UK Kidney Association
UK Renal Registry

Chapter 5

Adults on in-centre haemodialysis (ICHD) in the UK at the end of 2020

Contents

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 2020 (figure 5.1). This population comprises patients who were on ICHD at the end of 2019 and remained on ICHD throughout 2020, as well as patients who commenced/re-commenced ICHD in 2020. This latter group includes both incident kidney replacement therapy (KRT) patients who ended 2020 on ICHD and prevalent KRT patients who switched to ICHD from home haemodialysis (HHD), peritoneal dialysis (PD), or a transplant (Tx) in 2020. 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.

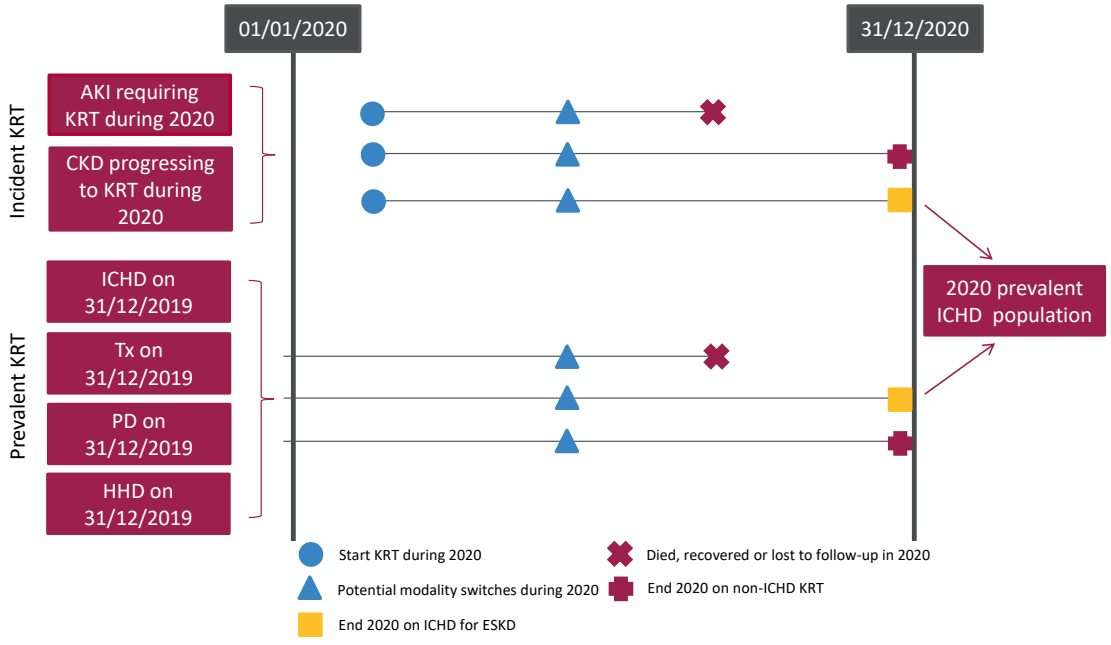

Figure 5.1 Pathways adult patients could follow to be included in the UK 2020 prevalent ICHD population

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 2020 or if they had been on KRT for ≥90 days and were on ICHD at the end of 2020.

CKD – chronic kidney disease

The infection analyses used a rolling two year cohort as per the audit measures (table 5.1). 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 Public Health England (PHE) are reported in this chapter – methicillin-resistant *Staphylococcus aureus* (MRSA), methicillin-sensitive *Staphylococcus aureus* (MSSA), *Escherichia coli* bacteraemia and *Clostridium difficile* - to be updated when 2020 data available.

Rationale for analyses

The analyses begin with a description of the 2020 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, where data permit, their attainment by UK kidney centres in 2020 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 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.

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 with serum ferritin <100 µg/L at start of treatment with erythropoiesis stimulating agent (ESA)	Table 5.8, figure 5.13 (the UKRR does not hold treatment with ESA start dates)
	Audit on ESA dose and use of ESA in patients with Hb out of range, normally reported in this chapter, have been omitted this year as the Registry is implementing improvements in how medications data are processed. ESA data will be processed and analysed again next year.	
Vascular access (2015)	Proportion of prevalent dialysis patients with definitive access (AVF/AVG/PD catheter) – ≥80%	Figure 5.16
	Annual rate of MRSA <1 episode/100 patient-years (measured over 2 years)	Table 5.9, figures 5.17, 5.19
	Annual rate of MSSA <2.5 episodes/100 patient-years (measured over 2 years)	Table 5.9, figures 5.18, 5.20
Planning, initiating and withdrawing KRT (2014)	Number of patients withdrawing from ICHD as a proportion of all deaths on ICHD	Table 5.10, figure 5.21

AVF – arteriovenous fistula; AVG – arteriovenous graft; ESA – erythropoiesis stimulating agent; MRSA – methicillin-resistant *Staphylococcus aureus*; MSSA – methicillin-sensitive *Staphylococcus aureus*

Key findings

- 24,155 adult patients were receiving ICHD for ESKD in the UK on 31/12/2020, which represented 35.4% of the KRT population. 2020 represents the first year we have not seen a 1% increase in the number on ICHD and is likely as a result of COVID pandemic as mentioned in previous chapters.
- The median age of ICHD patients was 66.5 years and 62.2% were male.
- 85.6% of ICHD patients achieved a dialysis adequacy of URR >65%.
- 93.2% of ICHD patients had dialysis 3 times a week and a further 1.5% had dialysis more frequently than this.
- 66.4% of ICHD patients had dialysis for 4–5 hours per session compared to 70.9% last year (likely due to COVID related disruption).
- The median adjusted calcium for ICHD patients was 2.3 mmol/L and 9.5% were above the target range 2.2–2.5 mmol/L.
- The median pre-dialysis bicarbonate for ICHD patients was 23 mmol/L and 81.6% were within the target range 18–26 mmol/L.
- The median pre-dialysis potassium for ICHD patients was 4.8 mmol/L and 14.1% had a pre-dialysis potassium of >6 mmol/L.
- The median haemoglobin and ferritin for ICHD patients was 111 g/L and 479 µg/L, respectively.
- 19.6% of ICHD patients had a haemoglobin <100 g/L and 22.9% had a haemoglobin >120 g/L.
- Of the 40 centres that provided adequate data on long term dialysis access in England, Northern Ireland and Wales, 5 centres achieved the 80% target for definitive access amongst prevalent dialysis patients (AVF/AVG/PD catheter).
- There was no cause of death data available for 33.6% of deaths. For those with data, the leading cause of death in both older and younger patients was infection at 28.7 % and 27.8% respectively. This is likely due to the contribution of COVID related deaths as noted in previous chapters.
- The 2 year rates (2018–2019) of MRSA and MSSA bacteraemia were 0.17/100 patient years and 2.72/100 patient years, respectively. TO BE UPDATED WHEN 2020 DATA AVAILABLE.

Analyses

Changes to the prevalent adult ICHD population

For the 68 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 prevalent adult ICHD patients 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)	2020 crude rate (pmp)
Centre	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020		
ENGLAND												
Bham	1,334	1,333	1,349	1,349	1,314	43.7	42.0	41.5	40.7	40.2	2.04	645
Bradfd	243	269	261	280	278	38.3	39.9	37.9	38.2	38.2	0.49	570
Brightn	418	425	446	432	425	42.1	42.0	42.3	40.6	39.4	1.07	397
Bristol	489	491	475	468	464	33.3	33.3	32.3	31.5	31.4	1.21	383
Camb	329	306	304	287	274	24.8	22.9	21.9	19.7	18.0	0.93	295
Carlis	95	98	101	111	111	34.1	34.9	34.5	36.9	37.4	0.25	438
Carsh	830	849	858	840	860	50.1	50.1	49.0	47.2	46.4	1.62	532
Colchr	123	129	122	145	151	100.0	100.0	100.0	100.0	100.0	0.29	521
Covnt	366	333	306	355	359	37.5	34.5	31.9	33.0	32.8	0.79	455
Derby	200	191	197	238	244	36.8	34.4	33.6	36.4	36.0	0.56	438
Donc	185	178	179	180	177	55.9	53.5	54.2	52.6	51.9	0.37	475
Dorset	272	291	291	289	298	39.7	39.9	38.1	37.4	37.3	0.72	411
Dudley	185	201	204	207	209	53.6	54.9	56.7	56.6	56.5	0.34	612
EssexMS	390	411	410	414	423	49.8	49.5	48.5	48.6	47.9	0.99	429
Exeter	443	455	450	443	460	43.7	43.0	41.6	40.7	41.6	0.95	486
Glouc	235	245	242	231	226	49.7	47.9	46.4	43.7	43.4	0.51	446
Hull	323	349	350	350	352	37.8	40.0	39.8	38.7	38.5	0.79	443
Ipswi	147	147	151	142	135	35.3	33.7	35.3	33.2	31.8	0.31	435
Kent	409	424	418	420	424	38.1	38.9	37.6	36.9	37.1	1.06	399
L Barts	1,007	1,031	1,061	1,032	935	42.4	41.3	40.8	38.8	36.6	1.58	592
L Guys	649	669	692	673	693	30.9	30.9	31.0	29.0	29.9	1.00	694
L Kings	567	576	597	610	616	51.0	49.9	50.5	48.9	49.2	0.93	664
L Rfree	709	684	683	742	719	32.6	31.2	30.6	31.6	30.8	1.32	545
L St.G	329	310	294	302	318	38.6	36.9	35.2	35.4	37.1	0.66	482
L West	1,454	1,449	1,430	1,381	1,271	42.8	41.7	40.2	38.2	35.9	1.95	652
Leeds	508	538	542	552	549	32.8	33.2	32.2	32.0	31.4	1.36	403
Leic	887	898	917	958	955	38.7	38.1	37.4	37.1	36.7	2.07	461
Liv Ain	174	160	154	149	145	76.0	76.2	71.0	71.3	67.1	0.43	338
Liv Roy*	326	352	360	352	322	26.8	28.1	28.3	28.8	28.2	0.81	399
M RI	466	497	501	497	505	23.4	24.2	24.2	24.3	25.4	1.32	381
Middlbr	321	332	349	344	324	36.0	36.7	37.5	36.1	34.4	0.80	404
Newc	294	327	339	329	356	28.0	29.3	29.4	28.1	29.5	0.95	376
Norwch	315	302	294	296	289	40.7	38.7	37.3	36.5	35.9	0.68	422
Nottm	364	354	350	359	349	31.6	29.9	29.2	29.5	28.8	0.92	378
Oxford	429	451	445	457	480	24.3	24.0	22.9	23.2	23.8	1.44	334
Plymth	135	141	128	126	153	26.3	26.1	23.7	23.6	28.1	0.40	384
Ports	561	544	529	590	606	33.2	31.2	30.0	31.4	31.9	1.74	349
Prestn	522	516	519	505	500	43.2	40.6	39.3	37.6	36.5	1.23	408
Redng	295	302	297	315	300	37.3	38.0	36.5	36.5	34.4	0.69	433
Salford	375	387	402	394	433	36.7	34.6	34.3	31.7	34.3	1.14	379
Sheff	560	549	550	538	548	39.4	38.1	37.1	36.2	36.8	1.13	487
Shrew	186	184	206	204	174	49.2	47.7	48.1	47.2	42.0	0.41	427

Table 5.2 Continued

Centre	N on ICHD					% on ICHD					Estimated catchment population (millions)	2020 crude rate (pmp)
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020		
Stevng	501	465	489	507	542	56.4	52.6	52.1	52.7	56.3	1.10	492
Stoke	312	301	281	264	253	37.6	37.1	34.9	32.8	31.3	0.73	348
Sund	245	243	243	252	220	48.2	44.7	43.4	44.2	39.5	0.54	405
Truro	160	158	168	164	159	37.6	37.2	38.4	36.4	35.7	0.36	447
Wirral	188	202	203	207	195	55.6	51.9	51.0	50.2	48.0	0.47	418
Wolve	283	301	317	304	323	49.6	51.7	52.1	49.6	50.2	0.54	593
York	183	184	183	184	192	34.1	33.0	32.2	31.6	33.6	0.48	398
N IRELAND												
Antrim	123	117	119	118	112	48.8	45.9	43.4	41.3	38.8	0.24	460
Belfast	186	179	173	157	143	22.6	21.3	19.7	17.8	16.1	0.53	271
Newry	84	77	82	78	78	35.6	32.0	32.5	30.8	29.5	0.23	335
Ulster	101	109	106	96	96	60.8	59.6	55.5	52.2	48.0	0.20	477
West NI	125	113	114	106	118	40.8	36.1	34.9	32.3	33.7	0.25	475
SCOTLAND												
Abrdn	227	226	214	190	192	40.9	40.1	37.4	34.1	34.0	0.50	385
Airdrie	185	191	192	207	194	42.1	41.0	39.3	39.5	37.7	0.46	424
D&Gall	47	51	55	52	56	35.9	37.8	37.9	34.9	35.9	0.12	459
Dundee	176	183	161	162	158	42.1	42.1	36.2	36.1	36.7	0.37	430
Edinb	282	305	301	296	288	36.3	37.0	34.9	33.4	32.4	0.84	344
Glasgw	571	573	587	575	549	32.6	32.3	32.4	31.0	29.8	1.37	401
Inverns	86	83	90	92	89	33.3	31.7	32.3	32.6	32.8	0.22	399
Klmarnk	133	144	141	139	147	42.0	42.7	41.5	38.7	39.8	0.29	505
Krkcldy	144	144	135	138	146	49.0	47.4	45.3	46.8	50.2	0.27	536
WALES												
Bangor	64	73	70	66	78	35.8	37.4	34.5	32.8	36.1	0.17	462
Cardff	486	530	554	551	512	29.8	31.5	32.2	31.9	30.5	1.19	430
Clwyd	69	71	75	86	84	39.0	39.7	39.5	42.0	40.6	0.19	451
Swanse	322	347	373	389	394	42.6	44.0	45.2	44.8	46.4	0.78	505
Wrexm	117	120	113	106	113	37.4	37.2	36.0	34.1	35.0	0.21	528
TOTAL												
England	20,321	20,532	20,637	20,768	20,608	38.3	37.5	36.8	36.1	35.7	44.46	464
N Ireland	619	595	594	555	547	34.7	32.4	30.9	28.7	27.4	1.45	376
Scotland	1,851	1,900	1,876	1,851	1,819	37.5	37.3	35.8	34.6	34.1	4.44	410
Wales	1,058	1,141	1,185	1,198	1,181	34.6	36.0	36.5	36.1	36.1	2.54	465
UK	**23,849**	**24,168**	**24,292**	**24,372**	**24,155**	**37.9**	**37.3**	**36.5**	**35.8**	**35.4**	**52.89**	**457**

Country ICHD populations were calculated by summing the ICHD patients from centres in each country. Estimated country populations were derived from Office for National Statistics figures. See appendix A for details on estimated catchment population by kidney centre.

*Incident patient numbers at Liverpool Royal Infirmary are under-reported (about 30 HD patients) due to a systems extraction problem at the centre. This will be corrected in the next annual report.
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 31/12/2020 by centre

Centre	N on KRT	N on ICHD	% on ICHD	Median age (yrs)	% Male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
ENGLAND										
Bham	3,272	1,314	40.2	64.9	58.6	50.0	32.0	15.1	2.9	1.8
Bradfd	727	278	38.2	63.0	60.8	43.4	47.4	4.0	5.1	2.2
Brightn	1,078	425	39.4	69.8	64.9	88.0	7.0	2.8	2.3	5.9
Bristol	1,477	464	31.4	68.7	66.8	86.2	4.0	8.1	1.8	1.9
Camb	1,526	274	18.0	70.3	63.5	88.5	6.3	2.0	3.2	7.7
Carlis	297	111	37.4	65.7	53.2	100.0	0.0	0.0	0.0	0.0
Carsh	1,854	860	46.4	68.3	62.1	60.3	18.4	14.7	6.7	5.7
Colchr	151	151	100.0	73.9	63.6	95.9	1.4	0.7	2.0	2.6
Covnt	1,096	359	32.8	70.5	60.4	73.4	20.7	5.9	0.0	0.6
Derby	677	244	36.0	67.5	65.6	82.5	10.4	3.8	3.3	1.6
Donc	341	177	51.9	70.2	62.7	92.1	2.8	1.7	3.4	0.0
Dorset	798	298	37.3	71.3	60.4	96.0	2.3	0.0	1.7	0.0
Dudley	370	209	56.5	71.0	59.8	76.6	15.3	8.1	0.0	0.0
EssexMS	884	423	47.9	67.7	66.0	84.4	6.9	5.5	3.2	4.7
Exeter	1,106	460	41.6	72.3	66.7	95.9	0.9	1.3	2.0	0.4
Glouc	521	226	43.4	72.5	65.5	91.6	3.1	3.5	1.8	0.0
Hull	914	352	38.5	65.6	66.2	95.4	3.2	0.9	0.6	0.9
Ipswi	425	135	31.8	70.5	65.2	82.0	0.8	2.3	14.8	5.2
Kent	1,143	424	37.1	68.9	63.2	94.7	1.9	1.9	1.4	2.1
L Barts	2,557	935	36.6	62.1	59.1	24.5	34.2	30.4	10.9	3.0
L Guys	2,320	693	29.9	62.3	58.9	41.7	8.8	44.6	4.9	6.5
L Kings	1,253	616	49.2	61.7	60.2	38.1	12.1	45.6	4.1	2.1
L Rfree	2,337	719	30.8	63.7	59.9	37.5	21.6	29.5	11.4	8.5
L St.G	857	318	37.1	65.1	61.6	27.7	26.1	35.5	10.7	3.5
L West	3,537	1,271	35.9	65.8	59.7	30.8	39.2	24.6	5.4	0.0
Leeds	1,751	549	31.4	62.5	63.9	69.2	21.5	7.3	2.0	0.7
Leic	2,604	955	36.7	67.5	63.5	71.5	20.1	6.2	2.2	8.4
Liv Ain	216	145	67.1	65.2	65.5	95.8	0.7	2.1	1.4	2.1
Liv Roy*	1,142	322	28.2	63.7	59.3	85.1	4.2	6.5	4.2	4.3
M RI	1,985	505	25.4	64.8	59.4	42.3	12.5	43.8	1.4	1.8
Middlbr	942	324	34.4	65.1	68.8	92.2	6.6	0.3	0.9	1.2
Newc	1,207	356	29.5	65.8	62.1	91.6	3.9	1.7	2.8	0.0
Norwch	805	289	35.9	71.3	63.0	96.5	0.7	1.0	1.7	1.0
Nottm	1,212	349	28.8	66.7	64.8	75.4	10.0	12.3	2.3	0.0
Oxford	2,021	480	23.8	69.1	61.5	75.5	9.6	8.8	6.2	19.4
Plymth	544	153	28.1	69.0	65.4	98.0	0.7	0.7	0.7	0.0
Ports	1,902	606	31.9	67.3	65.8	88.3	5.5	2.0	4.2	16.5
Prestn	1,370	500	36.5	66.1	61.6	79.2	18.4	1.2	1.2	0.2
Redng	871	300	34.4	69.8	63.0	61.8	25.3	6.6	6.3	4.0
Salford	1,264	433	34.3	61.5	62.8	69.7	21.9	5.3	3.0	0.0
Sheff	1,491	548	36.8	66.0	64.1	84.4	8.1	3.9	3.6	2.9
Shrew	414	174	42.0	71.5	66.7	91.2	4.1	1.2	3.5	2.3
Stevng	963	542	56.3	66.9	64.0	70.9	14.5	9.2	5.4	17.5
Stoke	809	253	31.3	70.0	66.8	89.8	6.5	1.2	2.4	3.2
Sund	557	220	39.5	65.2	59.5	96.3	2.7	0.5	0.5	0.5
Truro	445	159	35.7	72.8	59.1	99.4	0.0	0.0	0.6	0.0
Wirral	406	195	48.0	64.4	62.1	96.4	1.5	1.0	1.0	0.5

Table 5.3 Continued

Centre	N on KRT	N on ICHD	% on ICHD	Median age (yrs)	% Male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
Wolve	643	323	50.2	64.2	63.2	54.7	28.6	12.7	4.0	0.3
York	572	192	33.6	70.9	63.0	96.8	1.1	0.5	1.6	2.6
N IRELAND										
Antrim	289	112	38.8	74.0	65.2	100.0	0.0	0.0	0.0	3.6
Belfast	890	143	16.1	66.8	58.7	97.7	0.8	0.8	0.8	7.0
Newry	264	78	29.5	66.8	61.5	97.3	2.7	0.0	0.0	5.1
Ulster	200	96	48.0	77.9	60.4	95.8	4.2	0.0	0.0	0.0
West NI	350	118	33.7	69.5	61.0	100.0	0.0	0.0	0.0	1.7
SCOTLAND										
Abrdn	565	192	34.0	66.0	58.9					90.1
Airdrie	514	194	37.7	63.6	56.2					30.4
D&Gall	156	56	35.9	70.5	67.9					64.3
Dundee	430	158	36.7	66.3	60.1					82.3
Edinb	888	288	32.4	62.4	66.3					83.7
Glasgw	1,844	549	29.8	65.6	59.7					75.0
Inverns	271	89	32.8	72.0	62.9					78.7
Klmarnk	369	147	39.8	69.0	63.3					78.9
Krkcldy	291	146	50.2	67.3	63.7					91.1
WALES										
Bangor	216	78	36.1	73.3	61.5	98.6	0.0	0.0	1.4	10.3
Cardff	1,678	512	30.5	64.2	61.1	87.4	8.9	2.0	1.8	1.2
Clwyd	207	84	40.6	68.0	65.5	97.4	2.6	0.0	0.0	7.1
Swanse	850	394	46.4	69.3	66.2	97.9	1.5	0.5	0.0	1.0
Wrexm	323	113	35.0	67.0	63.7	97.3	0.9	0.9	0.9	2.7
TOTALS										
England	57,654	20,608	35.7	66.5	62.3	67.6	15.7	12.8	3.9	3.9
N Ireland	1,993	547	27.4	72.0	61.2	98.3	1.3	0.2	0.2	3.7
Scotland	5,328	1,819	34.1	65.6	61.4					75.3
Wales	3,274	1,181	36.1	66.6	63.4	93.2	4.7	1.1	1.0	2.3
UK	**68,249**	**24,155**	**35.4**	**66.5**	**62.2**	**70.1**	**14.6**	**11.6**	**3.6**	**9.2**

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.
*Incident patient numbers at Liverpool Royal Infirmary are under-reported (about 30 HD patients) due to a systems extraction problem at the centre. This will be corrected in the next annual report.

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 31/12/2020

PRD	N on ICHD	% ICHD population	Age <65 yrs		Age ≥65 yrs		M/F ratio
			N	%	N	%	
Diabetes	6,565	28.3	3,174	29.3	3,391	27.4	1.7
Glomerulonephritis	3,137	13.5	1,797	16.6	1,340	10.8	2.1
Hypertension	1,782	7.7	826	7.6	956	7.7	2.4
Polycystic kidney disease	1,342	5.8	722	6.7	620	5.0	1.1
Pyelonephritis	1,698	7.3	853	7.9	845	6.8	1.6
Renal vascular disease	1,130	4.9	175	1.6	955	7.7	2.1
Other	4,035	17.4	1,987	18.4	2,048	16.6	1.3
Uncertain aetiology	3,500	15.1	1,286	11.9	2,214	17.9	1.6
Total (with data)	**23,189**	**100.0**	**10,820**	**100.0**	**12,369**	**100.0**	
Missing	966	4.0	432	3.8	534	4.1	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. These analyses were undertaken on the 2020 prevalent ICHD population, using data collected at the end of the third quarter.

Table 5.5 Median urea reduction ratio (URR) and distribution of session frequency and time for adult patients prevalent to ICHD on 31/12/2020 using end of third quarter data (30/09/2020)

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	78	93.7	7.9	90.6	1.5	20.4	79.4	0.2	99.0	95.6	95.3
Bradfd	72	74.4	11.0	88.3	0.8	28.6	71.4	0.0	82.0	100.0	99.1
Brightn	73	85.3	2.3	97.2	0.5	16.3	83.7	0.0	89.2	99.7	99.7
Bristol	73	85.1	4.1	95.4	0.5	26.4	73.6	0.0	100.0	99.5	100.0
Camb			0.9	94.5	4.7	50.0	50.0	0.0	0.0	99.6	98.7
Carlis	72	73.5	7.4	92.6	0.0	23.6	76.4	0.0	98.1	85.6	85.6
Carsh	76	88.8	3.4	96.1	0.5	11.5	88.5	0.0	86.0	99.4	98.3
Colchr	78	94.9	0.7	99.3	0.0	7.2	92.8	0.0	98.6	100.0	100.0
Covnt	76	89.6	7.6	91.2	1.2	33.6	66.4	0.0	94.4	98.5	97.0
Derby	75	86.6	0.5	97.3	2.3				80.0	100.0	14.4
Donc	76	91.1	0.7	99.3	0.0	28.3	71.7	0.0	97.5	94.4	94.4
Dorset	76	89.0	3.8	94.8	1.4	16.2	83.8	0.0	83.2	99.3	99.6
Dudley	76	88.4	4.2	94.7	1.1	17.3	82.7	0.0	97.8	96.9	96.8
EssexMS	72	78.3	18.4	80.9	0.8	35.8	63.8	0.3	97.8	99.2	99.4
Exeter	75	88.4	3.3	95.7	1.0	56.2	43.8	0.0	98.3	99.8	99.8
Glouc	73	86.4	7.6	92.4	0.0				99.5	98.5	0.0
Hull	77	92.6							99.1	0.6	1.2
Ipswi			11.2	88.8	0.0	9.4	90.6	0.0	67.3	99.2	92.3
Kent	70	75.6	4.8	94.4	0.8	80.9	19.1	0.0	88.3	99.3	100.0
L Barts			5.2	94.2	0.7	62.0	38.0	0.0	0.0	97.6	97.4
L Guys	75	89.1	3.0	96.3	0.6	23.1	76.9	0.0	99.7	100.0	99.8
L Kings	74	85.9	2.7	96.8	0.5	53.7	46.3	0.0	95.9	100.0	100.0
L Rfree									0.0	0.0	0.0
L St.G	77	94.9	2.1	97.9	0.0	8.8	91.2	0.0	82.2	98.0	87.4
L West	78	91.3	7.3	92.2	0.5	33.6	65.9	0.5	91.9	96.0	96.0
Leeds	74	82.7	10.0	89.6	0.4	25.2	74.8	0.0	99.6	98.0	99.6

Table 5.5 Continued

Centre	Median URR (%)	% URR >65%	% session frequency/week <3 sessions	3 sessions	>3 sessions	% session time <4 hours	4–5 hours	>5 hours	% data completeness URR	Session frequency	Session time
Leic	73	80.9	1.5	98.0	0.5	37.5	59.4	3.0	99.9	100.0	100.0
Liv Ain			4.4	93.3	2.2	11.1	88.9	0.0	0.0	97.8	97.7
Liv Roy			1.3	92.1	6.7	9.0	91.0	0.0	0.0	99.4	99.3
M RI			3.7	95.5	0.8	8.2	91.8	0.0	54.1	83.5	83.1
Middlbr	72	80.3	1.3	98.4	0.3				99.7	100.0	41.0
Newc	74	84.5	11.6	87.1	1.3	52.0	48.0	0.0	100.0	100.0	100.0
Norwch	73	80.0	5.0	93.4	1.6	63.1	36.9	0.0	90.4	97.0	96.8
Nottm	74	88.5	0.3	95.4	4.3	8.6	91.4	0.0	97.1	99.7	100.0
Oxford	74	81.3	0.0	100.0	0.0	20.5	79.5	0.0	78.7	99.3	99.3
Plymth	75	87.9	0.8	99.2	0.0				99.3	97.0	0.0
Ports			6.7	92.2	1.1	46.2	52.5	1.4	0.0	99.1	99.0
Prestn	72	75.6							82.3	0.0	0.2
Redng	74	90.0	5.5	94.5	0.0	22.8	77.2	0.0	100.0	98.9	97.7
Salford	71	73.1	10.5	74.5	15.1	18.8	81.3	0.0	74.7	99.8	98.3
Sheff	73	81.9	4.5	93.5	2.0	85.7	14.3	0.0	98.9	98.8	98.9
Shrew	75	91.8	1.2	95.2	3.6	17.7	82.3	0.0	98.8	98.8	98.8
Stevng	71	72.4	12.8	85.4	1.9	42.9	55.4	1.7	98.3	98.8	97.6
Stoke	74	85.1	13.6	83.9	2.5	15.8	84.2	0.0	72.9	100.0	100.0
Sund	75	87.9	5.2	87.8	7.0	26.3	73.7	0.0	100.0	98.6	87.9
Truro	74	88.7	1.4	97.2	1.4				100.0	100.0	0.0
Wirral	74	89.7	1.6	95.1	3.2	31.1	68.9	0.0	98.3	99.5	100.0
Wolve	74	89.4	2.1	97.1	0.7				97.1	99.6	3.7
York	78	94.0	2.3	94.7	2.9	20.1	79.9	0.0	100.0	97.7	98.8
N IRELAND											
Antrim	73	85.9	0.0	100.0	0.0	10.4	89.6	0.0	100.0	100.0	100.0
Belfast	73	86.2	2.5	93.4	4.1	19.7	78.6	1.7	98.3	96.8	99.2
Newry			15.6	84.4	0.0	64.9	35.1	0.0	60.3	94.1	98.3
Ulster	70	66.7	3.5	96.5	0.0	21.4	78.6	0.0	100.0	98.9	100.0
West NI	71	77.8	5.3	89.5	5.3	67.1	32.9	0.0	93.1	97.9	97.7
SCOTLAND											
Abrdn									0.0	0.0	0.0
Airdrie									0.0	0.0	0.0
D&Gall									0.0	0.0	0.0
Dundee									0.0	0.0	0.0
Edinb									0.0	0.0	0.0
Glasgw									0.0	0.0	0.0
Inverns									0.0	0.0	0.0
Klmarnk									0.0	0.0	0.0
Krkcldy									0.0	0.0	0.0
WALES											
Bangor	73	85.3	2.9	97.1	0.0				100.0	100.0	0.0
Cardff	74	88.7	4.2	95.6	0.2				99.6	96.5	0.0
Clwyd	71	67.5							98.8	0.0	0.0
Swanse	75	88.3	6.9	91.0	2.1	36.7	63.0	0.3	99.4	100.0	100.0
Wrexm	73	76.8	3.9	96.1	0.0				100.0	100.0	0.0
TOTALS											
England	75	85.8	5.3	93.2	1.5	33.2	66.5	0.3	78.6	90.8	83.8
N Ireland	72	79.9	4.4	93.4	2.1	32.5	67.0	0.4	93.2	97.7	99.1
Scotland									0.0	0.0	0.0
Wales	74	85.6	5.1	94.0	0.9				99.5	91.3	32.3
UK	**74**	**85.6**	**5.3**	**93.2**	**1.5**	**33.3**	**66.4**	**0.3**	**73.6**	**84.0**	**74.8**

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

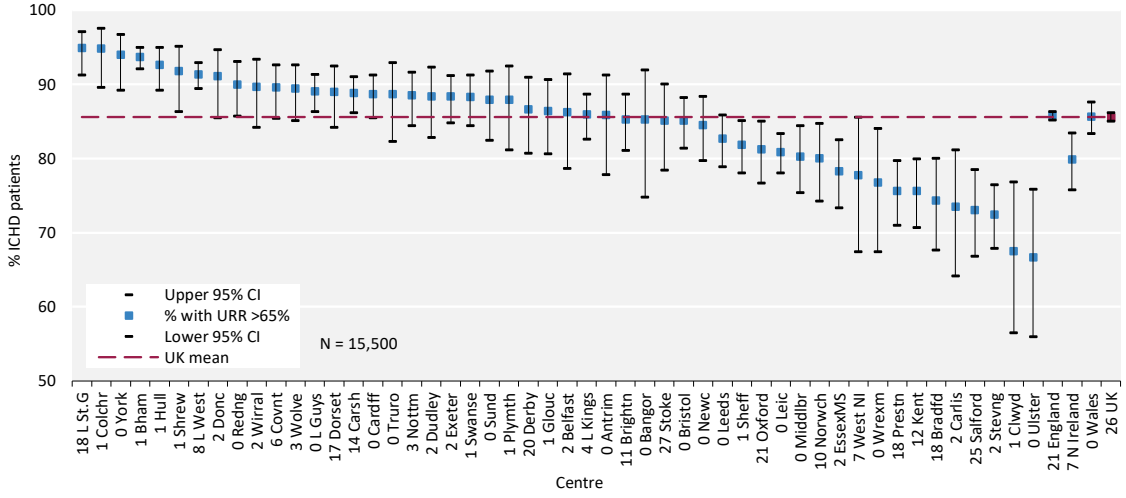

Figure 5.2 Percentage of adult patients prevalent to ICHD on 31/12/2020 with urea reduction ratio (URR) >65% by centre
CI – confidence interval

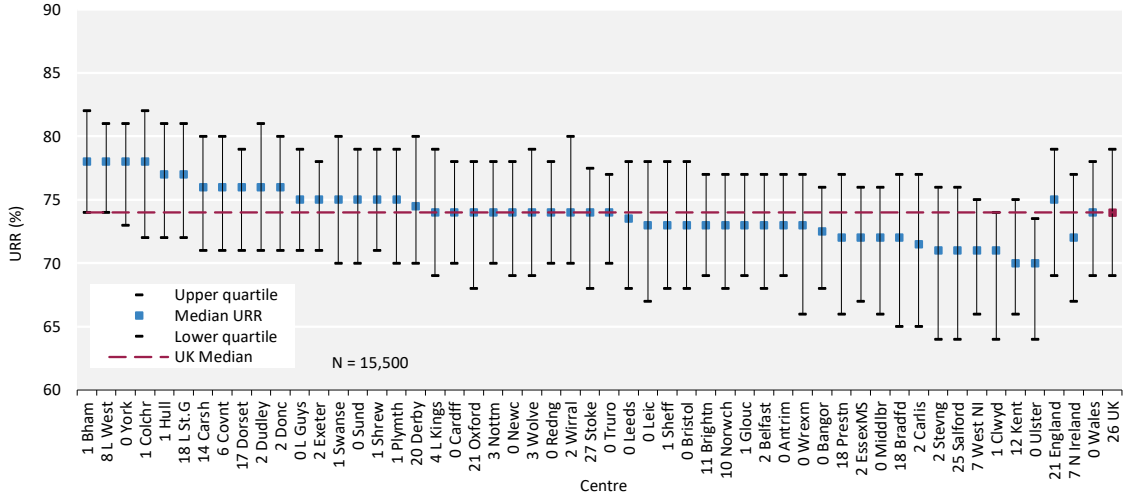

Figure 5.3 Median urea reduction ratio (URR) achieved in adult patients prevalent to ICHD on 31/12/2020 by centre

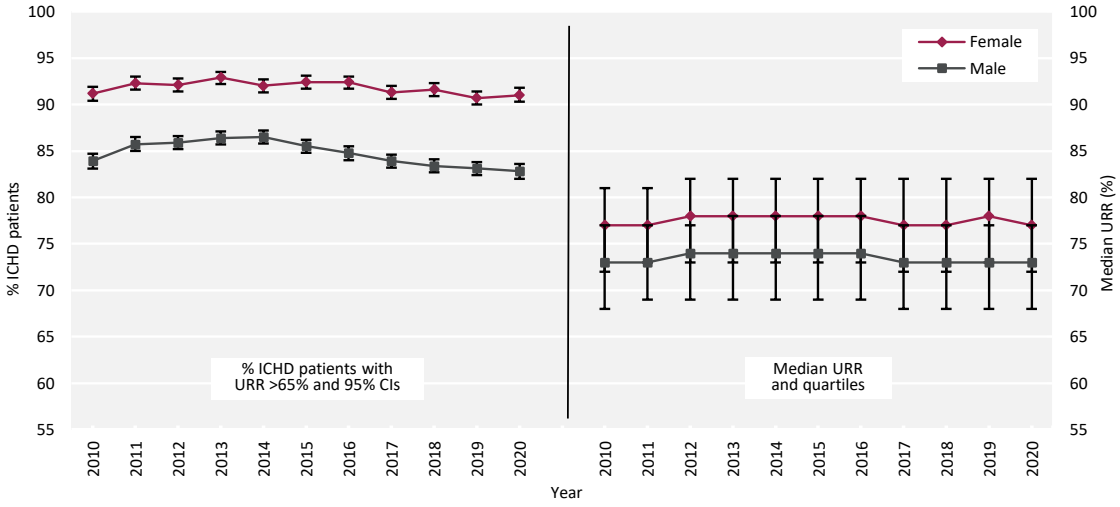

Figure 5.4 Change in the percentage of prevalent adult ICHD patients with urea reduction ratio (URR) >65% and the median URR by sex between 2010 and 2020

CI – confidence interval

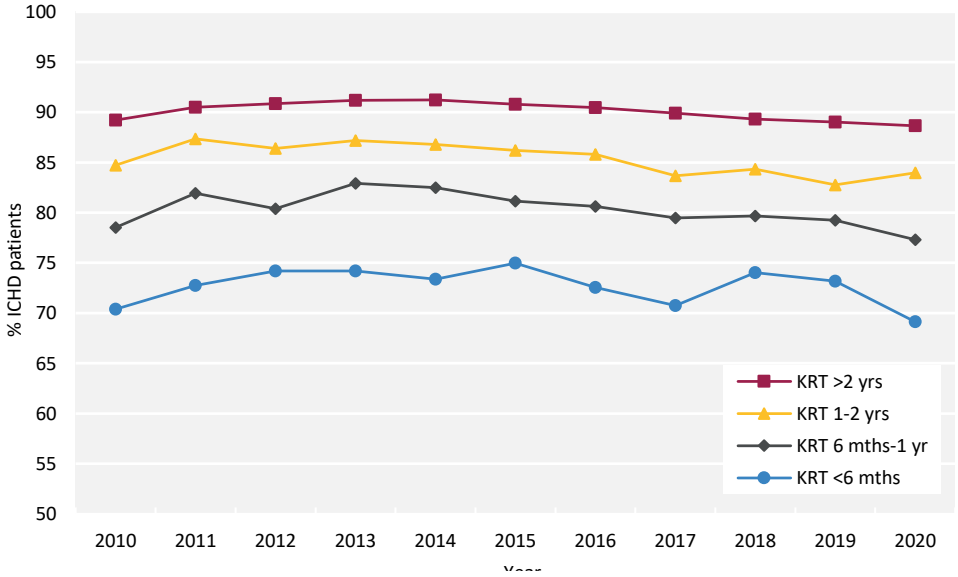

Figure 5.5 Percentage of prevalent adult ICHD patients achieving urea reduction ratio (URR) >65% by time on KRT between 2010 and 2020

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 31/12/2020 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	77.8	9.5	99.8
Bradfd	2.4	71.9	22.3	99.6
Brightn	2.3	81.5	6.9	100.0
Bristol	2.4	83.8	13.7	100.0
Camb	2.3	77.7	8.9	98.8
Carlis	2.3	73.6	12.3	100.0
Carsh	2.3	69.9	5.5	98.9
Colchr	2.3	84.3	5.7	97.9
Covnt	2.3	74.0	8.7	100.0
Derby	2.4	84.4	9.3	100.0
Donc	2.3	82.9	4.3	100.0
Dorset	2.3	82.0	6.0	100.0
Dudley	2.4	85.7	10.7	100.0
EssexMS	2.4	82.6	10.5	100.0
Exeter	2.3	88.7	7.9	99.8
Glouc	2.4	82.8	12.3	100.0
Hull	2.4	77.7	15.5	100.0
Ipswi	2.3	71.8	12.1	100.0
Kent	2.3	77.0	9.0	98.7
L Barts	2.3	76.7	9.1	97.9
L Guys	2.4	79.2	11.7	100.0
L Kings	2.3	76.2	9.0	99.8
L Rfree	2.3	74.1	7.7	100.0
L St.G	2.3	74.1	10.8	99.3
L West	2.3	73.7	9.6	88.2
Leeds	2.3	82.4	8.0	99.6
Leic	2.3	78.2	7.4	99.7
Liv Ain	2.4	83.7	10.1	97.7
Liv Roy	2.4	80.3	13.4	99.0
M RI	2.4	78.3	15.4	82.7
Middlbr	2.3	83.3	5.1	99.0
Newc	2.4	78.9	10.3	100.0
Norwch	2.3	78.5	11.3	92.5
Nottm	2.3	81.4	8.4	100.0
Oxford	2.3	78.9	7.6	86.6
Plymth	2.3	82.7	5.0	100.0
Ports	2.4	73.7	14.5	100.0
Prestn	2.3	79.0	3.3	93.1
Redng	2.3	86.9	6.2	100.0
Salford	2.4	78.9	13.1	100.0
Sheff	2.3	78.8	5.4	99.6
Shrew	2.4	81.8	14.6	98.8
Stoke	2.4	83.4	14.1	85.0
Sund	2.4	74.8	11.7	100.0
Truro	2.4	81.7	16.9	100.0
Wirral	2.3	81.7	10.0	98.9
Wolve	2.4	81.1	10.3	99.7
York	2.4	92.2	2.2	100.0
N IRELAND				
Antrim	2.4	84.3	9.8	99.0
Belfast	2.3	82.0	7.0	100.0
Newry	2.3	85.3	2.9	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
Ulster	2.5	63.7	35.2	100.0
West NI	2.3	79.0	7.0	95.2
SCOTLAND				
Abrdn				
Airdrie				
D&Gall				
Dundee				
Edinb				
Glasgw				
Inverns				
Klmarnk				
Krkcldy				
WALES				
Bangor	2.3	81.7	9.9	100.0
Cardff	2.3	82.7	6.8	99.8
Clwyd	2.4	87.2	11.5	100.0
Swanse	2.3	83.9	5.8	100.0
Wrexm	2.3	88.5	3.9	100.0
TOTALS				
England	2.3	78.7	9.5	97.7
N Ireland	2.4	78.9	12.3	98.8
Scotland				
Wales	2.3	83.9	6.7	99.9
UK	**2.3**	**79.0**	**9.5**	**90.3**

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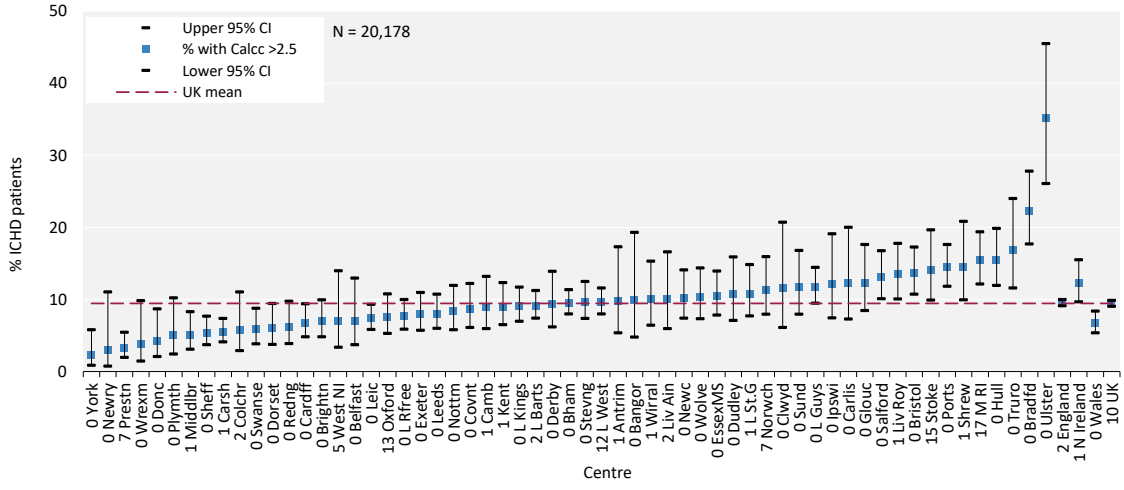

Figure 5.6 Percentage of adult patients prevalent to ICHD on 31/12/2020 with adjusted calcium (Ca) above the target range (>2.5 mmol/L) by centre
CI – confidence interval

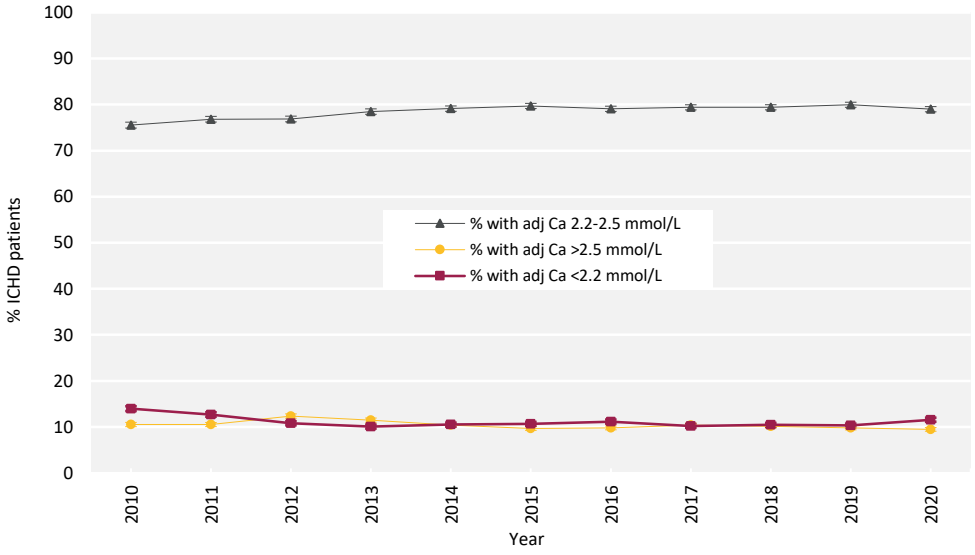

Figure 5.7 Change in percentage of prevalent adult ICHD patients within, above and below the target range for adjusted calcium (Ca 2.2–2.5 mmol/L) between 2010 and 2020

Table 5.7 Median pre-dialysis potassium and bicarbonate and percentage attaining target ranges in adult patients prevalent to ICHD on 31/12/2020 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	% complete	Median (mmol/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% complete
ENGLAND										
Bham	4.2	41.2	56.8	38.4	99.8	23	2.6	90.3	7.1	99.8
Bradfd	4.7	12.3	81.2	8.8	99.6	23	2.3	88.9	8.9	99.6
Brightn					0.0	25	0.3	65.8	33.9	100.0
Bristol	4.8	18.1	78.0	14.7	100.0	22	2.3	95.4	2.3	100.0
Camb	4.9	5.7	87.5	3.4	99.2					16.4
Carlis					0.0	21	1.9	97.2	0.9	100.0
Carsh					0.0					67.4
Colchr	4.9	5.7	90.7	2.9	97.9	22	0.7	94.3	5.0	97.9
Covnt					0.0	23	3.0	86.3	10.7	89.5
Derby					0.0	23	2.7	93.3	4.0	100.0
Donc	4.8	7.3	87.2	4.2	100.0	23	0.0	92.7	7.3	100.0
Dorset	4.8	6.3	87.3	4.0	100.0	22	3.5	92.3	4.2	100.0
Dudley	4.8	10.7	85.7	7.1	100.0					60.7
EssexMS	4.8	9.7	85.7	7.2	100.0	23	3.1	82.6	14.3	100.0
Exeter	4.4	23.1	74.3	19.3	99.8	22	2.6	96.4	1.0	99.8
Glouc					0.0	24	0.0	91.1	8.9	99.5
Hull	4.7	8.4	84.8	5.8	100.0	24	0.6	83.9	15.5	100.0
Ipswi					0.0	24	3.2	78.2	18.6	100.0
Kent	4.4	31.2	64.8	26.8	98.7	22	7.9	87.8	4.2	98.7
L Barts	4.8	14.8	80.9	12.6	97.9	23	3.1	84.0	12.9	97.7
L Guys	4.7	25.5	70.0	22.2	100.0	24	0.8	83.4	15.8	100.0
L Kings	5.2	7.1	78.2	5.2	99.8	21	6.4	92.0	1.6	99.7
L Rfree	5.0	10.0	83.0	7.9	100.0	23	4.1	86.1	9.8	93.9
L St.G					0.0	25	0.7	68.8	30.4	92.3
L West					0.0					52.9
Leeds	5.0	4.3	89.8	2.9	99.8	23	1.0	90.0	9.0	99.6
Leic	4.8	8.7	85.5	7.0	99.7	25	0.8	73.9	25.3	99.6

Table 5.7 Continued

Centre	Pre-dialysis potassium					Pre-dialysis bicarbonate				
	Median (mmol/L)	% <4.0 mmol/L	% 4.0–6.0 mmol/L	% >6.0 mmol/L	% complete	Median (mmol/L)	% <18 mmol/L	% 18–26 mmol/L	% >26 mmol/L	% complete
Liv Ain					0.0	25	0.0	74.4	25.6	97.7
Liv Roy					0.0	27	0.3	44.7	54.9	98.7
M RI					0.0	23	0.8	93.4	5.8	82.3
Middlbr	4.7	16.0	81.0	12.2	99.0	30	0.0	8.5	91.5	99.0
Newc					0.0	23	2.2	87.0	10.9	100.0
Norwch	5.1	3.9	83.9	2.1	97.4	23	2.8	84.4	12.8	93.6
Nottm	4.8	10.8	85.5	7.9	100.0	25	0.6	74.2	25.2	99.7
Oxford	4.9	9.1	85.5	6.6	87.3	22	5.0	86.6	8.4	84.0
Plymth	4.7	10.1	86.3	6.1	100.0	21	11.6	86.2	2.2	99.3
Ports	4.8	10.4	86.4	8.2	100.0	25	1.2	67.0	31.8	100.0
Prestn					0.0	23	5.4	85.7	8.9	100.0
Redng					0.0	24	1.1	85.8	13.1	99.6
Salford	4.7	19.6	75.6	16.0	100.0					0.0
Sheff	5.0	7.7	85.4	5.7	99.6	24	1.0	81.2	17.8	99.6
Shrew					0.0	23	5.5	88.5	6.1	98.8
Sthend										
Stoke					0.0	25	0.0	64.5	35.5	86.8
Sund					0.0	22	3.9	88.4	7.8	100.0
Truro	4.9	9.9	82.4	5.9	100.0	26	0.0	61.3	38.7	100.0
Wirral					0.0	25	0.6	71.7	27.8	98.9
Wolve	4.9	4.8	86.6	2.9	99.7	21	8.6	90.0	1.4	99.7
York	5.1	2.2	87.8	0.8	100.0	23	1.1	90.0	8.9	100.0
N IRELAND										
Antrim	4.6	11.7	85.4	6.7	100.0	26	0.0	68.9	31.1	100.0
Belfast	5.1	5.5	87.5	2.6	100.0	23	3.1	91.4	5.5	100.0
Newry	4.7	14.7	82.4	8.1	100.0					35.3
Ulster	4.9	1.1	94.5	0.2	100.0	25	0.0	74.7	25.3	100.0
West NI	5.0	9.5	78.1	5.2	100.0	23	1.0	93.3	5.7	100.0
SCOTLAND										
Abrdn					0.0					0.0
Airdrie					0.0					0.0
D&Gall					0.0					0.0
Dundee					0.0					0.0
Edinb					0.0					0.0
Glasgw					0.0					0.0
Inverns					0.0					0.0
Klmarnk					0.0					0.0
Krkcldy					0.0					0.0
WALES										
Bangor					0.0	26	1.4	60.6		100.0
Cardff					0.0	22	3.0	89.4		99.6
Clwyd					0.0	22	2.6	92.3		100.0
Swanse					0.0	23	3.1	86.7		100.0
Wrexm					0.0	27	1.0	43.3		100.0
TOTALS										
England	4.8	9.5	79.6	14.3	63.2	23	2.7	81.5	15.8	90.3
N Ireland	4.9		85.7	6.0	100.0	24	1.8	81.8	16.4	91.1
Scotland					0.0					0.0
Wales					0.0	23	2.7	82.4	14.9	99.8
UK	**4.8**		**79.8**	**14.1**	**56.0**	**23**	**2.7**	**81.6**	**15.8**	**83.8**

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

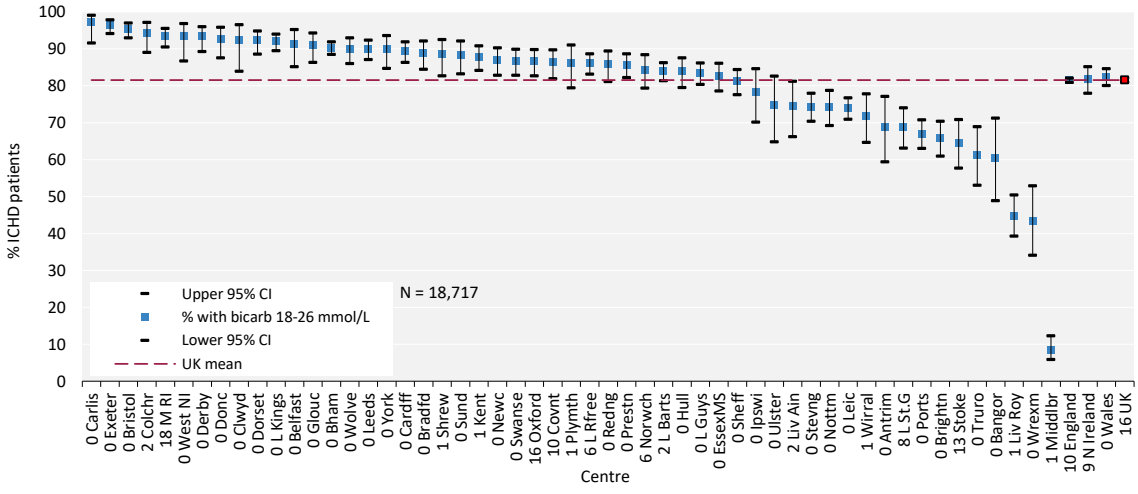

Figure 5.8 Percentage of adult patients prevalent to ICHD on 31/12/2020 with pre-dialysis bicarbonate (bicarb) within the target range (18–26 mmol/L) by centre

CI – confidence interval

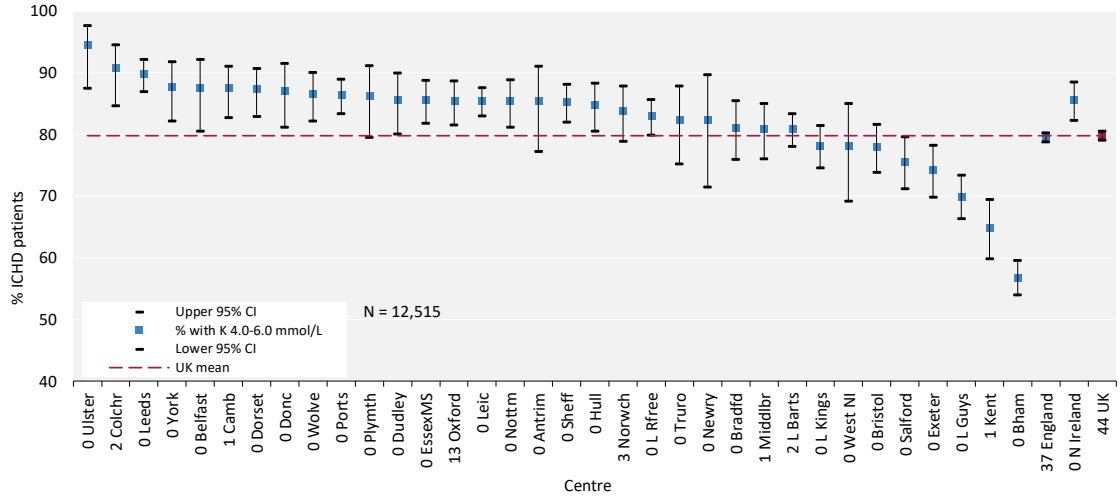

Figure 5.9 Percentage of adult patients prevalent to ICHD on 31/12/2020 with pre-dialysis potassium (K) within the target range (4.0–6.0 mmol/L) by centre

CI – confidence interval

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

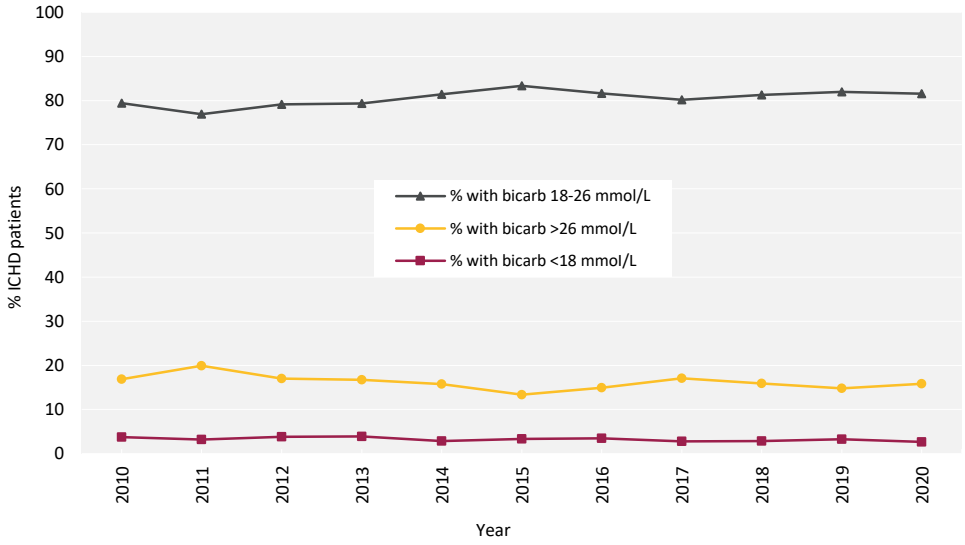

Figure 5.10 Change in percentage of prevalent adult ICHD patients within, above and below the target range for pre-dialysis bicarbonate (bicarb 18–26 mmol/L) between 2010 and 2020

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 31/12/2020 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	111	20.8	21.7	99.8	407	6.0	99.8
Bradfd	114	16.5	34.6	99.6	566	3.8	99.6
Brightn	113	20.8	22.1	100.0	527	2.3	98.7
Bristol	115	4.4	32.6	100.0	690	0.9	100.0
Camb	114	12.9	27.8	96.4			54.0
Carlis	112	17.9	21.7	100.0	531	6.6	100.0
Carsh	109	23.5	18.1	99.6	476	6.8	98.9
Colchr	112	15.7	17.9	97.9	550	1.4	97.9
Covnt	109	21.6	13.5	100.0	502	4.2	100.0
Derby	120	8.9	46.7	100.0	581	3.6	99.6
Donc	109	25.0	17.1	100.0	443	1.2	100.0
Dorset	112	15.0	21.0	82.0	634	1.8	100.0
Dudley	113	14.4	14.4	99.5	231	15.8	74.5
EssexMS	114	16.4	25.1	99.7	438	6.9	100.0
Exeter	111	10.7	16.9	99.8	324	6.9	99.8
Glouc	112	18.7	23.6	100.0	424	8.3	95.1
Hull	112	17.0	22.0	100.0	439	1.9	99.7
Ipswi	109	24.2	14.5	100.0	484	9.7	100.0
Kent	112	18.7	23.9	99.2	535	4.0	98.2
L Barts	109	21.7	18.0	97.9	664	3.2	98.1
L Guys	111	18.8	21.7	100.0	491	3.3	99.8
L Kings	110	16.0	23.9	99.8	523	2.5	98.9
L Rfree	111	20.7	20.4	100.0	444	8.8	99.4
L St.G	111	23.9	22.6	99.3	582	3.8	98.0
L West	113	12.9	22.8	94.8	360	4.7	94.5
Leeds	110	23.4	17.4	99.8	372	7.2	99.6
Leic	114	19.0	30.3	99.7	433	5.0	99.6
Liv Ain	111	20.9	25.6	97.7	589	3.9	97.0
Liv Roy	113	16.8	26.0	98.7	465	4.7	97.7
M RI	112	21.0	30.1	83.4	387	5.3	81.4
Middlbr	113	20.4	28.9	99.0	930	7.8	99.0
Newc	110	22.4	19.9	100.0	548	3.1	100.0
Norwch	111	24.6	25.8	94.4	459	3.6	94.4
Nottm	110	20.9	17.8	99.1	422	5.3	100.0
Oxford	110	24.1	23.6	87.6	481	3.1	97.9
Plymth	115	10.8	37.4	100.0	380	7.9	100.0
Ports	108	25.0	20.6	100.0	279	13.5	98.1
Prestn	112	19.7	26.0	100.0	638	3.9	94.8
Redng	115	19.3	30.9	100.0	637	3.6	100.0
Salford	108	33.9	19.1	100.0	403	12.8	100.0
Sheff	109	31.7	20.8	99.6	458	2.4	99.6
Shrew	113	12.7	27.9	98.8	676	1.2	98.8
Stevng	107	28.2	14.3	99.8	437	4.7	99.8
Stoke	114	11.7	33.2	87.6	522	2.0	84.2
Sund	114	16.5	29.1	100.0	678	1.5	99.0
Truro	109	23.2	20.4	100.0	471	0.7	100.0

Table 5.8 Continued

Centre	Haemoglobin				Ferritin		
	Median (g/L)	%<100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <100 µg/L	% data completeness
Wirral	112	19.4	18.9	98.9	580	5.6	98.4
Wolve	112	20.6	24.1	99.7	626	5.2	99.3
York	110	21.7	22.2	100.0	423	3.9	100.0
N IRELAND							
Antrim	107	26.2	10.7	100.0	395	2.9	100.0
Belfast	114	14.8	28.9	100.0	580	0.0	100.0
Newry	109	23.9	14.9	98.5	637	2.9	100.0
Ulster	112	16.5	17.6	100.0	619	2.2	100.0
West NI	110	22.9	22.9	100.0	630	2.9	100.0
SCOTLAND							
Abrdn				0.0			0.0
Airdrie				0.0			0.0
D&Gall				0.0			0.0
Dundee				0.0			0.0
Edinb				0.0			0.0
Glasgw				0.0			0.0
Inverns				0.0			0.0
Klmarnk				0.0			0.0
Krkcldy				0.0			0.0
WALES							
Bangor	117	8.5	33.8	100.0	450	4.2	100.0
Cardff	113	17.9	24.2	100.0	633	3.2	99.8
Clwyd	115	14.1	26.9	100.0	437	5.1	100.0
Swanse	109	21.6	13.9	100.0	447	8.9	99.7
Wrexm	115	12.5	32.7	100.0	670	1.0	100.0
TOTALS							
England	111	19.7	23.0	98.1	475	5.1	97.3
N Ireland	111	20.4	19.8	99.8	559	2.0	100.0
Scotland				0.0			0.0
Wales	112	17.7	22.4	100.0	554	5.1	99.8
UK	**111**	**19.6**	**22.9**	**90.7**	**479**	**5.0**	**90.0**

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

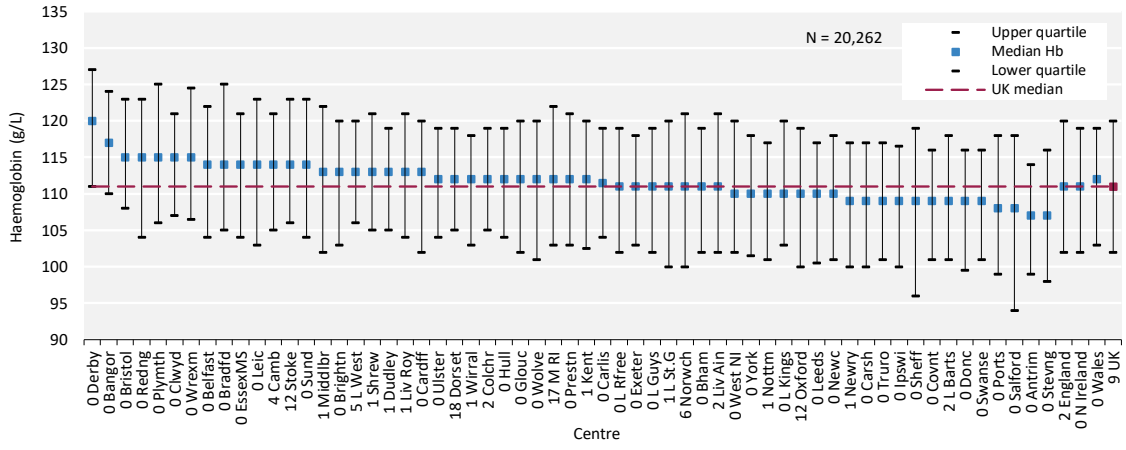

Figure 5.11 Median haemoglobin (Hb) in adult patients prevalent to ICHD on 31/12/2020 by centre

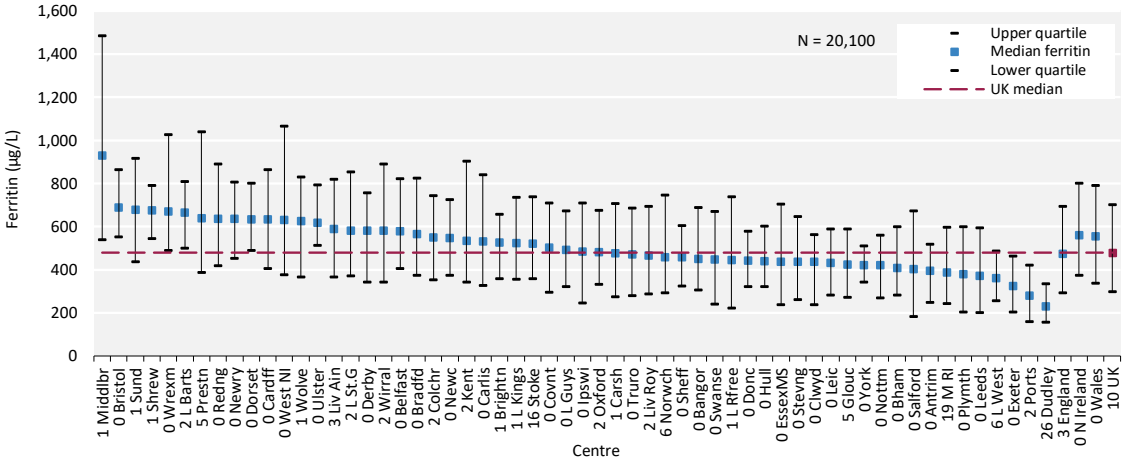

Figure 5.12 Median ferritin in adult patients prevalent to ICHD on 31/12/2020 by centre

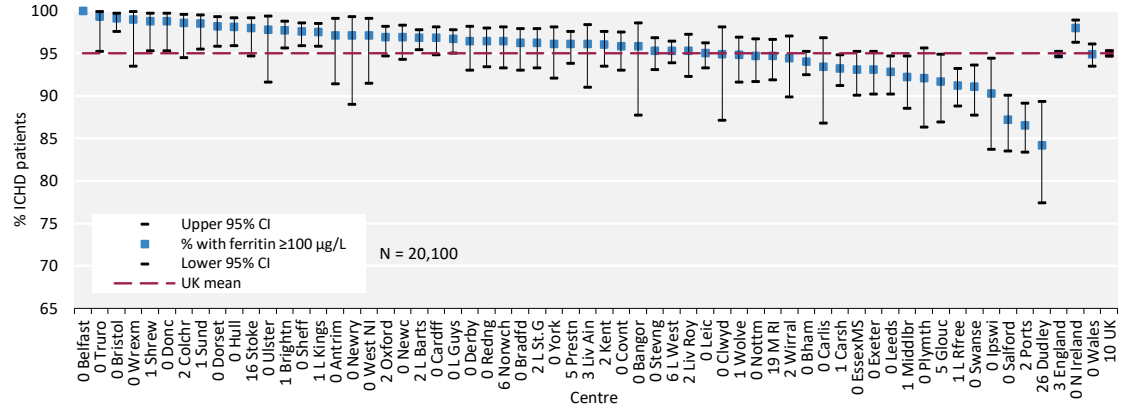

Figure 5.13 Percentage of adult patients prevalent to ICHD on 31/12/2020 with ferritin ≥100 µg/L by centre
CI – confidence interval

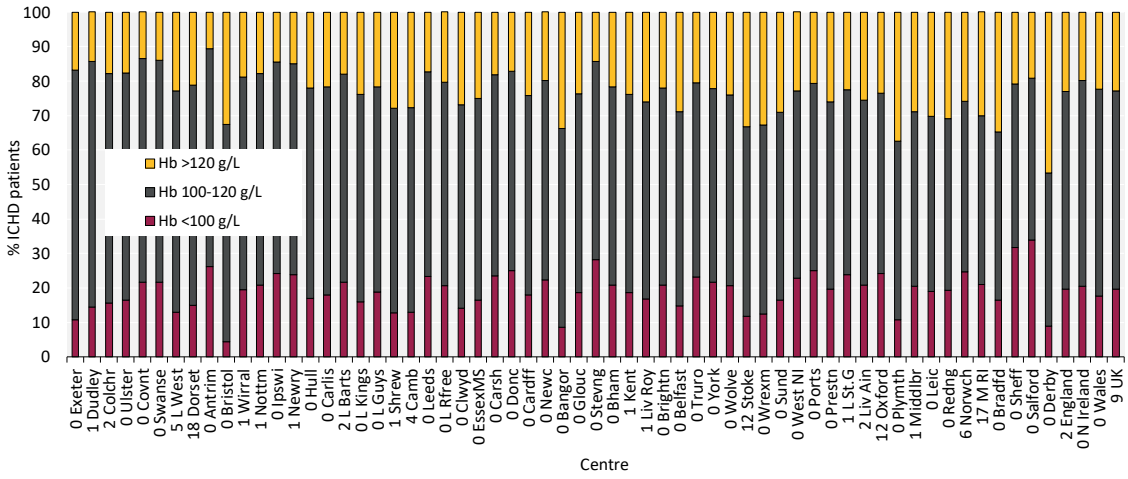

Figure 5.14 Distribution of haemoglobin (Hb) in adult patients prevalent to ICHD on 31/12/2020 by centre

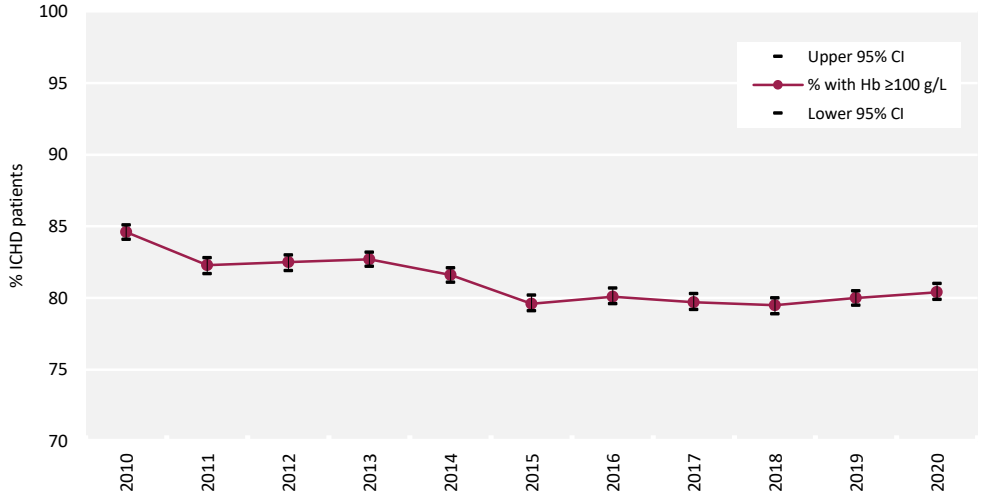

Figure 5.15 Percentage of prevalent adult ICHD patients with haemoglobin (Hb) ≥100 g/L between 2010 and 2020
CI – confidence interval

Dialysis access in prevalent adult dialysis patients

Prevalent dialysis access data were collected separately to the main UKRR quarterly data returns via the 2020 Multisite Dialysis Access Audit (see appendix A). Scotland do not contribute data via the audit, and therefore are not included in the analysis of prevalent patients. They submit access data for incident patients separately to the audit (see chapter 2). The type of prevalent dialysis access is presented in figure 5.16 for the 40 of centres in England, Northern Ireland and Wales that returned vascular access data 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. West NI is two centres combined, but only one submitted vascular access data. For West NI and Birmingham, not all contributing centres submitted vascular access data, so the number of patients on dialysis is lower than presented elsewhere in the report..

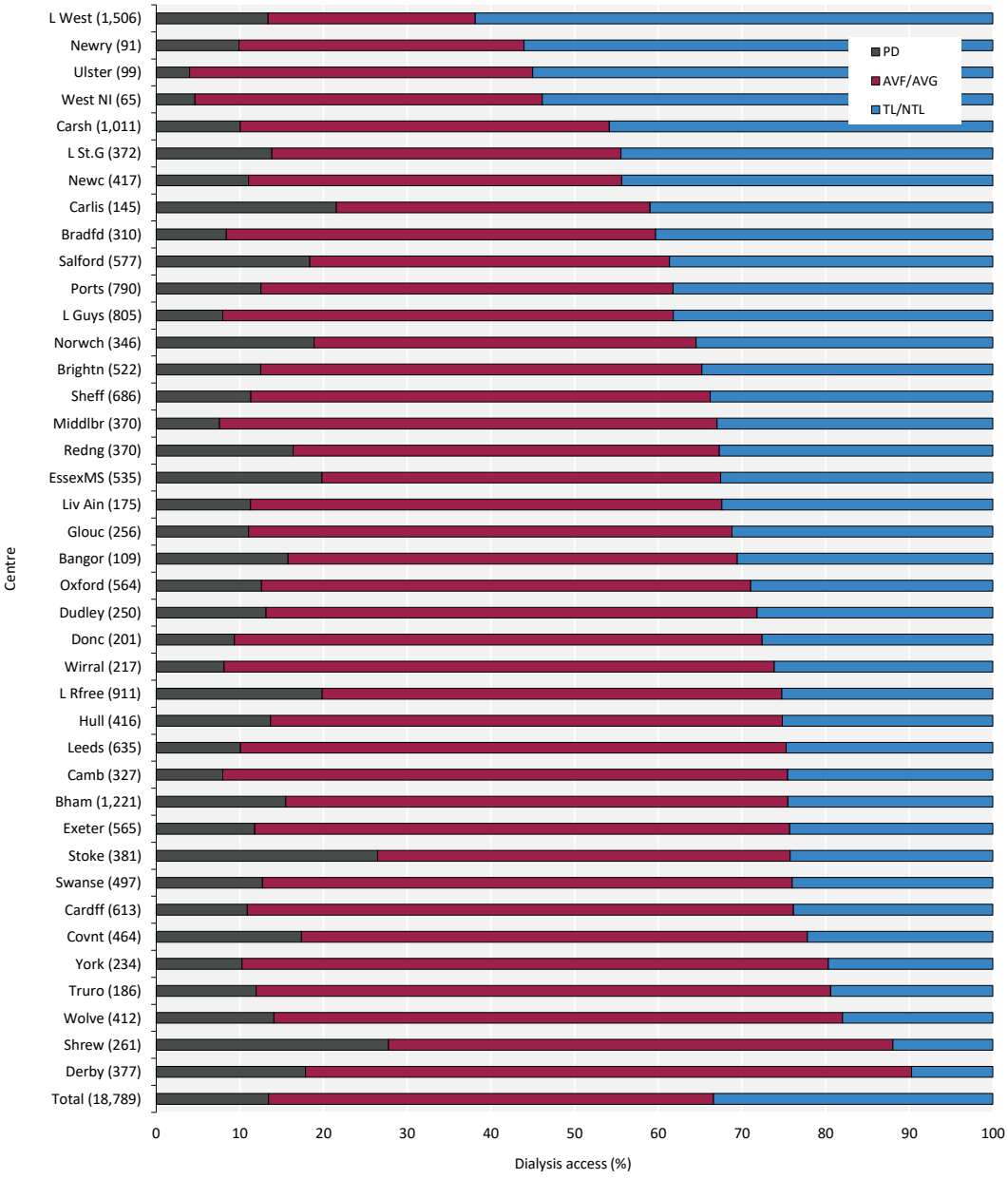

Figure 5.16 Dialysis access in adult patients prevalent to dialysis on 31/12/2020 by centre (2020 Multisite Dialysis Access Audit)

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

Infections in adult haemodialysis patients- to be updated when 2020 data available

PHE has carried out mandatory enhanced surveillance of MRSA bacteraemia since October 2005 and of MSSA bacteraemia since January 2011 for NHS acute trusts, with the subsequent addition of *E. coli* bacteraemia and *C. difficile* reporting. Patient-level infection data are reported in real time to PHE. Wales provides infection data extracted locally from the kidney and hospital IT systems.

The definition of each type of infectious episode is detailed in appendix A.

A rolling two year cohort is reported in line with UK Kidney Association guidelines. These analyses included all patients on HD, whether on HHD or ICHD.

Table 5.9 Rate of infection episodes per 100 HD patient-years in prevalent adult HD patients in England and Wales from January 2018 to December 2019 by centre

		Rate per 100 HD patient-years			
Centre	HD patient-years	MRSA	MSSA	C.difficile	E.coli
ENGLAND					
Basldn	368	0.27	4.62	2.72	0.54
Bham	2,886	0.14	2.36	1.32	1.70
Bradfd	558	0.36	2.69	0.18	1.97
Brightn	960	0.21	3.75	1.25	2.08
Bristol	993	0.91	2.42	0.81	2.32
Camb	782	0.13	2.17	0.51	1.15
Carlis	211	0.00	4.75	0.95	1.42
Carsh	1,776	0.06	1.75	0.84	2.08
Chelms	229	0.00	2.18	1.74	3.05
Colchr	271	0.37	1.84	0.00	1.48
Covnt	771	0.00	1.43	0.91	3.63
Derby	518	0.00	1.35	0.58	1.16
Donc	378	0.00	4.50	0.79	2.12
Dorset	610	0.16	2.30	1.15	1.97
Dudley	432	0.00	3.71	0.70	2.32
Exeter	949	0.11	1.48	0.95	1.79
Glouc	480	0.42	2.50	1.67	0.62
Hull	719	0.00	2.92	1.11	1.25
Ipswi	310	0.00	3.22	1.61	2.26
Kent	900	0.11	2.78	0.44	2.44
L Barts	2,172	0.14	3.08	0.74	1.98
L Guys	1,450	0.07	2.21	0.62	1.52
L Kings	1,212	0.00	2.56	1.07	1.65
L Rfree	1,430	0.00	1.68	1.68	2.87
L St.G	610	0.33	0.82	0.66	0.82
L West	2,932	0.17	2.05	1.23	1.77
Leeds	1,124	0.27	3.12	1.25	2.58
Leic	1,976	0.10	2.89	0.71	1.82
Liv Ain	343	0.00	3.21	2.04	4.37
Liv Roy	805	0.25	2.73	2.11	1.74
M RI	1,147	0.26	3.75	1.31	2.35
Middlbr	717	0.00	1.67	0.42	1.95
Newc	717	0.14	6.97	1.81	2.23
Norwch	619	0.00	1.29	0.65	0.81
Nottm	783	0.00	2.04	1.66	2.04
Oxford	967	0.10	1.03	0.72	1.96

Table 5.9 Continued

Centre	HD patient-years	Rate per 100 HD patient-years			
		MRSA	MSSA	C.difficile	E.coli
Plymth	274	0.00	2.56	1.10	1.83
Ports	1,286	0.31	4.35	1.09	1.32
Prestn	1,126	0.09	2.58	1.78	2.04
Redng	622	0.16	2.57	0.32	1.93
Salford	864	0.12	3.47	1.39	2.66
Sheff	1,202	0.17	2.50	0.75	1.58
Shrew	446	0.22	2.47	0.90	1.12
Stevng	1,053	0.57	2.28	1.33	2.00
Sthend	248	0.00	4.03	0.81	3.63
Stoke	622	0.00	1.61	1.13	3.54
Sund	534	0.00	2.81	1.69	1.87
Truro	337	0.00	2.38	0.89	2.08
Wirral	423	0.00	0.95	3.31	2.13
Wolve	675	0.00	1.93	0.30	2.37
York	394	0.51	5.59	0.25	1.27
WALES					
Bangor	162	0.00	4.95	1.24	2.48
Cardff	1,178	0.17	5.26	1.02	2.04
Clwyd	158	0.00	5.70	1.90	1.90
Swanse	836	0.96	3.71	0.48	3.23
Wrexm	237	1.27	7.60	0.42	0.84
TOTALS					
England	**44,207**	**0.15**	**2.59**	**1.08**	**1.95**
Wales	**2,571**	**0.51**	**4.98**	**0.86**	**2.33**
E & W	**46,778**	**0.17**	**2.72**	**1.06**	**1.98**

C. difficile – Clostridium difficile; E. coli – Escherichia coli; MRSA – methicillin-resistant *Staphylococcus aureus*; MSSA – methicillin-sensitive *Staphylococcus aureus*

Funnel plots show each centre's estimated infection rate per 100 HD patient-years for MRSA and MSSA against the number of patient-years at risk to take into account the greater variation expected as centre size decreases.

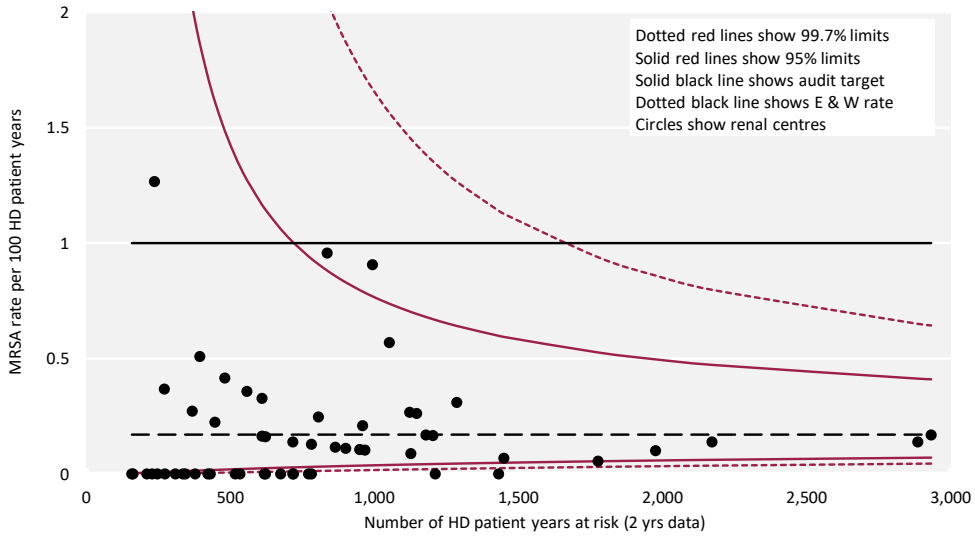

Figure 5.17 Methicillin-resistant *Staphylococcus aureus* (MRSA) rates by centre per 100 HD adult patient-years (2018–2019 data) compared to the England and Wales average, with the audit target also shown.

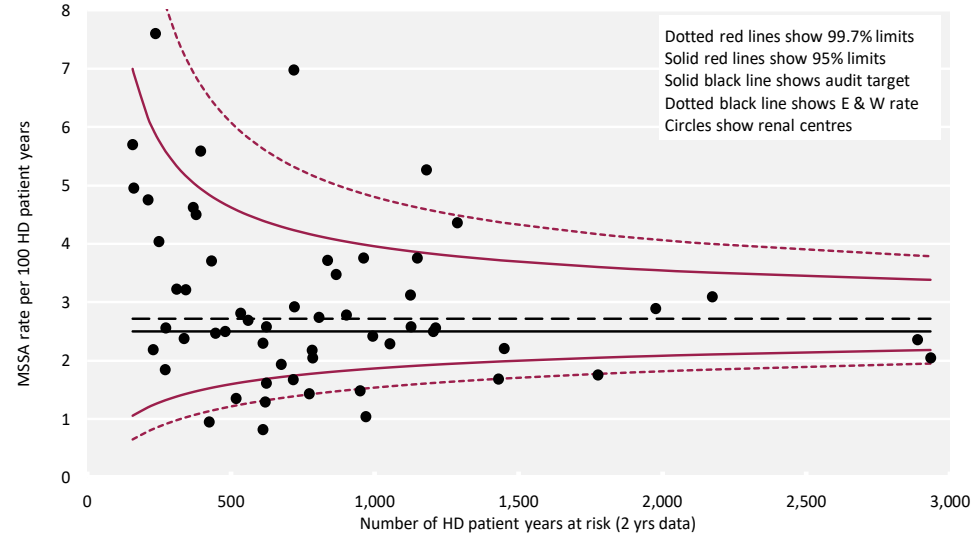

Figure 5.18 Methicillin-sensitive *Staphylococcus aureus* (MSSA) rates by centre per 100 HD adult patient-years (2018–2019 data) compared to the England and Wales average, with the audit target also shown.

Trends in MRSA and MSSA rates are displayed using box and whisker plots, displaying the median, interquartile range and range of centre rates (more detail is available in appendix A).

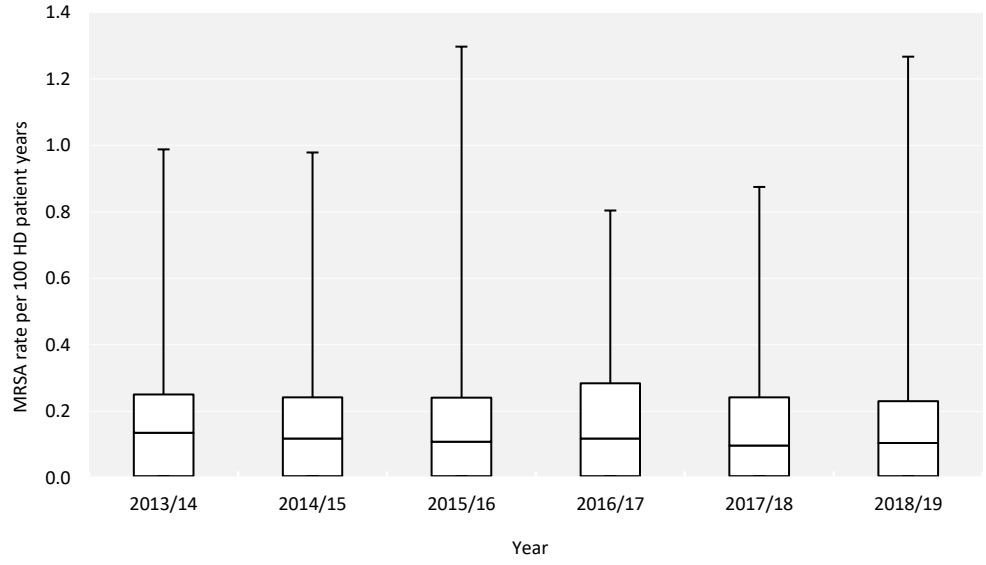

Figure 5.19 Distribution of methicillin-resistant *Staphylococcus aureus* (MRSA) centre rates per 100 HD adult patient-years by rolling 2 calendar year cohort (Wales included from 2016 onwards)

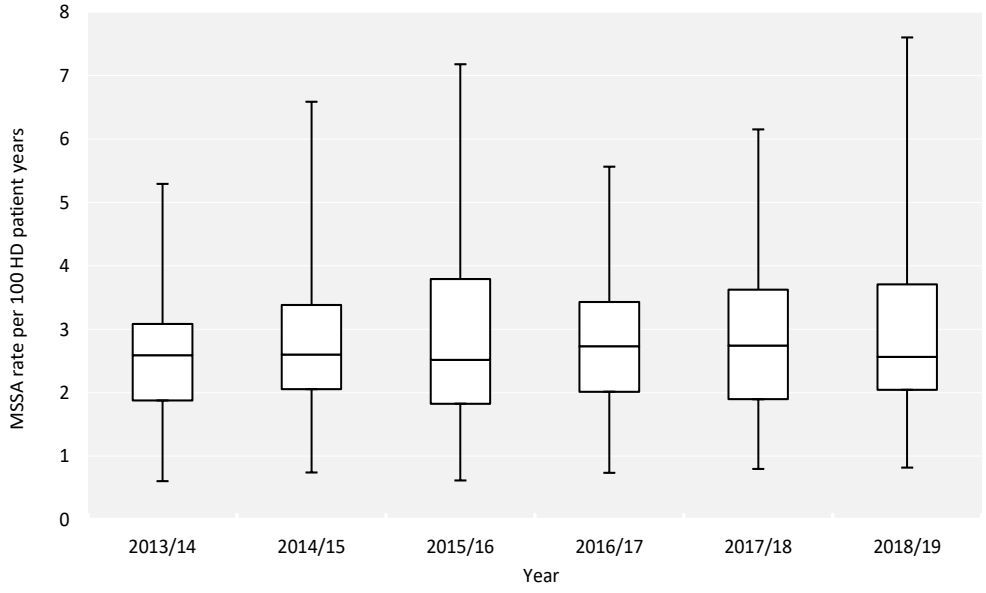

Figure 5.20 Distribution of methicillin-sensitive *Staphylococcus aureus* (MSSA) centre rates per 100 HD adult patient-years by rolling 2 calendar year cohort (Wales included from 2016 onwards)

Cause of death in adult ICHD patients

Cause of death was analysed in prevalent patients receiving ICHD on 31/12/2019 and followed-up for one year in 2020. 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. Further detail on the survival of prevalent KRT patients is in chapter 3.

Table 5.10 Cause of death in adult patients prevalent to ICHD on 31/12/2019 followed-up in 2020 by age group

Cause of death	ICHD all ages		ICHD <65 years		ICHD ≥65 years	
	N	%	N	%	N	%
Cardiac disease	556	18.2	198	25.8	358	15.7
Cerebrovascular disease	82	2.7	28	3.7	54	2.4
Infection	868	28.5	213	27.8	655	28.7
Malignancy	162	5.3	42	5.5	120	5.3
Treatment withdrawal	476	15.6	65	8.5	411	18.0
Other	674	22.1	168	21.9	506	22.2
Uncertain aetiology	231	7.6	53	6.9	178	7.8
Total (with data)	**3,049**	**100.0**	**767**	**100.0**	**2,282**	**100.0**
Missing	1,540	33.6	427	35.8	1,113	32.8

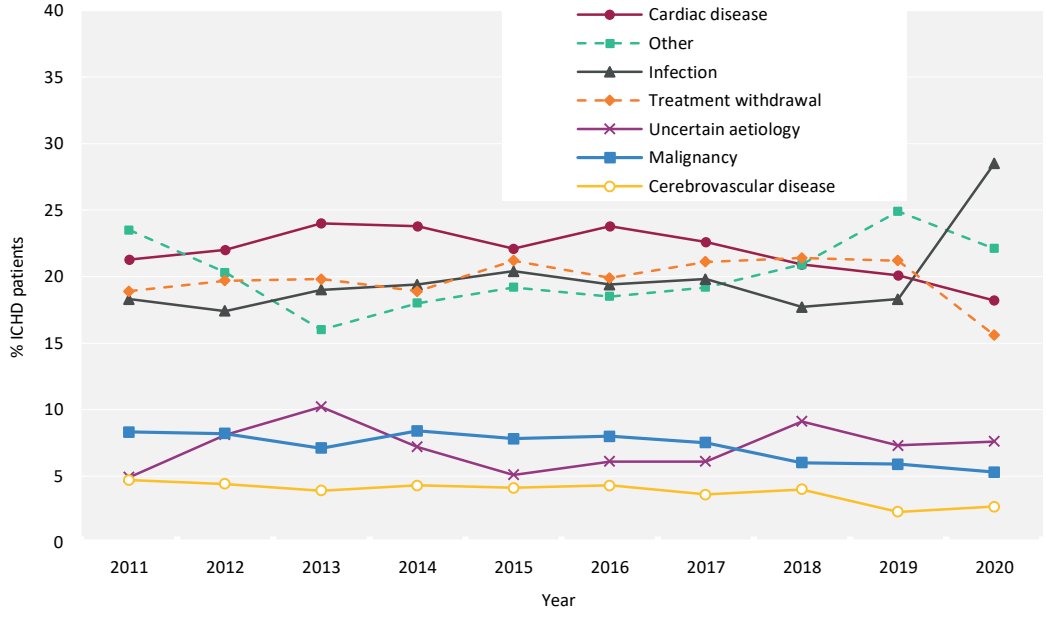

Figure 5.21 Cause of death between 2011 and 2020 for adult patients prevalent to ICHD at the beginning of the year.