	7.9	100.0	24	29.0	71.1	0.0	100.0
L Kings	2.35	68.8	10.0	94.1	23	39.2	58.2	2.5	92.9
L Rfree	2.4	75.7	19.1	100.0	24	15.7	84.4	0.0	100.0
L St.G	2.4	73.1	17.3	100.0	22	34.6	65.4	0.0	100.0

Table 6.5 Continued

Centre	Adjusted calcium				Bicarbonate				
	Median (mmoI/L)	% 2.2-2.5 mmoI/L	% >2.5 mmoI/L	% data completeness	Median (mmoI/L)	% <22 (mmoI/L)	% 22-30 (mmoI/L)	% >30 (mmoI/L)	% data completeness
L West				24.4					23.1
Leeds	2.4	84.4	9.4	98.5	26	4.7	84.4	10.9	98.5
Leic	2.3	81.0	8.9	99.4	24	19.0	80.4	0.6	99.4
Liv UH	2.4	77.8	20.0	97.8	25	20.0	77.8	2.2	97.8
M RI	2.4	72.9	17.7	99.0	24	25.3	73.7	1.1	97.9
Middlbr	2.4	90.0	10.0	100.0	28	0.0	90.0	10.0	100.0
Newc	2.4	83.0	12.8	97.9	23	31.9	68.1	0.0	97.9
Norwch	2.4	84.3	13.7	100.0	22	46.8	53.2	0.0	92.2
Nottm	2.35	83.0	8.0	100.0					37.0
Oxford	2.2	75.7	1.4	81.4	22	49.2	49.2	1.5	75.6
Plymth	2.3	75.0	18.8	100.0	22	40.0	60.0	0.0	93.8
Ports	2.3	74.1	13.6	98.8	23	29.3	70.7	0.0	100.0
Prestn	2.4	78.4	11.8	100.0	24	18.0	82.0	0.0	98.0
Redng	2.4	87.2	5.1	100.0	23	20.5	79.5	0.0	100.0
Salford	2.4	89.2	8.4	100.0	25	14.5	84.3	1.2	100.0
Sheff	2.4	84.1	12.7	100.0	23	27.0	73.0	0.0	100.0
Shrew	2.4	76.4	16.4	100.0	23	32.7	65.5	1.8	100.0
Stevng	2.3	57.1	28.6	87.5	25	9.5	90.5	0.0	87.5
Stoke	2.45	70.0	27.5	97.6					0.0
Sund	2.4	83.8	13.5	97.4					2.6
Truro	2.3	84.6	15.4	100.0	27	0.0	100.0	0.0	100.0
Wirral	2.4	90.9	9.1	100.0	27	9.1	81.8	9.1	100.0
Wolve	2.35	92.3	5.8	94.6	22	46.2	51.9	1.9	94.6
York	2.3	91.7	0.0	100.0	27	0.0	95.8	4.2	100.0
N IRELAND									
Antrim	2.4	66.7	33.3	92.3					69.2
Belfast	2.4	61.9	33.3	100.0	25	9.5	81.0	9.5	100.0
Newry				100.0					100.0
Ulster				100.0					100.0
West NI				100.0					100.0
WALES									
Bangor				100.0					100.0
Cardff	2.4	84.4	11.1	100.0	24	15.6	80.0	4.4	100.0
Clwyd	2.4	73.3	26.7	100.0	23	33.3	66.7	0.0	100.0
Swanse	2.3	81.4	4.7	100.0	24	17.1	82.9	0.0	95.4
Wrexm	2.4	92.3	7.7	100.0	25	11.5	88.5	0.0	100.0
TOTALS									
England	2.4	80.2	12.1	93.8	24	24.9	73.2	2.0	82.8
N Ireland	2.4	66.7	25.5	98.1	24	20.8	75.0	4.2	92.3
Wales	2.4	84.6	9.6	100.0	24	17.2	81.3	1.5	98.5
E, W & NI	**2.4**	**80.1**	**12.2**	**94.1**	**24**	**24.4**	**73.6**	**2.0**	**83.6**

Blank cells – no data returned by the centre or <10 patients in the centre or data completeness <70%

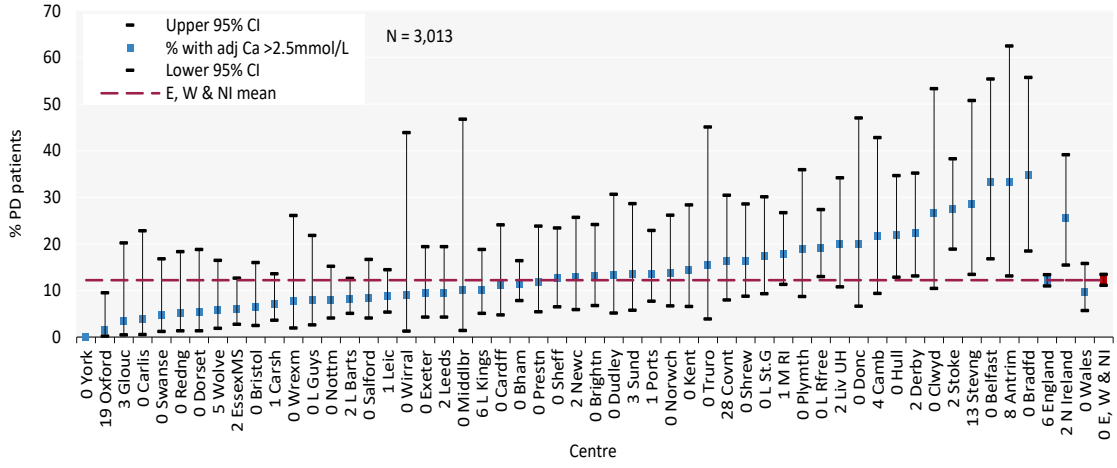


Figure 6.3 Percentage of adult patients prevalent to PD on 31/12/2024 with adjusted calcium (Ca) above the target range (>2.5 mmol/L) by centre
CI – confidence interval

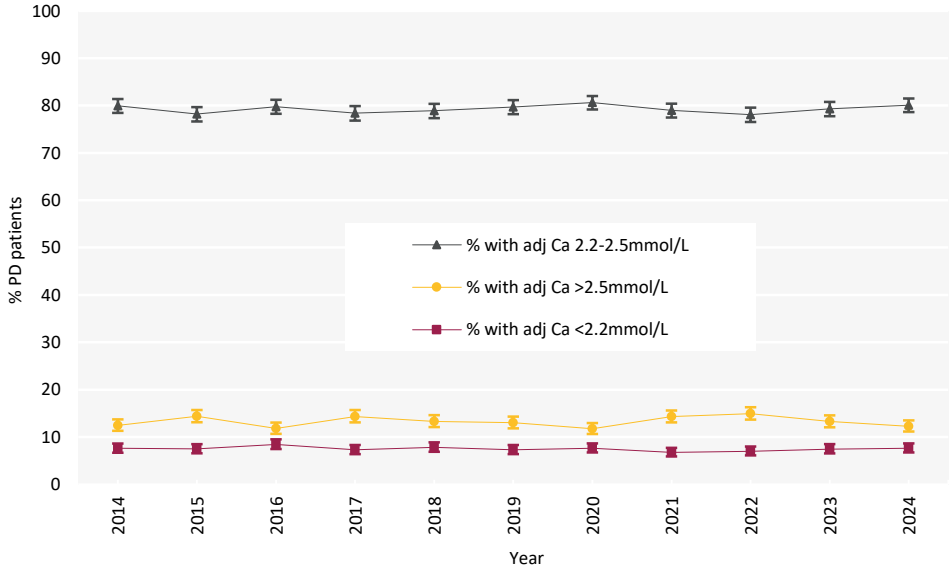


Figure 6.4 Change in percentage of adult patients prevalent to PD within, above and below the target range for adjusted calcium (Ca 2.2–2.5 mmol/L) between 2014 and 2024

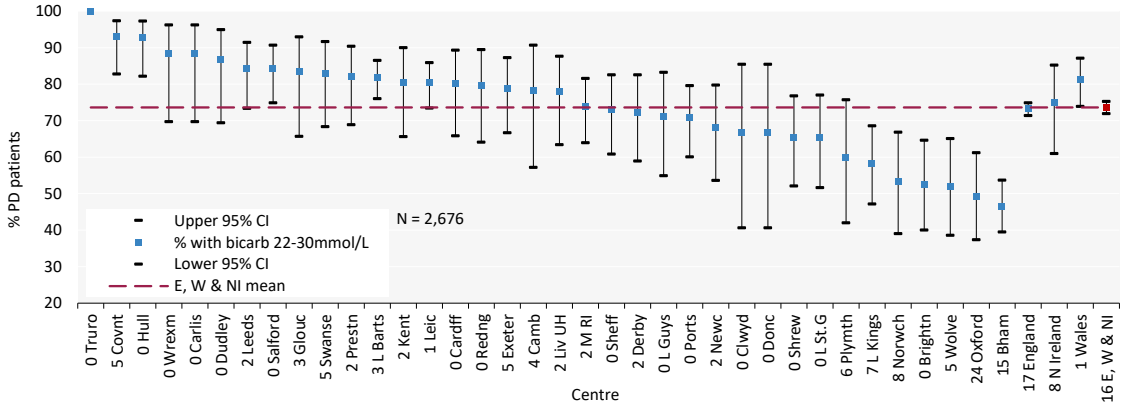


Figure 6.5 Percentage of adult patients prevalent to PD on 31/12/2024 with bicarbonate (bicarb) within the target range (22–30 mmol/L) by centre

CI – confidence interval

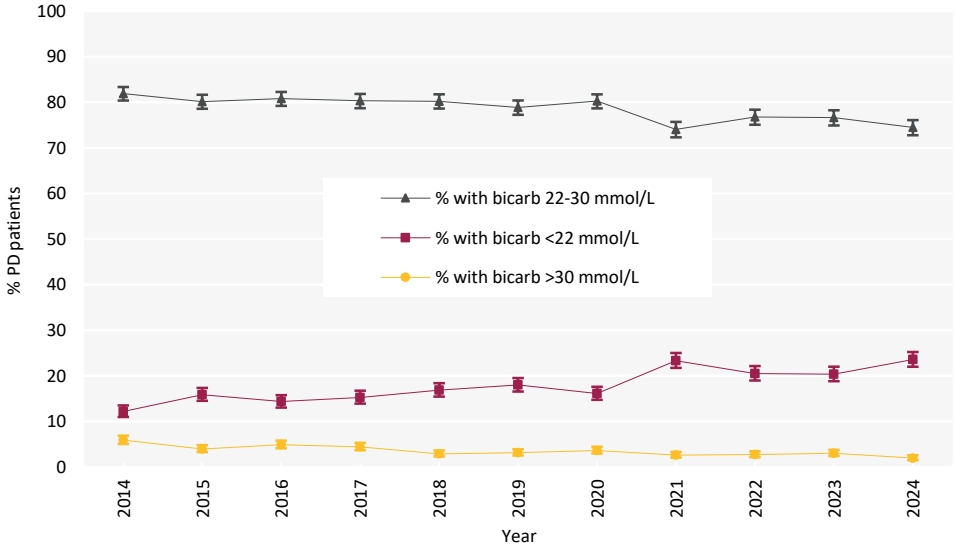


Figure 6.6 Percentage of adult patients prevalent to PD within, above and below the target range for bicarbonate (bicarb 22–30 mmol/L) between 2014 and 2024

Anaemia in prevalent adult PD patients

UK Kidney Association anaemia guidelines recommend a target haemoglobin of 100-120 g/L. Data regarding target and median haemoglobin and ferritin levels attained are presented in table 6.6.

Table 6.6 Median haemoglobin and ferritin and percentage attaining target ranges in adult patients prevalent to PD on 31/12/2024 by centre

	Haemoglobin				Ferritin		
Centre	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <100 µg/L	% data completeness
ENGLAND							
Bham	109	26.9	18.7	99.6	367	6.0	98.2
Bradfd	114	21.7	34.8	100.0	348	4.3	100.0
Brightn	112	11.5	24.6	100.0	410	3.3	100.0
Bristol	113	8.1	22.6	100.0	327	6.5	100.0
Camb	107	17.4	17.4	95.8	369	0.0	95.8
Carlis	120	19.2	42.3	100.0	457	3.8	100.0
Carsh	107	33.6	13.3	99.1	263	5.3	99.1
Colchr							
Covnt	108	24.6	17.5	95.0	195	30.4	93.3
Derby	110	20.4	27.8	98.2	394	7.4	98.2
Donc	109	20.0	13.3	100.0	562	0.0	100.0
Dorset	110	7.9	21.1	100.0	283	16.7	94.7
Dudley	111	23.3	23.3	100.0	172	48.0	83.3
EssexMS	112	10.8	24.5	99.0	294	20.6	99.0
Exeter	114	12.5	29.7	100.0	252	15.9	98.4
Glouc	114	12.9	32.3	100.0	229	14.8	87.1
Hull	109	23.6	21.8	100.0	793	1.8	100.0
Ipswi				81.8			81.8
Kent	109	19.0	11.9	100.0	476	2.4	97.6
L Barts	108	24.2	20.4	98.1	289	18.4	91.2
L Guys	106	31.6	21.1	100.0	341	10.8	97.4
L Kings	106	30.4	20.3	92.9	254	12.2	87.1
L Rfree	111	22.6	25.2	100.0	679	7.0	100.0
L St.G	107	28.8	17.3	100.0	429	5.9	98.1
L West				23.8			13.1
Leeds	109	33.8	20.0	100.0	394	6.2	100.0
Leic	111	21.4	20.1	100.0	335	10.2	98.7
Liv UH	112	15.6	17.8	97.8	443	6.8	95.7
M RI	108	27.4	22.1	97.9	321	6.8	90.7
Middlbr	109	10.0	20.0	100.0	260	20.0	100.0
Newc	109	27.1	20.8	100.0	589	2.1	100.0
Norwch	113	13.7	29.4	100.0	347	12.2	96.1
Nottm	106	33.0	14.0	100.0	492	5.0	100.0
Oxford	105	30.6	9.7	83.7	326	1.4	80.2
Plymth	110	25.0	18.8	100.0	378	9.4	100.0
Ports	112	12.2	24.4	100.0	495	5.2	93.9
Prestn	114	17.6	37.3	100.0	689	6.0	98.0
Redng	112	12.8	28.2	100.0	361	7.7	100.0
Salford	110	14.5	15.7	100.0	412	10.8	100.0
Sheff	110	17.5	25.4	100.0	580	4.8	98.4
Shrew	116	9.1	20.0	100.0	274	14.5	100.0
Stevng	107	23.8	4.8	87.5	323	4.8	87.5
Stoke	109	21.3	18.8	97.6	409	1.3	96.3
Sund	116	13.5	40.5	97.4	347	18.2	86.8
Truro	106	15.4	15.4	100.0	175	30.8	100.0
Wirral	108	9.1	18.2	100.0	601	0.0	100.0
Wolve	110	21.2	30.8	94.6	244	9.8	92.7
York	111	20.8	25.0	100.0	339	8.3	100.0
N IRELAND							
Antrim	111	16.7	25.0	92.3	348	7.7	100.0
Belfast	112	9.5	33.3	100.0	387	19.0	100.0
Newry				100.0			100.0
Ulster				100.0			100.0

Table 6.6 Continued

Centre	Haemoglobin				Ferritin		
	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <100 µg/L	% data completeness
West NI				100.0			100.0
SCOTLAND							
Abrdn	114	7.7	23.1	100.0			
Airdrie	109	11.5	11.5	100.0			
D&Gall				83.3			
Dundee	115	10.5	36.8	100.0			
Edinb				0.0			
Glasgw	113	15.4	23.1	100.0			
Inverns				100.0			
Klmarnk	107	13.6	27.3	95.7			
Krkcldy				0.0			
WALES							
Bangor				100.0			100.0
Cardff	113	20.0	22.2	100.0	204	20.5	97.8
Clwyd	118	6.7	40.0	100.0	540	6.7	100.0
Swanse	111	14.3	19.0	97.7	377	9.5	97.7
Wrexm	113	15.4	23.1	100.0	462	0.0	100.0
TOTALS							
England	110	21.7	21.5	94.4	363	9.4	91.6
N Ireland	110	15.7	23.5	98.1	391	13.5	100.0
Scotland	113	13.8	25.0	78.9			
Wales	113	16.3	22.2	99.3	377	11.2	98.5
UK	**110**	**21.1**	**21.7**	**94.0**	**365**	**9.6**	**92.1**

Blank cells – no data returned by the centre or <10 patients in the centre or data completeness <70%
Ferritin total for UK represents E, W and NI only

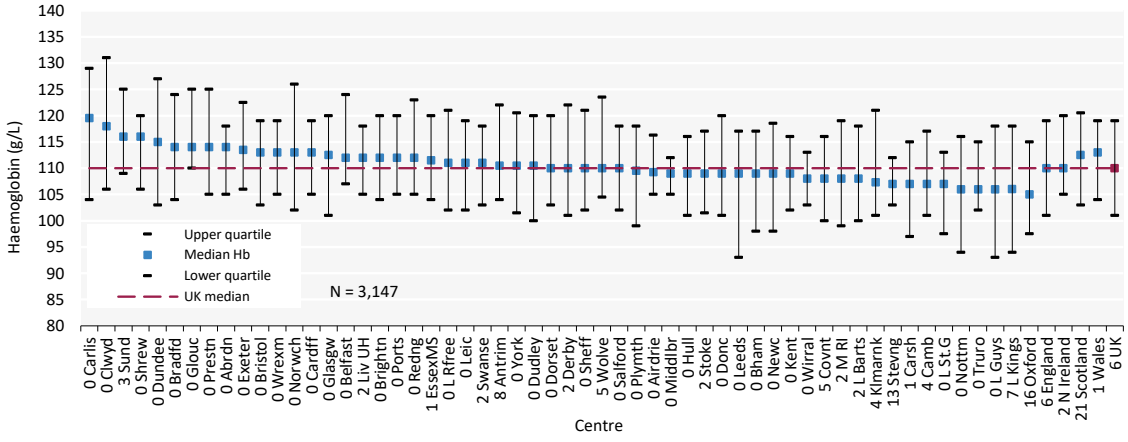


Figure 6.7 Median haemoglobin (Hb) in adult patients prevalent to PD on 31/12/2024 by centre

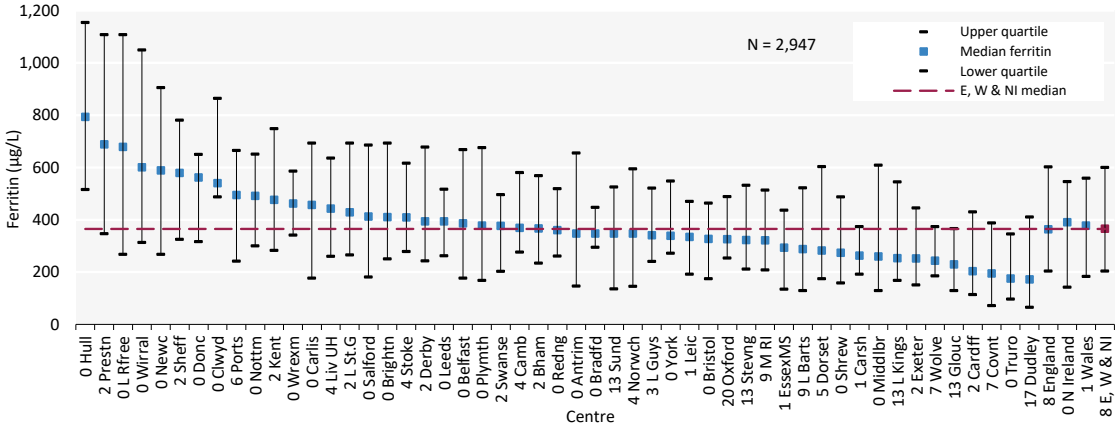


Figure 6.8 Median ferritin in adult patients prevalent to PD on 31/12/2024 by centre

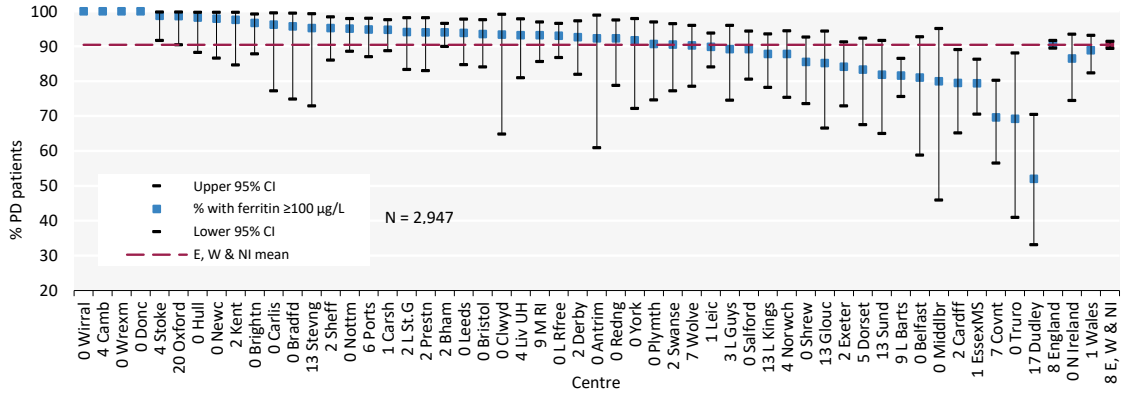


Figure 6.9 Percentage of adult patients prevalent to PD on 31/12/2024 with ferritin ≥100 µg/L by centre
CI – confidence interval

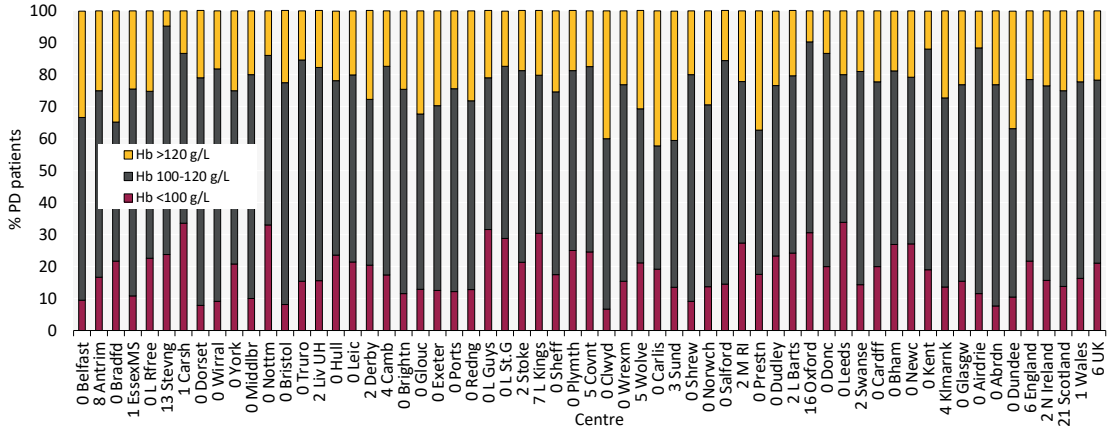


Figure 6.10 Distribution of haemoglobin (Hb) in adult patients prevalent to PD on 31/12/2024 by centre

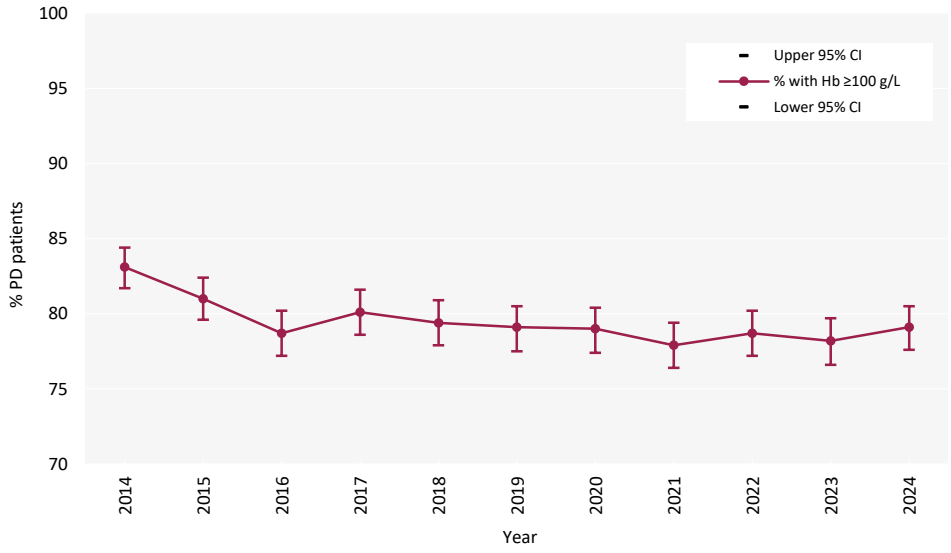


Figure 6.11 Percentage of adult patients prevalent to PD with haemoglobin (Hb) ≥100 g/L between 2014 and 2024
CI – confidence interval

Peritonitis in adult PD patients

PD peritonitis infection rates are collected for English kidney centres by the UKRR in collaboration with NHS England for the Renal Dialysis Quality Dashboard (ukkidney.org/audit-research/data-permissions/data/ukrr-nhs-england-quality-dashboard-dataset) and are listed in the table below. The funnel plot (figure 6.12) shows each centre's 2024 peritonitis rate per one PD patient-year against the number of patient-years at risk to take into account the greater variation expected as centre size decreases.

Table 6.7 Number of patient-years and peritonitis rate in adult patients receiving PD in 2024 by centre in England

Centre	PD patient years	Peritonitis rate per 1 PD patient year
Bham	277	0.43
Bradfd	28	0.36
Brightn	68	0.18
Bristol	75	0.35
Camb	40	0.33
Carlis	18	0.11
Carsh	133	0.16
Covnt	69	0.29
Derby	70	0.52
Donc	20	0.31
Dorset	38	0.34
Dudley	32	0.38
EssexMS		
Exeter	72	0.26
Glouc	58	0.40
Hull	60	0.40
Ipswi	33	0.12
Kent	54	0.33
L Barts	229	0.46
L Guys	43	0.35
L Kings		
L Rfree	138	0.29

Table 6.7 Continued

Centre	PD patient years	Peritonitis rate per 1 PD patient year
L St.G	60	0.35
L West	186	0.26
Leeds	68	0.32
Leic	122	0.70
Liv UH	52	0.31
M RI	99	0.36
Middlbr	12	0.25
Newc	54	0.37
Norwch		
Nottm	110	0.52
Oxford	95	0.36
Plymth	41	0.07
Ports	100	0.27
Prestn	53	0.55
Redng	51	0.59
Salford	93	0.15
Sheff	68	0.06
Shrew	68	0.40
Stevng	47	0.40
Stoke	88	0.26
Sund	46	0.15
Truro	16	0.19
Wirral	19	0.11
Wolve	60	0.35
York	28	0.18
	TOTAL	
England	**3,189**	**0.34**

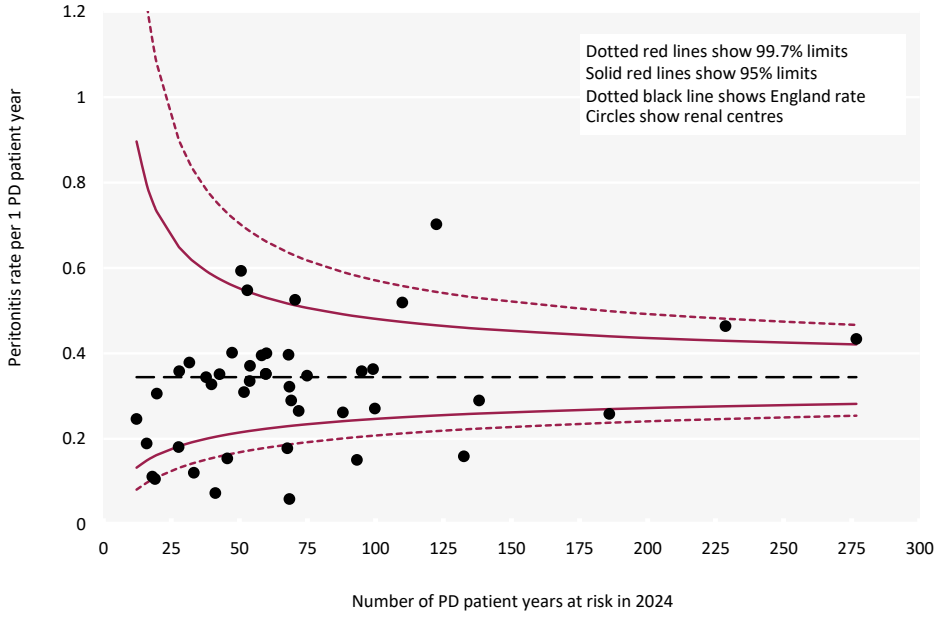


Figure 6.12 PD peritonitis rates in adult patients receiving PD in 2024 per 1 PD patient-year by centre in England
Please visit the UKRR data portal (ukkidney.org/audit-research/data-portals) to identify individual kidney centres

Rate of transfer to HD amongst adult PD patients

The rate of transfer from PD to HD was calculated as number of HD starts of any duration in patients that were receiving PD during 2024, see Appendix-A section 7.6 for details on method. Note that the PD patient years shown in Table 6.8, calculated using the UKRR patient-level data, can be different from what is shown in Table 6.7, which is obtained from the aggregate data of the Renal Dialysis Quality Dashboard. The funnel plot (figure 6.13) shows each centre's 2024 rate of HD per one PD patient-year against the number of patient-years at risk to take into account the greater variation expected as centre size decreases.

Table 6.8 Number of PD patient-years and rate of transfer to HD in adult patients receiving PD in 2024 by centre

Centre	PD patient years	N PD patients transferring to HD	HD rate per 1 PD patient year
ENGLAND			
Bham	236.6	60	0.25
Bradfd	28.3	9	0.32
Brightn	67.9	27	0.40
Bristol	65.4	28	0.43
Camb	27.5	6	0.22
Carlis	27.2	5	0.18
Carsh	127.5	24	0.19
Colchr			
Covnt	66.5	21	0.32
Derby	58.3	13	0.22
Donc	18.1	12	0.66
Dorset	36.0	9	0.25
Dudley	31.4	9	0.29
EssexMS	112.3	22	0.20
Exeter	70.8	15	0.21
Glouc	32.9	11	0.33
Hull	57.5	19	0.33
Ipswi	13.1	2	0.15
Kent	56.3	24	0.43
L Barts	227.1	75	0.33
L Guys	41.1	12	0.29
L Kings	101.5	27	0.27
L Rfree	138.1	24	0.17
L St.G	57.3	18	0.31
L West	187.3	35	0.19
Leeds	65.9	17	0.26
Leic	163.0	51	0.31
Liv UH	51.7	18	0.35
M RI			
Middlbr	13.0	3	0.23
Newc	51.0	11	0.22
Norwch	56.5	19	0.34
Nottm	106.0	25	0.24
Oxford	92.1	26	0.28
Plymth	33.3	5	0.15
Ports	98.3	39	0.40
Prestn	51.0	24	0.47
Redng	47.3	21	0.44
Salford	90.2	13	0.14
Sheff	63.8	20	0.31
Shrew	57.1	18	0.32
Stevng	36.7	23	0.63
Stoke	87.7	14	0.16
Sund	43.0	12	0.28
Truro	15.3	4	0.26

Centre	PD patient years	N PD patients transferring to HD	HD rate per 1 PD patient year
Wirral	14.3	4	0.28
Wolve	62.9	21	0.33
York	28.3	10	0.35
N IRELAND			
Antrim	14.2	2	0.14
Belfast	21.6	4	0.19
Newry	11.4	3	0.26
Ulster	4.0		
West NI	4.8		
SCOTLAND			
Abrdn	18.7	8	0.43
Airdrie	28.0	3	0.11
D&Gall	8.1		
Dundee	21.7	3	0.14
Edinb	25.3	17	0.67
Glasgw	28.1	20	0.71
Inverns	6.7		
Klmarnk	30.1	10	0.33
Krkcldy	12.9	7	0.54
WALES			
Bangor	9.1		
Cardff	55.6	24	0.43
Clwyd	18.8	9	0.48
Swanse	42.5	20	0.47
Wrexm	24.9	3	0.12
TOTAL			
England	3,214	905	0.28
N Ireland	56	10	0.18
Scotland	180	78	0.43
Wales	151	59	0.39
UK	**3,601**	**1,052**	**0.29**

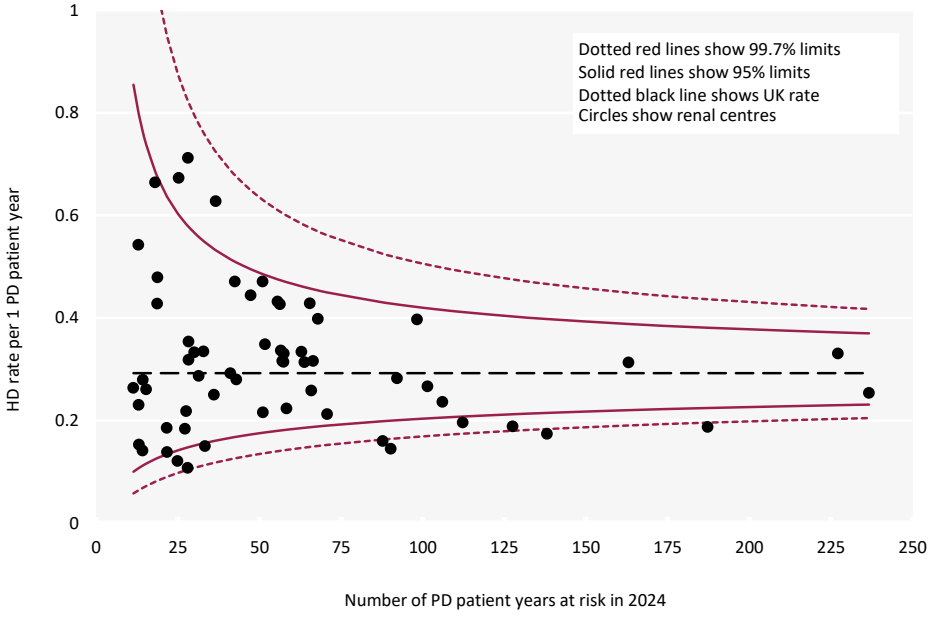


Figure 6.13 Rate of transfer to HD in adult patients receiving PD in 2024 per 1 PD patient-year by centre

Cause of death in adult PD patients

Cause of death was analysed in prevalent patients receiving PD on 31/12/2023 and followed-up for one year in 2024. The proportion of PD 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 cause of death was missing in UKRR data, cause of death from Civil Registration records was used. Further detail on the survival of prevalent KRT patients is in chapter 3.

Table 6.9 Cause of death in adult patients prevalent to PD on 31/12/2023 followed-up in 2024 by age group

	PD all ages		PD < 65 years		PD ≥ 65 years	
Cause of death	*N*	%	*N*	%	*N*	%
Cardiac disease	97	23.7	36	33.0	61	20.3
Cerebrovascular disease	18	4.4	3	2.8	15	5.0
Infection	60	14.6	15	13.8	45	15.0
Malignancy	27	6.6	6	5.5	21	7.0
Treatment withdrawal	30	7.3	5	4.6	25	8.3
Other	149	36.3	41	37.6	108	35.9
Uncertain aetiology	29	7.1	3	2.8	26	8.6
Total (with data)	**410**	**100.0**	**109**	**100.0**	**301**	**100.0**
Missing	38	8.5	11	9.2	27	8.2

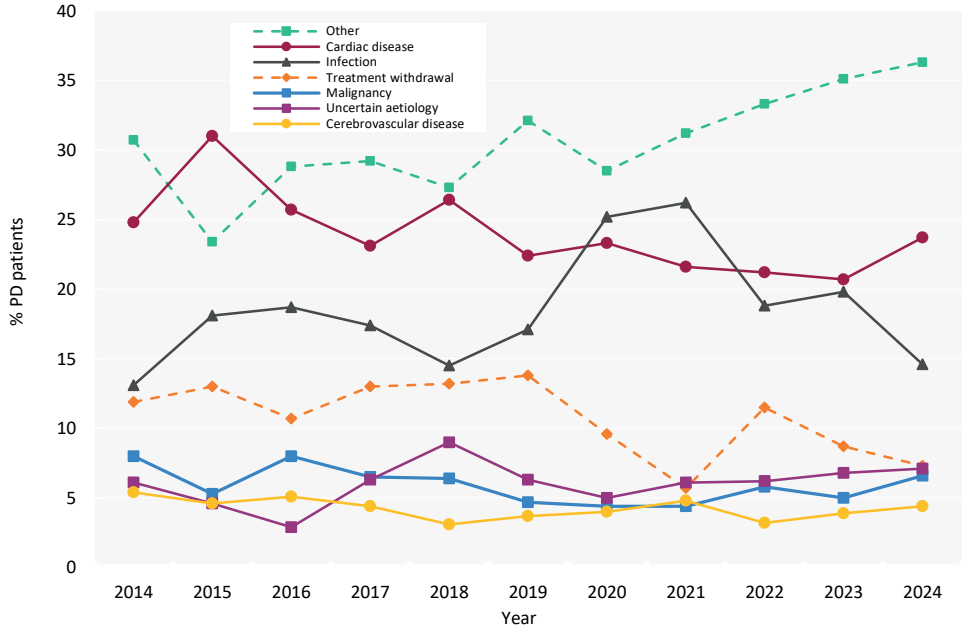


Figure 6.14 Cause of death between 2014 and 2024 for adult patients prevalent to PD at the beginning of the year

UK Kidney Association
UK Renal Registry

Chapter 7

Adults on home haemodialysis (HHD) in the UK at the end of 2024

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- Cause of death in adult HHD patients 174

Introduction

This chapter describes the population of adult patients with end-stage kidney disease (ESKD) who were receiving regular home haemodialysis (HHD) in the UK at the end of 2024 (figure 7.1). This population comprises patients who were on HHD at the end of 2023 and remained on HHD throughout 2024, as well as patients who commenced/re-commenced HHD in 2024. This latter group includes both incident kidney replacement therapy (KRT) patients who ended 2024 on HHD and prevalent KRT patients who switched to HHD from in-centre haemodialysis (ICHD), peritoneal dialysis (PD), or a transplant (Tx) in 2024. Consequently, the cohort of patients receiving HHD in a centre not only reflects differences in underlying population case-mix, but also differences in the rates of acceptance onto KRT, survival on HHD, transplantation and other dialysis therapies (ICHD and PD), and the care of patients on those other modalities, as described in other chapters of this report.

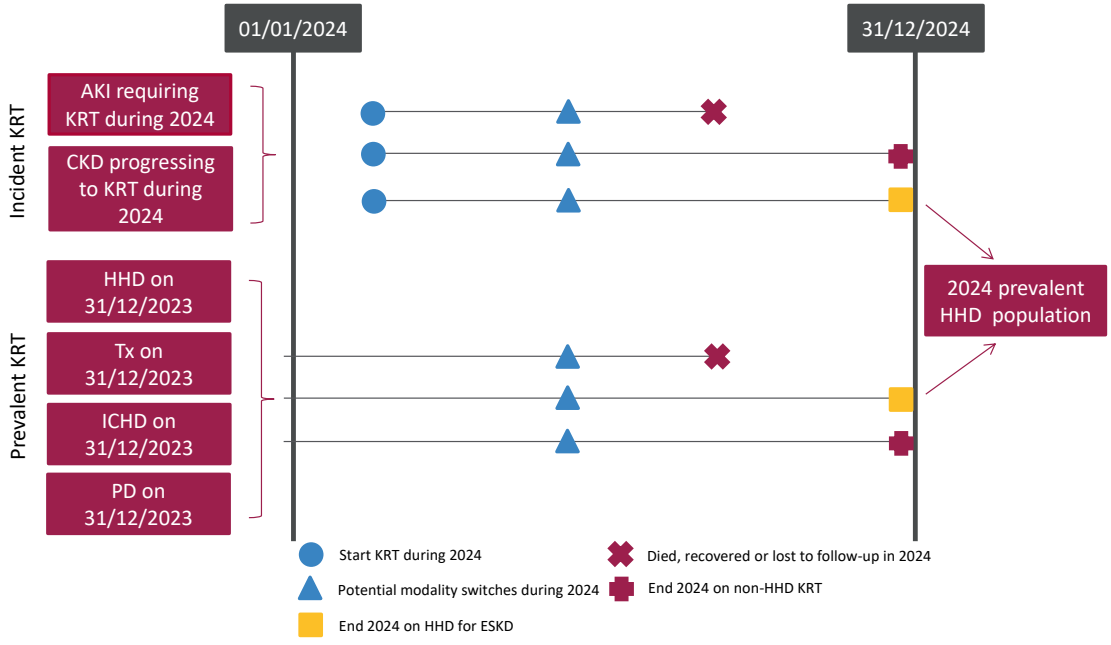


Figure 7.1 Pathways adult patients could follow to be included in the UK 2024 prevalent HHD population

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 chronic HHD at the end of 2024 or if they had been on KRT for ≥90 days and were on HHD at the end of 2024

CKD – chronic kidney disease

Where possible, the chapter addresses key aspects of the care of patients on HHD for which there are UK Kidney Association guidelines (table 7.1). This includes complications associated with ESKD and HHD, for example anaemia and mineral bone disorders.

Data on infections associated with haemodialysis (HD) are available through the UK Renal Registry (UKRR) data portal (ukkidney.org/audit-research/data-portals).

Rationale for analyses

The analyses begin with a description of the 2024 prevalent adult HHD population, including the number on HHD 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 on HHD, and the guidelines available during 2024 were used for this audit. Where data permit, attainment of these measures by UK kidney centres in 2024 is reported in this chapter (table 7.1). Audit measures in guidelines that have been archived are not included. 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 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.

Table 7.1 The UK KidneyAssociation audit measures relevant to HHD that are reported in this chapter

The UK Kidney Association guideline	Audit criteria	Related analysis/analyses
CKD mineral bone disorder (2018)	Percentage of patients with serum calcium above the normal reference range of 2.2–2.5 mmol/L	Table 7.5, figure 7.3
HD (2019)	Proportion of patients with pre-dialysis bicarbonate 18–26 mmol/L	Table 7.6, figure 7.4
	Proportion of patients with pre-dialysis potassium 4.0–6.0 mmol/L	Table 7.6, figure 7.5
Anaemia (2020)	Proportion of patients who are not iron replete with a serum ferritin <200 µg/L	Table 7.7
	Proportion of patients with haemoglobin 100–120 g/L	
Commentary on the NICE Guideline on Renal Replacement Therapy and Conservative Management (2020)	Number of patients withdrawing from HHD as a proportion of all deaths on HHD	Table 7.8, figure 7.10

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.

Key findings

- 1,477 adult patients were receiving HHD for ESKD in the UK on 31/12/2024, compared to 1,456 on 31/12/2023, which represented 2.0% of the KRT population.
- The median age of HHD patients was 56.3 years and 61.7% were male.
- The median adjusted calcium for HHD patients was 2.4 mmol/L and 11.1% were above the target range 2.2–2.5 mmol/L.
- The median pre-dialysis bicarbonate for HHD patients was 23 mmol/L and 80.5% were within the target range 18–26 mmol/L.
- The median pre-dialysis potassium for HHD patients was 5.0 mmol/L and 80.9% were within the target range 4.0–6.0 mmol/L.
- The median ferritin for HHD patients was 383 µg/L and 23.6% had a ferritin <200 µg/L.
- The median haemoglobin for HHD patients was 109 g/L and 26.4% had a haemoglobin <100 g/L.
- Cause of death records from Civil Registration were used where cause of death was missing in the UKRR data. This resulted in improved completeness and changes in proportions of the causes of death. The leading cause of death for patients on HHD was cardiac disease (34.5%) in younger patients (<65 years) and (19.6%) in patients ≥ 65 years.

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 prevalent adult HHD population

For the 67 adult kidney centres, the number of prevalent patients on HHD 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 7.2 Number of adult patients prevalent to HHD and proportion of adult KRT patients on HHD by year and by centre; number of HHD patients as a proportion of the catchment population

	N on HHD					% on HHD					Estimated catchment population (millions)	2024 crude rate (pmp)
Centre	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
ENGLAND												
Bham	76	71	67	63	68	2.3	2.1	2.0	1.8	2.0	2.13	32
Bradfd	6	7	9	6	4	0.8	1.0	1.2	0.7	0.5	0.52	8
Brightn	31	30	35	34	29	2.9	2.7	3.2	3.0	2.5	1.10	26
Bristol	17	18	15	9	13	1.2	1.2	1.0	0.6	0.9	1.29	10
Camb	26	24	23	20	22	1.7	1.5	1.4	1.2	1.3	1.00	22
Carlis	2	3	6	7	4	0.7	1.0	2.0	2.3	1.2	0.26	15
Carsh	28	28	26	23	25	1.5	1.5	1.3	1.2	1.2	1.71	15
Colchr	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.30	0
Covnt	20	21	18	15	22	1.8	1.9	1.6	1.3	1.9	0.82	27
Derby	63	55	62	60	59	9.3	8.0	8.6	8.2	7.6	0.59	101
Donc	5	5	9	9	10	1.5	1.5	2.4	2.3	2.6	0.39	26
Dorset	16	14	14	14	14	2.0	1.8	1.8	1.7	1.7	0.76	18
Dudley	9	10	14	11	9	2.4	2.5	3.7	3.0	2.5	0.36	25
EssexMS	29	21	23	18	12	3.3	2.3	2.6	1.8	1.2	1.03	12
Exeter	24	23	22	20	20	2.2	2.1	2.0	1.8	1.7	1.00	20
Glouc	4	4	2	3	2	0.8	0.7	0.4	0.5	0.3	0.53	4
Hull	7	12	17	17	17	0.8	1.3	1.8	1.8	1.8	0.82	21
Ipswi	3	2	0	0	0	0.7	0.5	0.0	0.0	0.0	0.32	0
Kent	18	18	21	20	24	1.6	1.5	1.7	1.6	1.9	1.10	22
L Barts	25	25	47	54	56	0.9	0.9	1.7	1.8	1.8	1.64	34
L Guys	48	41	37	38	33	2.1	1.8	1.6	1.7	1.4	1.02	32
L Kings	22	34	39	33	40	1.8	2.6	2.8	2.3	2.7	0.96	42
L Rfree	10	10	9	6	14	0.4	0.4	0.4	0.2	0.6	1.29	11
L St.G	6	6	5	5	7	0.7	0.7	0.6	0.6	0.8	0.68	10
L West	35	36	39	47	45	1.0	1.0	1.1	1.3	1.2	2.06	22
Leeds	22	16	22	26	25	1.3	0.9	1.2	1.4	1.3	1.43	18
Leic	50	48	48	43	38	1.9	1.8	1.8	1.5	1.3	2.21	17
Liv UH	60	57	56	63	60	4.2	3.9	3.8	4.2	3.9	1.29	47
M RI	71	84	82	86	67	3.6	4.1	3.9	3.8	3.1	1.39	48
Middlbr	18	17	20	16	18	1.9	1.8	2.1	1.6	1.8	0.83	22
Newc	15	18	19	21	25	1.3	1.5	1.5	1.6	2.0	0.97	26
Norwch	13	10	11	10	14	1.6	1.3	1.4	1.2	1.8	0.72	20
Nottm	32	28	30	30	29	2.6	2.3	2.5	2.5	2.3	0.95	31
Oxford	17	19	26	24	26	0.8	0.9	1.3	1.1	1.2	1.56	17
Plymth	4	3	3	5	5	0.7	0.6	0.6	0.9	0.9	0.42	12
Ports	83	85	78	77	80	4.4	4.4	3.9	3.8	3.9	1.81	44
Prestn	47	42	40	39	46	3.4	3.1	2.9	2.7	3.0	1.29	36
Redng	8	9	14	17	20	0.9	1.0	1.5	1.7	1.9	0.75	27
Salford	40	31	31	32	34	3.2	2.5	2.4	2.3	2.4	1.21	28
Sheff	61	56	54	44	42	4.1	3.7	3.6	3.0	2.8	1.14	37
Shrew	36	37	41	44	37	8.4	8.4	9.2	9.5	8.2	0.43	86

Table 7.2 Continued

Centre	N on HHD					% on HHD					Estimated catchment population (millions)	2024 crude rate (pmp)
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024		
Stevng	32	41	36	45	48	3.3	4.0	3.4	4.0	4.2	1.17	41
Stoke	39	39	27	35	32	4.8	4.6	3.0	3.8	3.5	0.76	42
Sund	9	10	11	15	10	1.6	1.8	1.9	2.5	1.6	0.55	18
Truro	4	5	3	9	11	0.9	1.1	0.6	1.9	2.4	0.37	30
Wirral	7	6	6	4	8	1.7	1.4	1.5	1.0	1.9	0.49	16
Wolve	31	38	43	43	39	4.7	5.5	5.9	5.4	4.7	0.56	69
York	18	17	22	18	17	3.1	2.9	3.6	3.0	2.8	0.50	34
N IRELAND												
Antrim	4	2	1	1	1	1.4	0.7	0.3	0.3	0.3	0.25	4
Belfast	10	8	7	8	8	1.1	0.9	0.8	0.9	0.9	0.54	15
Newry	4	3	3	2	2	1.5	1.1	1.1	0.7	0.7	0.24	8
Ulster	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.21	0
West NI	2	2	1	2	3	0.6	0.6	0.3	0.6	0.8	0.25	12
SCOTLAND												
Abrdn	2	2	3	3	7	0.4	0.3	0.5	0.5	1.1	0.50	14
Airdrie	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.47	0
D&Gall	1	1	1	1	1	0.6	0.6	0.7	0.7	0.6	0.12	8
Dundee	6	6	5	4	2	1.4	1.5	1.3	1.0	0.6	0.37	5
Edinb	3	7	9	8	10	0.3	0.8	0.9	0.8	1.0	0.86	12
Glasgw	11	10	11	15	19	0.6	0.5	0.6	0.8	1.0	1.40	14
Inverns	3	2	3	1	4	1.1	0.7	1.1	0.3	1.4	0.23	18
Klmarnk	14	16	12	13	15	3.8	4.4	3.2	3.4	3.9	0.29	51
Krkcldy	3	2	3	2	2	1.0	0.7	1.1	0.7	0.7	0.28	7
WALES												
Bangor	13	21	22	22	20	6.0	9.7	10.0	10.1	8.8	0.16	125
Cardff	34	51	49	44	41	2.0	3.0	2.8	2.4	2.2	1.18	35
Clwyd	6	5	10	9	11	2.9	2.5	4.9	4.0	5.0	0.18	60
Swanse	44	40	39	35	42	5.2	4.7	4.6	3.9	4.4	0.76	55
Wrexm	7	3	3	8	9	2.2	1.0	1.0	2.5	2.7	0.21	42
TOTALS												
England	1247	1234	1282	1278	1280	2.2	2.1	2.1	2.1	2.0	46.50	28
N Ireland	20	15	12	13	14	1.0	0.7	0.6	0.6	0.7	1.49	9
Scotland	43	46	47	47	60	0.8	0.9	0.9	0.8	1.1	4.53	13
Wales	104	120	123	118	123	3.2	3.7	3.7	3.4	3.4	2.50	49
UK	**1414**	**1415**	**1464**	**1456**	**1477**	**2.1**	**2.0**	**2.1**	**2.0**	**2.0**	**55.02**	**27**

Country HHD populations were calculated by summing the HHD 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

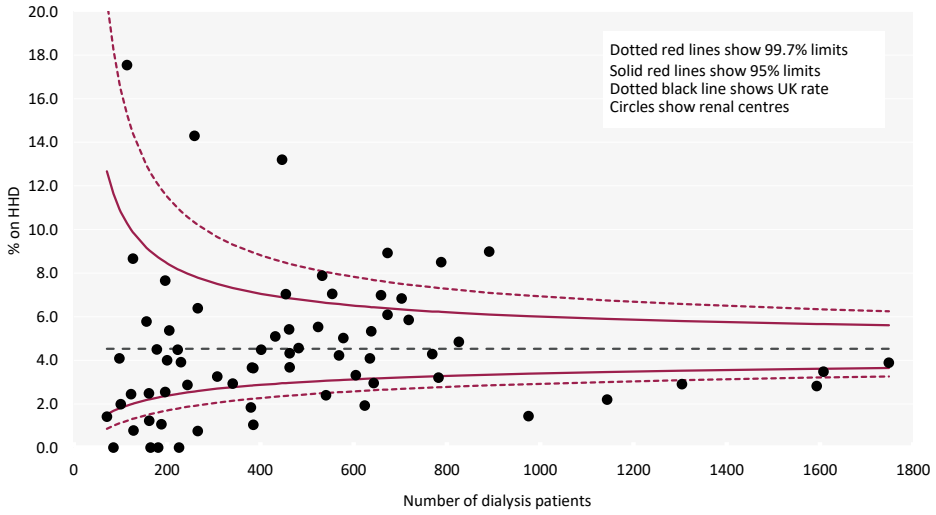


Figure 7.2 Percentage of adult patients prevalent to dialysis on 31/12/2024 who were on HHD by centre

Demographics of prevalent adult HHD patients

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

Table 7.3 Demographics of adult patients prevalent to HHD on 31/12/2024 by centre

						Ethnicity				
Centre	N on KRT	N on HHD	% on HHD	Median age (yrs)	% male	% White	% Asian	% Black	% Other	% missing
ENGLAND										
Bham	3,469	68	2.0	56.5	73.5	67.2	17.9	11.9	3.0	1.5
Bradfd	841	4	0.5	64.8	75.0	100.0	0.0	0.0	0.0	0.0
Brightn	1,180	29	2.5	62.9	69.0	96.6	3.4	0.0	0.0	0.0
Bristol	1,524	13	0.9	53.5	30.8	100.0	0.0	0.0	0.0	0.0
Camb	1,711	22	1.3	62.2	59.1	90.9	0.0	9.1	0.0	0.0
Carlis	332	4	1.2	50.4	50.0	100.0	0.0	0.0	0.0	0.0
Carsh	2,088	25	1.2	57.6	76.0	64.0	16.0	16.0	4.0	0.0
Colchr	181	0	0.0							
Covnt	1,160	22	1.9	46.2	77.3	81.8	9.1	9.1	0.0	0.0
Derby	775	59	7.6	58.0	66.1	90.7	7.4	1.9	0.0	8.5
Donc	382	10	2.6	64.5	70.0	100.0	0.0	0.0	0.0	0.0
Dorset	832	14	1.7	68.6	85.7	92.9	7.1	0.0	0.0	0.0
Dudley	359	9	2.5	58.0	66.7	100.0	0.0	0.0	0.0	0.0
EssexMS	1,006	12	1.2	59.8	58.3	91.7	0.0	0.0	8.3	0.0
Exeter	1,183	20	1.7	54.4	50.0	100.0	0.0	0.0	0.0	5.0
Glouc	577	2	0.3	61.0	50.0	100.0	0.0	0.0	0.0	0.0
Hull	971	17	1.8	43.8	70.6	70.6	5.9	11.8	11.8	0.0
Ipswi	400	0	0.0							
Kent	1,277	24	1.9	56.0	58.3	95.8	0.0	0.0	4.2	0.0
L Barts	3,138	56	1.8	52.3	58.9	44.6	19.6	32.1	3.6	0.0
L Guys	2,300	33	1.4	52.0	48.5	66.7	6.1	24.2	3.0	0.0
L Kings	1,472	40	2.7	54.0	70.0	46.2	10.3	43.6	0.0	2.5
L Rfree	2,533	14	0.6	51.8	71.4	50.0	14.3	35.7	0.0	0.0
L St.G	916	7	0.8	50.4	57.1	66.7	0.0	33.3	0.0	14.3
L West	3,688	45	1.2	55.4	55.6	26.7	35.6	35.6	2.2	0.0
Leeds	1,987	25	1.3	51.7	64.0	80.0	8.0	4.0	8.0	0.0
Leic	2,920	38	1.3	54.3	81.6	77.8	13.9	5.6	2.8	5.3
Liv UH	1,531	60	3.9	55.3	55.0	96.2	0.0	0.0	3.8	11.7
M RI	2,128	67	3.1	56.2	58.2	65.7	13.4	17.9	3.0	0.0
Middlbr	1,002	18	1.8	53.1	55.6	83.3	0.0	5.6	11.1	0.0
Newc	1,276	25	2.0	60.1	36.0	96.0	0.0	4.0	0.0	0.0
Norwch	797	14	1.8	60.8	64.3	100.0	0.0	0.0	0.0	0.0
Nottm	1,240	29	2.3	58.7	41.4	89.7	0.0	10.3	0.0	0.0
Oxford	2,170	26	1.2	55.2	46.2	76.0	12.0	4.0	8.0	3.8
Plymth	540	5	0.9	57.6	40.0	100.0	0.0	0.0	0.0	0.0
Ports	2,070	80	3.9	56.1	62.5	93.8	3.1	0.0	3.1	18.8
Prestn	1,512	46	3.0	55.2	52.2	95.1	4.9	0.0	0.0	10.9
Redng	1,043	20	1.9	57.4	50.0	66.7	13.3	13.3	6.7	25.0
Salford	1,408	34	2.4	53.1	61.8	85.3	2.9	8.8	2.9	0.0
Sheff	1,503	42	2.8	56.5	59.5	90.5	2.4	4.8	2.4	0.0
Shrew	453	37	8.2	60.2	56.8	80.6	5.6	0.0	13.9	2.7
Stevng	1,144	48	4.2	57.4	60.4	70.8	10.4	8.3	10.4	0.0
Stoke	913	32	3.5	57.3	78.1	93.3	0.0	3.3	3.3	6.3
Sund	627	10	1.6	43.2	60.0	100.0	0.0	0.0	0.0	0.0
Truro	455	11	2.4	65.5	54.5	100.0	0.0	0.0	0.0	0.0
Wirral	421	8	1.9	56.8	62.5	100.0	0.0	0.0	0.0	0.0
Wolve	831	39	4.7	54.5	66.7	82.1	0.0	0.0	17.9	0.0

Table 7.3 Continued

Centre	N on KRT	N on HHD	% on HHD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
York	613	17	2.8	58.4	82.4	94.1	0.0	5.9	0.0	0.0
N IRELAND										
Antrim	302	1	0.3	65.2	100.0	100.0	0.0	0.0	0.0	0.0
Belfast	922	8	0.9	59.9	62.5	100.0	0.0	0.0	0.0	0.0
Newry	297	2	0.7	59.8	0.0	100.0	0.0	0.0	0.0	0.0
Ulster	193	0	0.0							
West NI	367	3	0.8	56.5	0.0	66.7	33.3	0.0	0.0	0.0
SCOTLAND										
Abrdn	628	7	1.1	50.1	42.9					
Airdrie	547	0	0.0							
D&Gall	159	1	0.6	59.3	0.0					
Dundee	362	2	0.6	64.9	100.0					
Edinb	1,042	10	1.0	55.1	60.0					
Glasgw	1,928	19	1.0	55.7	73.7					
Inverns	281	4	1.4	54.1	75.0					
Klmarnk	386	15	3.9	61.9	66.7					
Krkcldy	282	2	0.7	66.5	50.0					
WALES										
Bangor	227	20	8.8	59.1	70.0	93.8	0.0	6.3	0.0	20.0
Cardff	1,841	41	2.2	58.0	61.0	95.0	0.0	2.5	2.5	2.4
Clwyd	222	11	5.0	59.5	81.8					36.4
Swanse	956	42	4.4	60.1	66.7	95.1	2.4	2.4	0.0	2.4
Wrexm	336	9	2.7	64.5	33.3	100.0	0.0	0.0	0.0	22.2
TOTALS										
England	62,879	1,280	2.0	55.8	61.5	79.1	7.6	9.7	3.6	3.7
N Ireland	2,081	14	0.7	59.9	42.9	92.9	7.1	0.0	0.0	0.0
Scotland	5,615	60	1.1	55.7	65.0					
Wales	3,582	123	3.4	60.3	64.2	95.5	0.9	2.7	0.9	9.8
UK	**74,157**	**1,477**	**2.0**	**56.3**	**61.7**	**80.6**	**7.1**	**9.0**	**3.4**	**4.2**

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

Primary renal diseases (PRDs) were grouped into categories as shown in table 7.4, with the mapping of disease codes into groups explained in more detail in appendix A. The proportion of HHD 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 7.4 Primary renal diseases (PRDs) of adult patients prevalent to HHD on 31/12/2024

PRD	N on HHD	% HHD population	Age <65 yrs		Age ≥65 yrs		M/F ratio
			N	%	N	%	
Diabetes	205	14.7	154	14.7	51	14.8	1.7
Glomerulonephritis	362	25.9	295	28.1	67	19.4	2.1
Hypertension	88	6.3	61	5.8	27	7.8	3.0
Polycystic kidney disease	136	9.7	98	9.3	38	11.0	1.1
Pyelonephritis	127	9.1	90	8.6	37	10.7	1.2
Renal vascular disease	13	0.9	4	0.4	9	2.6	1.2
Other	306	21.9	234	22.3	72	20.9	1.3
Uncertain aetiology	159	11.4	115	10.9	44	12.8	1.5
Total (with data)	**1,396**	**100.0**	**1,051**	**100.0**	**345**	**100.0**	
Missing	81	5.5	66	5.9	15	4.2	2.4

Biochemistry parameters in prevalent adult HHD patients

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

Table 7.5 Median adjusted calcium (Ca) and percentage with adjusted Ca within and above the target range (2.2–2.5 mmol/L) in adult patients prevalent to HHD on 31/12/2024 by centre

Centre	Median adj Ca (mmoI/L)	% adj Ca 2.2-2.5 mmoI/L	% adj Ca >2.5 mmoI/L	% data completeness
ENGLAND				
Bham	2.3	72.3	12.3	100.0
Bradfd				100.0
Brightn	2.4	93.1	3.5	100.0
Bristol	2.4	76.9	15.4	100.0
Camb	2.4	66.7	23.8	95.5
Carlis				100.0
Carsh	2.4	87.5	0.0	100.0
Colchr				
Covnt	2.4	85.0	10.0	95.2
Derby	2.4	84.2	10.5	100.0
Donc	2.4	80.0	0.0	100.0
Dorset	2.3	92.9	7.1	100.0
Dudley				100.0
EssexMS	2.5	91.7	8.3	100.0
Exeter	2.3	80.0	5.0	100.0
Glouc				100.0
Hull	2.3	64.7	5.9	100.0
Ipswi				
Kent	2.4	75.0	8.3	100.0
L Barts	2.4	82.1	8.9	100.0
L Guys	2.3	69.7	12.1	100.0
L Kings	2.4	66.7	25.6	100.0
L Rfree	2.4	57.1	28.6	100.0
L St.G				100.0
L West				50.0
Leeds	2.4	77.3	9.1	88.0
Leic	2.3	71.1	5.3	100.0
Liv UH	2.4	82.8	12.1	98.3
M RI	2.4	84.9	13.6	98.5
Middlbr	2.3	88.9	0.0	100.0

Table 7.5 Continued

Centre	Median adj Ca (mmoI/L)	% adj Ca 2.2-2.5 mmoI/L	% adj Ca >2.5 mmoI/L	% data completeness
Newc	2.5	72.0	20.0	100.0
Norwch	2.3	76.9	0.0	100.0
Nottm	2.3	93.1	0.0	100.0
Oxford	2.4	76.9	0.0	100.0
Plymth				100.0
Ports	2.4	80.8	9.0	100.0
Prestn	2.4	91.3	6.5	100.0
Redng	2.3	88.2	11.8	100.0
Salford	2.5	67.7	29.4	100.0
Sheff	2.3	67.5	5.0	100.0
Shrew	2.4	75.8	21.2	100.0
Stevng	2.4	83.8	5.4	94.9
Stoke	2.5	66.7	26.7	100.0
Sund	2.3	50.0	20.0	100.0
Truro	2.5	80.0	20.0	90.9
Wirral				87.5
Wolve	2.4	84.6	12.8	100.0
York	2.3	76.5	5.9	100.0
N IRELAND				
Antrim				100.0
Belfast				100.0
Newry				100.0
Ulster				
West NI				100.0
WALES				
Bangor	2.4	80.0	10.0	100.0
Cardff	2.4	90.2	2.4	100.0
Clwyd	2.4	90.9	9.1	100.0
Swanse	2.4	83.3	11.9	100.0
Wrexm				100.0
TOTALS				
England	2.4	78.6	11.5	97.4
N Ireland	2.5	78.6	14.3	100.0
Wales	2.4	87.0	7.3	100.0
E, W & NI	**2.4**	**79.3**	**11.1**	**97.6**

Blank cells – no data returned by the centre or <10 patients in the centre or data completeness <70%

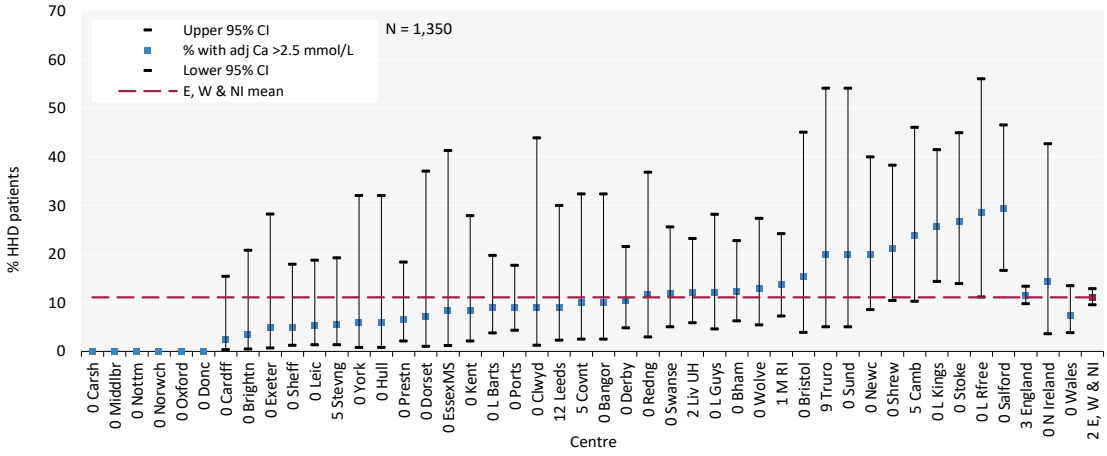


Figure 7.3 Percentage of adult patients prevalent to HHD on 31/12/2024 with adjusted calcium (Ca) above the target range (>2.5 mmol/L) by centre
CI – confidence interval

Table 7.6 Median pre-dialysis potassium and bicarbonate and percentage attaining target ranges in adult patients prevalent to HHD on 31/12/2024 by centre

	Pre-dialysis potassium					Pre-dialysis bicarbonate				
Centre	Median (mmol/L)	% <4.0 mmol/L	% 4.0–6.0 mmol/L	% >6.0 mmol/L	% data completeness	Median (mmol/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% data completeness
ENGLAND										
Bham					44.6	23	8.5	83.0	8.5	72.3
Bradfd					100.0					100.0
Brightn					0.0	24	0.0	58.6	41.4	100.0
Bristol	4.1	30.8	69.2	0.0	100.0	23	0.0	76.9	23.1	100.0
Camb	5.0	9.5	81.0	9.5	95.5	25	0.0	71.4	28.6	95.5
Carlis					0.0					100.0
Carsh					0.0					0.0
Colchr										
Covnt					0.0	26	0.0	57.9	42.1	90.5
Derby	4.4	21.1	79.0	0.0	100.0	24	0.0	86.0	14.0	100.0
Donc	5.3	0.0	100.0	0.0	100.0	25	0.0	80.0	20.0	100.0
Dorset	4.9	7.1	78.6	14.3	100.0	22	0.0	92.9	7.1	100.0
Dudley					100.0					100.0
EssexMS	5.0	41.7	41.7	16.7	100.0	26	0.0	66.7	33.3	100.0
Exeter	4.9	10.0	80.0	10.0	100.0	25	0.0	80.0	20.0	100.0
Glouc					0.0					100.0
Hull	5.0	5.9	88.2	5.9	100.0	24	6.7	80.0	13.3	88.2
Ipswi										
Kent	4.2	41.7	58.3	0.0	100.0	24	4.2	66.7	29.2	100.0
L Barts	5.3	5.4	80.4	14.3	100.0	24	0.0	76.8	23.2	100.0
L Guys	4.9	9.1	81.8	9.1	100.0	24	3.0	72.7	24.2	100.0
L Kings	5.4	2.6	76.9	20.5	100.0	20	18.0	76.9	5.1	100.0
L Rfree	5.5	0.0	85.7	14.3	100.0					64.3
L St.G					0.0					100.0
L West					0.0					31.8
Leeds	5.1	0.0	87.0	13.0	92.0	21	0.0	95.7	4.4	92.0
Leic	5.2	10.5	76.3	13.2	100.0	23	0.0	96.7	3.3	79.0
Liv UH					0.0	23	0.0	94.8	5.2	98.3
M RI	4.8	12.1	86.4	1.5	98.5	23	3.1	86.2	10.8	97.0
Middlbr	5.4	0.0	94.4	5.6	100.0	28	0.0	44.4	55.6	100.0

Table 7.6 Continued

Centre	Pre-dialysis potassium					Pre-dialysis bicarbonate				
	Median (mmoI/L)	% <4.0 mmol/L	% 4.0–6.0 mmol/L	% >6.0 mmol/L	% data completeness	Median (mmoI/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% data completeness
Newc					0.0	23	8.0	80.0	12.0	100.0
Norwch	4.7	23.1	53.9	23.1	100.0	22	0.0	90.9	9.1	84.6
Nottm	5.1	24.1	58.6	17.2	100.0					58.6
Oxford	5.1	19.2	80.8	0.0	100.0	23	3.9	88.5	7.7	100.0
Plymth					100.0					50.0
Ports	4.8	7.7	85.9	6.4	100.0	23	4.0	84.0	12.0	96.2
Prestn	5.1	6.5	91.3	2.2	100.0	23	2.2	84.8	13.0	100.0
Redng	4.4	23.5	64.7	11.8	100.0	21	0.0	76.5	23.5	100.0
Salford	5.0	14.7	79.4	5.9	100.0	23	0.0	78.8	21.2	97.1
Sheff	5.1	7.5	82.5	10.0	100.0	23	5.0	77.5	17.5	100.0
Shrew					0.0	21	9.1	84.9	6.1	100.0
Stevng	5.0	13.5	83.8	2.7	94.9	24	0.0	75.7	24.3	94.9
Stoke					0.0					0.0
Sund					0.0	24	0.0	90.0	10.0	100.0
Truro	4.8	10.0	90.0	0.0	90.9	24	10.0	80.0	10.0	90.9
Wirral					0.0					100.0
Wolve					0.0	20	30.8	66.7	2.6	100.0
York	5.3	0.0	70.6	29.4	100.0	23	0.0	64.7	35.3	100.0
N IRELAND										
Antrim					100.0					100.0
Belfast					100.0					100.0
Newry					100.0					100.0
Ulster										
West NI					100.0					100.0
WALES										
Bangor	4.6	20.0	75.0	5.0	100.0	24	5.0	75.0	20.0	100.0
Cardff	5.1	0.0	95.1	4.9	100.0	23	7.3	80.5	12.2	100.0
Clwyd	5.5	9.1	72.7	18.2	100.0	23	0.0	100.0	0.0	100.0
Swanse	5.0	9.5	83.3	7.1	100.0	24	4.9	82.9	12.2	97.6
Wrexm					100.0					100.0
TOTALS										
England	5.0	11.5	80.2	8.3	69.7	23	3.8	80.0	16.2	88.1
N Ireland	4.8	7.1	92.9	0.0	100.0	22	0.0	100.0	0.0	100.0
Wales	5.0	8.9	84.6	6.5	100.0	23	4.9	82.8	12.3	99.2
E, W & NI	**5.0**	**11.1**	**80.9**	**8.0**	**72.7**	**23**	**3.9**	**80.5**	**15.6**	**89.2**

Blank cells – no data returned by the centre or <10 patients in the centre or data completeness <70%

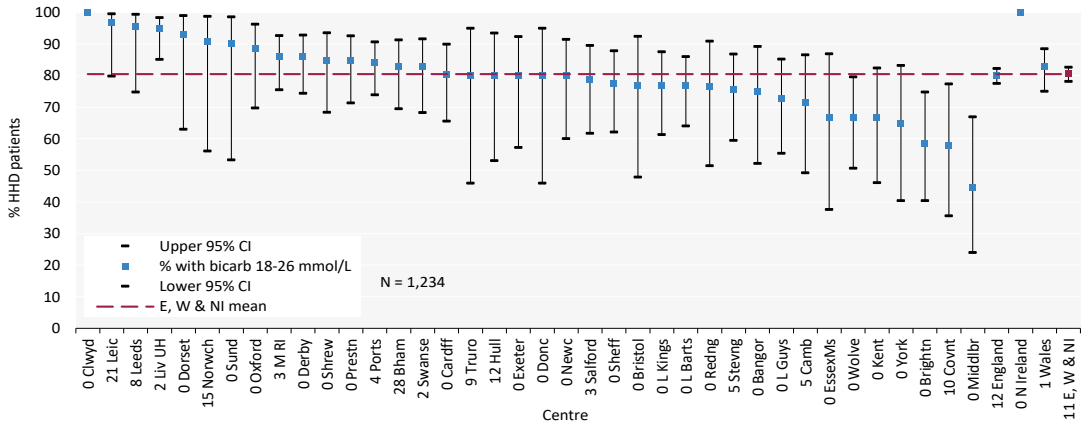


Figure 7.4 Percentage of adult patients prevalent to HHD on 31/12/2024 with pre-dialysis bicarbonate (bicarb) within the target range (18-26 mmol/L) by centre

CI – confidence interval

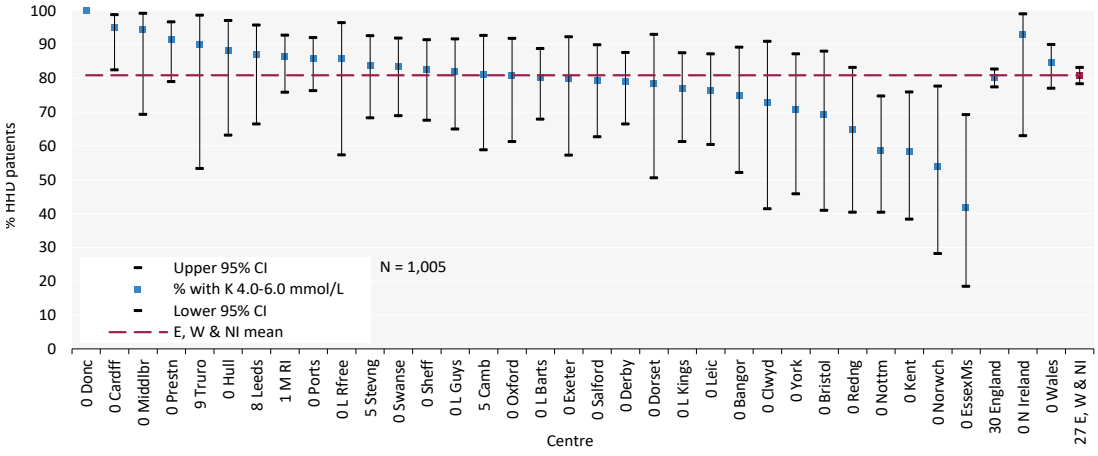


Figure 7.5 Percentage of adult patients prevalent to HHD on 31/12/2024 with pre-dialysis potassium (K) within the target range (4.0-6.0 mmol/L) by centre

CI – confidence interval

Anaemia in prevalent adult HHD patients

UK Kidney Association anaemia guidelines recommend a target haemoglobin of 100-120 g/L. Data are presented in table 7.7 regarding target and median haemoglobin and ferritin levels attained.

Table 7.7 Median haemoglobin and ferritin and percentage attaining target ranges in adult patients prevalent to HHD on 31/12/2024 by centre

	Haemoglobin				Ferritin		
Centre	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <200 µg/L	% data completeness
ENGLAND							
Bham	112	23.1	29.2	100.0	523	9.2	100.0
Bradfd				100.0			100.0
Brightn	104	34.5	24.1	100.0	327	34.5	100.0
Bristol	109	7.7	15.4	100.0	296	25.0	92.3
Camb				22.7			18.2
Carlis				100.0			100.0
Carsh	111	20.8	12.5	100.0	356	29.2	100.0
Colchr				NA			NA
Covnt	102	40.0	20.0	95.2	202	47.6	100.0
Derby	114	15.8	31.6	100.0	445	3.5	100.0
Donc	105	40.0	10.0	100.0	409	20.0	100.0
Dorset	110	21.4	21.4	100.0	272	14.3	100.0
Dudley				100.0			100.0
EssexMS	103	41.7	8.3	100.0	474	8.3	100.0
Exeter	101	50.0	10.0	100.0	200	50.0	100.0
Glouc				100.0			100.0
Hull	108	17.6	11.8	100.0	786	0.0	100.0
Ipswi				NA			NA
Kent	111	20.8	29.2	100.0	423	20.8	100.0
L Barts	110	21.4	21.4	100.0	623	23.2	100.0
L Guys	104	45.5	12.1	100.0	389	28.1	97.0
L Kings	112	15.8	18.4	97.4	552	2.9	89.7
L Rfree	110	0.0	14.3	100.0	382	7.1	100.0
L St.G				100.0			100.0
L West				52.3			40.9
Leeds	104	40.0	8.0	100.0	231	44.0	100.0
Leic	105	26.3	28.9	100.0	424	15.8	100.0
Liv UH	111	27.6	17.2	98.3	419	20.7	98.3
M RI	115	24.2	30.3	98.5	291	32.8	95.5
Middlbr	113	16.7	33.3	100.0	1089	6.3	88.9
Newc	107	36.0	20.0	100.0	795	12.0	100.0
Norwch	107	30.8	15.4	100.0	55	76.9	100.0
Nottm	109	27.6	17.2	100.0	396	20.7	100.0
Oxford	110	30.0	25.0	76.9	612	3.8	100.0
Plymth				100.0			100.0
Ports	109	25.6	19.2	100.0	311	28.6	98.7
Prestn	109	19.6	17.4	100.0	460	15.2	100.0
Redng	100	47.1	5.9	100.0	358	17.6	100.0
Salford	107	38.2	14.7	100.0	208	44.1	100.0
Sheff	110	20.0	15.0	100.0	375	22.5	100.0
Shrew	112	24.2	24.2	100.0	421	15.2	100.0
Stevng	106	32.4	16.2	94.9	403	13.2	97.4
Stoke	111	16.7	20.0	100.0	309	20.0	100.0
Sund	116	0.0	40.0	100.0	139	60.0	100.0
Truro	107	40.0	10.0	90.9	391	20.0	90.9
Wirral				100.0			100.0
Wolve	107	28.2	15.4	100.0	478	15.4	100.0

Table 7.7 Continued

Centre	Haemoglobin				Ferritin		
	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <200 µg/L	% data completeness
York	102	47.1	23.5	100.0	221	41.2	100.0
N IRELAND							
Antrim				100.0			100.0
Belfast				100.0			100.0
Newry				100.0			100.0
Ulster				NA			NA
West NI				100.0			100.0
SCOTLAND							
Abrdn				100.0			
Airdrie				NA			
D&Gall				100.0			
Dundee				100.0			
Edinb				100.0			
Glasgw	106	38.9	16.7	100.0			
Inverns				100.0			
Klmarnk	108	20.0	20.0	100.0			
Krkcldy				100.0			
WALES							
Bangor	106	30.0	10.0	100.0	445	25.0	100.0
Cardff	105	26.8	24.4	100.0	298	36.6	100.0
Clwyd	113	27.3	9.1	100.0	397	27.3	100.0
Swanse	113	14.3	16.7	100.0	290	38.1	100.0
Wrexm				100.0			100.0
TOTALS							
England	109	26.6	20.4	95.9	388	22.2	95.3
N Ireland	110	14.3	7.1	100.0	306	42.9	100.0
Scotland	109	29.3	22.4	100.0			
Wales	108	24.4	17.1	100.0	336	35.0	100.0
UK	**109**	**26.4**	**20.1**	**96.5**	**383**	**23.6**	**95.7**

Blank cells – no data returned by the centre or <10 patients in the centre or data completeness <70%
UK National average for ferritin does not include Scotland

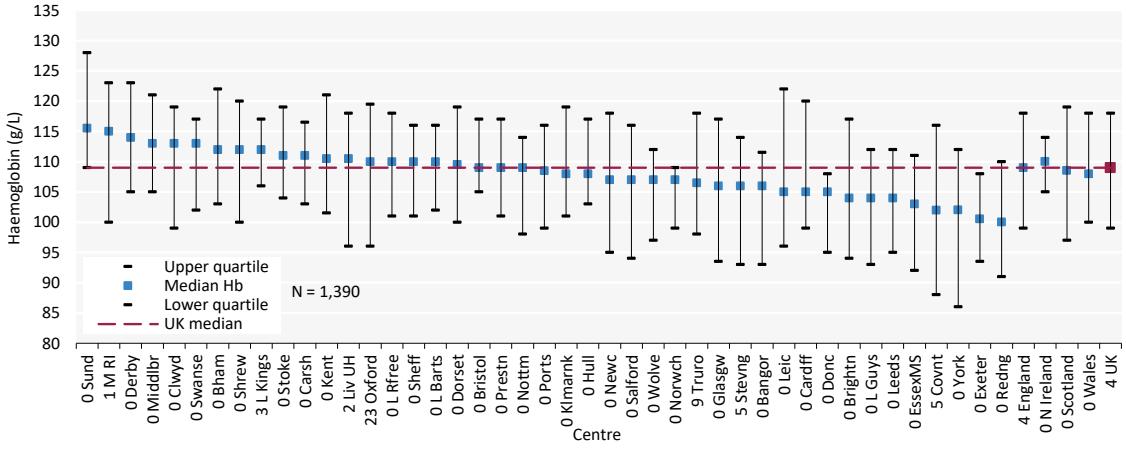


Figure 7.6 Median haemoglobin (Hb) in adult patients prevalent to HHD on 31/12/2024 by centre

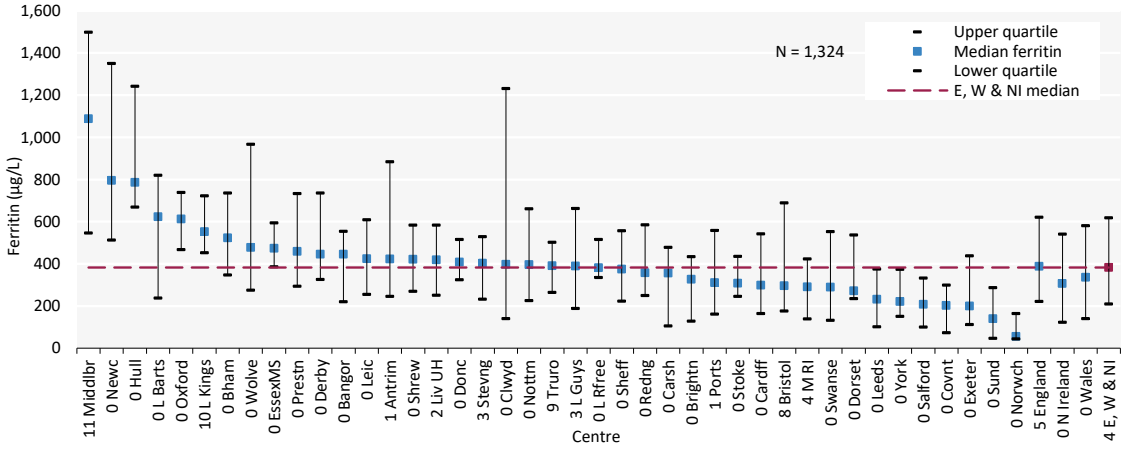


Figure 7.7 Median ferritin in adult patients prevalent to HHD on 31/12/2024 by centre

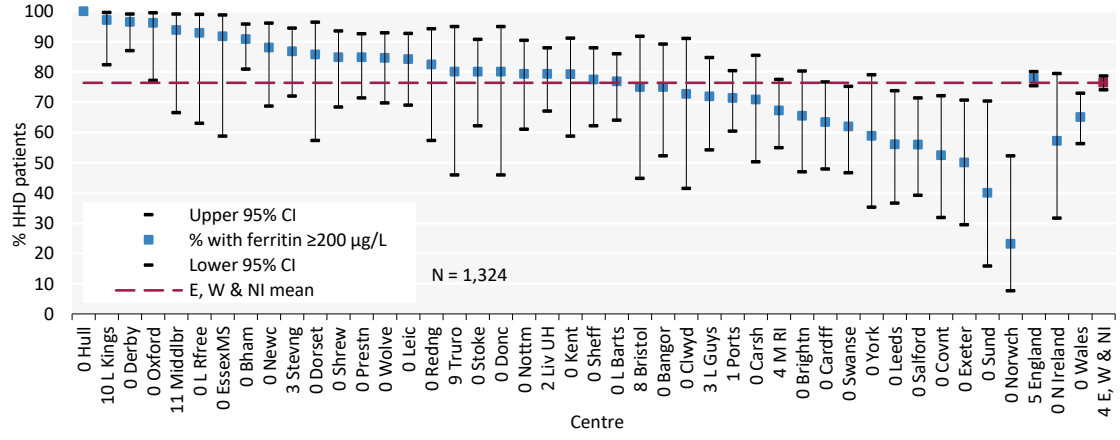


Figure 7.8 Percentage of adult patients prevalent to HHD on 31/12/2024 with ferritin ≥200 µg/L by centre
CI – confidence interval

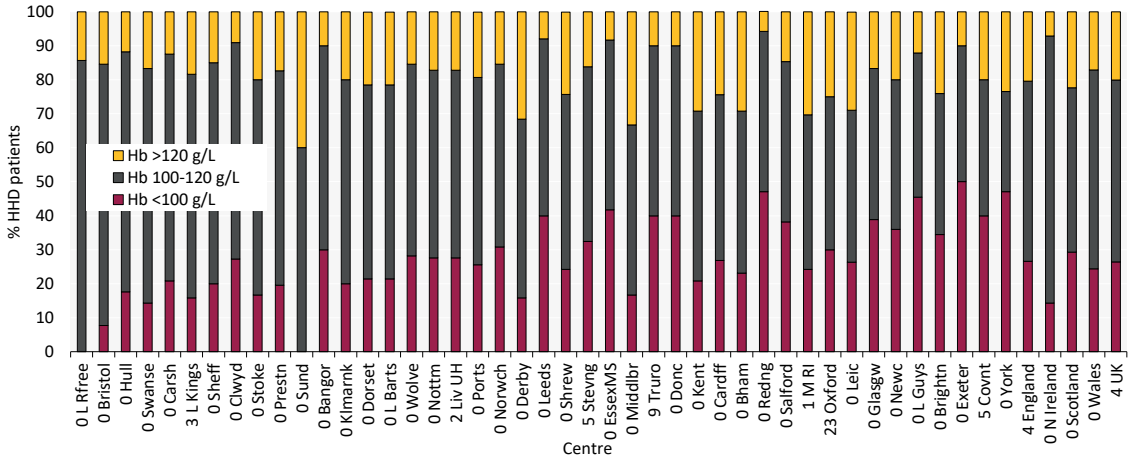


Figure 7.9 Distribution of haemoglobin (Hb) in adult patients prevalent to HHD on 31/12/2024 by centre

Cause of death in adult HHD patients

Cause of death was analysed in prevalent patients receiving HHD on 31/12/2023 and followed-up for one year in 2024. The proportion of HHD 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. Further detail on the survival of prevalent KRT patients is in chapter 3.

Table 7.8 Cause of death in adult patients prevalent to HHD on 31/12/2023 followed-up in 2024 by age group

	HHD all ages		HHD < 65 years		HHD ≥ 65 years	
Cause of death	*N*	%	*N*	%	*N*	%
Cardiac disease	29	27.9	20	34.5	9	19.6
Cerebrovascular disease	1	1.0	0	-	1	2.2
Infection	17	16.4	13	22.4	4	8.7
Malignancy	7	6.7	0	-	7	15.2
Treatment withdrawal	8	7.7	2	3.5	6	13.0
Other	35	33.7	21	36.2	14	30.4
Uncertain aetiology	7	6.7	2	3.5	5	10.9
Total (with data)	**104**	**100.0**	**58**	**100.0**	**46**	**100.0**
Missing	10	8.8	4	6.5	6	11.5

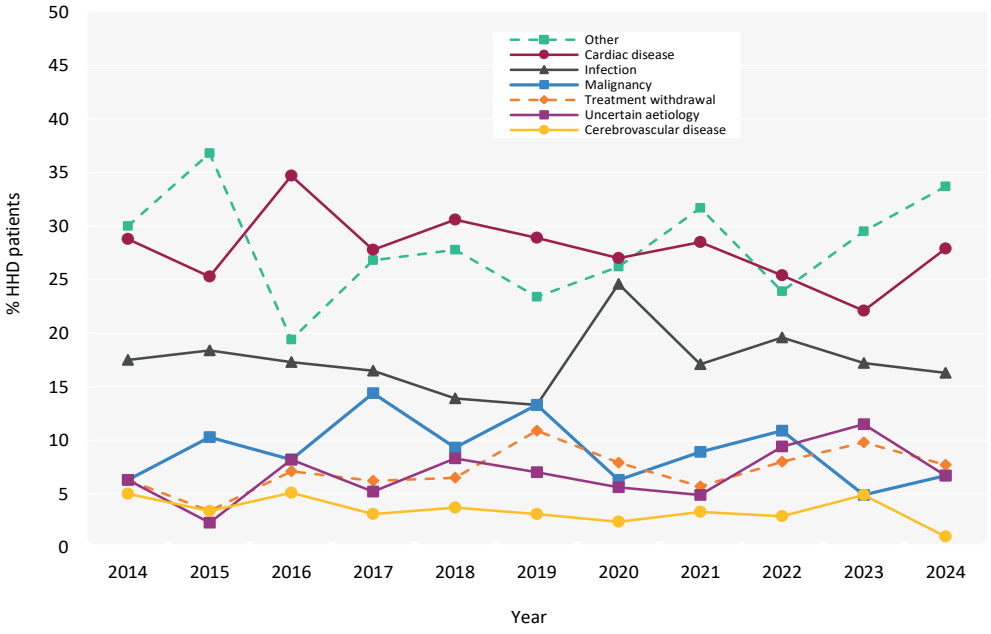


Figure 7.10 Cause of death between 2014 and 2024 for adult patients prevalent to HHD at the beginning of the year

UK Kidney Association
UK Renal Registry

Chapter 8

Children and young people with chronic kidney disease (CKD) and on 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 children and young people aged <18 years with end-stage kidney disease (ESKD) who were on kidney replacement therapy (KRT) in the UK for at least 90 days in 2024 (figure 8.1). This included patients with a kidney transplant (Tx) and patients on dialysis – in-centre haemodialysis (ICHD), home haemodialysis (HHD) and peritoneal dialysis (PD). Patients coded as acute kidney injury (AKI) or ESKD who recovered within the first 90 days of KRT were excluded from the analyses. For the second time, this report includes a dedicated section on children and young people (<18 years) with chronic kidney disease (CKD), outside the context of KRT or AKI. The content of this section is expected to evolve as data submission and completeness become more complete.

There are 13 paediatric kidney centres in the UK, all of which are equipped to provide both haemodialysis (HD) and PD. Ten of these centres also perform kidney transplantation. Children aged 16 to <18 years may be managed in either paediatric or adult services. This is variable across the UK and dependent on local practices, social factors and patient/family wishes. Children (aged <16 years) and young people (aged 16 to <18 years) are reported separately. Data about young people also include those managed in adult centres, to provide a more complete epidemiological picture for this population.

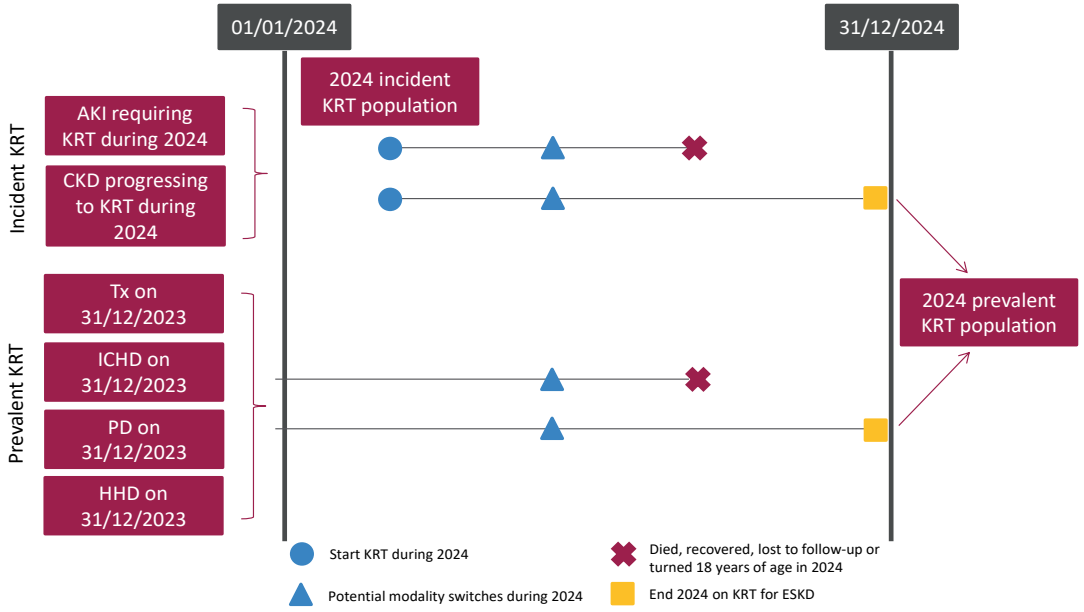


Figure 8.1 Pathways children and young people could follow to be included in the UK 2024 incident and/or prevalent KRT populations

Note that patients who recovered kidney function before 90 days on dialysis are not included in the KRT population
CKD – chronic kidney disease

For children aged <16 years, the following populations included in this chapter are:

- **Incident population:** patients who started KRT during 2024 and remained on KRT for at least 90 days.
- **Prevalent population:** patients who were on KRT at the end of 2024 and still under the care of a paediatric kidney centre.
- **Five-year populations:** patients who started KRT and remained on KRT for at least 90 days in the periods 2010-2014, 2015-2019 and 2020-2024.

For young people aged 16 to <18 years, the following populations included in this chapter are:

- **Incident population:** patients who started KRT during 2024 in either an adult or paediatric centre and remained on KRT for at least 90 days.
- **Prevalent population:** patients who were on KRT at the end of 2024 in either an adult or paediatric centre.

This chapter addresses the following key aspects of the care of children incident to or on KRT for which there are evidence-based guidelines (table 8.1):

- **Growth:** this includes age- and sex-adjusted heights and weights.
- **Cardiovascular risk factors:** these include age-adjusted blood pressure, cholesterol and body mass index (BMI).
- **Complications associated with KRT:** these include anaemia and mineral and bone disorders.

The sections for these aspects (and tables 8.3 and 8.4) use a restricted prevalent cohort. Children who have moved centre, or changed or started treatment in the quarter are not included for consistency of measurements.

For young people, the following aspects of care are addressed:

- **Cardiovascular risk factors:** these include blood pressure using raw systolic and diastolic values which are audited against European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents (2016).
- **Complications associated with KRT:** these include anaemia and mineral and bone disorders. Paediatric reference ranges for children and young people up to 18 years are used as the standard measure.

For children and young people aged <18 years with CKD not on KRT, the following population is included in the chapter:

A 2024 prevalent CKD population is described, comprising individuals who:

- were reported by a paediatric kidney centre as receiving treatment for CKD at the end of 2024, and
- had an eGFR of <30 mL/min/1.73m2 on their last recorded creatinine measurement.

Individuals are categorised as having CKD stage G5 (estimated glomerular filtration rate [eGFR] <15 mL/min/1.73m2) or CKD stage G4 (eGFR 15–29 mL/min/1.73m2). Further categorisation, e.g. by eGFR trend or albuminuria is not possible using UK Renal Registry (UKRR) data.

Possible pathways that a child could follow to be included in the 2024 prevalent CKD children population can be seen in figure 1.1 of Chapter 1 on the adult CKD population.

It is important to highlight that the individuals described in this chapter represent a sub-population of those with CKD in the UK. Many individuals with diagnosed CKD, particularly those with earlier stages, may receive care outside specialist kidney centres and are therefore not captured here. In addition, not all paediatric kidney centres are currently submitting CKD data to the UKRR.

Rationale for analyses

For both the children and young people sections, the analyses begin with a description of the 2024 incident and prevalent KRT populations, including the number on KRT per million age-related population (pmarp).

For children, height and weight are measures of healthy growth, which may be affected by kidney disease as well as its treatment. These measures are therefore presented for each centre in comparison to the UK median for this cohort.

The published guidelines listed below provide audit measures relevant to the care of children and young people on KRT and, where data permit, their attainment by UK paediatric kidney centres in 2024 is reported in this chapter (table 8.1). Due to the small numbers of young people identified, we have omitted reporting by centre for this population.

For children, reporting estimated glomerular filtration rate (eGFR) is dependent on the completeness of both creatinine and height data. For young people, the Full Age Spectrum (FAS) equation was used to calculate eGFR – height data for young people managed in adult centres were incomplete and therefore a height-free calculation was used to standardise reporting and enable direct comparison within this population.

Table 8.1 Audit measures relevant to KRT incidence and prevalence that are reported in this chapter

Audit guideline	Audit criteria	Related analysis/analyses
The UK Kidney Association: Treatment of adults and children with kidney failure: standards and audit measures (2002)	Height and weight to be monitored at each clinic visit and plotted on the growth charts of healthy children and adolescents	Figures 8.6–8.13
	Blood pressure during PD or after HD to be maintained at <90th percentile for age, sex and height. Blood pressure in Tx patients to be maintained at <90th percentile for age, sex and height	Tables 8.15–8.16, figures 8.14–8.15
	Serum phosphate and calcium should be kept within the normal range. Parathyroid hormone (PTH) levels should be maintained within twice the upper limit of the normal range but, contrary to adult standards, may be kept within the normal range if growth is normal	Table 8.18
	Serum bicarbonate concentrations should be 20–26 mmol/L	Table 8.18
	Typically maintain the aspirational haemoglobin range 100–120 g/L for young people and children aged ≥2 years and 95–115 g/L for children <2 years, reflecting the lower normal range in that age group	Table 8.18
National Heart Lung and Blood Institute and Kidney Disease Improving Global Outcomes (KDIGO) (2013)	Screening children at risk of secondary dyslipidaemias including those with CKD is recommended	Tables 8.3-8.4, 8.16

Detail about the completeness of data returned to the UKRR is available through the UKRR data portal (ukkidney.org/audit-research/data-portals). The completeness of both transferrin saturation and percentage hypochromic red cells was too low to be reported as measures of iron stores. Audit measures that cannot be reported because the required data items were not collected by the UKRR are omitted – this includes reticulocyte haemoglobin content.

For children, data for height, weight, BMI and blood pressure vary with age, sex and size and are therefore presented as z-scores. Z-scores are a way of expressing the deviation of a given measurement from the age and size-specific population mean. This relies on the completeness of height data during the period in question.

For definitions and methods relating to this chapter see appendix A. Centres were exluded 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. 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'.

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

Key findings

Children

- In 2024, 108 patients aged under 16 years commenced KRT for ESKD in the UK, a decrease from 118 patients in 2023. This corresponds to an incidence rate of 9 pmarp, similar to that in 2023.
- 816 patients aged under 16 years were receiving KRT at UK paediatric kidney centres on 31/12/2024, less than in 2023. The prevalence was 65 pmarp, with 77.0% having a functioning transplant (53.0% from living donors and 24.0% from deceased donors), 12.2% on haemodialysis, and 10.8% on peritoneal dialysis.
- Tubulointerstitial disease accounted for approximately 50% of all primary renal diseases (PRDs) in prevalent paediatric patients, with a high male:female ratio (3:1).
- At the time of transfer to adult services, 79% of paediatric patients had a functioning kidney Tx.
- The median height z-score for children on dialysis was -1.8 compared with -1.1 for those with a functioning Tx.
- The median weight z-score for children on dialysis was -1.3 compared with -0.3 for those with a functioning Tx.
- The median eGFR of children with a kidney transplant on 31/12/2024 was 59 mL/min/1.73m^2 and 8.0% had eGFR <30 mL/min/1.73m^2.
- Of those with complete data, 71.4% of the prevalent paediatric KRT population had 1 or more risk factors for cardiovascular disease; 3.6% had 3 risk factors.
- 64.0% and 64.7% of prevalent HD patients achieved systolic blood pressure (SBP) and diastolic blood pressure (DBP) values <90th percentile, respectively.
- 71.4% and 76.9% of prevalent PD patients achieved SBP and DBP values <90th percentile, respectively.
- 81.9% and 78.8% of prevalent Tx patients achieved SBP and DBP values <90th percentile, respectively.

Young people

- In 2024, 33 young people aged 16 to <18 years started KRT for ESKD in the UK, corresponding to an incidence rate of 20 pmarp.
- In young people aged 16 to <18 years, KRT prevalence was 165 pmarp , with 274 patients receiving KRT, 83% of whom were managed in paediatric kidney centres.
- Tubulointerstital disease accounted for 37.4% of all PRDs in prevalent young people, followed by glomerular disease (19.4%) and familial/hereditary nephropathies (16.7%).
- The overall median eGFR of young people with a kidney transplant on 31/12/2024 was 68 mL/min/1.73m^2 and 4.9% had an eGFR of <30 mL/min/1.73m^2.
- 56.8% of young people on dialysis and 61.0% of those transplanted had a blood pressure in the 'normal' range (<130/80 mmHg).

CKD

- In 2024, 135 patients aged under 18 years had CKD stage G4/5 across four paediatric centres, with a prevalence rate of 22 pmarp with the majority (70%) classified as CKD stage G4. The median age was 10.3 years (interquartile range (IQR) 5.5 - 13.9) and 65.9% were male.

Analyses – children

Changes to the prevalent paediatric KRT population

For the 13 paediatric kidney centres, the number of prevalent children on KRT was calculated as a proportion of the estimated centre catchment population (calculated as detailed in appendix A).

Table 8.2 Number of prevalent paediatric KRT patients by year and by centre; number of KRT patients as a proportion of the catchment population

	N on KRT					Estimated catchment population <16 (millions)	2024 crude rate (pmarp)
Centre	2020	2021	2022	2023	2024		
Bham_P	105	98	103	94	83	1.24	67
Blfst_P	27	25	25	22	22	0.40	56
Brstl_P	49	52	48	46	47	0.92	51
Cardf_P	29	28	26	29	31	0.39	79
Glasg_P	58	56	58	54	49	0.91	54
L Eve_P	80	81	82	78	76	1.56	49
L GOSH_P	157	157	158	169	159	2.59	61
Leeds_P	57	59	58	59	62	0.80	78
Livpl_P	39	42	47	54	49	0.59	82
Manch_P	87	86	82	96	84	0.95	88
Newc_P	35	34	31	32	30	0.53	56
Nottm_P	85	83	79	84	80	1.26	63
Soton_P	34	44	45	46	44	0.46	95
UK	**842**	**845**	**842**	**863**	**816**	**12.60**	**65**

pmarp – per million age-related population

Total prevalent numbers for Manch_P have been used in this table for 2023 and 2024, but not elsewhere in this chapter (except where noted)

Data completeness for prevalent paediatric KRT patients

Data returns of key variables for Tx and dialysis patients <16 years old at the end of 2024 are shown in tables 8.3 and 8.4, respectively, with further detail available through the UKRR data portal (ukkidney.org/audit-research/data-portals).

Table 8.3 Data completeness for paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

Centre	N with Tx	Data completeness (%)											
		Height	Weight	BMI	SBP	DBP	Hb	Creat	Chol	Bicarb	PTH	Ca	Phos
Bham_P	58	0.0	0.0	0.0	0.0	0.0	98.3	100.0	93.1	100.0	84.5	100.0	100.0
Blfst_P	21	0.0	14.3	0.0	0.0	0.0	100.0	100.0	4.8	100.0	71.4	100.0	100.0
Brstl_P	39	0.0	97.4	0.0	97.4	94.9	97.4	97.4	23.1	94.9	82.1	94.9	97.4
Cardf_P	25	92.0	92.0	92.0	92.0	16.0	92.0	92.0	8.0	92.0	20.0	92.0	92.0
Glasg_P	45	95.6	95.6	95.6	97.8	97.8	88.9	88.9	55.6	95.6	82.2	88.9	88.9
L Eve_P	56	100.0	100.0	100.0	100.0	100.0	75.0	100.0	57.1	100.0	100.0	100.0	100.0
L GOSH_P	121	29.8	35.5	29.8	24.0	24.0	100.0	100.0	72.7	5.8	93.4	0.0	100.0
Leeds_P	44	0.0	0.0	0.0	0.0	0.0	100.0	100.0	90.9	100.0	100.0	100.0	100.0
Livpl_P	33	0.0	0.0	0.0	3.0	0.0	100.0	100.0	60.6	100.0	97.0	100.0	100.0
Newc_P	22	0.0	0.0	0.0	100.0	9.1	100.0	100.0	81.8	100.0	81.8	100.0	100.0
Nottm_P	46	91.3	91.3	91.3	89.1	78.3	95.7	95.7	84.8	93.5	93.5	95.7	95.7
Soton_P	34	100.0	100.0	100.0	67.7	50.0	79.4	79.4	50.0	79.4	76.5	79.4	79.4
UK	**544**	**43.0**	**51.8**	**43.0**	**50.9**	**41.4**	**94.1**	**96.9**	**63.4**	**76.1**	**86.4**	**74.5**	**96.9**

Bicarb – bicarbonate; BMI – body mass index; Ca – calcium; Chol – cholesterol; Creat – creatinine; DBP – diastolic blood pressure; Hb – haemoglobin; Phos – phosphate; PTH – parathyroid hormone; SBP – systolic blood pressure
Children who have moved centre, or changed or started treatment in the quarter are not included

Table 8.4 Data completeness for paediatric patients (<16 years old) prevalent to dialysis on 31/12/2024 by centre

Centre	N on dialysis	Data completeness (%)										
		Height	Weight	BMI	SBP	DBP	Hb	Chol	Bicarb	PTH	Ca	Phos
Bham_P	22	0.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	59.1	100.0	100.0
Blfst_P	1	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0
Brstl_P	6	0.0	100.0	0.0	100.0	66.7	100.0	100.0	100.0	100.0	100.0	100.0
Cardf_P	3	100.0	100.0	100.0	33.3	0.0	100.0	100.0	100.0	100.0	100.0	100.0
Glasg_P	3	100.0	100.0	100.0	100.0	100.0	100.0	33.3	100.0	100.0	100.0	100.0
L Eve_P	15	100.0	100.0	100.0	100.0	100.0	86.7	86.7	93.3	93.3	93.3	93.3
L GOSH_P	30	70.0	96.7	70.0	76.7	76.7	100.0	50.0	16.7	100.0	0.0	100.0
Leeds_P	16	0.0	31.3	0.0	31.3	0.0	100.0	50.0	93.8	100.0	93.8	93.8
Livpl_P	13	0.0	0.0	0.0	0.0	0.0	100.0	53.9	100.0	100.0	100.0	100.0
Newc_P	8	0.0	0.0	0.0	62.5	12.5	100.0	50.0	100.0	87.5	100.0	100.0
Nottm_P	28	85.7	85.7	85.7	85.7	57.1	85.7	46.4	85.7	85.7	85.7	85.7
Soton_P	9	100.0	100.0	100.0	88.9	66.7	88.9	66.7	88.9	88.9	88.9	88.9
UK	**154**	**48.7**	**61.0**	**48.7**	**58.4**	**44.2**	**95.5**	**63.6**	**79.2**	**89.6**	**76.0**	**95.5**

Bicarb – bicarbonate; BMI – body mass index; Ca – calcium; Chol – cholesterol; Creat – creatinine; DBP – diastolic blood pressure; Hb – haemoglobin; Phos – phosphate; PTH – parathyroid hormone; SBP – systolic blood pressure
Children who have moved centre, or changed or started treatment in the quarter are not included

Changes to the incident paediatric KRT population

The number of incident patients on KRT <16 years old was used to calculate age-related rates per million population and were grouped by age, sex, five year time period, ethnicity, centre and PRD.

Table 8.5 Paediatric patients (<16 years old) incident to KRT in 2024 by age and sex

	All patients		Male		Female	
Age group (yrs)	N	pmarp	N	pmarp	N	pmarp
0-<2	5	4	3	4	2	3
2-<4	10	7	4	5	6	8
4-<8	20	6	11	7	9	6
8-<12	24	7	14	8	10	6
12-<16	33	10	16	9	17	10
<16 yrs	**92**	**7**	**48**	**7**	**44**	**7**

pmarp – per million age-related population

Including Manch_P the overall N was 108 and pmarp 9

Table 8.6 Paediatric patients (<16 years old) incident to KRT by age and 5 year time period

	2010-2014		2015-2019		2020-2024	
Age group (yrs)	N	pmarp	N	pmarp	N	pmarp
0-<2	102	13	108	14	76	11
2-<4	71	9	67	8	49	7
4-<8	94	6	114	7	79	5
8-<12	126	9	129	8	149	9
12-<16	177	12	180	13	192	12
<16 yrs	**570**	**10**	**598**	**10**	**545**	**9**

pmarp – per million age-related population

Including Manch_P the overall N for 2020-2024 was 573 and pmarp 9

Table 8.7 Paediatric patients (<16 years old) incident to KRT by ethnicity and 5 year time period

	2010-2014		2015-2019		2020-2024	
Ethnicity	N	%	N	%	N	%
White	398	69.8	401	67.6	332	66.0
Asian	110	19.3	115	19.4	96	19.1
Black	21	3.7	41	6.9	30	6.0
Other	41	7.2	36	6.1	45	8.9
<16 yrs	**570**	**100.0**	**593**	**100.0**	**503**	**100.0**

5 children in 2015-2019 and 42 in 2020-2024 with no ethnicity recorded were excluded

Table 8.8 Paediatric patients (<16 years old) incident to KRT by centre and 5 year time period

	2010-2014		2015-2019		2020-2024	
Centre	N	%	N	%	N	%
Bham_P	62	10.9	81	13.5	66	11.5
Blfst_P	21	3.7	10	1.7	8	1.4
Brstl_P	39	6.8	30	5.0	23	4.0
Cardf_P	22	3.9	21	3.5	21	3.7
Glasg_P	35	6.1	45	7.5	31	5.4
L Eve_P	57	10.0	65	10.9	66	11.5
L GOSH_P	100	17.5	100	16.7	114	19.9
Leeds_P	50	8.8	42	7.0	40	7.0
Livpl_P	31	5.4	27	4.5	42	7.3
Manch_P	61	10.7	69	11.5	52	9.1
Newc_P	21	3.7	35	5.9	13	2.3
Nottm_P	51	8.9	50	8.4	64	11.2
Soton_P	20	3.5	23	3.8	33	5.8
<16 yrs	**570**	**100.0**	**598**	**100.0**	**573**	**100.0**

Total incident numbers for Manch_P have been used in this table for 2023 and 2024, but not elsewhere in this chapter (except where noted)

Primary renal diseases (PRDs) were grouped into categories as shown in table 8.9, with the mapping of disease codes into groups explained in more detail in appendix A.

Table 8.9 Paediatric patients (<16 years old) incident to KRT by primary renal disease (PRD) and 5 year time period

	2010-2014		2015-2019		2020-2024	
PRD	N	%	N	%	N	%
Tubulointerstitial disease	283	49.9	282	47.2	188	42.3
- CAKUT	275	48.5	272	45.6	176	39.6
- Non-CAKUT	8	1.4	10	1.7	12	2.7
Glomerular disease	72	12.7	107	17.9	97	21.8
Familial/hereditary nephropathies	109	19.2	91	15.2	71	16.0
Systemic diseases affecting the kidney	20	3.5	23	3.9	16	3.6
Miscellaneous renal disorders	83	14.6	94	15.7	72	16.2
Total (with data)	**567**	**100.0**	**597**	**100.0**	**444**	**100.0**
Missing	3	0.5	1	0.2	101	18.5

CAKUT – congenital anomalies of the kidneys and urinary tract

Start modality of incident paediatric KRT patients

Start modality used by patients <16 years old starting KRT between 2010 and 2024 was grouped by five year time periods.

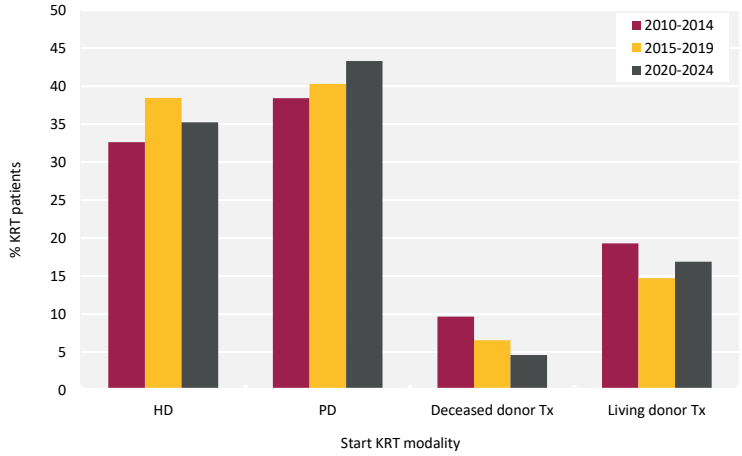


Figure 8.2 Start KRT modality for paediatric patients (<16 years old) incident to KRT by 5 year time period

Pre-emptive transplantation in incident paediatric KRT patients

The analysis of pre-emptive transplantation excluded patients starting KRT aged <3 months and patients known to have presented late.

Table 8.10 Pre-emptive transplantation in the incident paediatric KRT population aged 3 months to 16 years by 5 year time period, sex, ethnicity, age at start of KRT and primary renal disease (PRD)

	N on KRT	N (%) with pre-emptive Tx
Total cohort analysed (2010-2024)	1,312	403 (30.7)
Time period		
2010-2014	430	162 (37.7)
2015-2019	453	125 (27.6)
2020-2024	429	116 (27.0)
Sex		
Male	819	278 (33.9)
Female	493	125 (25.4)
Ethnicity		
White	871	314 (36.1)
Asian	247	48 (19.4)
Black	67	14 (20.9)
Other	91	21 (23.1)
Age at start of RRT (yrs)		
3 mths-<2	157	6 (3.8)
2-<4	162	50 (30.9)
4-<8	231	102 (44.2)
8-<12	326	104 (31.9)
12-<16	436	141 (32.3)
PRD		
Tubulointerstitial disease	631	266 (42.2)
Glomerular disease	200	8 (4.0)
Familial/hereditary nephropathies	203	54 (26.6)
Systemic diseases affecting the kidney	40	14 (35.0)
Miscellaneous renal disorders	156	41 (26.3)

74 children were excluded because they were aged <3 months; 327 children were excluded because they presented late

Demographics of prevalent paediatric KRT patients

The number of prevalent patients on KRT <16 years old was used to calculate age-related rates per million population and were grouped by age, sex and ethnicity.

Table 8.11 Age and sex breakdown of paediatric patients (<16 years old) prevalent to KRT on 31/12/2024

	All patients		Male		Female		M/F pmarp
Age group (yrs)	N	pmarp	N	pmarp	N	pmarp	ratio
0-<2	8	6	5	7	3	5	1.6
2-<4	43	29	25	33	18	25	1.3
4-<8	144	46	93	59	51	34	1.7
8-<12	221	67	139	83	82	51	1.6
12-<16	400	118	241	139	159	96	1.4
<16 yrs	**816**	**65**	**503**	**78**	**313**	**51**	**1.5**

pmarp – per million age-related population
Manch_P is included in this table

Table 8.12 Age and ethnicity breakdown of paediatric patients (<16 years old) prevalent to KRT on 31/12/2024

	N			
Age group (yrs)	White	Asian	Black	Other
0-<4	25	3	4	4
4-<8	74	25	8	7
8-<12	138	35	9	18
12-<16	232	59	22	37
<16 yrs	**469**	**122**	**43**	**66**

32 children with no ethnicity recorded were excluded

Treatment modality in prevalent paediatric KRT patients

The current and start KRT modalities for prevalent KRT patients aged <16 years are shown in figures 8.3 and 8.4, respectively. Table 8.13 breaks down current modality for prevalent patients by age group.

Table 8.13 KRT modality used by paediatric patients (<16 years old) prevalent to KRT on 31/12/2024 by age group

		HD		PD		Living donor Tx		Deceased donor Tx	
Age group (yrs)	Total N	N	%	N	%	N	%	N	%
0-<2	8	2	25.0	6	75.0	0	0.0	0	0.0
2-<4	38	8	21.1	16	42.1	12	31.6	2	5.3
4-<8	122	13	10.7	18	14.8	69	56.6	22	18.0
8-<12	205	24	11.7	18	8.8	114	55.6	49	23.9
12-<16	359	42	11.7	21	5.8	193	53.8	103	28.7
<16 yrs	**732**	**89**	**12.2**	**79**	**10.8**	**388**	**53.0**	**176**	**24.0**

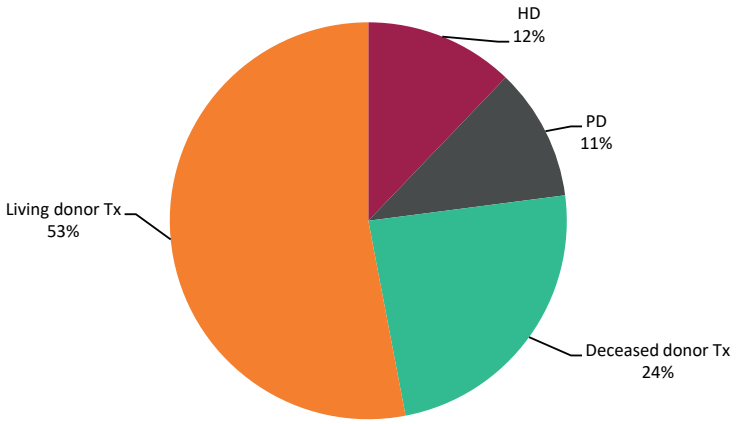


Figure 8.3 KRT modality used by paediatric patients (<16 years old) prevalent to KRT on 31/12/2024

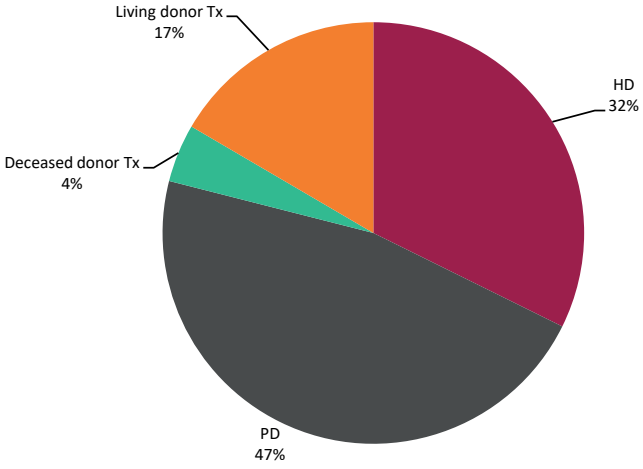


Figure 8.4 KRT modality used at the start of KRT by paediatric patients (<16 years old) prevalent to KRT on 31/12/2024

Causes of ESKD in prevalent paediatric KRT patients

Primary renal diseases (PRDs) were grouped into categories as shown in table 8.14. with the mapping of disease codes into groups explained in more detail in appendix A.

Table 8.14 Primary renal diseases (PRDs) of paediatric patients (<16 years old) prevalent to KRT on 31/12/2024 by sex and ethnicity

PRD	N	%	N male	N female	M/F ratio	% White
Tubulointerstitial disease	333	50.9	255	78	3.3	70.0
- CAKUT	323	49.4	250	73	3.4	70.6
- Non-CAKUT	10	1.5	5	5	1.0	50.0
Glomerular disease	118	18.0	52	66	0.8	66.4
Familial/hereditary nephropathies	98	15.0	48	50	1.0	69.8
Systemic diseases affecting the kidney	28	4.3	12	16	0.8	82.1
Miscellaneous renal disorders	77	11.8	35	42	0.8	64.4
Total (with data)	**654**	**100.0**	**402**	**252**	**1.6**	**69.2**
Missing	78	10.7	44	34	1.3	42.1

CAKUT – congenital anomalies of the kidneys and urinary tract

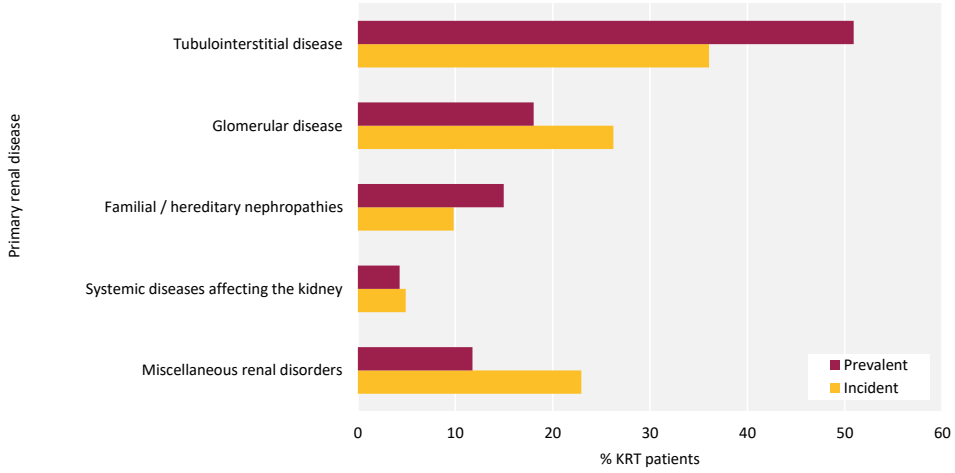


Figure 8.5 Comparison of primary renal diseases for paediatric patients (<16 years old) incident and prevalent to KRT in 2024 excluding missing data

Growth of prevalent paediatric KRT patients

The height and weight of children receiving KRT were compared to the age- and sex-matched general childhood population. The UK median score for each measure is represented by a red dotted line.

Height of paediatric KRT patients

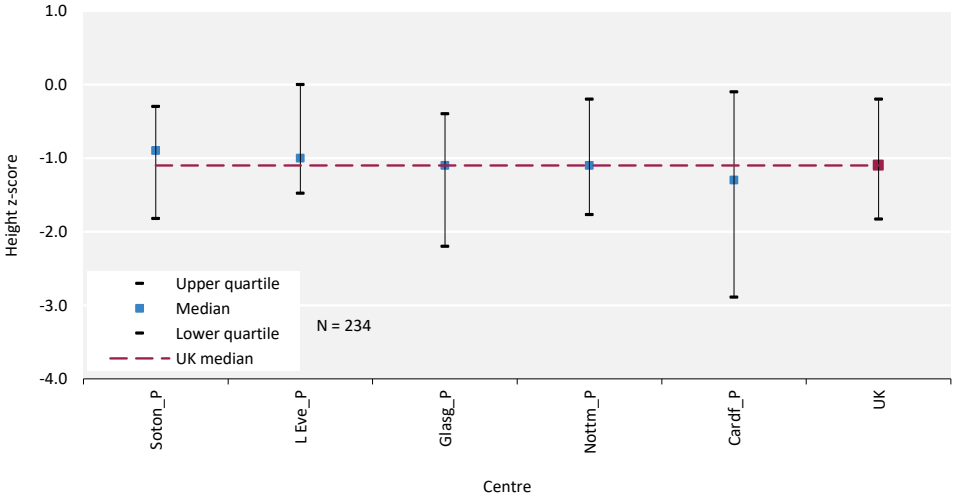


Figure 8.6 Median height z-scores for paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

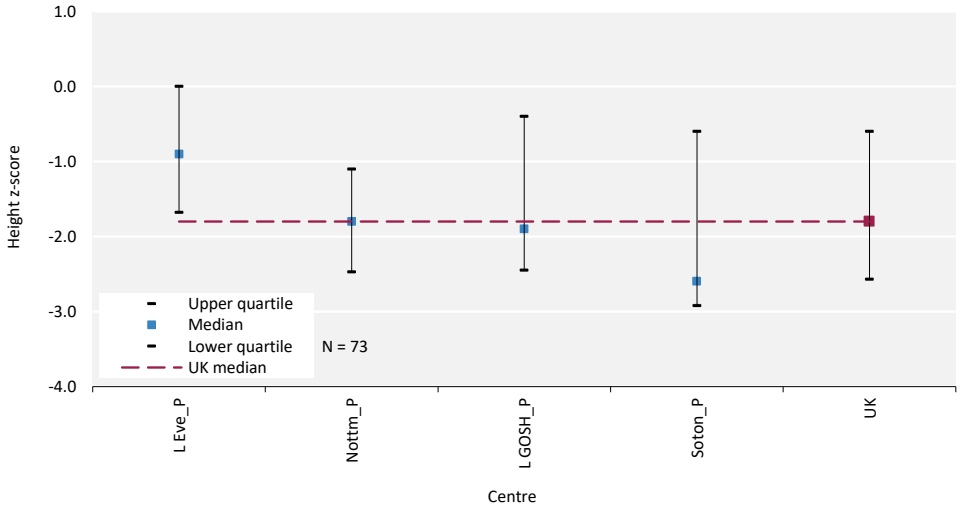


Figure 8.7 Median height z-scores for paediatric patients (<16 years old) prevalent to dialysis on 31/12/2024 by centre (the usual centre exclusion criteria have been relaxed here)

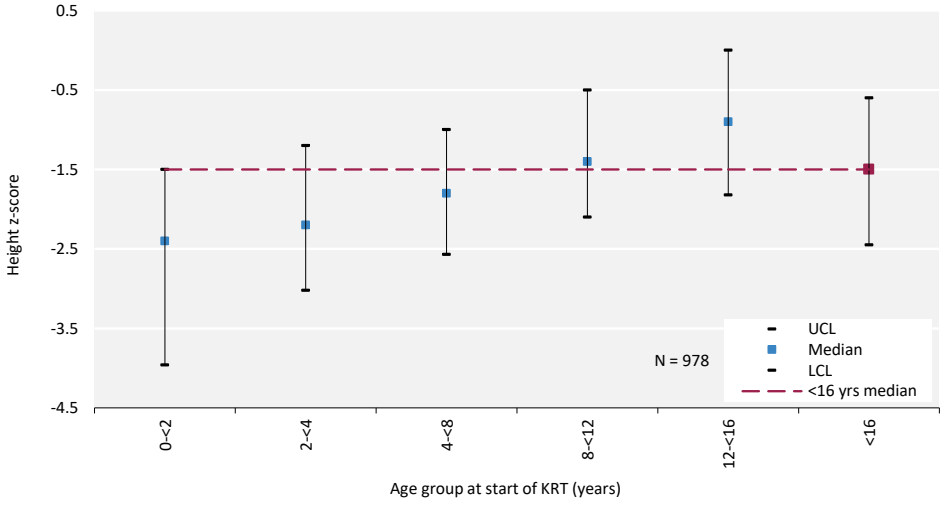


Figure 8.8 Median height z-scores at start of KRT for incident paediatric KRT patients (<16 years old) between 2010 and 2024 by age group at start of KRT

Weight of paediatric KRT patients

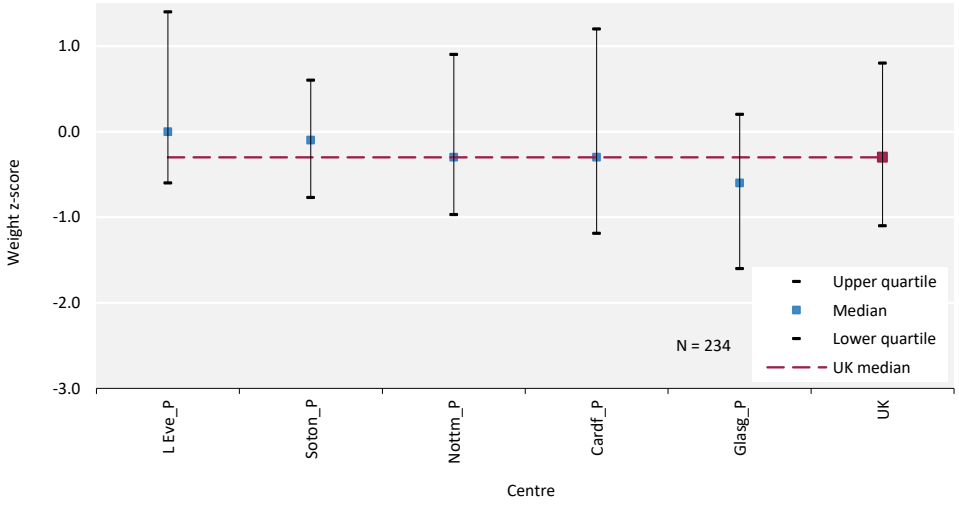


Figure 8.9 Median weight z-scores for paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

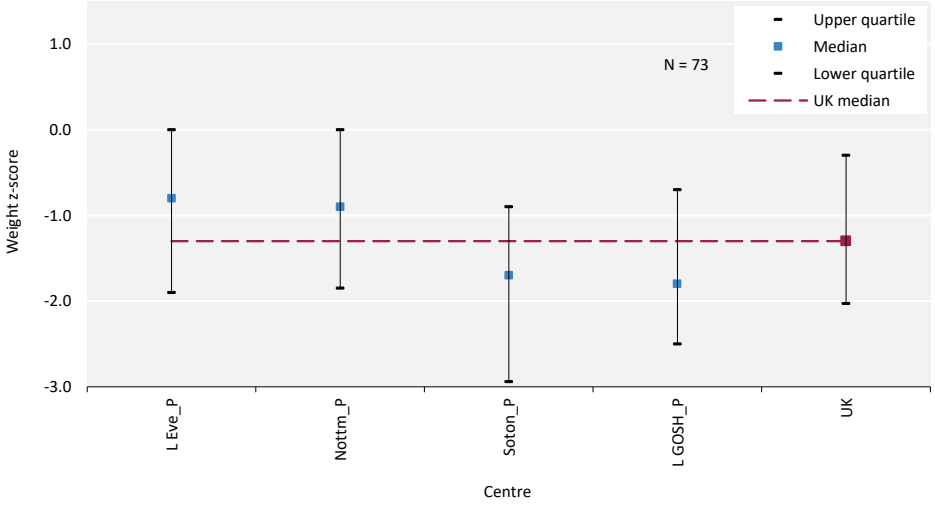


Figure 8.10 Median weight z-scores for paediatric patients (<16 years old) prevalent to dialysis on 31/12/2024 by centre (the usual centre exclusion criteria have been relaxed here)

Cardiovascular risk factor evaluation in prevalent paediatric KRT patients

Obesity in paediatric KRT patients

BMI was calculated using the formula BMI = weight (kg)/height^2 (m). Height and weight were adjusted for age. To account for discrepancies in linear growth secondary to kidney disease, BMI was expressed according to height age, rather than chronological age. Height age corresponds to the age when a child's height is plotted at the 50th percentile on a UK growth chart.

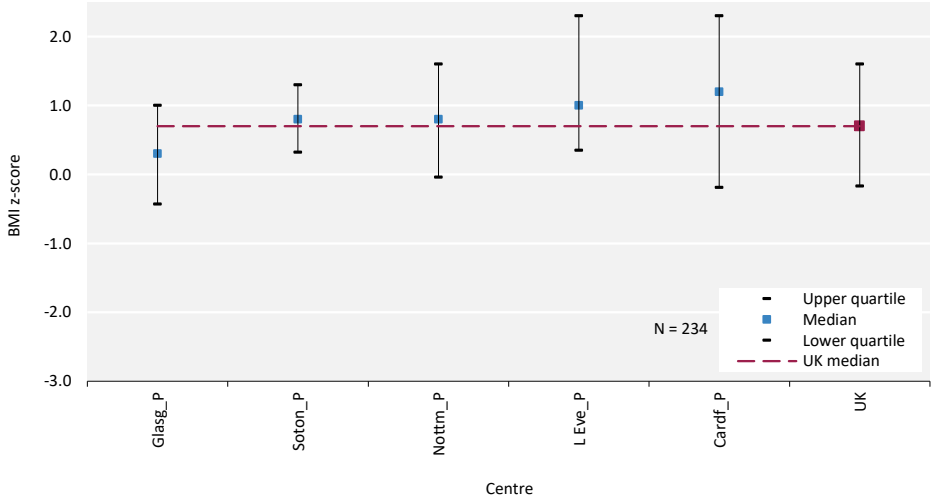


Figure 8.11 Median body mass index (BMI) z-scores for paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

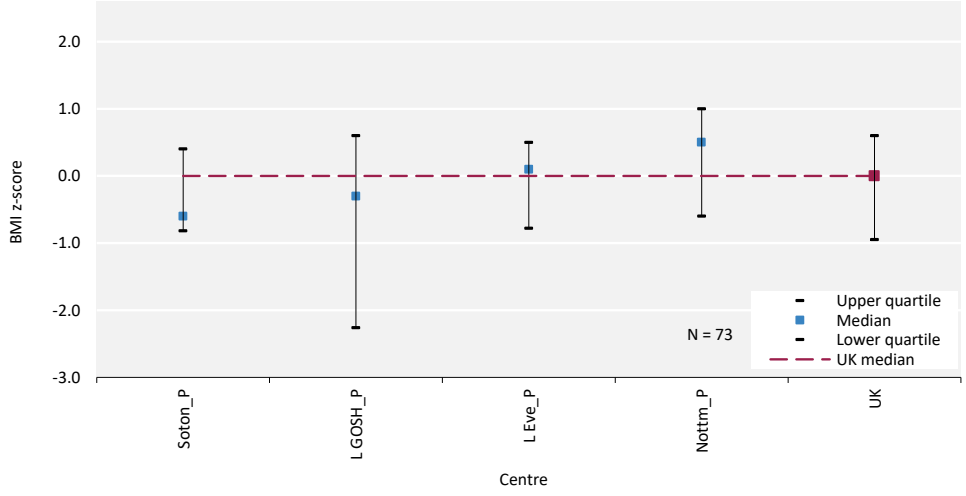


Figure 8.12 Median body mass index (BMI) z-scores for paediatric patients (<16 years old) prevalent to dialysis on 31/12/2024 by centre (the usual centre exclusion criteria have been relaxed here)

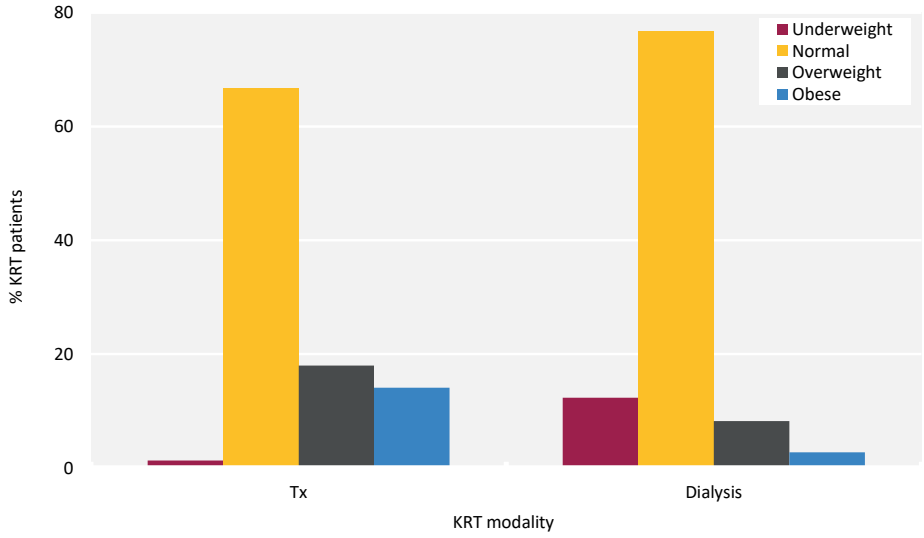


Figure 8.13 Body mass index (BMI) categorisation of paediatric patients (<16 years old) prevalent to KRT on 31/12/2024 by KRT modality

Hypertension in paediatric KRT patients

In paediatric KRT patients, the systolic blood pressure (SBP) should be maintained at <90th percentile for age, sex and height.

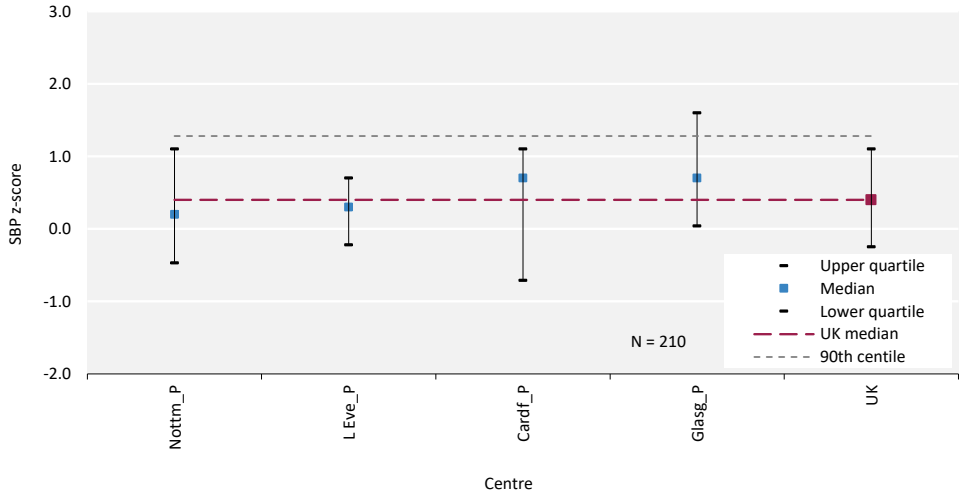


Figure 8.14 Median systolic blood pressure (SBP) z-scores for paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

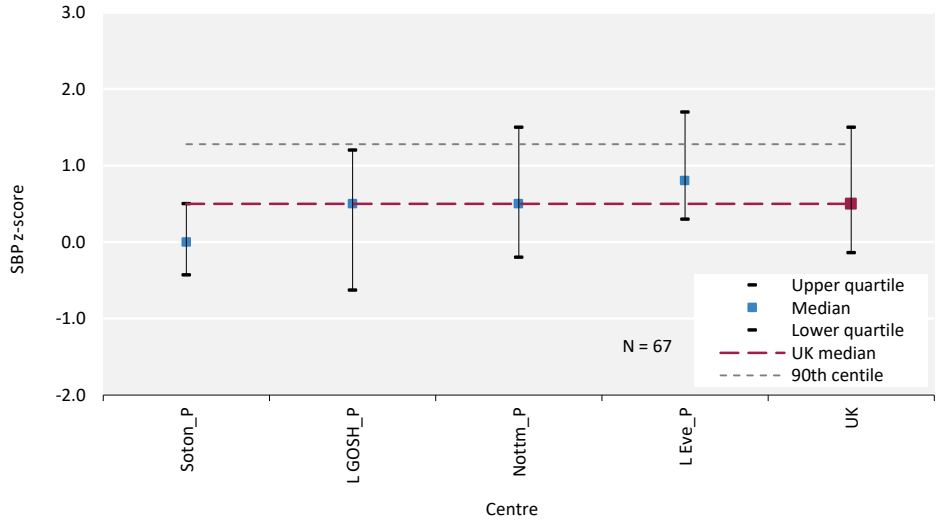


Figure 8.15 Median systolic blood pressure (SBP) z-scores for paediatric patients (<16 years old) prevalent to dialysis on 31/12/2024 by centre (the usual centre exclusion criteria have been relaxed here)

Table 8.15 Percentage of paediatric patients (<16 years old) prevalent to KRT on 31/12/2024 achieving the standards for blood pressures

	SBP		DBP	
Characteristic	N	% <90th percentile	N	% <90th percentile
Total	277	78.7	235	77.5
Age group (yrs)				
0-<5	28	64.3	22	63.6
5-<12	115	74.8	96	79.2
12-<16	134	85.1	117	78.6
Sex				
Male	167	82.6	141	77.3
Female	110	72.7	94	77.7
Ethnicity				
White	187	79.7	161	77.0
Asian	34	67.7	28	85.7
Black	19	84.2	17	64.7
Other	30	80.0	24	79.2
Modality				
HD	25	64.0	17	64.7
PD	42	71.4	39	76.9
Tx	210	81.9	179	78.8

DBP – diastolic blood pressure; SBP – systolic blood pressure
HD – haemodialysis; PD – peritoneal dialysis; Tx – transplant

Cardiovascular risk factors in paediatric KRT patients

The analysis of the percentage of prevalent KRT patients with identified cardiovascular risk factors was restricted to the 168 of the 698 patients (24.1%) with data for all three risk factors.

Table 8.16 Frequency of number of cardiovascular risk factors in paediatric patients (<16 years old) prevalent to KRT on 31/12/2024

N cardiovascular risk factors	Hypertensive	Overweight/Obese	Hypercholesterolaemic	N	%	Total %
0	No	No	No	48	28.6	28.6
1	Yes	No	No	22	13.1	
	No	Yes	No	19	11.3	42.9
	No	No	Yes	31	18.5	
2	Yes	Yes	No	6	3.6	
	Yes	No	Yes	19	11.3	25.0
	No	Yes	Yes	17	10.1	
3	Yes	Yes	Yes	6	3.6	3.6
				168		**100.0**
Total N with the risk factor	**53**	**48**	**73**			
Total % with the risk factor	**31.5**	**28.6**	**43.5**			

Biochemistry parameters in prevalent paediatric KRT patients

The median values and the percentage with eGFR <30 mL/min/1.73m^2 for prevalent 2024 paediatric Tx patients are presented in table 8.17.

Table 8.17 Median estimated glomerular filtration rate (eGFR) and percentage with eGFR <30 mL/min/1.73m^2 in paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by centre

Centre	N with Tx	Median eGFR (mL/min/1.73m^2)	% eGFR <30 mL/min/1.73m^2	% data completeness
Bham_P	58			0.0
Blfst_P	21			0.0
Brstl_P	39			0.0
Cardf_P	25	71	4.4	92.0
Glasg_P	45	75	2.4	93.3
L Eve_P	56	55	7.1	100.0
L GOSH_P	121			29.8
Leeds_P	44			0.0
Livpl_P	33			0.0
Newc_P	22			0.0
Nottm_P	46	53	11.9	91.3
Soton_P	34	79	0.0	79.4
UK	**544**	**59**	**8.0**	**41.5**

Blank cells – centres with <70% data completeness or <10 patients
For the centres with missing data, completeness of creatinine data was good but completeness of height was low (heights are needed to calculate eGFRs from creatinine)

Table 8.18 Attainment of targets for haemoglobin, calcium, phosphate, parathyroid hormone and bicarbonate in paediatric patients (<16 years old) (a) prevalent to dialysis on 31/12/2024 by centre and (b) prevalent to Tx on 31/12/2024 with estimated glomerular filtration rate (eGFR) <30 mL/min/1.73 m^2 in the UK

Centre	N	% Hb below target	% Hb within target	% Ca below target	% Ca within target	% phos below target	% phos within target	% PTH within target	% bicarb below target	% bicarb within target
DIALYSIS PATIENTS										
Bham_P	22	22.7	36.4	4.6	68.2	13.6	45.5		18.2	68.2
Blfst_P	1									
Brstl_P	6									
Cardf_P	3									
Glasg_P	3									
L Eve_P	15	15.4	61.5	7.1	64.3	0.0	64.3	14.3	42.9	57.1
L GOSH_P	30	30.0	46.7			3.3	50.0	50.0		
Leeds_P	16	25.0	56.3	0.0	93.3	6.7	66.7	37.5	0.0	73.3
Livpl_P	13	38.5	46.2	0.0	92.3	15.4	30.8	61.5	0.0	100.0
Newc_P	8									
Nottm_P	28	20.8	54.2	0.0	66.7	4.2	33.3	25.0	0.0	75.0
Soton_P	9									
UK	**154**	**25.9**	**46.9**	**1.7**	**75.2**	**10.2**	**47.6**	**37.7**	**12.3**	**73.0**
TX PATIENTS WITH EGFR <30 ML/MIN/1.73 M^2										
UK	**18**	**25.0**	**75.0**	**0.0**	**100.0**	**0.0**	**82.4**	**47.1**	**58.3**	**41.7**

Blank cells – centres with <70% data completeness or <10 patients
See appendix A for biochemical target ranges
Bicarb – bicarbonate; Ca – calcium; Hb – haemoglobin; Phos – phosphate; PTH – parathyroid hormone

Table 8.19 Median estimated glomerular filtration rate (eGFR) in paediatric patients (<16 years old) prevalent to Tx on 31/12/2024 by time since transplantation and age group

	Age group (yrs)					
	0-<5		5-<12		12-<16	
Time since transplantation	N	Median eGFR (mL/min/1.73 m^2)	N	Median eGFR (mL/min/1.73 m^2)	N	Median eGFR (mL/min/1.73 m^2)
< 3 mths			1			
3 months–<2 years	11	86	20	63	29	61
2–<4 years	4		24	69	24	72
4–<7 years			39	57	17	64
≥ 7 years			11	69	45	45
Total (IQR)	**15**	**80 (66-108)**	**95**	**60 (48-82)**	**115**	**55 (39-73)**

IQR – interquartile range
As seen in table 8.17, completeness of eGFR is 41.5% of N=544

Transfer to adult kidney services for prevalent paediatric KRT patients

One hundred and eighteen paediatric patients transitioned to adult kidney centres in 2024. The median age of patients at transfer was 17.9 years with an IQR of 17.3-18.0 years. Overall, the demographics of this population reflected those of the prevalent paediatric KRT population.

Survival in paediatric KRT patients

Of patients aged <16 years, 1,600 started KRT between 2010 and 2023 at paediatric kidney centres and were included in survival analyses, to allow at least one year follow-up. At the end of 2024, 108 deaths had been reported in these children. Patients included in the analysis must have been alive on KRT for 90 days. The median follow-up time (beyond day 90) was 7.3 years (range 1 day to 14.8 years).

Table 8.20 Unadjusted Kaplan-Meier survival (from day 90) of incident paediatric KRT patients (<16 years old) between 2010 and 2023 by age group at start of KRT

	Age group (yrs)				
	0-<2	2-<4	4-<8	8-<12	12-<16
Survival at 1 year (%)	94.1	98.2	98.9	99.2	99.6
95% CI	90.6-96.4	94.6-99.4	96.5-99.6	97.5-99.7	98.4-99.9
Survival at 2 years (%)	92.2	97.0	96.5	98.0	98.8
95% CI	88.3-94.9	93.0-98.7	93.3-98.1	95.9-99.1	97.3-99.4
Survival at 3 years (%)	89.0	96.3	95.2	97.7	98.1
95% CI	84.5-92.2	92.0-98.3	91.7-97.2	95.5-98.9	96.3-99.0
Survival at 5 years (%)	84.9	95.6	94.2	96.6	97.3
95% CI	79.8-88.8	91.0-97.9	90.4-96.5	94.0-98.1	95.2-98.4
Survival at 10 years (%)	83.1	95.6	91.3	94.3	93.9
95% CI	77.6-87.3	91.0-97.9	86.1-94.6	90.3-96.6	90.4-96.1

CI – confidence interval

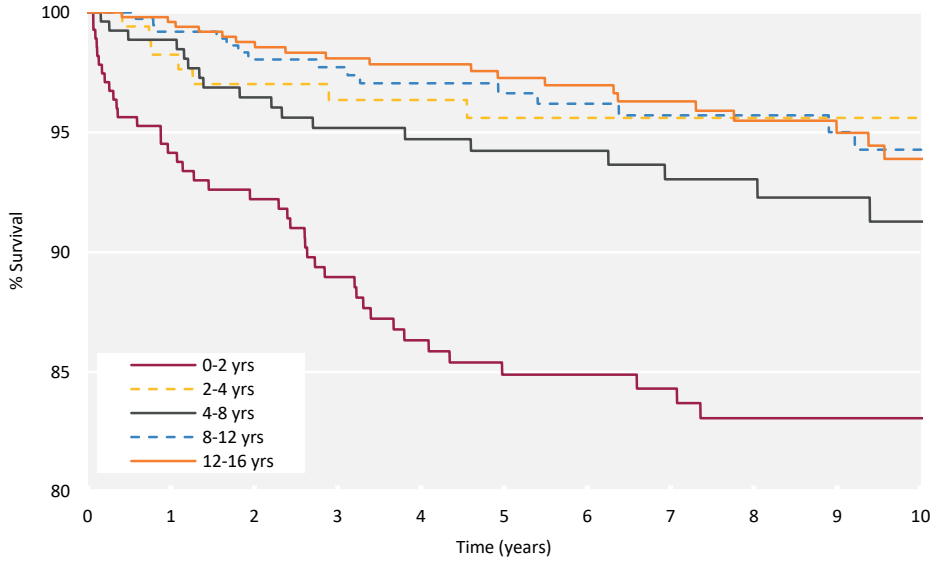


Figure 8.16 Unadjusted Kaplan-Meier survival (from day 90) of incident paediatric KRT patients (<16 years old) between 2010 and 2023 by age group at start of KRT

Analyses – young people

KRT incidence and prevalence in young people

Table 8.21 reports the numbers of young people (16-<18 years old) who started KRT in 2024 (incidence) as well as those on KRT as of 31/12/2024 (prevalence) in both paediatric and adult centres, as an estimated total pmarp and grouped by sex, ethnicity and PRD. For incident young people, start modality is reported; current treatment modality is reported for prevalent patients.

Table 8.21 Demographics of young people (16-<18 years) incident to KRT in 2024 and/or prevalent to KRT on 31/12/2024, by care setting

	Incident			Prevalent		
Characteristic	Paediatric centres	Adult centres	All	Paediatric centres	Adult centres	All
N	13	20	33	228	46	274
Rate (pmarp)			20			165
Median age (yrs)	18.0	17.1	16.9	16.9	17.6	17.0
% male	58.3	60.0	59.4	56.1	53.3	55.6
Ethnicity[1] (%)						
White	54.6	33.3	42.3	69.4	45.0	65.3
Asian	18.2	40.0	30.8	16.3	35.0	19.5
Black	18.2	13.3	15.4	5.6	10.0	6.4
Other	9.1	13.3	11.5	8.7	10.0	8.9
Missing ethnicity	8.3	25.0	18.8	4.4	11.1	5.6
PRD[1] (%)						
Tubulointerstitial disease	0.0	28.6	19.1	38.0	35.0	37.4
Glomerular disease	28.6	28.6	28.6	19.8	17.5	19.4
Familial/hereditary nephropathies	28.6	0.0	9.5	16.6	17.5	16.7
Systemic diseases affecting the kidney	0.0	0.0	0.0	4.8	5.0	4.9
Diabetes	0.0	0.0	0.0	0.0	0.0	0.0
Miscellaneous renal disorders	42.9	42.9	42.9	20.9	25.0	21.6
Missing PRD	41.7	30.0	34.4	8.8	11.1	9.2
Modality (%)						
HD	58.3	45.0	50.0	15.6	28.9	18.0
PD	33.3	40.0	37.5	7.3	8.9	7.6
Tx	8.3	15.0	12.5	77.1	62.2	74.4

[1]Percentages by ethnicity and PRD were calculated for those with data (excluding patients with missing data)
pmarp – per million age-related population; PRD – primary renal disease
HD – haemodialysis; PD – peritoneal dialysis; Tx – transplant

Table 8.22 details the number and type of centres (adult or paediatric) that have contributed to the incident and prevalent numbers reported. The small proportion of adult centres identified may reflect that young people are often directed to centres with an established transition programme for early adult care; however, under-reporting of young people may also account for this finding.

Table 8.22 Number of centres that submitted data for young people (16-<18 years) incident to KRT in 2024 and/or prevalent to KRT on 31/12/2024, by care setting

	Incident	Prevalent
Paediatric centres	6 out of 13	12 out of 13
Adult centres	15 out of 67	22 out of 67

Transplant parameters in young people

The median values for age, creatinine and eGFR, and the proportion with an eGFR <30 mL/min/1.73m^2 for young people prevalent to Tx on 31/12/2024 are presented by care setting (adult or paediatric centre).

Table 8.23 Measures of graft function in young people (16–<18 years) prevalent to Tx on 31/12/2024, by care setting

	N on Tx	Median age (yrs)	N with creatinine data	Median creatinine (µmol/L)	Median FAS-eGFR (mL/min/1.73m^2)	% FAS-eGFR <30 mL/min/1.73m^2	% creatinine completeness
Paediatric centres	158	16.9	157	105	69	5.7	99.4
Adult centres	28	17.6	25	130	58	0.0	89.3

eGFR – estimated glomerular filtration rate; FAS – Full Age Spectrum

Table 8.24 reports the median eGFR for all young people prevalent to Tx on 31/12/2024 by time since transplantation. Small numbers preclude further analysis by care setting (adult or paediatric centre).

Table 8.24 Estimated glomerular filtration rate (eGFR) in young people (16-<18 years) prevalent to Tx on 31/12/2024 by time since transplantation

Time since transplantation	N	Median FAS-eGFR (mL/min/1.73m^2)
< 3 months	4	
3 months–<2 years	42	73
2–<4 years	29	71
4–<7 years	30	66
≥ 7 years	74	63
Total (IQR)	**179**	**68 (54-83)**

eGFR – estimated glomerular filtration rate; FAS – Full Age Spectrum; IQR - inter-quartile range

Biochemical and blood pressure measures in young people

Table 8.25 shows attainment of biochemical and blood pressure measures for young people prevalent to dialysis and transplant on 31/12/2024 for the total population and by care setting (adult or paediatric). Attainment of targets including haemoglobin, calcium, phosphate and bicarbonate are shown; median systolic and diastolic blood pressure values and the percentage of young people with blood pressure values within 'normal' range or that are 'high' are also reported.

Table 8.25 Attainment of biochemical and blood pressure measures in young people (16-<18 years) prevalent to KRT on 31/12/2024, by modality and care setting

	Dialysis			Tx		
Characteristic	Paediatric centres	Adult centres	All	Paediatric centres	Adult centres	All
N	47	17	64	158	28	186
Median (IQR) Hb (g/L)	115 (95-123)	97 (91-109)	110.5 (93-122)	129 (114-137)	125 (113-136)	128.5 (114-137)
% Hb <100g/L	26.2	56.3	34.5	6.7	7.7	6.8
Median (IQR) Ca (mmol/L)	2.5 (2.3-2.5)	2.3 (2.2-2.5)	2.4 (2.2-2.5)	2.4 (2.4-2.5)	2.5 (2.4-2.5)	2.4 (2.4-2.5)
% Ca in range	72.7	71.4	72.3	92.7	90	92.3
Median (IQR) Phos (mmol/L)	1.8 (1.1-2.2)	1.7 (1.3-2.3)	1.8 (1.1-2.2)	1.2 (1-1.3)	1.1 (1-1.2)	1.2 (1-1.3)
% phos in range	27.9	43.8	32.2	64.3	72.0	65.4
Median (IQR) bicarb (mmol/L)	23 (21-26)	23.5 (22-26)	23 (21-26)	23 (21-25)	23 (22-25)	23 (21-25)
% bicarb in range	69.7	71.4	70.2	78.3	71.4	77.3
Median (IQR) SBP (mmHg)	120 (108-126)	122 (119-138)	120 (114-128)	118 (108-125)	132 (128-141)	121 (110-128)
Median (IQR) DBP (mmHg)	75 (57-88)	74 (64-82)	74 (60-84)	72 (64-81)	80 (71-83)	72 (64-82)
% 'normal' BP range (<130/80 mmHg)	57.7	54.5	56.8	68.1	23.1	61.0
% high BP (≥140/90 mmHg)	23.1	18.2	21.6	7.2	30.8	11.0

See appendix A for biochemical target ranges
bicarb – bicarbonate; BP – blood pressure; Ca – calcium; DBP – diastolic blood pressure; Hb – haemoglobin; IQR – inter-quartile range; phos – phosphate; SBP – systolic blood pressure

Analyses - Under 18 yrs old with CKD

For the 4 paediatric centres that were able to submit data on their CKD population, the number of prevalent patients with CKD is presented as crude rate per million age-related population (pmarp).

Table 8.26 Demographics and CKD stage of under 18s on 31/12/2024

Centre	N with CKD <18yrs old	Median (IQR) age in yrs	% male	% stage G4	% stage G5	CKD 2024 crude rate (pmarp)
Glasg_P	20	11.8 (4.3-15.6)	70.0	90.0	10.0	19.5
L GOSH_P	55	9.3 (3.6-12.8)	65.5	67.3	32.7	18.8
Leeds_P	24	9.8 (5.2-14.0)	58.3	79.2	20.8	26.7
Nottm_P	36	10.4 (7.0-15.6)	69.4	55.6	44.4	25.2
Total	**135**	**10.3 (5.5-13.9)**	**65.9**	**69.6**	**30.4**	**21.5**

pmarp - per million age-related population
IQR - interquartile range

UK Kidney Association
UK Renal Registry

Abbreviations

UK kidney centre abbreviations and other shortened forms used in the 28th Annual Report

UK kidney centre abbreviations

Adult kidney centres

Abbreviation	City	Hospital
	ENGLAND	
Bham	Birmingham	Heartlands Hospital and Queen Elizabeth Hospital
Bradfd	Bradford	St Luke's Hospital
Brightn	Brighton	Royal Sussex County Hospital
Bristol	Bristol	Southmead Hospital
Camb	Cambridge	Addenbrooke's Hospital
Carlis	Carlisle	Cumberland Infirmary
Carsh	Carshalton	St Helier Hospital
Colchr	Colchester	Colchester General Hospital
Covnt	Coventry	University Hospital Coventry and Warwick
Derby	Derby	Royal Derby Hospital
Donc	Doncaster	Doncaster Royal Infirmary
Dorset	Dorchester	Dorset County Hospital
Dudley	Dudley	Russells Hall Hospital
EssexMS	Essex	Basildon Hospital, Broomfield Hospital and Southend Hospital
Exeter	Exeter	Royal Devon and Exeter Hospital
Glouc	Gloucester	Gloucestershire Royal Hospital
Hull	Hull	Hull Royal Infirmary
Ipswi	Ipswich	Ipswich Hospital
Kent	Kent	Kent and Canterbury Hospital
L Barts	London	St Bartholomew's Hospital and The Royal London Hospital
L Guys	London	Guy's Hospital and St Thomas' Hospital
L Kings	London	King's College Hospital
L Rfree	London	Royal Free, Middlesex and UCL Hospitals
L St.G	London	St George's Hospital and Queen Mary's Hospital
L West	London	Hammersmith, Charing Cross and St Mary's Hospitals
Leeds	Leeds	St James's University Hospital and Leeds General Infirmary
Leic	Leicester	Leicester General Hospital
Liv UH	Liverpool	Aintree University Hospital and Royal Liverpool University Hospital
M RI	Manchester	Manchester Royal Infirmary
Middlbr	Middlesbrough	The James Cook University Hospital
Newc	Newcastle	Freeman Hospital and Royal Victoria Infirmary
Norwch	Norwich	Norfolk and Norwich University Hospital
Nottm	Nottingham	Nottingham City Hospital
Oxford	Oxford	Oxford Radcliffe Hospital
Plymth	Plymouth	Derriford Hospital
Ports	Portsmouth	Queen Alexandra Hospital
Prestn	Preston	Royal Preston Hospital
Redng	Reading	Royal Berkshire Hospital
Salford	Salford	Salford Royal Hospital
Sheff	Sheffield	Northern General Hospital
Shrew	Shrewsbury	Royal Shrewsbury Hospital
Stevng	Stevenage	Lister Hospital
Stoke	Stoke	University Hospital of North Staffordshire
Sund	Sunderland	Sunderland Royal Hospital
Truro	Truro	Royal Cornwall Hospital
Wirral	Birkenhead	Arrowe Park Hospital
Wolve	Wolverhampton	New Cross Hospital
York	York	York District General Hospital

Adult kidney centres Continued

Abbreviation	City	Hospital
	NORTHERN IRELAND	
Antrim	Antrim	Antrim Hospital (Northern Trust)
Belfast	Belfast	Belfast City Hospital
Newry	Newry	Daisy Hill Hospital (Southern Trust)
Ulster	Belfast	Ulster Hospital
West NI	Londonderry and Omagh	Tyrone County Hospital (Western Trust)
	SCOTLAND	
Abrdn	Aberdeen	Aberdeen Royal Infirmary
Airdrie	Airdrie	University Hospital Monklands
D&Gall	Dumfries	Mountainhall Treatment Centre
Dundee	Dundee	Ninewells Hospital
Edinb	Edinburgh	Royal Infirmary of Edinburgh
Glasgw	Glasgow	Queen Elizabeth University Hospital
Inverns	Inverness	Raigmore Hospital
Klmarnk	Kilmarnock	University Hospital Crosshouse
Krkcldy	Kirkcaldy	Victoria Hospital
	WALES	
Bangor	Bangor	Ysbyty Gwynedd
Cardff	Cardiff	University Hospital of Wales
Clwyd	Clwyd	Ysbyty Glan Clwyd Hospital
Swanse	Swansea	Morriston Hospital
Wrexm	Wrexham	Wrexham Maelor Hospital

Paediatric kidney centres

Abbreviation	City	Hospital
	ENGLAND	
Bham_P	Birmingham	Birmingham Children's Hospital
Brstl_P	Bristol	Bristol Royal Hospital for Children
L Eve_P	London	Evelina London Children's Hospital
L GOSH_P	London	Great Ormond Street Hospital for Children
Leeds_P	Leeds	Leeds Children's Hospital
Livpl_P	Liverpool	Alder Hey Children's Hospital
Manch_P	Manchester	Royal Manchester Children's Hospital
Newc_P	Newcastle	Great North Children's Hospital
Nottm_P	Nottingham	Nottingham Children's Hospital
Soton_P	Southampton	Southampton Children's Hospital
	NORTHERN IRELAND	
Blfst_P	Belfast	Royal Belfast Hospital for Sick Children
	SCOTLAND	
Glasg_P	Glasgow	Royal Hospital for Children Glasgow
	WALES	
Cardf_P	Cardiff	Children's Kidney Centre University Hospital Wales

Other shortened forms

ACR	albumin creatinine ratio
adj	adjusted
AKI	acute kidney injury
APD	automated peritoneal dialysis
AVF	arteriovenous fistula
AVG	arteriovenous graft
BAPN	British Assocation for Paediatric Nephrology
Bicarb	bicarbonate
BMI	body mass index
Ca	calcium
CAG	Confidentiality Advisory Group
CAKUT	congenital abnormalities of the kidneys and urinary tract
CAPD	continuous ambulatory peritoneal dialysis
CC	conservative care
CCG	Clinical Commissioning Group
Chol	cholesterol
CI	confidence interval
CKD	chronic kidney disease
CKD-EPI	CKD Epidemiology Collaboration
CL	confidence limit
COVID-19	coronavirus disease 2019
Creat	creatinine
DBD	donor after brain death
DBP	diastolic blood pressure
DCD	donor after circulatory death
E	England
EF	error factor
eGFR	estimated glomerular filtration rate
ERA-EDTA	European Renal Association-European Dialysis and Transplant Association
ESA	erythropoiesis stimulating agent
ESKD	end-stage kidney disease
FAS	Full Age Spectrum
Ferr	ferritin
GIRFT	Getting It Right First Time
Hb	haemoglobin
HB	Health Board
HbA1c	glycated haemoglobin
HD	haemodialysis
HES	Hospital Episode Statistics
HHD	home haemodialysis
HRA	Health Research Authority
ICB	Integrated Care Board

ICHD	in-centre haemodialysis
IQR	interquartile range
IZ	Intermediate zone
K	potassium
KDIGO	Kidney Disease: Improving Global Outcomes
KM	Kaplan Meier
KRT	kidney replacement therapy
LKD	living kidney donor
MRSA	methicillin-resistant *Staphylococcus aureus*
MSOA	Middle Layer Super Output Area
MSSA	methicillin-sensitive *Staphylococcus aureus*
mths	months
N	Number
NHS	National Health Service
NHSBT	NHS Blood and Transplant
NI	Northern Ireland
NICE	National Institute of Health and Care Excellence
NTL	non-tunnelled line
ONS	Office for National Statistics
PAS	patient administration system
PCR	protein creatinine ratio
PD	peritoneal dialysis
PEDW	Patient Episode Database for Wales
Phos	phosphate
pmarp	per million age-related population
pmp	per million population
PRD	primary renal disease
PREM	patient reported experience measures
PTH	parathyroid hormone
PVD	peripheral vascular disease
SBP	systolic blood pressure
SD	standard deviation
SR	standardised ratio
SRR	Scottish Renal Registry
TL	tunnelled line
Tx	transplant
UK	United Kingdom
UKHSA	UK Health Security Agency
UKKA	UK Kidney Association
UKRDC	UK Renal Data Collaboration
UKRR	UK Renal Registry
URR	urea reduction ratio
W	Wales
yrs	years

Prepared by UK Kidney Association staff

Management team

Ron Cullen (chief executive officer)

Dr James Medcalf (medical director for audit)

Dr Retha Steenkamp (head of operations)

Biostatisticians

Dr Anna Casula

Winnie Magadi

Dr Shalini Santhakumaran

Esther Wong

Dr Julie Gilg (consultant biostatistician)

Research

Dr Lucy Plumb

Dr Nithin Bodapati

Lauren Windsor

Data managers

Beth Carter-Crosby

Sarika Dahiya

Sarah Evans

Jacqueline Laken

Stacy Ojo

Jo Wilson

Florianne Socquet-Juglard

Dixie Ramos

Informatics and operations

Andrew Atterton

Marta Badji

Philip Main

Dr Andre Ortega Alban

George Swinnerton

Oliver Reeves

Michael Ruston

Gleb Rysev

Business support

Caitlin Sewell

Tom Gray

Danielle Piotrowski

UK Renal Registry 28th Annual Report

Data to 31/12/2024

The UK Renal Registry

The UKRR was established by the Renal Association in 1995 (now the UK Kidney Association after merging with the British Renal Society in 2020) to collate data centrally from all adult UK kidney centres to improve the care of patients with end-stage kidney disease. Although originally limited to patients on kidney replacement therapies (KRT) – dialysis treatments and kidney transplant recipients – the UKRR now collects cases of acute kidney injury in primary and secondary care and cases of advanced chronic kidney disease in secondary care not on dialysis. Data on children on KRT have been collated by the UKRR since 2009 and data on advanced CKD in children for the first time this year. The UKRR team manages data collection, analysis and reporting on both new and existing patients on KRT each year. The UK Kidney Assciation has an active and involved Patient Council. Each year the UKRR publishes an annual report comprising centre comparisons, attainment of the UK Kidney Association audit standards, national averages and long term trends.

UK Kidney Association
UK Renal Registry

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