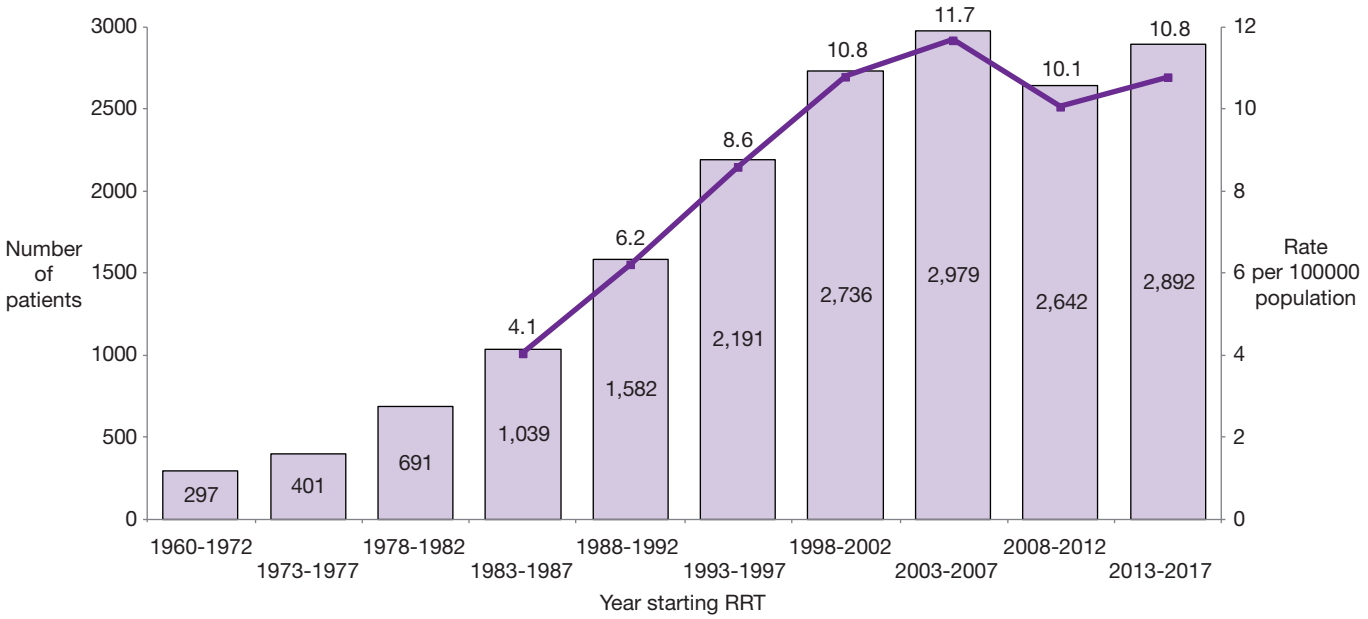
SECTION A INCIDENCE

This section's data are available on-line in Tableau format which enables interaction with the data: http://www.srr.scot.nhs.uk/publications/Dashboards/Incidence.html.

A1 Incidence of new patients starting RRT

A1.1 Incidence of new patients starting RRT 1960-2017



A1.2 Annual incidence per 100000 population of new patients starting RRT 1983-2017

Year	Number starting RRT	Population of Scotland	Incidence per 100000
1983-1987	1039	5,125,134*	4.1
1988-1992	1582	5,081,170*	6.2
1993-1997	2191	5,094,778*	8.6
1998-2002	2736	5,068,432*	10.8
2003-2007	2979	5,113,220	11.7
2008	548	5,202,900	10.6
2009	542	5,231,900	10.4
2010	520	5,262,200	9.9
2011	505	5,299,900	9.5
2012	527	5,313,600	10.0
2013	510	5,327,700	9.6
2014	554	5,347,600	10.4
2015	619	5,373,000	11.5
2016	571	5,404,700	10.6
2017	638	5,424,800	11.8

Population figures are from National Records for Scotland. They are population estimates for the 30 June each year. http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

* The population estimates shown for the five year bands between 1983 and 2007 are the arithmetical mean of the mid-year population estimates for each of the five years in question, the annual incidence of new patients is averaged over the five year periods.

A1.3 Incidence of patients starting RRT 2013-2017 by NHS Health Board area of residence standardised for age, sex and social deprivation

NHS Health Board	Number starting RRT	Incidence per 100000 population	Standardised incidence per 100000 population
A&A	248	13.4	11.7
BORD	52	9.3	9.4
D&G	78	10.4	9.5
FIFE	213	11.6	11.2
FV	153	10.3	10.1
GG&C	688	9.8	11.6
GRAM	286	11.9	11.7
HIGH	149	9.3	9.5
LAN	381	11.6	11.5
LOTH	352	8.1	9.3
ORKN	8	7.4	4.3
SHET	11	9.5	8.5
TAY	247	11.9	11.5
WI	25	18.4	10.3
SCOT	**2891**	**10.8**	**10.8**

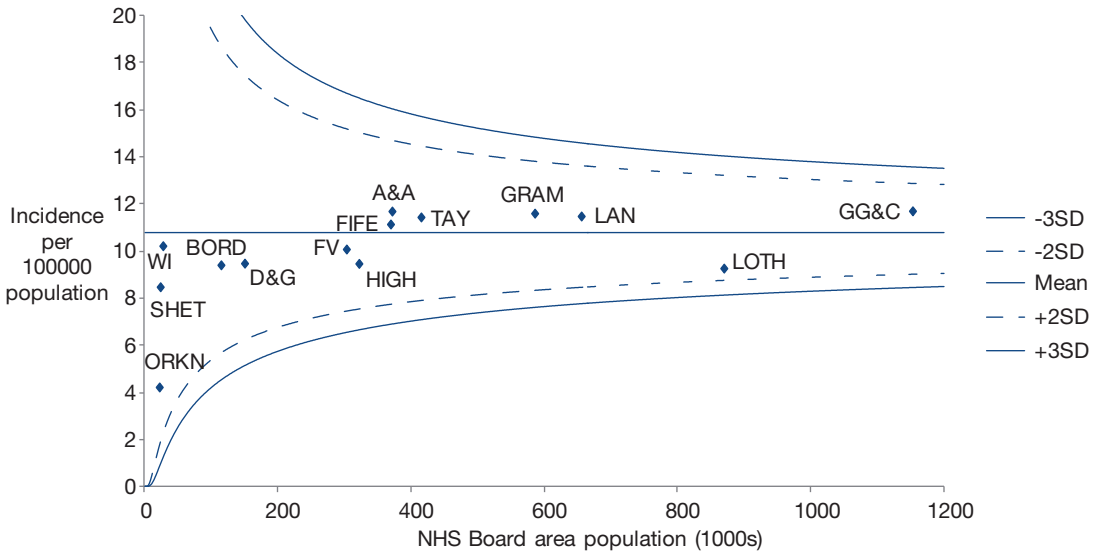
Note: One patient started RRT in Scotland with a postcode of residence outwith Scotland. Data for this patient is excluded from this Table.

The incidence of new patients starting RRT in each NHS Health Board area of residence has been standardised to take into account differences in the age, sex and multiple deprivation distribution of residents to allow direct comparison between areas. Patients' postcode of residence when starting RRT was used to derive a Scottish Index of Multiple Deprivation (SIMD) score. The Scottish Index of Multiple Deprivation (SIMD) identifies small area concentrations of multiple deprivation across all of Scotland in a consistent way and ranks small areas (datazones) from most deprived (ranked 1) to least deprived (ranked 6505). SRR data have previously shown an association between SIMD and RRT use: http://www.srr.scot.nhs.uk/Projects/Projects3.html#simd

The age, sex, SIMD standardised incidence is the total number of residents who would be expected to start RRT in an NHS Health Board area population, if the age, sex, SIMD structure of the Board area was the same as that of Scotland as a whole.

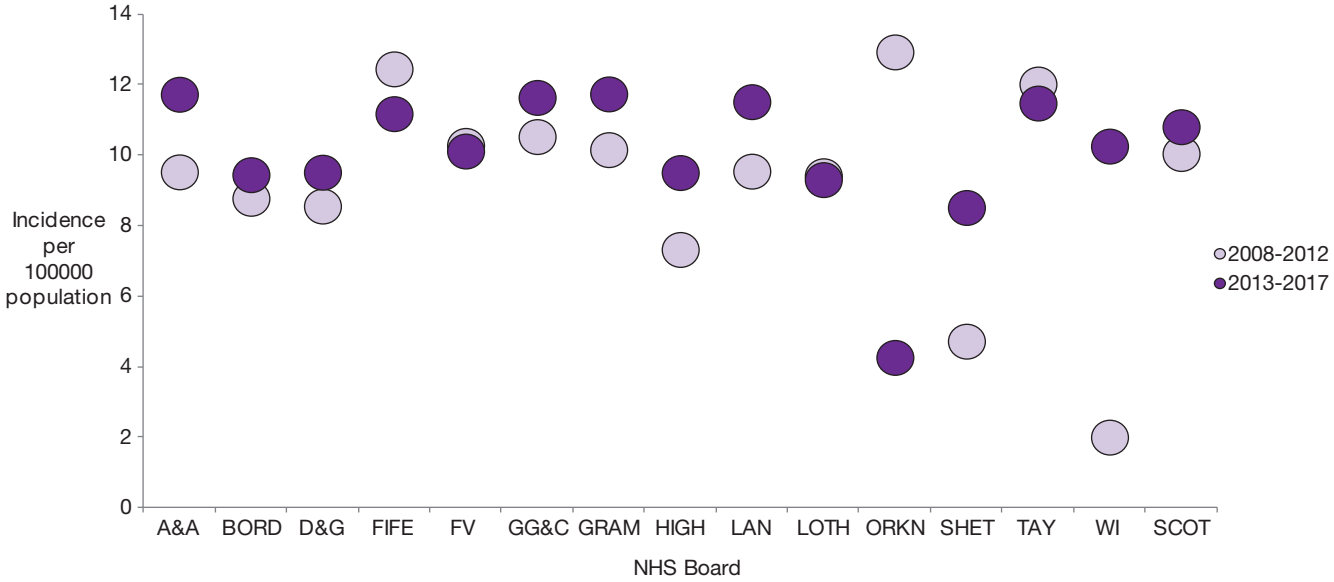
A five year incident period from 2013 to 2017 has been used to minimise the impact of year to year fluctuations in numbers of patients.

A1.4 Incidence of new patients starting RRT 2013-2017 by NHS Health Board area of residence standardised for age, sex and social deprivation



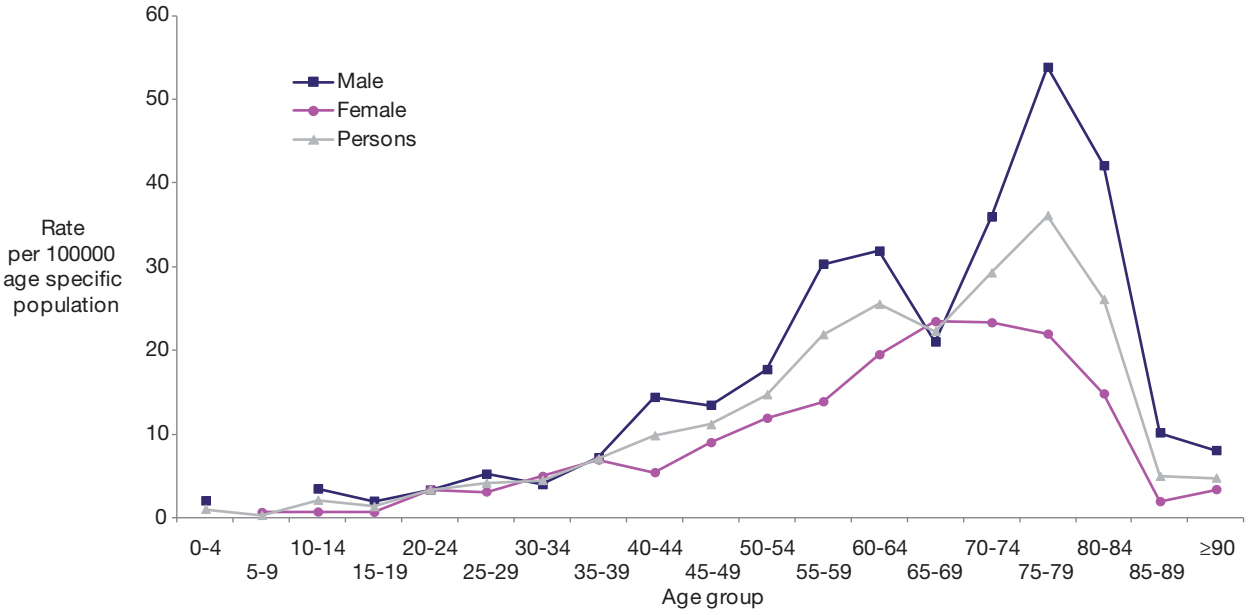
There were no outliers beyond 3SD for the whole population or in the subgroup of those >65 years old when starting RRT.

A1.5 Incidence of new patients starting RRT 2008-2012 and 2013-2017 by NHS Health Board of residence standardised for age, Sex and social deprivation

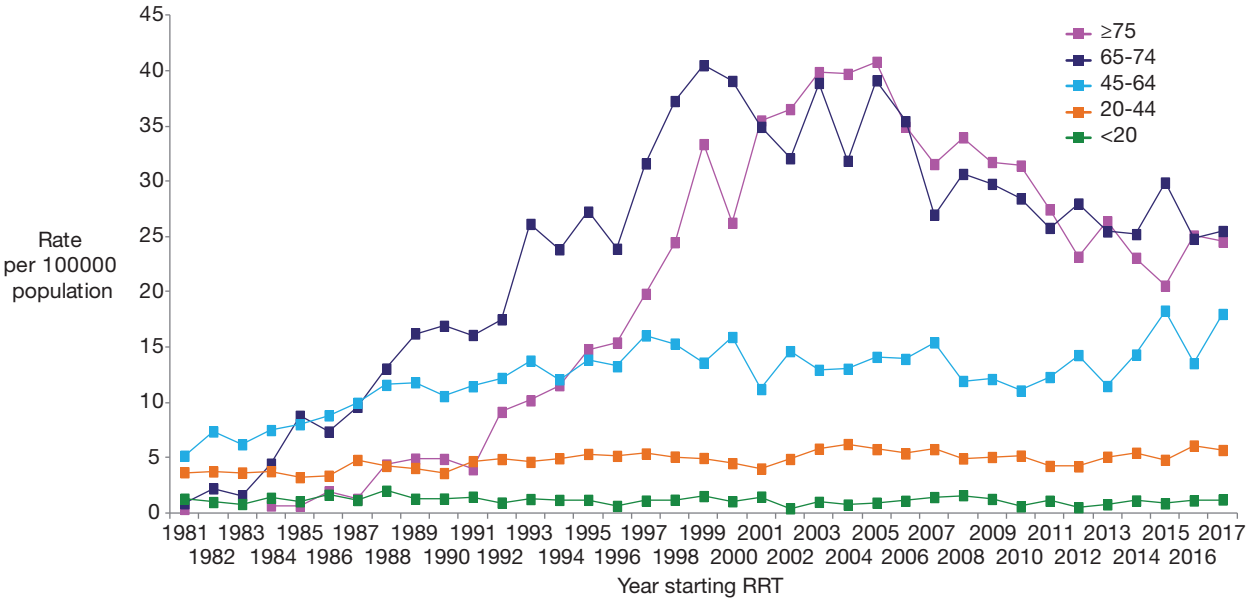


A2 General population and incident RRT population 2017

A2.1 Age specific incidence of new patients starting RRT 2017 per 100000 population



A2.2 Age specific incident RRT population 1981 to 2017 per 100000 population



A2.3 Incidence per 100000 population of patients aged 65 and over starting RRT 2013-2017 by NHS Health Board: standardised for age, sex and social deprivation

NHS Health Board	2013	2014	2015	2016	2017	Standardised incidence per 100000 population 2013-2017	95% Confidence Intervals
A&A	33	19	23	29	33	27	(22,32)
BORD	4	11	26	11	29	16	(10,24)
D&G	9	31	11	22	24	19	(13,26)
FIFE	38	39	33	26	21	31	(25,37)
FV	40	33	25	9	16	24	(18,30)
GRAM	28	16	27	23	18	22	(18,27)
GG&C	28	29	30	37	27	30	(27,34)
HIGH	15	10	21	18	21	17	(13,21)
LAN	35	20	30	28	27	28	(23,32)
LOTH	14	19	14	21	26	19	(15,22)
ORKN	44	-	42	-	20	21	(6,48)
SHET	49	47	23	-	22	28	(10,60)
TAY	22	32	31	24	29	28	(22,32)
WI	32	78	61	15	15	40	(21,68)
Scotland	**26**	**24**	**26**	**25**	**25**	**25**	**(24,27)**

A3 Age distribution of patients when starting RRT

A3.1 Number of patients in each age group and median age when starting RRT 1960-2017

Year starting RRT	<20		20-44		45-64		65-74		≥75		Median age
	n	%	n	%	n	%	n	%	n	%	
1960-1972	45	**15**	202	**68**	48	**16**	2	**1**	0	**0**	33
1973-1977	56	**14**	227	**57**	117	**29**	1	**0**	0	**0**	36
1978-1982	81	**12**	271	**39**	313	**45**	25	**4**	1	**0**	44
1983-1987	86	**8**	343	**33**	458	**44**	138	**13**	14	**1**	49
1988-1992	92	**6**	404	**26**	646	**41**	351	**22**	89	**6**	55
1993-1997	68	**3**	475	**22**	811	**37**	598	**27**	239	**11**	60
1998-2002	70	**3**	423	**15**	867	**32**	820	**30**	556	**20**	65
2003-2007	62	**2**	512	**17**	918	**31**	786	**26**	701	**24**	64
2008-2012	60	**2**	416	**16**	883	**33**	687	**26**	596	**23**	64
2013-2017	59	**2**	475	**16**	1,122	**39**	713	**25**	523	**18**	61
Total	**679**	**4**	**3748**	**21**	**6183**	**35**	**4121**	**24**	**2719**	**16**	**59**

A3.2 Number and median age of patients starting RRT 2013-2017 by renal unit

Renal unit	Number starting RRT 2013-2017	Median Age 2013-2017	Number starting RRT 2017	Median Age 2017
ARI	281	62	55	60
XH	214	64	48	66
DGRI	71	64	16	68
GLAS	969	60	202	59
MONK	294	61	65	61
NINE	234	65	53	64
RAIG	121	63	25	64
RHC	49	9	11	11
RIE	469	58	123	61
VHK	190	67	40	64
Scotland	**2892**	**61**	**638**	**61**

A3.3 Number of patients in each age group and median age when starting RRT 2013-2017 by NHS Health Board area of residence

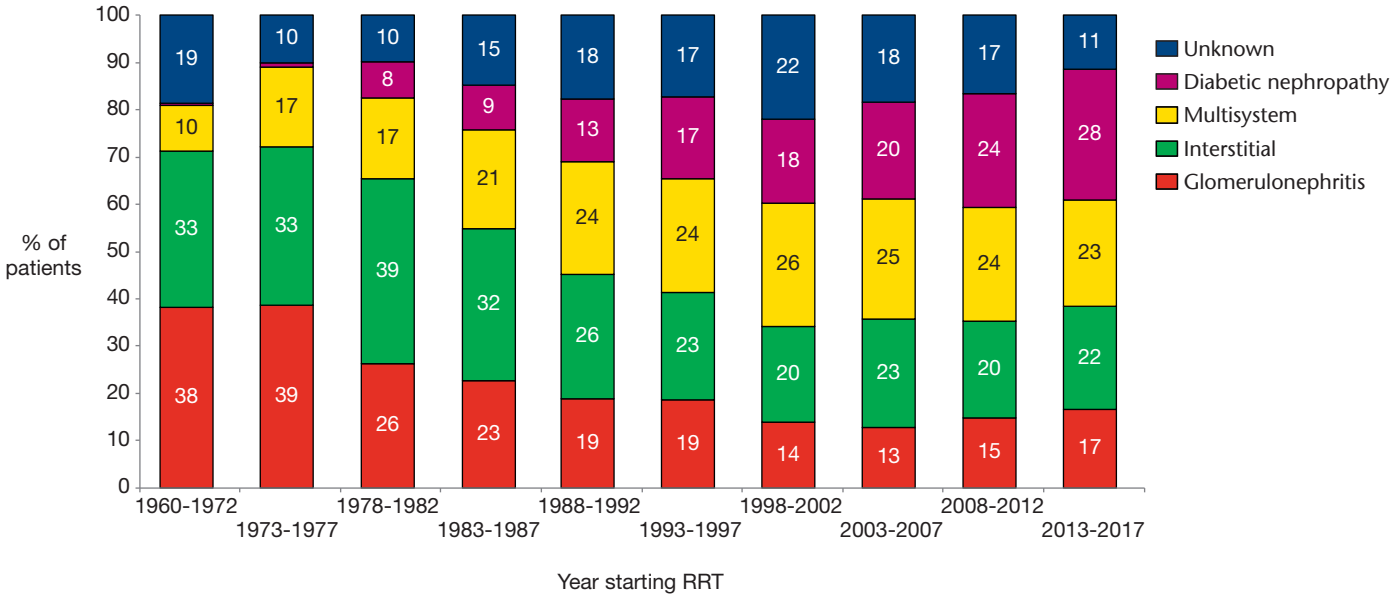
NHS Health Board	<20	20-44	45-64	65-74	≥75	Number starting RRT 2013-2017	Median Age
A&A	6	33	101	53	55	248	62
BORD	1	8	21	15	7	52	62
D&G	1	12	30	16	19	78	63
FIFE	4	25	71	62	51	213	65
FV	5	20	61	38	29	153	61
GRAM	5	58	111	72	41	287	60
GG&C	17	119	265	163	123	687	60
HIGH	0	34	55	42	18	149	60
LAN	11	61	150	83	76	381	60
LOTH	4	66	151	87	44	352	59
ORKN	0	0	3	2	3	8	69
SHET	0	1	4	4	2	11	66
TAY	4	34	92	65	52	247	64
WI	1	4	7	10	3	25	67
Scotland	**59**	**475**	**1122**	**712**	**523**	**2891**	**61**

Note: One patient started RRT in Scotland with a postcode of residence outwith Scotland. Data for this patient is excluded from this Table.

A4 Primary renal diagnosis of patients starting RRT

ERA-EDTA Primary Renal Diagnoses (PRD) codes and groupings used in SRR reports are available on the SRR website: http://www.srr.scot.nhs.uk/Projects/Methods.html

A4.1 Percentage of patients in each diagnosis group starting RRT 1960-2017



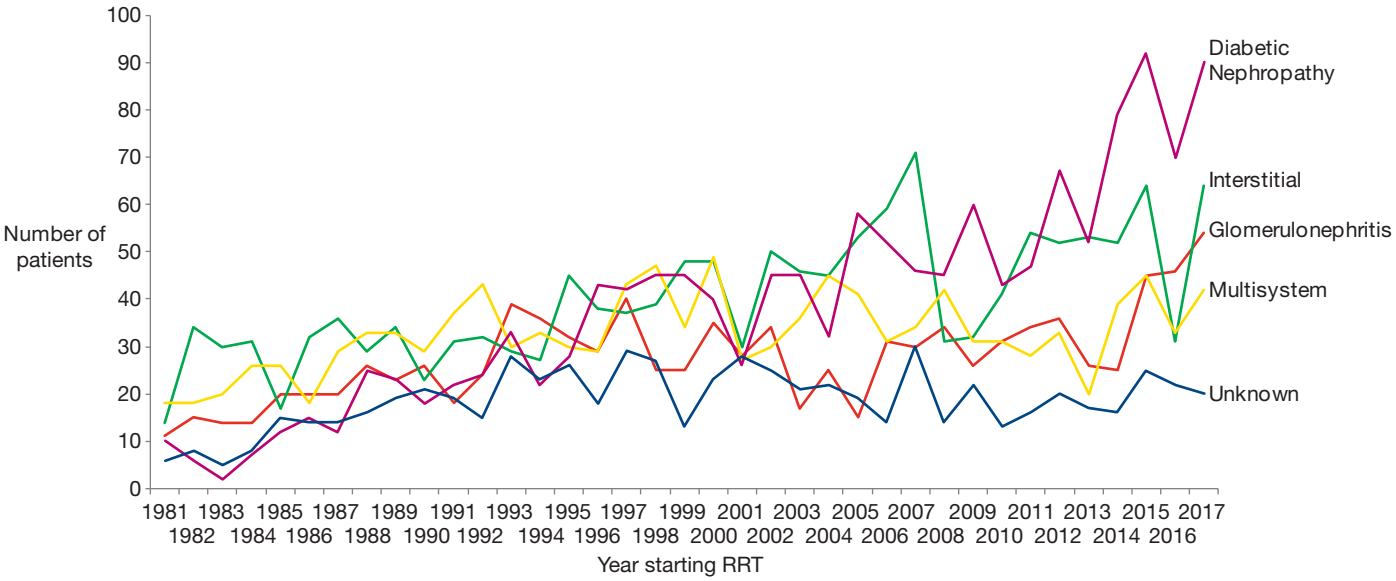
Since 2014 the updated (2012) ERA-EDTA PRD are available for all patients with diabetic nephropathy. These codes differentiate between type I and type II diabetes within the diabetic nephropathy diagnosis group.

Of those patients who started RRT with a primary diagnosis of diabetic nephropathy between 2014 and 2017 (n=681), 65% are attributed to type II diabetes.

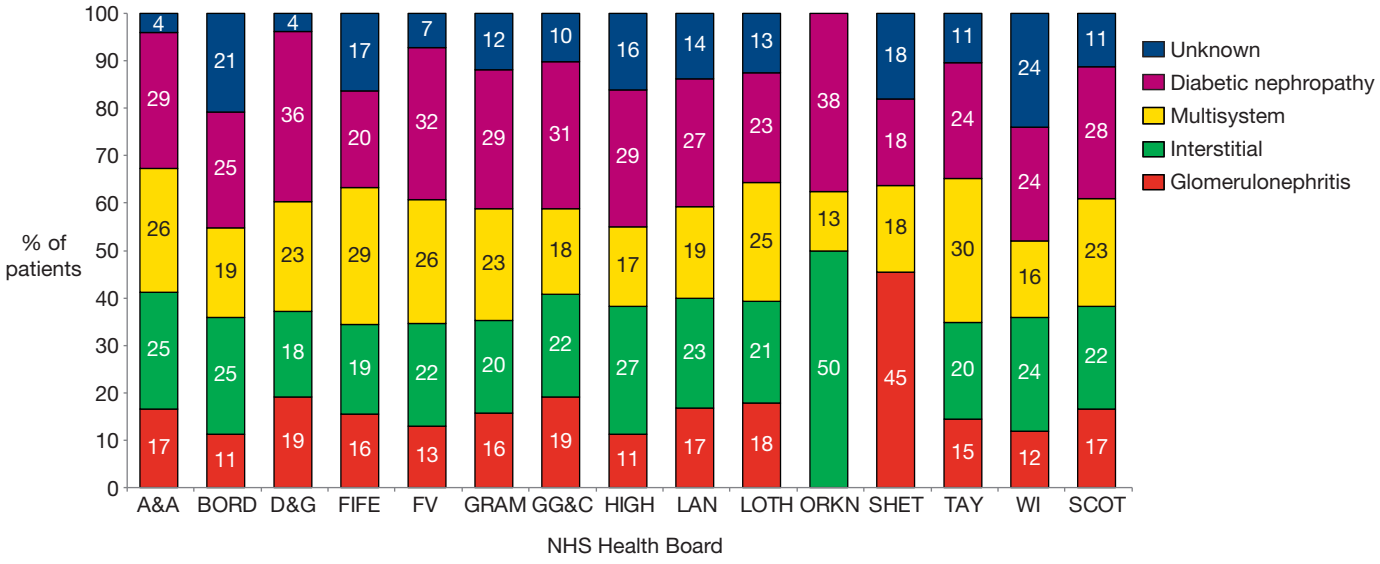
The median age when starting RRT attributed to type I is 46 years (IQR 38,54) and 64 years (IQR 58,71) for type II.

The increase in number of patients starting RRT with a PRD of diabetic nephropathy is mainly due to the increase in those in the 45-64 age group.

A4.2 Number of patients in 45-64 age group when starting RRT 1981-2017 by Primary Renal Diagnosis Group



A4.3 Percentage of patients in each diagnosis group by NHS Health Board of residence 2013-2017



A4.4 Number of patients in each diagnosis group starting RRT 1960-2017

Year starting RRT	Glomerulo-nephritis		Interstitial		Multisystem		Diabetic nephropathy		Unknown		Missing		Total
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n
1960-1972	113	**38**	97	**33**	29	**10**	1	**0**	55	**19**	2	1	297
1973-1977	155	**39**	134	**33**	68	**17**	4	**1**	40	**10**	0	0	401
1978-1982	181	**26**	267	**39**	118	**17**	52	**8**	68	**10**	5	1	691
1983-1987	235	**23**	334	**32**	217	**21**	98	**9**	153	**15**	2	0	1039
1988-1992	296	**19**	417	**26**	374	**24**	211	**13**	278	**18**	6	0	1582
1993-1997	407	**19**	499	**23**	525	**24**	378	**17**	377	**17**	5	0	2191
1998-2002	381	**14**	555	**20**	713	**26**	482	**18**	603	**22**	2	0	2736
2003-2007	380	**13**	684	**23**	756	**25**	606	**20**	546	**18**	7	0	2979
2008-2012	394	**15**	538	**20**	636	**24**	635	**24**	438	**17**	1	0	2642
2013-2017	480	**17**	629	**22**	654	**23**	799	**28**	330	**11**	1	0	2893
Total	3022	**17**	4154	**24**	4090	**23**	3266	**19**	2888	**17**	31	0	17451

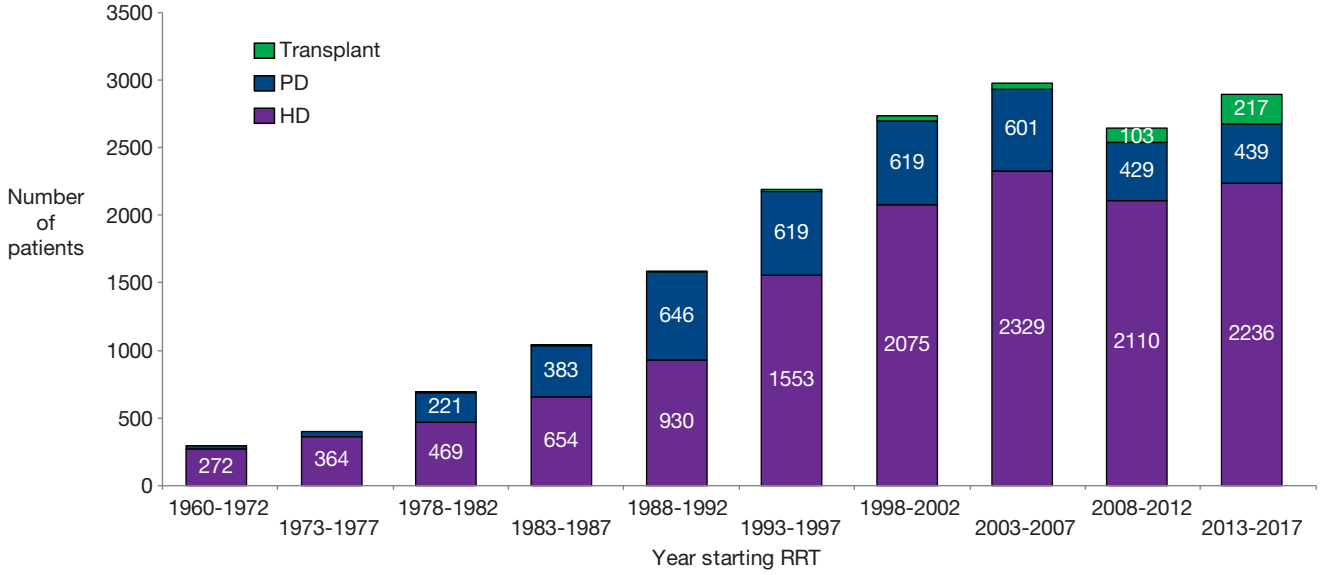
Please see primary renal diagnoses section on page x for details of the missing diagnoses.

A5 Modality of RRT

There are three principal types of RRT: Haemodialysis (HD); Peritoneal dialysis (PD); Kidney Transplantation.

Patients who have received a kidney transplant as their first mode of RRT are termed as receiving a pre-emptive transplant.

A5.1 Mode of first RRT 1960-2017



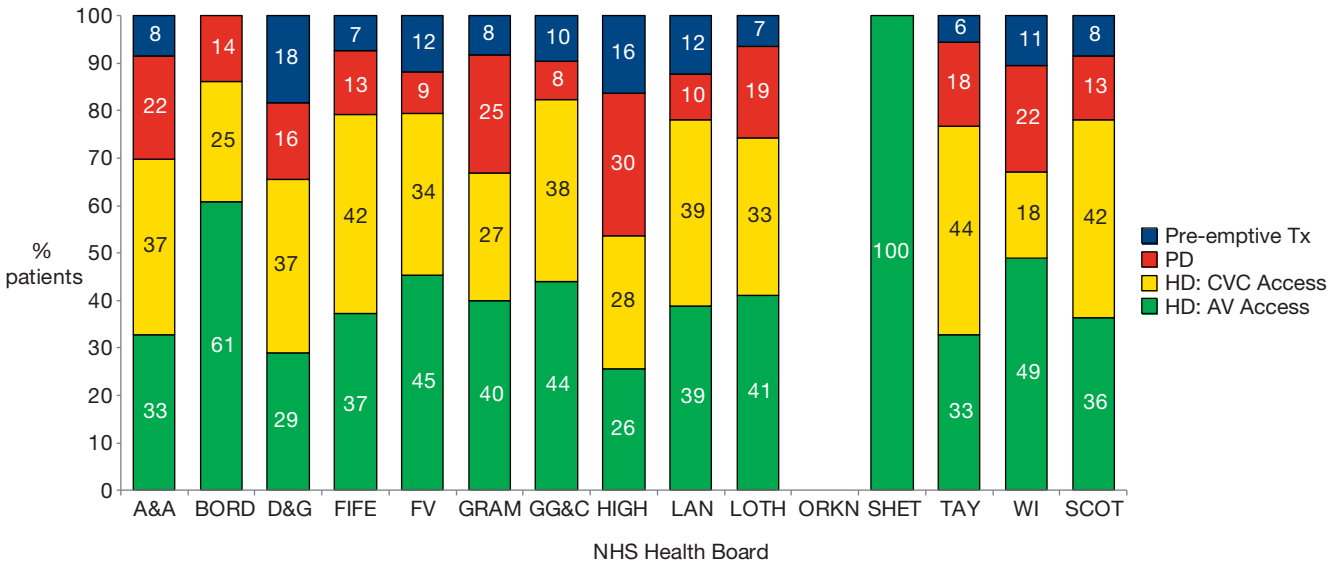
A5.2 Mode of first RRT 1960-2017

Year starting RRT	HD		PD		Transplant		Total
	n	%	n	%	n	%	
1960-1972	272	**92**	25	**8**	0	**0**	297
1973-1977	364	**91**	37	**9**	0	**0**	401
1978-1982	469	**68**	221	**32**	1	**0**	691
1983-1987	654	**63**	383	**37**	2	**0**	1039
1988-1992	930	**59**	646	**41**	6	**0**	1582
1993-1997	1553	**71**	619	**28**	19	**1**	2191
1998-2002	2075	**76**	619	**23**	42	**2**	2736
2003-2007	2329	**78**	601	**20**	49	**2**	2979
2008	436	**80**	92	**17**	20	**4**	548
2009	445	**82**	83	**15**	14	**3**	542
2010	419	**81**	89	**17**	12	**2**	520
2011	395	**78**	89	**18**	21	**4**	505
2012	415	**79**	76	**14**	36	**7**	527
2013	399	**78**	74	**15**	37	**7**	510
2014	429	**77**	84	**15**	41	**7**	554
2015	475	**77**	92	**15**	52	**8**	619
2016	435	**76**	103	**18**	33	**6**	571
2017	498	**78**	86	**13**	54	**8**	638

A5.3 First Mode of incident patients and vascular access at first HD by NHS Health Board of residence

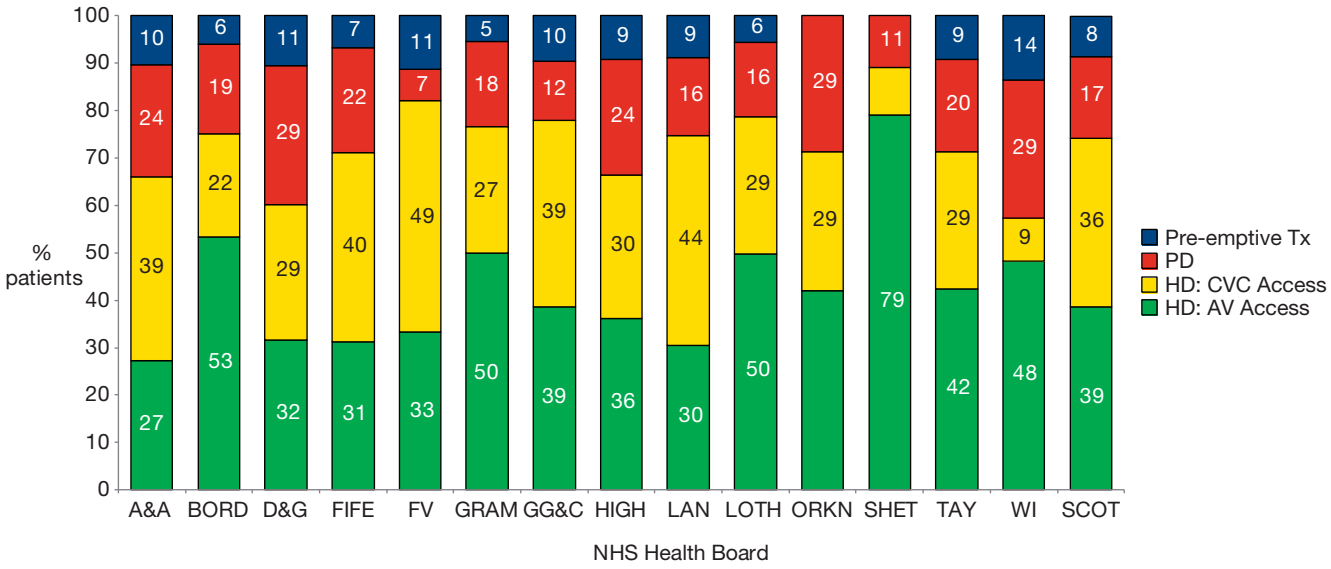
NHS Health Board	HD: AV Access		HD: CVC Access		PD		Pre-emptive Tx		Total
	n	%	n	%	n	%	n	%	
A&A	15	**27**	27	**49**	10	**18**	3	**5**	55
BORD	11	**58**	6	**32**	2	**11**	0	**0**	19
D&G	7	**37**	6	**32**	3	**16**	3	**16**	19
FIFE	14	**32**	23	**52**	5	**11**	2	**5**	44
FV	12	**46**	9	**35**	2	**8**	3	**12**	26
GRAM	18	**31**	24	**41**	13	**22**	4	**7**	59
GG&C	62	**42**	60	**40**	12	**8**	15	**10**	149
HIGH	8	**25**	10	**31**	9	**28**	5	**16**	32
LAN	31	**37**	35	**42**	8	**10**	10	**12**	84
LOTH	33	**38**	36	**41**	13	**15**	5	**6**	87
ORKN	0	**0**	1	**100**	0	**0**	0	**0**	1
SHET	1	**100**	0	**0**	0	**0**	0	**0**	1
TAY	18	**32**	28	**49**	8	**14**	3	**5**	57
WI	2	**40**	1	**20**	1	**20**	1	**20**	5
Scotland	**232**	**36**	**266**	**42**	**86**	**13**	**54**	**8**	**638**

A5.4 Incident patients first mode of RRT and vascular access for first HD by NHS Health Board of residence 2017, standardised for age, sex and PRD group



68 patients started HD within 90 days of presenting to a nephrologist and have been excluded from this graph.

A5.5 Incident patients first mode of RRT and vascular access for first HD by NHS Health Board of residence between 2013-2017, standardised for age, sex and PRD group



335 patients started HD within 90 days of presenting to a nephrologist and have been excluded from this graph.

The UK Renal Association guideline on initiation of RRT suggests that patients known to nephrology services for 3 months or more and who are planned to have renal support should start RRT using an established access (arteriovenous fistula [AVF], arteriovenous graft [AVG], PD catheter) or by pre-emptive renal transplantation.

Analyses of SRR data have previously demonstrated that the attainment of AV access for haemodialysis is influenced by patients' age, sex and primary renal diagnosis.

To take account of differing case mix of incident patients in each NHS Health Board area the data in A5.4 and A5.5 are adjusted for these variables by an indirect standardisation using the Scottish incident population as the standard.

For each NHS Health Board area the standardised incidence ratios for each modality are then multiplied by the respective Scotland counts to obtain the standardised distribution of incident patients across modalities.

Incident patients not known to nephrology services for at least three months from the analyses have been excluded from the analysis to allow comparison with the UK Renal Association guidance.