
UK Renal Registry 16th Annual Report: Chapter 2 UK RRT Prevalence in 2012: National and Centre-specific Analyses

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Key Words

Chronic kidney disease · Comorbidity · Diabetes · Dialysis · End stage renal disease · Established renal failure · Ethnicity · Haemodialysis · Peritoneal dialysis · Prevalence · Primary Care Trust · Renal replacement therapy · Transplantation · Treatment modality

Summary

- There were 54,824 adult patients receiving renal replacement therapy (RRT) in the UK on 31st December 2012, an absolute increase of 3.7% from 2011. The actual number of patients increased across all modalities: 2.3% increase haemodialysis (HD), 0.3% peritoneal dialysis (PD) and 5.6% for those with a functioning transplant.
- The UK adult prevalence of RRT was 861 per million population (pmp). The reported prevalence in 2000 was 523 pmp.
- The number of patients receiving home HD increased by 19.3% from 905 patients in 2011 to 1,080 patients in 2012.
- The median age of prevalent patients was 58 years (HD 66 years, PD 63 years, transplant 52 years). In 2000 the median age was 55 years (HD 63 years, PD 58 years, transplant 48 years). The percentage of RRT patients aged greater than 70 years increased from 19.2% in 2000 to 24.9% in 2012.
- For all ages, the prevalence rate in men exceeded that in women, peaking in age group 80–84 years at 2,973 pmp and for females in age group 75–79 years at 1,528 pmp.
- The most common identifiable renal diagnosis was glomerulonephritis (18.8%), followed by uncertain aetiology (16.7%) and diabetes (15.5%).
- Transplantation continued as the most common treatment modality (50.4%), HD was used in 42.7% and PD in 6.9% of RRT patients.
- Prevalence rates in patients aged >85 years continued to increase between 2011 and 2012 (952 pmp to 983 pmp). There was 20 fold variation between PCT/HBs in prevalence rates in patients aged >80 years suggesting there was uncertainty regarding the risks and benefits of RRT in the elderly.
- In 2012, 20.7% of the prevalent UK RRT population (with ethnicity assigned) were from ethnic minorities compared to 14.9% in 2007.
- There were national, regional and dialysis centre level variations in prevalence rates. A significant factor in this variation was the ethnic mix of local populations, but a large amount of the variation remains unexplained. Assessment of conservatively managed stage 5 CKD patients might explain more of this variation.

Introduction

This chapter presents data on all adult patients on RRT in the UK at the end of 2012. The UK Renal Registry (UKRR) received data returns for 2012 from all five renal centres in Wales, all five in Northern Ireland and all 52 in England. Data from all nine centres in Scotland were obtained from the Scottish Renal Registry. Demographic data on children and young adults can be found in chapter 7.

These analyses of prevalent RRT patients are performed annually to aid clinicians and policy makers in planning future RRT requirements in the UK. It is important to understand national, regional and centre level variation in numbers of prevalent patients as part of the planning process. In addition, knowledge about variation in case mix is also reported to improve understanding of where resources should be focussed to improve equity of provision of RRT in the UK.

The term established renal failure (ERF) used within this chapter is synonymous with the terms end stage renal failure and end stage renal disease, which are in more widespread international usage. Patients have disliked the term 'end stage' which reflects the inevitable outcome of this disease.

Methods

These analyses relate to the prevalent RRT cohort in the UK in 2012. The cohort was defined as all adult patients receiving RRT on the UKRR database on 31st December 2012. Population estimates were obtained from the UK Office for National Statistics (ONS) [1], the National Records of Scotland (NRS) [2] and the Northern Ireland Statistic and Research Agency (NISRA) [3].

The number of adult prevalent RRT patients was calculated for the UK as a whole and for each UK country, using UKRR data from all renal centres. Crude prevalence rates were calculated per million population (pmp) and standardised prevalence ratios were calculated as detailed in appendix D: Methodology used for Analyses (www.renalreg.com) for Primary Care Trusts (PCTs) in England, Health & Social Care Areas in Northern Ireland, Local Health Boards in Wales and Health Boards in Scotland. These areas will be referred to in this report as 'PCT/HBs' reflecting the period of time before re-organisation of PCTs in England. Briefly, data from all areas were used to calculate overall age and gender specific prevalence rates. The age and gender breakdown of the population in each PCT/HB were obtained from the mid-2011 population estimate based on 2011 Census data from the ONS [1], the NRS [2] and the NISRA [3]. The population breakdown and the overall prevalence rates were used to calculate the expected age and gender specific prevalence numbers for each PCT/HB for each of the last six years. The age and gender

standardised prevalence ratio was the observed prevalence number divided by the expected prevalence number. The expected number of prevalent patients in a specific age/sex group (e.g. females 70–74) for a PCT is found by multiplying the total number of people (from the census) in that age/sex group in that PCT by the overall rate in the whole of the UK for that same age/sex group. Summing together the expected numbers in each of the age/sex groups gives the overall expected number of prevalent patients for that PCT. A ratio below 1 indicates that the observed number was less than expected given the area's population structure. This was statistically significant at the 5% level if the upper confidence limit was less than 1. To enable assessment of whether a centre was an outlier in this regard, funnel plots for smaller and larger populations have been included (appendix D: figures D3, D4) which show the 95% confidence intervals around the national average prevalence. The proportion of non-Whites in each PCT/HB was obtained from the ONS [1], the NRS [2] and the NISRA [3].

The prevalence rate per million population for each centre was calculated using a derived catchment population. For a full description of the methodology used to estimate the catchment populations see appendix E: Methodology for Estimating Catchment Populations Analyses (www.renalreg.com). For Scotland, mid-2011 populations of Health Boards (from the General Register Office for Scotland) were converted to centre level populations using an approximate mapping of renal centres to HBs supplied by the Scottish Renal Registry. Estimates of the catchment populations in Northern Ireland were supplied by personal communication from Dr D Fogarty.

Throughout this chapter, haemodialysis refers to all modes of HD treatment, including haemodiafiltration (HDF). Several centres reported significant numbers of patients on HDF, but other centres did not differentiate this treatment type in their UKRR returns. Where joint care of renal transplant recipients between the referring centre and the transplant centre occurred, the patient was allocated to the centre which saw the patient most frequently, usually the referring centre. Thus the number of patients allocated to a transplant centre is often lower than that recorded by the centre itself and as a converse pre-emptively transplanted patients are sometimes allocated to the transplanting centre rather than the referring centre if no transfer out code had been sent through. Queries and updated information are welcomed by the UKRR at any point during the year if this has occurred.

Prevalent patients on RRT in 2012 were examined by time on RRT, age group, gender, ethnic origin, primary renal disease, presence of diabetes and treatment modality (see appendix H: Coding (www.renalreg.com)). In this year's analysis of prevalence, only adult patients on RRT contributed to the numerator. In previous years, children have also been included in the numerator. Data on the paediatric population are presented in chapter 7. Some centres electronically upload ethnicity coding to their renal information technology (IT) system from the hospital Patient Administration System (PAS). Ethnicity coding in these PAS systems is based on self-reported ethnicity and uses a different coding system to those centres not linked to PAS [4]. For the remaining centres, ethnicity coding is performed by clinical staff and recorded directly into the renal IT system (using a variety of coding systems). For all these analyses, data on ethnic origin were grouped into Whites, South Asians, Blacks, Chinese and

Table 2.1. Prevalence of adult RRT in the UK on 31/12/2012

	England	N Ireland	Scotland	Wales	UK
All UK centres	46,076	1,520	4,492	2,736	54,824
Total estimated population, mid-2012 (millions)*	53.5	1.8	5.3	3.1	63.7
Prevalence rate HD (pmp)	369	381	361	351	367
Prevalence rate PD (pmp)	61	46	44	65	60
Prevalence rate dialysis (pmp)	430	427	405	416	427
Prevalence rate transplant (pmp)	432	407	440	474	434
Prevalence rate total (pmp)	861	834	845	890	861
95% confidence intervals total (pmp)	853–869	792–875	821–870	857–923	853–868

*Data from the Office for National Statistics, National Records of Scotland and the Northern Ireland Statistics and Research Agency – based on the 2011 census

Others as described in appendix H: Coding (www.renalreg.com). Time on RRT was defined as median time on treatment and was calculated from the most recent start date. Patients without an accurate start date were excluded from this calculation. Analyses were done for the UK as a whole, by UK country, at centre level and split by treatment modality when appropriate.

Chi-squared test, Fisher's exact test, linear regression and Kruskal Wallis tests were used as appropriate to test for significant differences between groups. The data were analysed using SAS 9.3.

Results

Prevalent patient numbers and changes in prevalence

The number of patients for each country (table 2.1) was calculated by adding the patient numbers in each renal centre and these differ marginally from those quoted elsewhere when patients are allocated to geographical areas by their individual postcodes, as some centres treat patients across national boundaries.

There were 54,824 adult patients receiving RRT in the UK at the end of 2012, giving an adult UK population prevalence of 861 pmp (table 2.1) compared with 841 pmp in 2011. Prevalence rates increased in all of the UK countries in 2012. PD prevalence increased in Northern Ireland but remained static or decreased in the other three countries compared with 2011. The decline in PD prevalence in the UK overall noted since 1997 seems to have plateaued in 2011 and 2012 with a static overall prevalence of 60 pmp. Once more, the prevalence of transplanted patients increased in the UK. Northern Ireland had a higher RRT prevalence rate for patients aged 65 and older compared with the other UK countries (figure 2.1). In the UK, the RRT prevalence rate in patients aged 80–84 continued to rise over time from 1,824 per million age related population (pmp) in 2011 to 1,896 pmp in 2012 and in patients aged >85 years from 952 pmp in 2011 to

983 pmp in 2012. It is likely that this ageing of the prevalent population was due to an increasing number of older patients starting RRT, although improving patient survival will also contribute.

Prevalent patients by RRT modality and centre

The number of prevalent patients in each renal centre and the distribution of their treatment modalities varied widely (table 2.2). Many factors including geography, local population density, age distribution, ethnic composition, prevalence of diseases predisposing to kidney disease and the social deprivation index of that population may contribute to this.

Changes in prevalence

Overall growth in the prevalent UK RRT population from 2011 to 2012 was 3.7% (table 2.3), an annual growth rate which has been fairly consistent over the last 10–15 years (figure 2.2). Most of the growth in the prevalent RRT population was due to a continued increase in the size of the prevalent RRT population in England, Wales

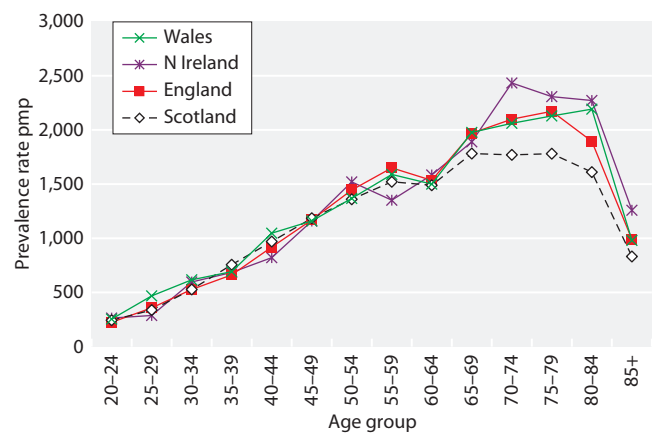


Fig. 2.1. Prevalence rates per million population by age group and UK country on 31/12/2012

Table 2.2. Number of prevalent RRT patients by treatment modality and centre on 31/12/2012

Centre	HD	PD	Dialysis	Transplant	RRT	Catchment population (millions)	2012 crude rate pmp	(95% CI)
England								
B Heart	435	47	482	188	670	0.74	908	(839–977)
B QEH ^a	926	159	1,085	886	1,971	1.70	1,160	(1,109–1,211)
Basldn	164	32	196	68	264	0.42	636	(559–713)
Bradfd	208	29	237	271	508	0.65	779	(711–847)
Brightn	371	85	456	375	831	1.30	641	(597–684)
Bristol ^a	494	66	560	777	1,337	1.44	929	(879–979)
Camb ^a	350	35	385	728	1,113	1.16	961	(905–1,018)
Carlis	61	27	88	128	216	0.32	673	(584–763)
Carsh	764	112	876	599	1,475	1.91	771	(732–811)
Chelms	129	26	155	69	224	0.51	439	(381–496)
Colchr	117		117		117	0.30	391	(320–462)
Covnt ^a	363	100	463	437	900	0.89	1,009	(943–1,075)
Derby	220	89	309	168	477	0.70	679	(618–740)
Donc	172	29	201	60	261	0.41	636	(559–714)
Dorset	260	48	308	302	610	0.86	708	(652–764)
Dudley	169	63	232	84	316	0.44	715	(636–794)
Exeter	397	77	474	372	846	1.09	777	(724–829)
Glouc	219	36	255	162	417	0.59	710	(642–778)
Hull	334	90	424	365	789	1.02	773	(719–827)
Ipswi	129	31	160	179	339	0.40	850	(759–940)
Kent	384	62	446	476	922	1.22	753	(704–802)
L Barts ^a	895	195	1,090	865	1,955	1.83	1,068	(1,021–1,116)
L Guys ^a	626	31	657	1,088	1,745	1.08	1,612	(1,537–1,688)
L Kings	492	86	578	340	918	1.17	784	(733–834)
L Rfree ^a	714	120	834	1,031	1,865	1.52	1,228	(1,173–1,284)
L St.G ^a	284	54	338	386	724	0.80	907	(841–974)
L West ^a	1,426	52	1,478	1,626	3,104	2.40	1,294	(1,248–1,340)
Leeds ^a	495	87	582	834	1,416	1.67	848	(804–892)
Leic ^a	872	160	1,032	950	1,982	2.44	814	(778–849)
Liv Ain	175	20	195		195	0.48	403	(346–459)
Liv RI ^a	366	63	429	812	1,241	1.00	1,241	(1,172–1,310)
M RI ^a	507	82	589	1,121	1,710	1.53	1,117	(1,064–1,170)
Middlbr	339	11	350	439	789	1.00	786	(731–841)
Newc ^a	285	47	332	614	946	1.12	844	(790–898)
Norwch	318	55	373	239	612	0.79	778	(716–840)
Nottm ^a	376	81	457	549	1,006	1.09	925	(868–982)
Oxford ^a	423	86	509	1,026	1,535	1.69	908	(863–953)
Plymth ^{ab}	131	35	166	293	459	0.47	977	(888–1,067)
Ports ^a	555	83	638	809	1,447	2.02	715	(678–752)
Prestn	536	69	605	476	1,081	1.49	724	(681–767)
Redng	271	72	343	328	671	0.91	737	(682–793)
Salford	380	104	484	398	882	1.49	592	(553–631)
Sheff ^a	588	69	657	650	1,307	1.37	953	(901–1,005)
Shrew	195	41	236	118	354	0.50	707	(633–781)
Stevng	409	32	441	224	665	1.20	552	(510–594)
Sthend	118	14	132	81	213	0.32	672	(582–763)
Stoke	305	79	384	311	695	0.89	781	(723–839)
Sund	198	22	220	201	421	0.62	681	(616–746)
Truro	154	23	177	200	377	0.41	913	(820–1,005)
Wirral	202	32	234		234	0.57	409	(357–462)
Wolve	285	92	377	151	528	0.67	790	(722–857)
York	135	32	167	229	396	0.49	805	(725–884)

Table 2.2. Continued

Centre	HD	PD	Dialysis	Transplant	RRT	Catchment population (millions)	2012 crude rate pmp	(95% CI)
Northern Ireland								
Antrim	132	13	145	80	225	0.30	750	(652–848)
Belfast ^a	228	28	256	445	701	0.55	1,275	(1,180–1,369)
Newry	91	16	107	81	188	0.28	671	(575–767)
Ulster	108	8	116	32	148	0.30	493	(414–573)
West NI	135	19	154	104	258	0.35	737	(647–827)
Scotland								
Abrdn	230	25	255	249	504	0.60	840	(767–913)
Airdrie	194	11	205	183	388	0.56	693	(624–762)
D & Gall	51	16	67	61	128	0.15	853	(706–1,001)
Dundee	181	21	202	201	403	0.41	983	(887–1,079)
Dunfn	147	20	167	111	278	0.37	751	(663–840)
Edin ^a	265	37	302	420	722	0.96	752	(697–807)
Glasgw ^a	624	47	671	878	1,549	1.51	1,026	(975–1,077)
Inverns	74	18	92	126	218	0.34	641	(556–726)
Klmarnk	150	41	191	111	302	0.37	816	(724–908)
Wales								
Bangor	90	15	105		105	0.22	481	(389–573)
Cardff ^a	482	77	559	989	1,548	1.42	1,090	(1,036–1,144)
Clwyd	84	18	102	70	172	0.19	907	(771–1,042)
Swanse	328	68	396	266	662	0.89	748	(691–805)
Wrexm	96	22	118	131	249	0.24	1,036	(908–1,165)
England	19,721	3,272	22,993	23,083	46,076			
N Ireland	694	84	778	742	1,520			
Scotland	1,916	236	2,152	2,340	4,492			
Wales	1,080	200	1,280	1,456	2,736			
UK	23,411	3,792	27,203	27,621	54,824			

Blank cells indicate no patients on that treatment type attending that centre when data were collected

Centres prefixed 'L' are London centres

The numbers of patients calculated for each country quoted above differ marginally from those quoted elsewhere when patients are allocated to areas by their individual post codes, as some centres treat patients from across national boundaries

^aTransplant centres

^bThe catchment population for Plymouth may be too low, see appendix E

and Scotland, with slower growth in the prevalent RRT population in Northern Ireland. The increases in prevalence across Scotland and England were similar at ~4%. The increase in prevalence in Wales was 2.4%. In Northern Ireland the increase in the prevalent RRT population was lower in magnitude at 1.5% between 2011 and 2012.

From 2011 to 2012, there was a 0.7% pmp growth in prevalent HD patients, a 4.3% pmp growth in those with a functioning transplant and a 1.5% pmp decline in patients on PD. Between 2007 and 2012 there was an average annual 2.6% pmp growth in HD, 4.8% pmp fall in PD, and 4.6% pmp growth in prevalent transplant patients in the UK (table 2.4). In the same period there was an average annual 16.8% pmp growth in the use of home haemodialysis (data not shown).

Prevalence rates between centres showed marked variation (table 2.2); the long-term (1997–2012) UK

prevalence pattern by treatment modality is shown in figure 2.2. The steady growth in transplant numbers was maintained in 2012. The increase in haemodialysis patient numbers has been associated with an increase in home haemodialysis, from 2.0% of the dialysis population in 2007 to 4.0% in 2012. The slow contraction in PD observed in more recent years may have started to plateau in 2012, with only a small reduction in the prevalent PD population from 7.2% in 2011 to 6.9% in 2012.

Prevalence of RRT in Primary Care Trusts in England, Health and Social Care Areas in Northern Ireland (HBs), Local Health Boards in Wales (HBs) and Health Boards in Scotland (HBs)

The need for RRT depends on many factors such as predisposing conditions but also on social and

Table 2.3. Number of prevalent patients on RRT by centre at year end 2008–2012

Centre	Date					% change 2011–2012	% annual change 2008–2012
	31/12/2008	31/12/2009	31/12/2010	31/12/2011	31/12/2012		
England							
B Heart	598	624	633	664	670	0.9	2.9
B QEH	1,714	1,821	1,844	1,912	1,971	3.1	3.6
Basldn	217	214	214	233	264	13.3	5.0
Bradfd	414	422	455	467	508	8.8	5.2
Brightn	722	737	770	775	831	7.2	3.6
Bristol	1,247	1,232	1,261	1,315	1,337	1.7	1.8
Camb	927	940	1,004	1,074	1,113	3.6	4.7
Carlisle	205	205	206	215	216	0.5	1.3
Carsh	1,249	1,302	1,377	1,380	1,475	6.9	4.2
Chelms	207	225	238	216	224	3.7	2.0
Colchr	118	116	120	119	117	−1.7	−0.2
Covnt	745	794	844	874	900	3.0	4.8
Derby	389	419	459	448	477	6.5	5.2
Donc	154	196	222	248	261	5.2	14.1
Dorset	515	553	585	586	610	4.1	4.3
Dudley	275	292	303	284	316	11.3	3.5
Exeter	708	731	785	796	846	6.3	4.6
Glouc	325	366	377	381	417	9.4	6.4
Hull	696	725	725	757	789	4.2	3.2
Ipswi	294	312	316	340	339	−0.3	3.6
Kent	714	744	797	864	922	6.7	6.6
L Barts	1,526	1,638	1,778	1,872	1,955	4.4	6.4
L Guys	1,447	1,613	1,625	1,681	1,745	3.8	4.8
L Kings	784	786	837	858	918	7.0	4.0
L Rfree	1,510	1,546	1,639	1,727	1,865	8.0	5.4
L St.G	624	663	684	716	724	1.1	3.8
L West	2,576	2,734	2,879	3,020	3,104	2.8	4.8
Leeds	1,342	1,348	1,383	1,425	1,416	−0.6	1.4
Leic	1,660	1,737	1,809	1,927	1,982	2.9	4.5
Liv Ain	130	147	159	189	195	3.2	10.7
Liv RI	1,200	1,223	1,238	1,250	1,241	−0.7	0.8
M RI	1,424	1,450	1,552	1,646	1,710	3.9	4.7
Middlbr	682	707	711	752	789	4.9	3.7
Newc	901	898	900	917	946	3.2	1.2
Norwch	567	591	615	611	612	0.2	1.9
Nottm	955	975	1,008	1,019	1,006	−1.3	1.3
Oxford	1,318	1,343	1,421	1,446	1,535	6.2	3.9
Plymth	443	456	461	465	459	−1.3	0.9
Ports	1,268	1,301	1,333	1,394	1,447	3.8	3.4
Prestn	876	940	970	1,011	1,081	6.9	5.4
Redng	578	618	636	688	671	−2.5	3.8
Salford	758	784	837	820	882	7.6	3.9
Sheff	1,216	1,216	1,254	1,260	1,307	3.7	1.8
Shrew	325	337	343	342	354	3.5	2.2
Stevng	580	582	606	639	665	4.1	3.5
Sthend	204	207	212	207	213	2.9	1.1
Stoke	603	643	658	696	695	−0.1	3.6
Sund	343	368	369	388	421	8.5	5.3
Truro	297	320	335	352	377	7.1	6.1
Wirral	216	223	223	234	234	0.0	2.0
Wolve	490	490	531	513	528	2.9	1.9
York	276	321	338	340	396	16.5	9.4

Table 2.3. Continued

Centre	Date					% change 2011–2012	% annual change 2008–2012
	31/12/2008	31/12/2009	31/12/2010	31/12/2011	31/12/2012		
N Ireland							
Antrim	220	215	217	220	225	2.3	0.6
Belfast	726	680	682	685	701	2.3	−0.9
Newry	163	170	177	190	188	−1.1	3.6
Ulster	97	114	115	137	148	8.0	11.1
West NI	236	258	256	266	258	−3.0	2.3
Scotland							
Abrdn	456	452	462	478	504	5.4	2.5
Airdrie	245	310	326	344	388	12.8	12.2
D & Gall	113	118	118	122	128	4.9	3.2
Dundee	370	395	385	400	403	0.8	2.2
Dunfn	220	241	263	278	278	0.0	6.0
Edinb	695	721	730	700	722	3.1	1.0
Glasgw	1,568	1,469	1,505	1,477	1,549	4.9	−0.3
Inverns	212	228	230	223	218	−2.2	0.7
Klmarnk	263	273	284	299	302	1.0	3.5
Wales							
Bangor	112	110	113	108	105	−2.8	−1.6
Cardff	1,374	1,426	1,517	1,534	1,548	0.9	3.0
Clwyd	146	144	142	136	172	26.5	4.2
Swanse	602	598	624	656	662	0.9	2.4
Wrexm	223	219	223	237	249	5.1	2.8
England	39,552	41,175	42,879	44,353	46,076	3.9	3.9
N Ireland	1,442	1,437	1,447	1,498	1,520	1.5	1.3
Scotland	4,142	4,207	4,303	4,321	4,492	4.0	2.0
Wales	2,457	2,497	2,619	2,671	2,736	2.4	2.7
UK	47,593	49,316	51,248	52,843	54,824	3.7	3.6

demographic factors such as age, gender, social deprivation and ethnicity. Hence, comparison of crude prevalence rates by geographical area can be misleading. This section, as in previous reports, uses age and gender stan-

dardisation to compare RRT prevalence rates. The ethnic minority profile is also provided to help understand the differences in standardised prevalence ratios (SPRs). The impact of social deprivation was reported in the 2003 UKRR Report [4].

There were substantial variations in the crude PCT/HB prevalence rates pmp, from 430 pmp (Shetland, population 23,200) to 1,630 pmp (Brent, population 312,200). There were similar variations in the standardised prevalence ratios (ratio of observed:expected prevalence rate given the age/gender breakdown of the PCT/HB) from 0.48 (Shetland) to 2.23 (Brent) (table 2.5). Confidence intervals are not presented for the rates per million population for 2012 but figures D3 and D4 in appendix D (www.renalreg.com) can be used to determine if a PCT/HB falls within the range representing the 95% confidence limit of the national average prevalence rate. The annual standardised prevalence ratios were inherently more stable than the annual standardised incidence ratios (chapter 1).

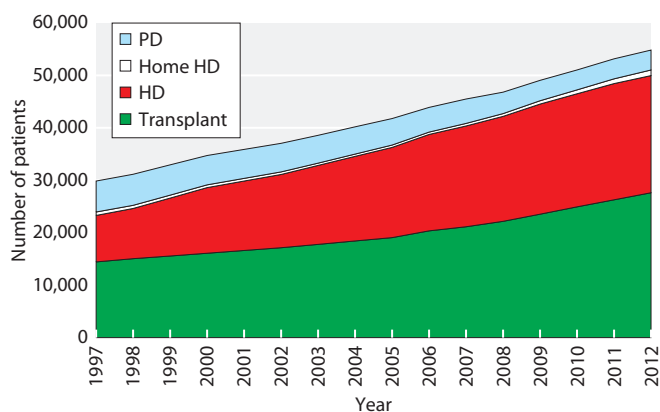


Fig. 2.2. Growth in prevalent patients by treatment modality at the end of each year 1997–2012

Table 2.4. Change in RRT prevalence rates pmp 2007–2012 by modality*

Year	Prevalence					% growth in prevalence pmp				
	HD pmp	PD pmp	Dialysis pmp	Transplant pmp	RRT pmp	HD	PD	Dialysis	Tx	RRT
2007	323	76	399	346	746					
2008	342	69	411	363	774	5.8	−9.0	2.9	4.9	3.8
2009	354	64	417	377	794	3.5	−7.8	1.6	3.7	2.6
2010	359	62	421	397	818	1.5	−3.2	0.8	5.4	3.0
2011	365	60	426	416	841	1.7	−2.2	1.1	4.7	2.9
2012	367	60	427	434	861	0.7	−1.5	0.4	4.3	2.3
Average annual growth 2007–2012						2.6	−4.8	1.4	4.6	2.9

*Differences in the figures for dialysis and RRT prevalence and the sum of the separate modalities are due to rounding

pmp – per million population

Tx = transplant

Factors associated with variation in standardised prevalence ratios in Primary Care Trusts in England, Health and Social Care Areas in Northern Ireland, Local Health Boards in Wales and Health Boards in Scotland

In 2012, there were 57 PCT/HBs with a significantly low SPR, 73 with a ‘normal’ SPR and 47 with a significantly high SPR (table 2.5). The areas with high and low SPRs have been fairly consistent over the last few years. They tend to reflect the demographics of the regions in question such that urban, ethnically diverse populations in areas of high social deprivation have the highest prevalence rates of renal replacement therapy. Mean SPRs were significantly higher in the 75 PCT/HBs with an ethnic minority population greater than 10% than in those with lower ethnic minority populations ($p < 0.001$). The SPR was positively correlated with the percentage of the population that are non-White ($r = 0.69$ $p < 0.001$). In 2012 for each 10% increase in ethnic minority population, the standardised prevalence ratio increased by 0.16 (equates to ~16%). In figure 2.3, the relationship between the ethnic composition of a PCT/HB and its SPR is demonstrated.

Only five of the 102 PCT/HBs with ethnic minority populations of less than 10% had high SPRs: Abertawe Bro Morgannwg University, Aneurin Bevan, Belfast, Cwm Taf, and Greater Glasgow & Clyde. Forty-two (56%) of the 75 PCT/HBs with ethnic minority populations greater than 10% had high SPRs, whereas seven (9%) (Bedfordshire, Brighton and Hove City, Buckinghamshire, Hertfordshire, Leeds, Richmond & Twickenham and Trafford) had low SPRs. However, not all PCT/HBs with a high (>15%) ethnic minority population also had higher than expected RRT prevalence rates (e.g. Bromley, Oldham, Kensington). The age and gender

standardised prevalence ratios in each region of England and in Wales, Northern Ireland and Scotland are presented in table 2.6. These calculations have not taken into account variation in ethnicity between areas. Wales and Northern Ireland previously had higher than expected prevalence rates but in more recent years were similar to their expected rates. Scotland had lower than expected prevalence rates of RRT. There was marked variation (20-fold) in prevalence rates in over 80 year olds between PCT/HBs (data not shown).

Case mix in prevalent RRT patients

Time on RRT (vintage)

Table 2.7 shows the median time, in years, since starting RRT of prevalent RRT patients on 31st December 2012. Median time on RRT for all prevalent patients remained fairly static at 5.9 years. Patients with functioning transplants had survived a median of 10.2 years on RRT whilst the median time on RRT of HD and PD patients was significantly less (3.4 and 1.7 years respectively, $p < 0.001$).

Age

The median age of prevalent UK patients on RRT at 31st December 2012 was static (58.3 years) compared with 2011 (58.2 years) (table 2.8) and significantly higher than in 2005 when it was 55 years. There were marked differences between modalities; the median age of HD patients (66.4 years) was greater than that of those on PD (63.4 years) and substantially higher than that of transplanted patients (52.3 years). Half of the UK prevalent RRT population was in the 40–64 years age group (table 2.9). The proportion of patients aged 75 years and older was 17.1% in Wales, 16.1% in Northern Ireland, 15.7% in England and 13.4% in Scotland

Table 2.5. Prevalence of RRT and standardised prevalence ratios in PCT/HB areas

PCT/HB – PCT in England, Health and Social Care Areas in Northern Ireland, Local Health Boards in Wales and Health Boards in Scotland
 O/E – standardised prevalence ratio. Ratio of observed:expected rate of RRT given the age and gender breakdown of the area

LCL – lower 95% confidence limit

UCL – upper 95% confidence limit

pmp – per million population

Blank cells – no data returned to the UKRR for that year

Areas with significantly low prevalence ratios in 2012 are italicised in greyed areas, those with significantly high prevalence ratios in 2012 are bold in greyed areas

Population data from the Office for National Statistics, National Records of Scotland and the Northern Ireland Statistics and Research Agency – based on the 2011 Census

% non-White – percentage of the PCT/HB population that is non-White, from 2011 Census for E, W & NI (2001 for Scotland)

ONS specifies that the populations should be rounded to the nearest 100 when being presented

UK area	Name	Total population	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2011 O/E	2012			% non-White	
								O/E	95% LCL	95% UCL		Crude rate pmp
North East	<i>County Durham</i>	513,000	0.90	0.87	0.86	0.85	0.87	0.87	0.79	0.96	801	1.8
	Darlington	105,600	0.86	0.89	0.91	0.85	0.79	0.86	0.69	1.07	767	3.8
	<i>Gateshead</i>	200,300	0.87	0.82	0.86	0.84	0.81	0.84	0.72	0.99	759	3.7
	Hartlepool	92,100	0.88	0.94	0.92	0.86	0.85	0.91	0.72	1.14	804	2.3
	Middlesbrough	138,400	1.07	1.10	1.10	1.10	1.10	1.14	0.96	1.35	932	11.8
	Newcastle	279,100	1.00	1.01	0.97	0.91	0.90	0.89	0.77	1.02	692	14.5
	North Tyneside	201,200	0.98	0.93	0.95	0.97	0.91	0.92	0.79	1.07	835	3.4
	<i>Northumberland</i>	316,300	0.85	0.82	0.77	0.74	0.75	0.74	0.65	0.84	724	1.6
	Redcar and Cleveland	135,200	1.04	1.02	1.01	0.97	1.01	0.95	0.79	1.13	888	1.5
	South Tyneside	148,200	1.05	0.98	1.06	0.96	0.98	0.93	0.78	1.11	850	4.1
	Stockton-on-Tees Teaching	191,800	0.84	0.84	0.81	0.80	0.85	0.87	0.74	1.02	751	5.4
	Sunderland Teaching	275,300	0.96	0.99	0.97	0.97	0.93	0.93	0.82	1.06	839	4.1
	North West	Ashton, Leigh and Wigan	318,100	0.86	0.80	0.80	0.81	0.86	0.91	0.81	1.03	811
Blackburn with Darwen Teaching		147,700	1.31	1.23	1.23	1.21	1.23	1.21	1.03	1.43	941	30.8
Blackpool		142,100	0.77	0.80	0.86	0.81	0.81	0.93	0.78	1.11	859	3.3
Bolton Teaching		277,300	1.05	1.02	0.94	1.02	1.05	1.05	0.92	1.18	880	18.1
Bury		185,400	0.88	0.85	0.92	0.89	0.90	0.92	0.78	1.08	793	10.8
<i>Central and Eastern Cheshire</i>		462,800	0.82	0.79	0.79	0.79	0.79	0.79	0.71	0.88	741	3.1
<i>Central Lancashire</i>		467,400	0.80	0.83	0.86	0.85	0.85	0.88	0.79	0.97	774	7.8
<i>Cumbria Teaching</i>		499,800	0.76	0.75	0.73	0.72	0.70	0.70	0.63	0.78	688	1.5
East Lancashire Teaching		382,500	1.09	1.04	0.99	0.97	0.97	0.92	0.82	1.03	810	11.6
Halton and St Helens		301,100	0.93	0.86	0.88	0.90	0.94	0.94	0.83	1.06	837	2.0
Heywood, Middleton and Rochdale		211,900	0.99	0.99	1.02	0.95	1.00	1.01	0.87	1.17	830	18.3
Knowsley		145,900	1.14	1.08	1.05	0.96	0.96	0.97	0.81	1.16	836	2.8
Liverpool		465,700	1.06	1.07	1.08	1.04	1.04	1.01	0.91	1.12	816	11.1
Manchester Teaching		502,900	1.05	1.12	1.15	1.18	1.16	1.21	1.09	1.33	799	33.4
<i>North Lancashire Teaching</i>		321,600	0.78	0.75	0.76	0.74	0.75	0.76	0.67	0.86	731	3.1
Oldham		225,200	0.93	0.93	0.95	0.92	0.91	0.93	0.80	1.08	755	22.5
Salford		234,500	0.79	0.84	0.83	0.84	0.84	0.87	0.75	1.01	695	9.9
Sefton		274,000	0.87	0.83	0.83	0.86	0.92	0.89	0.78	1.01	850	2.6
<i>Stockport</i>		283,300	0.87	0.88	0.83	0.86	0.87	0.85	0.75	0.97	777	7.9
Tameside and Glossop		252,900	1.03	0.99	0.98	0.99	0.98	0.97	0.85	1.11	842	8.2
<i>Trafford</i>	227,100	0.76	0.72	0.75	0.86	0.82	0.85	0.73	0.99	735	14.5	
<i>Warrington</i>	202,700	0.91	0.88	0.96	0.87	0.85	0.84	0.71	0.98	735	4.1	
Western Cheshire	237,400	0.93	0.92	0.95	0.97	0.99	0.96	0.84	1.10	906	2.8	
<i>Wirral</i>	319,800	0.93	0.86	0.83	0.80	0.80	0.80	0.70	0.91	738	3.0	
Yorkshire and the Humber	Barnsley	231,900	1.05	1.06	1.08	1.12	1.10	1.06	0.93	1.21	957	2.1
	Bradford and Airedale Teaching	523,100	1.13	1.12	1.10	1.17	1.16	1.22	1.12	1.34	941	32.6
	Calderdale	204,200	1.08	1.06	1.07	1.09	1.02	0.96	0.82	1.11	838	10.3
	Doncaster	302,500	0.97	0.96	0.97	0.95	0.99	0.97	0.86	1.10	860	4.7
	<i>East Riding of Yorkshire</i>	334,700	0.81	0.83	0.84	0.81	0.81	0.81	0.71	0.91	804	1.9

Table 2.5. Continued

UK area	Name	Total population	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2011 O/E	2012			% non-White	
								O/E	95% LCL	95% UCL		Crude rate pmp
Yorkshire and the Humber	Hull Teaching	256,100	1.08	1.00	1.05	1.03	0.99	0.96	0.84	1.11	777	5.9
	Kirklees	423,000	1.08	1.01	1.01	1.02	1.01	1.02	0.92	1.13	856	20.9
	Leeds	750,700	0.98	0.93	0.91	0.91	0.90	0.87	0.80	0.95	701	14.9
	North East Lincolnshire	161,200	0.99	1.00	0.98	0.97	1.03	1.01	0.86	1.18	900	2.6
	North Lincolnshire	163,600	0.88	0.85	0.75	0.71	0.80	0.85	0.72	1.01	783	4.1
	North Yorkshire and York	799,000	0.80	0.79	0.81	0.81	0.81	0.84	0.78	0.91	794	3.4
	Rotherham	257,700	1.11	1.13	1.10	1.13	1.06	1.05	0.92	1.19	939	6.4
	Sheffield	551,800	1.11	1.10	1.10	1.13	1.10	1.11	1.02	1.21	901	16.3
Wakefield District	326,400	0.84	0.81	0.81	0.81	0.84	0.86	0.76	0.97	772	4.6	
East Midlands	Bassetlaw	113,000	0.97	0.90	0.80	0.78	0.78	0.84	0.68	1.03	788	2.6
	Derby City	248,900	0.99	1.05	1.14	1.11	1.10	1.15	1.01	1.31	928	19.7
	Derbyshire County	737,500	0.87	0.87	0.85	0.84	0.85	0.82	0.76	0.89	773	2.5
	Leicester City	329,600	1.66	1.68	1.69	1.73	1.75	1.76	1.60	1.93	1265	49.5
	Leicestershire County and Rutland	688,800	0.90	0.89	0.88	0.89	0.87	0.86	0.79	0.94	790	8.3
	Lincolnshire Teaching	717,200	0.78	0.77	0.76	0.77	0.80	0.79	0.73	0.86	761	2.4
	Northamptonshire Teaching	694,000	0.91	0.92	0.91	0.90	0.91	0.91	0.83	0.99	784	8.5
	Nottingham City	303,900	1.15	1.16	1.20	1.27	1.21	1.19	1.05	1.34	849	28.5
Nottinghamshire County Teaching	673,800	1.00	0.99	0.96	0.95	0.95	0.91	0.84	0.99	842	4.8	
West Midlands	Birmingham East and North	421,400	1.52	1.57	1.54	1.49	1.52	1.53	1.40	1.67	1179	36.1
	Coventry Teaching	316,900	1.19	1.21	1.25	1.30	1.33	1.38	1.24	1.54	1079	26.2
	Dudley	313,300	0.91	0.88	0.92	0.90	0.84	0.91	0.81	1.03	827	10.0
	Heart of Birmingham Teaching	299,200	2.25	2.28	2.30	2.28	2.18	2.18	1.98	2.40	1380	70.5
	Herefordshire	183,600	0.88	0.80	0.84	0.78	0.79	0.79	0.67	0.93	773	1.8
	North Staffordshire	212,900	0.88	0.88	0.92	0.88	0.93	0.88	0.76	1.02	827	3.5
	Sandwell	309,000	1.44	1.52	1.58	1.55	1.55	1.53	1.39	1.69	1233	30.1
	Shropshire County	307,100	0.90	0.93	0.90	0.87	0.85	0.84	0.74	0.95	808	2.0
	Solihull	206,900	0.97	0.92	0.98	0.95	0.92	0.87	0.75	1.02	802	10.9
	South Birmingham	353,700	1.31	1.32	1.34	1.30	1.30	1.28	1.16	1.42	1001	25.3
	South Staffordshire	628,500	0.91	0.91	0.87	0.87	0.90	0.84	0.77	0.92	781	4.7
	Stoke on Trent	256,900	1.11	1.07	1.11	1.12	1.12	1.07	0.94	1.22	911	11.0
	Telford and Wrekin	166,800	1.01	1.02	1.07	1.06	1.05	1.01	0.86	1.19	845	7.3
	Walsall Teaching	269,500	1.22	1.28	1.24	1.32	1.30	1.26	1.12	1.42	1076	21.1
	Warwickshire	546,600	1.02	0.98	1.00	1.01	1.01	0.98	0.90	1.07	900	7.3
Wolverhampton City	249,900	1.22	1.23	1.25	1.19	1.10	1.11	0.98	1.26	929	32.0	
Worcestershire	566,600	0.84	0.84	0.85	0.85	0.86	0.87	0.79	0.95	819	4.3	
East of England	Bedfordshire	413,500	0.85	0.87	0.86	0.88	0.86	0.88	0.79	0.99	771	11.2
	Cambridgeshire	622,300	0.87	0.83	0.85	0.88	0.91	0.87	0.80	0.96	758	7.4
	Hertfordshire	1,119,800	0.82	0.91	0.91	0.93	0.93	0.92	0.86	0.98	780	12.4
	Great Yarmouth and Waveney	212,800	0.54	0.82	0.91	0.97	0.97	0.93	0.80	1.07	902	2.7
	Luton	203,600	1.21	1.27	1.26	1.28	1.35	1.36	1.18	1.56	992	45.3
	Mid Essex	375,200	0.86	0.85	0.86	0.83	0.83	0.79	0.70	0.89	714	4.4
	Norfolk	762,000	0.94	0.92	0.89	0.85	0.82	0.79	0.73	0.85	761	3.5
	North East Essex	311,700		0.88	0.86	0.87	0.89	0.87	0.77	0.99	815	5.5
	Peterborough	184,500	1.03	0.96	1.02	1.00	1.03	1.00	0.85	1.18	792	17.5
	South East Essex	345,600	0.91	0.90	0.89	0.86	0.84	0.84	0.74	0.94	776	5.7
	South West Essex	407,100	0.94	0.97	0.95	0.96	0.98	0.97	0.87	1.08	818	9.8
	Suffolk	614,800	0.84	0.82	0.83	0.83	0.82	0.80	0.73	0.88	742	5.3
West Essex	289,600	0.75	0.69	0.71	0.75	0.74	0.82	0.72	0.94	732	8.1	
London	Barking and Dagenham	187,000	1.18	1.16	1.24	1.33	1.44	1.51	1.31	1.74	1027	41.7
	Barnet	357,500	1.40	1.45	1.41	1.48	1.47	1.51	1.38	1.67	1172	35.9
	Bexley	232,800	1.15	1.15	1.19	1.23	1.23	1.24	1.09	1.41	1044	18.1
	Brent Teaching	312,200	1.79	2.01	2.10	2.20	2.20	2.23	2.04	2.43	1630	63.7

Table 2.5. Continued

UK area	Name	Total population	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2011 O/E	2012			Crude rate pmp	% non-White
								O/E	95% LCL	95% UCL		
London	Bromley	310,600	1.00	1.04	1.00	1.03	1.02	0.99	0.88	1.12	866	15.7
	Camden	220,100	1.14	1.21	1.24	1.27	1.29	1.30	1.13	1.48	954	33.7
	City and Hackney Teaching	254,600	1.35	1.28	1.35	1.44	1.51	1.56	1.39	1.77	1017	44.6
	Croydon	364,800	1.31	1.31	1.38	1.37	1.42	1.45	1.31	1.59	1118	44.9
	Ealing	339,300	1.56	1.84	1.86	1.88	1.86	1.92	1.75	2.10	1426	51.0
	Enfield	313,900	1.40	1.41	1.39	1.40	1.51	1.52	1.37	1.68	1147	39.0
	Greenwich Teaching	255,500	1.06	1.15	1.18	1.30	1.34	1.34	1.19	1.52	959	37.5
	Hammersmith and Fulham	182,400	1.19	1.24	1.31	1.31	1.34	1.38	1.19	1.60	970	31.9
	Haringey Teaching	255,500	1.36	1.41	1.41	1.42	1.56	1.69	1.51	1.89	1186	39.5
	Harrow	240,500	1.45	1.67	1.76	1.82	1.87	1.86	1.67	2.06	1497	57.8
	Havering	237,900	0.82	0.82	0.84	0.82	0.87	0.88	0.76	1.02	778	12.3
	Hillingdon	275,500	0.92	1.31	1.32	1.33	1.41	1.44	1.29	1.61	1111	39.4
	Hounslow	254,900	1.20	1.41	1.44	1.51	1.58	1.62	1.44	1.81	1192	48.6
	Islington	206,300	1.35	1.27	1.29	1.37	1.42	1.58	1.38	1.79	1100	31.8
	Kensington and Chelsea	158,300	0.88	1.09	1.08	1.12	1.11	1.08	0.91	1.27	872	29.4
	Kingston	160,400	1.08	1.19	1.16	1.14	1.16	1.17	1.00	1.38	916	25.5
	Lambeth	304,500	1.56	1.55	1.61	1.58	1.67	1.73	1.56	1.92	1176	42.9
	Lewisham	276,900	1.65	1.62	1.71	1.65	1.71	1.75	1.58	1.95	1246	46.5
	Newham	310,500	1.48	1.52	1.57	1.77	1.87	1.90	1.72	2.11	1166	71.0
	Redbridge	281,400	1.22	1.34	1.39	1.47	1.43	1.50	1.34	1.67	1112	57.5
	<i>Richmond and Twickenham</i>	<i>187,500</i>	<i>0.64</i>	<i>0.70</i>	<i>0.76</i>	<i>0.77</i>	<i>0.77</i>	<i>0.77</i>	<i>0.65</i>	<i>0.93</i>	<i>640</i>	<i>14.0</i>
Southwark	288,700	1.65	1.68	1.71	1.76	1.85	1.89	1.71	2.09	1288	45.8	
Sutton and Merton	391,700	1.17	1.20	1.24	1.26	1.27	1.33	1.21	1.46	1054	28.4	
Tower Hamlets	256,000	1.22	1.26	1.39	1.44	1.47	1.54	1.36	1.76	914	54.8	
Waltham Forest	259,700	1.44	1.42	1.40	1.46	1.56	1.52	1.35	1.71	1078	47.8	
Wandsworth	307,700	1.33	1.33	1.40	1.38	1.34	1.29	1.15	1.45	894	28.6	
Westminster	219,600	0.98	1.12	1.20	1.22	1.30	1.31	1.15	1.50	1016	38.3	
South East Coast	<i>Brighton and Hove City</i>	<i>273,000</i>	<i>0.83</i>	<i>0.84</i>	<i>0.83</i>	<i>0.81</i>	<i>0.81</i>	<i>0.83</i>	<i>0.72</i>	<i>0.96</i>	<i>656</i>	<i>10.9</i>
	<i>East Sussex Downs and Weald</i>	<i>343,900</i>	<i>0.80</i>	<i>0.75</i>	<i>0.71</i>	<i>0.71</i>	<i>0.69</i>	<i>0.76</i>	<i>0.67</i>	<i>0.85</i>	<i>739</i>	<i>3.8</i>
	Eastern and Coastal Kent	759,600	0.87	0.92	0.93	0.96	0.96	0.97	0.90	1.05	878	5.0
	<i>Hastings and Rother</i>	<i>183,400</i>	<i>0.76</i>	<i>0.79</i>	<i>0.74</i>	<i>0.78</i>	<i>0.76</i>	<i>0.74</i>	<i>0.62</i>	<i>0.88</i>	<i>725</i>	<i>4.5</i>
	Medway	264,900	0.86	0.90	0.90	0.90	0.91	0.92	0.80	1.05	751	10.4
	<i>Surrey</i>	<i>1,124,800</i>	<i>0.85</i>	<i>0.87</i>	<i>0.88</i>	<i>0.88</i>	<i>0.87</i>	<i>0.89</i>	<i>0.84</i>	<i>0.95</i>	<i>794</i>	<i>9.5</i>
	<i>West Kent</i>	<i>706,800</i>	<i>0.85</i>	<i>0.88</i>	<i>0.89</i>	<i>0.86</i>	<i>0.85</i>	<i>0.87</i>	<i>0.80</i>	<i>0.95</i>	<i>768</i>	<i>7.7</i>
	<i>West Sussex</i>	<i>808,900</i>	<i>0.82</i>	<i>0.83</i>	<i>0.83</i>	<i>0.84</i>	<i>0.82</i>	<i>0.80</i>	<i>0.74</i>	<i>0.87</i>	<i>753</i>	<i>6.2</i>
South Central	Berkshire East	410,100	1.16	1.16	1.19	1.22	1.25	1.25	1.13	1.37	983	26.6
	Berkshire West	464,400	1.11	1.10	1.11	1.04	1.05	1.00	0.91	1.11	835	14.0
	<i>Buckinghamshire</i>	<i>521,000</i>	<i>0.95</i>	<i>0.94</i>	<i>0.92</i>	<i>0.91</i>	<i>0.87</i>	<i>0.86</i>	<i>0.78</i>	<i>0.95</i>	<i>764</i>	<i>13.3</i>
	<i>Hampshire</i>	<i>1,322,100</i>	<i>0.77</i>	<i>0.79</i>	<i>0.81</i>	<i>0.80</i>	<i>0.79</i>	<i>0.78</i>	<i>0.73</i>	<i>0.83</i>	<i>719</i>	<i>5.0</i>
	<i>Isle of Wight National Health Service</i>	<i>138,400</i>	<i>0.59</i>	<i>0.59</i>	<i>0.55</i>	<i>0.56</i>	<i>0.60</i>	<i>0.64</i>	<i>0.52</i>	<i>0.79</i>	<i>650</i>	<i>2.7</i>
	Milton Keynes	255,400	0.93	0.95	0.93	0.95	0.96	0.97	0.84	1.11	752	19.6
	Oxfordshire	629,600	0.96	0.92	0.89	0.90	0.92	0.93	0.85	1.02	789	9.4
	Portsmouth City Teaching	205,400	0.97	0.97	0.93	0.91	0.97	0.99	0.84	1.15	755	11.6
Southampton City	235,900	0.91	0.95	0.94	0.99	1.02	1.04	0.90	1.20	784	14.1	
South West	<i>Bath and North East Somerset</i>	<i>175,500</i>	<i>0.92</i>	<i>0.84</i>	<i>0.87</i>	<i>0.85</i>	<i>0.79</i>	<i>0.79</i>	<i>0.66</i>	<i>0.94</i>	<i>695</i>	<i>5.4</i>
	<i>Bournemouth and Poole Teaching</i>	<i>331,500</i>	<i>0.86</i>	<i>0.84</i>	<i>0.81</i>	<i>0.79</i>	<i>0.79</i>	<i>0.77</i>	<i>0.68</i>	<i>0.88</i>	<i>688</i>	<i>6.3</i>
	Bristol	428,100	1.25	1.30	1.26	1.22	1.23	1.27	1.16	1.40	972	16.0
	Cornwall and Isles of Scilly	536,000	1.03	1.00	1.00	0.97	0.93	0.93	0.85	1.01	910	1.8
	<i>Devon</i>	<i>747,700</i>	<i>0.85</i>	<i>0.87</i>	<i>0.87</i>	<i>0.86</i>	<i>0.85</i>	<i>0.87</i>	<i>0.81</i>	<i>0.94</i>	<i>860</i>	<i>2.5</i>
	<i>Dorset</i>	<i>413,800</i>	<i>0.83</i>	<i>0.86</i>	<i>0.86</i>	<i>0.84</i>	<i>0.79</i>	<i>0.80</i>	<i>0.72</i>	<i>0.89</i>	<i>826</i>	<i>2.1</i>
	<i>Gloucestershire</i>	<i>598,300</i>	<i>0.88</i>	<i>0.82</i>	<i>0.85</i>	<i>0.85</i>	<i>0.86</i>	<i>0.88</i>	<i>0.80</i>	<i>0.96</i>	<i>807</i>	<i>4.6</i>
	North Somerset	203,100	0.96	0.97	0.90	0.88	0.89	0.91	0.79	1.06	876	2.7

Table 2.5. Continued

UK area	Name	Total population	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2011 O/E	2012			% non-White	
								O/E	LCL	95% UCL		Crude rate pmp
South West	Plymouth Teaching	256,600	1.14	1.12	1.11	1.15	1.15	1.12	0.99	1.27	951	3.9
	Somerset	531,600	0.84	0.81	0.82	0.84	0.87	0.84	0.76	0.92	805	2.0
	South Gloucestershire	263,400	1.01	1.00	0.94	1.00	0.97	0.95	0.83	1.08	839	5.0
	Swindon	214,900	0.86	0.85	0.87	0.90	0.94	0.96	0.82	1.11	796	10.0
	Torbay	131,200	0.84	0.94	0.88	0.93	0.96	0.98	0.82	1.16	976	2.5
	Wiltshire	474,300	0.72	0.75	0.73	0.73	0.74	0.72	0.64	0.80	651	3.4
Wales	Betsi Cadwaladr University	688,700	0.96	0.94	0.91	0.89	0.84	0.86	0.79	0.93	807	2.5
	Powys Teaching	133,200	0.89	0.89	0.94	0.88	0.86	0.87	0.73	1.05	886	1.6
	Hywel Dda	381,900	0.96	1.00	0.96	0.91	0.94	0.88	0.79	0.98	843	2.2
	Abertawe Bro Morgannwg University	517,700	1.25	1.17	1.20	1.24	1.23	1.20	1.11	1.31	1084	3.9
	Cwm Taf	293,500	1.51	1.43	1.39	1.31	1.35	1.27	1.14	1.41	1118	2.6
	Aneurin Bevan	577,000	1.16	1.09	1.08	1.11	1.09	1.09	1.00	1.18	974	3.9
	Cardiff and Vale University	472,300	1.16	1.06	1.07	1.06	1.05	1.02	0.93	1.13	822	12.2
Scotland	Ayrshire & Arran	373,800	1.13	1.14	1.08	1.07	1.01	0.99	0.89	1.10	939	0.7
	Borders	113,900	0.97	1.01	1.03	1.08	0.97	0.91	0.75	1.11	913	0.6
	Dumfries and Galloway	151,400	0.95	0.96	0.93	0.90	0.87	0.87	0.74	1.03	878	0.7
	Fife	365,300	0.97	0.96	0.95	0.95	0.99	0.97	0.87	1.08	881	1.3
	Forth Valley	298,100	0.96	0.93	0.92	0.93	0.89	0.87	0.76	0.99	778	1.1
	Grampian	569,600	1.01	0.98	0.95	0.95	0.94	0.96	0.88	1.05	853	1.6
	Greater Glasgow & Clyde	1,214,600	1.17	1.13	1.09	1.06	1.06	1.08	1.02	1.14	925	3.4
	Highland	321,700	1.11	1.05	1.03	0.99	0.90	0.86	0.76	0.97	833	0.8
	Lanarkshire	572,400	0.98	0.96	0.95	0.96	0.93	0.98	0.89	1.07	865	1.2
	Lothian	836,600	0.96	0.93	0.90	0.86	0.82	0.82	0.76	0.89	694	2.8
	Orkney	21,400	0.89	1.07	1.02	0.93	0.79	0.76	0.47	1.24	747	0.4
	Shetland	23,200	0.71	0.50	0.54	0.57	0.49	0.48	0.26	0.89	430	1.1
	Tayside	410,300	1.13	1.05	1.07	1.03	1.02	0.97	0.88	1.08	897	1.9
Western Isles	27,700	0.81	0.72	0.69	0.82	0.67	0.58	0.35	0.94	578	0.6	
Northern Ireland	Belfast	348,300	1.34	1.28	1.18	1.18	1.15	1.16	1.04	1.30	933	3.2
Ireland	Northern	463,500	1.14	1.10	1.05	1.01	1.05	1.05	0.96	1.16	878	1.2
	Southern	359,400	1.00	1.00	0.98	1.01	1.05	0.98	0.87	1.10	765	1.2
	South Eastern	347,700	1.00	0.99	0.96	0.89	0.92	0.89	0.79	1.01	759	1.3
	Western	295,300	1.15	1.12	1.15	1.14	1.08	1.00	0.88	1.13	792	1.0

(table 2.9). Furthermore, there existed a wide range between centres in the proportion of patients aged over 75 (9.2% in Liverpool RI to 36.8% in Colchester).

Colchester had the highest median age (70.4 years), whilst Belfast the lowest (53.8 years) (table 2.8). This could reflect either variation in the demography of the catchment populations or follow-up of younger transplant patients (as above in the case of Belfast). The median age of the non-White dialysis population was lower than the overall dialysis population (60.9 vs. 66.1 years, data not shown). The differing age distributions of the transplant and dialysis populations are illustrated in figure 2.4, demonstrating that the age peak for prevalent dialysis patients is 24 years later than for prevalent transplant patients.

In the UK on 31st December 2012, 63.5% of patients aged less than 65 years on RRT had a functioning transplant (table 2.15), compared with only 26.9% aged 65 years and over. There was a similar pattern in all four UK countries.

Gender

Standardising the age of the UK RRT prevalent patients, by using the age and gender distribution of the UK population by PCT/HB (from mid-2011 population estimates), allowed estimation of crude prevalence rates by age and gender (figure 2.5). This shows a progressive increase in prevalence rate with age, peaking at 2,138 pmp (a slight increase from 2,099 pmp in 2011) in the age group 75–79 years before showing a reducing prevalence rate in

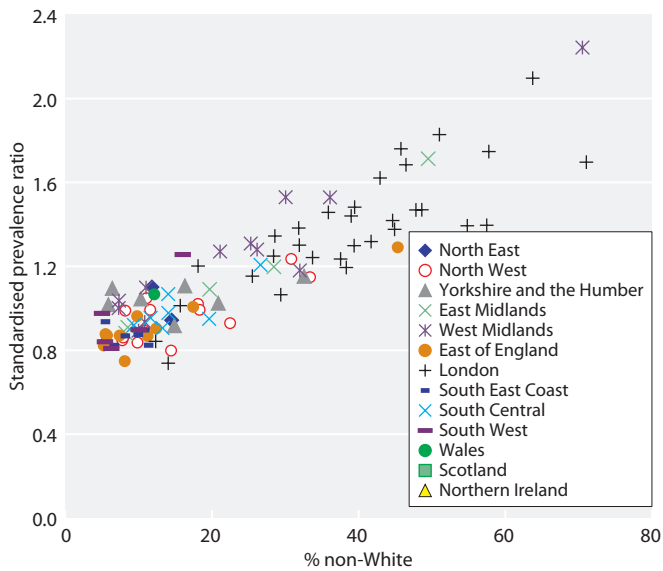


Fig. 2.3. Standardised prevalence ratios for all PCT/HB areas by percentage non-White on 31/12/2012 (excluding areas with <5% ethnic minorities)

age groups over 80 years. Crude prevalence rates in males exceeded those of females for all age groups, peaking in age group 80–84 years at 2,973 pmp and for females in age group 75–79 years at 1,528 pmp. Survival on RRT is described in chapter 8.

Ethnicity

Fifty-nine of the 71 centres (83.1%) provided ethnicity data that were at least 90% complete (table 2.10), an

Table 2.7. Median time on RRT of prevalent patients on 31/12/2012

Modality	N	Median time treated (years)
Haemodialysis	23,034	3.4
Peritoneal dialysis	3,752	1.7
Transplant	26,365	10.2
All RRT	53,151	5.9

All patients without a treatment modality were excluded
 Median time on RRT was calculated from the most recent start date.
 For patients who recovered for >90 days and then subsequently restarted RRT the median time from the start of RRT was calculated from the most recent start date
 Patients with an initial treatment modality of transferred in or transferred out were excluded from the calculation of median time on RRT since their treatment start date was not accurately known

improvement compared with 51 of 71 (71.8%) in 2011 and 36 centres in 2006. Ethnicity completeness for prevalent RRT patients improved in the UK from 88.6% in 2011 to 92.0% in 2012, with 97.9% ethnicity completeness in England, 99.9% completeness in Wales and 100% in Northern Ireland. Completeness of ethnicity data was highest in prevalent transplant patients. This may relate to the fact that the intensive work-up for transplantation may increase the recording of data. Completeness of ethnicity data from Scotland was low at 33.6%.

In 2012, 20.7% of the prevalent UK RRT population (with ethnicity assigned) were from ethnic minorities (22.7% in England). The proportion of the prevalent UK RRT population (with ethnicity assigned) from ethnic minorities in Wales, Scotland and Northern Ire-

Table 2.6. Standardised prevalence rate ratio of RRT for each Strategic Health Authority in England and for Wales, Scotland and Northern Ireland in 2012

UK Area	Total population	O/E	95% LCL	95% UCL	Crude rate pmp
North East	2,596,400	0.88	0.85	0.92	792.6
North West	7,089,100	0.91	0.88	0.93	790.2
Yorkshire and the Humber	5,285,700	0.96	0.93	0.99	832.2
East Midlands	4,506,800	0.94	0.91	0.97	835.6
West Midlands	5,608,700	1.10	1.07	1.13	948.9
East of England	5,862,400	0.88	0.85	0.90	780.6
London	8,204,400	1.49	1.46	1.52	1,101.8
South East Coast	4,465,200	0.87	0.84	0.89	778.7
South Central	4,182,300	0.91	0.88	0.94	779.0
South West	5,306,100	0.89	0.87	0.92	829.4
Wales	3,064,300	1.02	0.99	1.06	925.2
Scotland	5,299,900	0.95	0.92	0.98	850.2
Northern Ireland	1,814,300	1.02	0.97	1.07	829.5

O/E – observed/expected prevalence rate ratio given the age/gender breakdown of each region
 Bold – higher than expected prevalence rate ratio

Table 2.8. Median age of prevalent RRT patients by treatment modality in renal centres on 31/12/2012

Centre	Median age				Centre	Median age			
	HD	PD	Transplant	RRT		HD	PD	Transplant	RRT
England					Redng	69.4	62.4	56.5	60.3
B Heart	66.6	53.9	50.8	62.5	Salford	64.2	59.7	51.2	57.7
B QEH	64.7	58.0	51.3	57.1	Sheff	65.5	64.2	52.0	58.4
Basldn	67.8	65.3	50.8	64.2	Shrew	67.6	61.9	53.9	62.2
Bradfd	61.8	56.6	50.6	54.3	Stevng	67.1	66.2	51.8	60.6
Brightn	69.2	66.8	53.8	62.3	Sthend	72.1	65.1	54.9	65.6
Bristol	68.9	56.0	53.4	58.2	Stoke	66.3	68.6	50.8	59.3
Camb	72.1	71.3	52.6	58.3	Sund	65.5	60.4	53.3	58.1
Carlis	67.2	62.7	52.7	58.4	Truro	71.9	67.0	57.5	63.9
Carsh	68.9	66.4	52.3	62.0	Wirral	65.0	60.2		64.9
Chelms	68.0	65.8	59.3	65.3	Wolve	66.7	59.0	51.7	59.8
Colchr	70.4			70.4	York	66.4	56.8	52.0	57.4
Covnt	68.0	66.6	50.9	58.8	N Ireland				
Derby	66.9	64.3	54.2	61.7	Antrim	70.9	60.4	51.1	64.7
Donc	66.3	62.6	56.1	64.0	Belfast	64.5	60.8	50.8	53.8
Dorset	71.5	69.8	57.8	64.7	Newry	65.3	69.7	52.5	60.4
Dudley	69.0	61.9	56.9	63.0	Ulster	71.7	64.9	56.7	69.1
Exeter	72.2	68.3	53.2	62.9	West NI	66.8	46.7	50.7	59.5
Glouc	71.5	68.5	55.5	64.5	Scotland				
Hull	66.9	62.1	51.5	58.8	Abrdn	66.2	57.0	52.5	57.2
Ipswi	66.3	66.3	54.0	59.3	Airdrie	62.6	51.5	51.6	56.6
Kent	69.6	64.5	53.4	60.4	D & Gall	64.7	69.8	51.5	60.7
L Barts	60.1	60.3	50.5	55.1	Dundee	69.7	65.5	52.7	61.3
L Guys	62.6	58.8	49.8	54.0	Dunfn	66.5	62.0	51.3	60.0
L Kings	63.2	60.8	52.8	58.1	Edinb	60.1	69.6	51.5	54.8
L Rfree	67.6	63.0	51.1	57.2	Glasgw	65.0	63.9	52.9	56.9
L St.G	66.7	62.2	53.9	59.9	Inverns	68.9	65.2	47.9	54.8
L West	65.8	62.1	53.5	58.8	Klmarnk	66.2	59.1	50.4	57.9
Leeds	66.8	55.1	52.0	56.8	Wales				
Leic	66.2	66.0	52.4	59.5	Bangor	66.0	67.1		66.1
Liv Ain	67.1	59.9		65.9	Cardff	68.3	68.1	52.1	57.1
Liv RI	61.8	58.1	51.8	54.9	Clwyd	65.5	71.0	57.0	62.2
M RI	62.8	61.8	50.3	54.0	Swanse	71.1	62.9	56.5	63.7
Middlbr	67.3	55.5	52.6	57.6	Wrexm	71.5	62.9	52.6	57.9
Newc	62.5	64.1	54.3	57.0	England	66.5	63.3	52.3	58.4
Norwch	71.7	65.1	53.9	63.4	N Ireland	67.8	64.1	51.1	58.2
Nottm	68.7	62.7	51.1	57.4	Scotland	65.0	63.3	51.8	57.2
Oxford	66.3	64.6	51.1	55.7	Wales	68.6	66.1	52.9	59.7
Plymth	68.4	67.4	54.5	59.0	UK	66.4	63.4	52.3	58.3
Ports	66.2	63.8	53.1	58.3					
Prestn	63.9	65.9	52.7	58.5					

Blank cells indicate no patients on that treatment modality attending that centre when data were collected

land were very small, although it should be noted that there was a high level of missing ethnicity data in Scotland. The ONS estimates that approximately 14% of the UK general population are designated as belonging to an ethnic minority [1]. The relative proportion of patients reported to the UKRR as receiving RRT and belonging to an ethnic minority has increased from 14.9% in 2007 which may be due to improvements in

coding and reporting of ethnicity data as well as an increasing incidence of ERF and increased referral rates in these populations.

Amongst the centres with more than 50% returns there was wide variation in the proportion of patients from ethnic minorities, ranging from 0.5% in two centres (Truro and Newry) to over 50% in 3 centres: London Barts (60.2%), London West (55.5%) and London Royal

Table 2.9. Percentage of prevalent RRT patients in each age group by centre on 31/12/2012

Centre	N	Percentage of patients			
		18–39 years	40–64 years	65–74 years	75+ years
England					
B Heart	670	14.0	42.8	22.8	20.3
B QEH	1,971	14.9	52.0	17.7	15.4
Basldn	264	12.5	39.4	22.0	26.1
Bradfd	508	20.7	48.8	19.1	11.4
Brightn	831	11.4	44.8	22.4	21.4
Bristol	1,337	16.1	47.9	20.0	15.9
Camb	1,113	14.0	50.7	20.0	15.3
Carlis	216	13.9	53.2	19.9	13.0
Carsh	1,475	10.6	45.9	22.6	20.8
Chelms	224	7.6	41.1	25.4	25.9
Colchr	117	5.1	27.4	30.8	36.8
Covnt	900	12.9	48.7	19.8	18.7
Derby	477	11.7	45.5	24.3	18.4
Donc	261	11.5	42.9	21.5	24.1
Dorset	610	9.8	41.1	28.7	20.3
Dudley	316	7.3	48.7	20.9	23.1
Exeter	846	10.0	44.4	23.6	21.9
Glouc	417	10.1	42.2	23.0	24.7
Hull	789	13.6	50.6	20.2	15.7
Ipswi	339	10.3	54.9	21.8	13.0
Kent	922	12.9	46.3	23.8	17.0
L Barts	1,955	17.3	55.1	16.6	11.0
L Guys	1,745	19.7	53.6	15.6	11.0
L Kings	918	12.3	51.7	20.4	15.6
L Rfree	1,865	17.8	48.3	18.4	15.5
L St.G	724	13.7	49.9	19.6	16.9
L West	3,104	12.0	52.8	21.3	13.8
Leeds	1,416	17.6	50.0	19.8	12.6
Leic	1,982	13.6	49.1	22.4	14.9
Liv Ain	195	8.7	38.5	24.1	28.7
Liv RI	1,241	16.0	57.7	17.2	9.2
M RI	1,710	18.4	55.6	16.4	9.6
Middlbr	789	13.7	50.4	19.0	16.9
Newc	946	14.4	53.7	21.5	10.5
Norwch	612	11.3	41.8	22.5	24.3
Nottm	1,006	16.3	48.8	19.1	15.8
Oxford	1,535	16.3	53.0	17.6	13.1
Plymth	459	13.5	49.5	24.4	12.6
Ports	1,447	14.0	50.9	20.6	14.5
Prestn	1,081	12.4	53.4	20.5	13.7
Redng	671	10.1	49.2	22.5	18.2
Salford	882	13.8	52.3	20.6	13.3
Sheff	1,307	13.8	51.6	19.2	15.3
Shrew	354	12.1	44.4	21.2	22.3
Stevng	665	12.2	46.6	20.5	20.8
Sthend	213	13.6	34.7	24.4	27.2
Stoke	695	14.8	46.5	20.0	18.7
Sund	421	12.8	52.7	21.6	12.8
Truro	377	12.2	40.3	24.4	23.1
Wirral	234	7.7	43.2	21.8	27.4
Wolve	528	10.8	49.8	20.8	18.6
York	396	19.2	46.2	21.7	12.9

Table 2.9. Continued

Centre	N	Percentage of patients			
		18–39 years	40–64 years	65–74 years	75+ years
N Ireland					
Antrim	225	10.2	40.4	25.3	24.0
Belfast	701	17.4	54.6	17.1	10.8
Newry	188	14.9	47.9	22.9	14.4
Ulster	148	9.5	33.1	26.4	31.1
West NI	258	17.1	45.3	21.7	15.9
Scotland					
Abrdn	504	19.0	50.2	17.5	13.3
Airdrie	388	15.5	52.1	18.0	14.4
D & Gall	128	12.5	47.7	22.7	17.2
Dundee	403	12.2	46.2	22.1	19.6
Dunfn	278	13.3	46.8	24.1	15.8
Edinb	722	15.5	56.6	18.1	9.7
Glasgw	1,549	13.6	55.5	18.7	12.2
Inverns	218	15.1	56.4	13.8	14.7
Klmarnk	302	10.6	52.6	21.9	14.9
Wales					
Bangor	105	8.6	37.1	30.5	23.8
Cardff	1,548	15.1	51.6	19.6	13.7
Clwyd	172	12.2	45.3	26.7	15.7
Swanse	662	10.7	42.6	24.0	22.7
Wrexm	249	16.5	44.6	17.7	21.3
England	46,076	14.2	49.8	20.3	15.7
N Ireland	1,520	15.2	48.0	20.7	16.1
Scotland	4,492	14.4	53.0	19.1	13.4
Wales	2,736	13.7	47.8	21.4	17.1
UK	54,824	14.2	50.0	20.2	15.6
(min : max)		(5.1 : 20.7)	(27.4 : 57.7)	(13.8 : 30.8)	(9.2 : 36.8)

Free (50.9%). Three additional centres had over 40% of prevalent patients from ethnic minorities: Bradford (42.3%), London Kings (48.5%) and London St Georges (44.6%).

Primary renal diagnosis
Data for primary renal diagnosis (PRD) were not complete for 3.6% of patients (table 2.11) and there remained a marked inter-centre difference in completeness of data

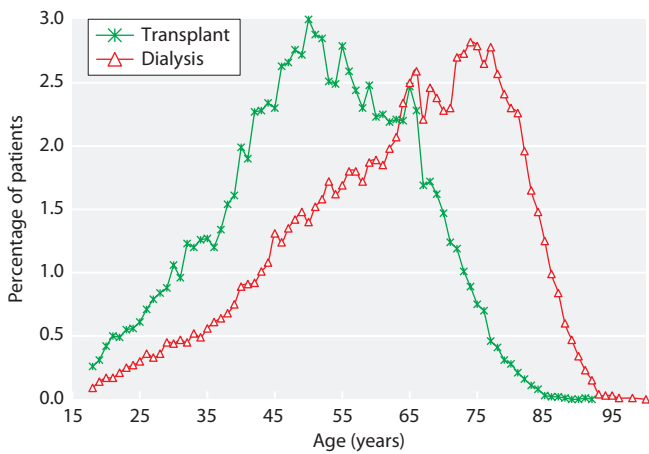


Fig. 2.4. Age profile of prevalent RRT patients by modality on 31/12/2012

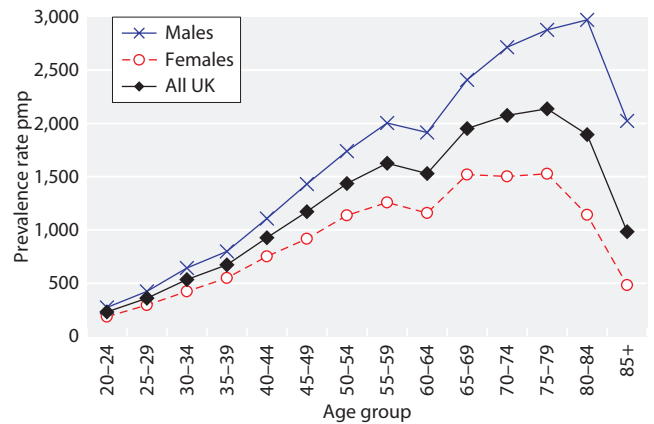


Fig. 2.5. Prevalence rate of RRT patients per million population by age and gender on 31/12/2012

Table 2.10. Ethnicity of prevalent RRT patients by centre on 31/12/2012

Centre	Data not available	N with data	Percentage in each ethnic group				
			White	Black	S Asian	Chinese	Other
England							
B Heart	0.0	670	61.9	7.2	29.6	0.6	0.7
B QEH	0.0	1,971	64.3	9.0	23.4	0.9	2.4
Basldn	0.0	264	85.2	8.3	4.2	0.8	1.5
Bradfd	1.4	501	57.7	1.8	39.7	0.0	0.8
Brightn	3.7	800	92.1	2.9	3.5	0.3	1.3
Bristol	0.4	1,331	89.9	5.0	3.6	0.4	1.1
Camb	1.2	1,100	93.1	1.9	4.0	0.2	0.8
Carlis	0.0	216	99.1	0.0	0.9	0.0	0.0
Carsh	6.8	1,374	72.9	9.6	12.7	1.5	3.3
Chelms	5.4	212	92.5	2.8	1.9	0.9	1.9
Colchr	0.0	117	95.7	0.9	0.9	0.9	1.7
Covnt	0.3	897	81.7	4.0	13.5	0.7	0.1
Derby	1.3	471	82.0	3.8	13.2	0.6	0.4
Donc	0.0	261	96.6	1.1	1.1	0.8	0.4
Dorset	0.0	610	97.5	0.2	0.7	0.5	1.1
Dudley	0.0	316	86.4	2.8	8.9	0.6	1.3
Exeter	0.2	844	98.3	0.6	0.4	0.2	0.5
Glouc	0.0	417	94.2	1.7	2.9	0.0	1.2
Hull	37.3	495	97.2	0.6	1.6	0.2	0.4
Ipswi	1.2	335	94.0	3.0	2.7	0.3	0.0
Kent	0.7	916	94.9	0.7	3.2	0.1	1.2
L Barts	0.0	1,955	39.8	32.4	25.8	1.5	0.4
L Guys	0.9	1,730	67.0	22.0	6.4	1.2	3.4
L Kings	1.9	901	51.5	34.4	11.0	1.7	1.4
L Rfree	3.1	1,807	49.1	21.7	19.0	1.6	8.5
L St.G	11.7	639	55.4	22.4	12.8	2.2	7.2
L West	0.0	3,104	44.5	17.9	33.5	1.0	3.1
Leeds	0.7	1,406	81.2	4.3	13.2	0.1	1.1
Leic	1.8	1,946	77.3	3.6	17.6	0.3	1.2
Liv Ain	2.1	191	95.8	0.5	2.1	1.0	0.5
Liv RI	1.4	1,224	93.5	2.0	1.6	1.4	1.6
M RI	0.6	1,699	79.1	6.2	11.8	0.9	2.0
Middlbr	0.3	787	94.0	0.6	5.0	0.3	0.1
Newc	0.1	945	93.4	0.7	4.2	0.7	0.8
Norwch	0.5	609	96.1	0.5	1.0	2.1	0.3
Nottm	0.0	1,006	87.0	5.1	6.5	0.0	1.5
Oxford	2.0	1,505	83.7	3.7	9.3	0.6	2.7
Plymth	0.0	459	97.4	0.7	0.4	0.7	0.9
Ports	1.1	1,431	94.3	0.9	3.1	0.0	1.7
Prestn	0.0	1,081	85.8	0.8	12.8	0.0	0.6
Redng	4.9	638	71.2	6.7	20.4	0.2	1.6
Salford	1.6	868	82.1	1.7	14.2	0.5	1.5
Sheff	0.5	1,301	91.8	2.2	3.8	0.7	1.5
Shrew	0.6	352	96.0	1.4	2.3	0.0	0.3
Stevng	0.3	663	69.4	9.5	17.6	0.6	2.9
Sthend	0.0	213	84.5	2.3	4.2	2.3	6.6
Stoke	15.5	587	93.4	0.3	4.3	0.3	1.7
Sund	0.2	420	96.9	0.7	2.1	0.2	0.0
Truro	0.0	377	99.5	0.0	0.3	0.0	0.3
Wirral	1.3	231	95.2	0.4	1.7	1.3	1.3
Wolve	0.0	528	71.4	9.1	19.3	0.2	0.0
York	3.3	383	97.4	0.5	1.6	0.0	0.5

Table 2.10. Continued

Centre	Data not available	N with data	Percentage in each ethnic group				
			White	Black	S Asian	Chinese	Other
N Ireland							
Antrim	0.0	225	99.1	0.0	0.9	0.0	0.0
Belfast	0.0	701	98.4	0.1	1.0	0.3	0.1
Newry	0.0	188	99.5	0.0	0.0	0.5	0.0
Ulster	0.0	148	97.3	0.0	2.0	0.7	0.0
West NI	0.0	258	98.4	0.4	0.8	0.4	0.0
Scotland							
Abrdn	60.7	198					
Airdrie	66.2	131					
D & Gall	88.3	15					
Dundee	55.8	178					
Dunfn	82.4	49					
Edinb	93.1	50					
Glasgw	92.5	116					
Inverns	14.7	186	98.9	0.0	1.1	0.0	0.0
Klmarnk	55.0	136					
Wales							
Bangor	0.0	105	96.2	1.0	1.0	0.0	1.9
Cardff	0.2	1,545	94.2	0.9	4.0	0.5	0.4
Clwyd	0.6	171	98.8	0.0	0.6	0.6	0.0
Swanse	0.0	662	97.9	0.3	1.5	0.0	0.3
Wrexm	0.0	249	99.2	0.4	0.4	0.0	0.0
England	2.1	45,104	77.3	8.1	12.1	0.7	1.9
N Ireland	0.0	1,520	98.6	0.1	0.9	0.3	0.1
Scotland	76.4	1,059					
Wales	0.1	2,732	95.9	0.7	2.7	0.3	0.4
UK	8.0	50,415	79.3	7.3	11.0	0.7	1.7

Percentage breakdown is not shown for centres with less than 50% data completeness, but these centres are included in national averages

Blank cells – less than 50% data completeness

Appendix H ethnicity coding

returns. Only one centre had $\geq 40\%$ primary renal diagnosis data coded as uncertain and has been excluded from the between centre analysis and other analyses where PRD is included in the case-mix adjustment (Col-

chester, 48% uncertain PRD); the UK and national totals have been appropriately adjusted. The range for the remaining 70 centres was between 5.0% and 34.5%, and has shown improvement over time. Completeness of

Table 2.11. Primary renal diagnosis in prevalent RRT patients by age and gender on 31/12/2012

Primary diagnosis*	N	% all patients	Inter-centre range %	Age <65		Age ≥ 65		M:F ratio
				N	%	N	%	
Aetiology uncertain	9,154	16.7	5.0–34.5	5,092	14.5	4,062	20.7	1.6
Glomerulonephritis	10,289	18.8	8.5–28.6	7,523	21.4	2,766	14.1	2.1
Pyelonephritis	6,008	11.0	3.9–18.5	4,473	12.7	1,535	7.8	1.1
Diabetes	8,456	15.5	9.6–24.9	5,064	14.4	3,392	17.3	1.6
Polycystic kidney	5,286	9.7	4.1–16.7	3,510	10.0	1,776	9.1	1.1
Hypertension	3,249	5.9	1.5–15.4	1,773	5.0	1,476	7.5	2.4
Renal vascular disease	1,743	3.2	0.6–9.1	354	1.0	1,389	7.1	2.0
Other	8,568	15.7	9.5–25.3	6,071	17.3	2,497	12.8	1.3
Not sent	1,954	3.6	0.2–37.5	1,266	3.6	688	3.5	1.6

*Appendix H: ERA-EDTA coding

Excluded centre: $\geq 40\%$ primary renal diagnosis aetiology uncertain (Colchr)

PRD data has also continued to improve and no centres had >50% missing data in 2012.

Glomerulonephritis (GN) remained the most common primary renal diagnosis in the 2012 prevalent cohort at 18.8% (table 2.11). Diabetes accounted for 15.5% of renal disease in prevalent patients on RRT, although it was more common in the ≥ 65 year age group compared to the younger group (17.3% vs. 14.4%). This contrasted with incident patients where diabetes was the predominant diagnostic code in 25.6% of new RRT patients. Younger patients (age <65 years) are more likely to have GN or pyelonephritis and less likely to have renal vascular disease or hypertension as the cause of their renal failure.

As described before, the male:female ratio was greater than unity for all primary renal diagnoses (table 2.11).

In individuals aged less than 65 years, renal transplantation to dialysis ratio was greater than 1 in all PRD groups except diabetes and renovascular disease. In those aged >65 years, dialysis was more prevalent than renal transplantation in all PRD groups except polycystic kidney disease (PKD) (table 2.12).

Diabetes

Diabetes included all prevalent patients with type 1 or type 2 diabetes as the primary renal diagnosis (ERA-EDTA coding) and did not include patients with diabetes as a comorbidity. This analysis did not differentiate between type 1 and type 2 diabetes as this distinction was not made in the data submitted by most centres.

The number of prevalent patients with diabetes as a primary renal diagnosis increased 8.4% to 8,456 in

Table 2.12. Transplant : dialysis ratios by age and primary renal disease in the prevalent RRT population on 31/12/2012

Primary diagnosis*	Transplant : dialysis ratio	
	<65	≥ 65
Aetiology uncertain	1.8	0.3
Glomerulonephritis	2.2	0.7
Pyelonephritis	2.5	0.4
Diabetes	0.8	0.1
Polycystic kidney	2.3	1.4
Hypertension	1.1	0.3
Renal vascular disease	0.9	0.1
Other	1.9	0.3
Not sent	2.1	0.3

*Appendix H ERA-EDTA coding

Excluded centre: $\geq 40\%$ primary renal diagnosis aetiology uncertain (Colchr)

2012, from 7,798 in 2011, representing 15.5% of all prevalent patients (compared with 13.5% in 2006) (table 2.13). The median age at start of RRT for patients with diabetes (56 years) was nine years higher compared with patients without diabetes (47 years), although the median age at the end of 2012 for prevalent diabetic patients was only three years higher than for individuals without diabetes. This reflects reduced survival for patients with diabetes compared with patients without diabetes on RRT. Median time on RRT for patients with diabetes was less when compared with patients without diabetes (3.5 years vs. 6.7 years) and this difference in survival has not changed over the last five years. Patients with diabetes starting RRT in Scotland were three years younger and in Northern Ireland three years older compared with the UK average age of patients with diabetes starting RRT (data not shown).

Sixty percent of patients with diabetes as primary renal diagnosis were undergoing HD. In patients with a different primary renal diagnosis 39% were undergoing HD (table 2.13). The percentage of patients with a functioning transplant was much lower in prevalent patients with diabetes than in prevalent patients without diabetes (32% vs. 54%). However, the proportion of patients with diabetes as PRD with a functioning transplant has

Table 2.13. Age relationships in patients with diabetes and patients without diabetes and modality in prevalent RRT patients on 31/12/2012

	Patients with diabetes ^a	Patients without diabetes ^b
N	8,456	44,297
M : F ratio	1.59	1.54
Median age on 31/12/12	61	58
Median age at start of RRT ^{cd}	56	47
Median years on RRT ^d	3.5	6.7
% HD ^e	60	39
% PD ^e	9	6
% transplant ^e	32	54

Excluded centre: $\geq 40\%$ primary renal diagnosis aetiology uncertain (Colchr)

^aPatients with diabetes: patients with a primary renal disease code of diabetes

^bPatients without diabetes: all patients excluding patients with diabetes and patients with a missing primary renal disease code

^cMedian age at start of RRT was calculated from the most recent RRT start date

^dPatients with an initial treatment modality of transferred in or transferred out were excluded from the calculation of median age at start of RRT and median years on RRT, since their treatment start date was not accurately known

^ePatients without a treatment modality code were excluded from calculating the % per treatment modality

Table 2.14. Treatment modalities by age and diabetes status on 31/12/2012

	<65 years		≥65 years	
	Diabetes ^a	All other causes ^b	Diabetes ^a	All other causes ^b
N	5,064	28,796	3,392	15,501
% HD	46.8	28.0	78.9	60.7
% PD	8.2	5.3	9.7	8.6
% transplant	45.0	66.7	11.4	30.6

Excludes all patients without a treatment modality code

Excluded centre with ≥40% PRD aetiology uncertain (Colchr)

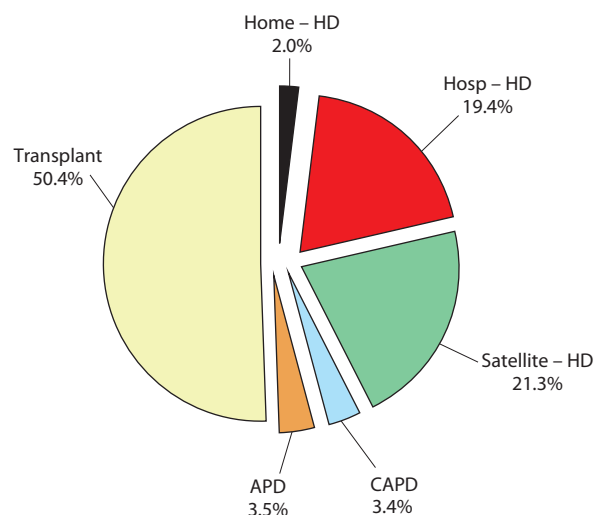
^aPatients with diabetes are patients with a primary renal disease code of diabetes

^bPatients without diabetes are calculated as all patients excluding patients with diabetes and patients with a missing primary renal disease code

increased since 2004 when only 26% of patients with diabetes had a functioning transplant. For older patients with diabetes (age ≥65 years), 11.4% had a functioning transplant compared with 30.6% of their peers without diabetes (table 2.14). In Northern Ireland, 23.6% of prevalent patients with diabetes had a functioning transplant compared with the UK average of 31.5% although on average the Northern Ireland patients with diabetes were older by three years (data not shown). A higher proportion of prevalent patients without diabetes (18.7%) were on home dialysis therapies (home HD and PD) compared with prevalent patients with diabetes (14.8%).

Modalities of treatment

Transplantation was the most common treatment modality (50.4%) for prevalent RRT patients in 2012, followed closely by centre-based HD (40.7%) in either hospital centre (19.4%) or satellite unit (21.3%) (figure 2.6). Satellite based haemodialysis was more prevalent than hospital centre haemodialysis for the first time in 2012. Home therapies made up the remaining 8.9% of treatment therapies, largely PD in its different formats (6.9%) which was similar to 2011. The proportion on continuous ambulatory peritoneal dialysis (CAPD) and automated PD (APD) was 3.4% and 3.5% respectively, although the proportion on APD may be an underestimate due to centre level coding issues which mean the UKRR cannot always distinguish between these therapies. The term CAPD has been used for patients receiving non-disconnect as well as disconnect CAPD systems, because the proportion of patients using non-disconnect systems was very small.

**Fig. 2.6.** Treatment modality in prevalent RRT patients on 31/12/2012

As mentioned earlier, treatment modality was related to patient age. Younger patients (age <65 years), were more likely to have a functioning transplant (63.5%) when compared with patients aged over 65 years (26.9%) (table 2.15). HD was the principal modality in the older patients (64.1%). However, in the elderly, interpreting the proportion of patients on renal replacement therapy who are transplanted is not straight forward as this depends on approaches to dialysis and conservative care in this age group.

Figure 2.7 shows the association between age and RRT modality. Beyond 54 years of age, transplant prevalence declined, whilst HD prevalence increased. The proportion of each age group treated by PD remained more stable across the age spectrum.

The proportion of prevalent dialysis patients receiving HD, ranged from 69.3% in Carlisle to 100% in Colchester (table 2.16).

Overall, the proportion of dialysis patients treated in a satellite haemodialysis unit has increased to 42.9% this year compared to 41.5% in 2011, and 39.9% in 2010. Although there are satellite units in Scotland, the data provided for 2012 did not distinguish between main centre and satellite unit haemodialysis. In 2012, the number of centres that had more than 50% of their haemodialysis activity taking place in satellite units was 28, an increase from 2011 (table 2.16 and figure 2.8). There was also wide variation between centres in the proportion of dialysis patients on APD treatment, ranging from 0% to 19.4% (table 2.16). Twelve of the 70 centres with a PD programme did not report having any patients

Table 2.15. Percentage of prevalent RRT patients by dialysis and transplant modality by UK country on 31/12/2012

UK country	<65 years			≥65 years				
	N	% HD	% PD	% transplant	N	% HD	% PD	% transplant
England	29,491	30.9	6.0	63.1	16,585	64.0	9.1	26.9
N Ireland	961	30.6	4.5	64.9	559	71.6	7.3	21.1
Scotland	3,028	31.6	4.2	64.3	1,464	65.6	7.5	26.9
Wales	1,684	26.5	5.6	67.9	1,052	60.2	10.1	29.8
UK	35,164	30.7	5.8	63.5	19,660	64.1	9.0	26.9

All patients without a treatment modality code were excluded

on APD, whilst in the Northern Ireland centres almost all PD patients were on this form of the modality.

Home haemodialysis

The use of home HD as a RRT peaked in 1982 when almost 2,200 patients were estimated to be on this modality, representing 61% of HD patients reported to the ERA-EDTA Registry at that time. The fall in the use of this modality to just 445 patients (2.4% of HD patients) in 2006 was probably due to an increase in availability and uptake of renal transplantation, and also the similar expansion of hospital HD provision with the introduction of satellite units. In the last seven years there has been renewed interest in home HD and a target of 15% of HD patients on this modality has been suggested [6]. Equipment changes and patient choice has helped drive this change. Since 2006 there has been a gradual increase in the proportion of prevalent patients receiving haemodialysis in their own homes so that in 2012 it reached 4.6% of HD patients (*n* = 1,080, figure 2.2). These numbers may be an underestimate as some centres have been unable to submit data for patients coded as home HD and work is ongoing to address this.

In 2012, the percentage of dialysis patients receiving home HD varied from 0% in eight centres, to greater than 5% in 23 centres (table 2.16). In the UK, the overall percentage of dialysis patients receiving home haemodialysis has increased from 3.4% in 2011 to 4.0% in 2012.

The proportion of dialysis patients receiving home haemodialysis was greatest in Wales at 5.9%, compared with 4.9% in Northern Ireland, 3.9% in England and 2.9% in Scotland (figure 2.8, table 2.16). The proportion on home haemodialysis has increased in each of the four countries since 2011. Forty-seven renal centres across the UK had an increase in the proportion of individuals on home haemodialysis compared with 2011. In 2007, for comparison, the proportion of patients receiving home haemodialysis was 2% in each of the four UK countries.

Change in modality

The relative proportion of RRT modalities in prevalent patients has changed dramatically over the past decade. The main features are depicted in figure 2.9, which describes a decline in the proportion of patients treated by PD after 2000. This may however have started to

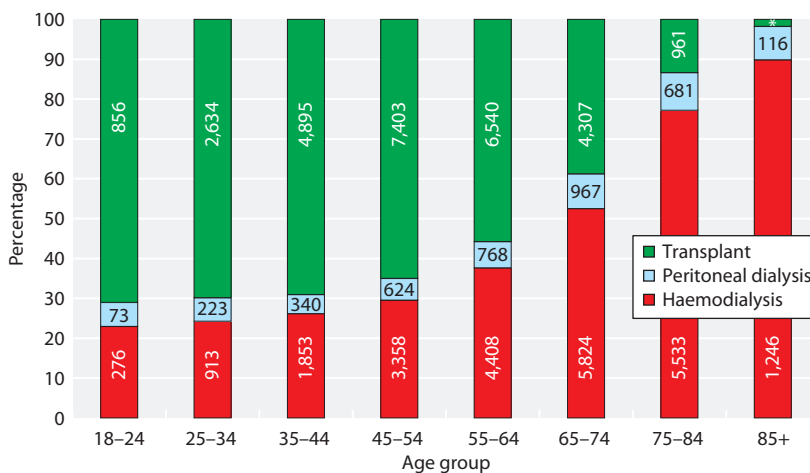


Fig. 2.7. Treatment modality distribution by age in prevalent RRT patients on 31/12/2012

*N = 25

Table 2.16. Percentage of prevalent dialysis patients by dialysis modality by centre on 31/12/2012

Centre	N	Haemodialysis				Peritoneal dialysis	
		Total	Home	Hospital	Satellite	CAPD	APD
England							
B Heart	482	90.3	3.7	79.9	6.6	7.3	2.5
B QEH	1,085	85.3	4.9	10.5	70.0	5.5	9.1
Basldn	196	83.7	0.0	83.2	0.5	8.2	7.7
Bradfd	237	87.8	0.8	71.7	15.2	1.7	10.6
Brightn	456	81.4	7.9	43.0	30.5	11.8	6.6
Bristol	560	88.2	5.5	15.4	67.3	5.7	6.1
Camb	385	90.9	3.4	37.4	50.1	0.0	0.0
Carlis	88	69.3	0.0	51.1	18.2	12.5	18.2
Carsh	876	87.2	2.5	19.1	65.6	3.7	9.1
Chelms	155	83.2	0.0	83.2	0.0	11.0	5.8
Colchr	117	100.0	0.0	100.0	0.0	0.0	0.0
Covnt	463	78.4	4.3	74.1	0.0	21.6	0.0
Derby	309	71.2	8.1	63.1	0.0	18.8	10.0
Donc	201	85.6	0.0	45.3	40.3	1.5	12.9
Dorset	308	84.4	0.7	20.8	63.0	6.5	8.4
Dudley	232	72.8	5.2	50.9	16.8	16.0	11.2
Exeter	474	83.8	0.6	12.5	70.7	7.8	8.4
Glouc	255	85.9	1.2	76.1	8.6	2.8	11.4
Hull	424	78.8	2.4	36.6	39.9	10.4	10.4
Ipswi	160	80.6	3.1	66.3	11.3	10.0	9.4
Kent	446	86.1	4.0	22.9	59.2	13.9	0.0
L Barts	1,090	82.1	1.7	35.1	45.4	5.6	12.3
L Guys	657	95.3	6.1	16.7	72.5	2.0	2.7
L Kings	578	85.1	1.2	20.6	63.3	6.8	8.1
L Rfree	834	85.6	2.3	3.7	79.6	3.8	10.4
L St.G	338	84.0	1.5	41.7	40.8	4.1	11.8
L West	1,478	96.5	1.0	22.2	73.3	1.6	2.0
Leeds	582	85.1	2.1	19.1	63.9	3.6	11.3
Leic	1,032	84.5	6.0	16.6	61.9	4.6	11.0
Liv Ain	195	89.7	2.6	9.2	78.0	2.6	7.7
Liv RI	429	85.3	8.2	37.1	40.1	9.8	4.9
M RI	589	86.1	11.5	30.9	43.6	2.6	11.4
Middlbr	350	96.9	3.4	30.9	62.6	3.1	0.0
Newc	332	85.8	7.5	78.3	0.0	1.5	12.7
Norwch	373	85.3	5.1	49.3	30.8	11.3	3.5
Nottm	457	82.3	7.7	39.0	35.7	8.1	9.6
Oxford	509	83.1	3.9	32.4	46.8	4.3	12.6
Plymth	166	78.9	4.2	74.7	0.0	17.5	3.6
Ports	638	87.0	1.4	18.7	66.9	13.0	0.0
Prestn	605	88.6	6.6	19.2	62.8	2.6	8.8
Redng	343	79.0	1.8	34.4	42.9	13.7	7.3
Salford	484	78.5	4.6	33.5	40.5	10.7	9.5
Sheff	657	89.5	6.1	39.0	44.4	10.5	0.0
Shrew	236	82.6	6.8	45.8	30.1	17.4	0.0
Stevng	441	92.8	6.4	33.1	53.3	7.3	0.0
Sthend	132	89.4	2.3	87.1	0.0	10.6	0.0
Stoke	384	79.4	6.8	46.9	25.8	3.7	16.9
Sund	220	90.0	1.4	54.6	34.1	6.4	3.6
Truro	177	87.0	2.8	45.2	39.0	6.2	6.8
Wirral	234	86.3	1.7	42.3	42.3	3.0	10.7
Wolve	377	75.6	3.7	23.6	48.3	24.4	0.0
York	167	80.9	7.2	31.7	41.9	18.6	0.6

Table 2.16. Continued

Centre	N	Haemodialysis				Peritoneal dialysis	
		Total	Home	Hospital	Satellite	CAPD	APD
N Ireland							
Antrim	145	91.0	2.8	88.3	0.0	1.4	7.6
Belfast	256	89.1	8.2	80.9	0.0	0.8	9.8
Newry	107	85.0	2.8	82.2	0.0	0.0	15.0
Ulster	116	93.1	3.5	89.7	0.0	0.0	6.9
West NI	154	87.7	3.9	83.8	0.0	0.0	12.3
Scotland							
Abrdn	255	90.2	2.0	88.2	0.0	5.5	4.3
Airdrie	205	94.6	0.0	94.6	0.0	3.4	2.0
D & Gall	67	76.1	1.5	74.6	0.0	11.9	11.9
Dundee	202	89.6	0.0	89.6	0.0	2.5	7.9
Dunfn	167	88.0	0.0	88.0	0.0	0.0	12.0
Edinb	302	87.8	2.0	85.8	0.0	4.0	8.3
Glasgw	671	93.0	5.2	87.8	0.0	2.4	4.6
Inverns	92	80.4	7.6	72.8	0.0	7.6	12.0
Klmarnk	191	78.5	4.2	74.4	0.0	2.1	19.4
Wales							
Bangor	105	85.7	13.3	54.3	18.1	5.7	8.6
Cardff	559	86.2	5.4	12.7	68.2	9.3	4.5
Clwyd	102	82.4	2.9	79.4	0.0	6.9	0.0
Swanse	396	82.8	7.1	47.5	28.3	14.1	3.0
Wrexm	118	81.4	0.9	67.0	13.6	18.6	0.0
England	22,993	85.8	3.9	33.4	48.5	7.1	7.0
N Ireland^a	778	89.2	4.9	84.3	0.0	0.5	10.2
Scotland^b	2,152	89.0	2.9	86.2	0.0	3.4	7.6
Wales	1,280	84.4	5.9	37.2	41.3	11.2	3.6
UK	27,203	86.1	4.0	39.2	42.9	6.8	6.9

^aThere are no satellite units in Northern Ireland

^bAll haemodialysis patients in Scotland are shown as receiving treatment at home or in centre as no data is available regarding satellite dialysis

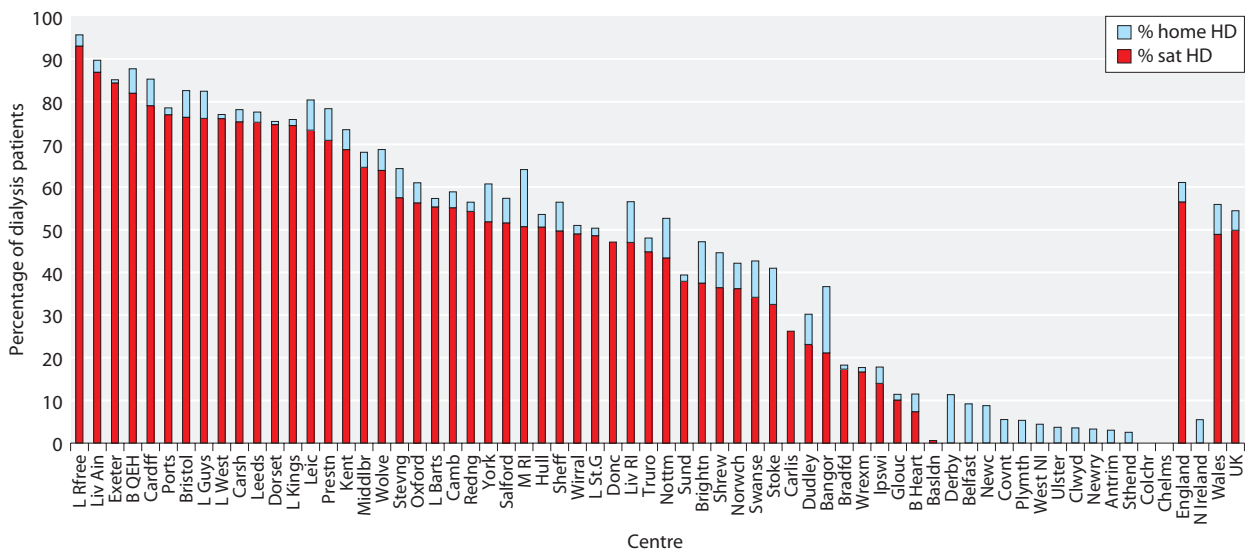


Fig. 2.8. Percentage of prevalent haemodialysis patients treated with satellite or home haemodialysis by centre on 31/12/2012

*Scottish centres excluded as information on satellite HD was not available. No centres in Northern Ireland have satellite dialysis units

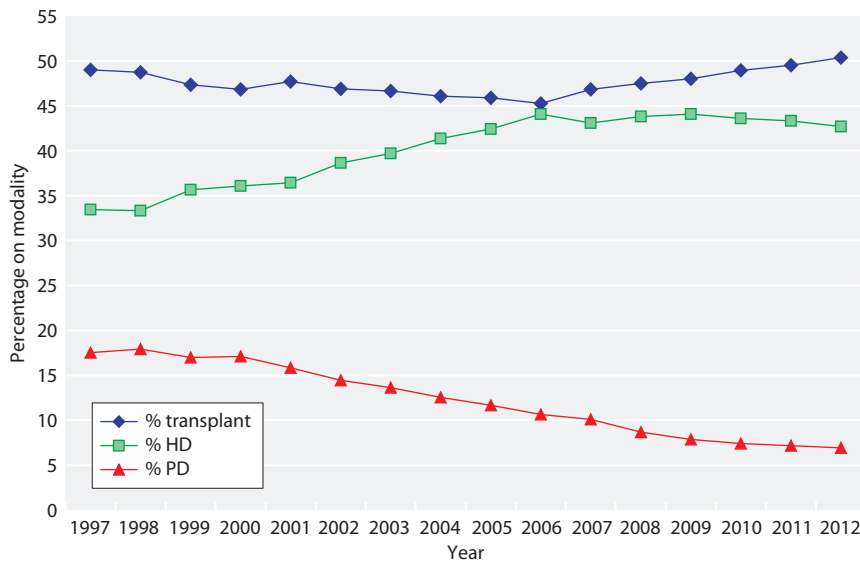


Fig. 2.9. Modality changes in prevalent RRT patients from 1997–2012

plateau, with only a minor reduction from 7.2% of the RRT population in 2011 to 6.9% in 2012. For the first time since 2007, the absolute number of patients on PD increased from 3,780 patients in 2011 to 3,792 patients in 2012. Time on PD has decreased marginally over that last six years, from a median of 2.0 years in 2007 to 1.7 years in 2012 probably reflecting increased transplantation rates in this largely younger patient group.

Since 2009 there have been small increases in the size of the incident population commencing PD as the first established modality. The determinants of this are likely to be multi-factorial and include the effect of patient or physician choice regarding the treatment modality at start of RRT, the general health and fitness of patients starting RRT, organisational level flexibility around PD

tube insertion and acute PD. The introduction of dialysis best practice tariffs in England may result in further changes to the types of treatment patients receive in England.

The proportion of patients treated with HD has stabilised in the last three years. The proportion of patients with a functioning transplant which had been on a slight downward trend has reversed since 2007, probably due to continued increases in living organ and non-heart beating donation [7].

Figure 2.10 depicts in more detail the modality changes in the prevalent dialysis population during this time and highlights a sustained reduction in the proportion of patients treated by CAPD. There was a sustained increase in the proportion of prevalent HD

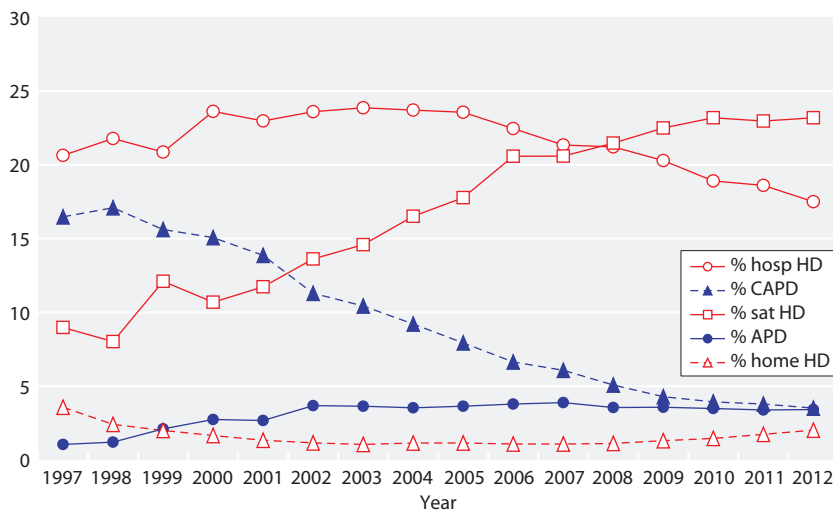


Fig. 2.10. Detailed dialysis modality changes in prevalent RRT patients from 1997–2012

*Scottish centres excluded as information on satellite HD was not available

patients treated at satellite units with a steady decline in hospital centre haemodialysis since 2004.

International comparisons

At the time of writing this report, prevalence rate data were not yet available for 2012 from other countries. Therefore international comparisons of prevalence rates are not presented. This data will be added to the UKRR data portal when it is available.

Summary

There continues to be growth across the UK in prevalent patients on RRT with regional and centre level variation. There was no real difference in prevalence rates between the four nations of the UK once adjusted for background population characteristics. In general, areas with large ethnic minority populations had higher standardised prevalence ratios. There were increasing numbers of patients on HD and those with a functioning transplant. There was an absolute increase in patient numbers on PD in 2012, with only a minor reduction in the relative proportion on PD between 2011 and 2012. The prevalence rate in the over 80 year age group continues to increase. There have been substantial increases in home HD use in some areas although several centres are still unable to offer this modality.

Conflicts of interest: none

References

- 1 Office for National Statistics. www.statistics.gov.uk
- 2 National Records of Scotland. <http://www.nrscotland.gov.uk/>
- 3 Northern Ireland Statistics and Research Agency. <http://www.nisra.gov.uk/>
- 4 Office for National Statistics. The classification of ethnic groups. (www.statistics.gov.uk)
- 5 Ansell D, Feest T: The sixth annual report. Chapter 17: Social deprivation on renal replacement therapy. Bristol, UK Renal Registry, 2003
- 6 NICE 2002. Technology appraisal No 48. National Institute Clinical Excellence. www.nice.org.uk
- 7 NHS Blood and Transplant activity report 2009/2010. Transplant activity in the UK. http://www.organdonation.nhs.uk/ukt/statistics/transplant_activity_report/current_activity_reports/ukt/activity_report_2009_10.pdf