

Chapter 6

Adults on peritoneal dialysis (PD) in the UK at the end of 2020

Contents

Introduction	2
Rationale for analyses	3
Key findings	5
Analyses	6
Changes to the prevalent adult PD population	6
Demographics of prevalent adult PD patients	9
Biochemistry parameters in prevalent adult PD patients	11
Anaemia in prevalent adult PD patients	14
Infections in adult PD patients - to be updated when 2020 data available	19
Cause of death in adult PD patients	21

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 2020 (figure 6.1). This population comprises patients who were on PD at the end of 2019 and remained on PD throughout 2020, as well as patients who commenced/re-commenced PD in 2020. This latter group includes both incident kidney replacement therapy (KRT) patients who ended 2020 on PD and prevalent KRT patients who switched to PD from in-centre haemodialysis (ICHD), home haemodialysis (HHD) or a transplant (Tx) in 2020. 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.

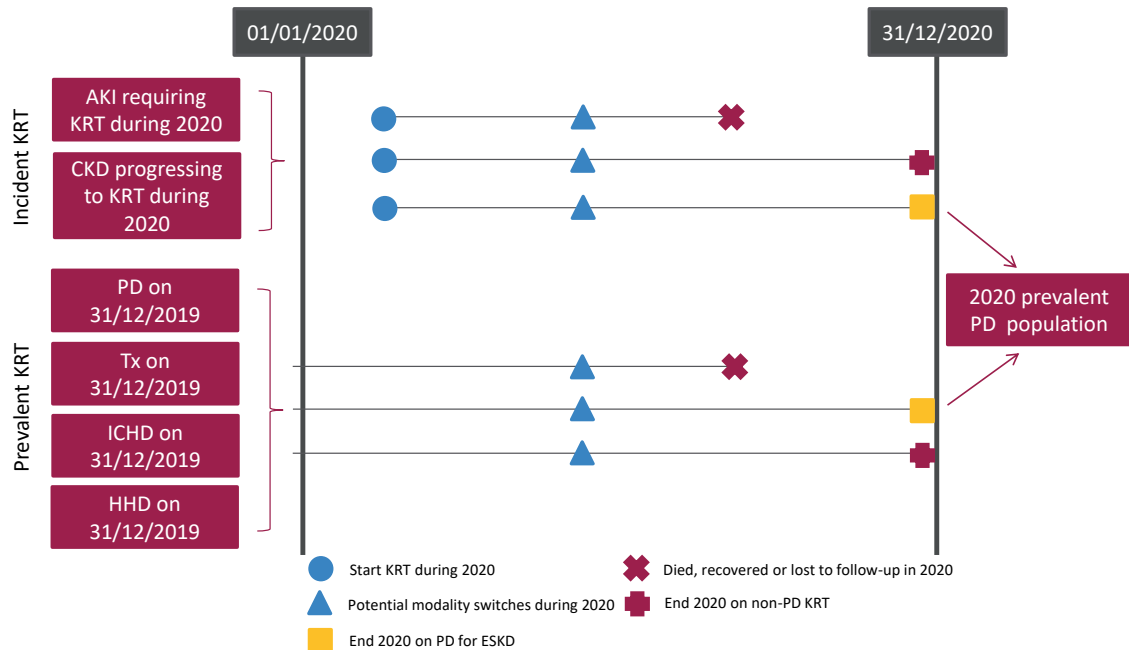


Figure 6.1 Pathways adult patients could follow to be included in the UK 2020 prevalent PD population

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 2020 or if they had been on KRT for ≥ 90 days and were on PD at the end of 2020. 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 and 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 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, where data permit, their attainment by UK kidney centres in 2020 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 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 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)
	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.	
Planning, initiating and withdrawing KRT (2014)	Number of patients withdrawing from PD as a proportion of all deaths on PD	Table 6.9, figure 6.13

ESA – erythropoiesis stimulating agent

Key findings

- 3,822 adult patients were receiving PD for ESKD in the UK on 31/12/2020, compared to 3636 in 2019, which represented 5.6% of the KRT population.
- The median age of PD patients was 63.5 years and 60.0% were male.
- The median adjusted calcium for PD patients was 2.4 mmol/L and 12.0% were above the target range of 2.2–2.5 mmol/L.
- The median bicarbonate for PD patients was 25 mmol/L and 80.2% were within the target range of 22–30 mmol/L.
- The median haemoglobin and ferritin for PD patients was 111 g/L and 331 µg/L, respectively.
- The PD peritonitis rate in 2020 (England only) was 0.38/1 PD patient-year.
- There was no cause of death data available for 36.6% of deaths. For those with data, the leading cause of death was infection in both younger patients and those ≥ 65 years at 36.3% and 23.8% respectively with a likely contribution from COVID related deaths. Treatment withdrawal accounted for 17.0% of deaths in those ≥ 65 years.

Analyses

Changes to the prevalent adult PD population

For the 68 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 prevalent adult PD patients and proportion of adult KRT patients on PD by year and by centre; number of PD patients as a proportion of the catchment population

Centre	N on PD					% on PD					Estimated catchment population (millions)	2020 crude rate (pmp)
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020		
ENGLAND												
Bham	231	249	257	257	268	7.6	7.8	7.9	7.8	8.2	2.04	131
Bradfd	25	20	26	34	26	3.9	3.0	3.8	4.6	3.6	0.49	53
Brightn	64	59	60	55	66	6.4	5.8	5.7	5.2	6.1	1.07	62
Bristol	53	58	56	63	68	3.6	3.9	3.8	4.2	4.6	1.21	56
Camb	22	26	32	28	27	1.7	1.9	2.3	1.9	1.8	0.93	29
Carlis	36	27	30	35	32	12.9	9.6	10.2	11.6	10.8	0.25	126
Carsh	113	96	99	72	123	6.8	5.7	5.7	4.0	6.6	1.62	76
Colchr	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.29	0
Covnt	67	52	52	81	85	6.9	5.4	5.4	7.5	7.8	0.79	108
Derby	77	79	79	62	70	14.2	14.2	13.5	9.5	10.3	0.56	126
Donc	27	29	23	25	19	8.2	8.7	7.0	7.3	5.6	0.37	51
Dorset	36	35	38	33	34	5.3	4.8	5.0	4.3	4.3	0.72	47
Dudley	52	57	38	36	32	15.1	15.6	10.6	9.8	8.6	0.34	94
EssexMS	96	93	87	85	84	12.3	11.2	10.3	10.0	9.5	0.99	85
Exeter	84	75	77	84	85	8.3	7.1	7.1	7.7	7.7	0.95	90
Glouc	42	45	37	31	30	8.9	8.8	7.1	5.9	5.8	0.51	59
Hull	72	56	45	49	57	8.4	6.4	5.1	5.4	6.2	0.79	72
Ipswi	34	45	40	42	32	8.2	10.3	9.3	9.8	7.5	0.31	103
Kent	57	51	43	50	62	5.3	4.7	3.9	4.4	5.4	1.06	58
L Barts	203	236	237	228	268	8.6	9.4	9.1	8.6	10.5	1.58	170
L Guys	39	39	43	53	64	1.9	1.8	1.9	2.3	2.8	1.00	64
L Kings	91	97	89	95	101	8.2	8.4	7.5	7.6	8.1	0.93	109
L Rfree	159	145	166	168	182	7.3	6.6	7.4	7.2	7.8	1.32	138
L St.G	44	37	40	43	48	5.2	4.4	4.8	5.0	5.6	0.66	73
L West	100	120	135	155	200	2.9	3.5	3.8	4.3	5.7	1.95	103
Leeds	47	59	64	67	64	3.0	3.6	3.8	3.9	3.7	1.36	47
Leic	88	96	108	126	112	3.8	4.1	4.4	4.9	4.3	2.07	54
Liv Ain	27	21	25	18	20	11.8	10.0	11.5	8.6	9.3	0.43	47
Liv Roy	71	70	57	32	27	5.8	5.6	4.5	2.6	2.4	0.81	33
M RI	63	71	69	76	84	3.2	3.5	3.3	3.7	4.2	1.32	63
Middlbr	26	23	29	32	28	2.9	2.5	3.1	3.4	3.0	0.80	35
Newc	53	58	60	59	46	5.0	5.2	5.2	5.0	3.8	0.95	49
Norwch	48	43	36	46	44	6.2	5.5	4.6	5.7	5.5	0.68	64
Nottm	81	69	70	76	95	7.0	5.8	5.8	6.2	7.8	0.92	103
Oxford	95	67	69	57	67	5.4	3.6	3.6	2.9	3.3	1.44	47
Plymth	41	49	40	42	33	8.0	9.1	7.4	7.9	6.1	0.40	83
Ports	75	84	94	87	101	4.4	4.8	5.3	4.6	5.3	1.74	58
Prestn	40	35	39	43	50	3.3	2.8	3.0	3.2	3.6	1.23	41
Redng	56	39	40	56	62	7.1	4.9	4.9	6.5	7.1	0.69	90
Salford	106	117	115	120	106	10.4	10.5	9.8	9.7	8.4	1.14	93
Sheff	55	55	61	60	77	3.9	3.8	4.1	4.0	5.2	1.13	68

Table 6.2 Continued

Centre	N on PD					% on PD					Estimated catchment population (millions)	2020 crude rate (pmp)
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020		
Shrew	39	42	58	55	51	10.3	10.9	13.6	12.7	12.3	0.41	125
Stevng	21	23	28	37	25	2.4	2.6	3.0	3.8	2.6	1.10	23
Stoke	79	72	81	71	89	9.5	8.9	10.0	8.8	11.0	0.73	123
Sund	17	16	17	26	33	3.3	2.9	3.0	4.6	5.9	0.54	61
Truro	18	15	17	21	23	4.2	3.5	3.9	4.7	5.2	0.36	65
Wirral	22	20	20	17	15	6.5	5.1	5.0	4.1	3.7	0.47	32
Wolve	69	54	54	49	59	12.1	9.3	8.9	8.0	9.2	0.54	108
York	33	35	29	33	24	6.2	6.3	5.1	5.7	4.2	0.48	50
N IRELAND												
Antrim	16	14	20	19	12	6.3	5.5	7.3	6.6	4.2	0.24	49
Belfast	24	16	22	18	15	2.9	1.9	2.5	2.0	1.7	0.53	28
Newry	21	23	16	11	9	8.9	9.5	6.3	4.3	3.4	0.23	39
Ulster	6	6	10	8	3	3.6	3.3	5.2	4.3	1.5	0.20	15
West NI	10	9	9	14	7	3.3	2.9	2.8	4.3	2.0	0.25	28
SCOTLAND												
Abrdn	21	22	26	22	22	3.8	3.9	4.5	3.9	3.9	0.50	44
Airdrie	24	16	22	21	28	5.5	3.4	4.5	4.0	5.4	0.46	61
D&Gall	10	6	6	8	10	7.6	4.4	4.1	5.4	6.4	0.12	82
Dundee	21	18	22	21	14	5.0	4.1	4.9	4.7	3.3	0.37	38
Edinb	36	33	36	41	32	4.6	4.0	4.2	4.6	3.6	0.84	38
Glasgw	54	48	52	45	45	3.1	2.7	2.9	2.4	2.4	1.37	33
Inverns	11	10	13	12	9	4.3	3.8	4.7	4.3	3.3	0.22	40
Klmarnk	33	24	19	24	27	10.4	7.1	5.6	6.7	7.3	0.29	93
Krkldy	18	11	10	12	6	6.1	3.6	3.4	4.1	2.1	0.27	22
WALES												
Bangor	16	17	20	14	18	8.9	8.7	9.9	7.0	8.3	0.17	107
Cardff	74	71	59	63	67	4.5	4.2	3.4	3.6	4.0	1.19	56
Clwyd	15	12	15	13	15	8.5	6.7	7.9	6.3	7.2	0.19	80
Swanse	67	74	70	77	59	8.9	9.4	8.5	8.9	6.9	0.78	76
Wrexm	32	27	24	23	26	10.2	8.4	7.6	7.4	8.0	0.21	122
TOTALS												
England	3,094	3,059	3,109	3,170	3,398	5.8	5.6	5.5	5.5	5.9	44.46	76
N Ireland	77	68	77	70	46	4.3	3.7	4.0	3.6	2.3	1.45	32
Scotland	228	188	206	206	193	4.6	3.7	3.9	3.8	3.6	4.44	43
Wales	204	201	188	190	185	6.7	6.3	5.8	5.7	5.7	2.54	73
UK	3,603	3,516	3,580	3,636	3,822	5.7	5.4	5.4	5.3	5.6	52.89	72

Country PD populations were calculated by summing the PD 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. pmp – per million population

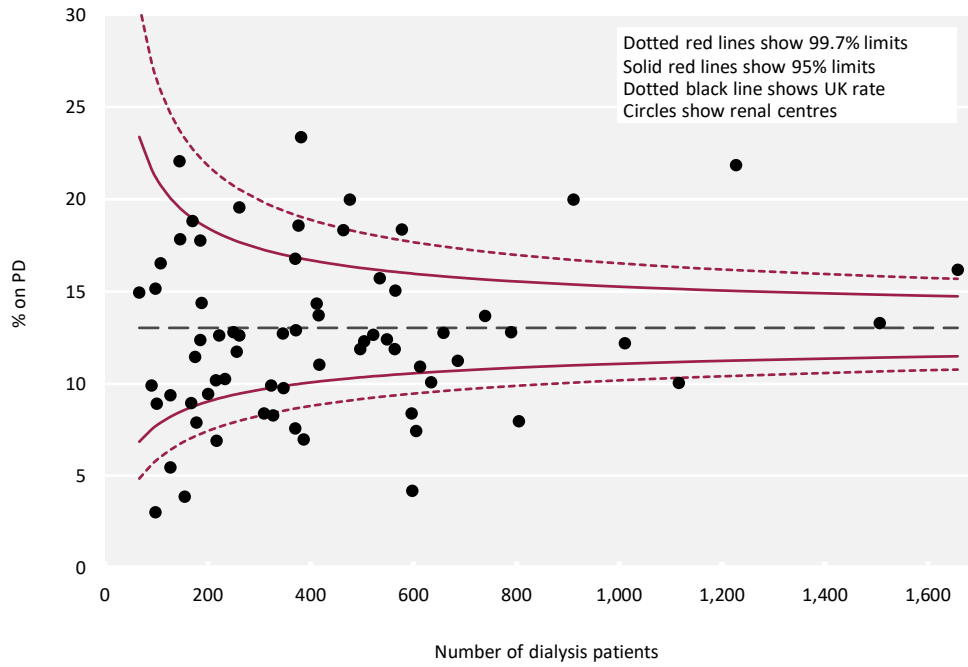


Figure 6.2 Percentage of adult patients prevalent to dialysis on 31/12/2020 who were on PD by centre

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 31/12/2020 by centre

Centre	N on KRT	N on PD	% on PD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
ENGLAND										
Bham	3,272	268	8.2	61.5	62.3	58.2	28.0	11.9	1.9	2.6
Bradfd	727	26	3.6	62.7	65.4	61.5	30.8	0.0	7.7	0.0
Brightn	1,078	66	6.1	69.0	66.7	91.7	6.7	0.0	1.7	9.1
Bristol	1,477	68	4.6	59.6	70.6	92.1	0.0	4.8	3.2	7.4
Camb	1,526	27	1.8	73.7	70.4	100.0	0.0	0.0	0.0	11.1
Carlis	297	32	10.8	66.2	62.5	100.0	0.0	0.0	0.0	0.0
Carsh	1,854	123	6.6	65.8	56.1	67.5	12.8	12.0	7.7	4.9
Colchr	151	0	0.0							
Covnt	1,096	85	7.8	67.9	62.4	82.4	9.4	8.2	0.0	0.0
Derby	677	70	10.3	67.7	61.4	89.7	8.8	1.5	0.0	2.9
Donc	341	19	5.6	59.5	36.8	100.0	0.0	0.0	0.0	0.0
Dorset	798	34	4.3	67.9	67.6	94.1	2.9	0.0	2.9	0.0
Dudley	370	32	8.6	68.1	56.3	87.5	9.4	3.1	0.0	0.0
EssexMS	884	84	9.5	71.3	66.7	93.8	3.7	0.0	2.5	3.6
Exeter	1,106	85	7.7	71.0	64.7	95.2	1.2	0.0	3.6	1.2
Glouc	521	30	5.8	59.8	56.7	89.7	0.0	3.4	6.9	3.3
Hull	914	57	6.2	66.1	66.7	94.7	1.8	3.5	0.0	0.0
Ipswi	425	32	7.5	73.8	65.6	84.6	0.0	3.8	11.5	18.8
Kent	1,143	62	5.4	61.0	61.3	93.2	5.1	1.7	0.0	4.8
L Barts	2,557	268	10.5	60.9	58.6	28.2	42.7	24.0	5.0	2.2
L Guys	2,320	64	2.8	55.6	54.7	48.2	16.1	32.1	3.6	12.5
L Kings	1,253	101	8.1	57.1	60.4	52.0	14.0	28.0	6.0	1.0
L Rfree	2,337	182	7.8	62.5	58.2	34.1	32.3	21.0	12.6	8.2
L St.G	857	48	5.6	62.8	50.0	34.1	26.8	24.4	14.6	14.6
L West	3,537	200	5.7	66.3	53.5	42.5	39.0	16.0	2.5	0.0
Leeds	1,751	64	3.7	56.8	54.7	76.6	15.6	6.3	1.6	0.0
Leic	2,604	112	4.3	63.3	54.5	83.5	11.7	3.9	1.0	8.0
Liv Ain	216	20	9.3	68.6	40.0	100.0	0.0	0.0	0.0	0.0
Liv Roy	1,142	27	2.4	52.7	44.4	96.0	0.0	0.0	4.0	7.4
M RI	1,985	84	4.2	59.2	51.2	65.4	17.3	13.6	3.7	3.6
Middlbr	942	28	3.0	63.8	60.7	92.6	3.7	0.0	3.7	3.6
Newc	1,207	46	3.8	57.9	69.6	95.7	2.2	2.2	0.0	0.0
Norwch	805	44	5.5	66.5	75.0	97.7	2.3	0.0	0.0	0.0
Nottm	1,212	95	7.8	60.3	60.0	70.5	17.9	9.5	2.1	0.0
Oxford	2,021	67	3.3	63.7	50.7	80.0	9.1	5.5	5.5	17.9
Plymth	544	33	6.1	69.0	72.7	100.0	0.0	0.0	0.0	0.0
Ports	1,902	101	5.3	68.5	69.3	94.2	3.5	0.0	2.3	14.9
Prestn	1,370	50	3.6	64.2	58.0	80.0	18.0	2.0	0.0	0.0
Redng	871	62	7.1	61.3	61.3	74.1	12.1	6.9	6.9	6.5
Salford	1,264	106	8.4	64.2	60.4	88.7	10.4	0.0	0.9	0.0
Sheff	1,491	77	5.2	65.8	68.8	92.1	6.6	1.3	0.0	1.3
Shrew	414	51	12.3	68.5	62.7	85.4	8.3	2.1	4.2	5.9
Stevng	963	25	2.6	65.4	56.0	71.4	14.3	4.8	9.5	16.0
Stoke	809	89	11.0	66.5	56.2	91.3	6.3	2.5	0.0	10.1
Sund	557	33	5.9	54.0	39.4	93.9	6.1	0.0	0.0	0.0
Truro	445	23	5.2	61.9	60.9	100.0	0.0	0.0	0.0	0.0
Wirral	406	15	3.7	55.7	53.3	100.0	0.0	0.0	0.0	0.0

Table 6.3 Continued

Centre	N on KRT	N on PD	% on PD	Median age (yrs)	% male	Ethnicity				
						% White	% Asian	% Black	% Other	% missing
Wolve	643	59	9.2	59.5	55.9	64.4	23.7	10.2	1.7	0.0
York	572	24	4.2	70.4	70.8	100.0	0.0	0.0	0.0	12.5
N IRELAND										
Antrim	289	12	4.2	81.8	66.7	100.0	0.0	0.0	0.0	8.3
Belfast	890	15	1.7	78.3	53.3					46.7
Newry	264	9	3.4	76.5	66.7	100.0	0.0	0.0	0.0	0.0
Ulster	200	3	1.5	64.4	100.0	100.0	0.0	0.0	0.0	0.0
West NI	350	7	2.0	61.9	42.9	100.0	0.0	0.0	0.0	0.0
SCOTLAND										
Abrdn	565	22	3.9	61.2	81.8					95.5
Airdrie	514	28	5.4	62.8	57.1					50.0
D&Gall	156	10	6.4	57.3	40.0					80.0
Dundee	430	14	3.3	71.3	78.6					100.0
Edinb	888	32	3.6	60.5	71.9					93.8
Glasgw	1,844	45	2.4	58.0	53.3					75.6
Inverns	271	9	3.3	63.2	44.4					88.9
Klmarnk	369	27	7.3	62.2	33.3					81.5
Krkldy	291	6	2.1	56.6	83.3					100.0
WALES										
Bangor	216	18	8.3	69.0	72.2	100.0	0.0	0.0	0.0	11.1
Cardff	1,678	67	4.0	65.5	49.3	89.1	7.8	3.1	0.0	4.5
Clwyd	207	15	7.2	69.7	86.7	92.3	7.7	0.0	0.0	13.3
Swanse	850	59	6.9	66.0	67.8	96.6	3.4	0.0	0.0	0.0
Wrexm	323	26	8.0	62.9	65.4	92.0	0.0	8.0	0.0	3.8
TOTALS										
England	57,654	3,398	5.9	63.3	59.9	71.4	16.2	9.1	3.3	4.3
N Ireland	1,993	46	2.3	75.6	60.9	100.0	0.0	0.0	0.0	17.4
Scotland	5,328	193	3.6	61.7	59.1					81.3
Wales	3,274	185	5.7	66.5	62.7	93.2	4.5	2.3	0.0	4.3
UK	68,249	3,822	5.6	63.5	60.0	73.0	15.4	8.6	3.1	8.3

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.

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 31/12/2020

PRD	N on PD	% PD population	Age <65 yrs		Age ≥65 yrs		M/F ratio
			N	%	N	%	
Diabetes	898	24.7	506	26.1	392	23.1	1.7
Glomerulonephritis	606	16.7	391	20.2	215	12.7	1.5
Hypertension	306	8.4	149	7.7	157	9.2	2.1
Polycystic kidney disease	270	7.4	161	8.3	109	6.4	1.0
Pyelonephritis	238	6.5	123	6.3	115	6.8	1.6
Renal vascular disease	184	5.1	43	2.2	141	8.3	2.1
Other	544	15.0	317	16.3	227	13.4	1.0
Uncertain aetiology	591	16.2	249	12.8	342	20.1	1.5
Total (with data)	3,637	100.0	1,939	100.0	1,698	100.0	
Missing	185	4.8	90	4.4	95	5.3	1.9

Biochemistry parameters in prevalent adult PD 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. 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 31/12/2020 by centre

Centre	Adjusted calcium				Bicarbonate				
	Median (mmol/L)	% 2.2-2.5 mmol/L	% >2.5 mmol/L	% data completeness	Median (mmol/L)	% <22 mmol/L	% 22-30 mmol/L	% >30 mmol/L	% data completeness
ENGLAND									
Bham	2.4	85.4	9.4	98.3					64.1
Bradfd	2.4	86.4	9.1	95.7	27	4.6	81.8	13.6	95.7
Brightn	2.4	91.2	7.0	98.3	25	15.5	77.6	6.9	100.0
Bristol	2.4	75.9	22.2	100.0	24	22.2	75.9	1.9	100.0
Camb	2.4	73.9	26.1	100.0	26	9.5	76.2	14.3	91.3
Carlis	2.3	85.7	0.0	93.3	23	32.1	67.9	0.0	93.3
Carsh	2.2	63.5	6.7	98.1					0.0
Colchr									
Covnt	2.3	81.9	8.3	98.6	25	12.9	82.9	4.3	95.9
Derby	2.4	82.1	16.1	100.0	25	19.6	76.8	3.6	100.0
Donc	2.3	81.3	18.8	100.0	25	12.5	87.5	0.0	100.0
Dorset	2.3	75.9	3.5	96.7	22	37.9	62.1	0.0	96.7
Dudley	2.5	64.5	35.5	100.0	26	6.5	93.6	0.0	100.0
EssexMS	2.4	83.6	12.3	97.3	27	4.1	80.8	15.1	97.3
Exeter	2.3	85.1	10.5	98.5	25	13.6	86.4	0.0	97.1
Glouc	2.4	83.3	12.5	92.3	24	13.0	87.0	0.0	88.5
Hull	2.4	77.3	20.5	97.8	27	4.6	86.4	9.1	97.8
Ipswi	2.3	83.9	6.5	96.9	25	10.0	86.7	3.3	93.8
Kent	2.3	81.1	7.6	100.0	23	30.8	69.2	0.0	98.1
L Barts	2.3	76.1	9.9	95.3	25	15.4	81.0	3.6	94.9
L Guys	2.4	75.9	15.5	100.0	25	15.5	79.3	5.2	100.0
L Kings	2.3	76.7	11.6	98.9	23	29.1	69.8	1.2	98.9
L Rfree	2.3	77.4	10.3	99.4	25	12.9	84.4	2.7	94.2
L St.G	2.5	69.2	28.2	92.9	24	17.1	82.9	0.0	83.3

Table 6.5 Continued

Centre	Adjusted calcium				Bicarbonate				
	Median	% 2.2-2.5	% >2.5	% data	Median	% <22	% 22-30	% >30	% data
	(mmol/L)	mmol/L	mmol/L	completeness	(mmol/L)	mmol/L	mmol/L	mmol/L	completeness
L West				48.8					47.5
Leeds	2.4	89.5	7.0	98.3	28	1.8	80.7	17.5	98.3
Leic	2.4	85.6	11.3	98.0	25	10.2	88.8	1.0	99.0
Liv Ain	2.4	85.7	14.3	100.0	27	0.0	71.4	28.6	100.0
Liv Roy	2.4	87.5	12.5	96.0	25	0.0	91.7	8.3	96.0
M RI	2.4	75.7	17.1	100.0	25	17.1	82.9	0.0	100.0
Middlbr	2.4	72.7	13.6	95.7	27	0.0	90.9	9.1	95.7
Newc	2.4	74.4	20.5	100.0	25	23.1	76.9	0.0	100.0
Norwch	2.4	82.1	15.4	100.0	24	20.5	79.5	0.0	100.0
Nottm	2.3	82.1	6.4	100.0					24.4
Oxford	2.3	91.8	4.1	83.1					62.7
Plymth	2.3	86.2	6.9	100.0	23	24.0	76.0	0.0	86.2
Ports	2.4	76.5	18.5	100.0	26	11.5	85.9	2.6	96.3
Prestn	2.3	73.2	4.9	100.0	25	15.4	82.1	2.6	95.1
Redng	2.4	89.6	6.3	100.0	26	6.3	85.4	8.3	100.0
Salford	2.4	79.4	20.7	100.0					0.0
Sheff	2.3	86.4	3.0	100.0	25	24.2	75.8	0.0	100.0
Shrew	2.4	79.6	15.9	100.0	24	14.0	86.1	0.0	97.7
Stoke	2.4	81.7	16.9	96.0	26	4.1	91.9	4.1	100.0
Sund	2.4	76.7	13.3	100.0					13.3
Truro	2.4	80.0	10.0	100.0	25	10.0	90.0	0.0	100.0
Wirral	2.4	100.0	0.0	100.0	23	9.1	72.7	18.2	100.0
Wolve	2.4	80.8	13.5	96.3	23	23.1	76.9	0.0	96.3
York	2.4	81.0	19.1	100.0	26	9.5	90.5	0.0	100.0
N IRELAND									
Antrim	2.3	72.7	27.3	100.0	27	0.0	90.9	9.1	100.0
Belfast	2.3	90.9	9.1	91.7	27	0.0	100.0	0.0	100.0
Newry				100.0					100.0
Ulster				100.0					100.0
West NI				83.3					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
Krkldy				0.0					0.0
WALES									
Bangor	2.4	100.0	0.0	100.0	26	18.2	72.7	9.1	100.0
Cardff	2.4	80.4	12.5	100.0	24	14.3	85.7	0.0	100.0
Clwyd	2.4	69.2	23.1	100.0	23	38.5	61.5	0.0	100.0
Swanse	2.4	98.1	1.9	100.0	26	11.5	84.6	3.9	98.1
Wrexm	2.4	95.7	0.0	100.0	27	4.4	87.0	8.7	100.0
TOTALS									
England	2.4	80.0	12.3	95.3	25	16.6	79.8	3.6	81.4
N Ireland	2.3	83.8	10.8	94.9	27	0.0	94.9	5.1	100.0
Scotland				0.0					0.0
Wales	2.4	89.1	7.1	100.0	25	14.2	82.6	3.2	99.4
UK	2.4	80.5	12.0	90.6	25	16.2	80.2	3.6	78.3

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

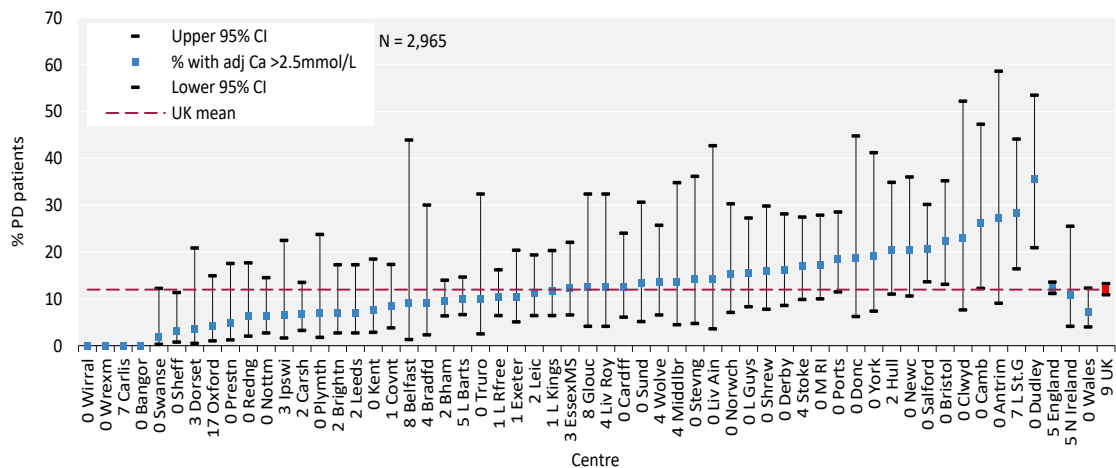


Figure 6.3 Percentage of adult patients prevalent to PD on 31/12/2020 with adjusted calcium (Ca) above the target range (>2.5 mmol/L) by centre
 CI – confidence interval

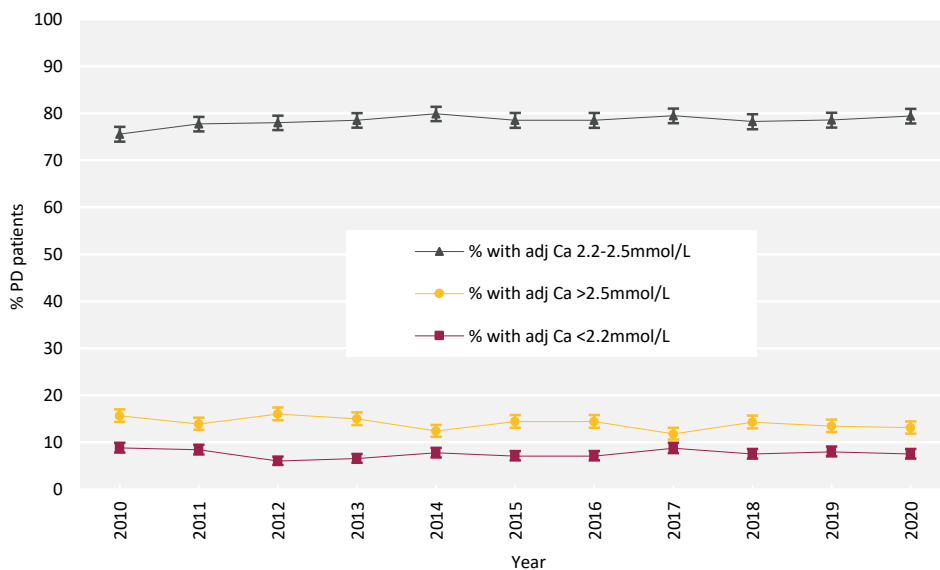


Figure 6.4 Change in percentage of prevalent adult PD patients within, above and below the target range for adjusted calcium (Ca 2.2–2.5 mmol/L) between 2010 and 2020

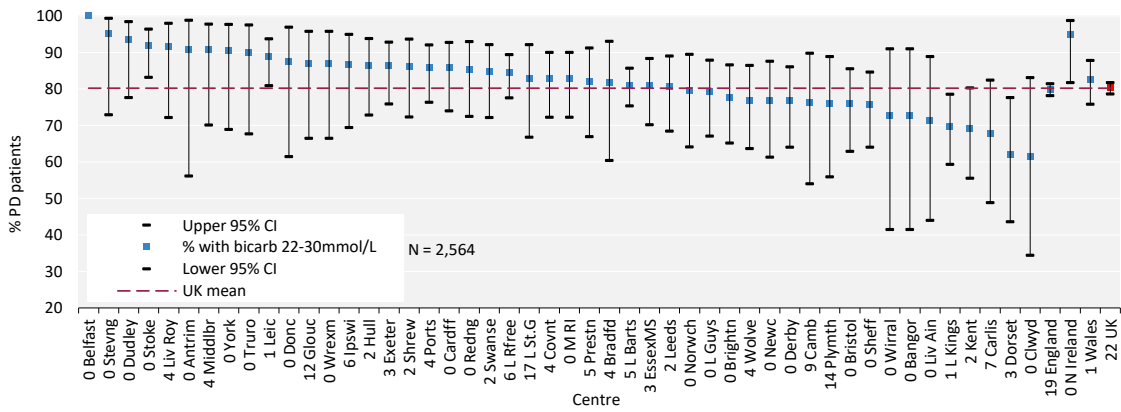


Figure 6.5 Percentage of adult patients prevalent to PD on 31/12/2020 with bicarbonate (bicarb) within the target range (22–30 mmol/L) by centre
 CI – confidence interval

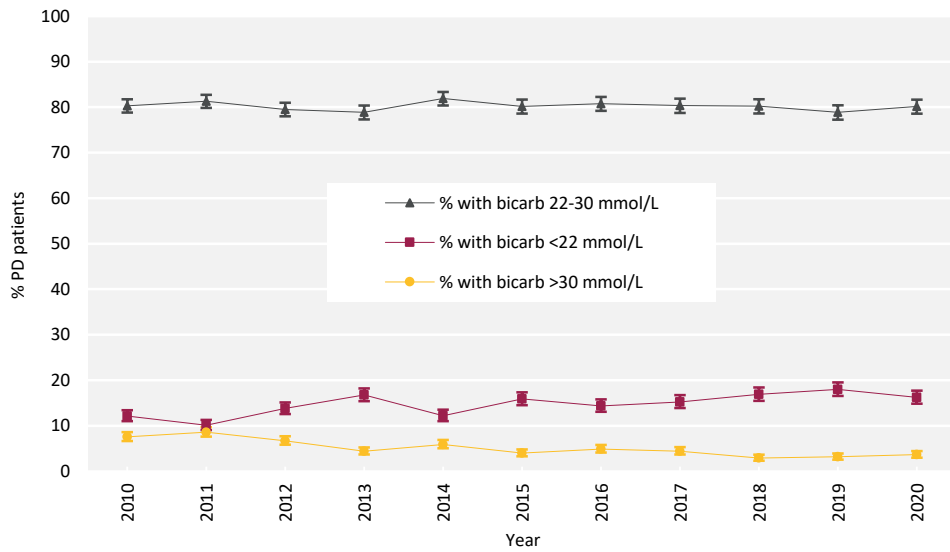


Figure 6.6 Percentage of prevalent adult PD patients within, above and below the target range for bicarbonate (bicarb) 22–30 mmol/L) between 2010 and 2020

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 31/12/2020 by centre

Centre	Haemoglobin				Ferritin		
	Median (g/L)	% <100 g/L	% >120 g/L	% data completeness	Median (µg/L)	% <100 µg/L	% data completeness
ENGLAND							
Bham	107	33.0	13.7	98.3	338	9.4	98.7
Bradfd	125	13.6	68.2	95.7	308	4.5	95.7
Brightn	114	20.7	20.7	100.0	295	3.8	89.7
Bristol	113	7.4	29.6	100.0	295	5.7	98.2
Camb	114	17.4	30.4	100.0	390	4.5	95.7
Carlis	112	17.9	14.3	93.3	228	26.9	86.7
Carsh	104	31.4	14.3	99.1	186	22.1	98.1
Colchr							
Covnt	111	19.2	19.2	100.0	259	23.3	100.0
Derby	116	23.2	39.3	100.0	473	0.0	100.0
Donc	112	6.3	37.5	100.0	310	12.5	100.0
Dorset	111	26.7	13.3	100.0	325	7.1	93.3
Dudley	122	16.1	51.6	100.0			3.2
EssexMS	113	13.5	24.3	98.7	266	16.4	97.3
Exeter	112	2.9	19.1	98.6	223	10.1	100.0
Glouc	112	32.0	36.0	96.2	118	30.0	76.9
Hull	112	15.6	31.1	100.0	508	6.8	97.8
Ipswi	112	12.9	29.0	96.9	302	22.6	96.9
Kent	113	19.2	34.6	98.1	254	12.0	94.3
L Barts	110	22.6	24.0	94.9	329	17.2	89.7
L Guys	103	43.1	13.8	100.0	204	17.9	96.6
L Kings	113	22.1	33.7	98.9	234	15.5	96.6
L Rfree	110	20.0	25.2	99.4	575	11.7	98.7
L St.G	106	30.8	12.8	92.9	292	2.6	90.5
L West				48.8			45.1
Leeds	108	22.4	24.1	100.0	515	6.9	100.0
Leic	114	15.3	29.6	99.0	293	15.3	99.0
Liv Ain	123	0.0	57.1	100.0	419	0.0	100.0
Liv Roy	115	12.5	20.8	96.0	336	4.0	100.0
M RI	109	28.6	17.1	100.0	299	10.1	98.6
Middlbr	117	13.6	45.5	95.7	255	4.8	91.3
Newc	108	23.1	20.5	100.0	428	10.3	100.0
Norwch	117	15.4	30.8	100.0	267	20.5	100.0
Nottm	114	14.1	26.9	100.0	429	1.3	100.0
Oxford	108	18.5	24.1	91.5	324	3.4	100.0
Plymth	112	17.2	20.7	100.0	290	17.2	100.0
Ports	115	11.1	23.5	100.0	386	11.5	96.3
Prestn	112	19.5	34.1	100.0	727	0.0	100.0
Redng	112	20.8	29.2	100.0	372	10.9	95.8
Salford	114	16.3	26.1	100.0	672	5.4	100.0
Sheff	112	25.8	30.3	100.0	517	4.8	95.5
Shrew	110	29.5	18.2	100.0	289	14.0	97.7
Stevng	111	23.8	28.6	100.0	246	27.8	85.7
Stoke	108	27.0	29.7	100.0	301	6.9	97.3
Sund	115	10.3	34.5	96.7	444	17.2	96.7
Truro	114	25.0	25.0	100.0	163	33.3	90.0
Wirral	107	9.1	9.1	100.0	423	9.1	100.0
Wolve	108	20.8	26.4	98.2	147	38.5	96.3
York	115	10.0	20.0	95.2	372	19.0	100.0
N IRELAND							
Antrim	108	0.0	27.3	100.0	536	0.0	100.0
Belfast	115	8.3	41.7	100.0	446	0.0	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
Newry				100.0			100.0
Ulster				100.0			100.0
West NI				100.0			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
Krkldy				0.0			0.0
WALES							
Bangor	118	18.2	36.4	100.0	250	27.3	100.0
Cardff	113	21.4	28.6	100.0	180	34.5	98.2
Clwyd	113	15.4	46.2	100.0	450	0.0	100.0
Swanse	112	20.8	32.1	100.0	225	14.0	94.3
Wrexm	112	13.0	17.4	100.0	319	8.7	100.0
TOTALS							
England	111	21.4	24.7	95.7	335	12.0	92.8
N Ireland	113	10.3	25.6	100.0	388	5.1	100.0
Scotland				0.0			0.0
Wales	113	19.2	30.1	100.0	238	20.4	97.4
UK	111	21.2	25.0	91.1	331	12.3	88.3

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

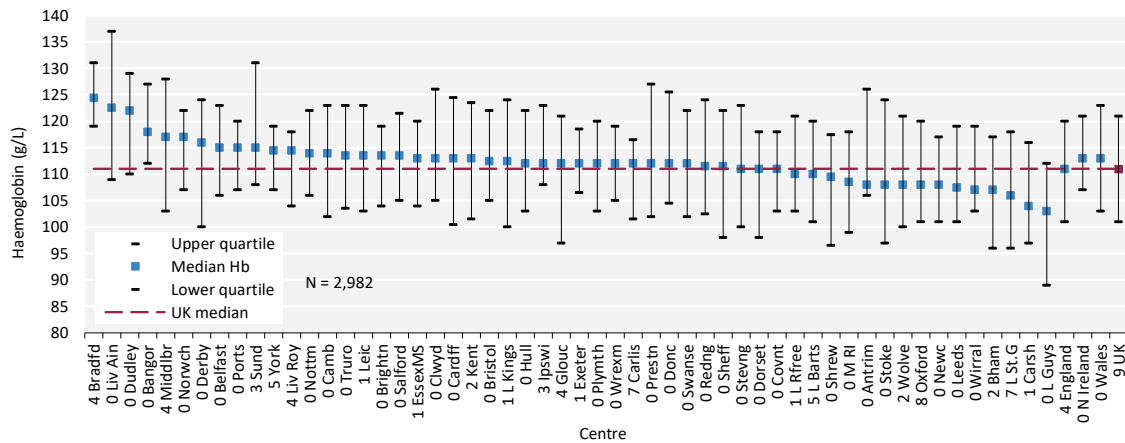


Figure 6.7 Median haemoglobin (Hb) in adult patients prevalent to PD on 31/12/2020 by centre

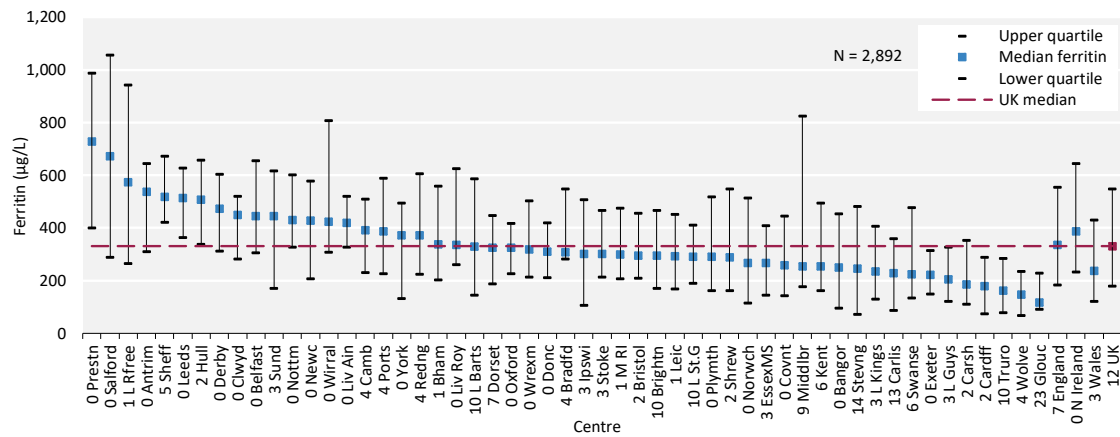


Figure 6.8 Median ferritin in adult patients prevalent to PD on 31/12/2020 by centre

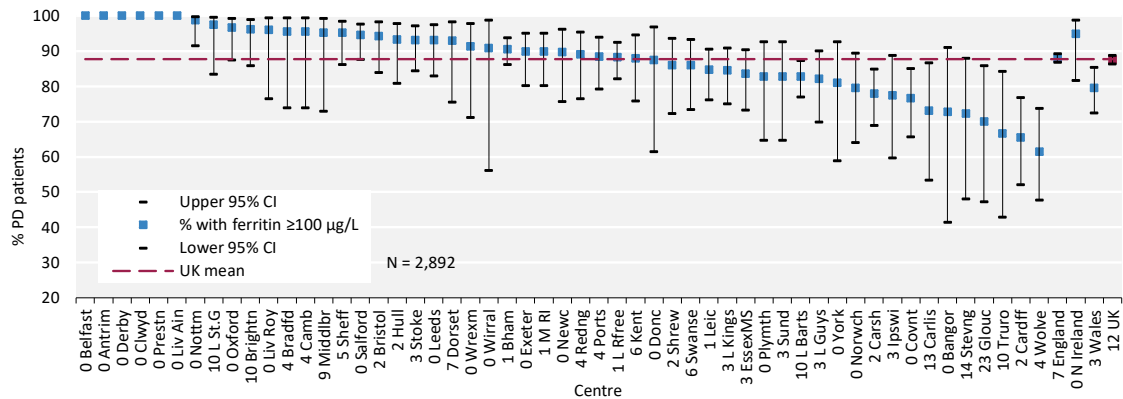


Figure 6.9 Percentage of adult patients prevalent to PD on 31/12/2020 with ferritin ≥ 100 $\mu\text{g/L}$ by centre
 CI – confidence interval

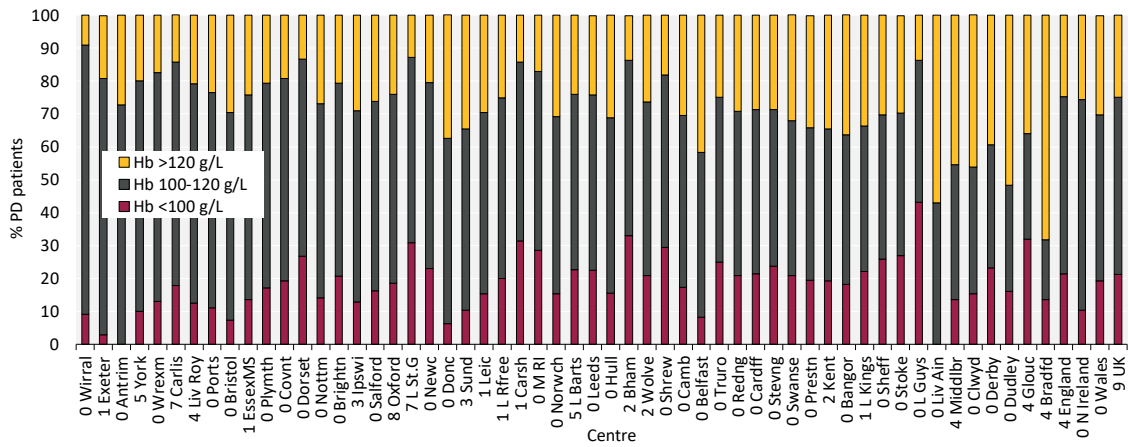


Figure 6.10 Distribution of haemoglobin (Hb) in adult patients prevalent to PD on 31/12/2020 by centre

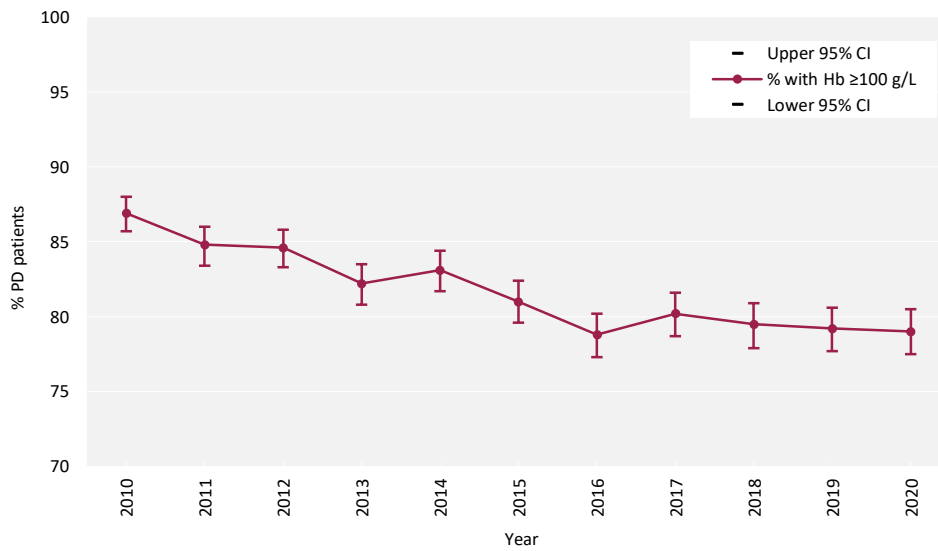


Figure 6.11 Percentage of prevalent adult PD patients with haemoglobin (Hb) ≥ 100 g/L between 2010 and 2020
CI – confidence interval

Infections in adult PD 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 the UKHSA. Wales provides infection data extracted locally from the kidney and hospital IT systems.

Given the small numbers of infections in PD patients, data are only shown at the national level and are compared to infection rates in haemodialysis (HD) patients. The definition of each type of infectious episode is detailed in appendix A.

A rolling two year cohort is reported to be consistent with the reporting of infections in chapter 5. These analyses included all patients on HD, whether on HHD or ICHD.

Table 6.7 Number and rate of infection episodes per 100 patient-years in prevalent adult PD patients in England and Wales compared to prevalent adult HD patients in England and Wales from January 2018 to December 2019

Infections during 2019	Infection			
	MRSA	MSSA	<i>C. difficile</i>	<i>E.coli</i>
Number of episodes				
HD	80	1,271	498	924
PD	1	29	56	67
Rate per 100 patient-years (with range between centres)				
HD	0.17 (0.0 - 1.27)	2.72 (0.82 - 7.60)	1.06 (0.0 - 3.31)	1.96 (0.54 - 4.37)
PD	0.01 (0.0 - 0.67)	0.43 (0.0 - 5.36)	0.83 (0.0 - 6.26)	0.99 (0.0 - 7.34)

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

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 2020 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 6.8 Number of patient-years and peritonitis rate in adult patients receiving PD in 2020 by centre in England

Centre	PD patient years	Peritonitis rate per 1 PD patient year
Bham	261	0.33
Bradfd	30	0.47
Brightn	59	0.21
Bristol	73	0.50
Camb	35	0.40
Carlis	24	0.34
Carsh	118	0.42
Covnt	85	0.46
Derby	61	0.33
Donc	19	0.43
Dorset	32	0.85
Dudley	36	0.11
EssexMS	83	0.24
Exeter	82	0.37
Glouc	36	0.38
Hull	53	0.36
Ipswi	37	0.48
Kent	56	0.28
L Barts	245	0.28
L Guys	61	0.54
L Kings	101	0.29
L Rfree	175	0.44
L St.G	49	0.34
L West	178	0.31
Leeds	71	0.44
Leic	133	0.18
Liv Ain	30	0.17
Liv Roy	36	0.81
M RI	83	0.56
Middlbr	30	0.47
Newc	49	0.61
Norwch	45	0.34
Nottm	95	0.50
Oxford	62	0.37
Plymth	33	0.15
Ports	92	0.36
Prestn	52	0.68
Redng	60	0.60
Salford	113	0.44
Sheff	71	0.07
Shrew	63	0.35
Stevng	33	0.39
Stoke	78	0.38
Sund	36	0.22
Truro	22	0.18
Wirral	17	0.23
Wolve	55	0.69
York	26	0.11
TOTAL		
England	3,371	0.38

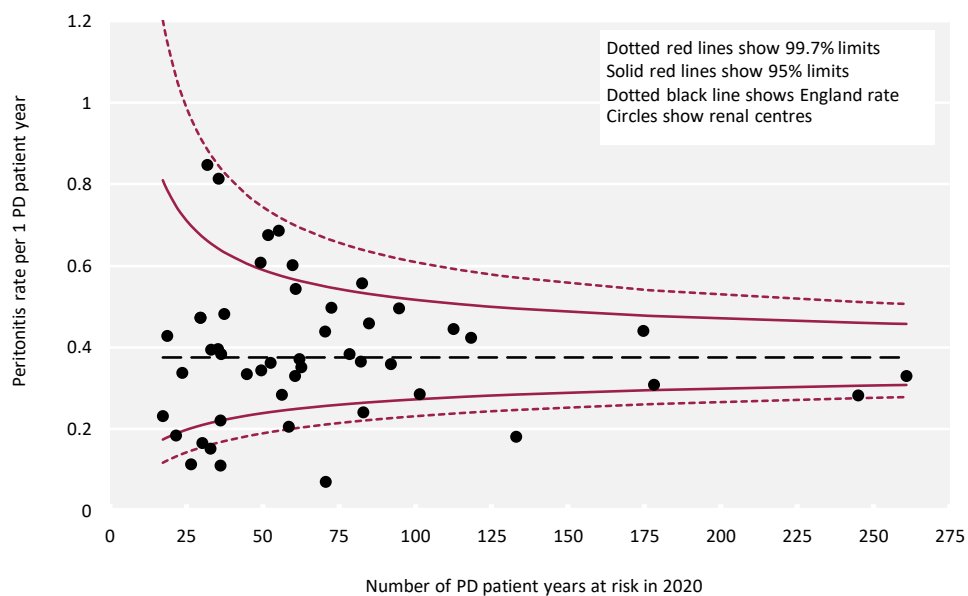


Figure 6.12 PD peritonitis rates in adult patients receiving PD in 2020 per 1 PD patient-year by centre in England
Please visit the UKRR data portal (ukkidney.org/audit-research/data-portals) to identify individual kidney centres.

Cause of death in adult PD patients

Cause of death was analysed in prevalent patients receiving PD on 31/12/2019 and followed-up for one year in 2020. 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. 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 31/12/2019 followed-up in 2020 by age group

Cause of death	PD all ages		PD <65 years		PD ≥65 years	
	N	%	N	%	N	%
Cardiac disease	73	22.4	23	25.3	50	21.3
Cerebrovascular disease	11	3.4	6	6.6	5	2.1
Infection	89	27.3	33	36.3	56	23.8
Malignancy	15	4.6	5	5.5	10	4.3
Treatment withdrawal	46	14.1	6	6.6	40	17.0
Other	69	21.2	16	17.6	53	22.6
Uncertain aetiology	23	7.1	2	2.2	21	8.9
Total (with data)	326	100.0	91	100.0	235	100.0
Missing	188	36.6	52	36.4	136	36.7

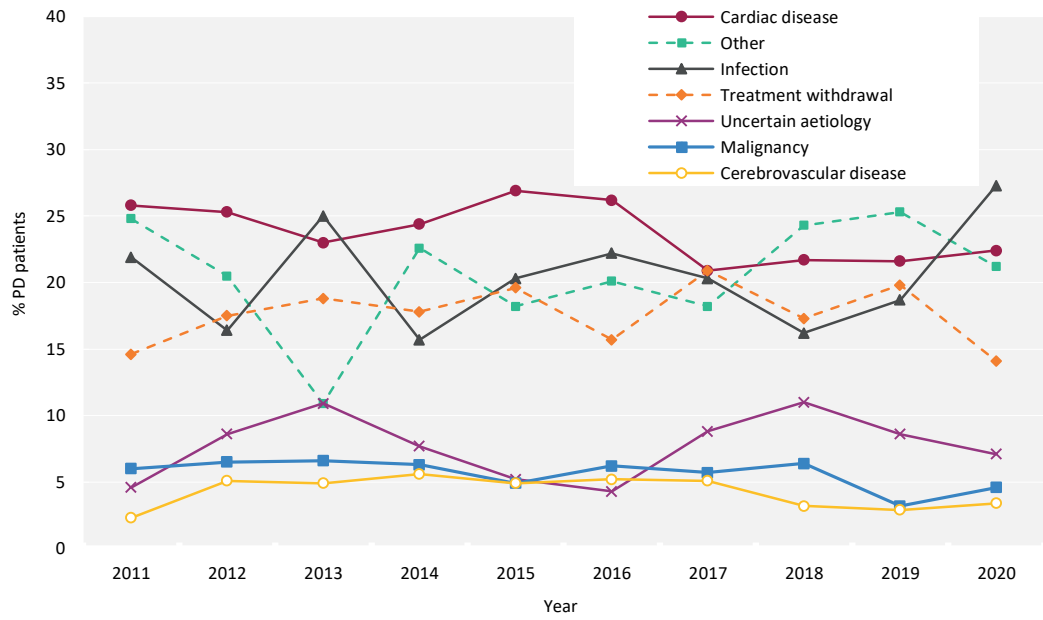


Figure 6.13 Cause of death between 2011 and 2020 for adult patients prevalent to PD at the beginning of the year