Kidney Transplant Report

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National Renal Transplant Programme

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1. Introduction

This document summarises the outcomes of Kidney and Kidney Pancreas Transplantation in Ireland as it stands at the end of 2014.

Highlights of this report include;

- Number of transplants down in 2014 with 152 recorded compared to the last five year average of 163.

- Number of living donor transplants continues to rise to a high of 40 performed in 2014 representing a rate of 8.64 per million population.

- Waiting times for transplants overall was reduced in 2014 with a median time of 17 months. This is the total for deceased and living donor transplants. Due to the fact that living donors generally have shorter stay on the transplant pool and the numbers of these are rising each year, largely explains this fall in waiting times.

- Progressive decline in cold ischaemic time for deceased donor recipients from a mean of 20 hours in 2001 to 14 hours in 2014. Delayed graft function (defined as the need for dialysis post transplant) was also at a low of 13.4%.

- The progressive improvement in 1-year adult deceased donor graft survival from 86.8% in period 1991-1995 to 96.7% in 2011-2013. Medium term improvement in graft survival defined by 5-year adult deceased donor graft survival from 68.4% in 1991-1995 to 86.8% in 2006-2010.

- Improvements are also noted in patient survival despite the increasing age of transplant recipients. One-year patient survival has increased from 94.2% in the period 1991-1995 to 97.7% in the most recent period. Five-year graft survival has also improved with rates in 1991-1995 of 82.3% increasing to 91.4% for 2006-2010.

- Results compare favourably to European Renal Association/ European Dialysis and Transplantation Association (ERA/EDTA) countries. In nearly every category of patient studied, short and medium term patient and graft survival surpasses combined European countries outcomes.

- This report describes the consistent improvement in outcomes for kidney transplantation over the last two decades (Table 5.5), however for the full benefit of this to be realised there needs to a reduction in time on dialysis (Table 2.7) and time on waiting list (Table 2.8).

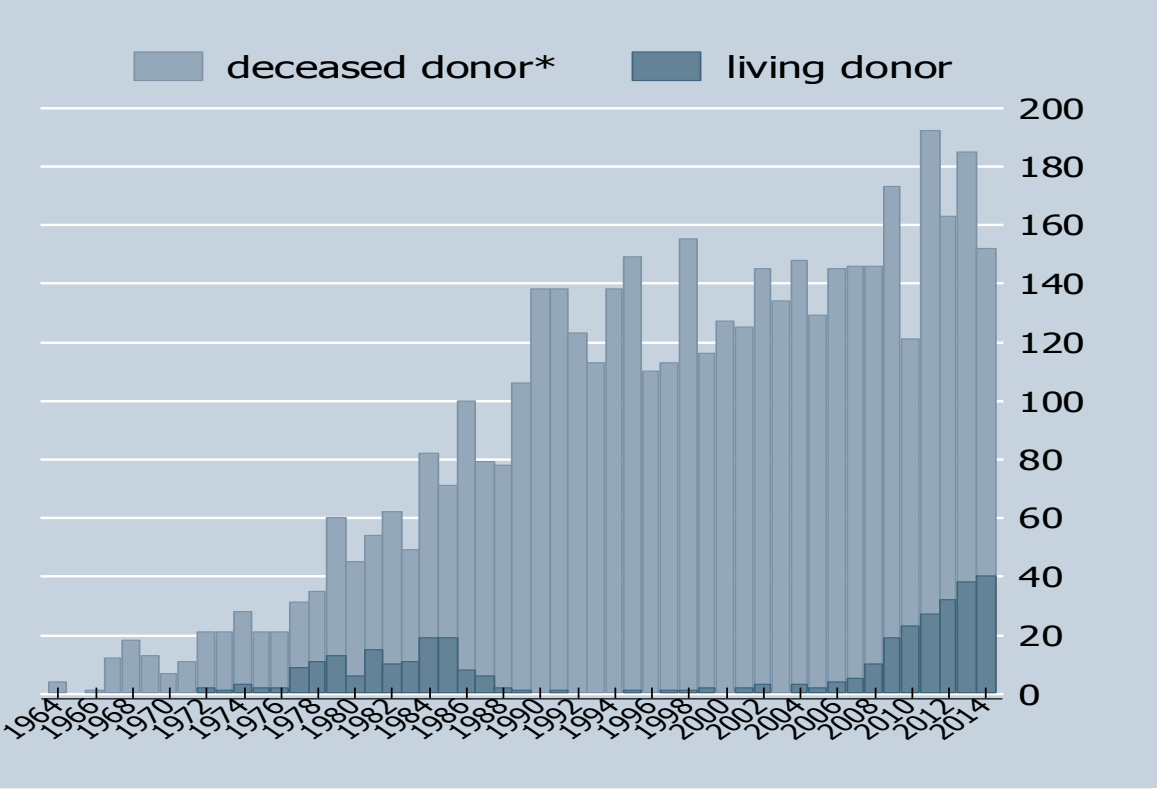
- At time of report, 69% of patients were in active follow up in centres other than Beaumont. The completeness of follow up data and production of this analysis is largely dependent on the excellent cooperation with Clinical Nurse Specialists in providing follow up data to the Renal Transplant Registry without their commitment this report would not be possible.

2.1 Summary of transplant activity 2010-2014

Table 2.1: Summary of transplant numbers 2010 – 2014

Category	*Year 2010*	*Year 2011*	*Year 2012*	*Year 2013*	*Year 2014*	*Average for 5 years (rounded)*
Total number of transplanted kidneys	122	192	163	185	152	163
Number of deceased donor kidney only	90	158	130	135	107	124
Number of Living donor kidneys	23	27	32	38	40	32
Number of Simultaneous Pancreas/Kidney (SPK)	8	7	1	12	5	7
Number of Combined Kidney/Liver or Heart	1	0	0	0	0	0

Figure 2.1: Number of deceased donor and living related transplants per annum 1964 – 2014



*Includes kidney only, SPK and kidney/liver or kidney/ heart combined

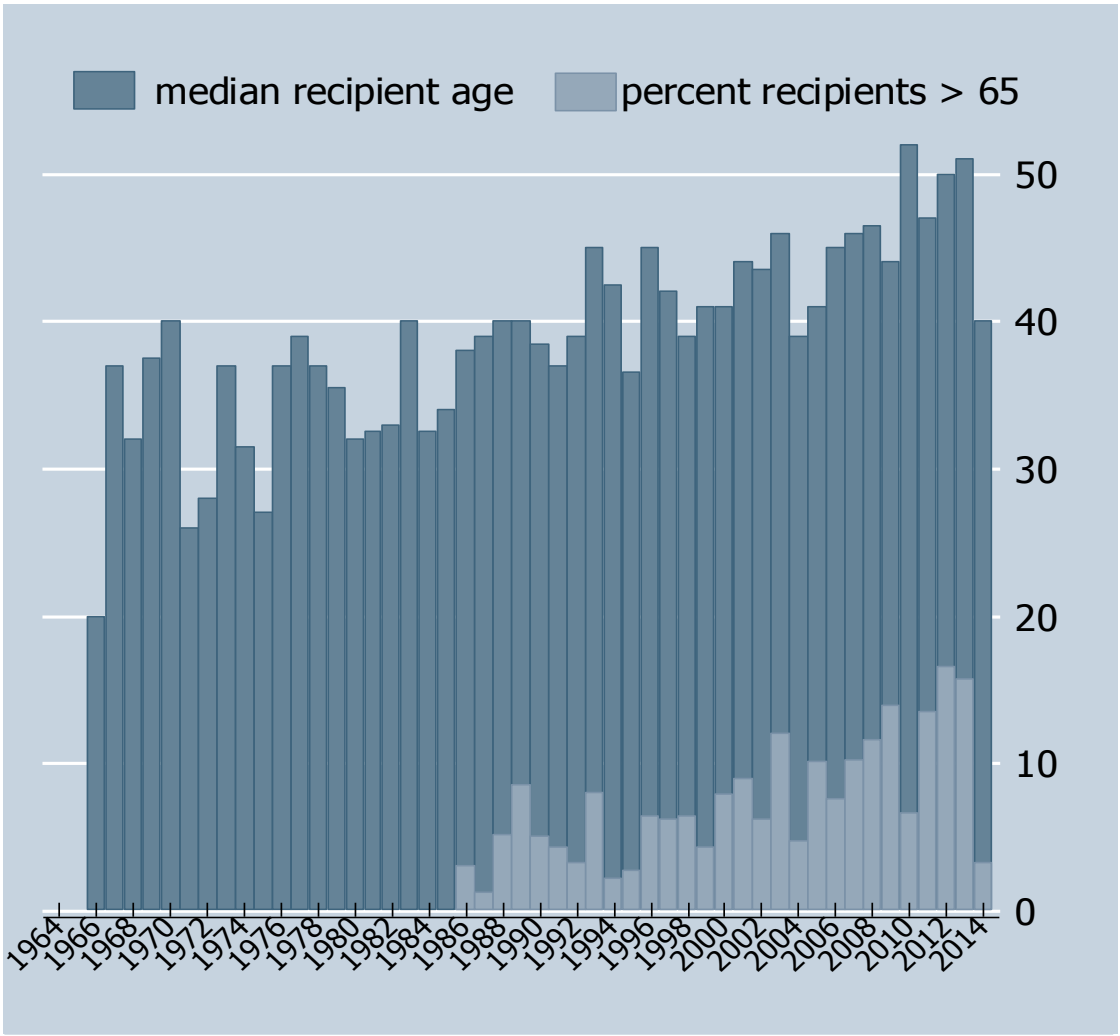
- Record number of living donor transplants in 2014
- Total number of transplants lower in 2014 than 5 year mean

2.2 Recipient age and sex

Table 2.2: Recipient age and sex at transplant years 2010-2014

Year	*Median age*	*Age range*	*Number (%) greater than 65 years at transplant*	*% Male/Female*
2010	52	6 – 73	8 (7)	66/34
2011	47	5 – 74	26 (14)	71/29
2012	50	4 – 75	27 (17)	66/34
2013	51	3 – 73	29 (16)	59/41
2014	40	2 – 72	5 (3)	61/39
overall	48	2 – 75	95 (12)	65/35

Figure 2.2: Median recipient age & % > 65 years at transplant for years 1964-2014



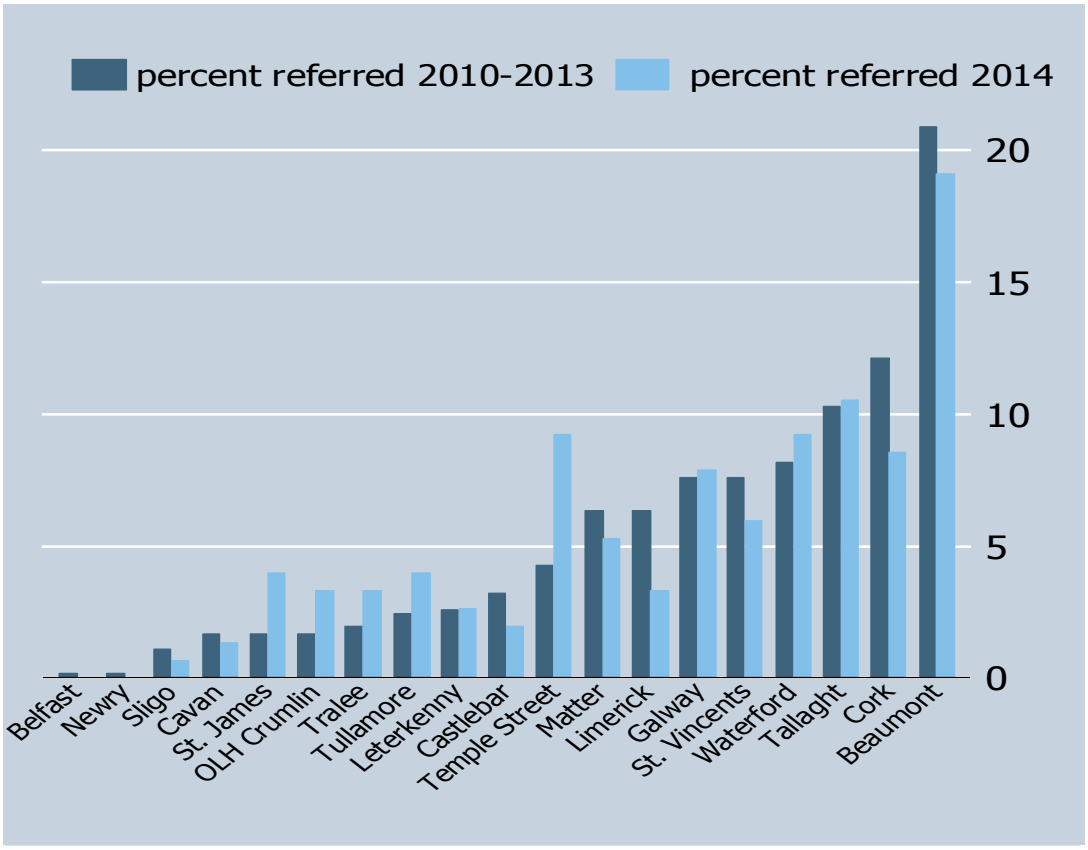
2.3 Referring centre of transplant recipients

Table 2.3: Referring centre of transplant recipients 2010 - 2014

Centre	*Number 2010 (%)*	*Number 2011 (%)*	*Number 2012 (%)*	*Number 2013 (%)*	*Number 2014 (%)*
BELFAST	4 (3.3)	0 (0)	0 (0)	0 (0)	0 (0)
BEAUMONT	26 (21.3)	35 (18.2)	33 (20.3)	43 (23.2)	29 (19.1)
CAVAN	1 (0.8)	2 (1.0)	4 (2.5)	4 (2.2)	2 (1.3)
CASTLEBAR	6 (4.9)	4 (2.1)	2 (1.2)	9 (4.9)	3 (2.0)
CORK	18 (14.7)	28 (14.6)	13 (8.0)	21 (11.3)	13 (8.6)
GALWAY	9 (7.4)	21 (10.9)	9 (5.5)	12 (6.5)	12 (7.9)
LETTERKENNY	2 (1.6)	5 (2.6)	3 (1.8)	7 (3.8)	4 (2.6)
LIMERICK	7 (5.7)	11 (5.7)	12 (7.4)	12 (6.5)	5 (3.3)
MATER	7 (5.7)	9 (4.7)	12 (7.4)	14 (7.6)	8 (5.3)
NEWRY	0 (0)	1 (0.5)	0 (0)	0 (0)	0 (0)
OLH CRUMLIN	2 (1.6)	1 (0.5)	7 (4.3)	1 (0.5)	5 (3.3)
ST. JAMES	3 (2.5)	2 (1.0)	4 (2.5)	1 (0.5)	6 (4.0)
SLIGO	3 (2.5)	0 (0)	2 (1.2)	2 (1.1)	1 (0.7)
ST. VINCENTS	6 (4.9)	16 (8.3)	15 (9.2)	13 (7.0)	9 (5.9)
TALLAGHT	12 (9.8)	23 (12.0)	14 (8.6)	19 (10.3)	16 (10.5)
TRALEE	3 (2.5)	6 (3.1)	2 (1.2)	2 (1.1)	5 (3.3)
TEMPLE STREET	4 (3.3)	7 (3.6)	9 (5.5)	8 (4.3)	14 (9.2)
TULLAMORE	3 (2.5)	3 (1.6)	5 (3.1)	4 (2.2)	6 (4.0)
WATERFORD	6 (4.9)	18 (9.4)	17 (10.4)	13 (7.0)	14 (9.2)

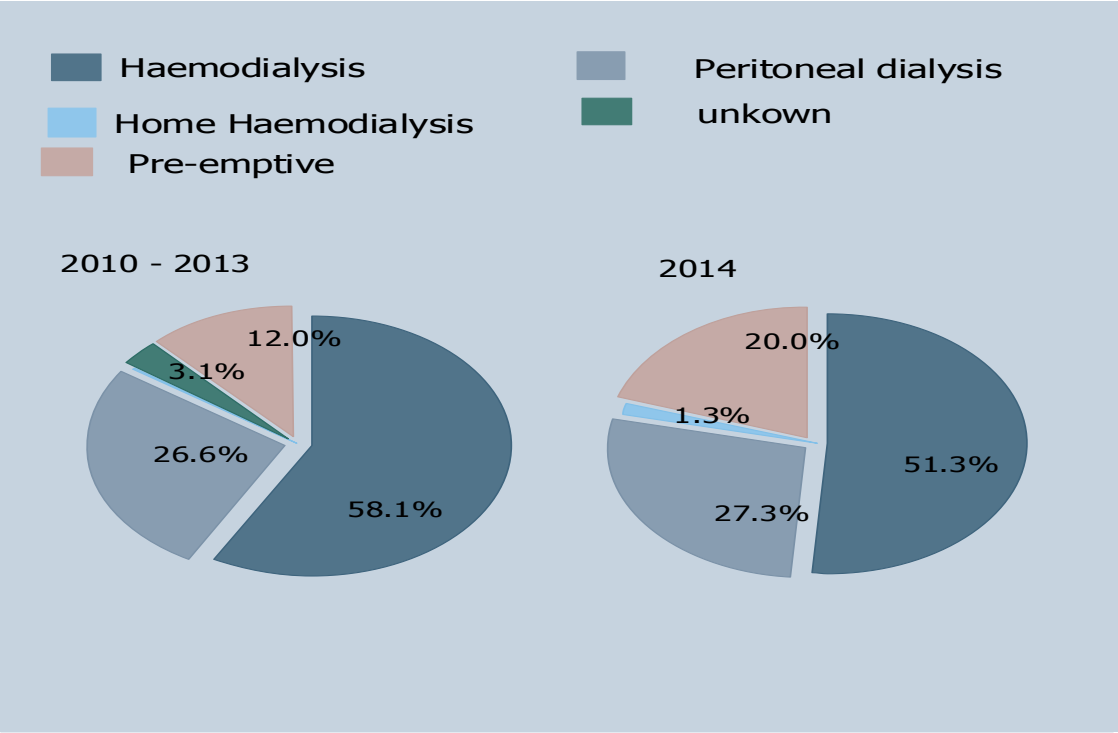
*compared to previous year

Figure 2.3: Percent of recipients transplanted from referring centres 2010-2014



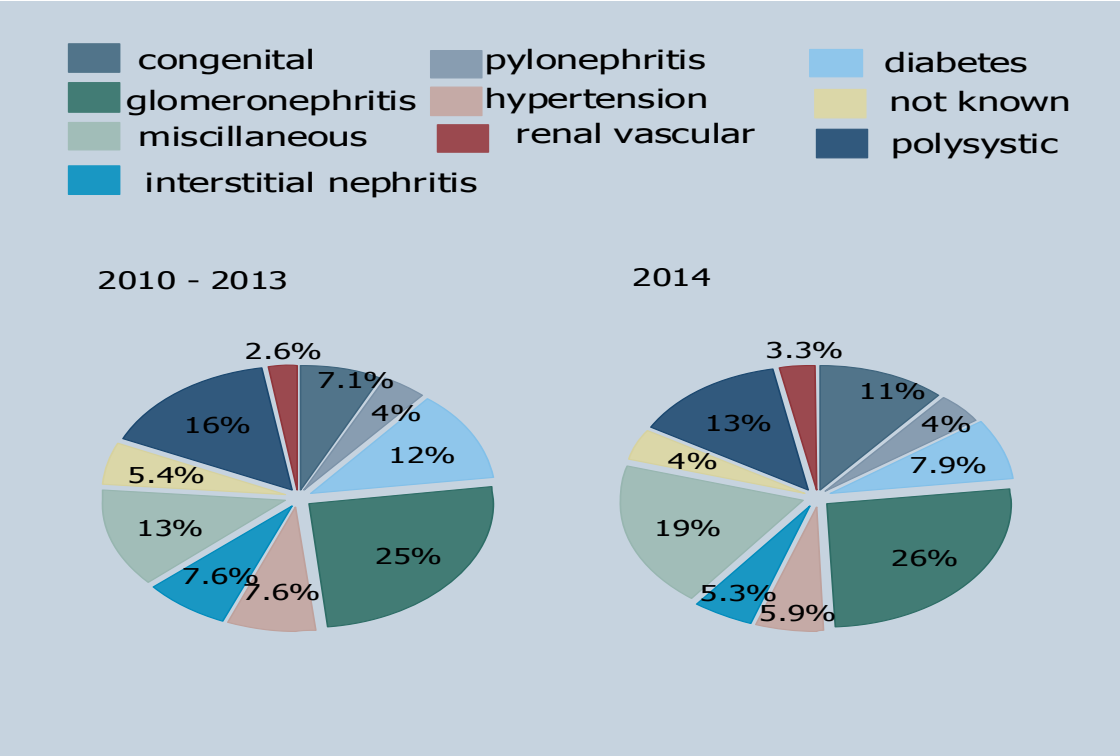
2.4 Mode of renal replacement therapy prior to transplantation

Figure 2.4: Mode renal replacement prior to transplantation 2010 – 2014



2.5 Cause of end stage renal disease

Figure 2.5: Primary cause of end stage renal disease for 2010-2014 transplant recipients

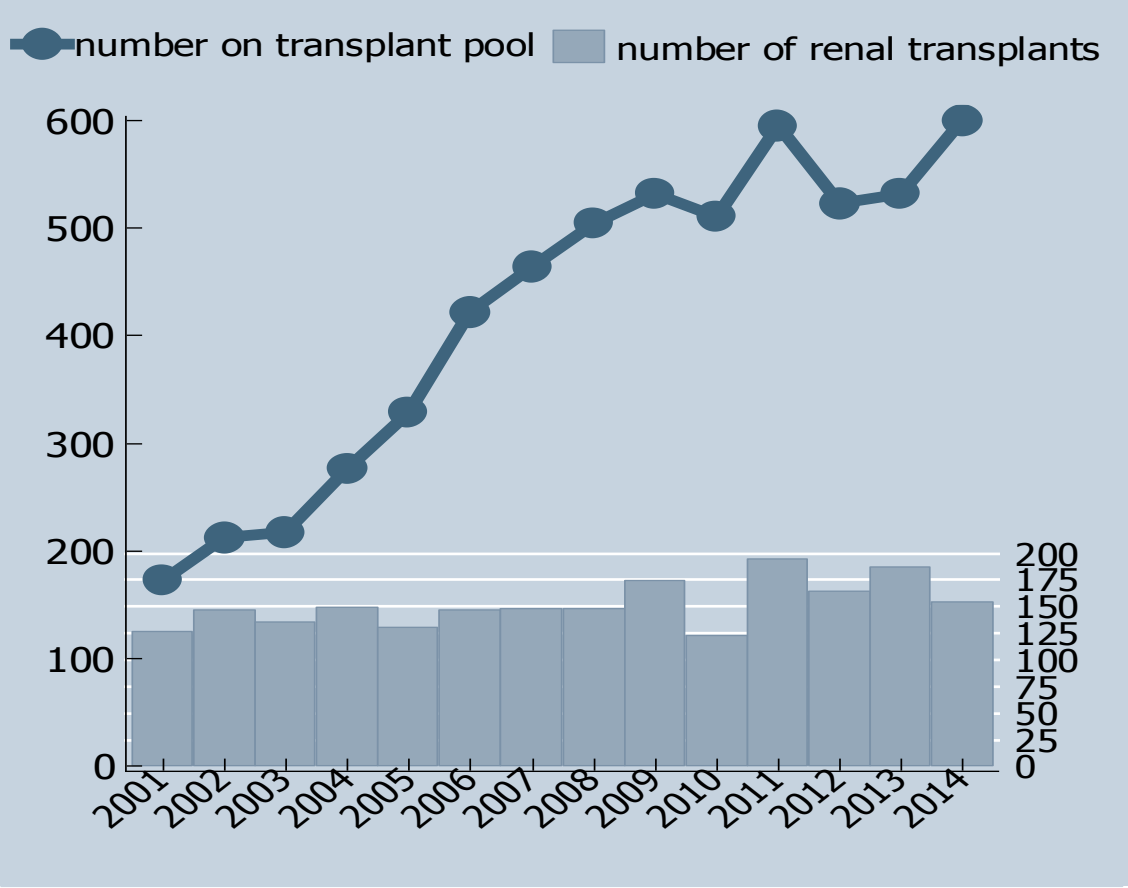


2.6 Number of potential recipients on transplant waiting list at the start of year and total number of kidney transplants

Table 2.6: Number of potential recipients on transplant waiting list 2001-2014 and total number of kidney transplants

Year	*Number on transplant waiting list*	*Total number of kidney transplants*
2001	174	125
2002	214	145
2003	220	134
2004	279	148
2005	332	129
2006	426	145
2007	468	146
2008	509	146
2009	537	173
2010	515	121
2011	601	192
2012	528	163
2013	538	185
2014	606	152

Figure 2.6: Number of potential recipients on transplant waiting list and total kidneys transplanted 2001-2014



- The numbers on the transplant waiting list is provided by the dept. of Histocompatibility and Immunogenetics (H & I) and refer to the number waiting at the start of that year.

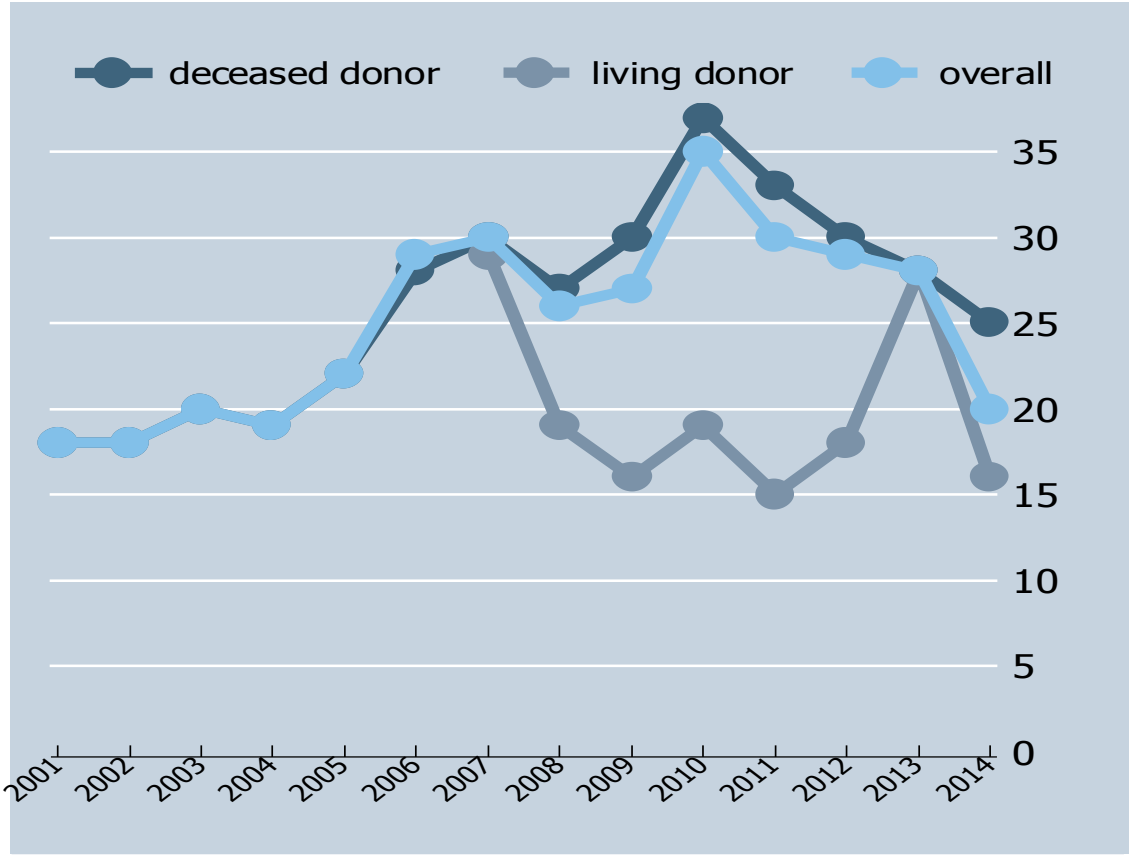
2.7 Time on dialysis prior to transplant

Table 2.7: Time on dialysis in months 2001-2014

Year	*Median time on dialysis deceased donor[IQR]**	*Median time on dialysis living donor[IQR]*	*Median time on dialysis overall [IQR]*
2001	18 [10 – 31]	1 [0 – 2]	18 [9 – 30]
2002	18 [8 – 32]	19 [0 – 41]	18 [8 – 32]
2003	20 [11 – 36]		20 [11 – 36]
2004	19 [11 – 32]	16 [0 – 22]	19 [11 – 32]
2005	22 [12 – 37]	30 [22 – 37]	22 [13 – 37]
2006	28 [15 – 42]	33 [29 – 67]	29 [16 – 42]
2007	30 [18 – 39]	29 [23 – 51]	30 [18 – 40]
2008	27 [13 – 40]	19 [8 – 31]	26 [13 – 40]
2009	30 [13 – 44]	16 [10 – 26]	27 [12 – 43]
2010	37 [21 – 51]	19 [14 – 40]	35 [19 – 50]
2011	33 [19 – 51]	15 [9 – 23]	30 [15 – 48]
2012	30 [11 – 48]	18 [4 – 39]	29 [10 – 47]
2013	28 [11 – 50]	28 [16 – 44]	28 [11 – 49]
2014	25 [8 – 49]	16 [1 – 26]	20 [7 – 41]

*Interquartile range (IQR) refers to data in the 1st to 3rd quartile or the middle 50% of data

Figure 2.7: Median time on dialysis prior to transplant 2001-2014



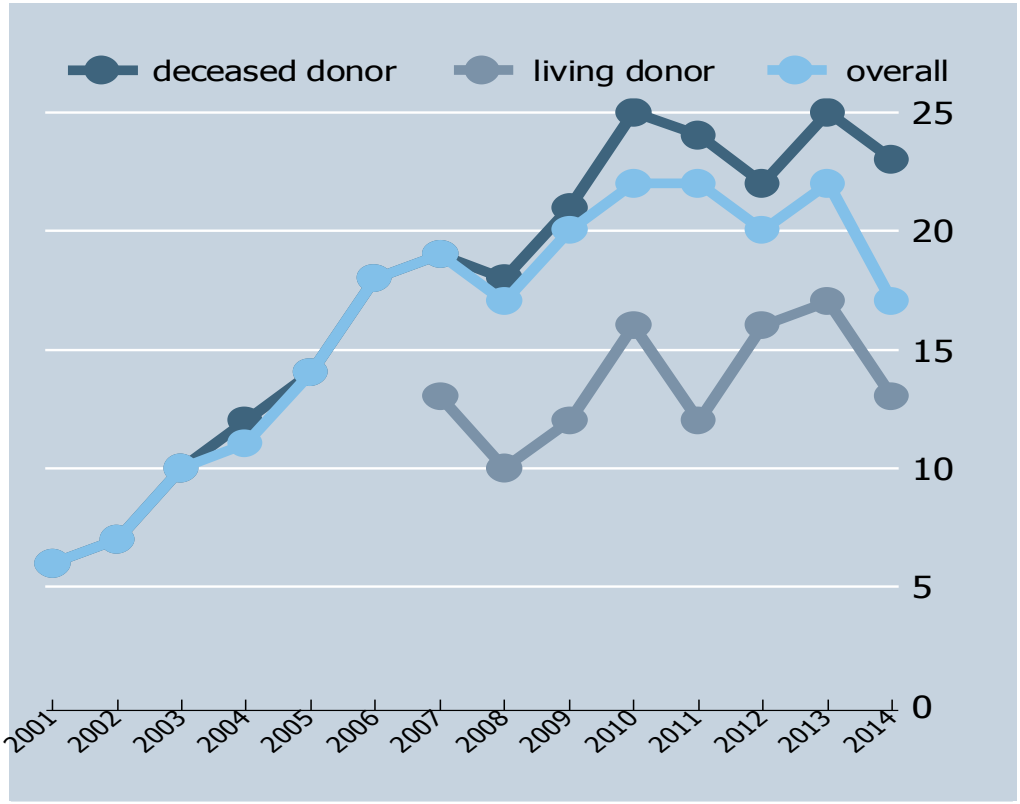
2.8 Time on transplant waiting list

Table 2.8: Time on transplant waiting list 2001-2014

Year	*Median time on transplant waiting list deceased donor[IQR]*	*Median time on transplant waiting list living donor [IQR]*	*Median time on transplant waiting list overall [IQR]*
2001	6 [3 – 13]	5 [5 – 5]	6 [3 – 12]
2002	7 [2 – 16]	27 [14 – 40]	7 [2 – 16]
2003	10 [5 – 18]		10 [5 – 18]
2004	12 [7 – 17]	11 [1– 17]	11 [7 – 17]
2005	14 [9 – 21]	9 [9 – 10]	14 [9 – 21]
2006	18 [9 – 25]	14 [8 – 29]	18 [9 – 25]
2007	19 [9 – 28]	13 [12– 25]	19 [10 – 28]
2008	18 [8 – 30]	10 [9 – 14]	17 [8 – 30]
2009	21 [9 – 30]	12 [8 – 21]	20 [9 – 28]
2010	25 [12 – 40]	16 [10 – 22]	22 [11 – 38]
2011	24 [11 – 40]	12 [10 – 21]	22 [10 – 36]
2012	22 [11 – 41]	16 [12 – 21]	20 [12 – 38]
2013	25 [12 – 43]	17 [12 – 26]	22 [12 – 41]
2014	23 [10 – 33]	13 [8 – 18]	17 [9 – 31]

*Interquartile range (IQR) refers to data in the 1st to 3rd quartile or the middle 50% of data

Figure 2.8: Median time on transplant waiting list prior to transplant 2001-2014

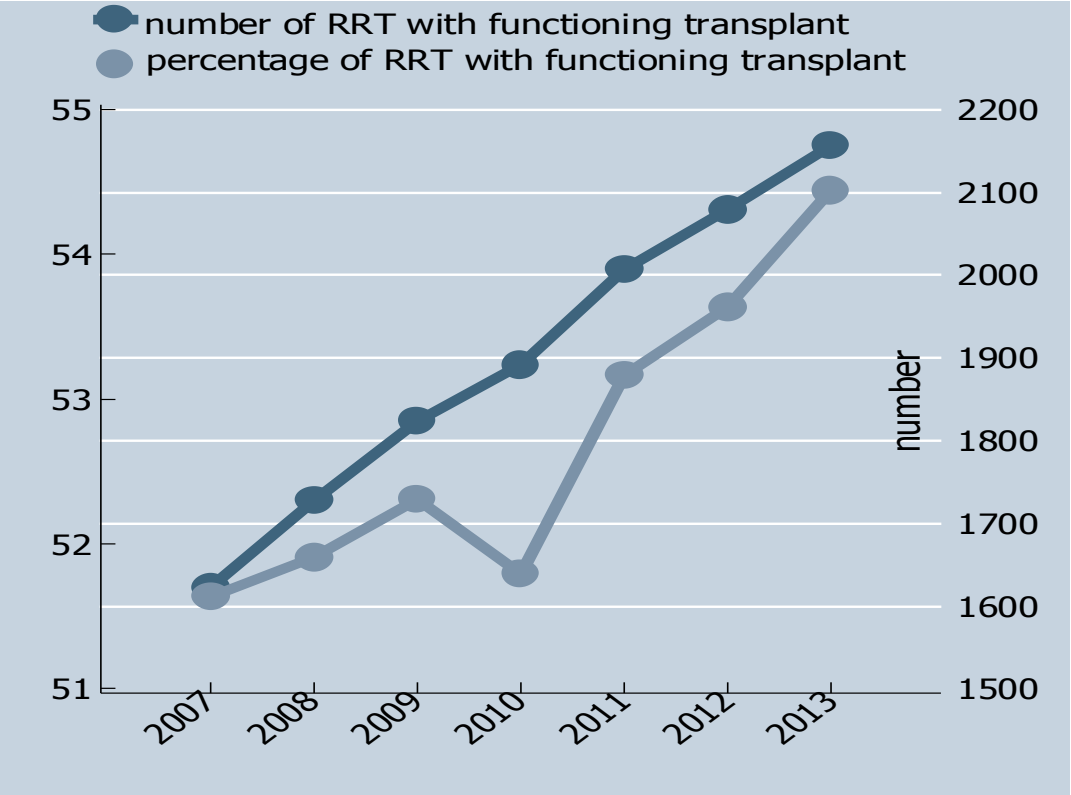


2.9 Numbers on renal replacement therapy

Table 2.9: Number of prevalent patients on renal replacement therapy (RRT) 2007 – 2013

Year	*Number on regular HD*	*Number on home HD*	*Number on PD*	*Total number on dialysis*	*Number of functioning transplants*	*Percentage of RRT patients with functioning renal transplant*
2007	1329		191	1520	1623	51.6
2008	1401		200	1601	1728	51.9
2009	1473	2	188	1663	1824	52.3
2010	1554	11	195	1760	1891	51.8
2011	1557	20	191	1768	2007	53.2
2012	1560	28	209	1797	2079	53.6
2013	1556	44	204	1804	2156	54.5

Figure 2.9: Number on dialysis and with a functioning transplant 2007 – 2013



- Percentage of patients on renal replacement therapy with a functioning transplant rose to over 54% in 2013
- The results above are end of year numbers and have been obtained from the HSE renal office website and refers to prevalent patients in the various renal replacement modalities at the end of each year

3. Clinical Variables pre and post transplant

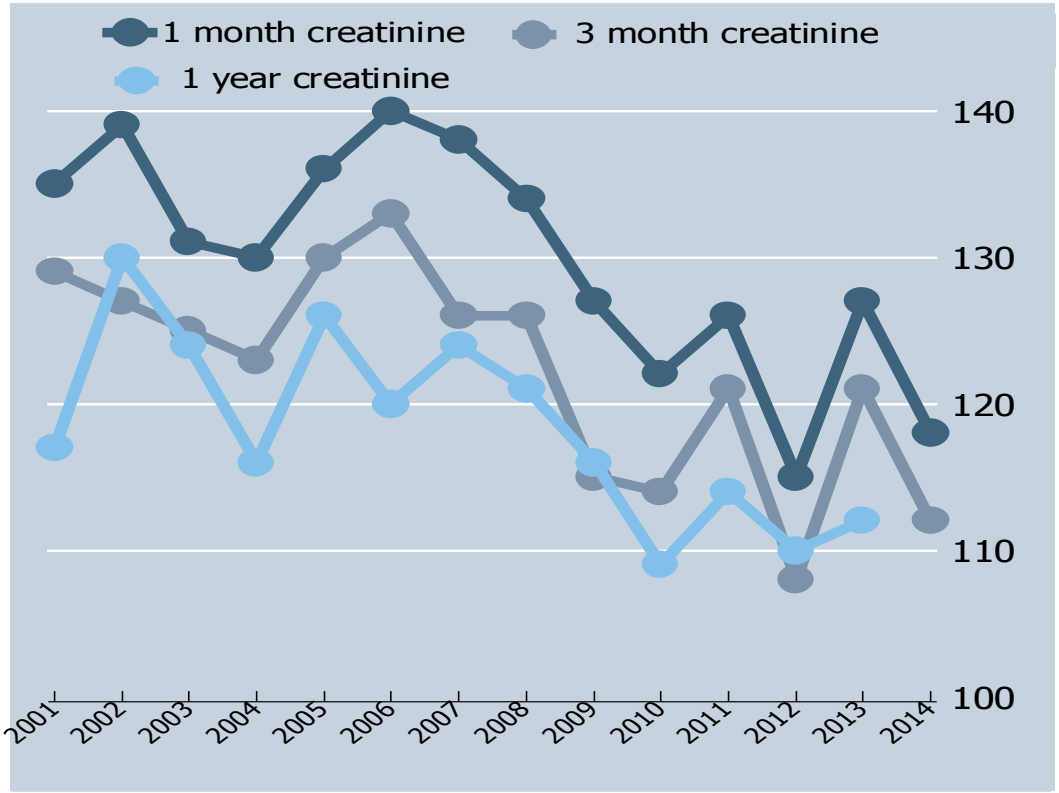
3.1 Renal function at 1 month, 3 months and 1 year post transplant

Table 3.1: Serum creatinine post transplant 2001 – 2014

Year	*Median creatinine 1 month post tx. [IQR]*	*Median creatinine 3 months post tx. [IQR]*	*Median creatinine 1 year post tx. [IQR]*
2001	135 [110 - 179]	129 [110 - 151]	117 [104 - 139]
2002	139 [118 - 190]	127 [110 - 154]	130 [109 - 155]
2003	131 [113 - 150]	125 [106 - 148]	124 [103 - 142]
2004	130 [110 - 147]	123 [109 - 145]	116 [100 - 138]
2005	136 [114 - 170]	130 [110 - 163]	126 [103 - 147]
2006	140 [119 - 162]	133 [116 - 156]	120 [104 - 138]
2007	138 [118 - 165]	126 [109 - 145]	124 [100 - 141]
2008	134 [109 - 155]	126 [101 - 150]	121 [98 - 141]
2009	127 [102 - 159]	115 [96 - 145]	116 [95 - 137]
2010	122 [100 - 154]	114 [93 - 134]	109 [87 - 136]
2011	126 [101 - 155]	121 [102 - 144]	114 [94 - 137]
2012	115 [93- 145]	108 [92 - 134]	110 [91 - 131]
2013	127 [98- 161]	121 [92- 155]	112 [90- 135]
2014	118 [94- 150]	112 [88- 146]	*

*Results of 1-year creatinine post transplant incomplete for 2014 transplants

Figure 3.1: Serum creatinine post transplant 2001 – 2014 (µmol/L)

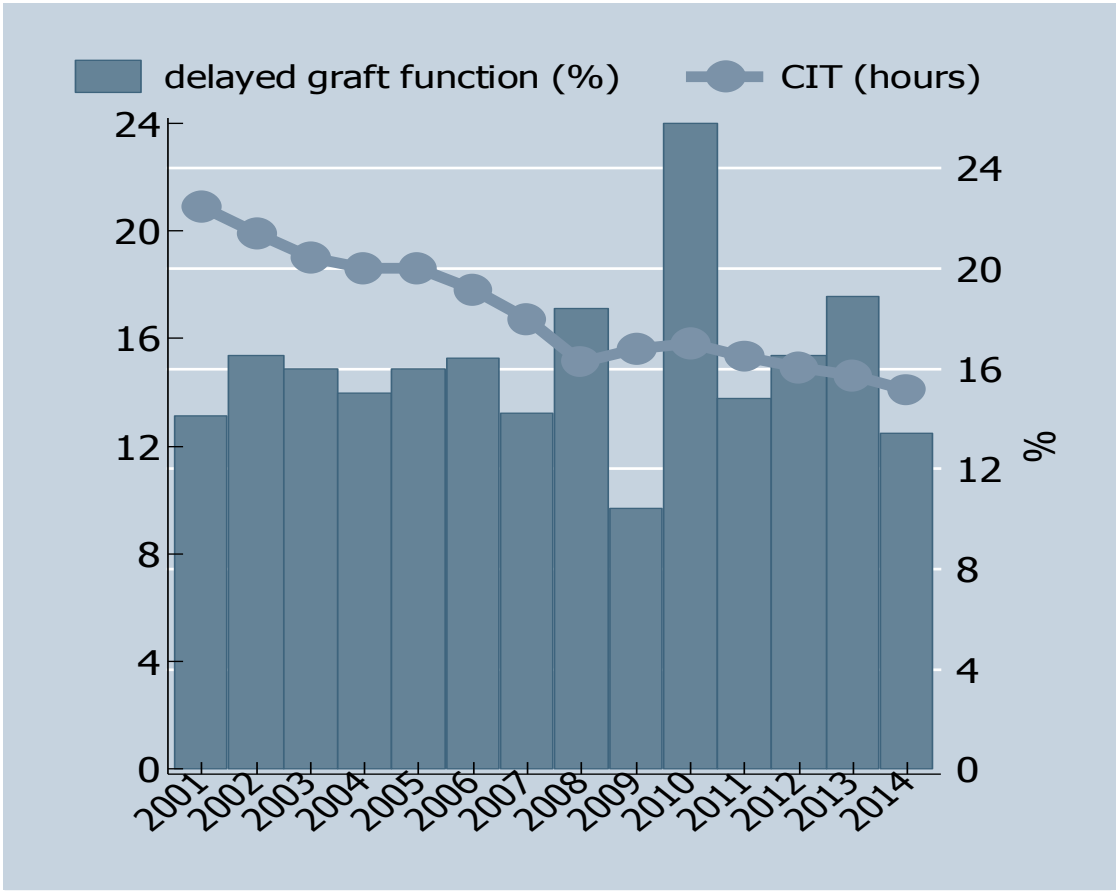


3.2 Delayed graft function (DGF) post transplant (defined as the need for dialysis) and cold ischaemic time (CIT) for deceased donor kidneys

Table 3.2: DGF and CIT post transplant 2001 – 2014

Year	*Number DGF (%)*	*Mean CIT in hours (SD)*
2001	17 (14.1)	20.9 (5.1)
2002	23 (16.5)	19.9 (5.3)
2003	21 (16.0)	19.0 (5.2)
2004	21 (15.0)	18.6 (4.3)
2005	19 (16.0)	18.6 (4.1)
2006	22 (16.4)	17.8 (4.5)
2007	19 (14.2)	16.7 (3.8)
2008	25 (18.4)	15.1 (3.7)
2009	16 (10.4)	15.6 (3.8)
2010	24 (25.8)	15.8 (3.8)
2011	23 (14.8)	15.3 (3.9)
2012	20 (16.5)	14.9 (3.8)
2013	27 (18.9)	14.6 (4.0)
2014	11 (13.4)	14.1 (4.1)

Figure 3.2: DGF post transplant and CIT 2001 – 2014

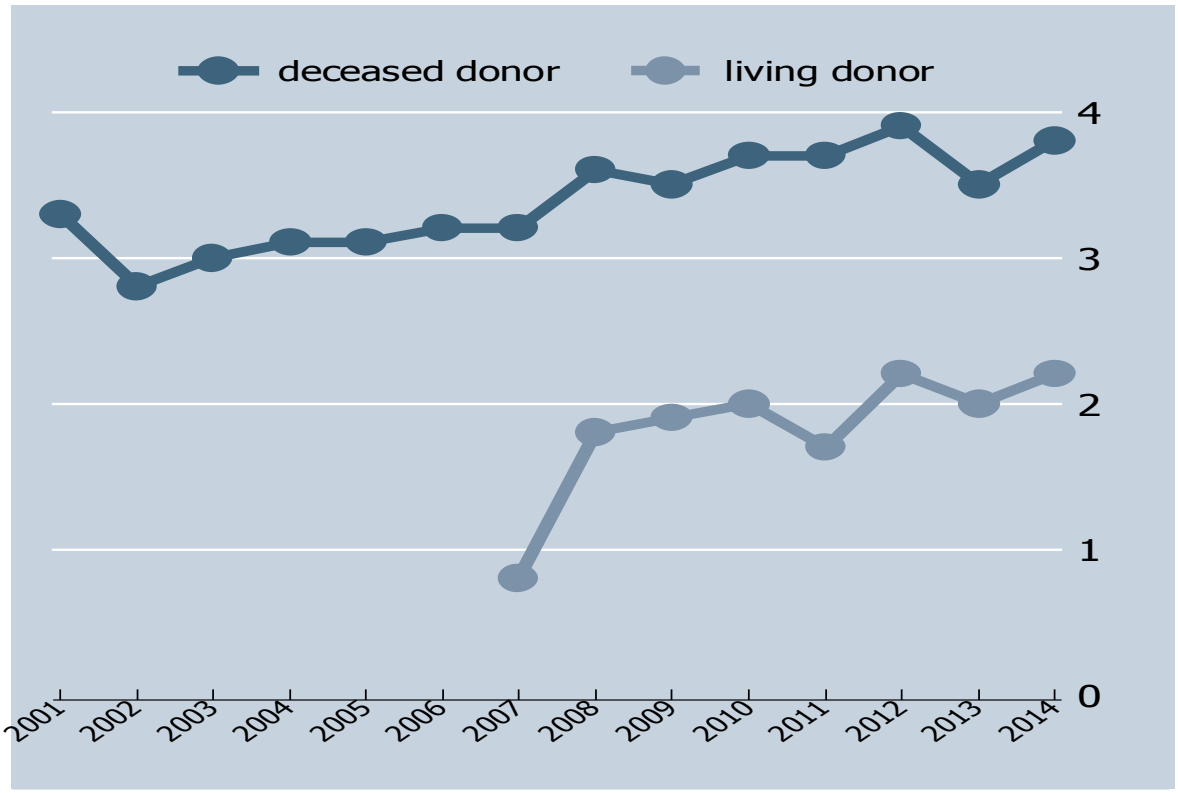


3.3 HLA mismatches

Table 3.3: Mean HLA mismatches 2001 – 2014

year	*Mean HLA deceased donors (std. dev.)*	*Mean HLA living donors (std. dev.)*	*Number 000 miss matches (% of total)*	*Number 222 miss matches (% of total)*
2001	3.3 (1.3)		2 (1.6)	5 (4.0)
2002	2.8 (1.3)		10 (6.9)	1 (0.7)
2003	3.0 (1.4)		8 (6.0)	5 (3.7)
2004	3.1 (1.4)		9 (6.1)	5 (3.4)
2005	3.1 (1.4)		5 (3.9)	6 (4.6)
2006	3.2 (1.5)		12 (8.3)	7 (4.8)
2007	3.2 (1.6)	0.8 (1.3)	12 (8.2)	6 (4.1)
2008	3.6 (1.4)	1.8 (1.9)	9 (6.2)	5 (3.4)
2009	3.5 (1.4)	1.9 (1.7)	11 (6.4)	11 (6.4)
2010	3.7 (1.2)	2.0 (1.5)	4 (3.4)	3 (2.5)
2011	3.7 (1.3)	1.7 (1.3)	9 (4.7)	15 (7.9)
2012	3.9 (1.2)	2.2 (1.9)	8 (5.0)	12 (7.5)
2013	3.5 (1.4)	2.0 (1.5)	10 (5.4)	11 (6.0)
2014	3.8 (1.3)	2.2 (1.)	4 (2.6)	8 (5.3)

Figure 3.3: Mean HLA mismatches 2001 – 2014

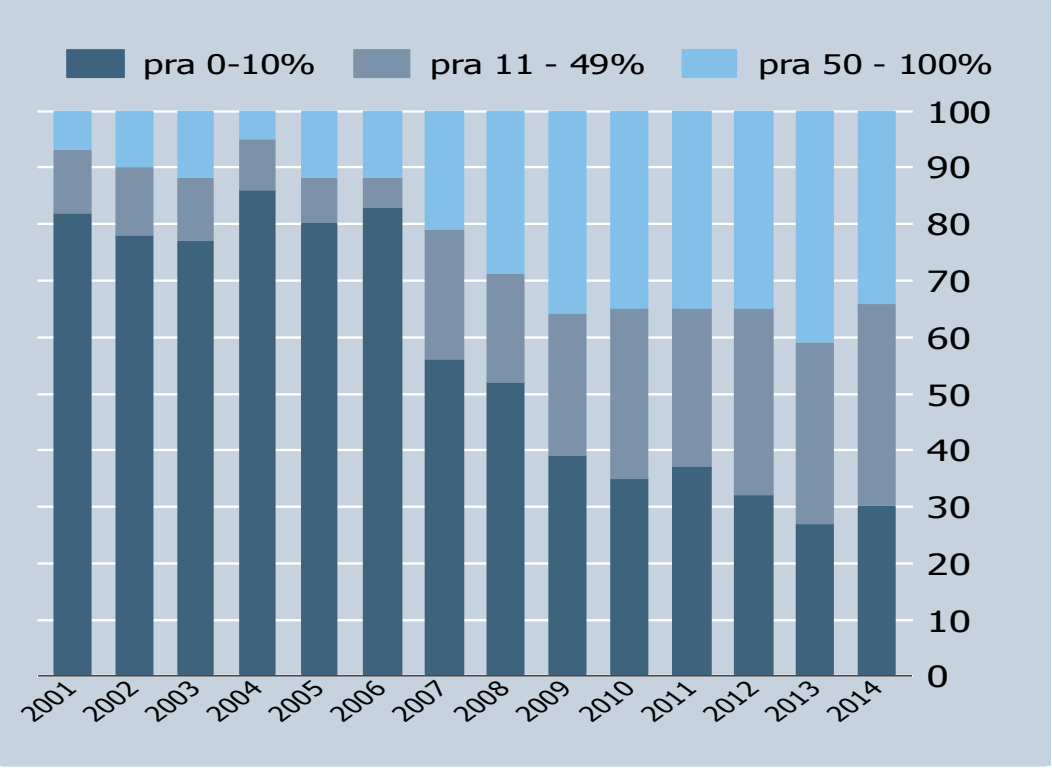


3.4 Panel reactive antibodies of transplant recipients

Table 3.4: Panel reactive antibodies (PRA) 2001 – 2014

year	*Percent PRA 0-10%*	*Percent PRA 11-49%*	*Percent PRA 50-100%*
2001	82	11	7
2002	78	12	10
2003	77	11	12
2004	86	9	5
2005	80	8	12
2006	83	5	12
2007	56	23	21
2008	52	19	29
2009	39	25	36
2010	35	30	35
2011	37	28	35
2012	32	33	35
2013	27	32	41
2014	30	36	34

Figure 3.4: Percent PRA in low/ medium and high categories 2001- 2014



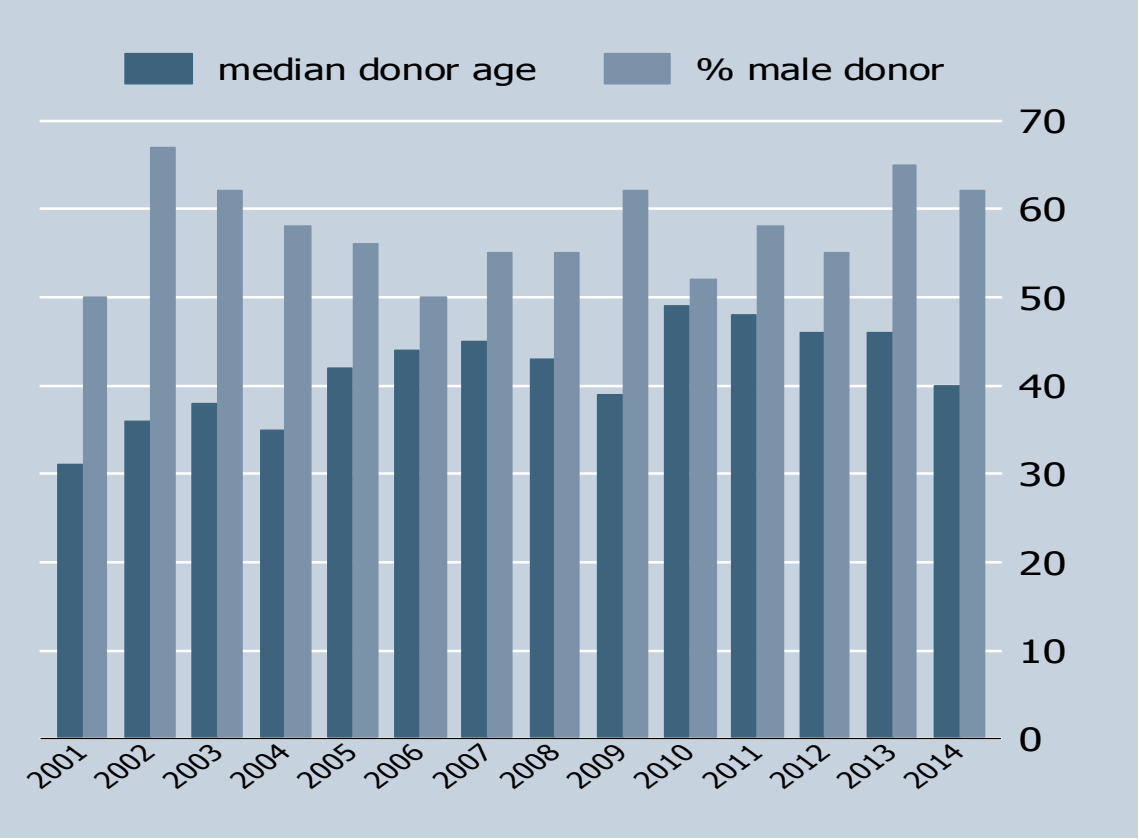
- Calculated or generated PRA (PGen) replaced PRA in 2007. PGen is a more accurate assessment of the difficulty in finding an antibody compatible donor for a given patient. It is based on the cumulative effect of antibodies detected in a patient and the percentage of organ donors expressing the matching antigens in our population. PRA was inaccurately low in how it assessed difficulty in transplanting a patient - hence the change and the apparent increase in the number of highly sensitized patients transplanted.

3.5 Donor age and sex

Table 3.5: Donor age & donor sex 2001 – 2014

Year	*Median donor age [Inter-quartile range]*	*Number of male donors (%)*
2001	31 [23 - 47]	62 (50)
2002	36 [21 - 46]	96 (67)
2003	38 [25 - 47]	82 (62)
2004	35 [24 - 48]	85 (58)
2005	42 [25 - 51]	72 (56)
2006	44 [26 - 53]	73 (50)
2007	45 [27 - 53]	80 (55)
2008	43 [28 - 54]	81 (55)
2009	39 [23 - 53]	107 (62)
2010	49 [34 - 54]	63 (52)
2011	48 [38 - 55]	112 (58)
2012	46 [35 - 54]	89 (55)
2013	46 [36 - 56]	120 (65)
2014	40 [28 - 51]	67 (62)

Figure 3.5: Donor age & percent male donor 2001 – 2014

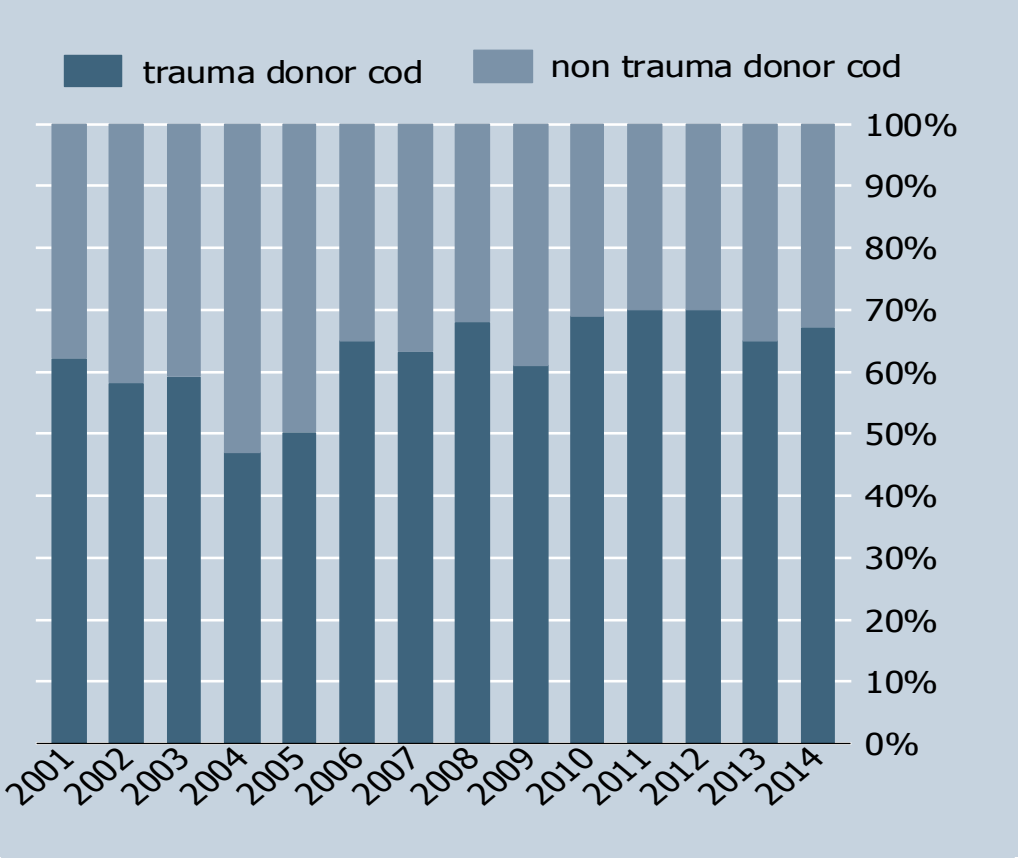


3.6 Donor cause of death

Table 3.6: Donor cause of death 2001 – 2014

Year	*Number trauma (%)*	*Number non trauma (%)*
2001	46 (38)	76 (62)
2002	60 (42)	82 (58)
2003	55 (41)	79 (59)
2004	76 (53)	68 (47)
2005	63 (50)	64 (50)
2006	49 (35)	92 (65)
2007	52 (37)	89 (63)
2008	43 (32)	93 (68)
2009	61 (39)	93 (61)
2010	30 (31)	69 (69)
2011	46 (30)	109 (70)
2012	35 (30)	80 (70)
2013	47 (35)	88 (65)
2014	27 (33)	55 (67)

Figure 3.6: Donor cause of death due to non trauma 2001 – 2014



3.7 Biopsy proven acute rejection

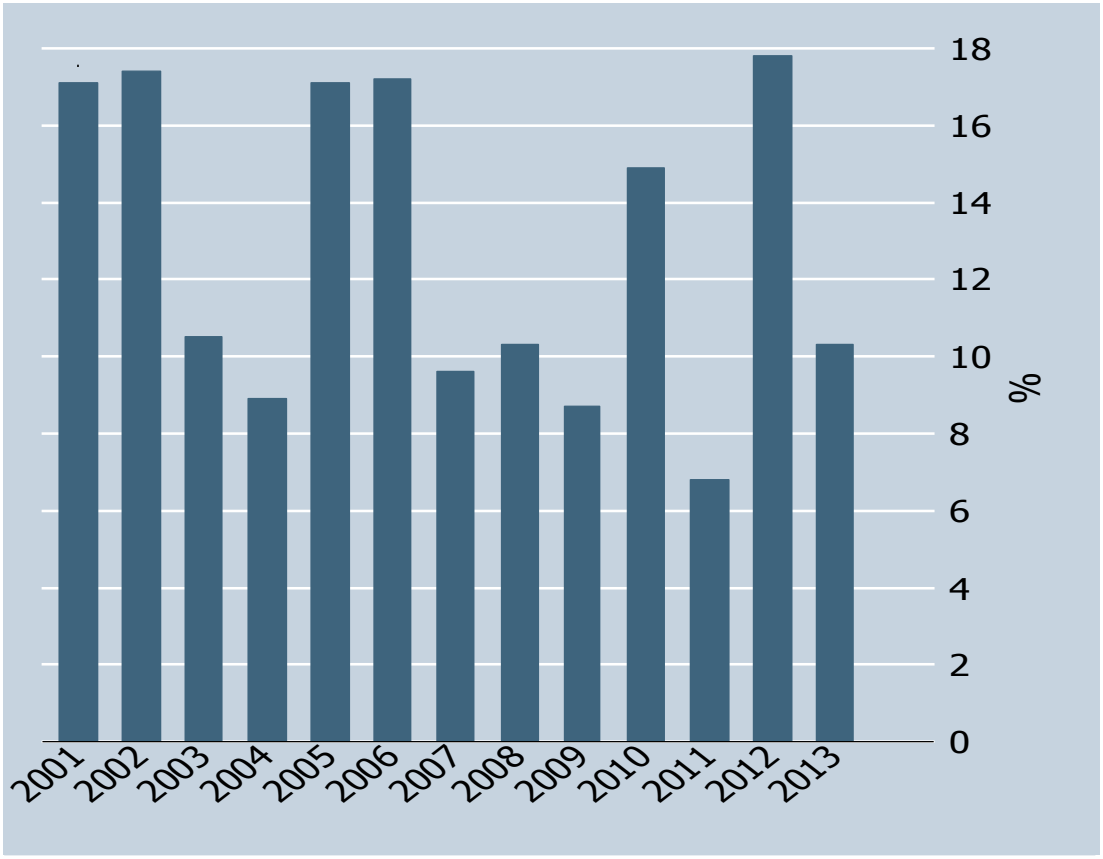
Acute rejection is defined as either a biopsy proven Banff category Type 1 or Type 2 acute cellular rejection or vascular rejection within the first year of transplantation.

Table 3.7: Acute rejection rate by year transplanted 2001 – 2013*

Year	*Number transplanted*	*Number of acute rejection patients*	*% acute rejection*
2001	123	21	17.1
2002	144	25	17.4
2003	133	14	10.5
2004	147	13	8.9
2005	129	22	17.1
2006	145	25	17.2
2007	146	14	9.6
2008	146	15	10.3
2009	172	15	8.7
2010	121	18	14.9
2011	192	13	6.8
2012	163	29	17.8
2013	185	19	10.3
Total	1,946	253	13.0

*results for full year of 2014 not available

Figure 3.7: Acute rejection rate by year transplanted 2001 – 2013

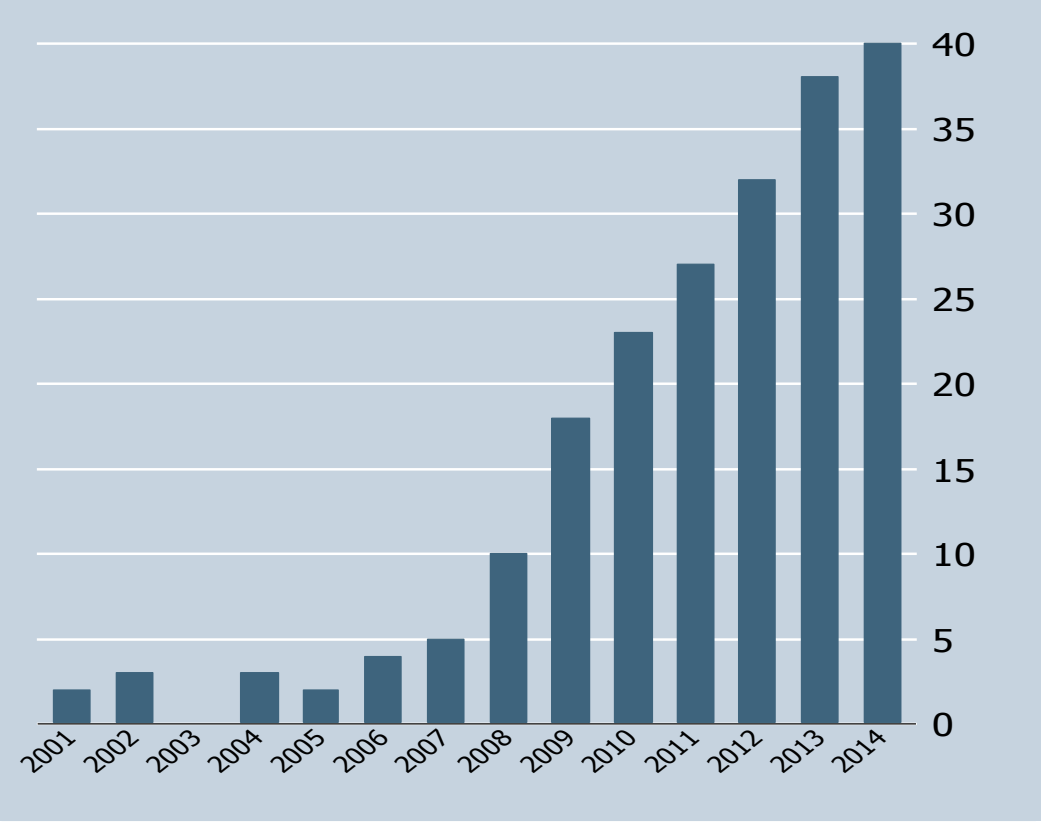


4. Living donor transplants

Table 4.1: Living donor (LD) transplants 2001 – 2014

Year transplanted	*Frequency*	*Percent of total transplants*	*Mean age of LD recipient (Std. Dev.)*
2001	2	1.6	11.0 (7.8)
2002	3	2.1	43.5 (14.8)
2003	0	0.0	-
2004	3	2.0	20.8 (15.1)
2005	2	1.6	2.7 (0.6)
2006	4	2.8	20.8 (17.1)
2007	5	3.4	34.1 (22.1)
2008	10	6.8	32.6 (12.7)
2009	18	11.0	38.9 (16.6)
2010	23	18.9	39.6 (15.7)
2011	27	14.1	37.5 (16.0)
2012	32	19.6	39.6 (20.0)
2013	38	20.5	40.7 (17.7)
2014	40	26.3	35.2 (18.0)

Figure 4.1: Number of living donor transplants 2001 – 2014



- A record high number of living donor transplants performed at our centre in 2014
- Up to the year 2005 most living donors were paediatric recipients. Average age for recipients in recent years show deceased donor and living donor recipients have a more similar demographic profile

Comparison of living donor and deceased donor kidney outcomes 2007 – 2013

4.2 Graft survival

Table 4.2: Adult and paediatric 1,2 & 3 year graft survival for deceased versus living donors 2007 – 2013 (first grafts)

	Adult transplants		*Paediatric transplants*	
Follow up time (years)	*Deceased donor graft survival % [95% C.I]*	*Living donor graft survival % [95% C.I]*	*Deceased donor graft survival % [95% C.I]*	*Living donor graft survival % [95% C.I]*
1	96.1 [94.5–97.3]	96.8 [90.4–99.0]	97.8 [85.3–99.7]	94.1 [65.0–99.1]
2	94.3 [92.4–95.7]	95.5 [88.4–98.3]	95.3 [82.3–98.8]	94.1 [65.0–99.1]
3	93.1 [91.0–94.8]	92.0 [82.5–96.5]	92.2 [77.5–97.4]	94.1 [65.0–99.1]

Figure 4.2.1: Kaplan-Meier graft survival for adult deceased donor versus living donor transplants 2007 – 2013

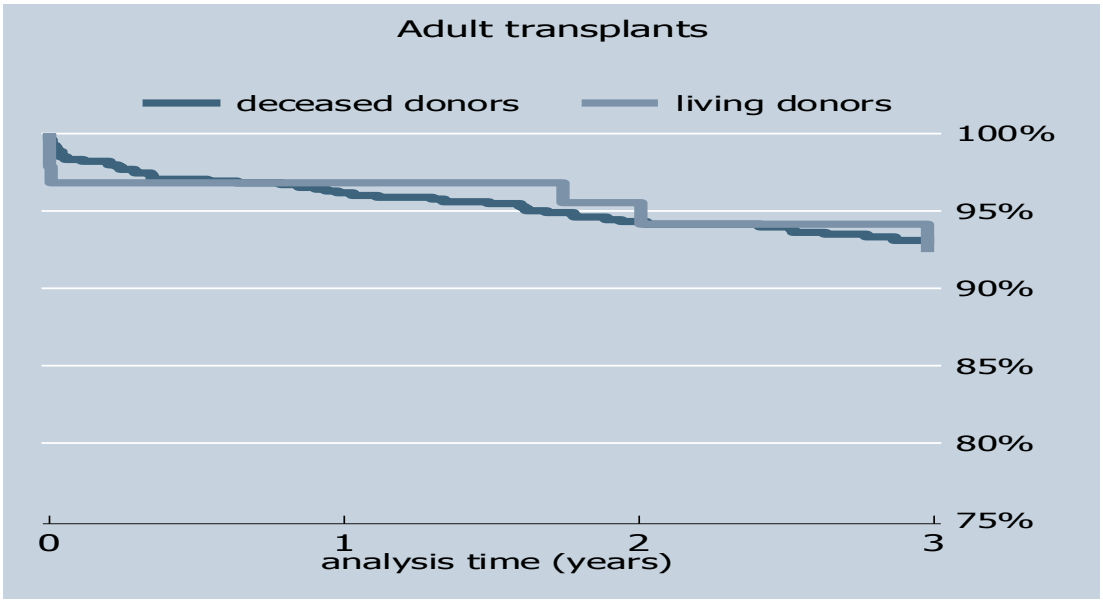
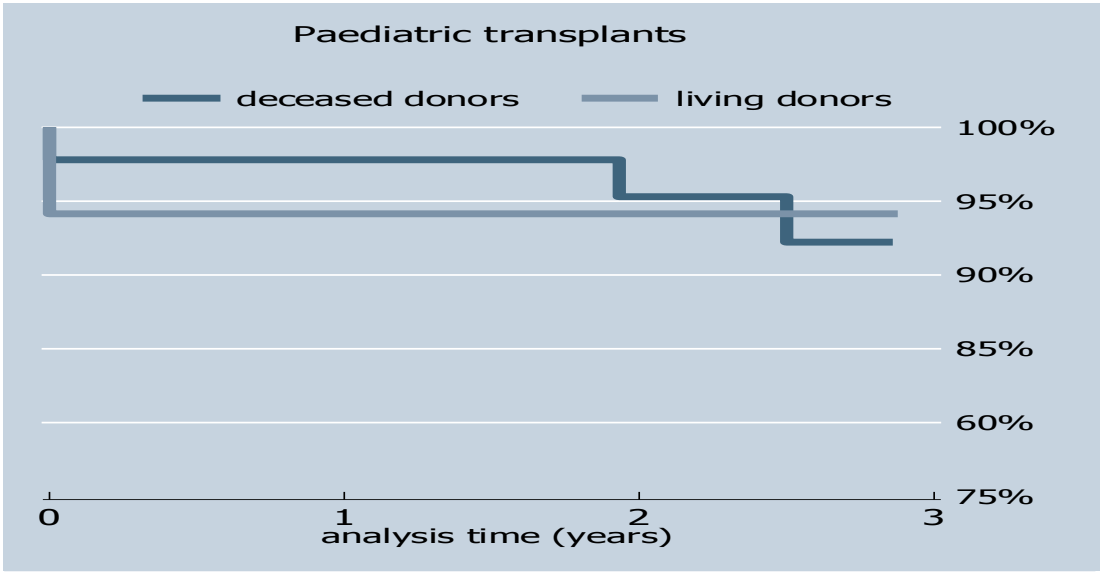


Figure 4.2.1: Kaplan-Meier graft survival for paediatric deceased donor versus living donor transplants 2007 – 2013



4.3 Patient survival

Table 4.3: Adult and paediatric 1,2 & 3 year patient survival deceased donor versus living donor transplants 2007 – 2013 (first grafts)

	Adult transplants		*Paediatric transplants*	
Follow up time (years)	*Deceased donor patient survival % [95% C.I]*	*Living donor patient survival % [95% C.I]*	*Deceased donor patient survival % [95% C.I]*	*Living donor patient survival % [95% C.I]*
1	98.1 [96.8–98.8]	100 [-----]	100 [-----]	100 [-----]
2	96.5 [94.8–97.6]	98.7 [90.9–99.8]	100 [-----]	100 [-----]
3	95.6 [93.8–96.9]	96.8 [87.4–99.2]	100 [-----]	100 [-----]

Figure 4.3.1: Kaplan-Meier patient survival for adult deceased versus living donor transplants 2007–2013

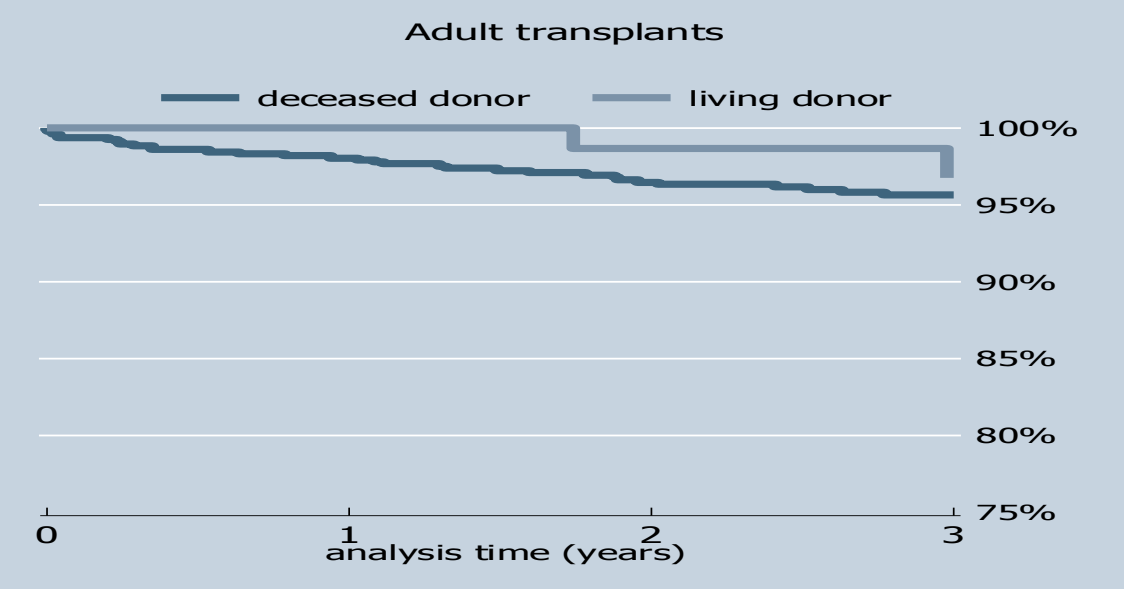
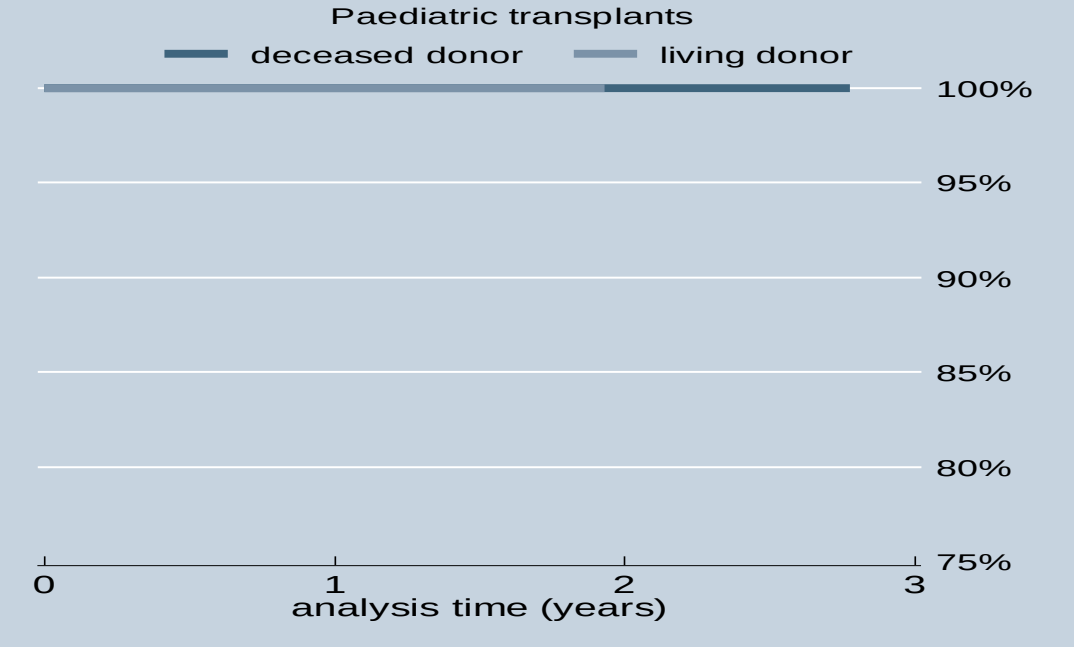


Figure 4.3.1: Kaplan-Meier patient survival for paediatric deceased donor versus living donor transplants 2007 – 2013



5. Adult deceased donor kidney only outcomes 1991 – 2013

Adult deceased donor graft outcome censored and uncensored for death with functioning graft 1991 - 2013

Table 5.1: Overall median adult deceased donor graft survival (graft half-life)

No of grafts	*Median graft survival in years [95% C.I.] Uncensored for death*	*Median graft survival in years[95% C.I.] Censored for death*
2707	14.3 [13.4 – 15.3]	21.7 [20.1 – -----]

Table 5.2: Estimated adult deceased donor graft survival

Follow up time (years)	*Estimated graft survival [95% C.I.] Uncensored for death*	*Estimated graft survival [95% C.I.] Censored for death*
1	91.37 [90.19 - 92.41]	93.52 [92.47 - 94.43]
5	77.99 [76.19 - 79.67]	85.60 [84.03 - 87.02]
10	59.17 [56.76 - 61.50]	72.55 [70.22 - 74.73]
15	42.73 [39.79 - 45.64]	60.75 [57.56 - 63.78]

Figure 5.1: Kaplan-Meier adult deceased donor graft survival estimates 1991-2013

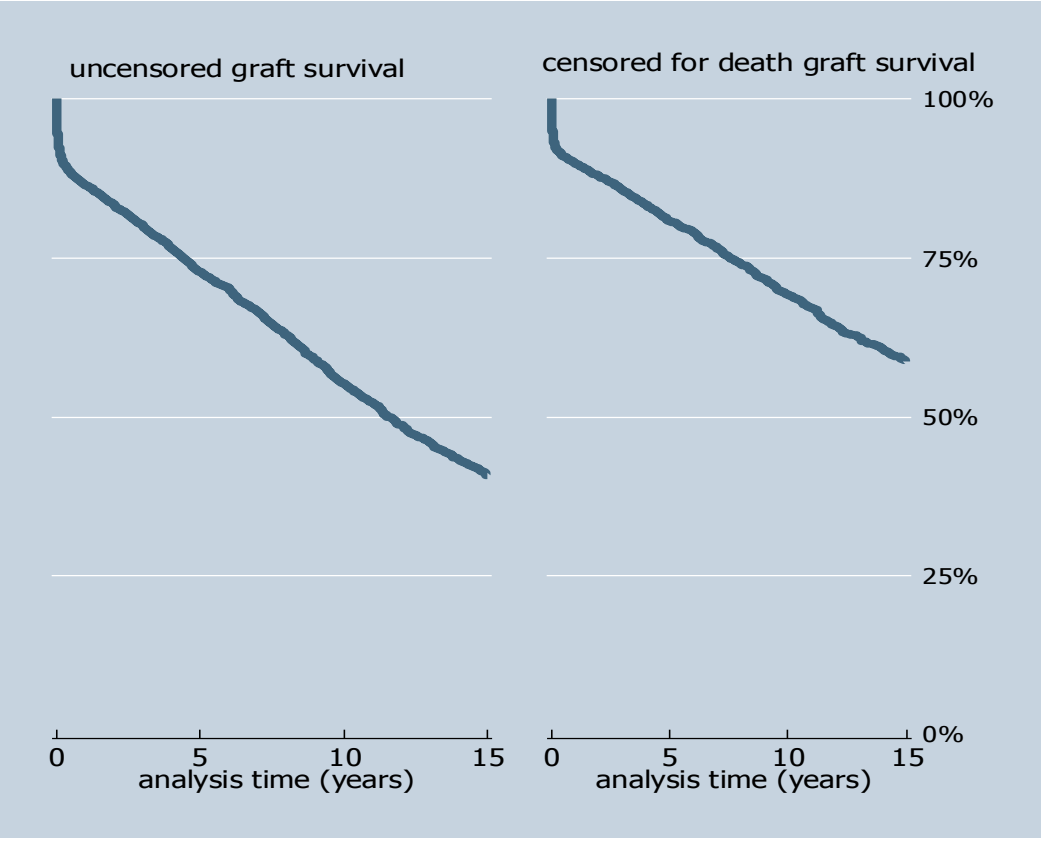


Table 5.3: Cox proportional hazards graft survival model for adult deceased donor kidneys Uncensored for death with a functioning graft

Variables	*HR [95% conf. int]*	*P value*
Recipient age	1.020 [1.015 - 1.025]	**<0.001****
Donor age	1.011 [1.006 - 1.015]	**<0.001****
Recipient sex	1.009 [0.887 - 1.148]	0.890
Donor sex	0.874 [0.771 - 0.992]	**0.037****
Transplant number	1.278 [1.112 - 1.468]	**0.001****
CIT	1.007 [0.997 - 1.018]	0.186
HLA miss matches	0.990 [0.945 - 1.038]	0.691
Delayed graft function	1.415 [1.185 - 1.689]	**<0.001****
Acute rejection	1.401 [1.220 - 1.609]	**<0.001****
PRA group*	1.049 [0.955 - 1.153]	0.318
Tacrolimus use	0.506 [0.433 - 0.593]	**<0.001****

*PRA groups 0-10%, 11-49%, 50-100% **Significant variables

Table 5.4: Cox proportional hazards graft survival model for adult deceased donor kidneys Censored for death with a functioning graft

Variables	*HR [95% conf. int]*	*P value*
Recipient age	0.983 [0.976 - 0.989]	**<0.001****
Donor age	1.015 [1.009 - 1.021]	**<0.001****
Recipient sex	0.938 [0.794 - 1.109]	0.454
Donor sex	0.842 [0.715 - 0.992]	**0.040****
Transplant number	1.126 [1.051 - 1.477]	**0.011****
CIT	1.011 [0.997 - 1.024]	0.119
HLA miss matches	1.008 [0.947 - 1.072]	0.806
Delayed graft function	1.434 [1.140 - 1.805]	**0.002****
Acute rejection (3 month)	1.730 [1.459 - 2.051]	**<0.001****
PRA group*	1.116 [0.989 - 1.259]	0.076
Tacrolimus use	0.489 [0.398 - 0.600]	<**0.001****

*PRA groups 0-10%, 11-49%, 50-100% **Significant variables

- Significant variables that predict graft failure not censored for death include higher recipient age, higher donor age, female donor, transplant number, the need for dialysis immediately post transplant(delayed graft function), biopsy proven acute rejection and Tacrolimus use. The latter predicts reduced risk of graft failure.

- All of the above variables that are associated with uncensored graft failure apply to graft outcome censored for death with a functioning graft. Recipient age is interesting in that the hazard ratio implies that older recipients are at reduced risk of graft failure censored for death unlike the uncensored graft outcome which implies increased risk. The reason is that a high proportion of older recipients die with a functioning graft which might give a false impression of patient outcomes based on age when censoring for death. Care is needed when interpreting the results.

Graft survival (uncensored) – adult deceased donor kidney only 1st , 2nd and 3rd transplants 1991 - 2013

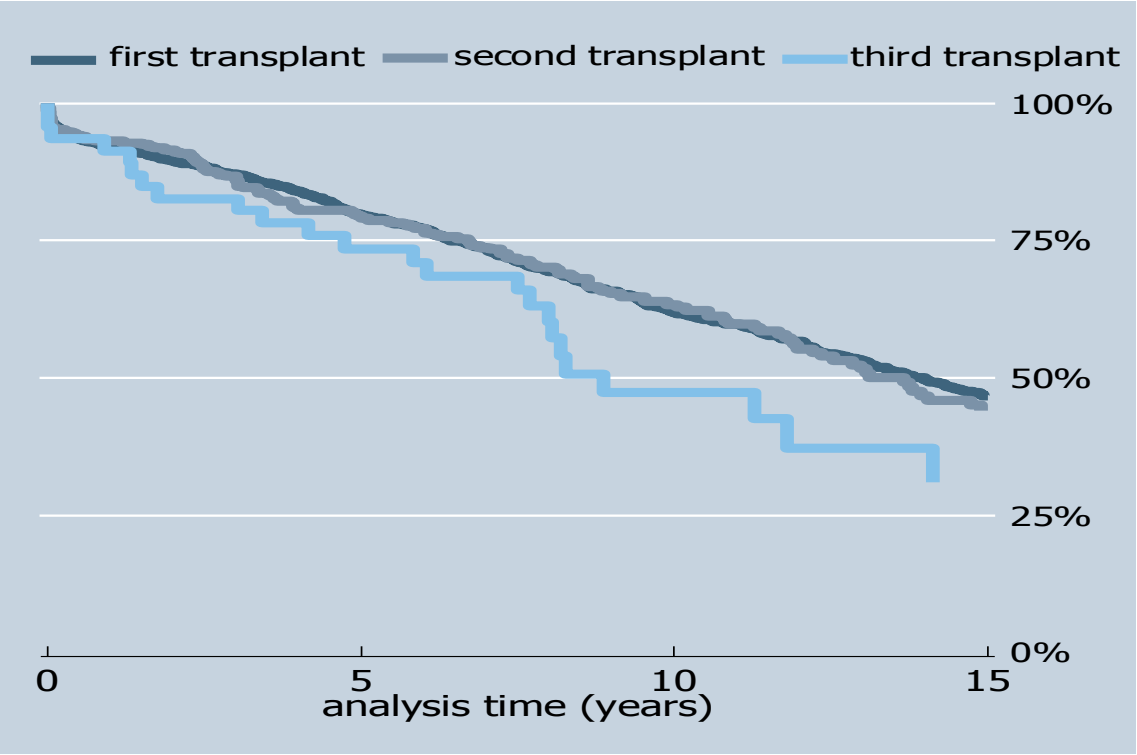
Table 5.5: Overall median graft survival (half-life) for deceased donor adult 1st , 2nd & 3rd grafts

Transplant number	*No of patients*	*Median graft survival (years) [95% C.I.]*
1	2,298	13.6 [12.9 – 14.5]
2	348	13.0 [11.8 – 14.9]
3	49	8.3 [7.5 – 14.1]

Table 5.6: Estimated deceased donor adult 1st,2nd & 3rd graft survival

Transplant number	*Follow up time (years)*	*Estimated graft survival [95% C.I.]*
1	1	91.76 [90.56 - 92.81]
1	5	79.31 [77.49 - 81.00]
1	10	61.06 [58.60 - 63.42]
1	15	45.57 [42.61 - 48.48]
2	1	93.10 [89.89 - 95.32]
2	5	79.26 [74.43 - 83.28]
2	10	61.88 [55.92 - 67.29]
2	15	42.64 [35.57 - 49.51]
3	1	89.80 [77.21 - 95.62]
3	5	70.95 [55.87 - 81.68]
3	10	46.70 [30.71 - 61.20]
3	15	32.35 [16.19 - 49.68]

Figure 5.2: Kaplan-Meier deceased donor adult 1st , 2nd & 3rd transplants graft survival estimates

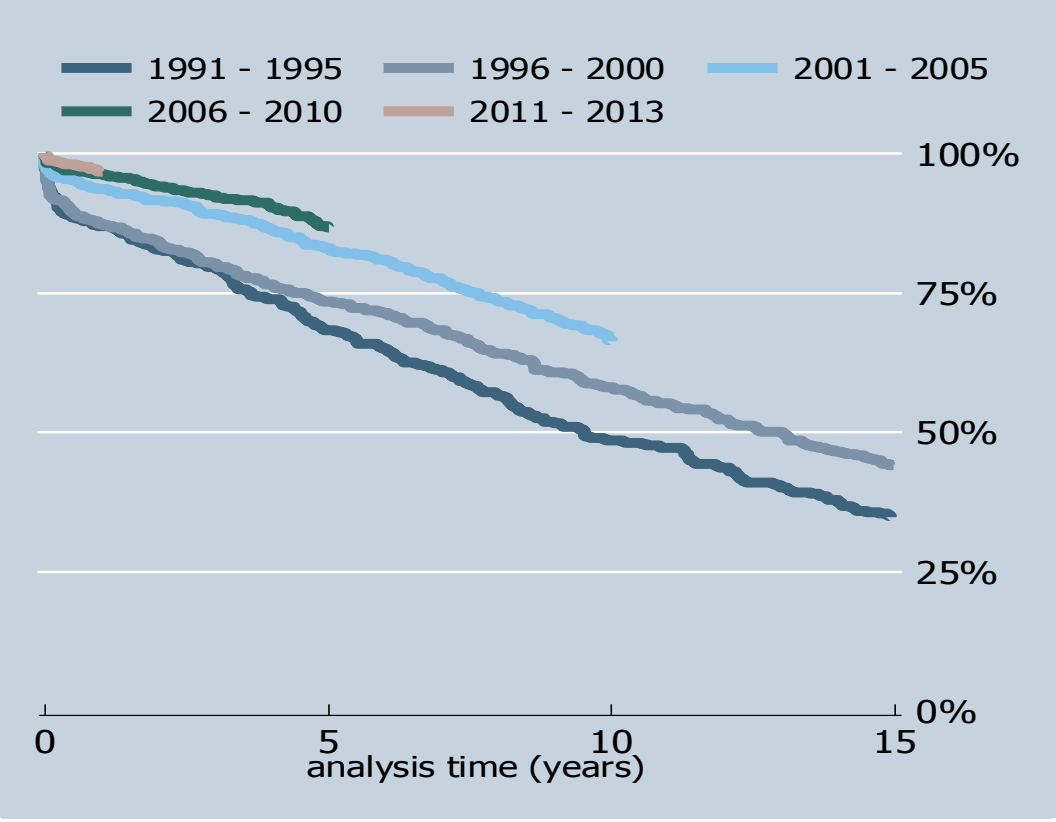


Graft survival (uncensored) – adult deceased donor by five time periods transplanted 1991 - 2013

Table 5.7: Adult deceased donor graft survival by era transplanted at 1,5,10 & 15 years

Follow up time (years)	*Period transplanted*	*Estimated graft survival [95% C.I.]*
1	1991-1995	86.84 [83.38 – 89.63]
5	1991-1995	68.39 [63.90 – 72.44]
10	1991-1995	48.57 [43.91 – 53.08]
15	1991-1995	34.66 [30.31 – 39.05]
1	1996-2000	87.34 [84.27 – 89.85]
5	1996-2000	73.48 [69.58 – 76.97]
10	1996-2000	58.07 [53.82 – 62.08]
15	1996-2000	44.08 [39.81 – 48.27]
1	2001-2005	93.57 [91.24 – 95.30]
5	2001-2005	82.95 [79.61 – 85.78]
10	2001-2005	66.20 [62.00 – 70.04]
15	2001-2005	
1	2006-2010	96.15 [94.26 – 97.42]
5	2006-2010	86.79 [83.67 – 89.36]
10	2006-2010	
15	2006-2010	
1	2011-2013	96.71 [94.41– 98.08]
5	2011-2013	
10	2011-2013	
15	2011-2013	

Figure 5.3: Kaplan-Meier adult deceased donor graft survival by era transplanted



Patient survival – adult deceased donor (from time of first graft) 1991 - 2013

Table 5.8: Overall median adult deceased donor patient survival (patient half-life)

No of grafts	*Median patient survival (years) [95% C.I.]*
2298	18.23 [16.90 – 20.04]

Table 5.9: Estimated adult deceased donor patient survival at 1,5,10&15 years

Follow up time (years)	*Estimated patient survival [95% C.I.]*
1	96.57 [95.73 - 97.25]
5	88.02 [86.50 - 89.37]
10	75.54 [73.28 - 77.64]
15	59.81 [56.65 - 62.81]
20	46.35 [42.17 - 50.41]

Figure 5.4: Kaplan-Meier adult deceased donor patient survival estimates

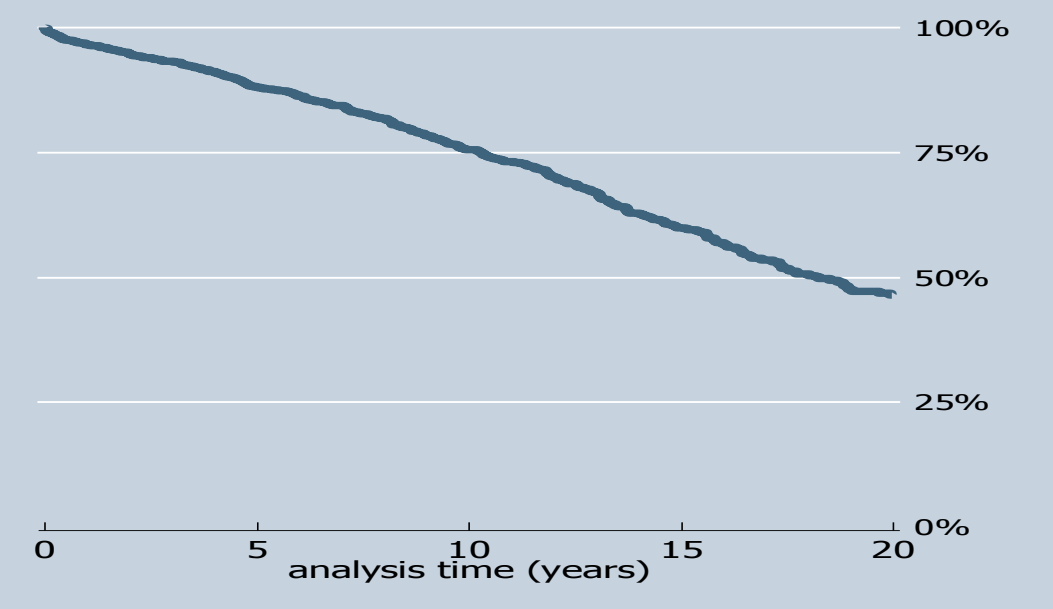


Table 5.10: Cox proportional hazards patient survival for adult deceased donor transplants

Variables	*HR [95% conf. int]*	*P value*
Recipient age	1.065 [1.057 - 1.073]	**<0.001****
Donor age	1.011 [1.005 - 1.017]	**0.001****
Recipient sex	1.127 [0.944 - 1.345]	0.186
Donor sex	0.916 [0.772 - 1.087]	0.313
CIT	1.010 [0.995 - 1.025]	0.202
HLA miss matches	1.001 [0.937 - 1.068]	0.985
Delayed graft function	1.371 [1.080 - 1.741]	**0.010****
Acute rejection (3 month)	1.202 [0.986 - 1.465]	0.069
PRA group	1.114 [0.973 - 1.277]	0.119
Tacrolimus	0.453 [0.360 - 0.569]	**<0.001****

*PRA groups 0-10%, 11-49%, 50-100% **Significant variables

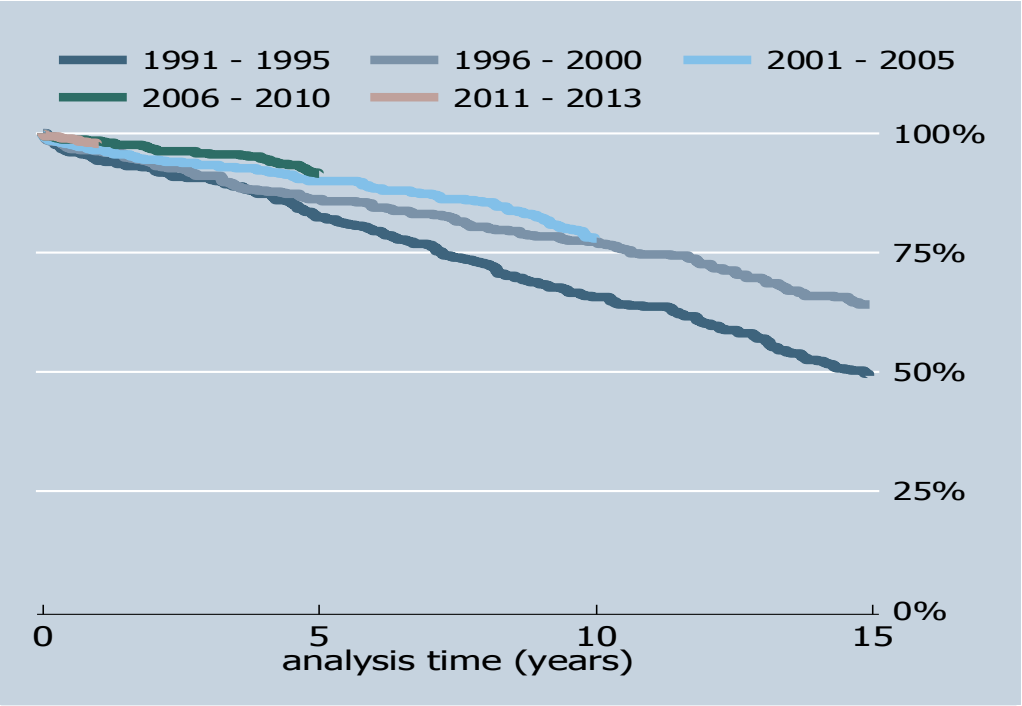
- Significant variables that predict patient survival include higher recipient age, higher donor age, delayed graft function and Tacrolimus use. The latter predicts a reduced risk of patient death

Patient survival – adult deceased donor by four time periods transplanted 1991 – 2013 from first transplant

Table 5.7: Adult deceased donor patient survival by era transplanted at 1,5,10 & 15 years

Follow up time (years)	*Period transplanted*	*Estimated graft survival [95% C.I.]*
1	1991-1995	94.20 [91.66 – 95.99]
5	1991-1995	82.29 [78.47 – 85.50]
10	1991-1995	65.57 [60.91 – 69.82]
15	1991-1995	49.15 [44.23 – 53.88]
1	1996-2000	96.14 [93.86 – 97.58]
5	1996-2000	86.22 [82.53 – 89.18]
10	1996-2000	77.18 [72.73 – 81.00]
15	1996-2000	64.17 [58.95 – 68.90]
1	2001-2005	96.36 [94.20 – 97.72]
5	2001-2005	89.99 [86.86 – 92.41]
10	2001-2005	77.68 [73.36 – 81.39]
15	2001-2005	
1	2006-2010	98.46 [96.94 – 99.22]
5	2006-2010	91.44 [88.58 – 93.61]
10	2006-2010	
15	2006-2010	
1	2011-2013	97.74 [95.53 – 98.86]
5	2011-2013	
10	2011-2013	
15	2011-2013	

Figure 5.5: Kaplan-Meier adult deceased donor patient survival by era transplanted



6. Paediatric deceased donor outcomes 1991 - 2013

Paediatric deceased donor graft survival (less than 18 years of age at transplant)

- 195 deceased donor grafts transplanted in 181 paediatric recipients 1991-2013
- 111 deceased donor grafts transplanted in male recipients (57%)
- Mean age at transplant 12.32 years (S.D. 4.26) range [1.42 years – 17.98 years]

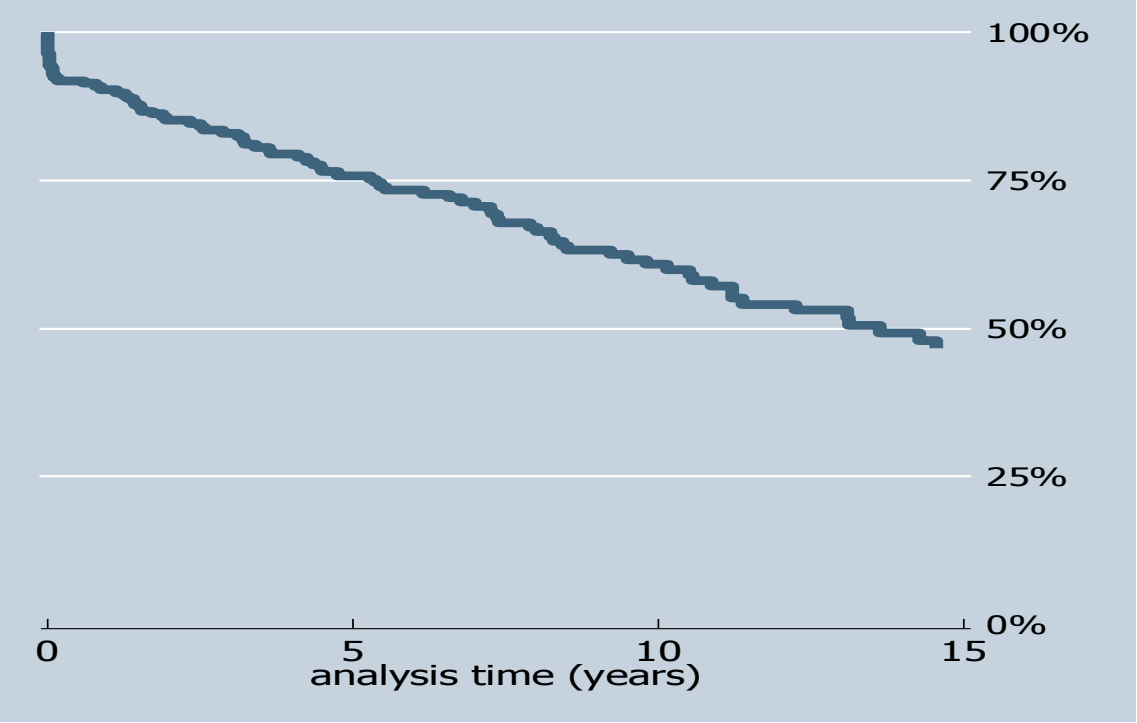
Table 6.1: Overall median paediatric deceased donor graft survival (graft half-life)

No of grafts	*Median graft survival (years) [95% C.I.]*
195	13.62 [10.55 – 16.71]

Table 6.2: Estimated paediatric deceased donor graft survival

Follow up time (years)	*Estimated graft survival [95% C.I.]*
1	90.26 [85.15 - 93.67]
5	75.79 [68.92 - 81.35]
10	60.71 [52.59 - 67.87]
15	46.64 [37.42 - 55.33]

Figure 6.1: Kaplan-Meier paediatric deceased donor graft survival estimates 1991-2013

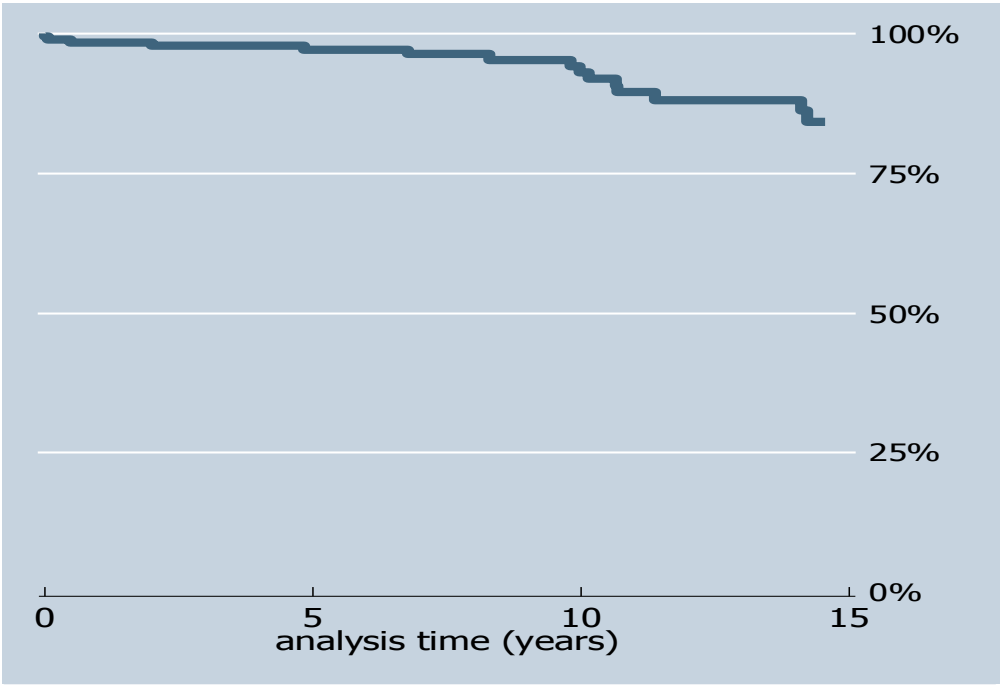


Patient survival – paediatric deceased donor

Table 6.3: Estimated paediatric deceased donor patient survival at 1,5,10&15 years

Follow up time (years)	*Estimated patient survival [95% C.I.]*
1	98.39 [95.10 - 99.48]
5	97.08 [93.08 - 98.78]
10	93.06 [86.70 - 96.44]
15	84.25 [74.12 - 90.66]

Figure 6.2: Kaplan-Meier paediatric deceased donor patient survival estimates



7. Simultaneous pancreas kidney (SPK) outcome 1991 - 2013

SPK kidney graft outcome

- 130 SPK transplants between 1991-2013
- Equal number of male and female recipients (65 male, 65 female)
- Mean age at transplant 40.1 years (S.D. 7.4) range [25.4 years – 59.2 years]

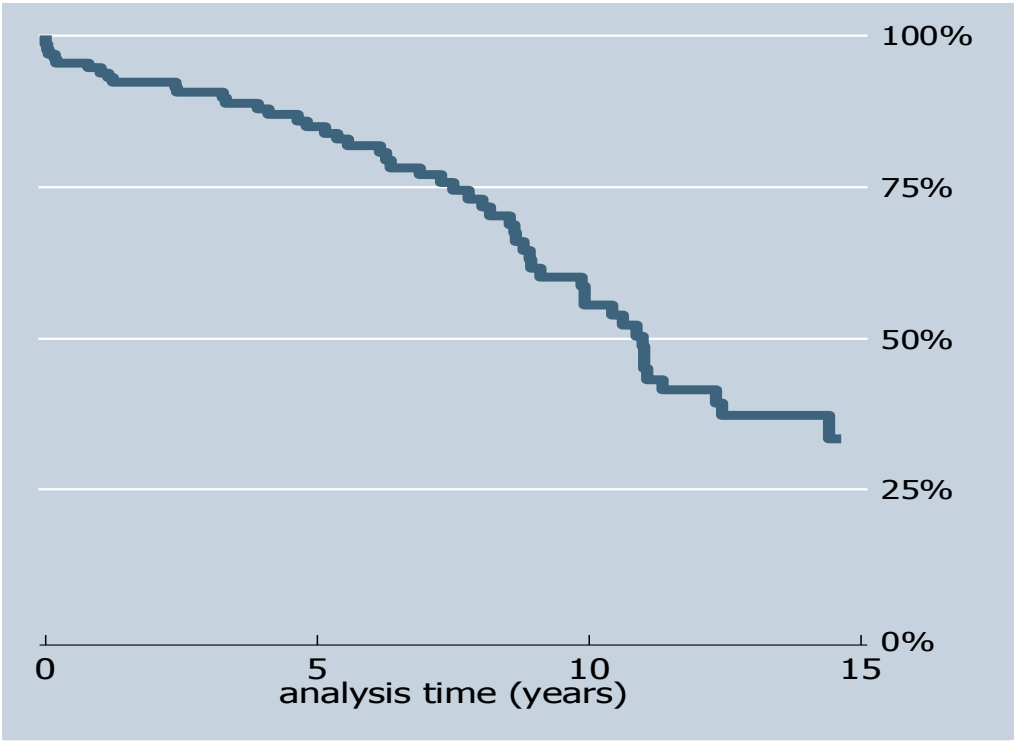
Table 7.1: Overall median SPK kidney graft survival (graft half-life)

No of patients	*Median graft survival (years) [95% C.I.]*
130	11.0 [9.2 – 12.4]

Table 7.2: Estimated SPK kidney graft survival

Follow up time (years)	*Estimated graft survival [95% C.I.]*
1	94.61 [89.02 - 97.39]
5	84.90 [77.02 - 90.24]
10	55.39 [43.73 - 65.58]
15	33.43 [21.15 - 46.16]

Figure 7.1: Kaplan-Meier SPK kidney graft survival estimates for 1991-2013



SPK pancreas graft outcome

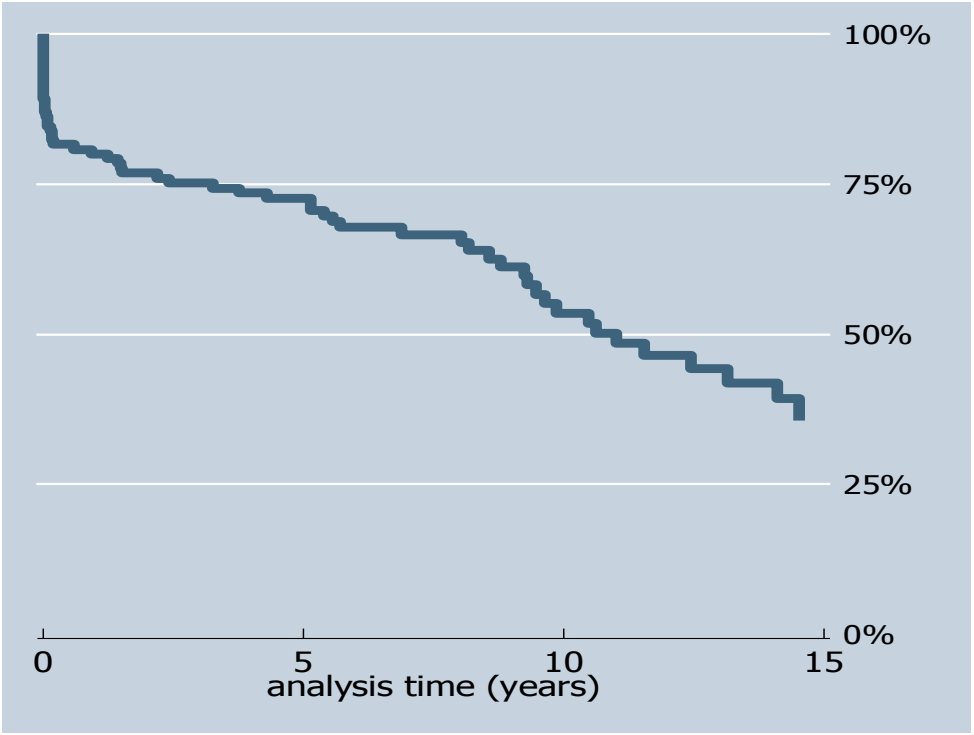
Table 7.3: Overall median SPK pancreas graft survival (graft half-life)

No of patients	*Median graft survival (years) [95% C.I.]*
130	11.0 [9.2 – 14.5]

Table 7.4: Estimated SPK pancreas graft survival

Follow up time (years)	*Estimated graft survival [95% C.I.]*
1	80.00 [72.02 - 85.90]
5	72.55 [63.88 - 79.47]
10	53.50 [42.72 - 63.13]
15	35.62 [23.18 - 48.24]

Figure 7.2: Kaplan-Meier SPK pancreas graft survival estimates for 1991-2013



SPK patient survival 1991 – 2013 from time of first transplant (two patients had a kidney only transplant prior to receiving an SPK)

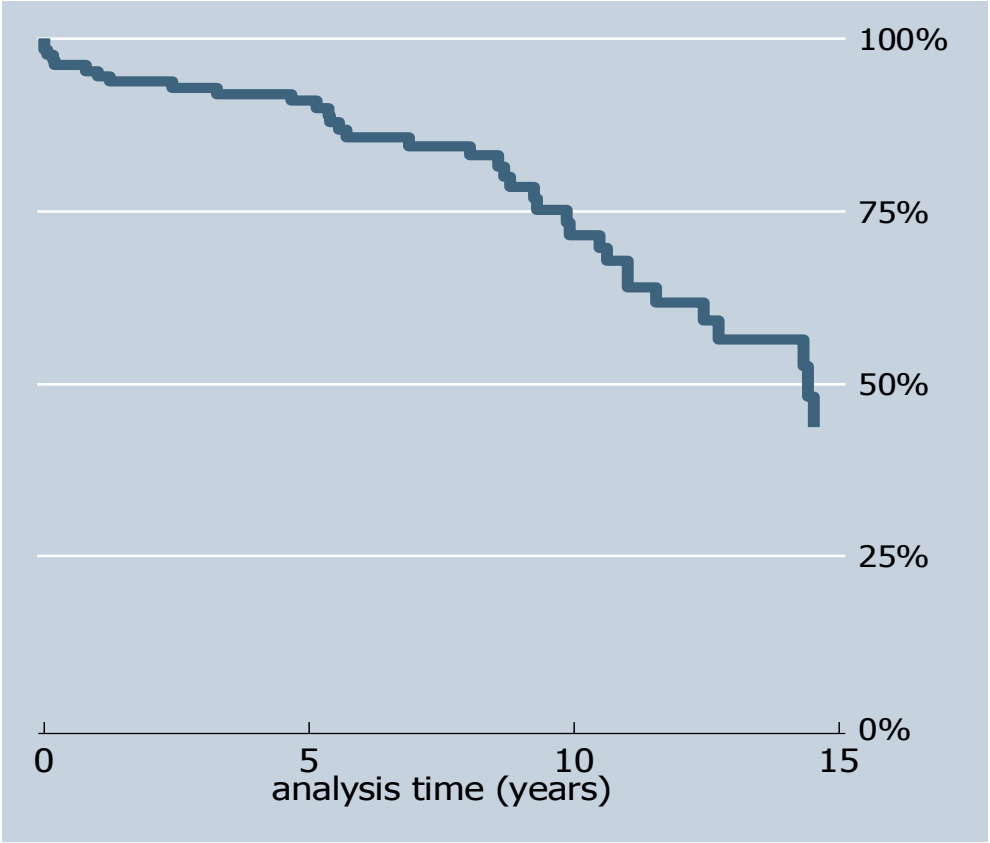
Table 7.5: Overall median SPK patient survival (patient half life)

No of patients	*Median patient survival (years) [95% C.I.]*
128	14.4 [11.5 – ----]

Table 7.6: Estimated SPK patient survival at 1, 5, 10&15 years

Follow up time (years)	*Estimated patient survival [95% C.I.]*
1	95.28 [89.80 - 97.85]
5	90.91 [84.14 - 94.88]
10	71.54 [59.97 - 80.31]
15	43.69 [27.37 - 58.91]

Figure 7.3: Kaplan-Meier SPK patient survival estimates for 1991-2013



8. Comparison of graft and patient outcomes between European Renal Association (ERA)/ European Dialysis and Transplantation Association (EDTA) countries and the Republic of Ireland (ROI)

Introduction

The ERA/EDTA* Registry collects data on renal replacement therapy (RRT) via the national and regional renal registries in Europe. For this section comparisons are made between 18 ERA countries and the ROI which is not affiliated to ERA. Data was gleaned from the 2013 ERA report.
There are 9 regions of Spain with separate results. Included in this report are the 3 largest regions by population, Andalusia, Catalonia and Valencia. The countries are listed in tables 8.1 and 8.2.
(* for the remainder of the report the association will be abbreviated to either ERA or EDTA).

Statistical analysis

Unadjusted survival probabilities were calculated using the Kaplan-Meier method.
In this section, patient survival after the first transplant, and graft survival after the first transplant is presented in tables and graphs by age, gender and cause of renal failure. Survival probabilities are presented as percentages from 0 to 100.
For the analysis of survival data, two five-year periods were used, 2004 to 2008 and 2007 to 2011, the former for one and five-year follow up, the latter for one and two-year follow up.
For patient survival from first graft, event is defined as death of patient. Censoring is at loss to follow-up and end of follow-up time.
For graft survival from first graft, event is defined as death of patient or graft loss. Censoring is at loss to follow-up and end of follow-up time.

Comparisons between the ROI and ERA countries reveal the following;

- In 2013, the ROI recorded a total of 185 kidney transplants. This represents approximately 40 per million population (based on CSO estimates of total population in the ROI of 4.625 million) and is about the midpoint by ERA countries standards.

- Great strides have been made to increase living donor transplantation in the ROI to the stage where rates are approximately 8 PMP during 2013.

- The percent of renal replacement therapy (RRT) patients with a functioning transplant remains high by European standard at 54.5%. The potential for improvement in this area is illustrated by rates of transplantation in Iceland and Norway of 67% and 72% respectively.

- In the period 2004-2008, significant improvements in graft and patient survival were recorded in our centre compared to previous years. The results show that for short and medium term graft and patient outcomes, survival rates exceed those for ERA countries. In nearly all categories of age, sex and primary disease, ROI outcomes surpass those for ERA countries.

- The second period studied 2007-2011 also reveals real differences between European and ROI averages for one and two year graft outcomes. Short term patient survival is low for all countries so the differences are naturally not so evident

- Despite the limited number of living donor transplants performed in ROI between 2007-2011 graft survival is high at 96.8% for two year survival versus 93.8% for ERA countries and patient survival at two years is recorded as 98.4% for the ROI versus 97.6% for ERA countries.

8.1 Rates of transplantation PMP for ERA countries and the ROI

Table 8.1: Rates of transplantation PMP for ERA countries and the ROI for 2013

Country	*Deceased donors*	*Living donors*	*Unknown source*	*Total*
Austria	38.2	7.7	0	45.9
Belgium Dutch-speaking	35.8	3.9	1.3	41.0
Belgium French-speaking	36.2	2.5	0	38.7
Bosnia and Herzogovina	1.4	5.4	0	6.8
Denmark	19.0	18.7	0	37.7
Estonia	34.9	0.8	0	35.7
Finland	32.2	2.2	0	34.4
France	40.7	6.1	0	46.8
Greece	10.1	4.6	0	14.7
Iceland	0	24.7	0	24.7
Norway	39.8	13.2	0	53.0
Romania	5.4	2.2	1.4	8.9
Serbia	11.9	4.8	0	16.6
Slovenia	29.6	0	0	29.6
Spain, Andalusia	42.3	7.2	0	49.5
Spain, Catalonia	49.6	21.7	0	71.4
Spain, Valencian region	43.8	2.3	0	46.1
Sweden	27.5	15.7	0	43.2
The Netherlands	25.5	30.6	0.2	56.4
England	32.8	15.7	0.2	48.7
Northern Ireland	21.3	26.2	0	47.5
Scotland	34.3	15.6	0.8	50.7
Wales	26.6	11.0	0	37.6
Republic of Ireland	31.7	8.2	0	39.9

Figure 8.1.1: Total rates of transplantation PMP for ERA countries and the ROI 2013

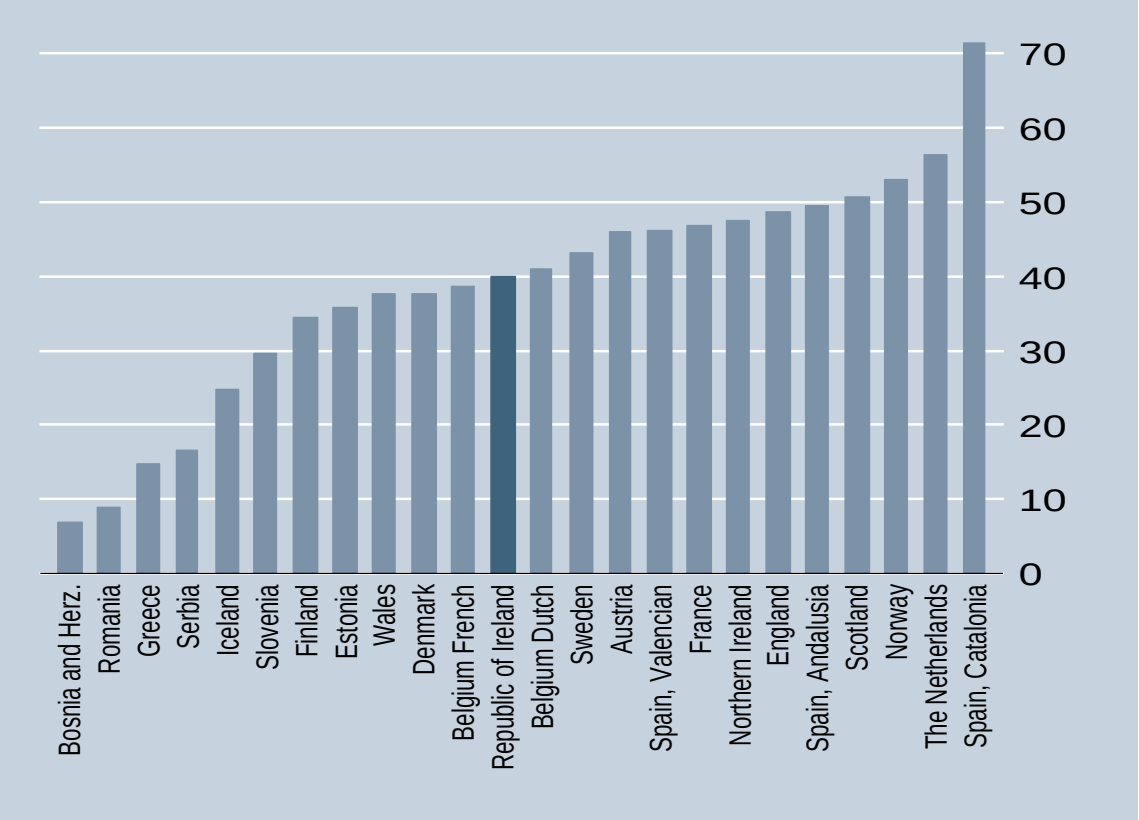


Figure 8.1.2: Deceased donor rates of transplantation PMP for ERA countries and the ROI for 2013

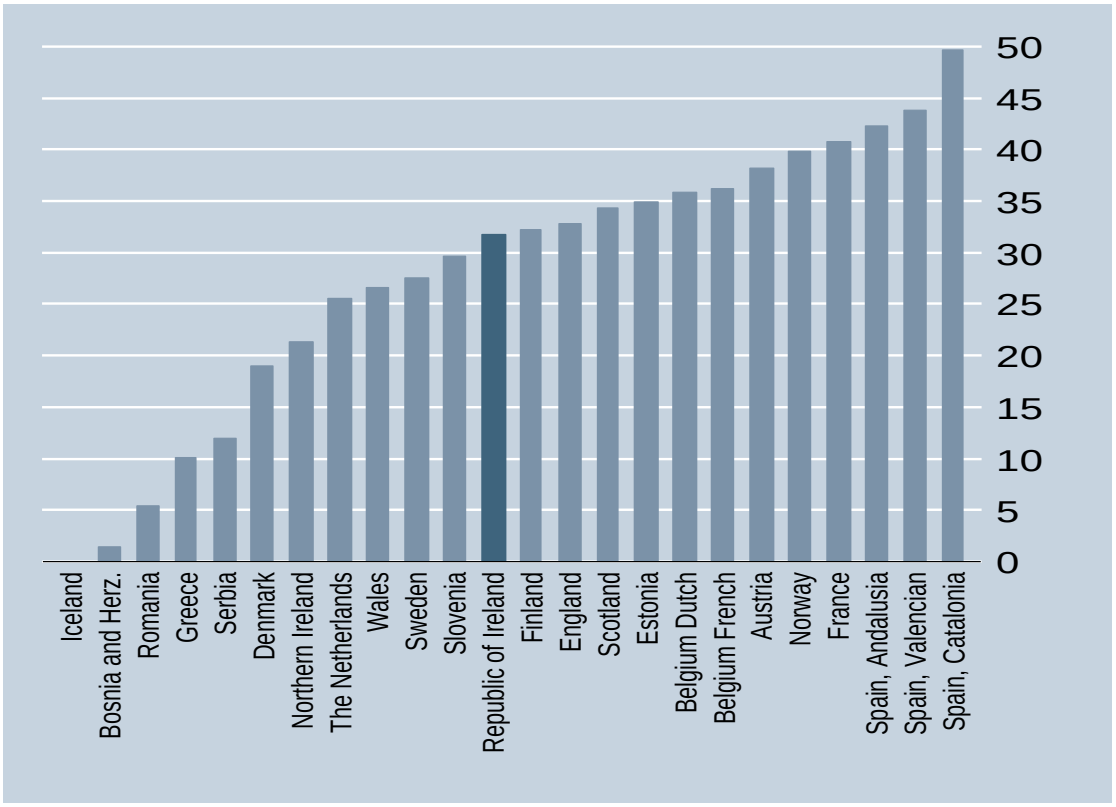
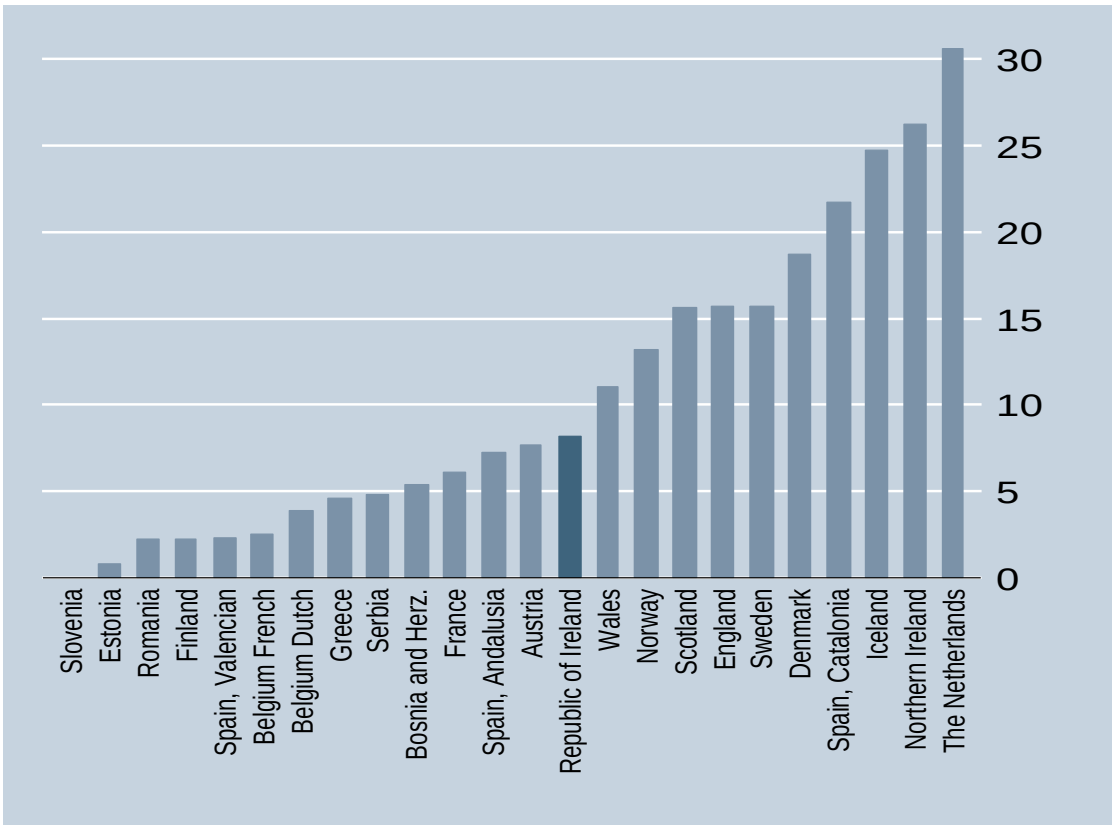


Figure 8.1.3: Living donor rates of transplantation PMP for ERA countries and the ROI 2013

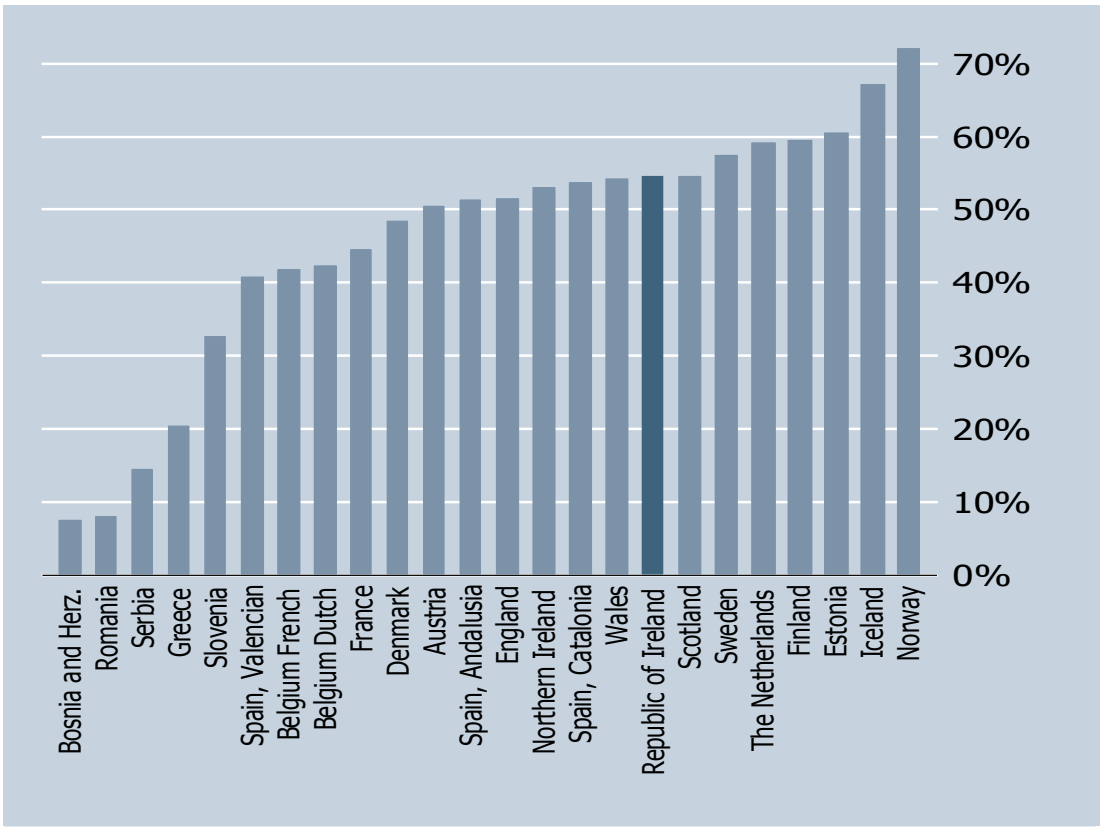


8.2 Percentage of RRT patients with functioning transplant

Table 8.2: Percentage of RRT patients with a functioning transplant for ERA and ROI for 2013

Country	*% Transplant*	*% HD*	*% PD*
Austria	50.5	44.7	4.7
Belgium Dutch-speaking	42.3	53	4.6
Belgium French-speaking	41.8	53.4	4.5
Bosnia and Herzogovina	7.5	89.2	3.2
Denmark	48.4	40.4	10.8
Estonia	60.5	33.7	5.8
Finland	59.4	32.6	8
France	44.4	51.2	3.8
Greece	20.4	74.4	5.2
Iceland	67.1	21.6	11.3
Norway	72	23.6	4.3
Romania	7.9	82.8	9.3
Serbia	14.4	77.2	8.3
Slovenia	32.5	64.9	2.5
Spain, Andalusia	51.3	44.6	4.2
Spain, Catalonia	53.6	42.2	4.2
Spain, Valencian region	40.7	52.8	6.3
Sweden	57.4	33.3	9.2
The Netherlands	59	35.1	5.8
England	51.5	41.9	6.6
Northern Ireland	52.9	41.9	5.2
Scotland	54.5	40.5	5
Wales	54.2	39.3	6.5
Republic of Ireland	54.5	40.4	5.1

Figure 8.2: Percentages of RRT patients with a functioning transplant for ERA and ROI in 2013



8.3 Graft survival

Table 8.3.1: Graft survival from first deceased donor transplant 2004 – 2008

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI five-year survival (95% CI)*	*ERA five-year survival (95% CI)*
Age 0-19 years	95.5 (83.0-98.8)	90.4 (87.9-92.4)	84.1 (69.5-92.0)	77.2 (74.4-79.8)
Age 20-44 years	98.6 (95.6-99.5)	92.8 (92.2-93.4)	94.7 (90.7-97.0)	83.6 (82.8-84.4)
Age 45-64 years	95.2 (91.7-97.2)	89.5 (88.9-90.1)	85.4 (80.4-89.3)	76.7 (76.0-77.3)
Age 65+ years	93.3 (83.2-97.4)	82.3 (80.8-83.8)	77.8 (64.8-86.5)	63.6 (62.1-65.0)
Men	97.4 (95.0-98.6)	90.0 (89.5-90.5)	90.0 (86.3-92.8)	77.5 (76.9-78.1)
Women	94.5 (90.6-96.9)	90.0 (89.3-90.6)	84.8 (79.3-89.0)	78.4 (77.6-79.1)
Diabetes	95.1 (81.9-98.8)	89.4 (88.4-90.4)	90.0 (75.5-96.1)	74.4 (73.2-75.6)
Hypertension	96.6 (78.0-99.5)	86.6 (85.1-87.9)	75.9 (55.9-87.7)	71.0 (69.5-72.5)
Glomerulonephritis	97.2 (92.6-98.9)	90.8 (89.9-91.6)	86.4 (79.5-91.1)	79.7 (78.7-80.7)
Other cause	96.0 (93.3-97.6)	90.5 (89.9-91.0)	89.4 (85.6-92.2)	79.5 (78.8-80.1)
All	96.3 (94.3-97.5)	90.0 (89.6-90.4)	88.0 (85.0-90.4)	77.8 (77.4-78.3)

Table 8.3.2: Graft survival from first deceased donor transplant 2007 – 2011

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI two-year survival (95% CI)*	*ERA two-year survival (95% CI)*
Age 0-19 years	97.1 (80.9-99.6)	91.3 (88.7-93.4)	94.1 (78.5-98.5)	88.2 (85.4-90.5)
Age 20-44 years	97.5 (94.2-99.0)	93.3 (92.8-93.9)	96.5 (92.9-98.3)	91.2 (90.6-91.8)
Age 45-64 years	95.6 (92.9-98.3)	90.4 (89.8-90.9)	94.1 (90.5-96.3)	87.2 (86.6-87.8)
Age 65+ years	95.2 (87.7-98.2)	85.1 (83.9-86.3)	90.4 (81.6-95.1)	81.4 (80.0-82.6)
Men	96.8 (94.3-98.1)	90.6 (90.2-91.1)	95.1 (92.4-96.9)	87.6 (87.1-88.1)
Women	95.5 (91.8-97.5)	90.9 (90.3-91.5)	93.2 (89.0-95.8)	88.3 (87.6-88.9)
Diabetes	100.00 (---)	90.4 (89.5-91.3)	97.8 (85.5-99.7)	87.2 (86.2-88.2)
Hypertension	97.9 (86.1-99.7)	87.8 (86.5-89.0)	93.7 (81.9-97.9)	84.9 (83.5-86.1)
Glomerulonephritis	96.4 (91.6-98.5)	92.0 (91.2-92.8)	95.0 (89.7-97.6)	89.2 (88.3-90.0)
Other cause	95.7 (93.0-97.4)	90.9 (90.3-91.4)	94.0 (91.0-96.0)	88.1 (87.5-88.6)
All	96.3 (94.4-97.5)	90.7 (90.4-91.1)	94.4 (92.2-96.0)	87.9 (87.4-88.2)

Table 8.3.3: Graft survival from first living donor transplant 2004 – 2008

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI five-year survival (95% CI)*	*ERA five-year survival (95% CI)*
Men	100 ()	95.1 (94.4-96.4)	100 ()	86.4 (85.5-87.4)
Women	100 ()	95.6 (94.7-96.4)	83.3 (27.3-97.5)	87.7 (86.5-88.9)
All	100 ()	95.3 (94.8-95.8)	93.8 (63.2-99.1)	86.9 (86.2-87.7)

Table 8.3.4: Graft survival from first living donor transplant 2007 – 2011

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI two-year survival (95% CI)*	*ERA two-year survival (95% CI)*
Men	97.8 (85.5-99.7)	95.7 (95.2-96.2)	95.6 (83.7-98.9)	94.1 (93.5-94.7)
Women	100 ()	95.9 (95.1-96.5)	100 ()	93.3 (92.4-94.1)
All	98.4 (89.1-99.8)	95.8 (95.3-96.2)	96.8 (87.8-99.2)	93.8 (93.3-94.3)

Figure 8.3.1: One-year graft survival from first deceased donor transplant 2004 – 2008

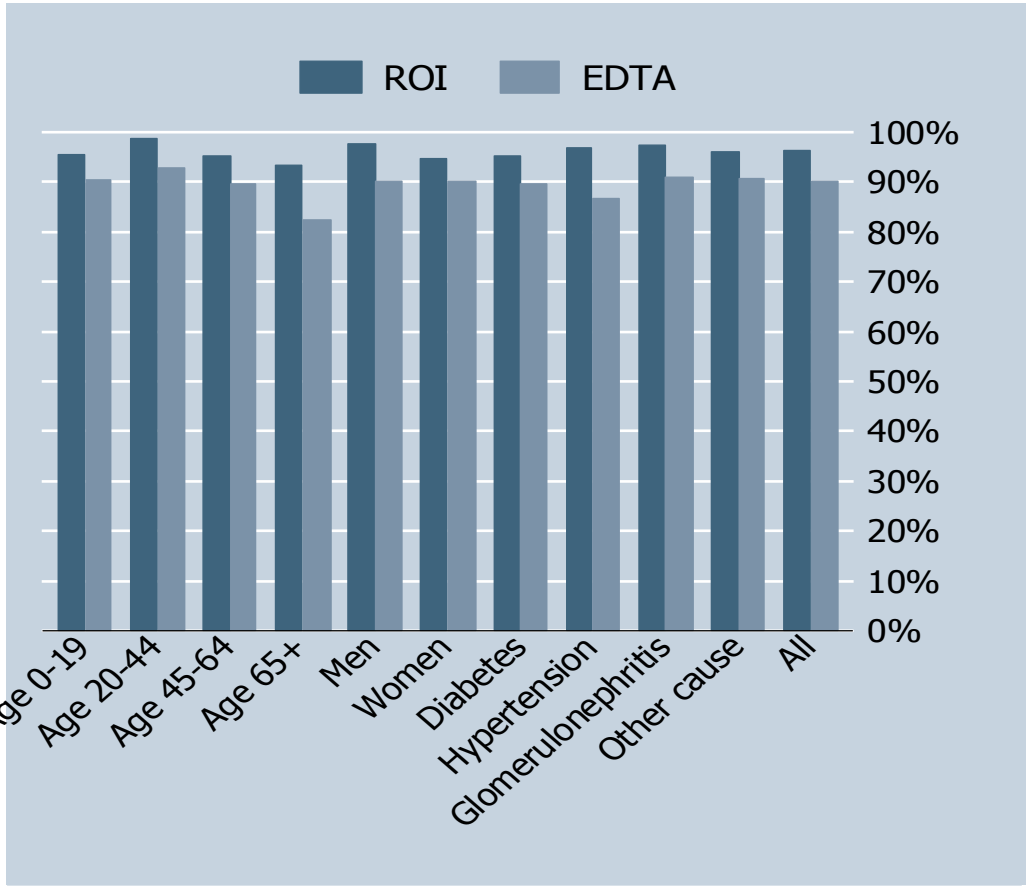


Figure 8.3.2: Five-year graft survival from first deceased donor transplant 2004 – 2008

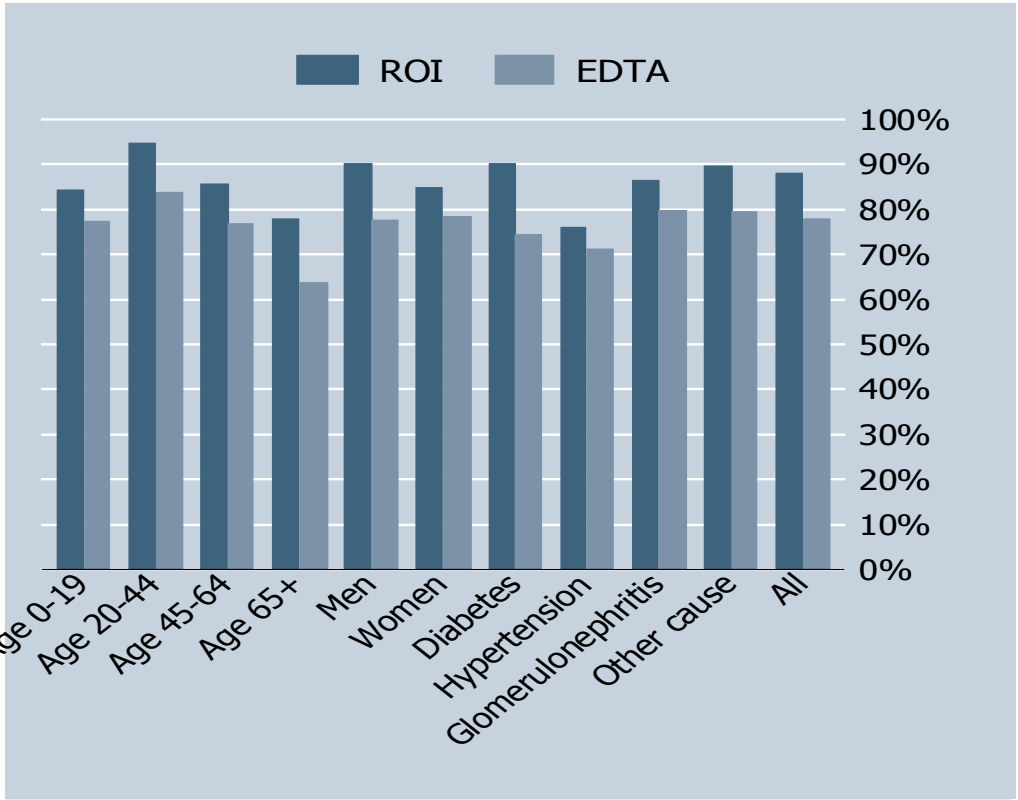


Figure 8.3.3: One-year graft survival from first deceased donor transplant 2007 – 2011

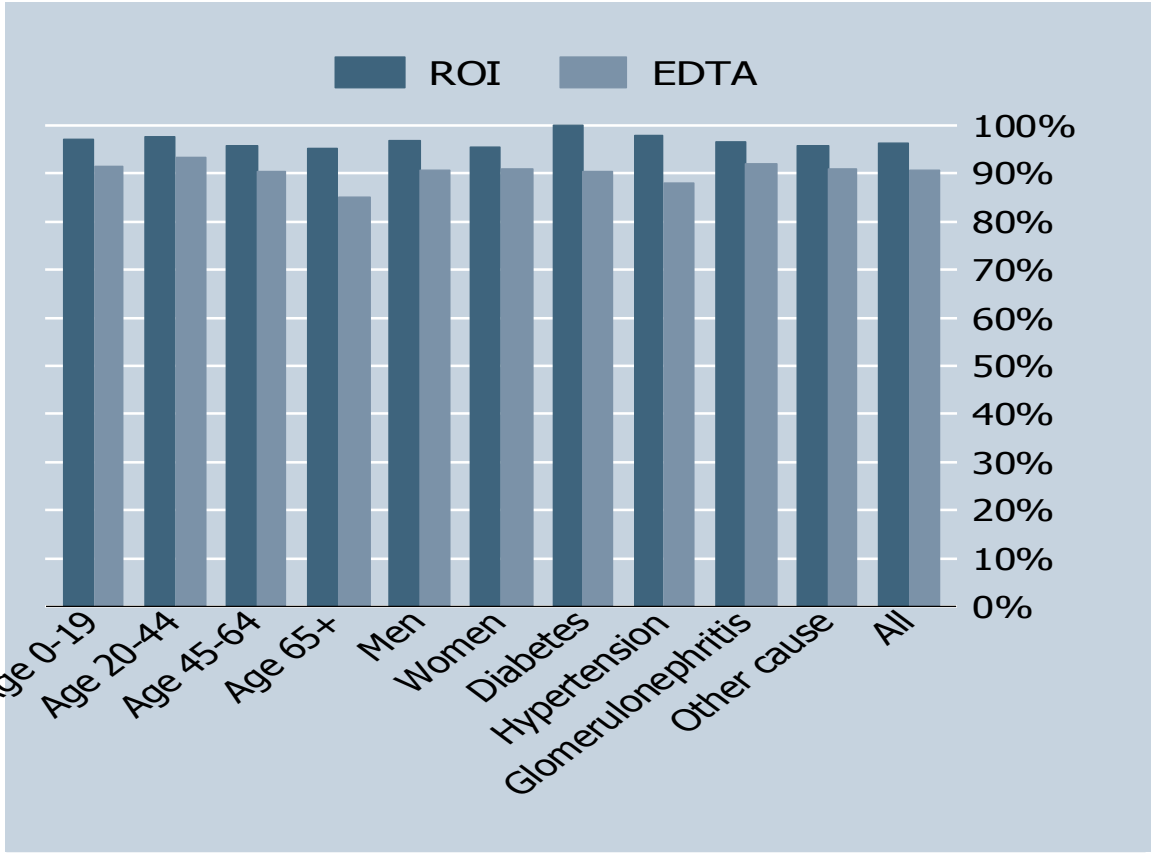
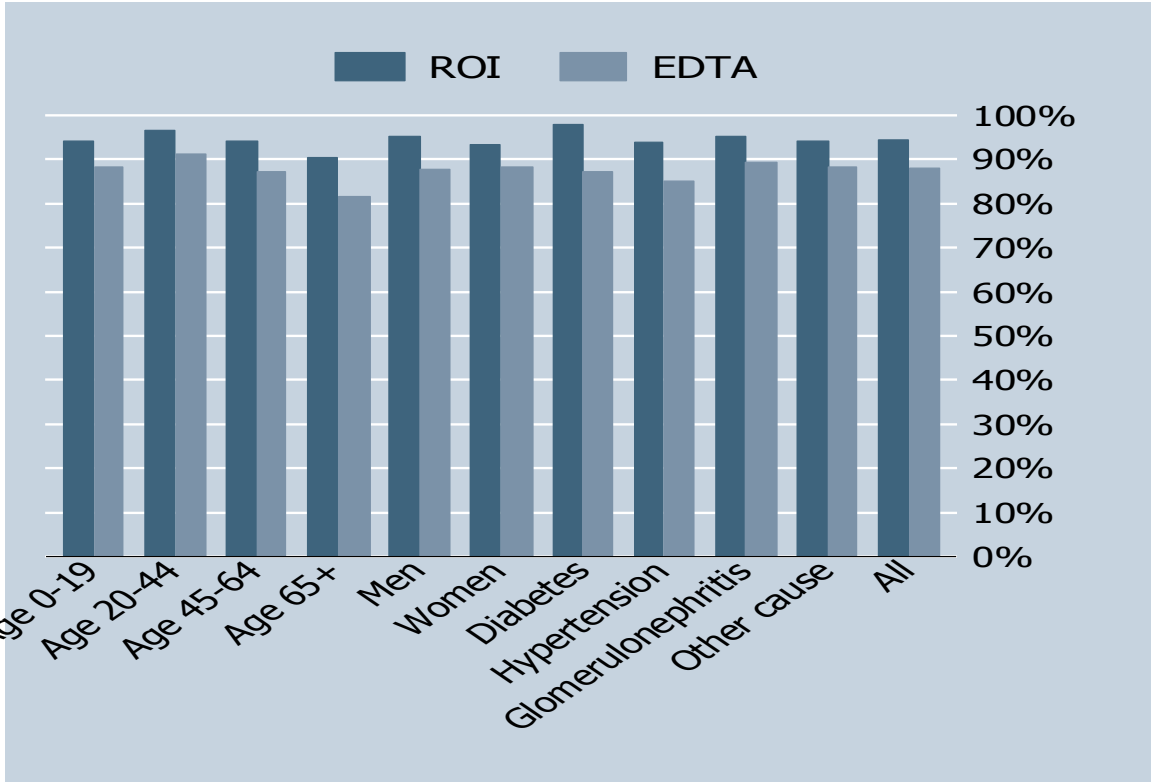


Figure 8.3.4: Two-year graft survival from first deceased donor transplant 2007 – 2011



8.4 Patient survival

Table 8.4.1: Patient survival from first deceased donor transplant 2004 – 2008

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI five-year survival (95% CI)*	*ERA five-year survival (95% CI)*
Age 0-19	100 ()	98.3 (96.9-99.1)	100 ()	95.7 (93.3-97.1)
Age 20-44	99.1 (96.2-99.7)	97.9 (97.5-98.3)	99.1 (96.2-99.7)	94.0 (93.4-94.5)
Age 45-64	98.0 (95.1-99.1)	95.3 (94.9-95.7)	92.0 (87.8-94.8)	85.0 (84.4-85.6)
Age 65+	96.7 (87.3-99.2)	89.1 (87.7-90.3)	79.6 (66.8-87.8)	70.8 (69.2-72.3)
Men	99.4 (97.7-99.9)	95.3 (94.9-95.7)	95.5 (92.6-97.2)	86.2 (85.7-86.8)
Women	96.8 (93.3-98.4)	96.5 (96.0-96.9)	91.5 (86.8-94.5)	88.6 (87.9-89.2)
Diabetes	95.1 (81.9-98.8)	93.9 (93.0-94.7)	90.1 (75.8-96.2)	81.6 (80.3-82.7)
Hypertension	96.6 (78.0-99.5)	93.0 (91.8-94.0)	82.8 (63.4-92.4)	80.4 (78.8-81.8)
Glomerulonephritis	100 ()	96.8 (96.3-97.3)	94.7 (89.3-97.5)	90.4 (89.6-91.2)
Othercause	98.3 (96.2-99.2)	96.3 (95.9-96.7)	94.8 (92.0-96.9)	88.7 (88.1-89.3)
All	98.4 (96.9-99.2)	95.7 (95.4-96.0)	93.9 (91.6-95.6)	87.1 (86.7-87.5)

Table 8.4.2: Patient survival from first deceased donor transplant 2007 – 2011

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI two-year survival (95% CI)*	*ERA two-year survival (95% CI)*
Age 0-19	100 ()	97.9 (96.2-98.9)	100 ()	97.7 (96.0-98.7)
Age 20-44	99.0 (96.1-99.8)	98.1 (97.8-98.4)	99.0 (96.1-99.8)	97.2 (96.8-97.6)
Age 45-64	98.5 (96.1-99.8)	95.7 (95.3-96.1)	97.0 (94.1-98.5)	93.4 (92.9-93.8)
Age 65+	97.6 (90.7-99.4)	90.9 (89.6-91.9)	91.6 (83.1-95.9)	86.9 (85.7-88.1)
Men	99.2 (97.5-99.7)	95.7 (95.3-96.0)	97.8 (95.6-98.9)	93.3 (92.9-93.7)
Women	97.7 (94.6-99.0)	96.6 (96.1-96.9)	95.9 (92.2-97.8)	95.0 (94.5-95.5)
Diabetes	100 ()	94.8 (94.0-95.4)	97.8 (85.6-99.7)	92.2 (91.3-93.0)
Hypertension	100 ()	93.8 (92.7-94.7)	95.8 (84.4-98.9)	91.0 (89.8-92.1)
Glomerulonephritis	100 ()	97.5 (96.9-97.9)	97.8 (93.2-99.3)	95.9 (95.3-96.5)
Othercause	97.7 (95.4-98.8)	96.3 (95.9-96.6)	96.8 (94.3-98.2)	94.4 (93.9-94.8)
All	98.6 (97.3-99.3)	96.0 (95.7-96.2)	97.1 (95.3-98.2)	94.0 (93.6-94.3)

Table 8.4.3: Patient survival from first living donor transplant 2004 – 2008

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI five-year survival (95% CI)*	*ERA five-year survival (95% CI)*
Men	100 ()	98.1 (97.6-98.5)	100 ()	93.5 (92.8-94.3)
Women	100 ()	98.6 (98.1-99.0)	100 ()	95.4 (94.5-96.2)
All	100 ()	98.3 (98.0-98.6)	100 ()	94.3 (93.7-94.8)

Table 8.4.4: Patient survival from first living donor transplant 2007 – 2011

Group	*ROI one-year survival (95% CI)*	*ERA one-year survival (95% CI)*	*ROI two-year survival (95% CI)*	*ERA two-year survival (95% CI)*
Men	100 ()	98.6 (98.2-98.9)	97.8 (85.2-99.7)	97.7 (97.2-98.0)
Women	100 ()	98.6 (98.2-99.0)	100 ()	97.5 (96.9-98.0)
All	100 ()	98.6 (98.3-98.8)	98.4 (88.9-99.8)	97.6 (97.3-97.9)

Figure 8.4.1: One-year patient survival from first deceased donor transplant 2004 – 2008

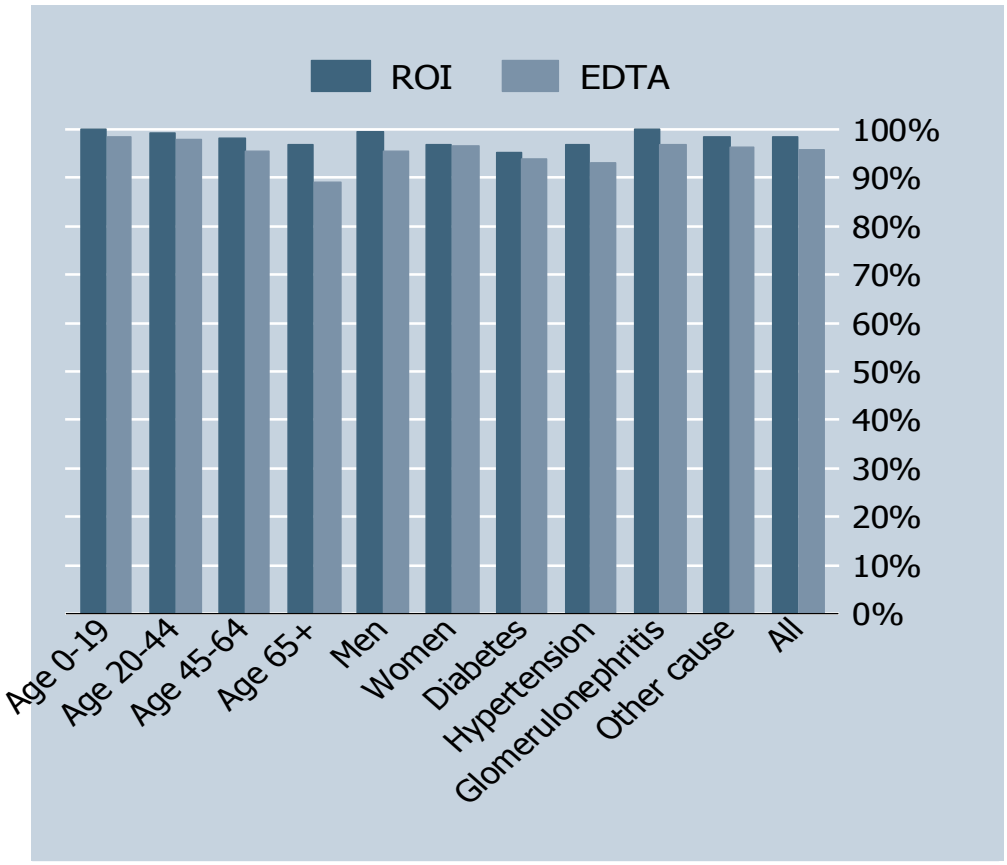


Figure 8.4.2: Five-year patient survival from first deceased donor transplant 2004 – 2008

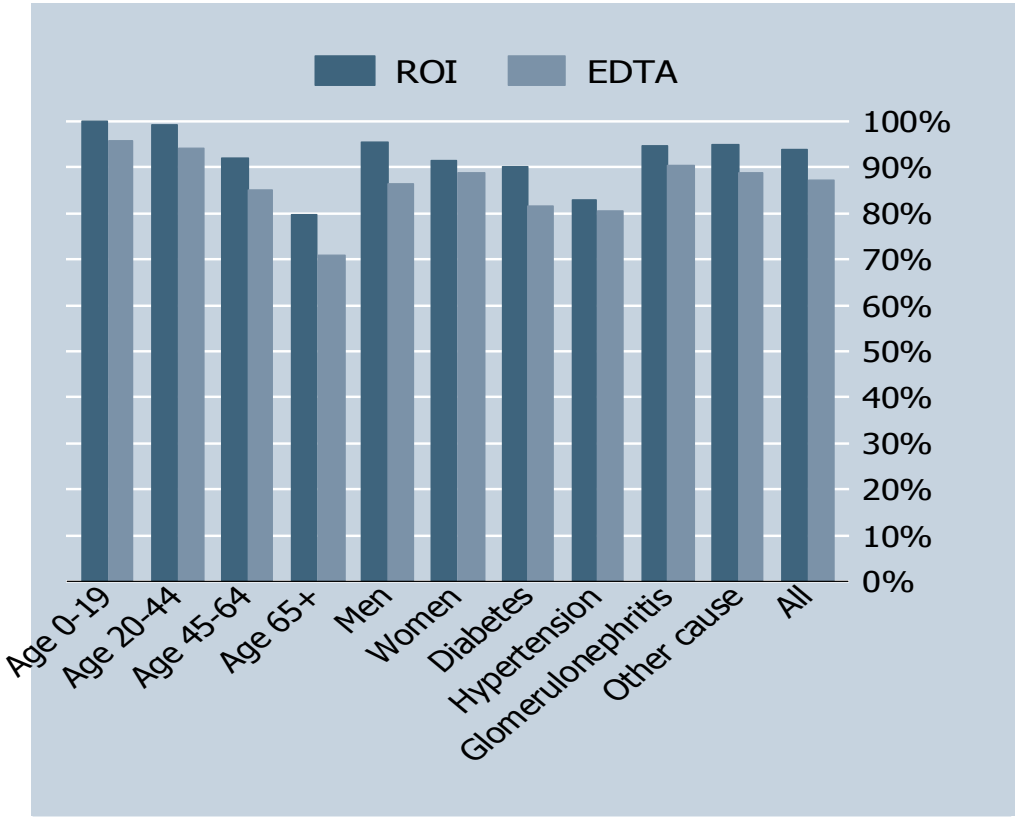


Figure 8.4.3: One-year patient survival from first deceased donor transplant 2007 – 2011

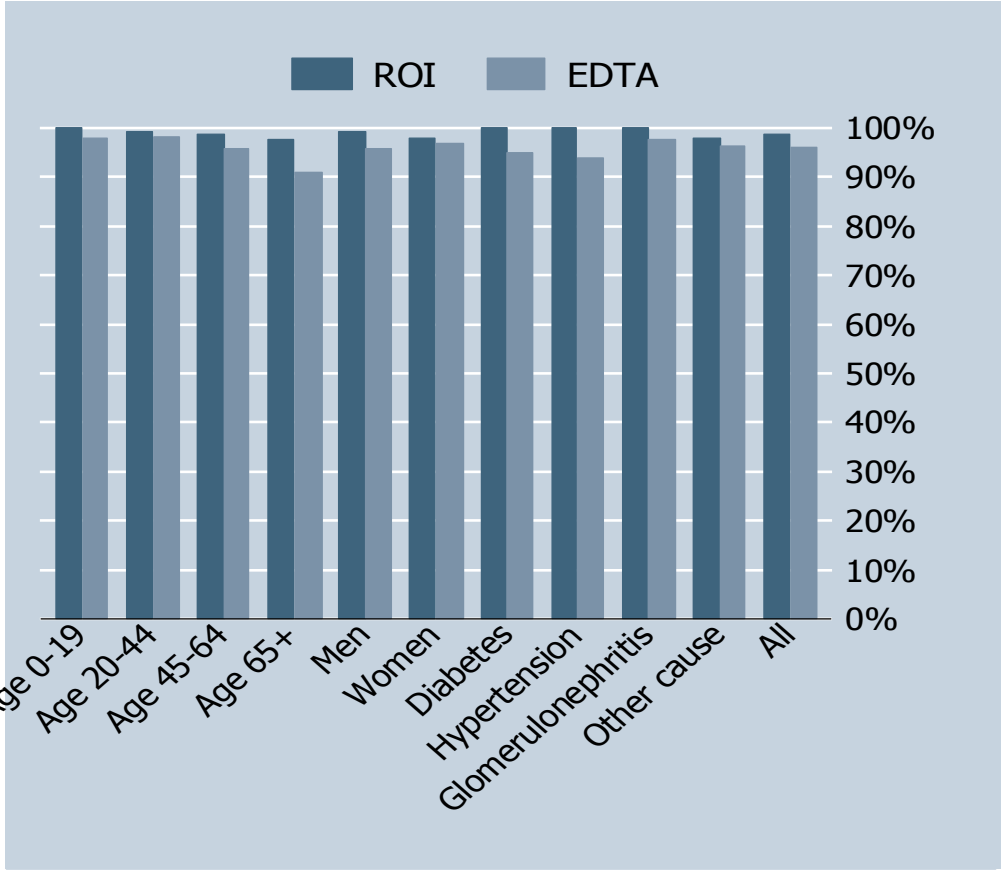


Figure 8.4.4: Two-year patient survival from first deceased donor transplant 2007 – 2011