

Chapter 3: New Adult Patients Starting Renal Replacement Therapy in the UK in 2004

Summary

- In 2004, the total estimated acceptance rate for RRT in adults in the UK was 103 pmp. This was compiled from complete data for adults from Northern Ireland, Scotland and Wales and an extrapolation from the 83% of the English population covered. In addition, 104 children started RRT (see Chapter 18) giving a total incidence of 105 pmp.
- The English rate is probably an underestimate by about 3 pmp.
- In the mainland UK, for adults in 2004, the crude acceptance rates in Local Authorities varied from 29 to 232 pmp; the standardised rate ratios for acceptance varied from 0.27 to 2.30.
- In the 38 UK renal units submitting data since 2000, there was a 7% rise in the acceptance numbers: there was a 3% rise in Scotland, a 6% rise in Wales and an 8% rise in England. The rise had occurred by 2003 with no rise in 2004: there were wide variations between different units.
- All 14 areas with significantly low standardised acceptance rate ratios have ethnic minority populations less than 5.5%. Some, eg Hertfordshire and Wiltshire are areas with lower social deprivation but this is not a consistent finding.
- Of the 22 areas with a significantly high standardised acceptance rate, three were in Scotland where the ethnic mix was not available. Of the 19 in England and Wales, the ethnic minority population was greater than 20% in 16 and 13% in one other, leaving only two with small ethnic minorities.
- The median age of patients starting renal replacement therapy in England has increased from 63.3 in 1998 to 64.7 in 2004 and this compares with a much greater

increase in Wales from 62.5 in 1998 to 68.7 years in 2004. Over the same time the percentage of incident patients aged over 75 years has risen from 18–25%.

- The proportion of incident patients with diabetic renal disease as the cause of established renal failure has remained unchanged between 1999 and 2004 (19.0% in 2000 and 2004), but with the increase in the overall acceptance rate in this period there has been an increase in the acceptance rate of patients with diabetic renal disease from 17 to 20 pmp.
- Haemodialysis was the very first modality of RRT in 71.0% of patients, peritoneal dialysis in 26.5% and pre-emptive transplant in 2.3%. This represents a significant change from 1998 when the very first treatment modality was haemodialysis in 57.7%.
- Of the 90% of the 2004 incident patient cohort alive on day 90 of treatment, 70% were on HD, 27% on PD and 3% had received a transplant. This too represents a significant change from 1998 when haemodialysis was the established mode at 90 days in 59% of dialysis patients.

Introduction

In 2004, the UK Renal Registry received complete returns from an estimated 83% of England and 100% of Wales. Data on incident patients in Scotland were obtained from the Scottish Renal Registry and summary data for Northern Ireland from the renal unit in the Royal Belfast Hospital, which coordinates renal service provision in Northern Ireland. Extrapolating from Registry data to derive information relating to the whole UK must still be viewed with caution, although estimates become more reliable as coverage increases.

The proportion of the population aged over 65 years was similar in the fully covered

Table 3.1: Number of new adult patients accepted in the UK in 2004

	England	Wales	Scotland	N. Ireland	UK
No of adult renal units	44/53	5	10	5	73
Patient numbers	4,094* (4,929)**	367	565	227	6088
Population (millions)	49.6	2.9	5.1	1.7	59.2
Acceptance rate pmp (95% CI)	99* (96–101)	127 (113–138)	111 (103–121)	134 (116–151)	103* (101–105)

*Patient number returned only from fully covered Local Authority areas.

**Calculated number for the whole of England.

population (defined below, ie based on Local Authority (LA) areas whose population was thought to be fully covered by participating renal units) compared with the general population of England and Wales. The proportion from ethnic minority groups was lower in the covered population at 8.1% compared with 9.0% in the total population, because some areas not reporting to the Registry have catchments with high ethnic minority populations. Extrapolating from Registry data will therefore tend to underestimate the acceptance rate of new patients for the whole UK, as the incidence of renal failure is high in South Asian and African–Caribbean ethnic minority populations. If renal failure is 3–4 times more common in these populations this would increase the national take on rate by about 3 per million per year above the figure quoted.

Data on children and young adults can be found in Chapter 18.

Adult patients accepted for renal replacement therapy in the UK, 2004

For 2004, individual new patient data were returned from 44 of the 53 renal units in England, all 5 units in Wales and all 10 units in Scotland. Of the patients in England 4,094 were from geographical areas completely covered by the Registry, with an estimated population of 41.2 million, representing 83% of the population. There were estimated to be just over 6,000 adult patients accepted for RRT in the whole of the UK for the year 2004. This equates to a total population acceptance rate of 103 pmp for adults and 105 pmp including children (Table 3.1) which is unchanged from 2003. The annual acceptance was 127 (CI 123–133) pmp in males and 74 (CI 71–78) pmp in females. The progressive rise in incident rate seen since 1982 seems to have slowed or stopped in the last two or three years (Figure 3.1).

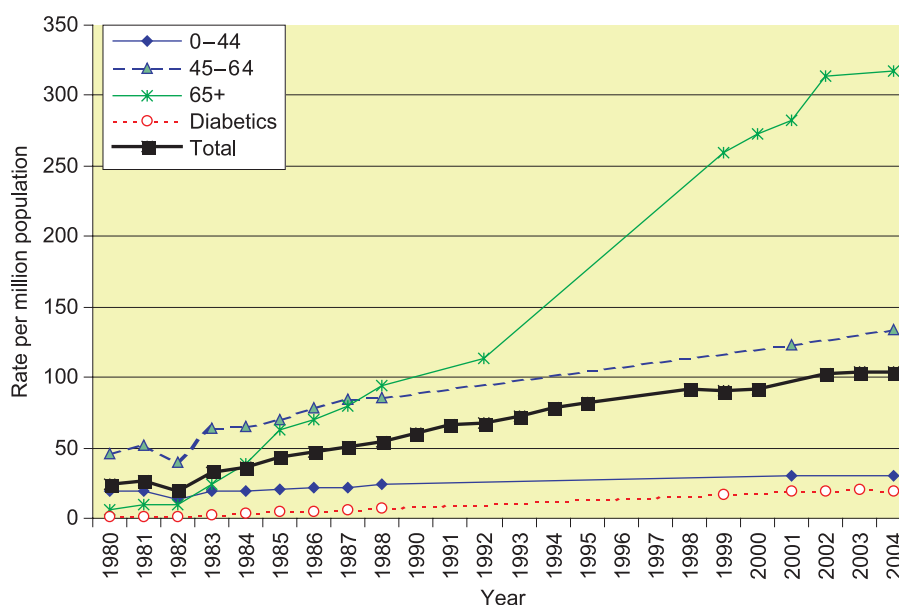


Figure 3.1: Incident rates for RRT in the UK; 1980–2004

The annual acceptance rates pmp in 2004 were 99 in England, 111 in Scotland, 127 in Wales and 134 in Northern Ireland. The trends for different age groups are shown in Figure 3.1 and for each country in Figure 3.2.

With the addition of the new paediatric patients the total incident rate was nearly 104pmp; allowing for the under-representation of ethnic minorities in the covered areas this gives a possible total incident rate in the UK of 106–107 pmp.

The numbers accepted by individual renal units are shown in Table 3.2. Acceptance rates of individual renal units have not been calculated, as their catchment populations are not precisely defined.

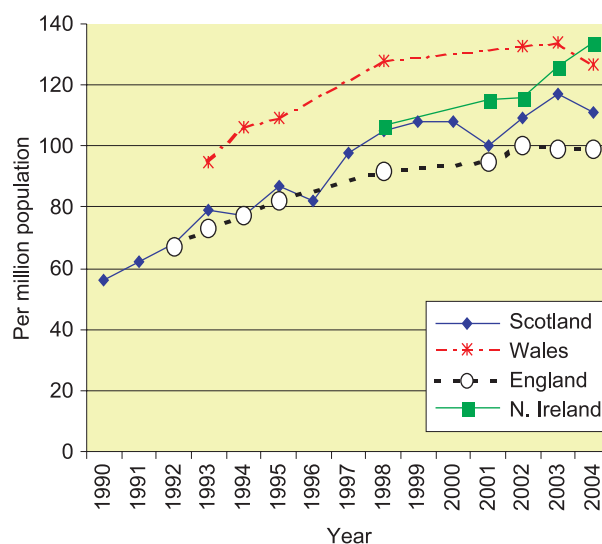


Figure 3.2: Incident rates in the countries of the UK; 1990–2004

Table 3.2: Number of new patients accepted by individual renal units reporting to the UK Renal Registry 2000–2004

Country	Centre	Year					% change since 2000
		2000	2001	2002	2003	2004	
England	Bristol	151	158	125	165	168	11.3
	Carlisle	28	28	27	31	29	3.6
	Carshalton	119	119	172	200	172	44.5
	Coventry	88	104	95	76	77	-12.5
	Derby	55	60		61	67	21.8
	Dudley	40	34	25	41	55	37.5
	Exeter	72	98	82	98	117	62.5
	Gloucester	50	50	57	57	55	10.0
	Guys	126	111	140	93	104	-17.5
	Heartlands	86	86	61	104	99	15.1
	Hull	81	74	105	80	109	34.6
	Leeds – combined	161	162	147	169	175	8.7
	Leicester	175	185	152	168	165	-5.7
	Middlesbrough	88	86	113	104	102	15.9
	Nottingham	117	123	87	116	109	-6.8
	Oxford	159	169	167	181	159	0.0
	Plymouth	59	64	79	64	61	3.4
	Preston	117	138	112	98	86	-26.5
	Reading	50	63	40	68	67	34.0
	Sheffield	137	153	156	159	169	23.4
	Stevenage	115	126	95	115	79	-31.3
	Southend	39	35	34	44	41	5.1
	Sunderland	48	38	56	56	51	6.3
	Wolverhampton	78	77	99	92	101	29.5
	York	40	37	68	57	48	20.0
	Bradford		61	62	75	62	
	Cambridge		95	74	95	103	
	Liverpool		197	156	116	131	
	Portsmouth		143	141	139	119	
	Truro		39	59	53	67	

Table 3.2: (continued)

Country	Centre	Year					% change since 2000
		2000	2001	2002	2003	2004	
England	Hammersmith&CX			176	152	196	
	Ipswich			42	35	46	
	Kings			117	108	114	
	Newcastle			106	100	101	
	Wirral			43	53	68	
	Basildon				53	43	
	Dorset				67	58	
	ManWst				141	106	
	Barts & London					187	
	Brighton					113	
	Chelmsford					52	
	Norwich					99	
	QEH, Birmingham					197	
	Shrewsbury					54	
Wales	Cardiff	142	155	182	164	181	27.5
	Swansea	92	112	113	131	95	3.3
	Wrexham	54	37	42	33	30	-44.4
	Bangor		31	29	33	36	
	Clwyd*			20	28	25*	
Scotland	Aberdeen	57	44	61	52	67	17.5
	Airdrie	57	58	60	52	51	-10.5
	Dumfries	20	23	21	21	7	-65.0
	Dundee	48	50	68	60	62	29.2
	Dunfermline	46	37	28	26	29	-37.0
	Edinburgh	101	59	81	90	99	-2.0
	Glasgow RI	56	73	58	77	79	41.1
	Glasgow WI	76	100	100	122	98	28.9
	Inverness	29	29	29	34	33	13.8
	Kilmarnock	38	27	32	40	23	-39.5
Stobhill**	22	7	17	21	17	-22.7	
England		2,279	2,913	3,270	3,684	4,381	
Wales		288	335	386	389	367	
Scotland		550	507	555	595	565	
UK		3,117	3,755	4,211	4,668	5,313	
Including only units reporting continuously 2000–2004							
England		2,279	2,378	2,294	2,497	2,465	8.2
Wales		288	304	337	328	306	6.3
Scotland		550	507	555	595	565	2.7
Total		3,117	3,189	3,186	3,420	3,336	7.0

Blank cells – no data returned to the Registry for that year.

*Clwyd might be under-reported by approximately 10 patients.

**Stobhill renal unit is part of the renal unit at Glasgow Royal Infirmary.

Geographical variation in acceptance rates in England, Scotland and Wales

Introduction

Equity of access to RRT is an important goal of service provision. The need for RRT depends on demographic factors including age, gender, social deprivation and ethnic minority status, so comparison of crude acceptance rates by geographical area alone can be misleading. This section, as in previous reports, uses age and gender standardisation and ethnic minority profile to compare RRT incident rates. The impact of social deprivation was recorded in the 2002 report. The population used for standardisation is the sum of all Local Authority areas for which the Registry had full coverage in 2004.

Methods

Standardised acceptance rate ratios were calculated as detailed in Appendix D. Briefly, age and gender specific acceptance numbers were first calculated using the available registry data on the number of incident patients for the covered areas of England, Wales and Scotland. The age and gender breakdown of the population of each Local Authority area was obtained from the 2001 Census data from the Office for National Statistics (ONS), and used to calculate the expected age and gender specific acceptance numbers for each LA area. The age and gender standardised acceptance rate ratio is the observed acceptance numbers/expected acceptance numbers. A ratio below 1 indicates that the observed rate is less than expected given the LA area's population structure. This is statistically significant at the 5% level, if the upper confidence limit is less than 1.

Results

Local Authority acceptance rates

Acceptance rates in Local Authorities with complete coverage by the Registry are shown in Table 3.3.

Acceptance rates for RRT in relatively small populations such as those covered by individual Primary Care Trusts, incur wide confidence

intervals for any observed frequency. To enable assessment of whether an observed acceptance rate differs significantly from the national average, Figure 3.3 has been included.

For any population size (X-axis), the upper and lower 95% confidence intervals around the national average acceptance rate (dotted lines) can be read from the Y-axis. An observed acceptance rate outside these limits is significantly different from the national average. Thus for a population of 50,000 the observed take-on would have to be outside the limits of 10 to 180 per million population per year in order to be judged significantly different from national norms, whilst for a population of 1 million, the limits are from 80 to 120 per million population per year.

In the 2004 data there was wide variation in the standardised acceptance rate ratios, which ranged from 0.25 (in Blackpool) to 2.30 (in Merthyr Tydfil). In Table 3.3 the trends over 4 years are shown, illustrating the wide variations in small populations which are also greater in areas with habitually low take-on rates.

In general, areas with significantly high standardised acceptance rate ratios are those with a high ethnic minority population and/or a socially deprived population, as shown in previous reports (Figure 3.4). All 14 areas with significantly low standardised acceptance rate ratios have ethnic minority populations less than 5.5%. Some eg Hertfordshire and Wiltshire are areas with lower social deprivation but this is not a consistent finding.

Of the 22 areas with significantly high standardised acceptance rate ratios in 2004, 3 were in Scotland where the ethnic mix was not available. Of the 19 in England and Wales the ethnic minority population was greater than 20% in 16 and 13% in one other, leaving only 2 with small ethnic minorities.

Some analysis was also performed using combined acceptance rates over 2–4 years which confirms these findings. Of the 37 areas with significantly high standardised acceptance rate ratios, 9 were in Scotland where the ethnic mix was not available. Of the 28 in England and Wales the ethnic minority population was greater than 20% in 15, and 10–20% in 2.

Table 3.3: Crude adult annual acceptance rates and standardised rate ratios 2001–2004

Areas with significantly low acceptance ratios over 3 years are italicised in greyed areas, those with significantly high ratios are bold in greyed areas.

Ratio = observed/expected acceptance rate adjusted for age of local population.

Ethnicity = % South Asian and African–Caribbean from 2001 Census.

UK Area	Local Authority	Name	Total pop	2001		2002		2003		2004					% non White
				O/E	pmp	O/E	pmp	O/E	pmp	Total obs	O/E	L 95% CI	U 95% CI	pmp	
North East	County Durham and Tees Valley	Darlington	97,838	0.9	82	1.0	102	1.0	102	7	0.68	0.33	1.43	72	2.1
		Durham	493,469	0.6	57	1.1	107	0.8	83	46	0.89	0.67	1.19	93	1.0
		Hartlepool	88,610	1.1	102	0.6	56	1.3	135	10	1.11	0.60	2.06	113	1.2
		Middlesbrough	134,855	1.2	104	1.1	104	1.2	119	13	1.01	0.59	1.74	96	6.3
		Redcar & Cleveland	139,132	0.9	86	1.8	187	1.0	108	15	1.02	0.61	1.69	108	1.1
		Stockton-on-Tees	178,408	0.9	78	1.1	101	1.0	101	19	1.08	0.69	1.70	106	2.8
	Northumberland, Tyne & Wear	Gateshead	191,151			1.2	126	0.9	99	17	0.83	0.52	1.34	89	1.6
		Newcastle upon Tyne	259,536			1.0	92	0.9	85	28	1.10	0.76	1.60	108	6.9
		North Tyneside	191,658			0.9	94	0.7	73	19	0.92	0.59	1.44	99	1.9
		Northumberland	307,190			0.8	81	0.9	104	28	0.82	0.57	1.19	91	1.0
North West	Cheshire & Merseyside	South Tyneside	152,785			0.9	92	0.7	72	16	0.98	0.60	1.60	105	2.7
		Sunderland	280,807	0.7	68	1.0	96	1.2	121	19	0.68	0.43	1.06	68	1.9
		Halton	118,209	1.8	152	0.8	76	1.3	118	16	1.44	0.88	2.35	135	1.2
		Knowsley	150,459	0.5	47	1.0	93	1.3	120	13	0.91	0.53	1.57	86	1.6
		Liverpool	439,471	1.9	168	1.0	96	0.8	75	45	1.07	0.80	1.43	102	5.7
		<i>Sefton</i>	<i>282,958</i>	<i>0.9</i>	<i>95</i>	<i>1.0</i>	<i>106</i>	<i>0.7</i>	<i>81</i>	<i>16</i>	<i>0.52</i>	<i>0.32</i>	<i>0.84</i>	<i>57</i>	<i>1.6</i>
		<i>St. Helens</i>	<i>176,843</i>	<i>1.0</i>	<i>96</i>	<i>1.0</i>	<i>96</i>	<i>0.6</i>	<i>57</i>	<i>8</i>	<i>0.45</i>	<i>0.22</i>	<i>0.89</i>	<i>45</i>	<i>1.2</i>
	Warrington	191,080	0.8	73	1.0	94	0.6	63	18	0.97	0.61	1.53	94	2.1	
	Wirral	312,293	0.4	42	0.8	83	1.0	109	40	1.20	0.88	1.63	128	1.7	
	North West	Cumbria and Lancashire	Blackburn with Darwen	137,470	0.9	73	1.5	124	1.3	116	14	1.15	0.68	1.95	102
<i>Blackpool</i>			<i>142,283</i>	<i>0.9</i>	<i>91</i>	<i>1.0</i>	<i>112</i>	<i>0.3</i>	<i>35</i>	<i>5</i>	<i>0.31</i>	<i>0.13</i>	<i>0.74</i>	<i>35</i>	<i>1.6</i>
<i>Cumbria</i>			<i>487,607</i>	<i>0.9</i>	<i>94</i>	<i>0.8</i>	<i>84</i>	<i>0.8</i>	<i>88</i>	<i>34</i>	<i>0.63</i>	<i>0.45</i>	<i>0.88</i>	<i>70</i>	<i>0.7</i>
<i>Lancashire</i>			<i>1,134,975</i>	<i>1.0</i>	<i>91</i>	<i>0.7</i>	<i>66</i>	<i>0.6</i>	<i>63</i>	<i>69</i>	<i>0.59</i>	<i>0.46</i>	<i>0.74</i>	<i>61</i>	<i>5.3</i>
Greater Manchester		Bolton	261,037					0.9	92	18	0.71	0.45	1.12	69	11.0
		Bury	180,607					0.6	55	11	0.63	0.35	1.13	61	6.1
		Oldham	217,276					0.7	69	13	0.63	0.37	1.09	60	13.9
		Rochdale	205,357					1.0	97	16	0.83	0.51	1.35	78	11.4
		<i>Salford</i>	<i>216,105</i>					<i>1.2</i>	<i>125</i>	<i>11</i>	<i>0.51</i>	<i>0.28</i>	<i>0.92</i>	<i>51</i>	<i>3.9</i>
		Wigan	301,415					0.9	86	25	0.84	0.57	1.24	83	1.3
Yorkshire and the Humber	North and East Yorkshire and Northern Lincolnshire	East Riding of Yorkshire	314,113	0.9	89	0.9	96	1.0	115	28	0.79	0.55	1.15	89	1.2
		Kingston upon Hull	243,588	1.0	86	1.1	99	1.0	99	30	1.28	0.90	1.84	123	2.3
		North East Lincolnshire	157,981	0.3	25	1.2	120	0.7	70	18	1.12	0.70	1.77	114	1.4
		North Lincolnshire	152,848	0.8	79	1.0	98	0.6	65	20	1.23	0.79	1.91	131	2.5
		North Yorkshire	569,660	0.9	88	1.2	128	1.0	111	65	1.03	0.81	1.32	114	1.1
		York	181,096	0.9	83	1.6	155	1.5	160	18	0.96	0.60	1.52	99	2.2
	South Yorkshire	Barnsley	218,063	0.8	73	1.1	110	0.7	73	21	0.93	0.61	1.43	96	0.9
		Doncaster	286,865	1.0	94	0.9	91	0.9	98	28	0.94	0.65	1.37	98	2.3
		Rotherham	248,175	1.6	153	0.9	85	1.0	101	30	1.19	0.83	1.71	121	3.1
		Sheffield	513,234	1.0	94	1.0	97	1.0	97	61	1.18	0.92	1.51	119	8.8
	West Yorkshire	Bradford	467,664	1.5	128	1.4	124	1.5	141	61	1.42	1.10	1.82	130	21.7
		Calderdale	192,405	1.2	114	0.7	62	0.9	94	19	0.99	0.63	1.55	99	7.0
		Kirklees	388,567	1.0	85	1.2	111	1.2	113	47	1.26	0.95	1.68	121	14.4
		Leeds	715,403	1.1	95	0.8	78	1.0	101	68	0.98	0.78	1.25	95	8.2
Wakefield		315,172	0.8	76	0.8	79	0.8	82	31	0.98	0.69	1.39	98	2.3	

Table 3.3: (continued)

UK Area	Local Authority	Name	Total pop	2001		2002		2003		2004					% non White
				O/E	pmp	O/E	pmp	O/E	pmp	Total obs	O/E	L 95% CI	U 95% CI	pmp	
East Midlands	Leicestershire, Northamptonshire and Rutland	Leicester	279,920	1.3	104	1.6	132	1.7	154	34	1.38	0.99	1.94	121	36.1
		Leicestershire	609,578	1.2	116	0.8	84	0.8	84	47	0.75	0.56	1.00	77	5.3
		Northamptonshire	629,676	0.9	84	1.0	89	0.8	73	44	0.72	0.54	0.97	70	4.9
		Rutland	34,563	0.6	58	0.3	29	1.4	145	1	0.27	0.04	1.92	29	1.9
	Trent	Derby	221,709					0.9	95	26	1.17	0.80	1.72	117	12.6
		Derbyshire	734,585	0.9	87	0.4	44	0.8	88	56	0.72	0.55	0.93	76	1.5
		Lincolnshire	646,644	0.7	73	0.6	70	0.6	70	57	0.77	0.60	1.00	88	1.3
		Nottingham	266,988	1.7	146	0.7	60	0.9	86	27	1.11	0.76	1.62	101	15.1
		Nottinghamshire	748,508	1.0	92	0.8	84	1.1	114	77	0.98	0.78	1.22	103	2.6
	West Midlands	Birmingham and the Black Country	Birmingham	977,085							151	1.69	1.44	1.98	155
Dudley			305,153	0.6	56	0.6	62	0.8	85	37	1.15	0.83	1.58	121	6.3
Sandwell			282,904							55	1.93	1.48	2.51	194	20.3
Solihull			199,515	1.2	115	0.7	70	1.6	170	26	1.23	0.84	1.81	130	5.4
Walsall			253,498	1.1	107	1.3	126	1.3	134	39	1.51	1.10	2.06	154	13.6
Wolverhampton		236,582	1.3	127	1.7	169	1.8	182	40	1.64	1.21	2.24	169	22.2	
Coventry, Warwickshire, Herefordshire and Worcestershire		Coventry	300,849	1.7	150	1.4	133	1.1	110	25	0.86	0.58	1.28	83	16.0
		Herefordshire, County of	174,871							21	1.05	0.68	1.61	120	0.9
		Warwickshire Worcestershire	505,858 542,105	1.1	105	1.0	101	0.8	81	48 54	0.90 0.94	0.68 0.72	1.20 1.23	95 100	4.4 2.5
Shropshire and Staffordshire		Shropshire	283,173							35	1.11	0.80	1.55	124	1.2
	Telford & Wrekin	158,325							19	1.33	0.85	2.08	120	5.2	
East of England	Bedfordshire and Hertfordshire	Bedfordshire	381,572	0.9	81	0.9	81	0.9	92	33	0.90	0.64	1.26	86	6.7
		Hertfordshire	1,033,978	0.9	81	0.6	53	0.6	62	52	0.51	0.39	0.67	50	6.3
		Luton	184,373	1.4	114	0.9	71	1.7	152	12	0.75	0.43	1.33	65	28.1
	Essex	Essex	1,310,837							134	0.97	0.82	1.15	102	2.9
		Southend-on-Sea	160,259	1.0	100	1.3	131	1.4	150	17	0.99	0.61	1.59	106	4.2
		Thurrock	143,128							22	1.69	1.11	2.57	154	4.7
	Norfolk, Suffolk and Cambridgeshire	Cambridgeshire	552,659	1.0	87	0.7	62	0.8	83	55	1.01	0.77	1.31	100	4.1
		Norfolk	796,728							95	1.02	0.84	1.25	119	1.5
		Peterborough	156,061	1.0	90	1.2	109	1.2	109	13	0.88	0.51	1.52	83	10.3
		Suffolk	668,555							64	0.87	0.68	1.11	96	2.8
London	North East London	Barking & Dagenham	163,942							18	1.21	0.76	1.92	110	14.8
		Hackney	202,824							24	1.60	1.07	2.39	118	40.6
		Newham	243,889							35	2.02	1.45	2.81	144	60.6
		Redbridge	238,634							28	1.27	0.88	1.84	117	36.5
		Tower Hamlets	196,105							20	1.40	0.90	2.17	102	48.6
	North West London	Ealing	300,948			1.7	140	1.5	133	48	1.87	1.41	2.48	159	41.3
		Hammersmith & Fulham	165,244			1.8	139	2.0	163	24	1.80	1.20	2.68	145	22.2
		Hillingdon	243,006							32	1.43	1.01	2.02	132	20.9
		Hounslow	212,342							40	2.23	1.63	3.04	188	35.1
	South East London	Bexley	218,307	0.8	73	1.3	124	1.0	96	20	0.91	0.59	1.42	92	8.6
		Bromley	295,532	0.6	61	0.9	91	1.0	108	30	0.98	0.69	1.41	102	8.4
		Greenwich	214,404			1.5	126	1.3	117	14	0.75	0.45	1.27	65	22.9
		Lambeth	266,169	0.8	53	1.7	120	1.3	98	30	1.50	1.05	2.14	113	37.6
		Lewisham	248,923	1.0	72	1.9	145	1.0	84	38	1.90	1.38	2.61	153	34.1
Southwark		244,866			1.7	127	1.6	127	27	1.40	0.96	2.05	110	37.0	
South West London	Croydon	330,588	0.7	60	1.5	130	1.3	118	36	1.21	0.88	1.68	109	29.8	

Table 3.3: (continued)

UK Area	Local Authority	Name	Total pop	2001		2002		2003		2004					% non White
				O/E	pmp	O/E	pmp	O/E	pmp	Total obs	O/E	L 95% CI	U 95% CI	pmp	
South East	Hampshire and Isle of Wight	<i>Hampshire</i>	1,240,102	0.7	62	0.7	73	0.7	77	81	0.63	0.51	0.79	65	2.2
		Isle of Wight	132,731	0.6	68	0.7	83	0.6	75	11	0.67	0.37	1.22	83	1.3
		Portsmouth	186,700	1.2	102	0.7	64	1.0	96	11	0.62	0.34	1.11	59	5.3
		Southampton	217,444	0.8	64	0.8	69	0.8	74	14	0.69	0.41	1.17	64	7.6
	Surrey and Sussex	Brighton & Hove	247,817							21	0.86	0.56	1.32	85	5.7
		East Sussex	492,326							65	1.09	0.86	1.39	132	2.3
		<i>Surrey</i>	1,059,017							86	0.79	0.64	0.97	81	5.0
		<i>West Sussex</i>	753,612							47	0.55	0.41	0.73	62	3.4
	Thames Valley	Bracknell Forest	109,616							11	1.20	0.66	2.17	100	4.9
		Buckinghamshire	479,026	1.0	90	0.8	71	0.7	71	35	0.74	0.53	1.03	73	7.9
		Milton Keynes	207,057	0.9	68	0.9	72	1.4	116	20	1.17	0.76	1.82	97	9.3
		Oxfordshire	605,489	1.0	92	0.9	83	1.1	111	47	0.80	0.60	1.07	78	4.9
		Reading	143,096	1.0	77	0.8	70	1.1	98	9	0.73	0.38	1.39	63	13.2
		Slough	119,064	1.4	109	1.1	92	1.7	143	20	2.00	1.29	3.10	168	36.3
		West Berkshire	144,485	0.9	76	0.6	55	0.8	76	17	1.24	0.77	2.00	118	2.6
	Wokingham	150,231	1.0	87	0.5	47	1.1	100	12	0.88	0.50	1.54	80	6.1	
South West	Avon, Gloucestershire and Wiltshire	Bath & North East Somerset	169,040	0.7	71	0.6	59	0.7	77	23	1.27	0.84	1.91	136	2.8
		Bristol, City of	380,616	1.7	145	1.0	87	1.4	131	46	1.28	0.96	1.71	121	8.2
		Gloucestershire	564,559	0.9	85	0.9	89	0.9	97	55	0.91	0.70	1.19	97	2.8
		North Somerset	188,564	1.1	111	0.9	101	1.3	148	26	1.21	0.82	1.78	138	1.4
		South Gloucestershire	245,641	1.0	90	1.3	118	1.2	114	25	1.04	0.70	1.53	102	2.4
		Swindon	180,051	0.7	61	1.0	94	1.0	94	21	1.24	0.81	1.90	117	4.8
		<i>Wiltshire</i>	432,972	0.8	72	0.5	46	0.6	62	27	0.60	0.41	0.87	62	1.6
	Dorset and Somerset	Bournemouth	163,444							10	0.54	0.29	1.01	61	3.3
		Dorset	390,980							37	0.75	0.54	1.03	95	1.3
		Poole	138,288							13	0.82	0.48	1.41	94	1.8
		Somerset	498,095	0.9	90	0.9	100	0.8	92	48	0.85	0.64	1.13	96	1.2
	South West Peninsula	Cornwall & Isles of Scilly	501,267	1.0	110	1.5	170	1.3	148	82	1.39	1.12	1.73	164	1.0
		Devon	704,491	0.9	97	0.8	95	0.9	102	93	1.11	0.91	1.37	132	1.1
		Plymouth	240,722	1.5	141	1.5	141	1.4	137	25	1.04	0.70	1.54	104	1.6
		Torbay	129,706	1.3	139	0.5	54	1.1	131	22	1.40	0.92	2.12	170	1.2
	Wales	Bro Taf	Cardiff	305,353	1.0	85	1.7	151	1.6	147	37	1.31	0.95	1.81	121
Merthyr Tydfil			55,979	1.0	89	2.0	197	1.8	179	13	2.28	1.33	3.93	232	1.0
Rhondda, Cynon, Taff			231,947	1.1	108	1.5	151	1.1	112	36	1.52	1.10	2.11	155	1.2
Vale of Glamorgan			119,292	1.0	92	1.2	117	1.0	101	16	1.28	0.78	2.09	134	2.2
Dyfed Powys		Carmarthenshire	172,842	1.1	116	1.1	121	1.4	162	23	1.16	0.77	1.75	133	0.9
		Ceredigion	74,941	1.4	147	1.2	133	0.6	67	10	1.19	0.64	2.21	133	1.4
		Pembrokeshire	114,131	1.3	131	0.9	96	1.2	140	10	0.77	0.41	1.42	88	0.9
		Powys	126,353	0.7	79	0.7	79	0.3	32	14	0.94	0.56	1.58	111	0.9
Gwent		Blaenau Gwent	70,064	1.3	128	1.3	128	0.1	14	8	1.09	0.55	2.19	114	0.8
		Caerphilly	169,519	1.0	88	1.5	142	1.1	106	17	1.01	0.63	1.62	100	0.9
		Monmouthshire	84,885	2.0	200	1.2	130	0.7	82	12	1.27	0.72	2.24	141	1.1
		Newport	137,012	1.3	117	1.1	102	1.4	146	13	0.94	0.55	1.63	95	4.8
		Torfaen	90,949	1.4	132	1.4	143	1.2	121	8	0.84	0.42	1.69	88	0.9
Morgannwg		Bridgend	128,645	1.2	117	1.2	124	1.7	179	17	1.27	0.79	2.04	132	1.4
		Neath Port Talbot	134,468	1.3	134	1.4	149	1.6	171	19	1.29	0.82	2.02	141	1.1
		Swansea	223,300	2.0	197	1.4	148	1.7	188	30	1.24	0.86	1.77	134	2.2

Table 3.3: (continued)

UK Area	Local Authority	Name	Total pop	2001		2002		2003		2004					% non White
				O/E	pmp	O/E	pmp	O/E	pmp	Total obs	O/E	L 95% CI	U 95% CI	pmp	
Wales (continued)	North Wales	Conwy	109,596			1.2	146	1.0	128	14	1.04	0.61	1.75	128	1.1
		Denbighshire	93,065	0.3	32	0.6	64	1.0	118	10	0.94	0.51	1.75	107	1.2
		Flintshire	148,594			1.4	135	1.2	121	19	1.28	0.81	2.00	128	0.8
		Gwynedd	116,843			1.7	180	1.5	163	16	1.24	0.76	2.02	137	1.2
		Isle of Anglesey	66,829			1.0	105	1.3	150	9	1.19	0.62	2.28	135	0.7
		Wrexham	128,476	1.3	125	1.0	101	1.3	132	10	0.76	0.41	1.42	78	1.1
Scotland		Aberdeen City	212,125	0.8	75	1.2	108	1.0	99	35	1.69	1.21	2.35	165	
		Aberdeenshire	226,871	1.0	93	1.1	106	0.7	71	19	0.85	0.54	1.33	84	
		Angus	108,400	1.5	148	2.1	221	0.9	101	16	1.35	0.83	2.20	148	
		Argyll & Bute	91,306	1.0	99	0.8	88	1.3	142	11	1.08	0.60	1.94	120	
		Scottish Borders	106,764	0.4	37	0.9	103	0.7	84	18	1.49	0.94	2.36	169	
		Clackmannanshire	48,077	0.9	83	1.3	125	1.5	146	5	1.06	0.44	2.55	104	
		West Dunbartonshire	93,378	1.8	161	0.4	43	0.6	64	12	1.29	0.73	2.28	129	
		Dumfries & Galloway	147,765	1.5	162	1.3	149	1.3	156	10	0.59	0.32	1.09	68	
		Dundee City	145,663	1.4	137	1.3	130	1.9	199	21	1.37	0.89	2.11	144	
		East Ayrshire	120,235	1.2	116	0.8	75	1.1	116	7	0.57	0.27	1.19	58	
		East Dunbartonshire	108,243	0.7	65	0.8	74	1.3	139	7	0.63	0.30	1.33	65	
		East Lothian	90,088	0.9	89	1.0	100	0.3	33	7	0.73	0.35	1.54	78	
		East Renfrewshire	89,311	0.6	56	0.5	45	1.1	112	7	0.78	0.37	1.64	78	
		Edinburgh, City of	448,624	0.8	76	0.8	76	1.0	103	47	1.08	0.81	1.44	105	
		Falkirk	145,191	1.0	90	0.6	55	0.7	69	11	0.75	0.42	1.36	76	
		Fife	349,429	1.2	114	1.1	106	0.9	92	38	1.06	0.77	1.46	109	
		Glasgow City	577,869	1.2	107	1.3	119	1.7	166	78	1.40	1.12	1.75	135	
		Highland	208,914	1.4	134	1.3	134	1.4	153	27	1.21	0.83	1.77	129	
		Inverclyde	84,203	1.6	154	2.2	214	1.1	119	9	1.04	0.54	1.99	107	
		Midlothian	80,941	0.9	86	1.0	99	1.8	185	15	1.85	1.12	3.08	185	
		Moray	86,940	0.7	69	0.9	92	1.3	138	10	1.11	0.60	2.07	115	
		North Ayrshire	135,817	0.5	44	1.4	140	1.1	118	16	1.15	0.70	1.87	118	
		North Lanarkshire	321,067	1.4	118	1.2	112	1.3	125	30	0.99	0.69	1.41	93	
		Orkney Islands	19,245	1.0	104	1.5	156	1.9	208	1	0.48	0.07	3.42	52	
		Perth & Kinross	134,949	0.8	82	1.3	141	1.1	126	19	1.26	0.81	1.98	141	
		Renfrewshire	172,867	1.1	98	1.8	174	1.1	116	19	1.09	0.70	1.72	110	
		Shetland Islands	21,988	0.0	0	0.0	0	0.5	45	3	1.42	0.46	4.39	136	
		South Ayrshire	112,097	0.9	89	0.7	71	1.2	134	6	0.47	0.21	1.05	54	
		South Lanarkshire	302,216	1.4	126	1.2	116	0.9	93	31	1.03	0.72	1.46	103	
		Stirling	86,212	0.8	70	0.7	70	0.7	70	6	0.69	0.31	1.54	70	
	West Lothian	158,714	0.5	44	1.0	82	0.6	50	10	0.72	0.39	1.33	63		
	Eilean Siar	26,502	0.4	38	0.7	75	1.0	113	5	1.64	0.68	3.93	189		

Social deprivation did not appear to be a consistent factor in the remaining 11 with ethnic minority populations less than 10%. It is noticeable that 6 of these were in Wales and 3

in the South West. These regional differences require investigation. These standardised rates are all relative to an overall acceptance rate that may not meet population need for RRT.

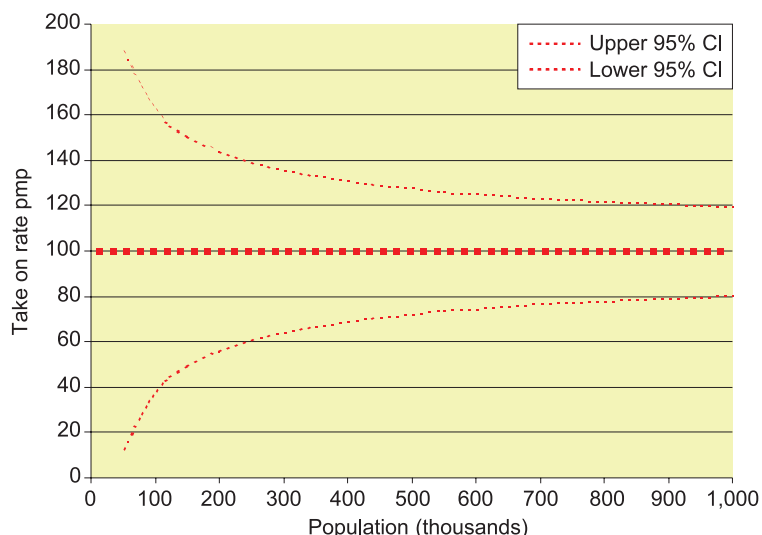


Figure 3.3: 95% confidence limits for take on rate of 100 pmp for population size 50,000–1 million

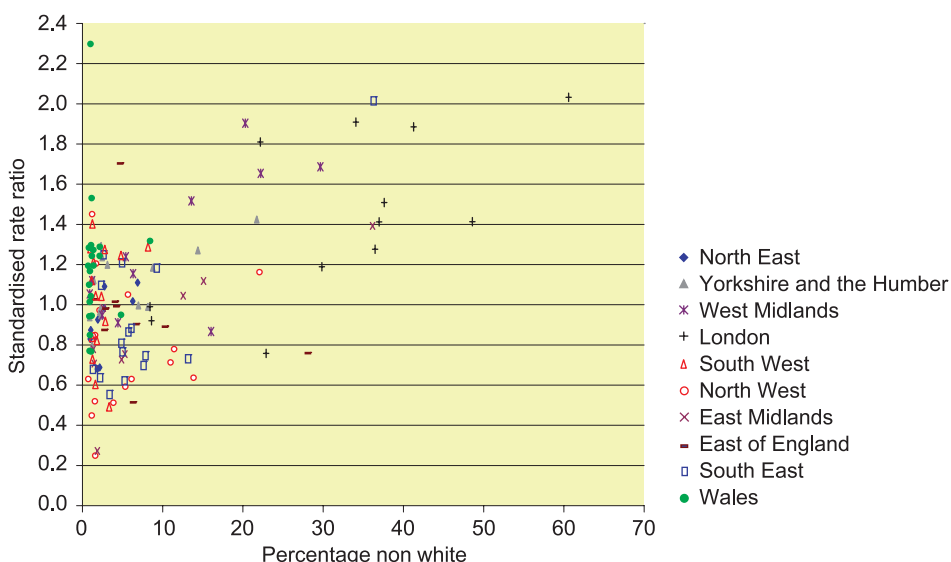


Figure 3.4: Relationship between ethnic mix and acceptance ratio

Local changes in acceptance rate

Changes in acceptance by renal units

The number of patients accepted by each renal unit is shown in Table 3.2. There is variation in time trends between renal units, which may reflect chance fluctuation, completeness of reporting, rising incidence of ERF, changes in referral patterns or catchment populations and areas, and the introduction of conservative care teams.

In the 38 UK renal units submitting data since 2000, there has been a 9.8% rise in the

acceptance numbers: there was little change in Scotland, a 19.5% rise in Wales and an 11.3% rise in England. The rise had occurred by 2003 with no change in 2004. There are wide variations between different renal units ranging from an increase of 63% since 2000 (Exeter) to a decrease of 48% (Wrexham).

Ethnicity

Only 23 renal units (41%) provide over 90% complete ethnicity data (Table 3.4). In contrast, 20 (36%) provide less than 50%. This degree of incompleteness makes analysis of ethnicity data unreliable. The proportion of patients from ethnic minority populations in the returned

Table 3.4: Percentage of patients in different ethnic groups by centre

	Centre	Total pts	Completion %	Percentage in each ethnic group				
				White	Black	Asian	Chinese	Other
England	Dudley	55	100	93	4	4		
	Gloucester	55	100	100				
	H&CX	196	100	52	10	19		20
	Heartlands	99	100	74	6	18		1
	Nottingham	109	100	96	3			1
	Stevenage	79	100	86	1	13		
	Wolverhampton	101	100	85	3	11	1	
	QEH	197	99	76	7	14	1	2
	York	48	98	100				
	Basildon	43	98	95		2	2	
	Reading	67	97	82		15		3
	Leicester	165	97	84	1	14		1
	Middlesbrough	102	96	99			1	
	Bristol	168	96	92	4	3		1
	Preston	86	95	80		19		1
	Newcastle	101	94	98		2		
	Carlisle	29	93	100				
	Bradford	62	92	58	5	37		
	ManWst	106	91	79	1	18		2
	Portsmouth	119	90	98	1	1		
	Sheffield	169	87	90	3	5		2
	Sunderland	51	86	100				
	Oxford	159	85	87	4	5	1	2
	Dorset	58	84	96		4		
	Wirral	68	84	100				
	Liverpool	131	83	97			1	2
	Barts	187	80	45	15	23	2	15
	Coventry	77	73	84		11	5	
	Plymouth	61	61	97			3	
	Shrewsbury	54	57	97		3		
	Derby	67	54	100				
	Guys	104	52	70	22	6	2	
	Truro	67	47					
	Leeds	175	42					
	Norwich	99	40					
	Chelmsford	52	25					
	Exeter	117	18					
	Brighton	113	16					
	Hull	109	16					
	Southend	41	15					
Carshalton	172	7						
Cambridge	103	2						
Kings	114	2						
Ipswich	46	0						
Wales	Swansea	95	97	100				
	Bangor	36	22					
	Clwyd	25	4					
	Wrexham	30	7					
	Cardiff	181	2					

Table 3.4: (continued)

Centre	Total pts	Completion %	Percentage in each ethnic group					
			White	Black	Asian	Chinese	Other	
Scotland								
Aberdeen	67	99						
Airdrie	51	98						
Dumfries	7	0						
Dundee	62	97						
Dunfermline	29	7						
Edinburgh	99	1						
Glasgow RI	79	6						
Glasgow WI	98	1						
Inverness	33	42						
Kilmarnock	23	0						
Stobhill	17	0						
England	4,381	70	84	4	9	1	3	
Wales	367	30						
Scotland	565	36						
UK	5,313	64						

Details of centres with less than 50% returns are not shown.
Data on ethnicity is not mandatory in the Scottish Registry.

registry data now appears similar to that found in the National Renal Review 2002 (see Registry Report 2003).

Within the renal units with over 90% returns there is significant variation in the percentages of new patients from the ethnic minorities ranging from 0% (Carlisle, Gloucester and York) to 49% (Hammersmith & Charing Cross). The units with the highest proportion of new patients from the ethnic minorities known to have high rates of ERF (South Asian and African-Caribbean) were Bradford (42%) and Hammersmith and Charing Cross (29%).

Age

The median ages of patients starting renal replacement therapy are 64.7 England, 65.1 Scotland, 68.7 Wales and 65.1 UK. Since 1998 the median age of a patient starting RRT has increased by 1.5 years in England, compared to the largest increase being seen in Wales of 6.2 years (Table 3.5). In Scotland, results and trends are similar although more volatile in a smaller population. Over the same time the percentage of incident patients aged over 75 has risen from approximately 18% to 23% in England and from 20% to 29% in Wales. The

Table 3.5: Median age of patients starting renal replacement therapy 1998–2004

Year	Median age			% over 75		
	England	Wales	Scotland	England	Wales	Scotland
1998	63.3	62.5	63.9	17.5	19.7	15.7
1999	63.2	64.5	65.7	17.8	20.7	21.8
2000	63.8	66.2	64.4	20.9	25.3	17.4
2001	64.5	65.1	66.4	21.3	23.0	25.6
2002	65.3	66.8	65.2	23.3	26.8	24.6
2003	64.6	66.4	66.4	21.9	26.5	24.5
2004	64.7	68.7	65.1	23.4	29.4	25.5

Median age for N. Ireland for 2004 was 71 years

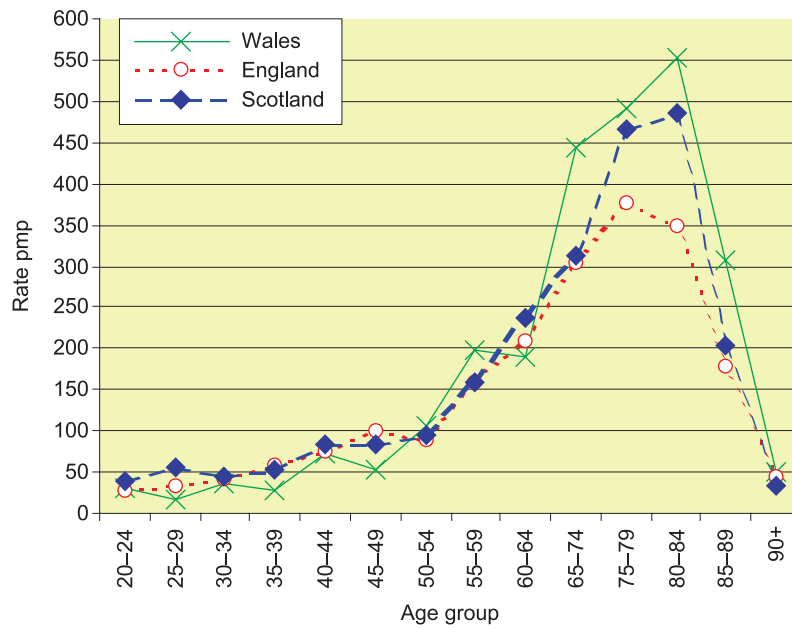


Figure 3.5: Age distribution of incident patients in 3 countries

median age of incident non-white patients in 2004 was considerably lower at 57.5.

The age distribution of incident patients in the three countries is shown in Figure 3.5. There is a large variation by centre in median age of new patients (Figure 3.6).

A few renal units have a median age under age 60; in contrast some have a median age well over 70. There are many possible reasons for these differences relating to local population demographics and the proportion of ethnic

minorities in the catchment area. There may be differences in the prevalence, nature and management of renal disease and in approaches to conservative management.

Gender

As in previous years there was an excess of males starting RRT (Table 3.6). This excess is a feature of all age groups (Figure 3.7) and of all reporting centres except Stobhill and Chelmsford in the 2004 cohort (Figure 3.8).

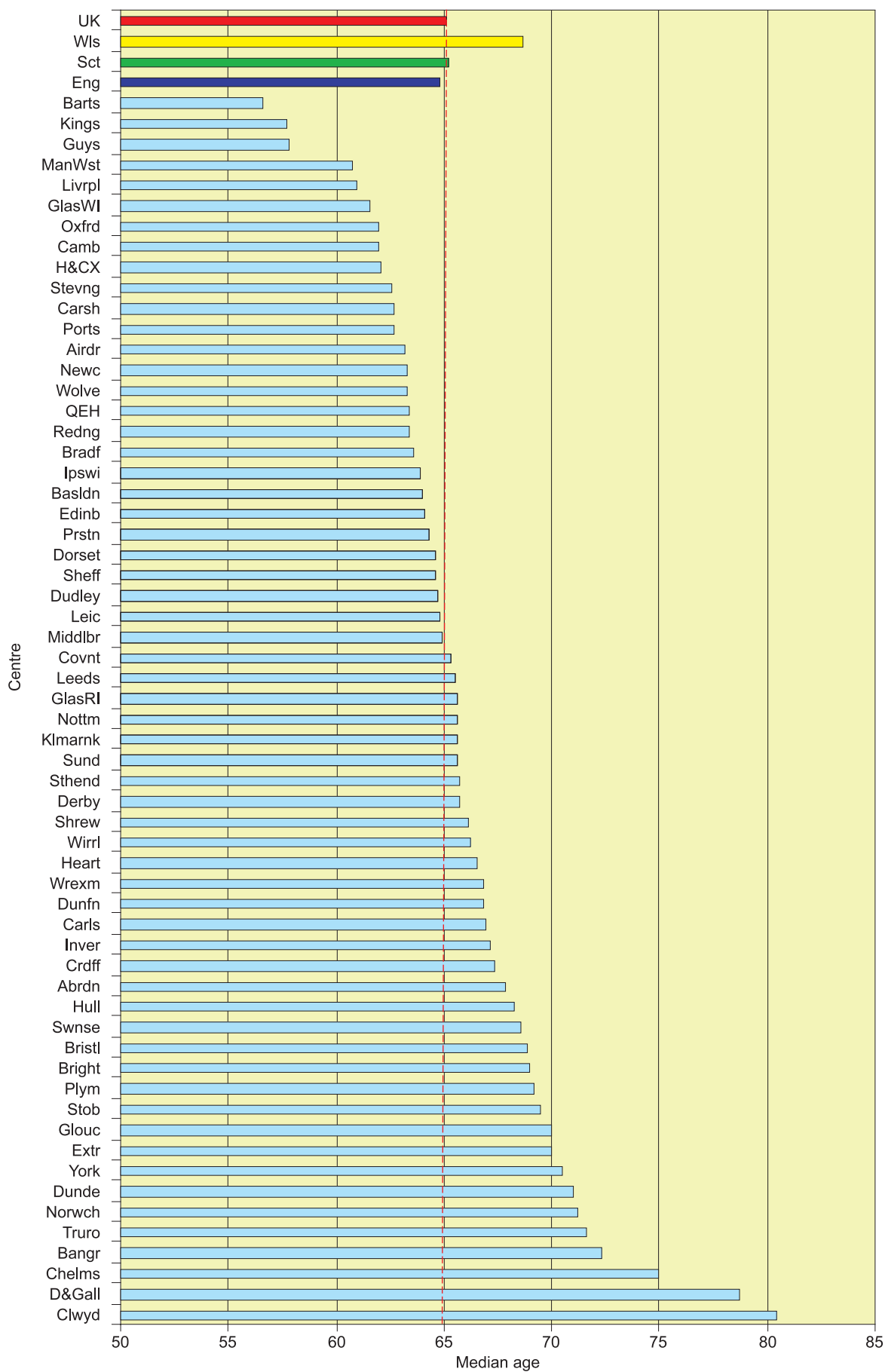
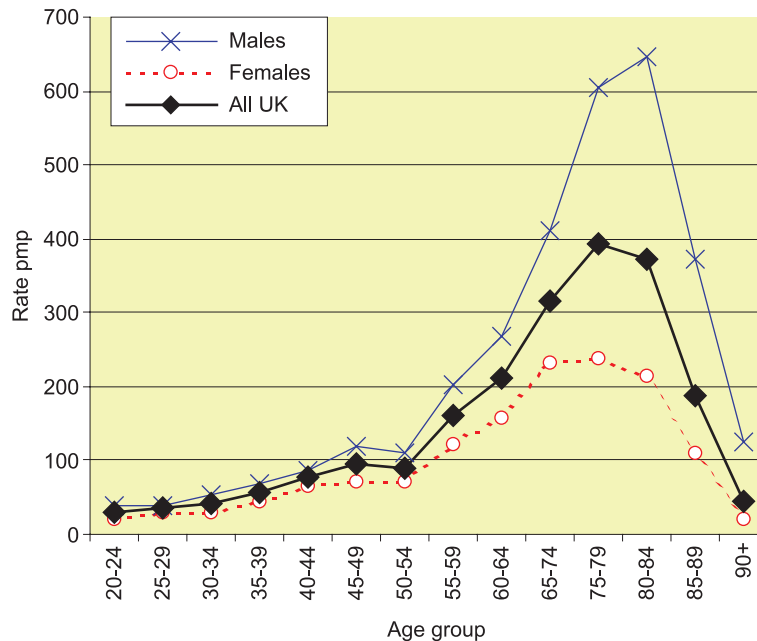


Figure 3.6: Median age of new patients in each centre

Table 3.6: Percentage starting RRT who are male, 1998–2004

	1998	1999	2000	2001	2002	2003	2004
England	63.7	62.2	59.5	63.0	61.1	61.5	62.2
Wales	53.3	63.3	59.6	63.2	63.1	64.1	62.0
Scotland	59.1	59.9	56.5	56.9	56.9	55.0	55.6
UK	62.0	61.8	59.0	62.2	60.7	60.9	61.4

**Figure 3.7: Incident rates by age and gender**

Primary renal diagnosis

The distribution of new patients by age, gender and cause of ERF is shown in Tables 3.7 and 3.8. The male to female ratio is over one, as expected for most types of kidney disease. The exception is Adult Polycystic Disease (APKD) for which the ratio is, as expected, exactly 1, though this was not a feature in the previous three annual cohorts in which the ratio was 1.3 to 1.4. The gender imbalance in other disease settings such as in patients with diabetic nephropathy may relate to the presence of factors, such as hypertension and reno-vascular disease, which are more common in males and which may influence the rate of progression of renal failure. As in previous cohorts the diagnoses of aetiology uncertain/glomerulonephritis unproven and reno-vascular disease are more common in patients over the age of 65. The proportion of null returns for primary renal diagnosis is also higher in this group.

For those centres with a high percentage of missing primary diagnoses, the percentage in the other diagnostic categories has not been calculated. The percentage by each category has been calculated after excluding those patients with a missing diagnosis.

The aetiology uncertain/glomerulonephritis not proven group remains the most common group overall and there is wide variation between centres in respect of the renal units to suggest that the diagnosis is being used as a surrogate for a null return.

Some centre variation with respect to this diagnosis is likely to reflect the lack of clear definition of certain diagnostic categories eg hypertensive disease and reno-vascular disease. In addition some variation seems to result from differences between centres in the degree of certainty required to record diagnoses such as glomerulonephritis and reno-vascular disease.

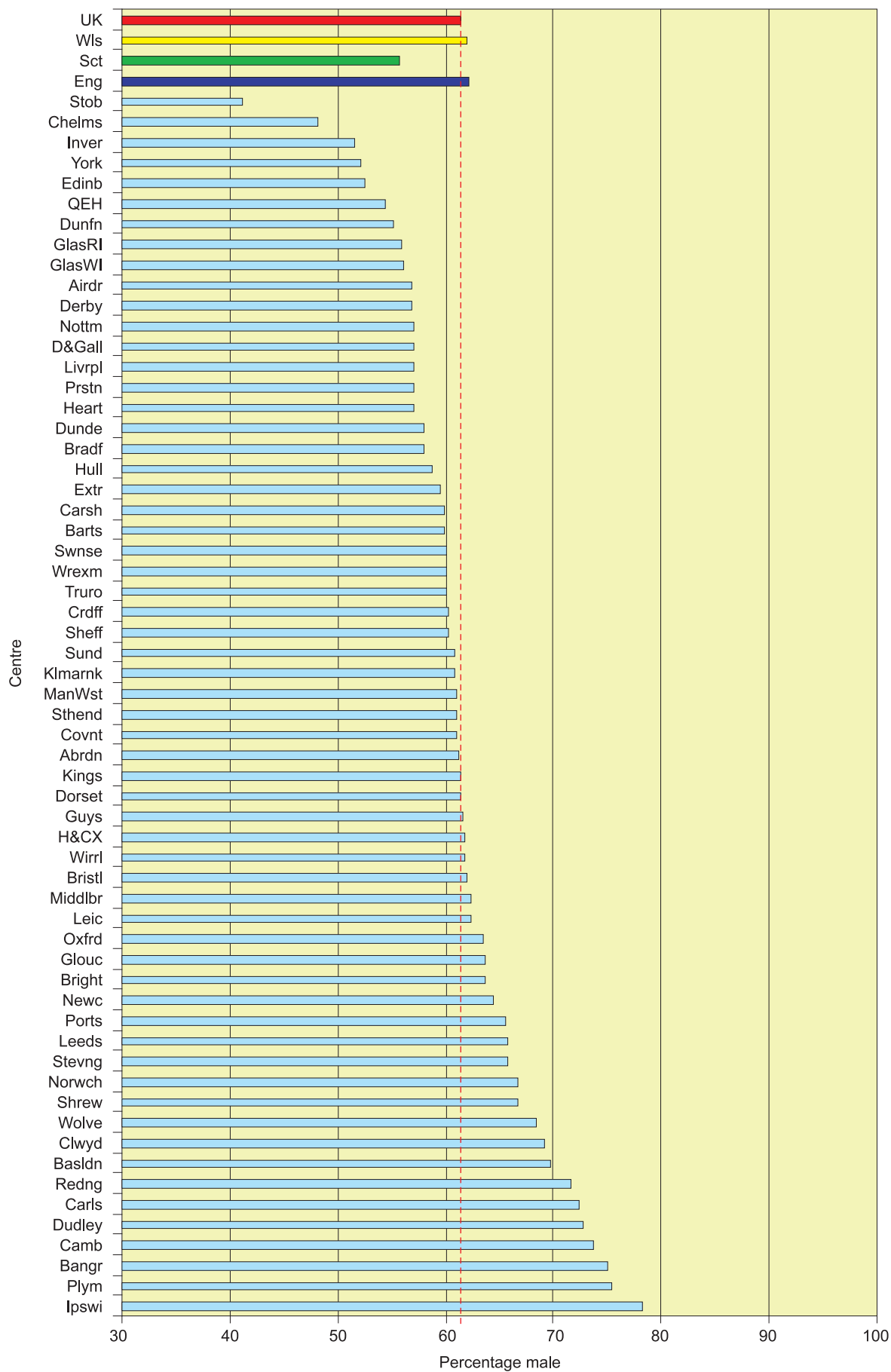


Figure 3.8: Percentage of new patients who are male in renal units reporting to UK Registry in 2004

Table 3.7: Percentage distribution of primary renal diagnosis by age and gender ratio in 2004 incident cohort

Diagnosis	UK <65	UK >65	UK All	M:F
Aetiology unc./GN NP*	18.5	27.6	23.0	1.6
Glomerulonephritis	13.3	7.7	10.4	2.4
Pyelonephritis	7.5	6.4	7.0	1.2
Diabetes	21.4	14.7	18.0	1.7
Reno-vascular disease	2.7	12.2	7.5	2.0
Hypertension	5.7	5.3	5.5	2.1
Polycystic kidney disease	8.0	2.8	5.4	1.0
Other	15.3	12.5	13.9	1.3
Not sent	7.7	10.7	9.2	1.5
No of patients	2,603	2,653	5,256	

*GN NP, glomerulonephritis not proven

Table 3.8: Percentage distribution of primary renal diagnosis by centre in 2004 incident cohort

Country	Treatment centre	Aetiology						Polycystic kidney	Pyelo-nephritis	Reno-vascular disease
		Not sent	unc./GN Not Proven	Diabetes	Glomerulo-nephritis	Hyper-tension	Other			
England	Barts	5.3	16.4	28.8	11.3	10.7	14.7	6.8	6.8	4.5
	Basildon	0.0	14.0	23.3	14.0	2.3	23.3	4.7	4.7	14.0
	Bradford	8.1	22.8	24.6	12.3	12.3	8.8	7.0	1.8	10.5
	Brighton	97.3							33.3	0.0
	Bristol	12.0	20.5	24.7	13.0	1.4	19.9	6.2	8.9	5.5
	Cambridge	2.9	32.0	12.0	13.0	7.0	20.0	5.0	4.0	7.0
	Carlisle	0.0	0.0	13.8	13.8	13.8	24.1	6.9	10.3	17.2
	Carshalton	0.6	15.7	25.9	13.3	7.8	17.5	4.8	4.8	10.2
	Chelmsford	7.7	39.6	18.8	2.1	12.5	4.2	2.1	10.4	10.4
	Coventry	1.3	19.7	11.8	11.8	1.3	17.1	9.2	14.5	14.5
	Derby	26.2								
	Dorset	0.0	31.6	24.6	5.3	1.8	15.8	7.0	7.0	7.0
	Dudley	0.0	27.3	23.6	12.7	5.5	7.3	5.5	10.9	7.3
	Exeter	37.1								
	Gloucester	0.0	30.9	25.5	5.5	1.8	16.4	5.5	5.5	9.1
	Guys	0.0	7.7	20.2	15.4	12.5	22.1	6.7	2.9	12.5
	H&CX	0.5	12.3	31.3	6.2	15.4	20.0	5.1	7.7	2.1
	Heartlands	0.0	25.5	28.6	3.1	2.0	14.3	7.1	6.1	13.3
	Hull	6.4	28.4	19.6	9.8	3.9	15.7	5.9	11.8	4.9
	Ipswich	0.0	47.8	13.0	4.3	4.3	4.3	15.2	8.7	2.2
Kings	0.0	16.7	30.7	10.5	12.3	16.7	0.9	5.3	7.0	
Leeds	30.3								5.7	
Leicester	4.2	30.4	17.7	9.5	1.9	15.2	7.6	8.9	8.9	
Liverpool	4.0	68.6	5.0	3.3	9.1	8.3	2.5	3.3	0.0	
ManWst	0.0	76.2	8.6	3.8	1.0	2.9	3.8	3.8	0.0	
Middlesbrough	1.0	35.0	14.0	12.0	13.0	12.0	4.0	3.0	7.0	
Newcastle	1.0	23.0	9.0	16.0	6.0	19.0	8.0	8.0	11.0	
Norwich	1.0	31.6	17.3	13.3	4.1	9.2	7.1	12.2	5.1	
Nottingham	0.9	21.7	17.9	7.5	4.7	25.5	9.4	6.6	6.6	
Oxford	2.5	23.9	24.5	11.6	2.6	18.1	5.2	9.7	4.5	

Table 3.8: (continued)

Country	Treatment centre	Not sent	Aetiology unc./GN		Glomerulo-nephritis	Hyper-tension	Other	Polycystic kidney	Pyelo-nephritis	Renal vascular disease
			Not Proven	Diabetes						
England	Plymouth	31.1								
	Portsmouth	7.6	17.3	13.6	14.5	7.3	19.1	12.7	6.4	9.1
	Preston	3.6	12.3	21.0	17.3	7.4	21.0	9.9	6.2	4.9
	QEH	4.6	17.2	25.3	7.5	1.6	19.4	7.5	9.1	12.4
	Reading	0.0	13.4	20.9	13.4	1.5	19.4	4.5	20.9	6.0
	Sheffield	0.6	32.7	20.2	12.5	6.5	10.7	3.6	4.8	8.9
	Shrewsbury	1.9	26.4	15.1	11.3	5.7	28.3	1.9	5.7	5.7
	Stevenage	1.3	50.0	12.8	6.4	2.6	15.4	3.8	3.8	5.1
	Southend	2.4	15.0	25.0	17.5	2.5	15.0	5.0	5.0	15.0
	Sunderland	0.0	3.9	19.6	17.6	29.4	5.9	9.8	5.9	7.8
	Truro	15.0	15.7	19.6	29.4	2.0	5.9	3.9	13.7	9.8
	Wirral	0.0	98.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0
	Wolverhampton	0.0	6.9	20.8	18.8	4.0	14.9	5.0	16.8	12.9
	York	12.5	11.9	7.1	11.9	4.8	21.4	7.1	16.7	19.0
Scotland	Aberdeen	37.3								4.8
	Airdrie	3.9	16.3	14.3	16.3	8.2	18.4	8.2	12.2	6.1
	Dumfries	14.3	33.3	0.0	0.0	0.0	33.3	0.0	33.3	0.0
	Dundee	3.2	8.3	21.7	6.7	3.3	15.0	1.7	16.7	26.7
	Dunfermline	24.1	22.7	18.2	9.1	9.1	18.2	4.5	9.1	9.1
	Edinburgh	1.0	20.8	8.3	14.6	9.4	16.7	7.3	4.2	18.8
	Glasgow RI	13.2	11.9	28.8	15.3	0.0	13.6	6.8	5.1	18.6
	Glasgow WI	40.8								
	Inverness	12.1	13.8	17.2	13.8	17.2	6.9	10.3	13.8	6.9
	Kilmarnock	0.0	21.7	17.4	21.7	0.0	13.0	4.3	8.7	13.0
	Stobhill	5.9	12.5	6.3	31.3	0.0	25.0	0.0	18.8	6.3
Wales	Bangor	0.0	19.4	22.2	8.3	19.4	30.6	0.0	0.0	0.0
	Clwyd	0.0	76.9	23.1	0.0	0.0	0.0	0.0	0.0	0.0
	Cardiff	16.0	40.1	24.3	7.2	5.9	7.9	5.9	5.3	3.3
	Swansea	1.1	11.7	20.2	20.2	3.2	14.9	3.2	7.4	19.1
	Wrexham	30.0								4.8
England		8.1	25.9	19.8	11.2	6.2	15.6	6.0	7.6	7.7
Wales		11.0	29.4	24.1	11.4	6.0	12.3	4.1	5.1	7.6
Scotland		16.7	18.7	17.0	14.3	5.4	14.1	6.7	10.0	13.7
UK		9.2	25.4	19.8	11.5	6.1	15.3	5.9	7.7	8.2

This is suggested by the strong inverse correlations across centres between the frequency of the aetiology uncertain diagnosis and those of glomerulonephritis and reno-vascular disease. To overcome any inaccuracies introduced by low returns, Table 3.9 shows the effect on percentage primary diagnoses of excluding renal units in England and Wales with more than 25% no return, and more than 10% no return; the latter is the figure quoted as representative. Calculations could not be made for Scotland where the rate of return was lower.

Diabetic renal disease remains the most common specific primary renal diagnosis. There is a significant variation between renal units in the percentage of patients starting RRT with diabetic kidney disease, which generally follows the pattern of population distribution of ethnic minorities. Five of the 32 centres with sufficient returns (80% primary renal diagnosis and 50% ethnicity) had non-white populations above 25%. The mean incidence of diabetic renal disease in these centres was significantly higher than in those centres with

Table 3.9: Effect on percentage primary diagnosis of excluding units with low returns – England & Wales

	Percentage primary diagnosis								
	Diabetes	GN	Hypertension	Missing	Other	Polycystic kidney	Pyelonephritis	RVD	Uncert
All	18.3	10.2	5.6	8.8	14.0	5.3	6.8	7.0	24.0
>75% return	19.0	10.7	6.0	3.8	14.9	5.6	7.3	7.9	24.8
>90% return	19.0	10.6	6.4	2.2	15.4	5.6	7.2	8.0	25.5

lower non-white populations (25.9 vs 16.5: $p = 0.008$).

Excluding patients with a missing diagnosis in each year, the proportion of patients with diabetic nephropathy as the cause of ERF has remained unchanged between 1999 and 2004 (19.0% in 1999 and 2004). The increase in overall acceptance rate implies an increase in the acceptance rate of patients with diabetic renal disease from 17 pmp to 20 pmp over the same time.

First established treatment modality

In 2004 haemodialysis was the very first modality of RRT in 71% of patients, peritoneal

dialysis in 26.5% and pre-emptive transplant in 2.3%. This represents a significant change from 1998 when the very first treatment modality was haemodialysis in 57.7%.

Many patients, especially those being referred late to renal units, undergo a brief period of haemodialysis before being established on peritoneal dialysis. As an indication of the elective treatment modality, the established modality at 90 days is a more clearly defined and representative figure. Of the 91.3% of the patient cohort 01/10/2003 to 30/09/2004 alive on day 90 of treatment, 70% were on HD, 27% on PD and 3% had received a transplant (Table 3.10 and Figure 3.9). This pattern is significantly different from 1998 when haemodialysis was the established mode at 90 days in 59% of dialysis patients.

Table 3.10: Treatment modality at day 90

Country	Centre	Percentage of patients on each modality						
		HD	PD	Tx	Transferred	Stopped	Died	Lost
England	Barts	51	33	7	1	0	8	1
	Basildon	60	18	0	0	8	15	0
	Bradford	74	22	0	0	0	5	0
	Brighton	67	27	0	0	0	6	0
	Bristol	72	11	4	0	0	13	0
	Cambridge	61	27	4	0	0	8	0
	Carlisle	83	14	3	0	0	0	0
	Carshalton	66	22	2	2	0	9	0
	Chelmsford	59	30	0	0	0	11	0
	Coventry	42	40	9	0	0	10	0
	Derby	68	18	0	3	0	11	0
	Dorset	33	46	0	0	13	8	0
	Dudley	54	30	0	0	0	15	0
	Exeter	71	21	0	0	1	7	0
	Gloucester	70	16	6	0	0	8	0
	Guys	53	30	13	1	0	3	0
	H&CX	69	24	0	0	1	7	0
	Heartlands	79	14	1	0	1	5	0

Table 3.10: (continued)

Country	Centre	Percentage of patients on each modality						
		HD	PD	Tx	Transferred	Stopped	Died	Lost
England	Hull	62	19	0	0	1	18	0
	Ipswich	49	41	0	0	0	10	0
	Kings	62	26	4	3	1	5	0
	Leeds	60	21	5	0	0	13	0
	Leicester	53	32	10	0	0	6	0
	Liverpool	68	19	3	0	1	9	0
	ManWst	53	43	0	0	0	4	0
	Middlesbrough	75	13	0	1	0	11	0
	Newcastle	57	17	14	0	0	12	0
	Norwich	63	13	0	15	3	6	0
	Nottingham	57	30	3	1	0	9	0
	Oxford	57	27	7	2	1	7	0
	Plymouth	54	21	0	0	1	24	0
	Portsmouth	58	33	4	0	0	4	0
	Preston	56	35	4	0	0	4	0
	QEH	72	14	4	0	0	10	0
	Reading	50	44	1	0	0	4	0
	Sheffield	55	35	3	0	0	7	0
	Shrewsbury	50	36	0	2	0	12	0
	Stevenage	66	25	2	0	0	7	0
	Southend	78	10	0	2	0	10	0
	Sunderland	86	9	0	0	0	5	0
	Truro	61	38	0	0	2	0	0
	Wirral	71	16	0	0	0	13	0
	Wolverhampton	65	22	1	0	0	12	0
	York	55	32	0	0	0	13	0
Wales	Bangor	54	18	0	3	3	23	0
	Clwyd	89	0	0	0	0	11	0
	Cardiff	70	16	6	0	0	9	0
	Swansea	71	19	0	0	0	10	0
	Wrexham	70	19	4	4	0	4	0
Scotland	Aberdeen	67	23	0	0	0	10	0
	Airdrie	73	18	0	0	2	6	0
	Dumfries	60	20	0	0	0	20	0
	Dundee	67	22	1	0	0	9	0
	Dunfermline	81	12	0	0	0	8	0
	Edinburgh	73	15	1	0	1	9	0
	Glasgow RI	75	18	0	0	0	7	0
	Glasgow WI	59	27	3	0	0	11	0
	Inverness	43	46	0	0	0	11	0
	Kilmarnock	68	32	0	0	0	0	0
	Stobhill	86	0	0	0	0	14	0
England		62	25	3	1	1	9	0
Wales		69	17	3	1	0	10	0
Scotland		68	22	1	0	0	9	0
UK		63	24	3	1	0	9	0

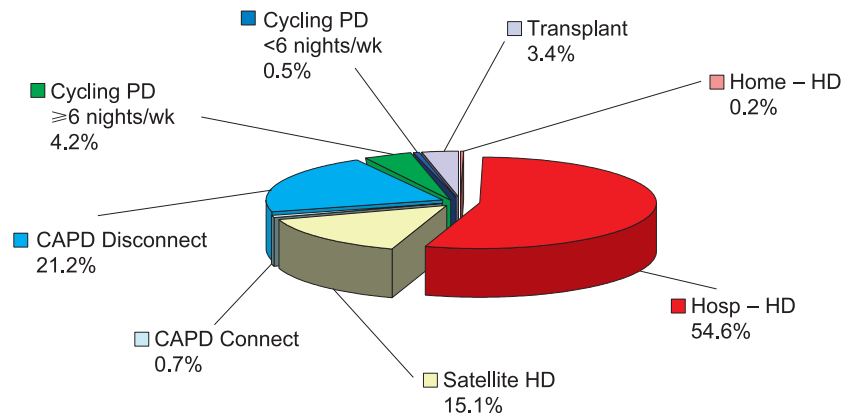


Figure 3.9: RRT modality at day 90

There were significant differences between individual renal units in the percentage of new patients established on haemodialysis ($p < 0.0001$). The wide variation between renal units in the percentage of incident dialysis patients receiving HD at day 90 persists ranging from 42 to 100% (Figure 3.10). There were no renal units with less than 40% and 17 units with over 80%. Haemodialysis was more frequently the first treatment in Wales and Scotland than in England.

A significantly higher proportion of incident dialysis patients over the age of 65 (80.0%) were on HD at 90 days compared with their younger counterparts (64.3%) (Figure 3.11). This difference is reflected in the vast majority of renal units though in 5 the proportions were similar or even reversed (Dorset, Barts, Bangor, Basildon and Derby). The median age of HD patients was significantly higher than that of PD patients (67 years and 58 years respectively, $p < 0.0001$).

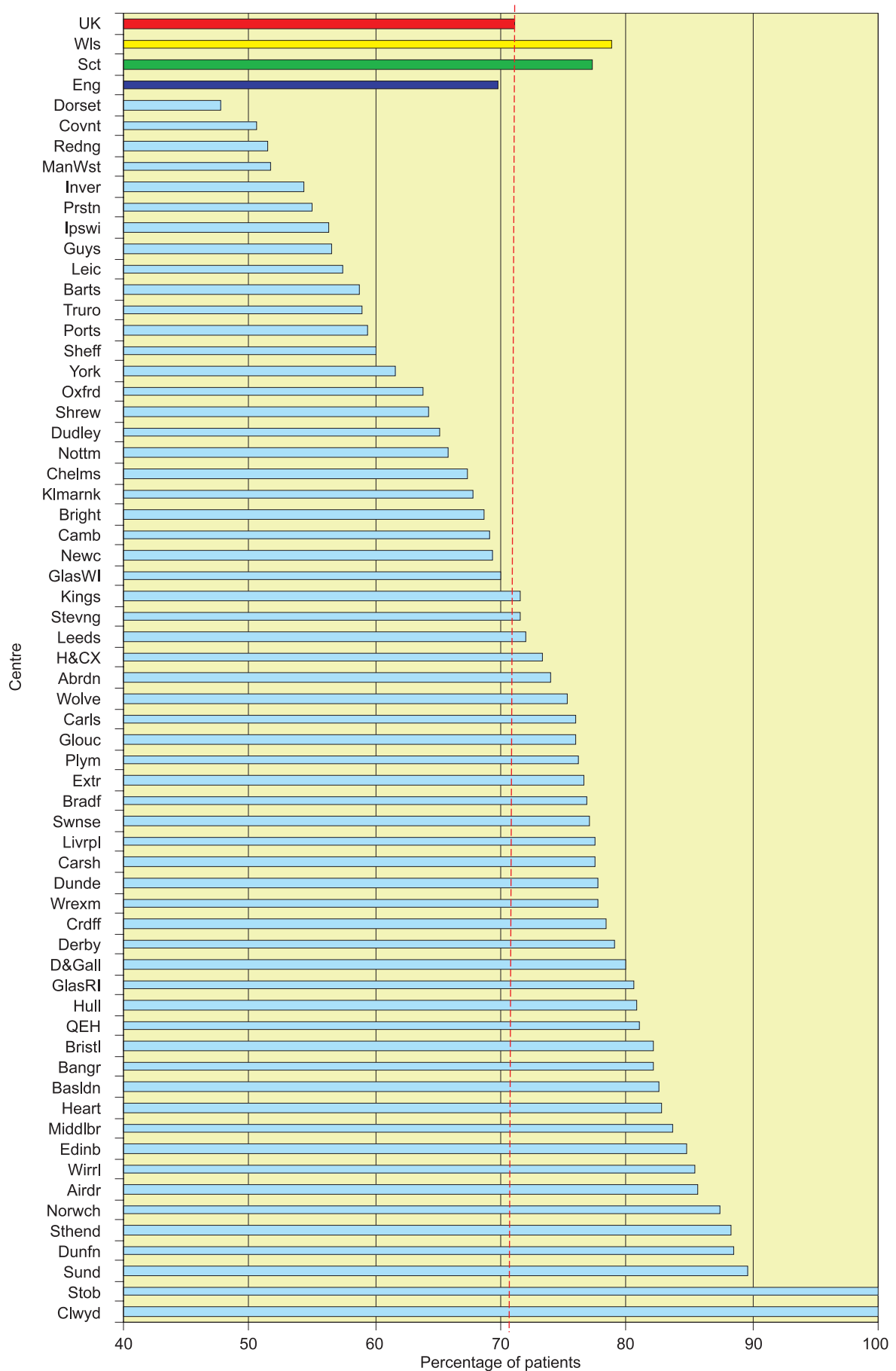


Figure 3.10: Percentage of incident dialysis patients in each centre on HD on day 90

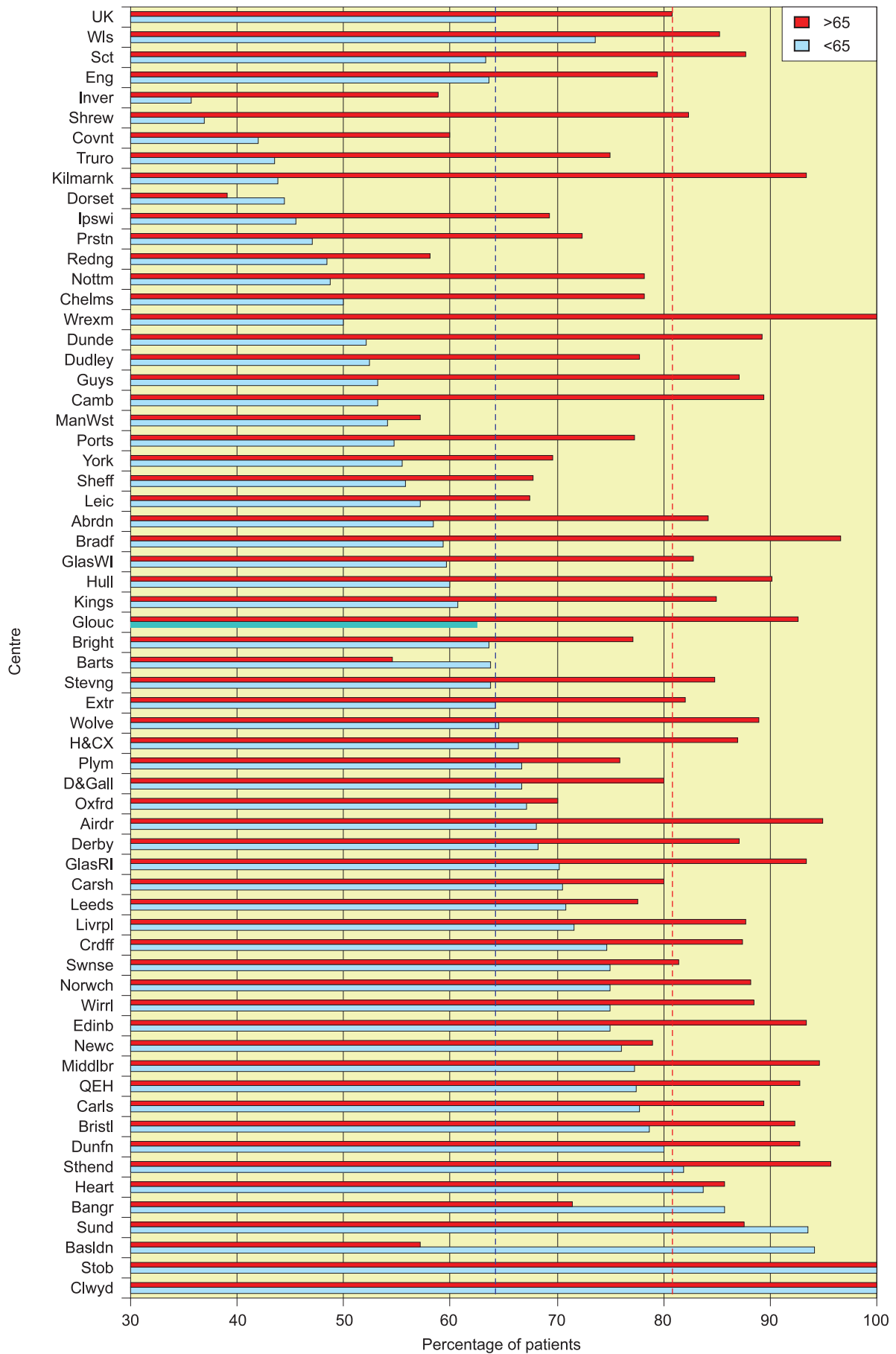


Figure 3.11: Percentage of incident dialysis patients on HD in each centre on day 90, by age

Changes in treatment modality in the first four years

Those established on haemodialysis

The modality changes in the first four years of those patients starting RRT in 1997–2000 were analysed for those patients established on haemodialysis on day 90 (n=4,870 patients). The sequential modality changes are shown in Table 3.11. These are changes subsequent to the first 90 days after starting dialysis. Transfer to PD is negligible after the first year. This is an older group of patients than those established on PD, and the patients have more co-morbidity, explaining the relatively higher death rate and lower transplant rate compared with PD patients.

Those established on peritoneal dialysis

The sequential modality changes in the first 4 years of those patients starting RRT in 1997–2000 who were on peritoneal dialysis on day 90 are shown in Table 3.12.

After 4 years only 17% are still alive on peritoneal dialysis, and 27% have changed to haemodialysis (defined as changing to haemodialysis for at least 3 months). The rate of change is constant with about 65% of those on PD at the beginning of each year remaining on it at the end, and 11% at the beginning of each year changing to HD within the year.

Survival of incident patients

This is considered in Chapter 14.

Table 3.11: Four-year sequential modality changes in patients established on HD 1997–2000: UK

N = 4,870	End of yr 1 %	End of yr 2 %	End of yr 3 %	End of yr 4 %
Remained on HD	71	53	40	31
Changed to PD	3	3	4	4
Had a transplant	5	9	12	14
Stopped treatment	0	0	0	0
Unknown	0	1	1	1
Recovered	1	1	1	1
Died	20	32	41	49

Table 3.12: Four-year sequential modality changes in patients established on PD 1997–2000: UK

N = 3,098	End of yr 1 %	End of yr 2 %	End of yr 3 %	End of yr 4 %
Remained on PD	67	43	27	17
Changed to HD	11	19	24	27
Had a transplant	10	18	22	24
Stopped treatment	0	0	0	0
Unknown	0	1	1	1
Recovered	1	1	1	1
Died	11	19	26	31