



Chapter 6

Access to kidney transplantation for adults in the UK – data to the end of 2017

Contents

Introduction	3
Rationale for analyses	5
Key findings.....	6
Analyses.....	7
Access to kidney transplantation for adults by patient characteristics	7
Access to kidney transplantation for adults by renal centre	8
Access to kidney transplantation for adults by transplant versus non-transplant centre.....	14

Introduction

This chapter aims to evaluate whether access to kidney transplant (Tx) wait-listing and access to kidney transplantation are equitable for adults in the UK. Rates of wait-listing and rates of transplantation after wait-listing were analysed according to patient characteristics. Time from starting renal replacement therapy (RRT) to wait-listing was also analysed. Differences between renal centres and between Tx versus non-Tx renal centres were analysed, with adjustment for patient characteristics. Kidney Tx from living donors were included in the analyses as described below.

Tx from donors after brain death (DBD) were considered separately from Tx from donors after circulatory death (DCD) or living kidney donors (LKD), because of differences in the process of allocation. DBD kidneys are allocated according to the national allocation policy, while one DCD kidney from each donor is allocated regionally according to the 2006 DBD allocation scheme and the second DCD kidney is offered to the local Tx renal centre. The process of LKD transplantation is managed by the Tx renal centre (and referring non-Tx renal centre).

This chapter uses a three year incident RRT cohort between 01/01/2012 and 31/12/2014 as explained in [figure 6.1](#). To assess Tx wait-listing, patients were followed-up for a maximum of two years after starting RRT (latest 31/12/2016). To assess transplantation after wait-listing, those wait-listed before 31/12/2015 were followed-up for a maximum of two years after wait-listing (latest 31/12/2017). Patients aged ≥ 65 years ($N = 10,438$), patients listed for multi-organ Tx other than kidney and pancreas ($N = 40$) and patients who were suspended for >30 days within 90 days of wait-listing ($N = 656$) were excluded.

In addition to patients wait-listed during the study period, patients who received a LKD Tx within two years of starting dialysis were also considered to have been wait-listed for the purposes of this analysis, even those not added to the deceased donor Tx waiting list before transplantation.

For patients wait-listed after starting dialysis, time from starting dialysis to wait-listing was recorded, while patients wait-listed before starting dialysis were recorded as listed on the day of dialysis initiation. Patients receiving a pre-emptive Tx (living or deceased donor) were recorded as wait-listed on the day of transplantation (i.e. time from starting RRT to wait-listing was zero days). Patients who received a LKD Tx after starting dialysis who had *not* been formally wait-listed prior to transplantation were recorded as wait-listed six months before the date of their Tx. This aimed to account for the time needed to prepare patients for a LKD Tx, assuming suitability for wait-listing six months before LKD transplantation.

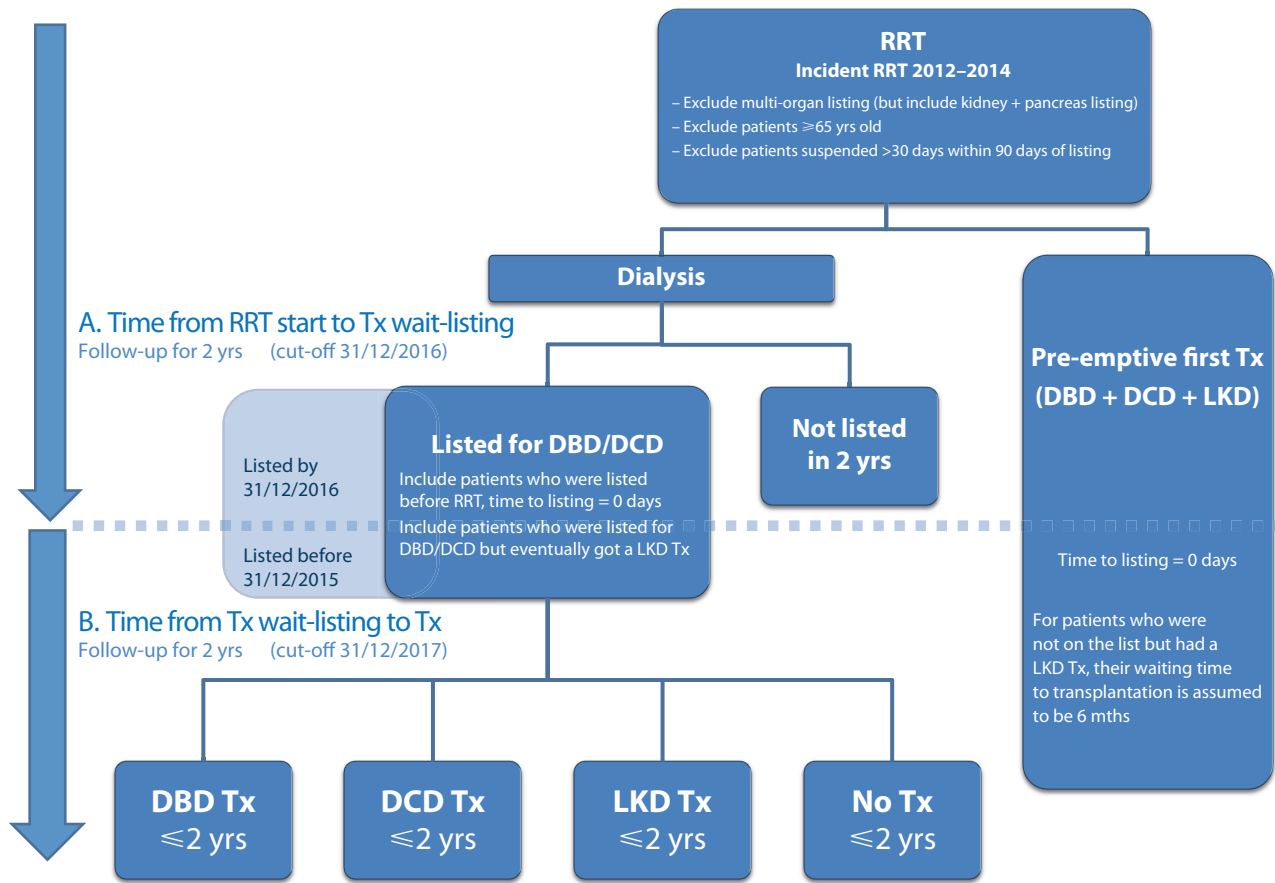


Figure 6.1 A – adult patients incident to RRT 01/01/2012–31/12/2014 who were wait-listed or transplanted within 2 years of RRT start; B – time to transplantation of adult patients incident to RRT 01/01/2012–31/12/2014 and wait-listed by 31/12/2015 who received a Tx within 2 years of wait-listing
 DBD – donor after brain death; DCD – donor after circulatory death; LKD – living kidney donor

This chapter addresses the following key aspects of care of patients on RRT for which there are Renal Association guidelines (table 6.1):

- **Wait-listing** – this includes the proportion of patients wait-listed at RRT start, the proportion wait-listed two years after RRT start and the time to wait-listing from RRT start
- **Pre-emptive Tx** – this is the proportion of patients who start RRT by receiving a kidney Tx from either a living or a deceased donor.

Rationale for analyses

Early Tx wait-listing increases the probability of transplantation from a deceased donor because the current national kidney allocation scheme prioritises potential Tx recipients who have accrued more time on the waiting list. Therefore, centres achieving earlier Tx wait-listing provide their patients with a clinical advantage.

The Renal Association guidelines (<https://renal.org/guidelines/>) provide audit measures relevant to the care of patients on RRT and, where data permit, their attainment by UK renal centres in 2017 is reported in this chapter (table 6.1).

Table 6.1 The Renal Association audit measures relevant to wait-listing and transplantation that are reported in this chapter

The Renal Association guideline	Audit criteria	Related analysis/analyses
Planning, initiating and withdrawing RRT (2014)	Proportion of incident patients on UK Tx waiting list at RRT initiation	Table 6.4
	Proportion of incident RRT patients transplanted pre-emptively from living donors and deceased donors	Table 6.4; also reported in chapters 1 and 5

In 2017, 23 of the 71 adult renal centres in the UK were Tx centres – 19 in England, two in Scotland and one in each of Northern Ireland and Wales.

For definitions and methods relating to this chapter see appendix A.

Cambridge renal centre (Addenbrooke's Hospital) was unable to submit patient level data for 2015–2017. While data extraction issues have now been resolved, the UKRR and Cambridge are working to load and validate the backlog of data for these years.

Key findings

- There was no significant difference in the likelihood of kidney Tx wait-listing for adult non-White patients within 2 years of starting RRT, compared to adult White patients. This represents an improvement in equity of access to the Tx waiting list compared to findings from 2008–2010. However, once on the Tx waiting list, non-White patients had a 61% lower chance of receiving a kidney Tx of any type within 2 years (odds ratio (OR) 0.39, 95% confidence interval (CI) 0.35–0.44)
- Compared to men, women had a 13% lower chance of being added to the kidney Tx waiting list within 2 years of starting RRT (OR 0.87, 95% CI 0.80–0.94). Once on the Tx waiting list, women had a 16% lower chance of receiving a kidney Tx of any type within 2 years (OR 0.84, 95% CI 0.75–0.93)
- Compared to patients treated at Tx centres, patients treated at non-Tx centres were less likely to be wait-listed for transplantation within 2 years of starting dialysis (OR 0.68, 95% CI 0.62–0.74), but were more likely to receive a DCD kidney within 2 years of wait-listing (OR 1.38, 95% CI 1.19–1.60). There was not a significant difference in the chance for patients in Tx versus non-Tx centres to receive a DBD Tx within 2 years of wait-listing. However, patients at non-Tx centres were less likely to receive a LKD kidney Tx (OR 0.65, 95% CI 0.58–0.74). Overall, this equated to a reduced chance of receiving a Tx from any donor type for patients treated at non-Tx centres (OR 0.88, 95% CI 0.79–0.99).

Analyses

Access to kidney transplantation for adults by patient characteristics

A logistic regression analysis for the relationship between patient characteristics – age, ethnicity, sex and primary renal disease (PRD) – and the odds of Tx wait-listing within two years of starting RRT is shown (calculated as detailed in appendix A). For the purposes of these analyses, PRD was divided only into diabetic nephropathy, non-diabetic nephropathy and missing data.

Odds of Tx wait-listing from RRT start

Table 6.2 Multivariable logistic regression model showing the relationship between adult patient characteristics and odds of Tx wait-listing within 2 years of starting RRT (cohort incident to RRT 01/01/2012–31/12/2014)

			Tx wait-listing ≤ 2 yrs of RRT start	
			OR	95% CI
		N (%)		
Age (yrs)	18–29	774 (7.6)	1.00	ref
	30–39	1,255 (12.3)	0.66	0.52–0.83
	40–49	2,453 (24.1)	0.40	0.32–0.49
	50–59	3,508 (34.5)	0.23	0.19–0.29
	60–64	2,180 (21.4)	0.13	0.10–0.16
Ethnicity	White	6,762 (66.5)	1.00	ref
	Non-White	2,627 (25.8)	1.10	1.00–1.21
	Missing	781 (7.7)	0.93	0.80–1.09
Sex	Male	6,257 (61.5)	1.00	ref
	Female	3,913 (38.5)	0.87	0.80–0.94
PRD	Not diabetic	7,090 (69.7)	1.00	ref
	Diabetic	2,813 (27.7)	0.51	0.47–0.56
	Missing	267 (2.6)	0.47	0.36–0.61

CI – confidence interval; OR – odds ratio; PRD – primary renal disease

Data were missing for ethnicity and PRD either because a renal centre failed to complete relevant fields on their renal IT system or from a failure to extract these data. Missing ethnicity and missing PRD were included as categories in the analysis because the data may not be missing at random. Over 80% of missing ethnicity data were from Scotland, which does not routinely collect these data. For missing PRD data, patients with increased comorbidity are likely to die sooner, allowing inadequate time for their physician to enter relevant comorbidity data; the very process of working up and listing a patient makes it less likely that data will be missing.

Odds of a Tx after Tx wait-listing

The results of logistic regression analyses for the relationship between patient characteristics and the likelihood of receiving a kidney Tx within two years of wait-listing are shown.

Table 6.3 Multivariable logistic regression model showing the relationship between adult patient characteristics and odds of receiving a kidney Tx by donor type (including living kidney donor) within 2 years of wait-listing (cohort incident to RRT 01/01/2012–31/12/2014 and wait-listed by 31/12/2015)

		N (%)	Receiving Tx ≤2 yrs of wait-listing					
			DBD		DCD		Any Tx	
			OR	95% CI	OR	95% CI	OR	95% CI
Age (yrs)	18–29	656 (11.2)	1.00	ref	1.00	ref	1.00	ref
	30–39	966 (16.5)	1.09	0.86–1.38	1.15	0.86–1.55	0.73	0.58–0.93
	40–49	1,627 (27.7)	0.73	0.58–0.92	1.16	0.88–1.52	0.42	0.34–0.52
	50–59	1,830 (31.2)	0.45	0.36–0.57	1.34	1.03–1.75	0.31	0.25–0.38
	60–64	790 (13.5)	0.33	0.24–0.44	1.39	1.03–1.88	0.23	0.18–0.28
Ethnicity	White	3,865 (65.8)	1.00	ref	1.00	ref	1.00	ref
	Non-White	1,595 (27.1)	0.67	0.56–0.79	0.72	0.61–0.86	0.39	0.35–0.44
	Missing	417 (7.1)	1.10	0.85–1.42	0.95	0.72–1.26	1.02	0.82–1.26
Sex	Male	3,668 (62.4)	1.00	ref	1.00	ref	1.00	ref
	Female	2,209 (37.6)	0.94	0.82–1.09	0.75	0.65–0.88	0.84	0.75–0.93
PRD	Not diabetic	4,526 (77.0)	1.00	ref	1.00	ref	1.00	ref
	Diabetic	1,235 (21.0)	2.13	1.82–2.5	1.25	1.05–1.48	0.93	0.81–1.06
	Missing	116 (2.0)	1.40	0.87–2.27	0.64	0.34–1.2	0.92	0.62–1.37

CI – confidence interval; DBD – donor after brain death; DCD – donor after circulatory death; OR – odds ratio; PRD – primary renal disease

Access to kidney transplantation for adults by renal centre

Proportion and time from RRT to Tx wait-listing by renal centre

The proportion of patients receiving a pre-emptive Tx and the proportion wait-listed at RRT start (including those with a Tx) was calculated by renal centre. The proportion of patients wait-listed within two years of starting RRT by renal centre after adjusting for patient characteristics (age, ethnicity, sex and PRD) is shown, as well as the median time (days) to listing. The CI of median time from starting RRT to wait-listing for each renal centre in [figure 6.3](#) was derived from simulations based on the actual data. For eight centres (those with fewer events and/or longer waiting times) median values could not be estimated, so final event times are shown (calculated as detailed in appendix A). For one centre, Belfast, >50% of patients were either pre-emptively transplanted or wait-listed before starting RRT, giving a median time to listing of zero days.

Table 6.4 Proportion of adult patients in each renal centre wait-listed or transplanted at RRT start and proportion of patients wait-listed for a Tx prior to or within 2 years of starting RRT (cohort incident to RRT 01/01/2012–31/12/2014)

Centre	N on RRT	% with pre-emptive Tx	% with LKD pre-emptive Tx	% wait-listed at RRT start including Tx	% wait-listed at 2 yrs (unadj)	% wait-listed at 2 yrs (risk adj)*	Median time to listing ^a (days)	Final event time (days)
TX CENTRES								
B QEH	357	10.6	7.6	28.6	51.3	50.3	616	
Belfast	112	40.2	32.1	53.6	69.6	64.4	0	
Bristol	217	17.5	8.8	35.9	59.9	57.0	227	
Camb	154	42.9	15.6	50.0	65.6	62.4	0	
Cardff	217	17.1	12.9	34.1	54.8	49.8	296	
Covnt	136	11.8	8.1	20.6	51.5	51.3	535	
Edinb	155	23.9	12.3	36.1	56.8	53.8	333	
Glasgw	265	20.4	14.0	40.4	67.9	61.0	139	
L Barts	527	6.1	4.4	20.1	56.7	57.3	464	
L Guys	249	23.3	13.3	34.9	54.2	51.6	435	
L Rfree	350	14.6	8.0	34.3	65.7	62.0	173	
L St.G	140	13.6	8.6	30.0	58.6	54.3	448	
L West	534	15.5	12.0	36.0	71.2	64.6	216	
Leeds	264	19.3	3.0	42.1	64.0	59.7	116	
Leic	374	17.1	8.6	39.0	65.5	59.4	133	
Liv Roy	177	24.3	14.7	31.1	46.3	47.6	904	
M RI	280	23.2	12.5	35.0	61.8	58.1	242	
Newc	161	15.5	13.7	28.0	49.1	48.8	779	
Nottm	152	19.7	8.6	42.8	59.9	54.8	134	
Oxford	268	19.4	6.3	41.0	66.4	58.8	140	
Plymth	66	21.2	10.6	42.4	68.2	61.7	96	
Ports	273	14.3	9.5	36.6	62.6	57.2	188	
Sheff	221	13.1	7.7	36.7	57.5	53.5	232	
DIALYSIS CENTRES								
Abrdn	86	0.0	0.0	19.8	41.9	40.0	1,309	
Airdrie	75	0.0	0.0	21.3	58.7	56.4	323	
Antrim	30	0.0	0.0	20.0	40.0	37.5	906	
B Heart	145	3.5	2.8	24.1	49.7	46.9	749	
Bangor	19	0.0	0.0	10.5	26.3	25.5	n/a	1,478
Basldn	66	1.5	0.0	24.2	54.6	52.5	450	
Bradfd	122	13.1	1.6	27.9	49.2	52.0	731	
Brightn	184	8.2	4.9	25.0	46.7	46.3	889	
Carlis	54	11.1	3.7	31.5	68.5	61.6	226	
Carsh	317	10.7	6.6	25.9	49.8	47.8	744	
Chelms	67	0.0	0.0	14.9	50.8	49.1	623	
Clwyd	28	3.6	0.0	10.7	35.7	35.7	n/a	512
Colchr	30	0.0	0.0	10.0	46.7	47.0	743	
D&Gall	20	0.0	0.0	30.0	75.0	66.6	65	
Derby	121	1.7	0.8	24.8	49.6	48.2	708	
Donc	73	0.0	0.0	23.3	63.0	59.9	232	
Dorset	79	10.1	2.5	30.4	55.7	52.9	380	
Dudley	74	1.4	1.4	16.2	35.1	37.4	n/a	1,624
Dundee	56	0.0	0.0	25.0	55.4	50.5	342	
Exeter	119	9.2	4.2	24.4	58.8	54.5	314	
Glouc	84	4.8	4.8	25.0	54.8	55.2	619	
Hull	130	4.6	1.5	16.9	49.2	49.3	740	
Inverns	32	0.0	0.0	34.4	62.5	58.2	126	
Ipswi	49	8.2	2.0	18.4	42.9	43.7	1,055	
Kent	167	16.8	11.4	26.4	55.1	53.6	480	
Klmarnk	57	0.0	0.0	17.5	43.9	40.9	813	
Krkcdy	33	0.0	0.0	6.1	30.3	30.5	n/a	907
L Kings	227	3.1	1.3	9.7	37.0	39.1	1,499	
Liv Ain	85	4.7	2.4	15.3	36.5	37.6	n/a	1,492

Table 6.4 Continued

Centre	N on RRT	% with pre-emptive Tx	% with LKD pre-emptive Tx	% wait-listed at RRT start including Tx	% wait-listed at 2 yrs (unadj)	% wait-listed at 2 yrs (risk adj)*	Median time to listing ^a (days)	Final event time (days)
Middlbr	148	19.6	8.8	37.8	66.2	61.0	186	
Newry	28	0.0	0.0	21.4	53.6	49.8	504	
Norwch	84	2.4	1.2	16.7	42.9	43.4	1,102	
Prestn	217	12.9	7.4	28.6	53.5	51.4	523	
Redng	133	8.3	5.3	22.6	54.9	51.2	425	
Salford	213	5.6	2.8	29.1	61.0	56.5	292	
Shrew	72	1.4	1.4	20.8	31.9	31.8	n/a	520
Stevng	206	12.1	5.3	33.0	61.2	58.2	255	
Sthend	41	12.2	12.2	34.2	65.9	59.8	110	
Stoke	122	2.5	0.8	20.5	52.5	50.3	505	
Sund	95	10.5	6.3	20.0	51.6	50.9	570	
Swanse	122	4.9	2.5	20.5	37.7	37.6	1,610	
Truro	46	15.2	6.5	37.0	71.7	64.7	120	
Ulster	27	0.0	0.0	29.6	63.0	56.0	110	
West NI	31	3.2	3.2	32.3	58.1	58.2	386	
Wirral	67	6.0	0.0	22.4	53.7	54.0	457	
Wolve	125	4.0	1.6	16.8	41.6	43.3	n/a	1,525
Wrexm	37	13.5	8.1	27.0	37.8	38.5	n/a	1,409
York	78	18.0	6.4	38.5	56.4	54.8	278	

*Risk adjusted by age, ethnicity, sex and primary renal disease, modelled with logistic regression

^aMedian time to listing is estimated by Kaplan Meier method

n/a – median values could not be estimated for centres with fewer events and/or longer waiting times, so final event times are shown

LKD – living kidney donor

A funnel plot (figure 6.2) shows the centre rate of listing at two years after starting RRT, risk adjusted by age group, ethnicity, sex and PRD. A second funnel plot (figure 6.3) shows the median time to wait-listing. Centres can be identified from the x-axis using the number of patients on RRT in table 6.4.

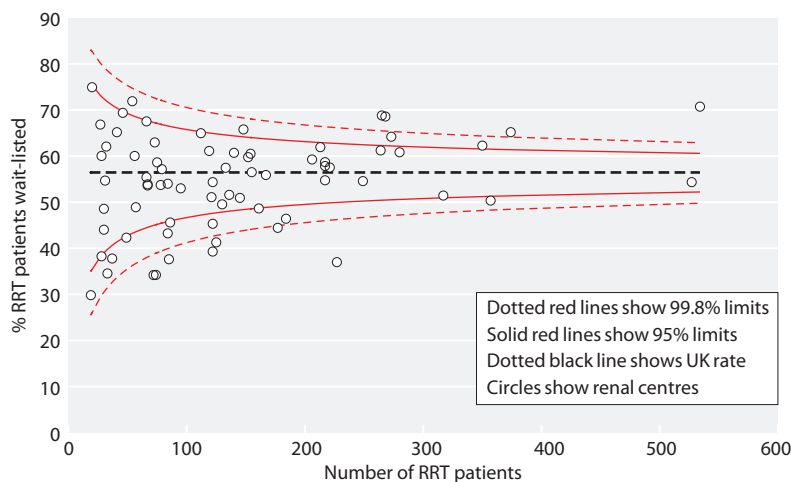


Figure 6.2 Percentage of adult RRT patients wait-listed prior to or within 2 years of starting RRT by centre (cohort incident to RRT 01/01/2012–31/12/2014)

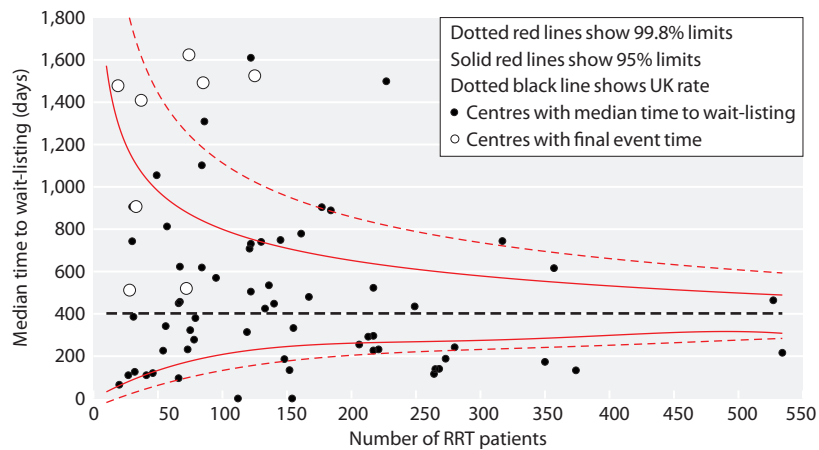


Figure 6.3 Median time (or final event time) from starting RRT to wait-listing by centre (cohort incident to RRT 01/01/2012–31/12/2014)

Proportion with a Tx after Tx wait-listing by renal centre

The Tx rates at two years from the time of wait-listing for patients who started RRT between 01/01/2012 and 31/12/2014 and who were on the waiting list by 31/12/2015 were assessed by donor type, because of the different allocation policies between DBD, DCD and LKD. Both crude and risk adjusted (by age group, ethnicity, sex and PRD) Tx rates are shown by donor type and by centre.

Table 6.5 Proportion of adult RRT patients receiving a Tx within 2 years of wait-listing by donor type (including living kidney donor) and centre (cohort incident to RRT 01/01/2012–31/12/2014 and wait-listed by 31/12/2015)

Centre	N wait-listed	DBD		DCD		Any Tx				
		N with Tx	% with Tx ≤ 2 yrs of wait-listing	N with Tx	% with Tx ≤ 2 yrs of wait-listing	N with Tx	% with Tx ≤ 2 yrs of wait-listing			
		Unadj	Risk adj*	Unadj	Risk adj*	Unadj	Risk adj*			
TX CENTRES										
B QEH	186	18	9.7	10.9	8	4.3	4.5	72	38.7	40.8
Belfast	79	8	10.1	9.5	4	5.1	4.9	60	75.9	67.0
Bristol	132	24	18.2	18.2	7	5.3	5.0	68	51.5	48.5
Camb	105	16	15.2	15.2	44	41.9	41.1	90	85.7	78.4
Cardff	123	15	12.2	11.9	30	24.4	22.4	90	73.2	69.6
Covnt	73	10	13.7	15.4	6	8.2	8.2	45	61.6	62.5
Edinb	88	22	25.0	21.2	11	12.5	12.9	64	72.7	66.0
Glasgw	180	35	19.4	18.0	22	12.2	11.9	116	64.4	59.8
L Barts	307	37	12.1	13.6	27	8.8	9.7	143	46.6	54.0
L Guys	137	22	16.1	16.7	28	20.4	24.4	96	70.1	73.8
L Rfree	243	43	17.7	19.0	44	18.1	19.6	143	58.8	66.4
L St.G	86	13	15.1	18.2	9	10.5	11.8	42	48.8	57.6
L West	388	43	11.1	12.3	21	5.4	5.7	182	46.9	55.5
Leeds	173	39	22.5	23.7	51	29.5	29.1	118	68.2	66.7
Leic	245	47	19.2	19.4	22	9.0	9.2	128	52.2	52.4
Liv Roy	87	14	16.1	16.3	16	18.4	18.5	65	74.7	68.0
M RI	176	28	15.9	15.8	20	11.4	11.5	109	61.9	62.9
Newc	85	14	16.5	15.9	16	18.8	18.1	67	78.8	75.5
Nottm	93	17	18.3	18.4	21	22.6	22.6	57	61.3	60.0
Oxford	185	49	26.5	26.1	27	14.6	14.2	118	63.8	65.5
Plymth	45	11	24.4	24.7	14	31.1	29.1	38	84.4	78.9
Ports	169	41	24.3	22.6	8	4.7	4.4	89	52.7	49.9
Sheff	132	18	13.6	12.2	9	6.8	6.4	62	47.0	43.7

Table 6.5 Continued

Centre	DBD				DCD				Any Tx	
	N wait-listed	N with Tx	% with Tx ≤ 2 yrs of wait-listing		N with Tx	% with Tx ≤ 2 yrs of wait-listing		N with Tx	% with Tx ≤ 2 yrs of wait-listing	
			Unadj	Risk adj*		Unadj	Risk adj*		Unadj	Risk adj*
DIALYSIS CENTRES										
Abrdn	34	8	23.5	22.7	9	26.5	27.5	21	61.8	60.6
Airdrie	44	12	27.3	24.2	7	15.9	14.9	27	61.4	56.5
Antrim	13	2	15.4	16.2	1	7.7	6.7	6	46.2	45.1
B Heart	74	13	17.6	16.4	4	5.4	5.6	28	37.8	40.0
Bangor	5	2	40.0	28.6	0	0.0	0.0	5	100.0	78.4
Basldn	36	4	11.1	10.9	4	11.1	11.2	16	44.4	44.1
Bradfd	62	14	22.6	24.0	26	41.9	45.8	45	72.6	74.4
Brightn	89	18	20.2	19.6	10	11.2	11.0	49	55.1	51.3
Carlis	35	11	31.4	36.1	7	20.0	18.8	24	68.6	66.1
Carsh	163	26	16.0	16.2	17	10.4	11.1	93	57.1	59.2
Chelms	35	9	25.7	23.8	15	42.9	38.5	27	77.1	75.9
Clwyd	10	2	20.0	20.2	2	20.0	22.0	5	50.0	48.1
Colchr	15	5	33.3	30.1	6	40.0	38.0	12	80.0	75.2
D&Gall	15	2	13.3	10.0	4	26.7	26.4	11	73.3	64.8
Derby	61	14	23.0	23.1	9	14.8	13.9	28	45.9	45.4
Donc	49	6	12.2	11.8	9	18.4	17.1	20	40.8	39.6
Dorset	45	12	26.7	22.5	2	4.4	4.3	19	42.2	38.9
Dudley	27	3	11.1	9.1	5	18.5	17.8	15	55.6	50.4
Dundee	33	9	27.3	25.4	1	3.0	3.0	17	51.5	49.9
Exeter	70	17	24.3	21.9	8	11.4	10.4	39	55.7	51.5
Glouc	47	9	19.1	19.1	7	14.9	14.3	27	57.4	55.4
Hull	65	8	12.3	11.5	21	32.3	30.7	44	67.7	61.8
Inverns	22	2	9.1	8.8	3	13.6	13.9	9	40.9	39.5
Ipswi	23	5	21.7	23.9	10	43.5	42.2	19	82.6	77.6
Kent	95	18	18.9	17.8	21	22.1	20.7	68	71.6	67.3
Klmarnk	26	2	7.7	6.6	3	11.5	11.0	12	46.2	43.5
Krkcldy	10	1	10.0	8.7	3	30.0	28.7	5	50.0	45.5
L Kings	88	19	21.6	24.2	15	17.0	18.4	48	54.5	60.2
Liv Ain	32	4	12.5	12.1	9	28.1	27.5	20	62.5	60.0
Middlbr	102	15	14.7	13.7	30	29.4	27.5	80	78.4	73.4
Newry	18	4	22.2	20.7	0	0.0	0.0	8	44.4	44.4
Norwch	38	5	13.2	12.4	15	39.5	38.1	28	73.7	65.9
Prestn	119	24	20.2	20.2	15	12.6	11.8	67	56.3	54.2
Redng	74	16	21.6	20.8	17	23.0	22.2	51	68.9	72.5
Salford	132	18	13.6	13.5	13	9.8	9.7	56	42.4	42.8
Shrew	23	2	8.7	8.8	3	13.0	13.0	10	43.5	44.0
Stevng	129	22	17.1	17.8	32	24.8	25.4	89	69.0	69.4
Sthend	27	3	11.1	11.1	5	18.5	17.8	19	70.4	68.3
Stoke	64	11	17.2	16.6	5	7.8	7.3	33	51.6	49.2
Sund	52	6	11.5	11.6	13	25.0	23.6	40	76.9	72.9
Swanse	45	9	20.0	15.8	7	15.6	14.0	29	64.4	56.5
Truro	33	7	21.2	19.3	10	30.3	28.8	25	75.8	68.6
Ulster	16	1	6.3	5.1	2	12.5	11.2	9	56.3	54.0
West NI	17	1	5.9	5.7	0	0.0	0.0	9	52.9	48.7
Wirral	37	10	27.0	22.7	6	16.2	15.0	24	64.9	58.4
Wolve	53	5	9.4	11.6	2	3.8	3.9	12	22.6	24.8
Wrexm	14	3	21.4	23.0	0	0.0	0.0	9	64.3	58.8
York	44	12	27.3	25.7	10	22.7	21.8	31	70.5	61.6

*Risk adjusted by age group, ethnicity, sex and primary renal disease, modelled with logistic regression

DBD – donor after brain death; DCD – donor after circulatory death

The following funnel plots show the centre Tx rates at two years from wait-listing, for patients who started RRT between 01/01/2012 and 31/12/2014 and who were on the waiting list by 31/12/2015, risk adjusted by age group, ethnicity, sex and PRD.

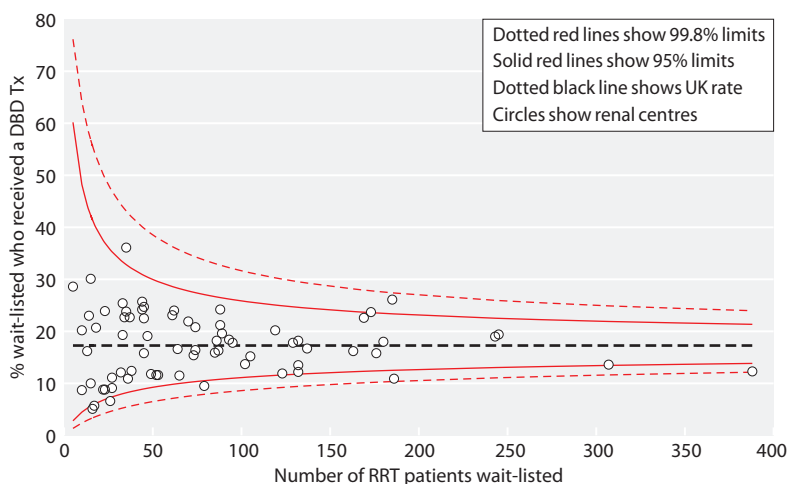


Figure 6.4 Percentage of adult RRT patients wait-listed by 31/12/2015 who received a Tx from a donor after brain death (DBD) within 2 years by centre (cohort incident to RRT 01/01/2012–31/12/2014)

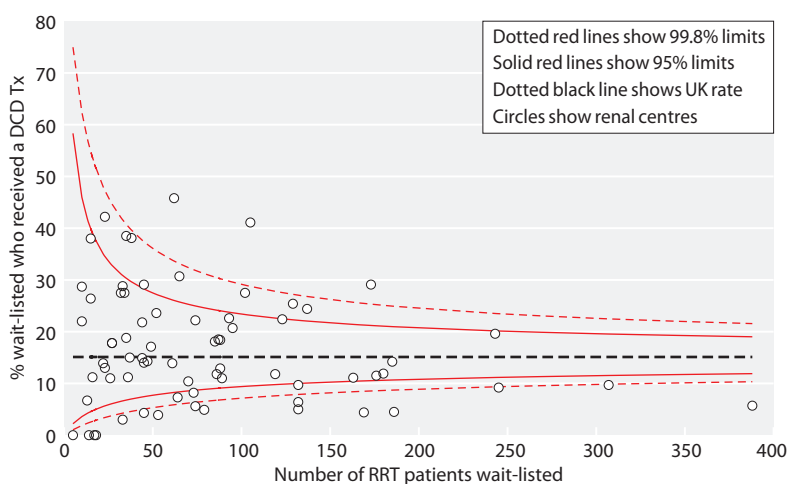


Figure 6.5 Percentage of adult RRT patients wait-listed by 31/12/2015 who received a Tx from a donor after circulatory death (DCD) within 2 years by centre (cohort incident to RRT 01/01/2012–31/12/2014)

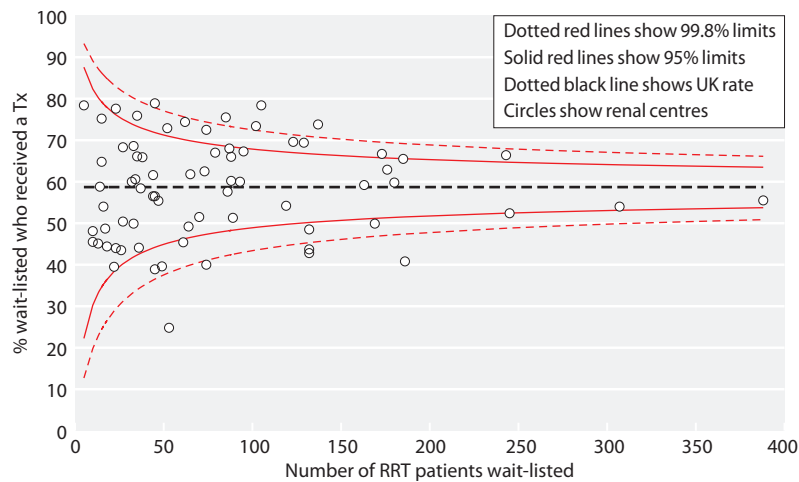


Figure 6.6 Percentage of adult RRT patients wait-listed by 31/12/2015 who received a Tx from any donor type (deceased or living) within 2 years by centre (cohort incident to RRT 01/01/2012–31/12/2014)

Access to kidney transplantation for adults by transplant versus non-transplant centre

Patients treated at Tx renal centres were compared to those treated at non-Tx renal centres.

Table 6.6 Odds of adult RRT patients being wait-listed within 2 years of RRT start and odds of wait-listed patients being transplanted within 2 years of wait-listing by Tx status of renal centre (cohort incident to RRT 01/01/2012–31/12/2014 and wait-listed by 31/12/2015), risk adjusted by age group, ethnicity, sex and primary renal disease, modelled with logistic regression

	Tx type	OR	95% CI
Odds of patients being wait-listed ≤ 2 yrs in non-Tx centre		0.68	0.62–0.74
Odds of wait-listed patients receiving a Tx ≤ 2 yrs in non-Tx centre	Any	0.88	0.79–0.99
	DBD	1.05	0.91–1.21
	DCD	1.38	1.19–1.60
	LKD	0.65	0.58–0.74

CI – confidence interval; DBD – donor after brain death; DCD – donor after circulatory death; LKD – living kidney donor; OR – odds ratio