UK Renal Registry 14th Annual Report: Chapter 1 UK RRT Incidence in 2010: national and centre-specific analyses

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Key Words
Acceptance rates · Comorbidity · Dialysis · End stage renal disease · End stage renal failure · Established renal failure · Haemodialysis · Incidence · Peritoneal dialysis · Primary Care Trust · Renal replacement therapy · Transplantation · Treatment modality

Summary

- In 2010 the incidence rate in the UK was stable at 107 per million population (pmp).
- The incidence rate pmp was stable for England from 2006 to 2010 but had increased from 95 pmp in 2001.
- The median age of all incident patients was 64.9 years and for non-Whites 57.1 years.
- Diabetic renal disease remained the single most common cause of renal failure (24%).
- By 90 days, 68.3% of patients were on haemodialysis, 18.1% on peritoneal dialysis, 7.7% had had a transplant and 5.9% had died or stopped treatment.
- The mean eGFR at the start of RRT was 8.7 ml/min/1.73 m^2 similar to the previous four years.
- There was no relationship between social deprivation and presentation pattern.
- Late presentation (<90 days) fell from 28.2% in 2005 to 20.6% in 2010.

Introduction

This chapter contains analyses of adult patients starting renal replacement therapy (RRT) in the UK in 2010. It describes regional and national variations in incidence rates of RRT, the demographics and clinical characteristics of all patients starting RRT and those presenting late. The methodology and results for these analyses are discussed in three separate sections.

Definitions

The definition of incident patients is given in detail in appendix B: Definitions and Analysis Criteria (www.renalreg.com/report-area/report 2011/appendix-B.pdf). In brief, it is all patients over 18 who commenced RRT in the UK in 2010 and who did not recover renal function within 90 days: this does not include those with a failed renal transplant who return to dialysis (as they started RRT with or before the transplant).

Differences may be seen in the 2005 to 2009 numbers now quoted when compared with previous publications because of retrospective updating of data in collaboration with renal centres, in particular for patients who were initially thought to have acute renal failure. As last year, rather than allocating all pre-emptive transplants to the transplanting centre, an attempt was made to allocate these patients to their work up centre. This was not possible for all such patients and consequently some patients probably remained incorrectly allocated to the transplanting centre.

The term established renal failure (ERF) used within this chapter is synonymous with the terms end stage renal failure (ESRF) and end stage renal disease (ESRD), which are in more widespread international usage. Within the UK, patient groups have disliked the term 'end stage' which formerly reflected the inevitable outcome of this disease.

UK Renal Registry coverage

The UK Renal Registry (UKRR) received individual patient level data from all adult renal centres in the UK (5 renal centres in Wales, 6 in Northern Ireland, 9 in Scotland and 52 in England). Data from centres in Scotland were obtained from the Scottish Renal Registry. Data on children and young adults can be found in chapter 5: Demography of the UK Paediatric Renal Replacement Therapy population in 2010.

1 Geographical variation in incidence rates

Over the years, there have been wide variations in incidence rates between renal centres. Equity of access to RRT is an important aim but is hard to assess as the need for RRT depends on many variables including medical, social and demographic factors such as underlying conditions, age, gender, social deprivation and ethnicity. Thus, comparison of crude incidence rates by geographical area can be misleading. This year's report again uses age and gender standardisation as well as showing crude rates. It also gives the ethnic minority percentage of each area as this influences incidence rates. More detailed investigations into variation in incidence rates are continuing at the UKRR.

Methods

Crude incidence rates were calculated per million population (pmp) and age/gender standardised incidence ratios were calculated as detailed in appendix D: Methodology used for Analyses (www.renalreg.com/report-area/report 2011/appendix-D.pdf). Briefly, data from all areas covered by the Registry for the relevant year were used to calculate overall age and gender specific incidence rates. The age and gender breakdown of the population in each Primary Care Trust (PCT) area in England, Local Health Board (HB) in Wales, Scottish Health Board (HB) and the Health and Social Care Trust Areas in Northern Ireland (HSC) were obtained from the Office for National Statistics (ONS) [1]. These are referred to by the umbrella term 'PCT/HB' in this report. The population breakdown was extrapolated by the ONS from the 2001 census data to mid-2010 estimates. For Northern Ireland the population data were aggregated from district council to HSC level. The population breakdown and the overall incidence rates were used to calculate the expected age and gender specific incident numbers for each PCT/HB. The age and gender standardised incidence ratio was the observed incident numbers divided by the expected incident numbers. A ratio below 1 indicated that the observed rate was less than expected given the area's age structure. This was statistically significant if the upper confidence limit was less than 1. Analyses were undertaken for each of the last 6 years and, as the incident numbers for one year can be small especially for smaller areas, a combined 6 years analysis was also done. The proportion of non-Whites in each PCT/HB area was obtained from the ONS from the 2001 Census for Northern Ireland, Scotland and Wales and from the ONS revised estimates for 2007 for England.

Results

In 2010 the number of adult patients starting RRT in the UK was 6,648 equating to an incidence rate of 107 pmp (table 1.1), slightly lower than in 2009. Wales remained the country with the highest incidence rate (figure 1.1). For England, incidence rates have been stable for the last 5 years. There continued to be very

Table 1.1. Number of new adult patients starting RRT in the UK in 2010

	England	N Ireland	Scotland	Wales	**UK**
Number starting RRT	5,587	181	494	386	**6,648**
[a]Total estimated population mid-2010 (millions)	52.2	1.8	5.2	3.0	**62.3**
Incidence rate (pmp)	107	101	95	128	**107**
(95% CI)	(104–110)	(86–115)	(86–103)	(116–141)	**(104–109)**

[a]Data extrapolated by the Office for National Statistics–based on the 2001 census

marked gender differences in incidence rates which were 136 pmp (95% CI 132–140) in males and 79 pmp (95% CI 75–82) in females. Including incident patients aged under 18 the UK rate was 108 pmp.

Table 1.2 shows incidence rates and standardised incidence ratios for PCT/HBs. The ratios, calculated using combined data from up to six years, have been used to determine areas with significantly high or low incidence rates. Significantly high areas have been shaded with bold text and significantly low areas shaded a lighter grey with italicised text. There were wide variations between areas, with 52 being significantly high and 54 being significantly low out of a total of 177 areas. As would be expected, urban areas with high percentages of non-White residents tended to have high incidence rates. Figure 1.2 shows the positive correlation ($r = 0.81$, $p < 0.001$) between the standardised incidence ratio and the percentage of the PCT/HB that is non-White.

Confidence intervals are not presented for the crude rates per million population but figures D1 and D2 in appendix D can be used to determine if a PCT/HB falls within the 95% confidence interval around the national average rate.

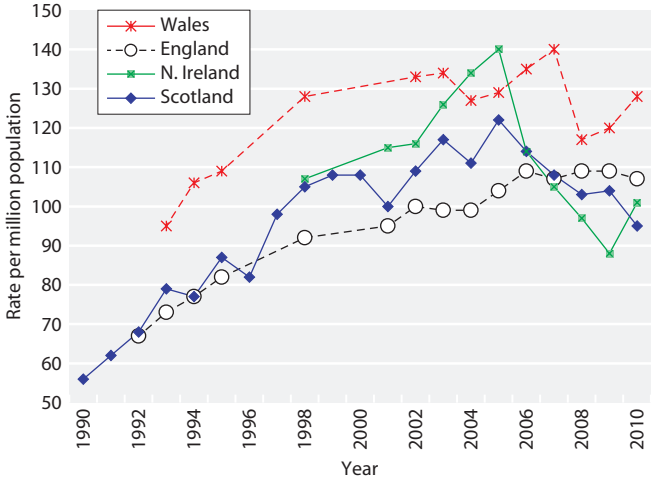

Fig. 1.1. RRT incidence rates in the countries of the UK 1990–2010

The number of new patients starting RRT at each renal centre from 2005 to 2010 is shown in table 1.3 along with the percentage change in these numbers between these years for those centres with full reporting during that period. Some centres have had an increase in new patients over time and others have fallen. The variation may reflect chance fluctuation, the introduction of new centres, changes in catchment populations or in completeness of reporting. Variation may also be due to changing incidence of established renal failure (increases in underlying disease prevalence, survival from co-morbid conditions and recognition of ERF), changes to treatment thresholds or the introduction of conservative care programmes. Incidence rates per million population by centre were presented for the first time in last year's report after a detailed piece of work was done to estimate the centre's catchment populations. These rates are again reported this year. 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/report-area/report 2011/appendix-E.pdf). In brief, the patient postcode for each prevalent dialysis patient in 2007 was used to create a series of overlapping areas corresponding to each renal centre. These small areas were then assigned to a Census Area Statistics ward using geographical information system technology and the population in each area assigned to its respective renal centre. These estimates will not be accurate for new centres and centres with changes in catchment populations since 2007 (e.g. Bristol, Cambridge and Ipswich, which have lost catchment population since 2007 and Dorset which gained catchment population); in addition the analysis used dialysis patients only and transplant patients may come from a different catchment population. Estimation of centre's catchment populations

Table 1.2. Crude adult incidence rates (pmp) and age/gender standardised incidence ratios 2005–2010

PCT/HB = PCT in England, Health and Social Care Trust Areas in Northern Ireland, Local Health Boards in Wales and Health Boards in Scotland
O/E = standardised incidence ratio
LCL = lower 95% confidence limit
UCL = upper 95% confidence limit
pmp = per million population
pmp[a] = per million population per year
Blank cells = no data returned to the UKRR for that year
Areas with significantly low incidence ratios over six years are italicised in greyed areas, those with significantly high incidence ratios over six years are bold in greyed areas
% non-White = percentage of the PCT/HB population that is non-White, from 2001 census (revised by ONS to 2007 for England)
For those areas not covered by the Registry for the entire period 2005–2010, the combined years standardised incidence ratios and incidence rates are averages for the years covered by the Registry

UK Area	PCT/HB	Tot pop (2010)	2005 O/E	2006 O/E	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2010 pmp	2005–2010 O/E	2005–2010 LCL	2005–2010 UCL	2005–2010 pmp[a]	% non-White
North East	*County Durham*	*510,800*	*0.89*	*0.86*	*0.67*	*0.67*	*0.76*	*0.78*	*88*	*0.77*	*0.68*	*0.87*	*88*	*2.5*
	Darlington	100,600	0.55	0.61	1.15	0.97	0.96	0.99	109	0.87	0.68	1.13	98	3.3
	Gateshead	*192,000*	*0.80*	*0.90*	*0.78*	*0.55*	*0.90*	*0.79*	*89*	*0.79*	*0.65*	*0.95*	*89*	*3.8*
	Hartlepool	91,400	0.83	1.37	0.50	1.29	0.78	0.61	66	0.90	0.69	1.17	98	2.6
	Middlesbrough	142,100	1.02	1.38	1.18	1.18	0.62	1.49	148	1.14	0.94	1.40	115	8.6
	Newcastle	292,200	1.08	0.82	1.18	1.00	0.89	0.73	68	0.95	0.81	1.11	90	9.7
	North Tyneside	*198,400*	*0.88*	*0.79*	*0.75*	*0.49*	*0.88*	*0.95*	*106*	*0.79*	*0.65*	*0.95*	*89*	*3.6*
	Northumberland	*312,100*	*0.64*	*0.71*	*0.74*	*0.67*	*0.61*	*0.60*	*74*	*0.66*	*0.57*	*0.78*	*82*	*2.2*
	Redcar and Cleveland	137,300	0.96	0.91	0.98	0.74	0.85	0.69	80	0.85	0.69	1.06	101	3.0
	South Tyneside	154,100	0.95	1.07	1.14	0.57	1.24	0.76	84	0.96	0.79	1.17	108	4.8
	Stockton-on-Tees Teaching	*192,600*	*0.81*	*0.87*	*0.63*	*0.83*	*0.68*	*0.89*	*93*	*0.78*	*0.64*	*0.96*	*83*	*4.7*
	Sunderland Teaching	283,400	0.80	0.73	1.05	0.86	0.92	1.04	113	0.90	0.77	1.05	99	3.3
North West	*Ashton, Leigh and Wigan*	*307,200*	*0.89*	*0.67*	*0.86*	*0.86*	*0.59*	*0.69*	*75*	*0.76*	*0.65*	*0.89*	*83*	*2.9*
	Blackburn with Darwen Teaching	140,000	1.43	1.28	1.30	0.46	0.91	1.09	100	1.08	0.87	1.33	100	22.7
	Blackpool	*140,200*	*0.82*	*0.54*	*0.91*	*0.91*	*0.96*	*0.62*	*71*	*0.79*	*0.64*	*0.99*	*93*	*3.7*
	Bolton Teaching	266,500	0.71	0.88	0.89	0.96	0.88	1.42	146	0.96	0.82	1.12	100	12.3
	Bury	*183,500*	*0.74*	*0.55*	*0.71*	*0.77*	*0.71*	*0.73*	*76*	*0.70*	*0.57*	*0.87*	*74*	*8.5*
	Central and Eastern Cheshire	*457,200*			*0.61*	*0.65*	*0.72*	*0.76*	*87*	*0.68*	*0.58*	*0.80*	*80*	*3.4*
	Central Lancashire	*459,200*	*0.74*	*0.58*	*0.81*	*0.87*	*0.92*	*0.64*	*70*	*0.76*	*0.67*	*0.87*	*83*	*6.7*
	Cumbria Teaching	*494,400*	*0.84*	*0.61*	*0.62*	*0.71*	*0.58*	*0.67*	*83*	*0.67*	*0.59*	*0.76*	*83*	*2.0*
	East Lancashire Teaching	*381,200*	*0.68*	*0.90*	*0.72*	*0.65*	*0.81*	*0.69*	*73*	*0.74*	*0.64*	*0.86*	*80*	*9.4*
	Halton and St Helens	296,700	1.21	1.21	1.01	0.55	0.88	0.91	98	0.96	0.83	1.11	105	2.1
	Heywood, Middleton and Rochdale	205,000			0.90	1.00	1.13	0.82	83	0.96	0.78	1.20	99	12.6
	Knowsley	*149,200*	*0.67*	*0.89*	*1.03*	*0.51*	*0.76*	*0.91*	*94*	*0.80*	*0.63*	*1.00*	*83*	*2.8*
	Liverpool	**445,300**	**1.34**	**1.21**	**1.11**	**1.15**	**1.21**	**0.90**	**88**	**1.15**	**1.03**	**1.29**	**114**	**8.3**
	Manchester Teaching	**498,800**			**1.25**	**1.32**	**1.38**	**1.29**	**100**	**1.31**	**1.14**	**1.50**	**104**	**23.4**
	North Lancashire Teaching	*329,100*	*0.38*	*0.51*	*0.59*	*0.52*	*0.70*	*0.62*	*76*	*0.56*	*0.47*	*0.66*	*68*	*4.2*
	Oldham	219,600	0.51	0.84	0.90	1.08	0.85	0.92	91	0.85	0.71	1.02	86	12.2
	Salford	229,100	0.36	0.96	0.53	1.05	0.96	1.39	135	0.88	0.73	1.05	87	7.7
	Sefton	*272,800*	*0.91*	*0.83*	*0.57*	*0.90*	*0.77*	*0.98*	*117*	*0.83*	*0.71*	*0.96*	*100*	*2.6*
	Stockport	*284,700*			*0.80*	*0.77*	*0.61*	*0.88*	*98*	*0.77*	*0.63*	*0.93*	*87*	*6.4*
	Tameside and Glossop	250,700			1.36	0.71	0.93	0.96	100	0.99	0.82	1.20	105	5.9
	Trafford	217,100			1.12	0.60	1.06	1.36	143	1.03	0.85	1.26	111	11.2
	Warrington	*199,100*	*0.82*	*0.73*	*0.74*	*0.60*	*1.00*	*0.56*	*60*	*0.74*	*0.61*	*0.91*	*80*	*3.5*
	Western Cheshire	*234,300*	*0.56*	*0.88*	*0.90*	*0.54*	*0.88*	*1.16*	*137*	*0.82*	*0.70*	*0.97*	*97*	*3.1*
	Wirral	*308,800*	*1.25*	*0.80*	*0.75*	*0.75*	*0.83*	*0.74*	*84*	*0.85*	*0.73*	*0.98*	*98*	*2.8*

Table 1.2. Continued

UK Area	PCT/HB	Tot pop (2010)	2005 O/E	2006 O/E	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2010 pmp	2005–2010 O/E	2005–2010 LCL	2005–2010 UCL	2005–2010 pmp[a]	% non-White
Yorkshire and the Humber	Barnsley	227,500	0.74	1.01	0.87	1.11	0.94	1.25	136	0.99	0.84	1.16	109	2.7
	Bradford and Airedale Teaching	**512,700**	**1.38**	**0.88**	**1.47**	**1.11**	**0.98**	**1.29**	**119**	**1.18**	**1.06**	**1.32**	**111**	**25.0**
	Calderdale	202,800	1.01	0.91	0.92	0.83	1.05	0.52	54	0.87	0.73	1.05	93	9.8
	Doncaster	*290,900*	*0.67*	*0.79*	*0.64*	*0.80*	*1.06*	*0.93*	*103*	*0.82*	*0.70*	*0.95*	*91*	*4.3*
	East Riding of Yorkshire	*338,500*	*1.07*	*0.67*	*0.63*	*0.96*	*0.90*	*0.69*	*86*	*0.82*	*0.71*	*0.94*	*103*	*3.0*
	Hull Teaching	263,800	1.24	0.76	1.04	1.00	1.03	0.94	91	1.00	0.85	1.17	98	5.8
	Kirklees	409,900	0.77	1.18	0.72	0.79	1.09	0.93	93	0.92	0.80	1.04	93	16.0
	Leeds	*798,700*	*1.14*	*0.92*	*0.82*	*0.97*	*0.81*	*0.67*	*64*	*0.89*	*0.81*	*0.98*	*85*	*11.8*
	North East Lincolnshire	158,800	1.17	1.11	1.07	1.12	0.83	0.68	76	1.00	0.82	1.20	111	3.1
	North Lincolnshire	157,500	1.07	1.01	0.65	0.81	0.75	0.71	83	0.83	0.68	1.02	97	3.2
	North Yorkshire and York	*802,100*	*0.91*	*0.87*	*0.81*	*0.73*	*0.81*	*0.63*	*74*	*0.79*	*0.72*	*0.87*	*94*	*3.7*
	Rotherham	254,300	1.14	0.91	1.03	1.31	0.95	1.16	126	1.08	0.93	1.25	119	5.2
	Sheffield	**555,700**	**1.05**	**1.10**	**1.14**	**1.12**	**1.25**	**1.07**	**106**	**1.12**	**1.01**	**1.24**	**113**	**12.2**
	Wakefield District	*325,500*	*0.69*	*1.04*	*0.50*	*0.75*	*0.63*	*0.88*	*95*	*0.75*	*0.64*	*0.87*	*82*	*4.3*
East Midlands	Bassetlaw	112,100	1.02	0.59	1.73	0.60	0.74	0.84	98	0.92	0.73	1.16	109	3.1
	Derby City	**247,100**	**1.19**	**1.21**	**1.03**	**1.62**	**1.37**	**1.05**	**105**	**1.25**	**1.08**	**1.44**	**127**	**15.0**
	Derbyshire County	*729,900*	*0.69*	*0.66*	*0.82*	*1.03*	*0.77*	*0.74*	*86*	*0.79*	*0.71*	*0.87*	*92*	*3.2*
	Leicester City	**306,800**	**1.55**	**1.47**	**1.75**	**1.63**	**1.40**	**1.82**	**156**	**1.60**	**1.42**	**1.81**	**140**	**38.2**
	Leicestershire County and Rutland	*687,200*	*0.75*	*0.86*	*0.85*	*0.72*	*0.78*	*0.96*	*108*	*0.82*	*0.74*	*0.91*	*94*	*7.7*
	Lincolnshire Teaching	*705,000*	*1.03*	*0.76*	*0.79*	*0.71*	*0.73*	*0.89*	*109*	*0.82*	*0.74*	*0.90*	*101*	*3.3*
	Northamptonshire Teaching	687,600	0.81	0.88	0.97	1.20	0.83	0.82	86	0.92	0.83	1.01	97	7.4
	Nottingham City	**306,300**	**1.40**	**1.38**	**0.96**	**1.31**	**1.42**	**1.50**	**124**	**1.33**	**1.16**	**1.52**	**112**	**18.7**
	Nottinghamshire County Teaching	668,000	1.19	1.16	1.04	0.89	1.03	0.91	103	1.04	0.95	1.13	119	5.1
West Midlands	**Birmingham East and North**	**409,300**	**1.93**	**1.84**	**1.45**	**1.70**	**1.48**	**1.43**	**134**	**1.64**	**1.48**	**1.81**	**156**	**23.8**
	Coventry Teaching	**315,700**	**1.05**	**1.06**	**1.36**	**1.59**	**1.67**	**1.29**	**124**	**1.34**	**1.18**	**1.52**	**130**	**19.6**
	Dudley	307,500	1.02	0.91	0.95	0.87	1.41	0.80	91	1.00	0.87	1.14	115	8.5
	Heart of Birmingham Teaching	**285,100**	**2.04**	**2.38**	**2.67**	**2.86**	**2.90**	**2.32**	**168**	**2.53**	**2.27**	**2.83**	**188**	**61.8**
	Herefordshire	*179,400*	*0.81*	*0.72*	*0.86*	*0.82*	*1.06*	*0.70*	*89*	*0.83*	*0.69*	*0.99*	*107*	*2.4*
	North Staffordshire	211,900			0.59	0.83	1.25	0.72	85	0.85	0.69	1.05	101	3.5
	Sandwell	**292,900**	**1.52**	**1.34**	**1.53**	**2.13**	**1.74**	**1.80**	**181**	**1.68**	**1.50**	**1.88**	**171**	**21.8**
	Shropshire County	293,400	0.90	0.96	0.79	1.11	0.72	0.91	112	0.90	0.78	1.03	112	3.0
	Solihull	206,300	1.22	1.32	0.80	0.97	1.32	0.98	111	1.10	0.94	1.29	127	9.0
	South Birmingham	**342,200**	**1.28**	**1.09**	**1.29**	**1.64**	**1.39**	**1.10**	**105**	**1.30**	**1.15**	**1.47**	**126**	**17.9**
	South Staffordshire	611,300			0.95	0.90	0.80	1.03	118	0.92	0.81	1.04	107	4.7
	Stoke on Trent	**248,000**			**1.27**	**1.01**	**1.34**	**1.26**	**133**	**1.22**	**1.03**	**1.45**	**131**	**7.1**
	Telford and Wrekin	**162,400**	**0.74**	**1.34**	**1.59**	**1.00**	**1.17**	**1.45**	**148**	**1.22**	**1.02**	**1.45**	**126**	**6.6**
	Walsall Teaching	**256,800**	**1.18**	**1.44**	**1.21**	**1.35**	**1.02**	**1.88**	**202**	**1.35**	**1.18**	**1.54**	**147**	**14.7**
	Warwickshire	536,200	0.95	1.05	1.03	0.97	0.99	1.20	136	1.03	0.93	1.14	119	6.7
	Wolverhampton City	**239,300**	**1.67**	**1.27**	**1.02**	**1.45**	**1.12**	**1.51**	**159**	**1.34**	**1.16**	**1.53**	**142**	**23.8**
	Worcestershire	*557,300*	*0.80*	*0.62*	*0.83*	*0.95*	*1.07*	*0.79*	*93*	*0.84*	*0.76*	*0.94*	*100*	*4.4*
East of England	*Bedfordshire*	*416,300*	*0.66*	*1.02*	*0.56*	*0.74*	*0.82*	*0.89*	*94*	*0.78*	*0.68*	*0.90*	*83*	*9.3*
	Cambridgeshire	616,400	0.94	1.09	0.83	0.81	1.00	0.80	84	0.91	0.82	1.01	98	7.4
	Hertfordshire	*1,107,500*	*0.74*	*0.93*	*0.77*	*0.94*	*0.83*	*0.89*	*92*	*0.85*	*0.79*	*0.92*	*89*	*9.9*
	Great Yarmouth and Waveney	214,700	1.29	1.29	1.13	1.21	0.86	1.11	140	1.15	0.99	1.32	146	3.5
	Luton	198,900	1.32	1.15	1.49	1.05	0.99	1.07	96	1.17	0.99	1.40	106	31.5
	Mid Essex	*374,500*	*0.85*	*0.95*	*0.93*	*0.81*	*0.88*	*0.78*	*85*	*0.87*	*0.76*	*0.99*	*96*	*5.1*
	Norfolk	764,800	1.16	1.01	1.06	0.90	0.71	0.82	102	0.94	0.86	1.02	117	3.9

Table 1.2. Continued

UK Area	PCT/HB	Tot pop (2010)	2005 O/E	2006 O/E	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2010 pmp	2005–2010 O/E	2005–2010 LCL	2005–2010 UCL	2005–2010 pmp[a]	% non-White
East of	North East Essex	329,500				1.47	0.65	0.93	109	1.02	0.85	1.21	121	6.4
England	Peterborough	173,600	1.21	1.27	1.11	1.05	1.27	0.71	69	1.10	0.92	1.33	108	13.0
	South East Essex	338,200	0.89	1.22	1.06	0.98	0.62	0.84	98	0.94	0.82	1.07	109	5.7
	South West Essex	410,000	0.96	1.03	0.94	1.11	0.68	0.87	88	0.93	0.82	1.06	96	7.6
	Suffolk	*601,900*	*0.92*	*0.78*	*0.94*	*0.79*	*0.86*	*0.76*	*88*	*0.84*	*0.76*	*0.93*	*99*	*5.7*
	West Essex	*286,400*	*0.80*	*0.72*	*0.73*	*0.45*	*0.82*	*0.65*	*70*	*0.69*	*0.58*	*0.82*	*76*	*7.9*
London	Barking and Dagenham	179,700	0.83	0.79	1.13	1.53	1.45	1.43	117	1.20	0.99	1.45	99	23.7
	Barnet	**348,000**	**0.77**	**1.34**	**1.83**	**1.44**	**1.34**	**1.81**	**172**	**1.43**	**1.27**	**1.60**	**138**	**29.4**
	Bexley	**228,300**	**0.99**	**1.11**	**1.12**	**1.20**	**1.31**	**1.35**	**140**	**1.18**	**1.02**	**1.37**	**124**	**13.0**
	Brent Teaching	**256,300**		**1.88**	**2.14**	**2.18**	**2.37**	**3.04**	**281**	**2.32**	**2.06**	**2.60**	**219**	**53.5**
	Bromley	312,400	1.05	0.88	0.71	1.25	0.99	1.12	118	1.00	0.87	1.15	107	11.9
	Camden	235,500	0.75	1.19	1.08	1.03	1.34	1.66	132	1.18	0.99	1.39	96	24.9
	City and Hackney Teaching	**231,000**		**1.31**	**1.43**	**1.26**	**1.87**	**1.71**	**130**	**1.51**	**1.28**	**1.79**	**119**	**35.7**
	Croydon	**345,400**	**1.69**	**1.04**	**1.74**	**1.44**	**1.66**	**1.44**	**136**	**1.50**	**1.34**	**1.68**	**144**	**34.5**
	Ealing	**318,300**	**1.63**	**1.79**	**2.05**	**1.59**	**2.28**	**2.18**	**192**	**1.92**	**1.72**	**2.14**	**172**	**40.7**
	Enfield	**295,000**	**1.11**	**1.40**	**1.17**	**1.38**	**1.26**	**1.34**	**125**	**1.28**	**1.12**	**1.46**	**121**	**28.0**
	Greenwich Teaching	**228,100**	**2.11**	**1.10**	**1.51**	**1.61**	**1.40**	**2.39**	**202**	**1.68**	**1.46**	**1.93**	**145**	**26.1**
	Hammersmith and Fulham	**169,800**	**1.21**	**1.03**	**1.44**	**0.62**	**1.43**	**1.56**	**130**	**1.21**	**1.00**	**1.47**	**103**	**21.0**
	Haringey Teaching	**225,100**	**1.31**	**1.40**	**1.31**	**1.73**	**1.15**	**1.63**	**133**	**1.42**	**1.22**	**1.66**	**119**	**33.1**
	Harrow	**230,300**		**1.38**	**0.48**	**1.65**	**1.98**	**2.32**	**226**	**1.56**	**1.35**	**1.80**	**155**	**44.7**
	Havering	*236,100*		*1.02*	*0.76*	*0.76*	*0.60*	*0.43*	*47*	*0.72*	*0.58*	*0.88*	*80*	*8.8*
	Hillingdon	**266,200**	**1.16**	**1.57**	**0.95**	**1.51**	**1.30**	**1.50**	**139**	**1.33**	**1.16**	**1.53**	**125**	**25.9**
	Hounslow	**236,700**	**1.49**	**1.66**	**1.48**	**1.24**	**1.71**	**1.97**	**169**	**1.59**	**1.38**	**1.83**	**139**	**37.8**
	Islington	**193,900**	**1.60**	**1.73**	**1.28**	**0.96**	**1.54**	**1.66**	**129**	**1.46**	**1.23**	**1.73**	**116**	**22.9**
	Kensington and Chelsea	169,500		0.81	0.53	1.11	0.70	0.96	94	0.82	0.65	1.04	83	22.6
	Kingston	169,000			0.96	1.34	0.70	0.85	77	0.96	0.75	1.24	89	19.9
	Lambeth	**284,400**	**1.93**	**1.45**	**1.98**	**1.58**	**2.07**	**1.51**	**116**	**1.75**	**1.54**	**1.99**	**138**	**32.0**
	Lewisham	**266,400**	**1.73**	**1.69**	**1.84**	**1.61**	**2.37**	**1.53**	**124**	**1.80**	**1.58**	**2.04**	**149**	**34.4**
	Newham	**240,200**	**2.30**	**2.24**	**1.76**	**2.14**	**2.42**	**2.90**	**212**	**2.29**	**2.02**	**2.60**	**171**	**57.0**
	Redbridge	**270,300**	**1.00**	**1.03**	**1.24**	**1.52**	**1.78**	**1.59**	**144**	**1.36**	**1.19**	**1.56**	**125**	**40.9**
	Richmond and Twickenham	190,800			0.86	0.75	0.80	0.88	84	0.82	0.64	1.06	80	11.7
	Southwark	**287,100**	**1.75**	**1.45**	**2.19**	**2.01**	**1.41**	**1.91**	**150**	**1.79**	**1.58**	**2.02**	**143**	**34.1**
	Sutton and Merton	**403,000**			**1.17**	**1.43**	**1.16**	**1.31**	**122**	**1.27**	**1.10**	**1.46**	**120**	**20.8**
	Tower Hamlets	**238,100**	**1.47**	**1.30**	**1.77**	**2.00**	**1.89**	**1.47**	**101**	**1.65**	**1.42**	**1.92**	**116**	**22.8**
	Waltham Forest	**227,400**		**1.84**	**2.63**	**1.44**	**1.69**	**1.38**	**114**	**1.80**	**1.55**	**2.09**	**153**	**36.6**
	Wandsworth	**289,200**			**1.75**	**1.62**	**1.95**	**1.60**	**124**	**1.73**	**1.48**	**2.02**	**139**	**19.7**
	Westminster	**253,400**		**1.40**	**0.62**	**1.31**	**1.53**	**1.23**	**107**	**1.22**	**1.03**	**1.44**	**109**	**27.8**
South	Brighton and Hove City	258,400	1.00	0.91	0.88	1.12	1.15	0.86	81	0.99	0.84	1.16	95	8.7
East	*East Sussex Downs and Weald*	*336,100*	*0.69*	*0.97*	*0.85*	*0.65*	*0.63*	*0.60*	*77*	*0.73*	*0.64*	*0.85*	*95*	*4.9*
Coast	**Eastern and Coastal Kent**	**742,200**			**1.33**	**1.18**	**1.08**	**1.05**	**120**	**1.16**	**1.05**	**1.28**	**134**	**5.3**
	Hastings and Rother	*179,700*	*0.81*	*1.02*	*0.56*	*0.90*	*0.68*	*0.78*	*100*	*0.79*	*0.66*	*0.95*	*102*	*5.2*
	Medway	256,600			1.46	0.69	0.96	0.75	74	0.97	0.79	1.18	97	7.5
	Surrey	*1,114,400*	*0.61*	*0.76*	*0.80*	*0.97*	*0.99*	*1.02*	*110*	*0.86*	*0.80*	*0.93*	*94*	*8.3*
	West Kent	685,100			0.99	1.01	0.95	0.74	80	0.92	0.82	1.04	102	6.8
	West Sussex	*800,000*	*0.77*	*0.85*	*0.89*	*0.90*	*0.77*	*0.74*	*89*	*0.82*	*0.75*	*0.90*	*99*	*5.8*

Table 1.2. Continued

UK Area	PCT/HB	Tot pop (2010)	2005 O/E	2006 O/E	2007 O/E	2008 O/E	2009 O/E	2010 O/E	2010 pmp	2005–2010 O/E	2005–2010 LCL	2005–2010 UCL	2005–2010 pmp[a]	% non-White
South Central	**Berkshire East**	**406,500**	**1.12**	**1.06**	**1.38**	**1.30**	**1.27**	**1.31**	**123**	**1.24**	**1.10**	**1.39**	**118**	**18.9**
	Berkshire West	471,500	1.22	1.05	0.94	1.13	0.91	0.74	72	1.00	0.89	1.12	99	10.1
	Buckinghamshire	*512,100*	*0.61*	*0.70*	*0.77*	*0.77*	*0.97*	*0.80*	*86*	*0.77*	*0.68*	*0.87*	*84*	*10.4*
	Hampshire	*1,297,200*	*0.66*	*0.91*	*0.77*	*0.79*	*0.81*	*0.79*	*90*	*0.79*	*0.73*	*0.85*	*91*	*4.2*
	Isle of Wight National Health Service	*140,200*	*0.33*	*0.42*	*0.22*	*0.32*	*0.16*	*0.65*	*86*	*0.35*	*0.26*	*0.48*	*46*	*3.6*
	Milton Keynes	247,000	0.72	0.73	1.12	0.95	0.94	1.02	93	0.91	0.77	1.09	85	12.7
	Oxfordshire	*624,200*	*0.89*	*0.74*	*0.72*	*0.71*	*1.05*	*0.91*	*93*	*0.84*	*0.75*	*0.93*	*87*	*8.1*
	Portsmouth City Teaching	*207,200*	*0.59*	*0.77*	*0.78*	*0.88*	*0.72*	*0.58*	*53*	*0.72*	*0.58*	*0.90*	*67*	*8.0*
	Southampton City	239,800	0.76	0.68	0.82	1.18	0.68	1.21	108	0.89	0.74	1.07	81	11.4
South West	Bath and North East Somerset	179,800	1.06	0.86	0.97	0.71	1.31	0.62	67	0.92	0.76	1.11	100	5.8
	Bournemouth and Poole Teaching	*310,800*	*0.70*	*0.63*	*0.73*	*0.89*	*0.57*	*0.56*	*64*	*0.68*	*0.58*	*0.80*	*78*	*5.0*
	Bristol	**441,100**	**1.16**	**1.38**	**1.04**	**1.49**	**1.21**	**1.40**	**125**	**1.28**	**1.15**	**1.43**	**116**	**11.6**
	Cornwall and Isles of Scilly	*537,900*	*0.67*	*1.07*	*0.93*	*0.88*	*1.01*	*0.79*	*99*	*0.90*	*0.81*	*0.99*	*113*	*2.8*
	Devon	749,700	1.04	0.92	1.08	1.13	1.02	0.90	113	1.01	0.93	1.10	129	3.3
	Dorset	*404,900*	*0.63*	*0.53*	*0.77*	*0.90*	*0.70*	*0.65*	*89*	*0.70*	*0.61*	*0.79*	*96*	*3.5*
	Gloucestershire	*593,600*	*0.85*	*1.01*	*0.87*	*0.65*	*1.11*	*0.88*	*101*	*0.90*	*0.81*	*0.99*	*104*	*4.7*
	North Somerset	212,100	1.05	0.84	0.74	1.12	0.84	0.87	104	0.91	0.77	1.07	110	3.6
	Plymouth Teaching	**258,900**	**1.09**	**1.79**	**1.73**	**1.05**	**1.15**	**1.22**	**124**	**1.34**	**1.17**	**1.54**	**137**	**4.4**
	Somerset	*525,500*	*0.63*	*0.75*	*0.67*	*0.76*	*1.10*	*1.10*	*135*	*0.84*	*0.75*	*0.93*	*104*	*3.2*
	South Gloucestershire	264,900	1.08	0.99	0.90	0.97	0.72	1.13	121	0.96	0.83	1.12	104	5.0
	Swindon	206,900	0.74	0.75	0.52	1.14	1.08	1.07	106	0.88	0.73	1.07	89	7.1
	Torbay	134,400	1.01	0.79	0.92	1.55	0.68	1.45	186	1.06	0.88	1.28	138	3.1
	Wiltshire	*459,800*	*0.82*	*0.70*	*0.60*	*0.85*	*0.74*	*0.82*	*94*	*0.76*	*0.67*	*0.86*	*87*	*3.4*
Wales	Betsi Cadwaladr University	678,500	1.32	1.09	1.11	0.94	0.87	0.92	109	1.04	0.95	1.14	125	1.0
	Powys Teaching	131,100	1.19	0.68	0.98	0.86	1.02	0.76	99	0.91	0.75	1.12	121	0.9
	Hywel Dda	374,800	1.04	0.91	1.13	1.20	0.80	1.13	139	1.03	0.92	1.16	129	1.0
	Abertawe Bro Morgannwg Univ.	**504,800**	**1.03**	**1.39**	**1.49**	**1.23**	**1.54**	**1.53**	**172**	**1.37**	**1.25**	**1.50**	**156**	**1.6**
	Cwm Taf	**290,600**	**1.50**	**1.73**	**1.60**	**1.10**	**1.30**	**0.99**	**107**	**1.37**	**1.21**	**1.55**	**150**	**1.1**
	Aneurin Bevan	**561,300**	**1.17**	**1.11**	**1.36**	**0.96**	**0.94**	**1.33**	**148**	**1.14**	**1.04**	**1.26**	**128**	**1.9**
	Cardiff and Vale University	**466,100**	**1.18**	**1.36**	**1.44**	**0.98**	**1.15**	**1.36**	**131**	**1.25**	**1.12**	**1.39**	**122**	**6.7**
Scotland	Ayrshire & Arran	366,900	1.19	1.35	0.85	0.85	0.88	1.12	131	1.04	0.92	1.17	123	0.7
	Borders	113,000	0.59	0.83	1.20	1.06	0.98	1.08	133	0.96	0.77	1.19	119	0.6
	Dumfries and Galloway	148,100	1.29	1.12	0.83	1.09	1.02	0.52	68	0.98	0.81	1.17	127	0.7
	Fife	**364,800**	**1.47**	**1.01**	**1.02**	**0.97**	**1.18**	**1.16**	**129**	**1.13**	**1.01**	**1.27**	**127**	**1.3**
	Forth Valley	293,100	0.97	1.01	1.31	0.78	1.02	1.02	109	1.02	0.88	1.17	111	1.1
	Grampian	*550,500*	*1.01*	*0.81*	*0.89*	*0.89*	*0.88*	*0.76*	*82*	*0.87*	*0.78*	*0.97*	*96*	*1.6*
	Greater Glasgow & Clyde	1,204,100	1.18	1.11	1.06	0.94	0.98	0.87	89	1.02	0.95	1.10	106	3.4
	Highland	310,700	1.45	0.85	0.86	0.79	0.73	0.64	77	0.88	0.77	1.01	108	0.8
	Lanarkshire	*562,700*	*0.77*	*0.91*	*0.84*	*0.76*	*0.86*	*0.99*	*105*	*0.85*	*0.76*	*0.96*	*92*	*1.2*
	Lthian	*837,000*	*1.02*	*1.04*	*0.86*	*0.96*	*0.84*	*0.61*	*61*	*0.89*	*0.81*	*0.97*	*91*	*2.8*
	Orkney	19,800	1.29	0.81	0.41	1.65	1.23	0.42	51	0.97	0.57	1.63	118	0.4
	Shetland	*22,500*	*0.41*	*0.00*	*1.57*	*0.00*	*0.39*	*0.40*	*44*	*0.46*	*0.22*	*0.96*	*52*	*1.1*
	Tayside	**402,400**	**1.37**	**1.05**	**1.23**	**1.17**	**1.28**	**1.01**	**117**	**1.18**	**1.06**	**1.32**	**138**	**1.9**
	Western Isles	26,500	0.00	0.87	1.77	0.29	0.87	1.20	151	0.84	0.52	1.35	107	0.6
N Ireland	**Belfast**	**335,700**	**1.61**	**1.60**	**1.26**	**1.01**	**0.80**	**1.34**	**131**	**1.27**	**1.12**	**1.43**	**126**	**1.1**
	Northern	**458,600**	**1.57**	**1.26**	**1.38**	**1.13**	**0.80**	**1.15**	**116**	**1.21**	**1.09**	**1.35**	**124**	**0.6**
	Southern	357,700	1.28	0.65	0.60	0.99	0.80	1.04	95	0.89	0.77	1.03	82	0.4
	South Eastern	347,100	1.24	0.99	0.86	0.83	0.69	0.71	72	0.88	0.77	1.02	91	0.7
	Western	299,900	0.95	1.25	1.02	0.85	1.23	0.90	83	1.04	0.89	1.20	97	0.5

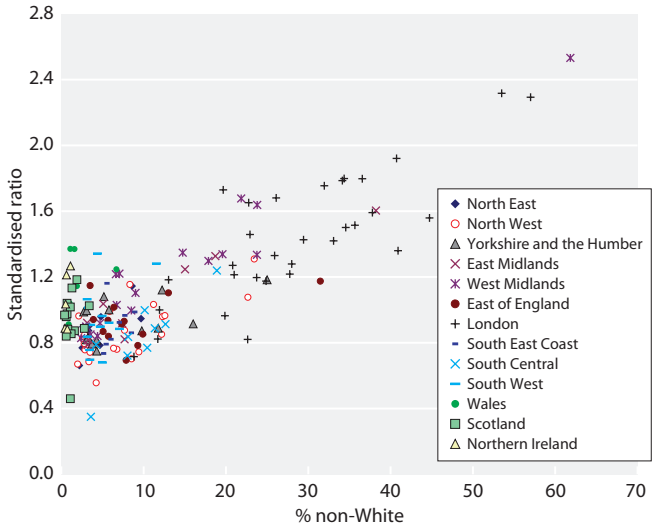

Fig. 1.2. Age/gender standardised incidence ratio (2005–2010) by percentage non-White

therefore remains an inexact science and these figures should be regarded as indicative only. This methodology was used for England only. Estimates of the catchment populations in Wales and Northern Ireland were supplied by personal communication from Dr K Donovan, Dr A Williams and Dr D Fogarty. No data were available from Scotland.

There was a fall of over 20% in the number of new patients for Scotland and Northern Ireland from 2005 to 2010. There was a small fall for Wales over the same period. After omitting the four English centres which did not contribute data for 2005 there was an increase of almost 5% in new patients for England from 2005 to 2010. However, this change occurred from 2005 to 2006 after which the number of patients was relatively stable. Across all four countries the change averages out at an increase of 0.5%.

Table 1.3. Number of new patients accepted by individual renal centres reporting to the UK Renal Registry 2005–2010

Country	Centre	Year						Catchment population (millions)	2010 rate pmp	(95% CI)
		2005	2006	2007	2008	2009	2010			
England	B Heart	119	116	101	105	99	95	0.72	131	(105–157)
	B QEH	199	186	225	268	255	197	1.62	121	(104–138)
	Basldn	32	45	39	40	26	32	0.41	78	(51–106)
	Bradfd	67	50	88	63	61	64	0.58	111	(83–138)
	Brightn	112	131	120	121	120	107	1.20	90	(73–106)
	Bristol	175	176	156	176	158	169	1.57	108	(91–124)
	Camb[a]	111	156	128	109	136	108	1.27[a]	85[a]	(69–101)
	Carlis	31	27	26	30	24	21	0.31	67	(38–95)
	Carsh	183	186	194	216	208	221	1.92	115	(100–131)
	Chelms[a]	40	50	52	36	52	42	0.47[a]	90[a]	(63–117)
	Colchr[b]	n/a	n/a	n/a	58	17	32	[b]	[b]	[b]
	Covnt	84	104	113	116	118	118	0.87	136	(111–160)
	Derby	71	70	63	96	78	80	0.65	124	(97–151)
	Donc[b]	n/a	n/a	20	26	40	44	[b]	[b]	[b]
	Dorset	49	53	65	85	76	72	0.73	99	(76–122)
	Dudley	38	45	40	46	69	41	0.42	99	(69–129)
	Exeter	111	105	126	135	145	136	1.03	132	(110–155)
	Glouc	61	74	58	47	79	58	0.58	101	(75–127)
	Hull	125	105	99	113	101	88	0.99	89	(71–108)
	Ipswi[a]	59	42	40	38	38	34	0.56[a]	61[a]	(40–81)
	Kent			172	140	131	134	1.16	115	(96–135)
	L Barts	187	190	214	206	239	207	1.68	123	(106–140)
	L Guys	148	152	168	164	176	144	1.15	125	(104–145)
	L Kings	131	110	121	151	128	148	0.97	153	(128–177)
	L Rfree	132	194	185	173	170	203	1.50	135	(116–154)
	L St.G			93	100	109	83	0.59	142	(111–172)
	L West	302	313	278	318	357	367	2.23	165	(148–182)
	Leeds	172	178	127	159	154	130	1.65	79	(65–93)
	Leic	226	241	244	243	228	250	2.32	108	(94–121)
	Liv Ain	29	35	36	42	38	49	0.29	169	(122–216)
	Liv RI	139	141	112	102	110	102	1.20	85	(69–102)
	M Hope	110	132	121	142	125	146	1.42	103	(86–119)

Table 1.3. Continued

Country	Centre	Year						Catchment population (millions)	2010 rate pmp	(95% CI)
		2005	2006	2007	2008	2009	2010			
England	M RI			160	133	147	163	1.47	111	(94–128)
	Middlbr	84	108	99	93	95	98	1.01	97	(78–116)
	Newc	112	106	106	97	100	95	1.11	86	(69–103)
	Norwch	119	113	110	90	73	85	0.79	107	(84–130)
	Nottm	145	137	130	115	134	113	1.14	99	(81–118)
	Oxford	153	157	144	150	177	167	1.68	99	(84–114)
	Plymth	60	92	76	69	56	55	0.48	116	(85–146)
	Ports	149	175	157	170	149	150	2.00	75	(63–87)
	Prestn	121	121	132	112	147	122	1.51	81	(66–95)
	Redng	90	88	94	105	99	89	0.80	111	(88–134)
	Sheff[a]	158	168	165	180	150	144	1.49[a]	97[a]	(81–113)
	Shrew	41	55	58	61	47	58	0.39	148	(110–186)
	Stevng	89	122	89	103	98	110	1.09	101	(82–120)
	Sthend	34	48	34	36	23	30	0.32	95	(61–129)
	Stoke			87	81	110	93	0.90	104	(83–125)
	Sund	60	57	62	45	64	55	0.59	93	(69–118)
	Truro	32	52	45	41	58	43	0.41	104	(73–136)
	Wirral	60	52	53	39	63	52	0.52	100	(73–127)
	Wolve	95	85	68	88	65	107	0.61	176	(143–210)
	York	46	48	38	38	47	36	0.51	71	(48–95)
N Ireland	Antrim	42	33	37	41	21	41	0.30	137	(95–179)
	Belfast	130	121	90	70	61	71	0.55	128	(99–158)
	Derry		4	8	6	17	18	0.18	102	(55–149)
	Newry	28	13	15	21	20	21	0.28	74	(42–106)
	Tyrone	24	29	21	25	19	10	0.18	57	(22–92)
	Ulster	9	8	16	14	13	20	0.30	67	(37–96)
Scotland	Abrdn	62	53	56	56	55	46			
	Airdrie	39	55	49	39	48	56			
	D & Gall	22	20	17	19	17	10			
	Dundee	73	51	62	64	69	50			
	Dunfn	44	37	37	30	33	44			
	Edinb	99	106	95	103	98	67			
	Glasgw	199	186	187	159	175	151			
	Inverns	44	26	26	25	21	27			
	Klmarnk	44	57	36	33	39	43			
Wales	Bangor	40	42	36	41	30	26	0.25	104	(64–144)
	Cardff	184	206	221	150	179	188	1.45	130	(111–148)
	Clwyd	26	18	22	15	17	13	0.20	65	(30–100)
	Swanse	101	116	127	124	116	135	0.80	169	(140–197)
	Wrexm	42	26	27	21	20	24	0.30	80	(48–112)
								% change since 2005		
England		**4,891**	**5,191**	**5,531**	**5,710**	**5,767**	**5,587**	[c]		
N Ireland		**233**	**208**	**187**	**177**	**151**	**181**	**−22.3**		
Scotland		**626**	**591**	**565**	**528**	**555**	**494**	**−21.1**		
Wales		**393**	**408**	**433**	**351**	**362**	**386**	**−1.8**		
UK		**6,143**	**6,398**	**6,716**	**6,766**	**6,835**	**6,648**	[c]		
Omitting Kent, L St.G, M RI and Stoke to look at change over time as they were not reporting for 2005										
England		**4,891**	**5,191**	**5,019**	**5,256**	**5,270**	**5,114**	**4.6**		
UK		**6,143**	**6,398**	**6,204**	**6,312**	**6,338**	**6,175**	**0.5**		

Blank cells = no data returned to the registry for that year
n/a – renal centre not yet operational
[a]Some reduction required to the population and increase to the rate after the opening of Colchester renal centre and the expansion of Doncaster renal centre
[b]Colchester renal centre was opened in 2007, Doncaster was still expanding and so catchment populations could not be calculated
[c]Percentage change not given as not all centres contributing for 2005

2 Demographics and clinical characteristics of patients starting RRT

Methods

Age, gender, primary renal disease, ethnic origin and treatment modality were examined for patients starting RRT.

Some centres electronically upload ethnicity coding to their renal information technology (IT) system from the hospital Patient Administration Systems (PAS). Ethnicity coding in these PAS systems is based on self-reported ethnicity and uses a different coding system [2]. 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 Others. The details of regrouping of the PAS codes into the above ethnic categories are provided in appendix H: Ethnicity and ERA-EDTA Coding (www.renalreg.com/report-area/report 2011/appendix-H.pdf). Chi-squared, Fisher's exact, ANOVA and Kruskal Wallis tests were used as appropriate to test for significant differences.

Estimated glomerular filtration rate (eGFR) at the start of RRT was studied amongst patients with eGFR data within 14 days before the start of RRT. The eGFR was calculated using the abbreviated 4 variable MDRD study equation [3]. For the purpose of the eGFR calculation, patients who had missing ethnicity but a valid serum creatinine measurement were classed as Whites. The eGFR values were log transformed in order to normalise the data. Patients with an eGFR >20ml/min/1.73 m^2 were excluded from the eGFR analyses due to concerns about possible data extraction errors.

Results

Age

Incidence rates within the UK have levelled off overall in the last four years and declined slightly in the under 65 age groups (figure 1.3).

Figure 1.4 shows RRT incidence rates for 2010 by age group. For men, the peak was in the 80-84 age group, for women 75–79 and overall 75–79 (the higher male peak at 80–84 does not shift the overall figure as there are relatively few people in this age group).

In 2010, the median age of patients starting renal replacement therapy was 64.9 years (table 1.4) and this had changed little over the previous six years (data not shown). The median age of non-White patients was considerably lower at 57.1 years. This reflects the younger age distribution of ethnic minority populations in general compared with the White population (5.1% of ethnic minorities were over 65 years old compared to 16.9% of Whites) [4] and the higher rates of diabetes in South Asian and Black populations. The median age of patients starting RRT in England was lower than that for N Ireland, Scotland and Wales possibly reflecting the larger percentage of the population being non-White in England.

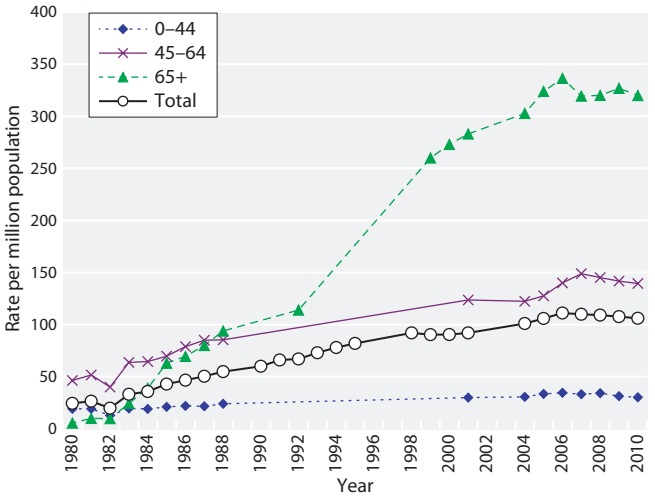

Fig. 1.3. UK incident RRT rates between 1980 and 2010

Figure 1.5 shows that the 45–54, 55–64 and 65–74 age groups contained the most patients starting on peritoneal dialysis whereas the 65–74 age group contained the most patients starting on haemodialysis closely followed by the 75–84 age group.

There were large differences between centres in the median age of incident patients (figure 1.6). This reflects differences in the age and ethnic structure of the catchment populations and also chance fluctuations, particularly in small centres. The median age of patients treated at transplant centres was 63.1 years (IQR 49.7, 74.2) and at non-transplanting centres 66.5 years (IQR 52.9, 76.0) ($p < 0.0001$).

Whilst the median age of patients has risen only slightly over the last 10 years the percentage of patients aged over 75 years has risen from 22.3% to 25.6%.

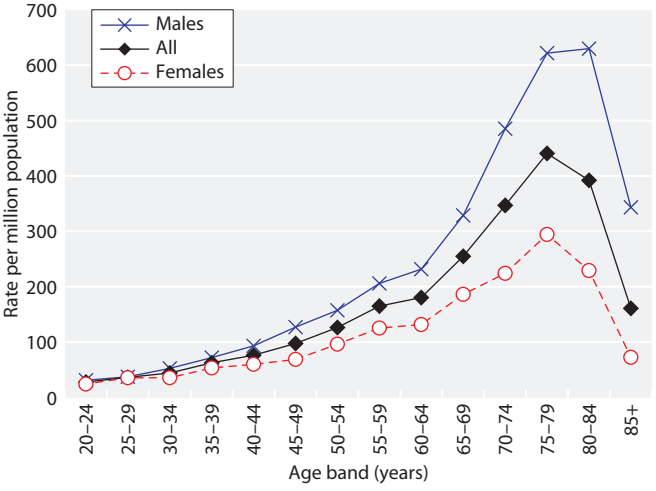

Fig. 1.4. Incidence rates by age and gender in 2010

Table 1.4. Median and inter-quartile range of the age of patients starting renal replacement therapy in 2010 by country

Country	Median	IQR
England	64.4	(50.6–75.1)
N Ireland	67.6	(57.1–77.8)
Scotland	65.3	(51.9–75.0)
Wales	68.5	(56.4–77.2)
UK	**64.9**	**(51.0–75.2)**

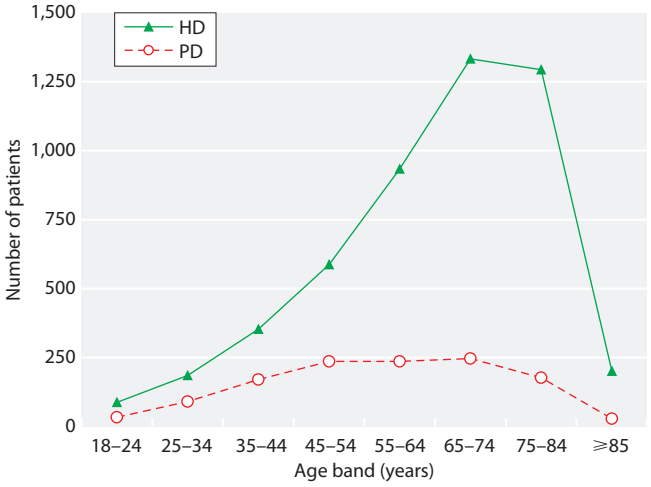

Fig. 1.5. Number of incident patients in 2010, by age group and initial dialysis modality

There is 6-fold variation in crude incidence rates in the over 75 year age group between PCT/HBs (excluding outlying areas) using a combined 6 year cohort. The absolute range in rates was from 0 per million age related population (pmarp) (Shetland) to 1,003 pmarp (Heart of Birmingham). Incidence rates in older patients were able to explain 55% of the variation in overall RRT incidence rate suggesting that this is one of the explanatory factors for the variation in RRT incidence seen in the UK. The wide range of treatment rates suggests there is geographical variation in the prevalence of co-morbid and predisposing renal conditions within the UK as well as uncertainty within the renal community about the suitability of older patients for dialysis. The median age of new patients with diabetes was slightly younger than the overall median at 63.9 years and this has not changed over the last 5 years.

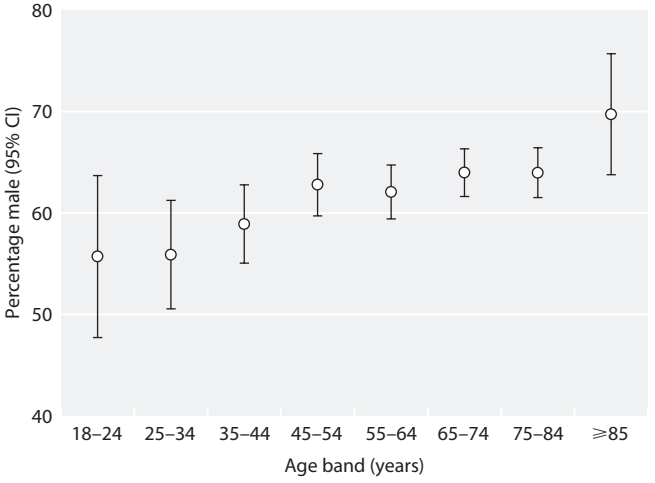

Fig. 1.7. Percentage of patients starting RRT in 2010 who were male, by age group

Gender

As in previous years, more men than women started RRT (62.6% male). The percentage male was above 50 for all age groups and increased with increasing age group (figure 1.7).

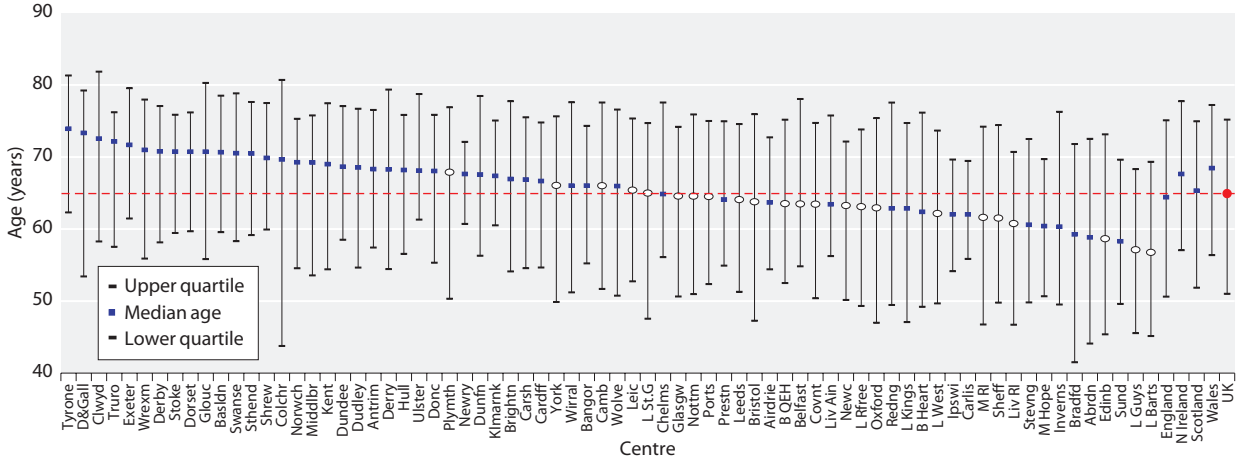

Fig. 1.6. Median age of incident patients in each centre in 2010
White points indicate transplant centres

Table 1.5. Percentage of incident patients (2010) in different ethnic groups by centre

Country	Centre	% data not available	N with data	Percentage in each ethnic group				
				White	Black	South Asian	Chinese	Other
England	B Heart	0.0	95	67.4	2.1	28.4	1.1	1.1
	B QEH	0.0	197	67.5	6.6	21.8	1.5	2.5
	Basldn	0.0	32	87.5	12.5			
	Bradfd	6.3	60	46.7	3.3	50.0		
	Brightn	98.1	2					
	Bristol	0.0	169	88.8	3.6	5.3	1.2	1.2
	Camb	0.9	107	98.1	0.9	0.9		
	Carlis	0.0	21	100.0				
	Carsh	14.5	189	77.2	7.4	11.6		3.7
	Chelms	11.9	37	91.9	2.7	2.7		2.7
	Colchr	18.8	26	96.2	3.8			
	Covnt	0.8	117	82.1	5.1	12.8		
	Derby	12.5	70	90.0		8.6		1.4
	Donc	0.0	44	95.5	2.3	2.3		
	Dorset	0.0	72	98.6				1.4
	Dudley	0.0	41	85.4	2.4	9.8		2.4
	Exeter	13.2	118	99.2		0.8		
	Glouc	1.7	57	96.5				3.5
	Hull	2.3	86	100.0				
	Ipswi	0.0	34	97.1		2.9		
	Kent	10.4	120	96.7		2.5		0.8
	L Barts	2.4	202	32.2	35.1	31.7		1.0
	L Guys	4.9	137	56.2	33.6	4.4	1.5	4.4
	L Kings	6.8	138	55.8	31.2	11.6	1.4	
	L Rfree	5.9	191	49.7	17.3	20.4	0.5	12.0
	L St.G	6.0	78	61.5	17.9	17.9		2.6
	L West	1.1	363	44.4	16.0	35.3	0.6	3.9
	Leeds	1.5	128	80.5	2.3	15.6		1.6
	Leic	4.4	239	81.6	2.1	14.6	0.4	1.3
	Liv Ain	65.3	17					
	Liv RI	28.4	73	94.5	4.1		1.4	
	M Hope	0.0	146	89.0		8.2	0.7	2.1
	M RI	3.1	158	73.4	12.0	12.7	1.9	
	Middlbr	0.0	98	93.9	1.0	5.1		
	Newc	0.0	95	94.7		4.2		1.1
	Norwch	11.8	75	98.7		1.3		
	Nottm	0.0	113	88.5	5.3	4.4		1.8
	Oxford	0.6	166	87.3	3.0	9.0		0.6
	Plymth	5.5	52	96.2		1.9		1.9
	Ports	1.3	148	90.5	2.7	5.4	0.7	0.7
	Prestn	1.6	120	83.3	0.8	15.8		
	Redng	0.0	89	70.8	5.6	23.6		
	Sheff	0.7	143	90.9	1.4	2.8	0.7	4.2
	Shrew	0.0	58	94.8	1.7	1.7		1.7
	Stevng	0.0	110	78.2	2.7	18.2		0.9
	Sthend	3.3	29	93.1	3.4		3.4	
	Stoke	1.1	92	98.9	1.1			
	Sund	0.0	55	96.4	1.8	1.8		
	Truro	0.0	43	100.0				
	Wirral	3.8	50	94.0		2.0	2.0	2.0
	Wolve	0.0	107	71.0	9.3	17.8	0.9	0.9
	York	5.6	34	97.1	2.9			
N Ireland	Antrim	0.0	41	97.6		2.4		
	Belfast	2.8	69	98.6		1.4		
	Derry	0.0	18	94.4		5.6		

Table 1.5. Continued

Country	Centre	% data not available	N with data	Percentage in each ethnic group				
				White	Black	South Asian	Chinese	Other
N Ireland	Newry	0.0	21	100.0				
	Tyrone	0.0	10	100.0				
	Ulster	0.0	20	95.0		5.0		
Wales	Bangor	0.0	26	100.0				
	Cardff	1.6	185	93.0	1.6	4.3		1.1
	Clwyd	15.4	11	100.0				
	Swanse	0.0	135	98.5		1.5		
	Wrexm	0.0	24	100.0				
England		**6.2**	**5,241**	**78.1**	**7.4**	**12.3**	**0.5**	**1.8**
N Ireland		**1.1**	**179**	**97.8**		**2.2**		
Wales		**1.3**	**381**	**96.1**	**0.8**	**2.6**		**0.5**
E, W & NI		**5.7**	**5,801**	**79.8**	**6.8**	**11.3**	**0.4**	**1.7**

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

Ethnicity

In 2010, there was an improvement in the completeness of ethnicity data. Sixty-one centres returned ethnicity data that were 50% or more complete (table 1.5) compared with 51 centres last year. Fifty-two of these 61 centres provided ethnicity data for 90% or more of their incident patients compared with 27 centres last year. Ethnicity completeness is low in the Scottish Renal Registry and Scotland has not been included in the table. The low completeness for some centres means results should still be interpreted with some caution. There was great variation between centres in the ethnic mix of incident patients ranging from 0% ethnic minorities in Carlisle, Hull, Truro, Newry, Tyrone, Bangor, Clywd and Wrexham to over 50% in Bradford, London Barts, London Royal Free and London West.

Primary renal diagnosis

The distribution of primary renal disease (PRD) by centre is shown in table 1.6. Data for PRD were missing in 9.8% of patients and there remained marked differences between centres in completeness of data returns. Sixty centres provided data on over 90% of incident patients and 28 of these had 100% completeness. Four centres had missing PRD data for more than 25% of new patients and for these centres the percentages in the diagnostic categories have not been shown in table 1.6.

Table 1.6. Percentage distribution of primary renal diagnosis by centre in the 2010 incident cohort

Country	Centre	% data not available	N with data	Percentage							
				Uncertain aetiology[a]	Diabetes	Glomerulo-nephritis	Hyper-tension	Other	Polycystic kidney	Pyelo-nephritis	Renal vascular disease
England	B Heart	1.1	94	28.7	26.6	12.8	3.2	10.6	2.1	8.5	7.5
	B QEH	0.0	197	12.7	25.9	12.7	7.1	17.3	8.1	7.1	9.1
	Basldn	0.0	32	25.0	18.8	12.5	3.1	9.4	12.5	6.3	12.5
	Bradfd	1.6	63	23.8	36.5	9.5	9.5	7.9	3.2	4.8	4.8
	Brightn	72.0	30								
	Bristol	0.6	168	21.4	17.3	12.5	6.0	20.2	7.1	7.1	8.3
	Camb	0.0	108	53.7							
	Carlis	0.0	21	4.8	23.8	14.3	19.1	19.1	4.8	14.3	0.0
	Carsh	19.0	179	34.1	17.9	6.2	6.7	20.1	3.4	5.0	6.7
	Chelms	4.8	40	30.0	25.0	10.0	5.0	15.0	0.0	7.5	7.5
	Colchr	18.8	26	11.5	11.5	15.4	11.5	15.4	3.9	19.2	11.5
	Covnt	2.5	115	18.3	13.9	12.2	10.4	15.7	11.3	7.0	11.3
	Derby	2.5	78	24.4	24.4	15.4	1.3	16.7	1.3	9.0	7.7
	Donc	0.0	44	43.2	25.0	2.3	6.8	11.4	4.6	4.6	2.3

Table 1.6. Continued

Country	Centre	% data not available	N with data	Percentage							
				Uncertain aetiology[a]	Diabetes	Glomerulo-nephritis	Hyper-tension	Other	Polycystic kidney	Pyelo-nephritis	Renal vascular disease
England	Dorset	4.2	69	14.5	13.0	5.8	7.3	21.7	14.5	13.0	10.1
	Dudley	2.4	40	7.5	30.0	12.5	27.5	12.5	5.0	5.0	0.0
	Exeter	3.7	131	14.5	22.9	4.6	7.6	19.1	6.1	8.4	16.8
	Glouc	0.0	58	25.9	19.0	10.3	0.0	15.5	12.1	3.5	13.8
	Hull	8.0	81	24.7	21.0	9.9	4.9	17.3	6.2	13.6	2.5
	Ipswi	0.0	34	55.9							
	Kent	2.2	131	28.2	16.8	12.2	2.3	18.3	9.2	6.1	6.9
	L Barts	10.1	186	12.4	36.6	12.4	9.1	15.6	5.4	4.8	3.8
	L Guys	22.9	111	12.6	25.2	14.4	10.8	15.3	6.3	11.7	3.6
	L Kings	0.0	148	19.6	27.0	14.2	14.2	10.8	6.8	5.4	2.0
	L Rfree	78.3	44								
	L St.G	4.8	79	15.2	26.6	13.9	5.1	19.0	8.9	8.9	2.5
	L West	1.1	363	16.5	33.1	11.6	3.6	19.8	4.7	5.8	5.0
	Leeds	0.8	129	20.2	24.8	8.5	9.3	17.8	4.7	7.8	7.0
	Leic	18.8	203	18.2	22.2	13.3	3.5	15.8	8.4	10.8	7.9
	Liv Ain	0.0	49	98.0							
	Liv RI	2.0	100	70.0							
	M Hope	51.4	71								
	M RI	17.8	134	14.9	26.1	14.9	13.4	13.4	7.5	7.5	2.2
	Middlbr	0.0	98	22.5	17.4	16.3	2.0	17.4	11.2	8.2	5.1
	Newc	2.1	93	22.6	22.6	14.0	6.5	11.8	10.8	4.3	7.5
	Norwch	8.2	78	24.4	19.2	10.3	1.3	16.7	11.5	5.1	11.5
	Nottm	0.0	113	19.5	22.1	10.6	4.4	15.9	9.7	11.5	6.2
	Oxford	5.4	158	18.4	27.2	14.6	2.5	15.2	6.3	12.0	3.8
	Plymth	7.3	51	7.8	23.5	23.5	5.9	15.7	9.8	7.8	5.9
	Ports	3.3	145	10.3	25.5	8.3	11.0	18.6	5.5	12.4	8.3
	Prestn	4.9	116	15.5	18.1	13.8	12.1	14.7	9.5	6.0	10.3
	Redng	4.5	85	16.5	24.7	18.8	2.4	14.1	4.7	10.6	8.2
	Sheff	8.3	132	27.3	22.0	11.4	2.3	15.9	3.8	9.9	7.6
	Shrew	0.0	58	27.6	22.4	8.6	10.3	17.2	3.5	3.5	6.9
	Stevng	0.0	110	16.4	29.1	12.7	6.4	15.5	7.3	6.4	6.4
	Sthend	10.0	27	37.0	14.8	11.1	3.7	11.1	14.8	3.7	3.7
	Stoke	16.1	78	15.4	18.0	10.3	5.1	16.7	7.7	9.0	18.0
	Sund	5.5	52	11.5	23.1	13.5	21.2	15.4	3.9	7.7	3.9
	Truro	2.3	42	19.1	23.8	11.9	0.0	21.4	0.0	4.8	19.1
	Wirral	30.8	36								
	Wolve	0.9	106	30.2	22.6	13.2	2.8	14.2	5.7	3.8	7.6
	York	0.0	36	16.7	13.9	19.4	13.9	19.4	5.6	0.0	11.1
N Ireland	Antrim	4.9	39	15.4	38.5	15.4	0.0	10.3	7.7	7.7	5.1
	Belfast	1.4	70	17.1	21.4	10.0	7.1	20.0	7.1	10.0	7.1
	Derry	0.0	18	16.7	11.1	16.7	11.1	16.7	0.0	5.6	22.2
	Newry	0.0	21	28.6	28.6	9.5	4.8	9.5	0.0	4.8	14.3
	Tyrone	0.0	10	0.0	20.0	0.0	40.0	10.0	10.0	0.0	20.0
	Ulster	0.0	20	20.0	30.0	5.0	5.0	20.0	10.0	5.0	5.0
Scotland	Abrdn	0.0	46	17.4	23.9	8.7	6.5	17.4	8.7	8.7	8.7
	Airdrie	0.0	56	26.8	17.9	10.7	1.8	17.9	5.4	12.5	7.1
	D & Gall	0.0	10	40.0	30.0	10.0	10.0	10.0	0.0	0.0	0.0
	Dundee	0.0	50	12.0	28.0	16.0	10.0	14.0	2.0	2.0	16.0
	Dunfn	0.0	44	27.3	20.5	2.3	6.8	25.0	4.6	2.3	11.4
	Edinb	0.0	67	11.9	26.9	0.0	9.0	31.3	1.5	9.0	10.5
	Glasgw	0.0	151	18.5	23.8	11.9	4.0	15.2	9.9	7.3	9.3
	Inverns	0.0	27	25.9	18.5	18.5	3.7	11.1	11.1	7.4	3.7
	Klmarnk	0.0	43	9.3	30.2	11.6	23.3	7.0	9.3	7.0	2.3

Table 1.6. Continued

Country	Centre	% data not available	N with data	Percentage							
				Uncertain aetiology[a]	Diabetes	Glomerulo-nephritis	Hyper-tension	Other	Polycystic kidney	Pyelo-nephritis	Renal vascular disease
Wales	Bangor	0.0	26	34.6	23.1	11.5	7.7	7.7	3.9	7.7	3.9
	Clwyd	7.7	12	58.3							
	Cardff	0.5	187	27.3	27.8	12.3	5.4	9.6	7.5	7.0	3.2
	Swanse	1.5	133	16.5	24.1	10.5	3.8	12.0	6.0	5.3	21.8
	Wrexm	4.2	23	21.7	21.7	4.4	13.0	8.7	13.0	8.7	8.7
England		**11.6**	**4,970**	**19.7**	**24.0**	**11.9**	**6.7**	**16.6**	**6.6**	**7.5**	**7.0**
N Ireland		**1.7**	**178**	**17.4**	**25.8**	**10.7**	**7.3**	**15.7**	**6.2**	**7.3**	**9.6**
Scotland		**0.0**	**494**	**18.6**	**24.1**	**9.7**	**7.3**	**17.6**	**6.7**	**7.1**	**8.9**
Wales		**1.1**	**381**	**23.6**	**25.8**	**11.1**	**5.4**	**10.3**	**7.1**	**6.5**	**10.3**
UK		**9.8**	**6,023**	**19.8**	**24.2**	**11.6**	**6.7**	**16.2**	**6.6**	**7.4**	**7.5**

[a]includes presumed glomerulonephritis not biopsy proven
The percentage in each category has been calculated after excluding those patients with data not available
For those centres with >25% missing primary diagnoses, the percentages in the diagnostic categories have not been calculated
For those centres judged to have high % uncertain aetiology, the percentages in the other diagnostic categories have not been calculated and the centres have not been included in the country and UK averages

The UKRR continues to be concerned about centres with apparently very high data completeness for PRD but also very high rates of 'uncertain' diagnoses (EDTA codes 00 and 10). It is accepted that there will inevitably be a number of patients with uncertain aetiology and that the proportion of these patients will vary between clinicians and centres as the definitions of renovascular disease, hypertensive nephropathy and chronic glomerulonephritis without tissue diagnosis remain relatively subjective. This year data was not used from five centres which had diagnosis 'unknown' for over 50% of their incident patients with non-missing data. As the numbers with the specific PRDs are likely to be falsely low in these centres, the breakdown into these categories has not been shown in table 1.6 or used in the country and UK averages. These centres have also been excluded where PRD is used to stratify analyses.

For the non-excluded centres, the overall UK percentage with uncertain aetiology was slightly down on 2009 (19.8% from 20.7%) and again, there was great variation between centres. Some of this variation is likely to reflect the lack of a clear definition of certain diagnostic categories e.g. hypertensive renal disease and renal vascular disease; some may result from differences between centres in attitudes to the degree of certainty required to record other diagnoses.

There was only a small amount of missing data for Northern Ireland and Wales and none for Scotland, whilst England had 11.6% missing. The overall percentage missing was similar to last year (9.8% from 9.9%) and was similar in under and over 65 year olds (10.0% and 9.7% respectively).

The overall distribution of PRDs is shown in table 1.7. Diabetic nephropathy was the most common specific

Table 1.7. Percentage distribution of primary renal diagnosis by age, plus gender ratio, in the 2010 incident cohort

Diagnosis	Age <65	Age ⩾65	All patients	M:F
Diabetes	27.0	21.3	24.2	1.8
Glomerulonephritis	15.8	7.3	11.6	2.1
Pyelonephritis	7.8	7.1	7.4	2.1
Hypertension	5.7	7.8	6.7	2.2
Polycystic kidney	9.8	3.5	6.6	1.0
Renal vascular disease	1.9	13.1	7.5	2.2
Other	17.3	15.2	16.2	1.3
Uncertain aetiology[a]	14.8	24.8	19.8	1.5

[a]includes presumed glomerulonepritis not biopsy proven
Percentages calculated after excluding those patients with data not available

Table 1.8. Primary renal diagnosis incidence rates per million population (unadjusted) 2010

Diagnosis	England	N Ireland	Scotland	Wales	UK
Diabetes	22.9	25.6	22.8	33.8	23.5
Glomerulonephritis	11.3	10.6	9.2	14.6	11.3
Pyelonephritis	7.2	7.2	6.7	8.5	7.2
Hypertension	6.4	7.2	6.9	7.1	6.5
Polycystic kidney	6.3	6.1	6.3	9.3	6.5
Renal vascular disease	6.7	9.4	8.4	13.5	7.3
Other	15.8	15.6	16.7	13.5	15.8
Uncertain aetiology[a]	18.8	17.2	17.6	31.0	19.3
Data not available	12.6	1.7	0.0	1.4	10.6
All	**108**	**101**	**95**	**133**	**108**

[a]includes presumed glomerulonephritis not biopsy proven
The overall rates per country may be slightly different to those in table 1.1 as those centres whose PRD data has not been used have been excluded from both the numerator and the denominator here

renal diagnosis in both the under and over 65 year age groups, accounting for 24% of all (non-missing) incident diagnoses. Biopsy proven glomerulonephritis and autosomal dominant polycystic kidney disease (ADPKD) made up higher proportions of the younger than the older incident cohorts (16% vs. 7% and 10% vs. 4% respectively), whilst renal vascular disease was much more common in older incident patients (13% vs. 2%). It was perhaps not surprising that uncertainty about the underlying diagnosis was also more common in the older cohort (25% vs. 15%).

For all primary renal diagnoses except ADPKD, the male to female ratio was 1.3 or greater. This gender difference may relate to factors such as hypertension, atheroma and renal vascular disease and smoking which are more common in males and may influence the rate of progression of renal failure.

Table 1.8 shows the incidence rates for each PRD per million population in the 2010 cohort by country. As there were some missing data, the rates for at least some of the diagnoses will be underestimates.

First established treatment modality

The first treatment recorded, irrespective of any later change, was haemodialysis (HD) in 74.8% of patients, peritoneal dialysis (PD) in 18.3% and pre-emptive transplant in 6.9% in 2010. This is a small decrease for HD (76.3 to 74.8) and an increase for PD (17.9 to 18.3) and transplant (5.9 to 6.9) since 2009.

Many patients, especially those presenting late, undergo a brief period of HD before switches to other modalities are, or can be, considered. Hence, the established modality at 90 days is more representative of the elective first modality. By 90 days, 5.6% of the 2010 incident patients had died and a further 0.3% had stopped treatment, leaving 94.1% of the original cohort still on RRT. Table 1.9 shows the percentages on each treatment modality at 90 days both as percentages of all of those starting RRT and then of those still on treatment at 90 days. For this analysis, the incident cohort from 1st October 2009 to 30th September 2010 was used so that follow up to 90 days was available for all patients. Expressed as percentages of the whole incident cohort, 68.3% were on HD at 90 days, 18.1% were on PD and 7.7% had received a transplant. Expressed as a percentage of those still receiving RRT at 90 days, 72.6% were on HD, 19.2% on PD and 8.1% had received a transplant. Figure 1.8 shows these percentages with the HD patients further subdivided. Of those still on RRT at 90 days, 46.1% were treated with main centre HD and 26.2% with satellite HD. The percentage of patients receiving peritoneal dialysis at 90 days increased from the previous year for the first time since the start of the Renal Registry.

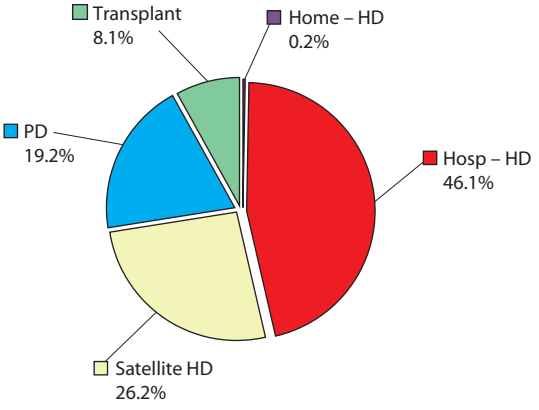

Fig. 1.8. RRT modality at day 90 (incident cohort 1/10/2009 to 30/09/2010)

Northern Ireland continued to have the lowest percentage of patients on PD at 90 days.

The percentage of incident patients who had died by 90 days varied considerably between centres (0% to 19%, table 1.9). Differences in the definition of whether patients have acute or chronic renal failure may be a factor in this apparent variation alongside possible differences in clinical practice.

The percentage with a functioning transplant at 90 days in different centres varied between 0% and 22%. The mean percentage of the incident cohort with a functioning transplant by 90 days was significantly greater in transplanting compared to non-transplanting centres (10.5% vs. 5.0%: $p < 0.0001$). One possible reason could be that some patients transplanted pre-emptively were attributed to the incident cohort of the transplanting centre rather than that of the referring centre (as mentioned earlier) and this was particularly the case in Reading, Oxford, Carlisle and Newcastle.

Table 1.10 shows the HD/PD split for those incident patients on dialysis at 90 days. It also gives this split by age group. The percentage on PD at 90 days was twice as high in patients aged <65 years than in older patients (28.2% vs. 14.0%). The median age on HD was 67.4 years compared with 58.4 years for PD. There were however four centres where the percentage of patients treated with PD was higher in the over 65s than the under 65s (Cambridge, Dorset, Liverpool Aintree and Truro).

Renal function at the time of starting RRT

Some caution should be applied to the analysis of eGFR at the start of RRT. A review of pre-RRT biochemistry in nine renal centres revealed that up to 18% of patients may have an incorrect date of start of RRT allocated (by up to 5 weeks). In these patients, the eGFR used for analysis in some patients may have been taken whilst they were already receiving RRT and thus be artificially high. The details of this analysis and a subsequent validation study were described in detail in the 12th Annual Report chapter 13: The UK Renal Registry Advanced CKD Study 2009 [5].

Table 1.9. RRT modality at 90 days by centre (incident cohort 1/10/2009 to 30/09/2010)

			Percentage of patients who started RRT					Percentage of patients still on RRT at 90 days		
Country	Centre	N	HD	PD	Tx	Stopped treatment	Died	HD	PD	Tx
England	B Heart	97	77.3	15.5	5.2	0.0	2.1	79.0	15.8	5.3
	B QEH	214	73.4	15.9	8.4	0.0	2.3	75.1	16.3	8.6
	Basldn	32	68.8	12.5	0.0	0.0	18.8	84.6	15.4	0.0
	Bradfd	56	73.2	12.5	3.6	0.0	10.7	82.0	14.0	4.0
	Brightn	127	66.9	26.0	0.8	0.0	6.3	71.4	27.7	0.8
	Bristol	170	72.9	11.8	8.8	0.0	6.5	78.0	12.6	9.4
	Camb	99	61.6	12.1	22.2	0.0	4.0	64.2	12.6	23.2
	Carlis	24	66.7	25.0	8.3	0.0	0.0	66.7	25.0	8.3
	Carsh	225	79.6	8.9	6.7	0.0	4.9	83.6	9.4	7.0
	Chelms	47	51.1	40.4	4.3	2.1	2.1	53.3	42.2	4.4
	Colchr	25	88.0	0.0	4.0	0.0	8.0	95.7	0.0	4.4
	Covnt	110	65.5	19.1	7.3	0.0	8.2	71.3	20.8	7.9
	Derby	73	46.6	41.1	1.4	1.4	9.6	52.3	46.2	1.5
	Donc	45	68.9	20.0	0.0	0.0	11.1	77.5	22.5	0.0
	Dorset	65	64.6	20.0	10.8	1.5	3.1	67.7	21.0	11.3
	Dudley	46	65.2	28.3	0.0	0.0	6.5	69.8	30.2	0.0
	Exeter	134	71.6	17.9	2.2	0.8	7.5	78.1	19.5	2.4
	Glouc	55	76.4	14.6	3.6	0.0	5.5	80.8	15.4	3.9
	Hull	102	71.6	18.6	1.0	0.0	8.8	78.5	20.4	1.1
	Ipswi	33	63.6	24.2	12.1	0.0	0.0	63.6	24.2	12.1
	Kent	135	62.2	15.6	11.1	0.7	10.4	70.0	17.5	12.5
	L Barts	226	60.6	27.4	7.1	0.0	4.9	63.7	28.8	7.4
	L Guys	165	64.9	10.9	21.2	0.0	3.0	66.9	11.3	21.9
	L Kings	135	63.7	31.1	1.5	0.0	3.7	66.2	32.3	1.5
	L Rfree	202	71.3	10.4	16.3	0.0	2.0	72.7	10.6	16.7

Table 1.9. Continued

			Percentage of patients who started RRT					Percentage of patients still on RRT at 90 days		
Country	Centre	N	HD	PD	Tx	Stopped treatment	Died	HD	PD	Tx
England	L St.G	88	68.2	12.5	17.1	0.0	2.3	69.8	12.8	17.4
	L West	379	79.7	2.4	12.4	0.5	5.0	84.4	2.5	13.1
	Leeds	125	63.2	20.8	9.6	0.0	6.4	67.5	22.2	10.3
	Leic	219	62.6	17.4	12.8	0.0	7.3	67.5	18.7	13.8
	Liv Ain	36	80.6	11.1	0.0	0.0	8.3	87.9	12.1	0.0
	Liv RI	101	51.5	30.7	9.9	1.0	6.9	55.9	33.3	10.8
	M Hope	128	57.8	28.9	11.7	0.0	1.6	58.7	29.4	11.9
	M RI	155	60.7	20.0	19.4	0.0	0.0	60.7	20.0	19.4
	Middlbr	101	74.3	12.9	5.0	0.0	7.9	80.7	14.0	5.4
	Newc	95	60.0	15.8	14.7	0.0	9.5	66.3	17.4	16.3
	Norwch	73	71.2	19.2	2.7	0.0	6.9	76.5	20.6	2.9
	Nottm	119	64.7	25.2	6.7	0.0	3.4	67.0	26.1	7.0
	Oxford	187	52.9	24.1	11.8	0.0	11.2	59.6	27.1	13.3
	Plymth	61	62.3	26.2	6.6	0.0	4.9	65.5	27.6	6.9
	Ports	150	60.0	23.3	8.7	0.0	8.0	65.2	25.4	9.4
	Prestn	126	66.7	22.2	4.0	0.0	7.1	71.8	23.9	4.3
	Redng	94	50.0	37.2	9.6	0.0	3.2	51.7	38.5	9.9
	Sheff	135	71.1	15.6	8.9	0.7	3.7	74.4	16.3	9.3
	Shrew	52	78.9	9.6	1.9	1.9	7.7	87.2	10.6	2.1
	Stevng	110	75.5	14.6	7.3	0.0	2.7	77.6	15.0	7.5
	Sthend	27	77.8	11.1	11.1	0.0	0.0	77.8	11.1	11.1
	Stoke	99	76.8	19.2	3.0	0.0	1.0	77.6	19.4	3.1
	Sund	62	61.3	27.4	6.5	0.0	4.8	64.4	28.8	6.8
	Truro	53	66.0	20.8	5.7	0.0	7.6	71.4	22.5	6.1
	Wirral	59	59.3	30.5	0.0	0.0	10.2	66.0	34.0	0.0
	Wolve	89	55.1	34.8	2.3	0.0	7.9	59.8	37.8	2.4
	York	40	80.0	15.0	0.0	0.0	5.0	84.2	15.8	0.0
N Ireland	Antrim	37	67.6	5.4	0.0	13.5	13.5	92.6	7.4	0.0
	Belfast	67	77.6	4.5	6.0	1.5	10.5	88.1	5.1	6.8
	Derry	15	73.3	6.7	6.7	6.7	6.7	84.6	7.7	7.7
	Newry	20	95.0	5.0	0.0	0.0	0.0	95.0	5.0	0.0
	Tyrone	12	91.7	8.3	0.0	0.0	0.0	91.7	8.3	0.0
	Ulster	21	90.5	4.8	0.0	0.0	4.8	95.0	5.0	0.0
Scotland	Abrdn	50	68.0	22.0	2.0	2.0	6.0	73.9	23.9	2.2
	Airdrie	64	84.4	12.5	0.0	0.0	3.1	87.1	12.9	0.0
	D & Gall	12	83.3	16.7	0.0	0.0	0.0	83.3	16.7	0.0
	Dundee	53	88.7	7.6	0.0	0.0	3.8	92.2	7.8	0.0
	Dunfn	43	76.7	18.6	0.0	0.0	4.7	80.5	19.5	0.0
	Edinb	73	71.2	16.4	4.1	1.4	6.9	77.6	17.9	4.5
	Glasgw	154	83.1	8.4	2.0	0.0	6.5	88.9	9.0	2.1
	Inverns	26	53.9	42.3	0.0	0.0	3.9	56.0	44.0	0.0
	Klmarnk	48	58.3	35.4	0.0	0.0	6.3	62.2	37.8	0.0
Wales	Bangor	25	80.0	20.0	0.0	0.0	0.0	80.0	20.0	0.0
	Cardff	181	71.8	15.5	6.1	0.6	6.1	76.9	16.6	6.5
	Clwyd	12	83.3	8.3	0.0	0.0	8.3	90.9	9.1	0.0
	Swanse	134	73.1	17.2	2.2	0.0	7.5	79.0	18.6	2.4
	Wrexm	26	42.3	46.2	0.0	0.0	11.5	47.8	52.2	0.0
England		**5,605**	**67.0**	**18.6**	**8.7**	**0.2**	**5.5**	**71.1**	**19.8**	**9.2**
N Ireland		**172**	**79.7**	**5.2**	**2.9**	**4.1**	**8.1**	**90.7**	**6.0**	**3.3**
Scotland		**523**	**76.5**	**16.4**	**1.3**	**0.4**	**5.4**	**81.1**	**17.4**	**1.4**
Wales		**378**	**71.2**	**18.3**	**3.7**	**0.3**	**6.6**	**76.4**	**19.6**	**4.0**
UK		**6,678**	**68.3**	**18.1**	**7.7**	**0.3**	**5.6**	**72.6**	**19.2**	**8.1**

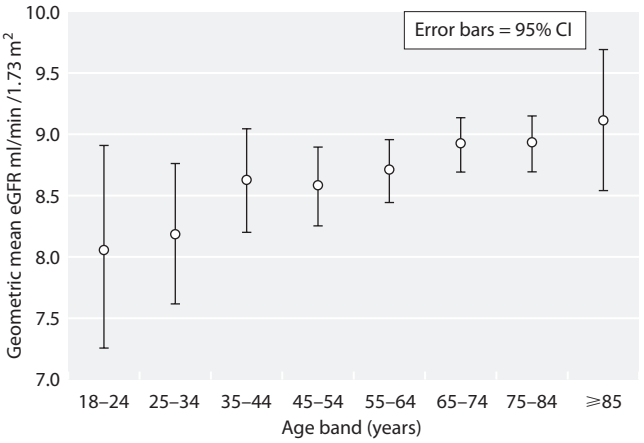

Fig. 1.9. Geometric mean eGFR at start of RRT (2010) by age group

The mean eGFR at initiation of RRT in 2010 was 8.7 ml/min/1.73 m^2. This was highest in patients who were aged 85 and over, at 9.1 ml/min/1.73 m^2 (figure 1.9). By contrast, in the United States 54% of patients starting RRT in 2009 had an eGFR greater than 10 ml/min/1.73 m^2 [6].

Figure 1.10 shows serial data from centres reporting annually to the UKRR since 1999. It demonstrates a continued pattern over the last six years of a higher mean eGFR at start of RRT for PD than HD patients. In patients starting HD, there may be some plateauing of this level around an eGFR of 8.5 ml/min/1.73 m^2.

3 Late presentation and delayed referral of incident patients

Introduction

Late presentation to a nephrologist has many definitions and a range of possible causes. There are many patients with chronic kidney disease who are regularly monitored in primary or secondary care and whose referral to nephrology services is delayed (delayed or late referral). In contrast other patients present late to medical services. Chronic kidney disease may be asymptomatic until very advanced resulting in no contact with medical services or patients may present with a variety of rapidly progressive kidney diseases: these patients are the true 'late presenters'. The main analyses presented here do not differentiate between these groups and include any patient first seen by renal services within 90 days of starting RRT as 'late presentation' however this year we have also attempted to capture late referrals by

Table 1.10. Modality split of patients on dialysis at 90 days after starting RRT (1/10/2009 to 30/09/2010)

			Age <65 (%)		Age ⩾65 (%)		All patients (%)	
Country	Centre	N	HD	PD	HD	PD	HD	PD
England	B Heart	90	74.5	25.5	93.0	7.0	83.3	16.7
	B QEH	191	70.7	29.3	94.6	5.4	82.2	17.8
	Basldn	26	80.0	20.0	87.5	12.5	84.6	15.4
	Bradfd	48	70.8	29.2	100.0	0.0	85.4	14.6
	Brightn	118	65.3	34.7	76.8	23.2	72.0	28.0
	Bristol	144	79.5	20.5	93.0	7.0	86.1	13.9
	Camb	73	84.0	16.0	83.3	16.7	83.6	16.4
	Carlis	22	54.5	45.5	90.9	9.1	72.7	27.3
	Carsh	199	85.0	15.0	93.3	6.7	89.9	10.1
	Chelms	43	33.3	66.7	84.2	15.8	55.8	44.2
	Colchr	22	100.0	0.0	100.0	0.0	100.0	0.0
	Covnt	93	70.5	29.5	83.7	16.3	77.4	22.6
	Derby	64	34.5	65.5	68.6	31.4	53.1	46.9
	Donc	40	68.4	31.6	85.7	14.3	77.5	22.5
	Dorset	55	81.8	18.2	72.7	27.3	76.4	23.6
	Dudley	43	44.4	55.6	88.0	12.0	69.8	30.2
	Exeter	120	74.4	25.6	82.7	17.3	80.0	20.0
	Glouc	50	65.0	35.0	96.7	3.3	84.0	16.0
	Hull	92	76.9	23.1	81.1	18.9	79.3	20.7
	Ipswi	29	57.1	42.9	86.7	13.3	72.4	27.6
	Kent	105	66.7	33.3	90.0	10.0	80.0	20.0
	L Barts	199	64.8	35.2	78.9	21.1	68.8	31.2
	L Guys	125	84.8	15.2	87.0	13.0	85.6	14.4

Table 1.10. Continued

			Age <65 (%)		Age ⩾65 (%)		All patients (%)	
Country	Centre	N	HD	PD	HD	PD	HD	PD
England	L Kings	128	65.7	34.3	69.0	31.0	67.2	32.8
	L Rfree	165	83.5	16.5	90.7	9.3	87.3	12.7
	L St.G	71	78.6	21.4	88.4	11.6	84.5	15.5
	L West	311	96.4	3.6	97.9	2.1	97.1	2.9
	Leeds	105	64.0	36.0	85.5	14.5	75.2	24.8
	Leic	175	73.5	26.5	82.6	17.4	78.3	21.7
	Liv Ain	33	88.9	11.1	86.7	13.3	87.9	12.1
	Liv RI	83	51.1	48.9	77.8	22.2	62.7	37.3
	M Hope	111	64.6	35.4	69.6	30.4	66.7	33.3
	M RI	125	66.7	33.3	83.1	16.9	75.2	24.8
	Middlbr	88	71.4	28.6	94.3	5.7	85.2	14.8
	Newc	72	71.4	28.6	86.5	13.5	79.2	20.8
	Norwch	66	75.0	25.0	81.0	19.0	78.8	21.2
	Nottm	107	62.5	37.5	82.4	17.6	72.0	28.0
	Oxford	144	59.7	40.3	79.1	20.9	68.8	31.3
	Plymth	54	62.5	37.5	76.7	23.3	70.4	29.6
	Ports	125	66.2	33.8	78.3	21.7	72.0	28.0
	Prestn	112	70.3	29.7	81.3	18.8	75.0	25.0
	Redng	82	47.8	52.2	69.4	30.6	57.3	42.7
	Sheff	117	75.8	24.2	90.2	9.8	82.1	17.9
	Shrew	46	88.9	11.1	89.3	10.7	89.1	10.9
	Stevng	99	78.3	21.7	92.3	7.7	83.8	16.2
	Sthend	24	77.8	22.2	93.3	6.7	87.5	12.5
	Stoke	95	70.6	29.4	85.2	14.8	80.0	20.0
	Sund	55	57.6	42.4	86.4	13.6	69.1	30.9
	Truro	46	83.3	16.7	71.4	28.6	76.1	23.9
	Wirral	53	46.7	53.3	91.3	8.7	66.0	34.0
	Wolve	80	52.4	47.6	71.1	28.9	61.3	38.8
	York	38	81.8	18.2	87.5	12.5	84.2	15.8
N Ireland	Antrim	27	85.7	14.3	100.0	0.0	92.6	7.4
	Belfast	55	91.3	8.7	96.9	3.1	94.5	5.5
	Derry	12	83.3	16.7	100.0	0.0	91.7	8.3
	Newry	20	100.0	0.0	88.9	11.1	95.0	5.0
	Tyrone	12	75.0	25.0	100.0	0.0	91.7	8.3
	Ulster	20	80.0	20.0	100.0	0.0	95.0	5.0
Scotland	Abrdn	45	64.5	35.5	100.0	0.0	75.6	24.4
	Airdrie	62	82.9	17.1	92.6	7.4	87.1	12.9
	D & Gall	12	75.0	25.0	87.5	12.5	83.3	16.7
	Dundee	51	80.0	20.0	100.0	0.0	92.2	7.8
	Dunfn	41	73.3	26.7	84.6	15.4	80.5	19.5
	Edinb	64	79.4	20.6	83.3	16.7	81.3	18.8
	Glasgw	141	87.0	13.0	94.4	5.6	90.8	9.2
	Inverns	25	33.3	66.7	90.0	10.0	56.0	44.0
	Klmarnk	45	57.1	42.9	66.7	33.3	62.2	37.8
Wales	Bangor	25	80.0	20.0	80.0	20.0	80.0	20.0
	Cardff	158	74.2	25.8	88.0	12.0	82.3	17.7
	Clwyd	11	75.0	25.0	100.0	0.0	90.9	9.1
	Swanse	121	71.7	28.3	86.7	13.3	81.0	19.0
	Wrexm	23	12.5	87.5	66.7	33.3	47.8	52.2
England		**4,801**	**71.1**	**28.9**	**85.3**	**14.7**	**78.3**	**21.7**
N Ireland		**146**	**88.9**	**11.1**	**97.6**	**2.4**	**93.8**	**6.2**
Scotland		**486**	**75.0**	**25.0**	**89.7**	**10.3**	**82.3**	**17.7**
Wales		**338**	**70.1**	**29.9**	**85.8**	**14.2**	**79.6**	**20.4**
UK		**5,771**	**71.8**	**28.2**	**86.0**	**14.0**	**79.1**	**20.9**

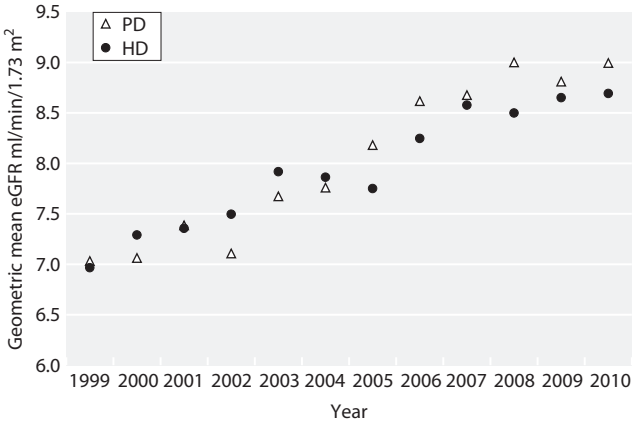

Fig. 1.10. eGFR on starting RRT 1999–2010; PD and HD (restricted to centres reporting since 1999)

excluding an acute renal disease group including all those conditions likely to present with rapidly deteriorating renal function: crescentic glomerulonephritis (type I, II, III), nephropathy (interstitial) due to cis-platinum, renal vascular disease due to malignant hypertension, renal vascular disease due to polyarteritis, Wegener's granulomatosis, cryoglobulinemic glomerulonephritis, myelomatosis/light chain deposit disease, Goodpasture's Syndrome, systemic sclerosis, haemolytic ureaemic syndrome (including Moschcowitz syndrome), multisystem disease – other, tubular necrosis (irreversible) or cortical necrosis, Balkan nephropathy, kidney tumour and traumatic or surgical loss of kidney.

Methods

Data were included from all incident patients in the years 2009 to 2010. The date first seen in a renal centre and the date of starting RRT were used to define the late presenting cohort. A small amount of data were excluded because of actual or potential inconsistencies. Only data from those centres/years with 75% or more completeness were used. Data were excluded for centres in the years where 10% or more of the patients were reported to have started RRT on the same date as the first presentation, as investigation has shown that this is likely due to misunderstanding on the part of the renal centres resulting in incorrect recording of data. After these exclusions, data on 6,895 patients were available for analysis. Presentation times of 90 days or more were defined as early presentation and times of less than 90 days were defined as late presentation.

Results

Table 1.11 shows the percentage completeness of data from 2009 to 2010 excluding centres/years with 10% or more start dates for RRT being on the same day as first presentation. There has been a big improvement in the reporting of presentation time data. Two years of data were combined in most of the following analyses in order to make the late presentation percentages more reliably estimated and to allow these to be shown for specific groups of patients. The improvement in completeness has allowed us to use only two years rather than the six years used in previous reports.

Late presentation by centre

Late presentation ranged by centre from 3.5–30.0% in patients commencing RRT in 2009 to 2010. The overall rate of late presentation was 20.0% and was 15.2% once diseases likely to present acutely were excluded.

Table 1.11. Percentage completeness of presentation time data (2009 to 2010) by centre

		N incident patients		Percentage completeness	
Country	Centre	2009	2010	2009	2010
England	B Heart	99	95	4.0	95.8
	B QEH	255	197	83.7	88.3
	Basldn	26	32	[a]	93.8
	Bradfd	61	64	91.7	100.0
	Brightn	120	107	0.8	1.9
	Bristol	158	169	72.2	97.6
	Camb	136	108	39.0	99.1
	Carlis	24	21	83.3	[a]
	Carsh	208	221	0.0	86.8
	Chelms	52	42	98.1	97.6
	Colchr	17	32	0.0	84.4
	Covnt	118	118	0.0	95.7
	Derby	78	80	97.4	98.8

Table 1.11. Continued

Country	Centre	N incident patients		Percentage completeness	
		2009	2010	2009	2010
England	Donc	40	44	95.0	95.5
	Dorset	76	72	88.0	87.5
	Dudley	69	41	7.4	90.0
	Exeter	145	136	21.5	61.8
	Glouc	79	58	100.0	91.4
	Hull	101	88	0.0	64.8
	Ipswi	38	34	92.1	93.9
	Kent	131	134	98.5	100.0
	L Barts	239	207	0.4	[a]
	L Guys	176	144	4.0	86.7
	L Kings	128	148	98.4	93.9
	L Rfree	170	203	47.6	89.6
	L St.G	109	83	6.4	75.9
	L West	357	367	0.6	0.0
	Leeds	154	130	94.1	100.0
	Leic	228	250	70.9	98.0
	Liv Ain	38	49	0.0	[a]
	Liv RI	110	102	0.0	47.5
	M Hope	125	146	0.0	1.4
	M RI	147	163	42.1	62.3
	Middlbr	95	98	96.8	96.9
	Newc	100	95	99.0	93.7
	Norwch	73	85	76.7	77.4
	Nottm	134	113	97.7	97.3
	Oxford	177	167	89.0	95.8
	Plymth	56	55	5.4	0.0
	Ports	149	150	98.0	98.0
	Prestn	147	122	0.0	96.7
	Redng	99	89	[a]	97.8
	Sheff	150	144	98.0	98.6
	Shrew	47	58	100.0	100.0
	Stevng	98	110	94.9	96.4
	Sthend	23	30	8.7	90.0
	Stoke	110	93	40.0	100.0
	Sund	64	55	0.0	89.1
	Truro	58	43	55.2	95.3
	Wirral	63	52	73.8	82.4
	Wolve	65	107	96.9	99.0
	York	47	36	85.1	94.4
N Ireland	Antrim	21	41	100.0	100.0
	Belfast	61	71	83.6	93.0
	Derry	17	18	100.0	100.0
	Newry	20	21	100.0	95.2
	Tyrone	19	10	100.0	100.0
	Ulster	13	20	100.0	100.0
Wales	Bangor	30	26	93.1	96.0
	Cardff	179	188	76.8	95.7
	Clwyd	17	13	0.0	69.2
	Swanse	116	135	81.1	99.2
	Wrexm	20	24	90.0	95.8
E, W & NI		**6,280**	**6,154**	**50.7**	**76.9**

[a]data not shown as >10% of patients reported as starting RRT on the same date as first presentation
Date first seen by a nephrologist has not been collected from the Scottish Renal Registry and so Scottish centres were excluded from these analyses

Table 1.12 shows the overall percentage presenting late for the combined 2009–2010 incident cohort, the percentages presenting late amongst those patients defined as not having an acute diagnosis and the percentages amongst non-diabetics (as PRD).

Late presentation in 2010 and trend over time

There has been a steady decline nationally in the proportion of patients presenting late to renal services, with some centres achieving <10% late presentation rates. This may have been as a consequence of the National CKD guidelines published by the Medical and GP Royal Colleges [7], the Quality and Outcomes Framework (QOF) initiative (www.dh.gov.uk) raising awareness of CKD amongst non-nephrologists and the introduction of estimated GFR reporting.

In 2010, 65.8% of incident patients presented over a year before they needed to start RRT. There were 8.7%

Table 1.12 Percentage of patients presenting to a nephrologist less than 90 days before RRT initiation (2009–2010 incident patients)

			Percentage presenting late			
Country	Centre	N with data	Overall	(95% CI)	Non-acute[a]	Non-diab PRD
England	B Heart	91	9.9	(5.2–17.9)	9.6	13.6
	B QEH	383	16.5	(13.1–20.5)	13.7	17.0
	Basldn	30	30.0	(16.4–48.3)	30.0	33.3
	Bradfd	118	17.0	(11.2–24.8)	13.5	18.8
	Bristol	161	22.4	(16.6–29.4)	17.9	24.8
	Camb	107	22.4	(15.5–31.3)		
	Carlis	20	25.0	(10.8–47.8)	21.1	33.3
	Carsh	190	30.0	(23.9–36.9)	23.2	33.5
	Chelms	92	21.7	(14.5–31.3)	17.1	25.0
	Colchr	27	25.9	(12.9–45.3)	26.1	29.2
	Covnt	112	17.9	(11.8–26.1)	13.0	18.6
	Derby	155	23.9	(17.8–31.2)	16.2	27.8
	Donc	80	18.8	(11.6–28.8)	13.3	24.6
	Dorset	129	21.7	(15.4–29.6)	15.5	25.0
	Dudley	36	13.9	(5.9–29.3)	13.9	16.0
	Glouc	129	18.6	(12.8–26.3)	12.7	20.5
	Ipswi	66	30.3	(20.5–42.4)	24.2	25.9
	Kent	263	28.9	(23.7–34.7)	22.2	31.8
	L Guys	124	14.5	(9.3–21.9)	13.5	16.2
	L Kings	265	24.2	(19.4–29.7)	18.9	29.5
	L Rfree	181	26.5	(20.6–33.4)	22.5	26.9
	L St.G	63	25.4	(16.2–37.5)	17.9	29.2
	Leeds	272	18.0	(13.9–23.0)	13.8	21.3
	Leic	239	14.2	(10.3–19.3)	8.6	16.3
	Middlbr	187	23.0	(17.5–29.6)	16.8	21.9
	Newc	187	19.3	(14.2–25.5)	14.0	23.3
	Norwch	121	19.8	(13.7–27.9)	13.3	22.7
	Nottm	234	18.0	(13.5–23.4)	14.6	21.3
	Oxford	313	16.6	(12.9–21.2)	13.0	20.0
	Ports	289	15.6	(11.8–20.2)	12.7	18.4
	Prestn	117	21.4	(14.9–29.7)	15.8	24.0
	Redng	87	12.6	(7.1–21.4)	9.5	14.9
	Sheff	288	17.0	(13.1–21.8)	11.4	20.7
	Shrew	105	22.9	(15.8–31.9)	15.6	27.2
	Stevng	199	15.1	(10.8–20.7)	11.8	20.1
	Sthend	27	11.1	(3.6–29.3)	9.1	13.0
	Stoke	93	28.0	(19.8–37.9)	24.3	30.4
	Sund	49	28.6	(17.7–42.6)	23.8	32.4
	Truro	41	24.4	(13.7–39.7)	21.1	32.3
	Wirral	42	26.2	(15.1–41.4)	21.4	30.6
	Wolve	166	23.5	(17.7–30.5)	19.5	28.2
	York	74	20.3	(12.6–30.9)	10.7	25.9

Table 1.12 Continued

Country	Centre	N with data	Percentage presenting late			
			Overall	(95% CI)	Non-acute[a]	Non-diab PRD
N Ireland	Antrim	62	27.4	(17.8–39.8)	22.2	30.2
	Belfast	117	16.2	(10.6–24.1)	10.3	18.0
	Derry	35	17.1	(7.9–33.3)	15.6	16.1
	Newry	40	15.0	(6.9–29.6)	10.8	14.3
	Tyrone	29	3.5	(0.5–20.8)	0.0	5.0
	Ulster	33	27.3	(14.8–44.7)	14.3	34.8
Wales	Bangor	51	23.5	(13.9–37.0)	22.0	29.0
	Cardff	314	13.7	(10.3–18.0)	11.3	16.9
	Swanse	221	26.7	(21.3–32.9)	20.1	27.3
	Wrexm	41	14.6	(6.7–29.0)	11.4	19.4
E, W & NI		**6,895**	**20.0**	**(19.1–21.0)**	**15.2**	**22.9**

Blank cells = data for PRD not used

[a]Non-acute group excludes crescentic (extracapillary) glomerulonephritis (type I, II, III), nephropathy (interstitial) due to cis-platinum, renal vascular disease due to malignant hypertension, renal vascular disease due to polyarteritis, Wegener's granulomatosis, cryoglobulinemic glomerulonephritis, myelomatosis/light chain deposit disease, Goodpasture's Syndrome, systemic sclerosis (scleroderma), haemolytic ureaemic syndrome (including Moschcowitz syndrome), multi-system disease – other, tubular necrosis (irreversible) or cortical necrosis, Balkan nephropathy, kidney tumour, and traumatic or surgical loss of kidney

of patients presenting within 6–12 months, 4.9% within 3–6 months and 20.6% within 3 months. Figure 1.11 shows this breakdown by year for those 13 centres supplying data for each of the last 6 years with >75% completeness (Bradford, Dorset, Gloucester, Leeds, Middlesbrough, Nottingham, Oxford, Portsmouth, Sheffield, Stevenage, Swansea, Tyrone and Wolverhampton). The proportion of patients presenting late in these centres has steadily fallen since 2005 and there has been an increase in those presenting 12 months or more before starting RRT. These trends appear to have levelled off at the end of the six years.

Age and late presentation

In contrast to the results shown in last year's report, patients who presented late were not significantly older than patients who presented earlier (>90 days before RRT initiation) (median age 65.6 vs. 65.4 years: p = 0.5). The cohort used here was 2009 to 2010 whereas in last year's report it was 2004 to 2009 and so this change may have happened over the longer term than just 2009 to 2010. Also in contrast to the pattern shown in last year's report, the median duration of pre-RRT care did not diminish with increasing age beyond the 55–64 age group (figure 1.12).

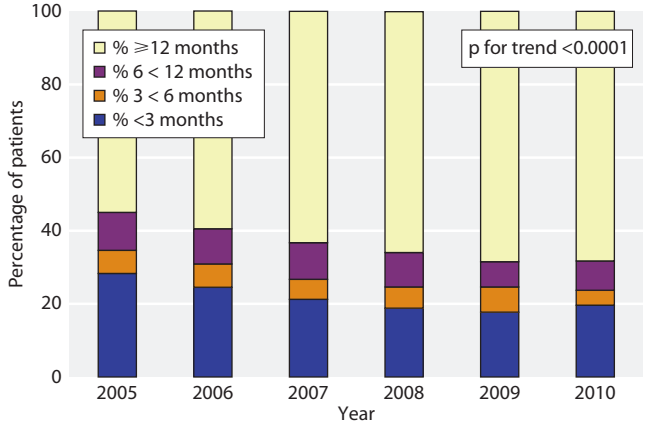

Fig. 1.11. Late presentation rate by year 2005–2010
Restricted to centres reporting continuous data 2005–2010

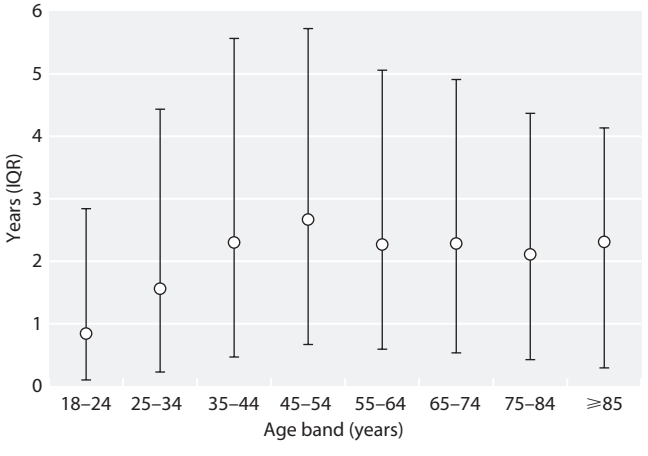

Fig. 1.12. Median duration of pre-RRT care by age group (2009–2010 incident patients)

Table 1.13. Late presentation by primary renal diagnosis (2009–2010 incident patients)

		Late presentation	
Diagnosis	N	N	%
Uncertain aetiology[a]	1,290	278	21.6
Diabetes	1,501	144	9.6
Glomerulonephritis	691	104	15.1
Other identified category	517	123	23.8
Polycystic kidney or pyelonephritis	931	93	10.0
Renal vascular disease	826	131	15.9
Acute group	608	353	58.1
Data not available	393	120	30.5

[a]includes presumed glomerulonephritis not biopsy proven
Unlike elsewhere in the report the RVD group includes hypertension. Also, polycystic and pyelonephritis are grouped together
Acute group includes crescentic (extracapillary) glomerulonephritis (type I, II, III), nephropathy (interstitial) due to cis-platinum, renal vascular disease due to malignant hypertension, renal vascular disease due to polyarteritis, Wegener's granulomatosis, cryoglobulinemic glomerulonephritis, myelomatosis/light chain deposit disease, Goodpasture's Syndrome, systemic sclerosis (scleroderma), haemolytic ureaemic syndrome (including Moschcowitz syndrome), multisystem disease–other, tubular necrosis (irreversible) or cortical necrosis, Balkan nephropathy, kidney tumour, and traumatic or surgical loss of kidney

Gender and late presentation

There was no significant difference in the proportion of males to females by time of presentation (male:female ratio 1.66 in early presentation, 1.84 in late presentation, $p = 0.12$).

Ethnicity, social deprivation and late presentation

This analysis of the 2009 to 2010 cohort was limited to patients from centres/years with >70% ethnicity and >75% presentation time data. Patients from the Chinese and Other ethnic minority groups were excluded due to the small numbers with presentation data. The percentage of non-Whites (South Asian and Black) presenting late (<90 days) was lower than in Whites but not significantly so (17.4% vs. 20.0%: $p = 0.06$). The high incidence of diabetes in non-Whites (as discussed below, patients with diabetes tended to present earlier) may explain this difference. There was no relationship between social deprivation and presentation pattern.

Primary renal disease and late presentation

In the 2009 to 2010 cohort, late presentation differed significantly between primary renal diagnoses (Chi-squared test $p < 0.0001$) (table 1.13). Patients in the acute group or with data 'not available' had high rates of late presentation. Those with diabetes and pyelonephritis or adult polycystic kidney disease had low rates. Since 2005 there has been a significant decline in the proportion of diabetics presenting late (Mantel-Haenszel Chi-squared test $p = 0.002$) although this has levelled off in recent years. The decline seen likely reflects national initiatives to screen patients with diabetes for proteinuria and falling GFR.

Table 1.14. Percentage prevalence of specific comorbidities amongst patients presenting late (<3 months) compared with those presenting early (⩾3 months) (2009–2010 incident patients)

Comorbidity	<3 months	⩾3 months	p-value
Cerebrovascular disease	6.3	11.5	<0.0001
COPD	7.5	8.1	0.6
Diabetes (not a cause of ERF)	7.0	9.4	0.03
Ischaemic heart disease	16.9	23.0	0.0002
Liver disease	3.6	2.6	0.12
Malignancy	19.9	11.9	<0.0001
Peripheral vascular disease	10.0	12.4	0.07
Smoking	15.2	12.7	0.07

Modality and late presentation

In the 2009 to 2010 cohort, late presentation was associated with initial modality. The percentage of patients whose first modality was PD was significantly lower in the late presentation group compared to those presenting earlier (9.6% vs. 21.8%: $p < 0.0001$). By 90 days after RRT initiation this difference was reduced, although still highly significant (12.9% vs. 22.2%: $p < 0.0001$).

Comorbidity and late presentation

In the 2009 to 2010 cohort, the percentage of patients who were assessed as having no comorbidity was roughly the same in those who presented late and those presenting earlier (45.7% vs. 44.2%: $p = 0.4$). This is in contrast to the 2004–2009 analysis published last year which showed the percentage with no comorbidity to be slightly, but significantly, lower in patients who presented late. Cerebrovascular disease, ischaemic heart disease and diabetes were significantly less common in the group presenting late (table 1.14). Malignancy was significantly more common in those presenting late, perhaps because of the potential for rapid decline in renal function in this group.

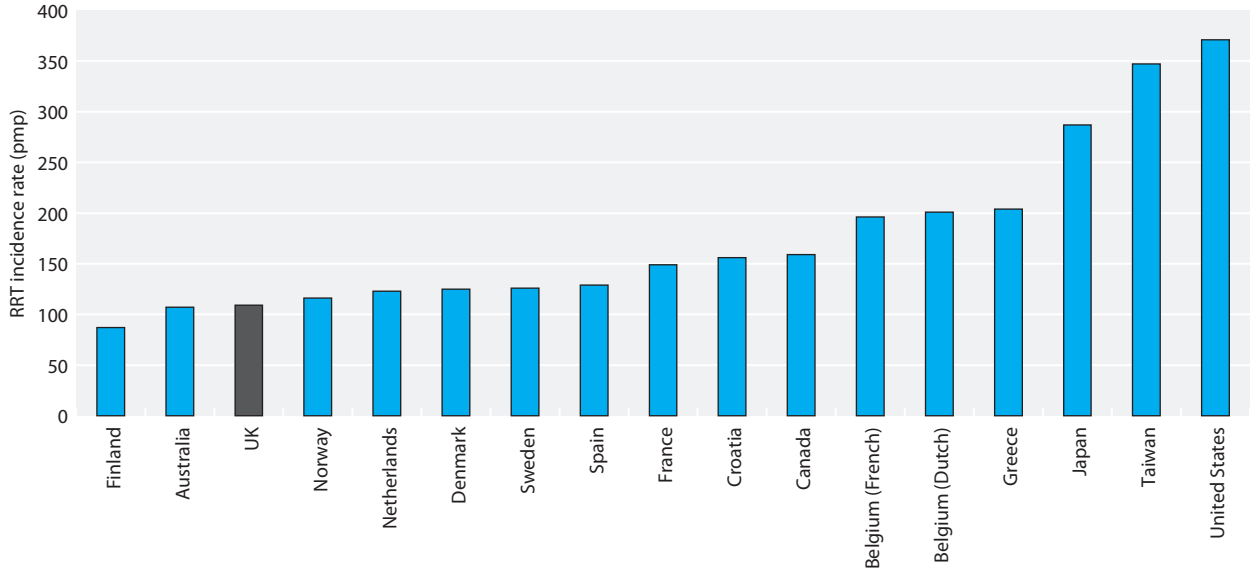

Fig. 1.13. International comparison of RRT incidence rates in 2009
Data from USRDS

Haemoglobin and late presentation

In the 2009 to 2010 cohort, patients presenting late had a significantly lower haemoglobin concentration at RRT initiation than patients presenting earlier (9.3 vs. 10.4 g/dl: $p < 0.0001$). This may reflect inadequate predialysis care with limited anaemia management, but alternatively those presenting late may be more likely to have anaemia because of multisystem disease or inter-current illness.

eGFR at start of RRT and late presentation

In the 2009 to 2010 cohort, eGFR at start of RRT was lower in patients presenting late (7.8 vs. 8.8 ml/min/1.73 m^2: $p < 0.0001$).

Survival of incident patients

This analysis is to be found in chapter 6: Survival and Causes of Death of UK Adult Patients on Renal Replacement Therapy in 2010.

International comparisons

Figure 1.13 shows the crude RRT incidence rates for 2009 for several countries. The UK incidence rate is similar to many other Northern European countries and Australia, but remains lower than Belgium, Greece, US, Japan and Taiwan. These differences are likely to be due to the rate of advanced kidney disease in these populations as well as lower mortality from competing risks for RRT, such as cardiovascular disease in southern Europe and the Far East. The healthcare system in use in these countries may also influence RRT incidence.

Summary

RRT incidence rates for 2010 were similar to 2009 for England and for the UK as a whole. At least partly because of the smaller numbers involved they have been more variable over the last few years for Northern Ireland, Scotland and Wales. Wales continues to have the highest incidence rate. There remain large centre variations in incidence rates for RRT. Significant numbers of patients continue to present late to renal centres.

Conflicts of interest: none

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