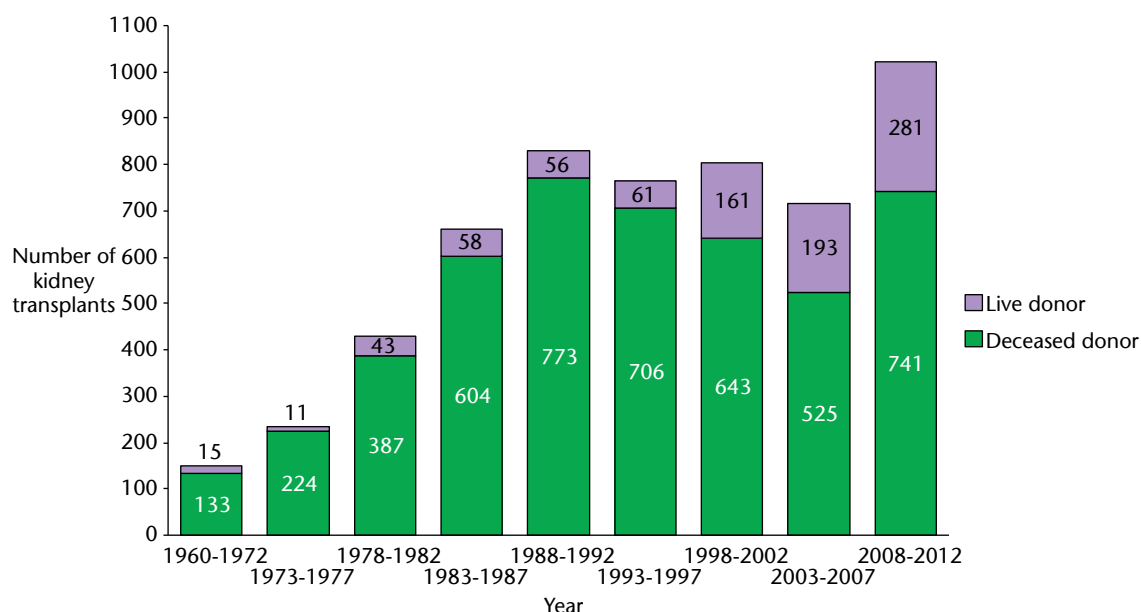


SECTION D KIDNEY TRANSPLANTATION

D1 Frequency of kidney transplantation in Scotland

D1.1 Frequency and donor type, kidney transplants performed in Scotland 1960-2012



Between 1960 and 31 December 2012, 5615 kidney transplants were performed in Scotland in 4737 patients.

The kidney donor was deceased for 4736 (84%) transplants, 879 (16%) transplanted kidneys were donated by live donors.

4710 first kidney transplants were performed, 739 second transplants, 142 third transplants and 24 fourth or subsequent kidney transplants.

177 patients received a simultaneous transplant of another organ at the same time as a kidney (162 pancreas, 13 liver, 2 heart).

Kidney transplants performed outside of Scotland are excluded.

D1.2 Frequency, transplant type and donor type, kidney transplants performed in Scotland 2003-2012

Year of transplant	Kidney and Liver		Kidney and pancreas		Deceased donor kidney alone		Live donor kidney		Total kidney transplants
	n	%	n	%	n	%	n	%	
2003	1	(0.7)	8	(5.4)	97	(66.0)	41	(27.9)	147
2004	0	0	13	(10.5)	82	(66.1)	29	(23.4)	124
2005	1	(0.7)	12	(8.7)	86	(62.3)	39	(28.3)	138
2006	1	(0.8)	11	(8.6)	89	(69.5)	27	(21.1)	128
2007	0	0	22	(12.2)	102	(56.4)	57	(31.5)	181
2008	2	(1.0)	13	(6.2)	127	(60.8)	67	(32.1)	209
2009	1	(0.5)	15	(7.2)	144	(68.9)	49	(23.4)	209
2010	0	0	7	(3.9)	125	(69.1)	49	(27.1)	181
2011	1	(0.5)	14	(7.2)	127	(65.1)	53	(27.2)	195
2012	2	(0.9)	18	(7.9)	145	(63.6)	63	(27.6)	228

D1.3 Age of patients at the time of kidney transplantation

Year of transplant	First kidney transplants				Second and subsequent transplants			
	n	Mean Age	SD	Age Range	n	Mean Age	SD	Age Range
1960-1972	138	31.5	12.4	8.0 - 64.8	10	25.4	6.1	15.7 - 36.8
1973-1977	203	34.3	11.7	11.3 - 65.1	32	33.3	10.0	11.6 - 55.2
1978-1982	358	37.1	13.4	8.5 - 68.6	72	34.8	11.0	15.4 - 68.9
1983-1987	532	38.5	15.4	1.5 - 77.6	130	35.5	12.4	3.4 - 63.6
1988-1992	690	42.2	15.7	0.3 - 76.2	139	36.2	13.1	5.1 - 69.5
1993-1997	644	42.6	15.4	2.1 - 76.1	123	37.2	12.7	3.9 - 66.1
1998-2002	666	41.6	15.5	4.0 - 78.4	138	39.0	12.1	5.1 - 71.3
2003-2007	602	43.3	15.1	4.2 - 77.7	116	40.5	10.7	16.4 - 69.2
2008-2012	877	47.0	15.2	2.4 - 79.3	145	44.0	11.3	18.2 - 69.4

D1.4 Year of first kidney transplant and diagnosis group										
Year of transplant	Glomerulonephritis		Interstitial		Multisystem		Diabetes		Unknown	
	n	%	n	%	n	%	n	%	n	%
1960-1972*	57	41.6	42	30.7	13	9.5	0		25	18.2
1973-1977	94	46.3	70	34.5	21	10.3	0		18	8.9
1978-1982	121	33.8	156	43.6	38	10.6	11	3.1	32	8.9
1983-1987	146	27.4	219	41.2	65	12.2	39	7.3	63	11.8
1988-1992	191	27.7	249	36.1	105	15.2	57	8.3	88	12.8
1993-1997	185	28.7	236	36.6	84	13.0	74	11.5	65	10.1
1998-2002	169	25.4	246	36.9	80	12.0	72	10.8	99	14.9
2003-2007	136	22.6	221	36.7	77	12.8	91	15.1	77	12.8
2008-2012	190	21.7	347	39.6	114	13.0	113	12.9	113	12.9

* One patient who received a first kidney transplant between 1960-1972 has missing PRD

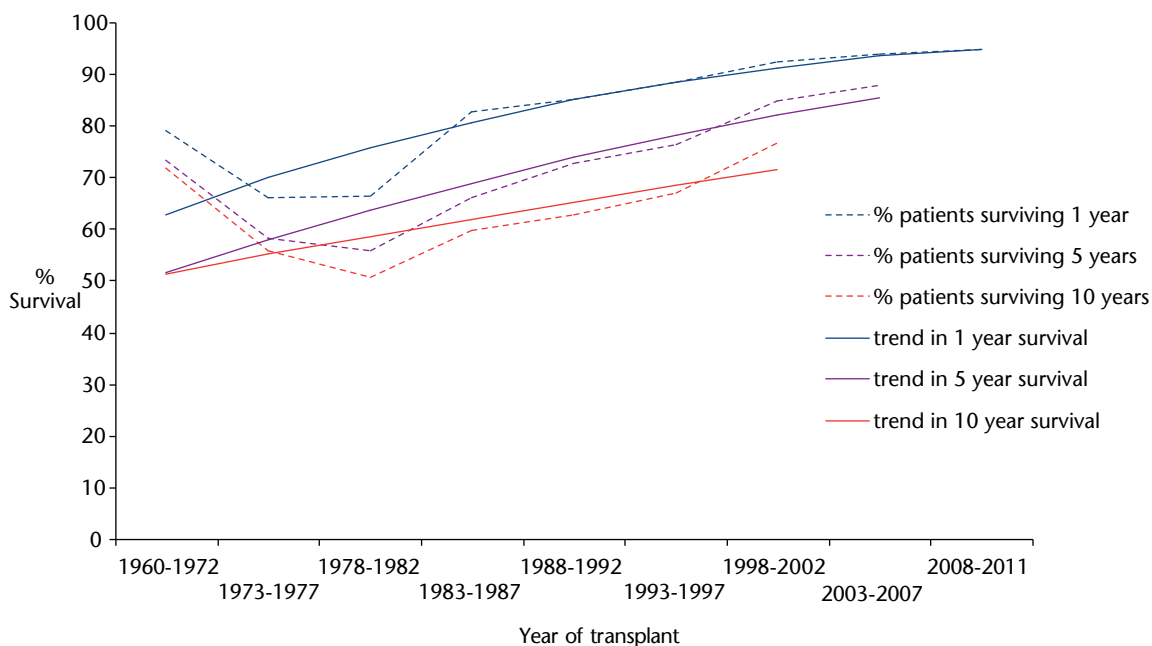
D2 Transplanted Kidney Survival

D2.1 Graft survival of first kidney transplants by year of transplantation 1960 - 2011			
Year of transplant	% grafts surviving 1 year	% grafts surviving 5 years	% grafts surviving 10 years
1960-1972	77.1	70.3	73.2
1973-1977	66.5	60.8	55.8
1978-1982	67.4	59.9	56.5
1983-1987	83.7	69.1	63.8
1988-1992	85.2	75.3	65.7
1993-1997	88.9	79.3	68.5
1998-2002	91.9	86.9	77.5
2003-2007	94.1	89.2	
2008	93.8		
2009	97.0		
2010	94.8		
2011	94.3		

Survival of first kidney transplants only is shown in the table.

Grafts with insufficient follow-up and those that did not fail in patients dying within the relevant period have been excluded from the table.

D2.2 Trends in first graft survival by year of transplantation 1960-2011



Trend in 1 year survival: year to year OR 1.06 (95% CI 1.05 - 1.07)

Trend in 5 year survival: year to year OR 1.05 (95% CI 1.04 - 1.06)

Trend in 10 year survival: year to year OR 1.05 (95% CI 1.04 - 1.05)

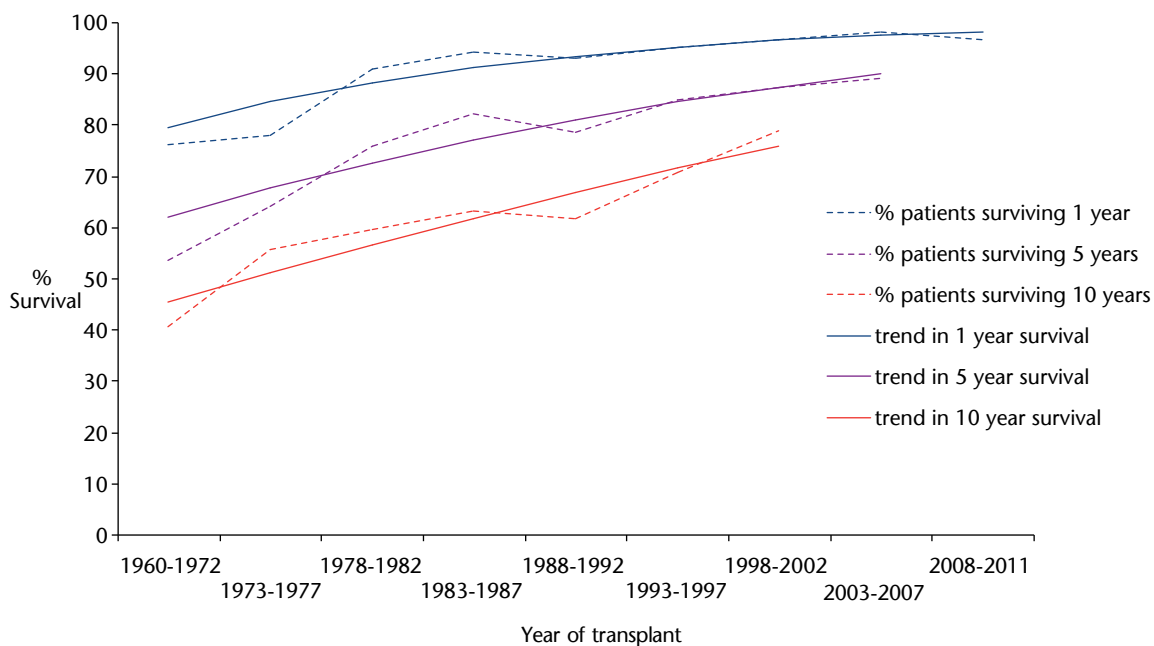
The trends in 1 year, 5 year and 10 year graft survival are all statistically significant (Wald-statistic, df=1, p<0.001).

D3 Patient survival after Kidney Transplantation

D3.1 Patient survival after first kidney transplant by year of transplantation 1960-2011			
Year of transplant	% patients surviving 1 year	% patients surviving 5 years	% patients surviving 10 years
1960-1972	76.1	53.6	40.6
1973-1977	77.8	64.0	55.7
1978-1982	90.8	76.0	59.8
1983-1987	94.4	82.1	63.2
1988-1992	93.0	78.6	61.7
1993-1997	95.2	84.9	70.8
1998-2002	96.5	87.2	78.8
2003-2007	98.0	89.2	
2008	98.9		
2009	92.2		
2010	98.7		
2011	97.5		

Patient survival is reported from the time of first kidney transplant. Those with insufficient follow-up are excluded.

D3.2 Trends in patient survival by year of first kidney transplant 1960 -2011



Trend in 1 year survival: year to year OR 1.07 (95% CI 1.06 - 1.08)

Trend in 5 year survival: year to year OR 1.05 (95% CI 1.04 - 1.06)

Trend in 10 year survival: year to year OR 1.05 (95% CI 1.04 - 1.05)

The trends in 1 year, 5 year and 10 year patient survival are all statistically significant (Wald-statistic, df=1,p<0.001).

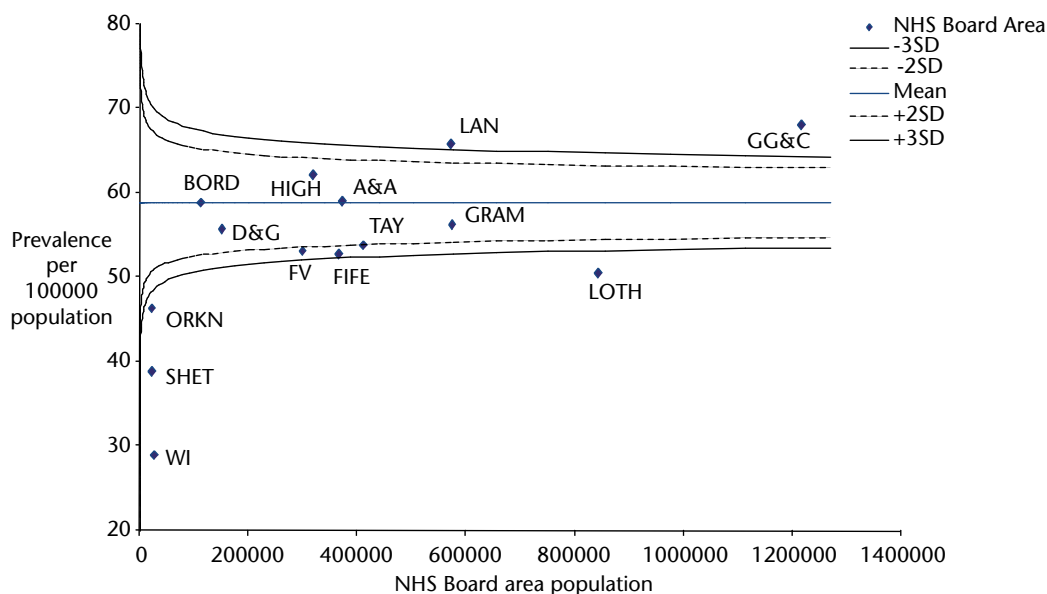
D4 Listing for Kidney Transplantation

D4.1 Percentage and prevalence per 100000 population of RRT patients with functioning kidney transplant or on transplant waiting list 31 December 2012 by NHS Board area of residence

	All RRT patients 31/12/2012	Patients with kidney transplant		Transplant or transplant listed		NHS Board population	Prevalence per 100000 population
		n	%	n	%		
A&A	354	156	44.1	220	62.1	373189	59.0
BORD	101	54	53.5	67	66.3	113707	58.9
D&G	128	60	46.8	84	65.6	150828	55.7
FIFE	321	142	44.2	193	60.1	366219	52.7
FV	235	117	49.8	159	67.7	299099	53.2
GG&C	1137	633	55.7	829	72.9	1217025	68.1
GRAM	490	240	49.0	322	65.7	573420	56.2
HIGH	277	165	59.6	200	72.2	319811	62.2
LAN	513	288	56.1	377	73.5	572520	65.8
LOTH	591	329	55.7	426	72.1	843733	50.5
ORKN	17	8	47.1	10	58.8	21530	46.4
SHET	11	7	63.6	9	81.8	23210	38.8
TAY	367	180	49.0	222	60.5	411749	53.9
WI	14	7	50.0	8	57.1	27560	29.0
Scotland	4556	2386	52.4	3126	68.6	5313600	58.8

The percentage of patients in each NHS Board area treated by all forms of RRT (PD, HD, Transplant) who are either on the transplant waiting list or have a functioning transplant are shown. Patients who were on the transplant waiting list but had suspended rather than active status are included.

D4.2 Prevalence per 100000 population of RRT patients with functioning kidney transplant or on transplant waiting list 31 December 2012 by NHS Board area of residence



ORKN, WI, SHET and LOTH all have prevalence per 100000 population of transplanted or transplant listed patients more than 3SD below the Scottish average.

GG&C and LAN have prevalence per 100000 population more than 3SD above the Scottish average. However both LOTH and SHET have a high proportion of RRT patients who have a kidney transplant or are transplant listed at 72.1 and 81.8% respectively as shown in Table D4.1.

D4.3 Frequency of first kidney transplants and time from start of RRT to activation on transplant waiting list, by NHS Board area of residence at transplantation 2003-2012

	Number of first transplants 2003-2012	Pre-emptive transplants (number from DD)	LD transplant within first year RRT*	Number of patients with listing date**	Median time from start of RRT to listing (days)	IQR
A&A	103	6 (4)	5	95	290	136 – 635
BORD	33	3 (2)	4	31	40	-117 – 260
D&G	41	5 (3)	5	37	156	60 – 306
FIFE	96	12 (7)	7	91	52	-105 – 328
FV	80	8 (3)	13	65	262	79 – 443
GG&C	370	47 (15)	58	319	176	32 – 387
GRAM	151	16 (4)	22	136	105	21 – 193
HIGH	104	11 (2)	18	92	96	-13 – 327
LAN	162	14 (5)	17	149	305	154 – 533
LOTH	220	18 (5)	29	205	98	-84 – 336
ORKN	5	0	0	5	254	85 – 554
SHET	5	0	1	4	318	181 – 451
TAY	95	10 (3)	16	86	58	-34 – 255
WI	4	2 (2)	0	4	41	-93 – 143
Scotland	1469	152 (55)	195	1319	262	-2 – 378

*Includes pre-emptive LD transplants

** Patients receiving LD pre-emptive transplants excluded

Ten patients received a kidney transplant in Scotland in this time period who were not Scottish residents, they are excluded from the analyses.

152 patients received a pre-emptive transplant 2003-2012, 97 from a live donor (LD), 55 from a deceased donor.

A further 98 patients received a LD transplant within one year of starting RRT.

The Renal Association guideline suggests that patients with progressive deterioration in renal function suitable for transplantation should be placed on the national transplant list within six months (-182.5 days) of their anticipated dialysis start date. Patients listed for transplantation for periods longer than six months prior to starting RRT have their duration of listing truncated to six months in the analysis.