

# **East of Scotland Renal Transplantation Service**

## **Annual Report**

### **The Royal Infirmary of Edinburgh**

**1<sup>st</sup> April 2012 to 31<sup>st</sup> March 2013**

**April 2013**

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## Introduction

The unit continues to try and improve the service we offer patients. It is evident that efforts need to be directed towards the pathway for assessment of potential recipients and donors to streamline this and reduce avoidable delays. We have presented data on the median (range) time it takes to assess potential living donors. Efforts need to be directed towards improving processes for assessing all patients – looking at the data included in referral, the time to clinic appointments, minimising further investigations and achieving listing as quickly as possible. That said, we are often dealing with marginal recipients. It is evident that some patients present for transplant with unrecognised or uncontrolled morbidity which can adversely affect outcome. We are therefore keen to try and develop some form of stratification of risk for patients listed – which can focus attention of responsible Nephrologists and Transplant teams on follow-up of these patients whilst on the list, ensuring that they remain fit for transplantation. One idea is of a traffic light type label on a listed patient which would then dictate a required frequency of review and feedback to the Transplant team to ensure that they are fit to remain active on the list. Regular communication between referring Nephrologists – both in Edinburgh and throughout the East of Scotland – and the Transplant Team is critical to maintain the list of active patients on the transplant list.

Concerns have been raised about the number of offered organs turned down for transplant in Edinburgh. We all appreciate that we are often dealing with marginal donors, we need better data to inform us whether we are too “conservative” – data on reasons why these organs are turned down and the ultimate outcome of these organs would be valuable. This will help better inform clinicians who make decisions about accepting organs often with limited information. The recent introduction of normothermic regional perfusion (NRP) of abdominal organs at time of retrieval from donors after cardiac death (DCD) by the Edinburgh Surgical team may increase the number of usable organs and ultimately improve the outcome of patients who receive these grafts. DCD donation currently accounts for 50% of donor activity.

Dr Caroline Whitworth  
Prof Steve Wigmore

## Nursing Report

The Transplant Unit, RIE has 18 inpatient beds in Ward 206, however, from 1<sup>st</sup> April 2013, two additional inpatient beds were allocated to the ward due to the increased demands on the service.

There is no change to the four bed Transplant High Dependency Unit (HDU, Ward 117) which has an additional funded HDU bed available in the critical care corridor. There are also funded beds in the main Intensive Therapy Unit (ITU, Ward 118).

### **The Nursing Establishment:**

Band 7- 2.0 WTE

Band 6 - 4.78 WTE

Band 5 – 32.45 WTE increased by 1.95 WTE for the additional beds

Band 2 - 7.6 WTE

### **Patient Care/Public Involvement**

NHS Lothian has focused on care rounding and Transplant HDU chose to take part in the pilot and adapted the tool for a High Dependency area. This documents and provides evidence that patients have had care delivered to them on a regular basis. The staff in HDU were fully involved in the development of this tool and it has been embedded into practice.

We aim to roll out the ward tool in our ward area later this year.

### **Nursing**

Staff retention remains good.

Nursing establishment increased by 1.95 WTE to account for the additional beds; this was achieved by transferring budgets from within NHS Lothian.

There is currently only 1.0 WTE Band 5 vacancy for the HDU area, which has already been recruited.

We continue to ensure the transplant nursing staff take part in the dialysis training programme and this adds to the overall quality and flexibility of the service delivered to patients by the transplant staff.

We consider the development of staff to be one of our priorities and are actively encouraging staff to take forward projects and to undertake further education. We are also commencing a staff rotation with Ward 115 (Renal HDU) in preparation for the new combined Transplant/Renal HDU.

Embedding the importance of audits and subsequent actions from this, the Healthcare Environmental Inspectorate (HEI) visits and The Improving Care for Older People in Acute Hospitals (OPAH) are priorities for staff in the coming year.

## **Serious Adverse Events**

Nil

There were two formal complaints and two concerns raised for the year 2012/13.

## **Concerns**

- 1) liver patient raised a concern regarding transport – resolved
- 2) Potential Live Donor patient raised a concern regarding the length of the assessment process - resolved

## **Complaints**

- 1) Kidney pancreas patient – formal complaint where the patient raised a number of concerns which have been addressed. The complainant was invited to meet with us but has not taken up this offer.
- 2) Kidney patient raised a complaint regarding care. This patient was being encouraged to be independent. Resolved

We continue to receive compliments in the form of verbal acknowledgement, cards and e-mail. An example of this is a very touching letter from the husband of a liver transplant patient who had been in the ward for 18 months and was discharged to home with support, until her death.

## **Infection Control**

We continue to clarify the infection control data before reporting to exclude:

- Instances of double counting
- Infections, which originated outwith (but were attributed to) the Transplant Unit since we obtained the specimens.

## ***Staphylococcus aureus* Bacteraemias**

We had five incidents of *Staphylococcus* bacteraemia, which is an increase from last year. We have already met with the Unit Quality Improvement Team and Infection Control Medical staff to investigate. It was found that there were reasons why we would have these infections, however, we require to be vigilant and proactive to try to reverse this trend.

- 1) Patient had a loss of skin integrity and on root cause analysis no cause of bacteraemia was attributed to practice.
- 2) Patient was admitted from the community with the *Staphylococcus* bacteraemia
- 3 and 4) Patient was in the ward for 18 months and had two positive screens

(1 MSSA and 1 MRSA). This patient had a number of ongoing medical issues.

5) Patient was found to be MSSA positive. The root cause analysis is still ongoing and not complete. This patient was in the unit for a number of weeks until her death and transferred from the ward to HDU and to ICU on more than one occasion. Her death was not associated with this infection.

### ***Clostridium difficile***

We had eight incidents of *Clostridium difficile* during 2012/13 which remains static from last year. These episodes have been subjected to root cause analysis.

Two patients were admitted from ICU with the infection.

Three patients were admitted from home with the infection. One patient was admitted twice and counted twice.

One patient was known to have this infection from a referring hospital and his treatment (appropriate) reactivated the infection.

One patient developed the infection and we are awaiting the root cause analysis report. We do not know as yet if she had been previously infected in her referring centre.

One patient had multiple antibiotic use which was unavoidable as part of their treatment.

### **Hand Hygiene**

Both areas continue to maintain high standards and average 95-96% for the year.

Ms Jackie Bradie  
Clinical Nurse Manager

## Renal Recipient Transplant Co-ordinator's Report

The Renal Co-ordinators now have a full complement of staff and the focus of last year has been to develop our service.

Nurse Led Post Transplant Annual review clinics continue to run at the Royal Infirmary of Edinburgh twice a week and monthly at St John's Hospital, Victoria Hospital, Kirkcaldy and Queen Margaret Hospital, Dunfermline. Clinic numbers have not increased significantly over the last year. Our clinic DNA rate is currently 15%, which has improved following the removal of regular non-attenders. We are currently setting up a database to capture referrals that are generated from clinic so that we can audit its effectiveness.

We have introduced Scotland-wide meetings between ourselves and our colleagues at other centres with the aim of sharing practice and encouraging collaboration. We have also organised a national study day for transplant co-ordinators and nurses from Scotland and the North of England, which is part of a rolling educational programme.

We have set up a "Going home and keeping healthy" website that aims to provide all patients, relatives and staff with up-to-date and relevant health and discharge information following a renal transplant. It will also provide users with the opportunity to feedback to the renal recipient transplant co-ordinator via e-mail. Within the next six months it is hoped to provide the above information for kidney/pancreas and islet patients.

We strive to continue to improve the service we deliver and to this end we are all undertaking further education this year. One member of the team has already presented our unit's data at both national and international conferences.

Laura Pairman  
Renal Transplant Co-ordinator

## Living Donor Kidney Transplantation

There were 29 living donor transplants carried out between 1<sup>st</sup> April 2012 and 31<sup>st</sup> March 2013.

All grafts are functioning. 10 pre-emptive, 16 haemodialysis and three peritoneal dialysis patients were transplanted.

### Live Donor Transplant by recipient centre.

Aberdeen	Dundee	Lothian	Fife	Highlands
9	7	9	2	2

### Paired exchange; ABOi and altruistic donors

In the past year, three paired/pooled transplants were performed and two Blood Group incompatible. We received four altruistic donor kidneys from other centres and donated four altruistic donor kidneys into the national pool.

### Clinic appointments

- Total number of assessment appointments: 152 (donors)
- Paired exchange – 12
- In progress/on hold – 36
- Not proceeding with donation – 37
- Repeat/review appt – 36
- Assess for other centre – 5
- Follow up – 123 (annual review)
- Donors progressed to donation – 29

### Time from first appointment to donation (excluding donors assessed elsewhere and paired/pooled)

For all East of Scotland: mean – 44 weeks; median 35 weeks (range 21 to 88)

Edinburgh/Fife/Borders: mean – 28 weeks; median 25 weeks (range 21 to 45)

For pre-emptive transplants: mean – 48 weeks; median 38 weeks (range 25 to 88)

For patients on RRT: mean – 38 weeks; median 28 weeks (range 21 to 64)

### Laparoscopic nephrectomy

All donors underwent laparoscopic nephrectomy, with 21 left nephrectomies and 8 right.



## Transplant outcome

### One and five-year graft survival estimates (unadjusted) following living donor kidney transplant – adults only, at Edinburgh

Survival period	Year of transplant	No. in analysis	Survival	95% confidence int.
One year	2007 - 2011	78	95%	86 – 98%
Five years	2003 - 2007	122	93%	86 – 96%

### One and five-year patient survival estimates (unadjusted) following first living donor kidney transplant – adults only, at Edinburgh

Survival period	Year of transplant	No. in analysis	Survival	95% confidence int.
One year	2007 - 2011	70	99%	90 – 100%
Five years	2003 - 2007	106	93%	82 – 98%

## Programme Developments

- A major initiative of 2012/13 involved the Transplant Team visiting all referring centres and running Transplant Roadshows – ‘Hear the Facts; Consider the Options’ attended by patients, families, members of staff and any other interested party. These sessions received excellent feedback and many of the attendees requested this be run as an annual event.
- Funding has been obtained for a permanent full time Live Donor Co-ordinator and this post is currently being advertised.
- The weekly living donor Multi-Disciplinary Team Meeting continues to address many of the increasingly complex issues involved. In 2012/13 there were 277 agenda items discussed.
- The Radiology Department in the Royal Infirmary of Edinburgh has facilitated a one stop assessment day for potential live donors. This will greatly reduce the assessment time for donors, and already other centres in the UK have expressed interest in this initiative.

## Future Developments

- Further work is being done to streamline the assessment process and utilise clinic appointment time effectively.
- The Living Donor Information Pack is a collection of booklets, information sheets and initial health questionnaires, sent to every potential donor to inform of the process. This pack requires updating and work is in progress to address this issue.
- Although the number of live donor transplants did increase last year, we are still at the lower end of the table compared to many UK centres. We believe there is still potential for expansion and improvement and anticipate that the number of patients benefiting from a live donor transplant in the East of Scotland will rise again this coming year.

## Histocompatibility and Immunogenetics (H&I) Laboratory Report

Between 1 April 2012 and 31 March 2013 the H&I laboratory supported 103 Kidney, Simultaneous Pancreas Kidney (SPK), Islet and Liver Kidney transplants performed at the Edinburgh Transplant Unit.

### HLA matching

Out of 43 deceased donor kidney transplants (DBD and DCD), 12 were Level 1 (000) mismatches, 18 were Level 2 (0 DR and 0/1 B) mismatches and 13 were Level 3 mismatches (0 DR and 2 B or 1 DR and 0/1 B). No patients received poor Level 4 mismatches (1 DR and 2 B or 2 DR). However in SPK transplants 11/20 of patients received Level 4 mismatches.

### Virtual crossmatching

Out of 43 deceased donor kidney transplants (DBD and DCD), 35 (81%) were undertaken following virtual crossmatching (vXM), i.e. without waiting for the results of the prospective crossmatch. Of these 35 vXMs, six were undertaken in patients with known HLA antibodies. The rate of vXM for SPK transplants was 95%.

### Transplanting sensitised patients

71/103 (69%) patients who received a transplant in 2012/13 had no HLA antibodies at the time of transplant. Only 5/103 (5%) transplants were for 'Highly Sensitised Patients'.

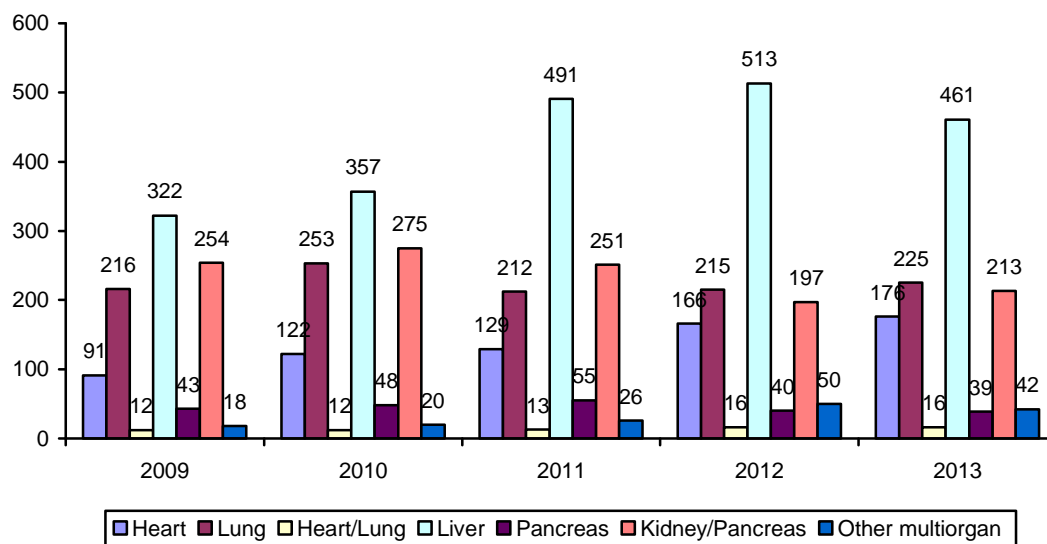
### HLA typing of deceased donors

The following table shows the number of deceased donor HLA class I and II types undertaken for ODT in 2012/13. For DCD donors, more than half of the types undertaken did not lead to transplant.

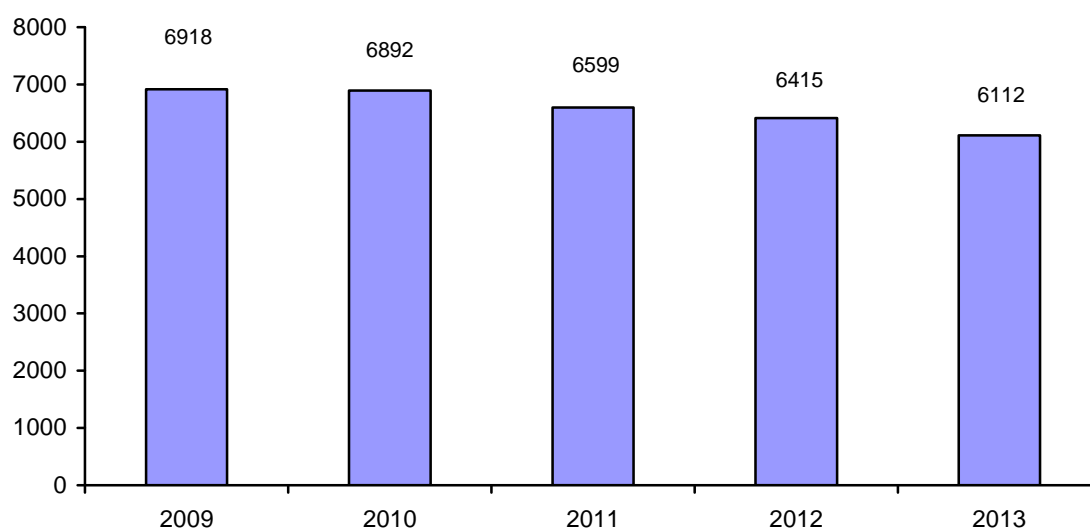
April 2012 to March 2013		
	Proceeded to Transplant	
	Yes	No
Total Number Deceased Donors HLA Typed (n=65)	40	25
DCD Donors (n=37)	17	20
DBD Donors (n=28)	23	5

## Waiting List Statistics

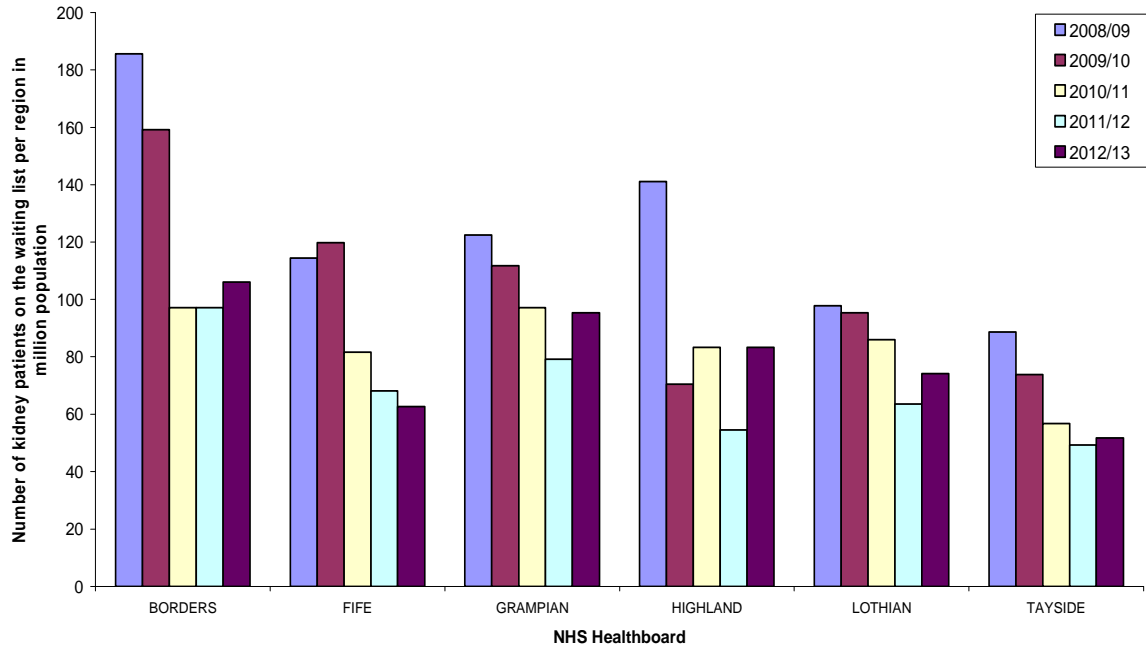
### UK active waiting list at 31<sup>st</sup> March – all organs (except kidney) 2009 to 2013



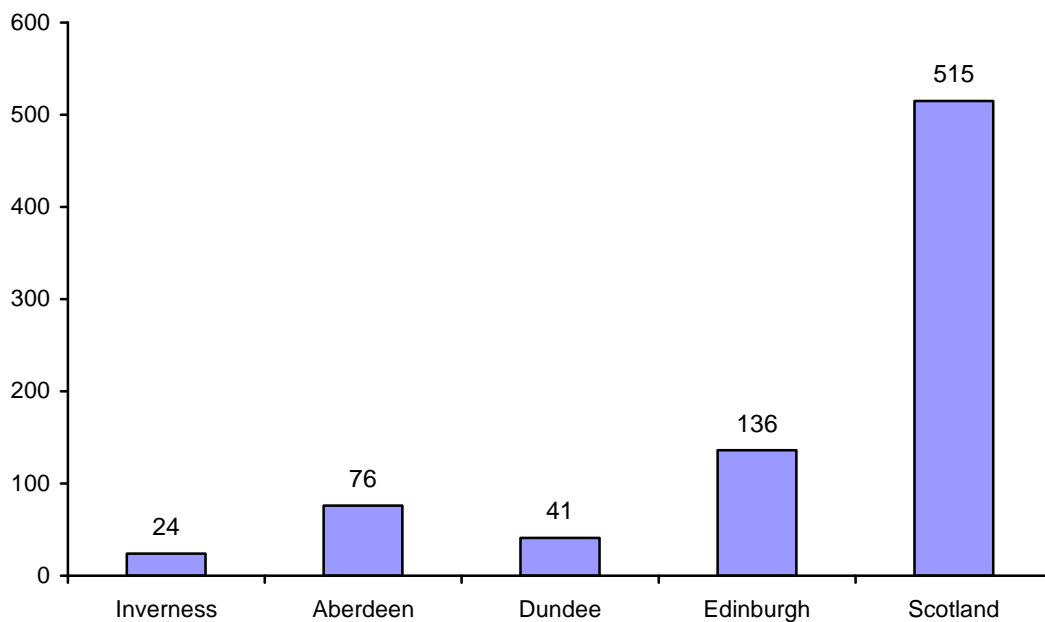
### UK waiting list as at 31<sup>st</sup> March – kidney only (active) 2009 to 2013



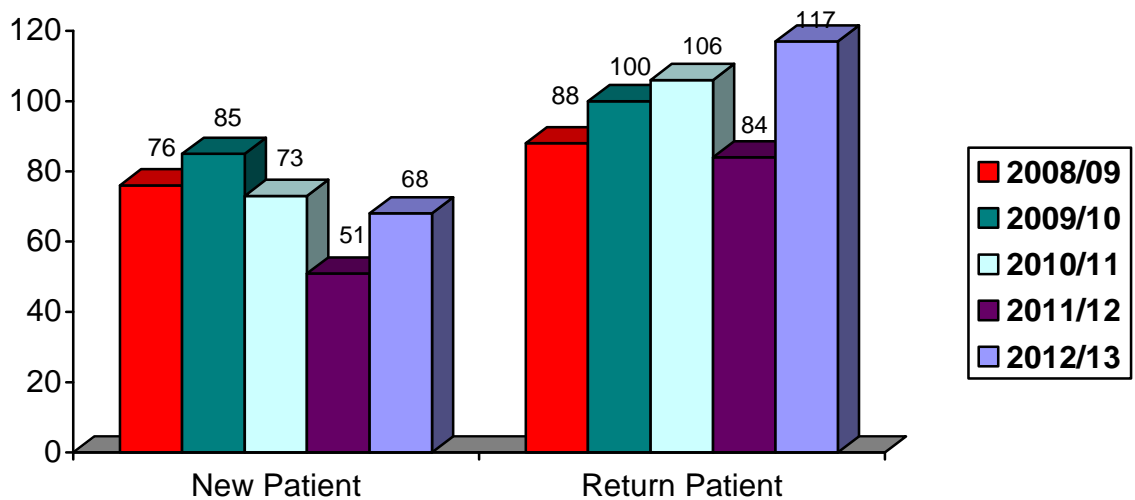
## Number of kidney patients on the waiting list for East of Scotland per Region (health board) pmp, as at 31<sup>st</sup> March 2013



## Total number of kidney patients on the waiting list for East of Scotland as at 31<sup>st</sup> March 2013



## Edinburgh Transplant Assessment Clinic Renal Appointments



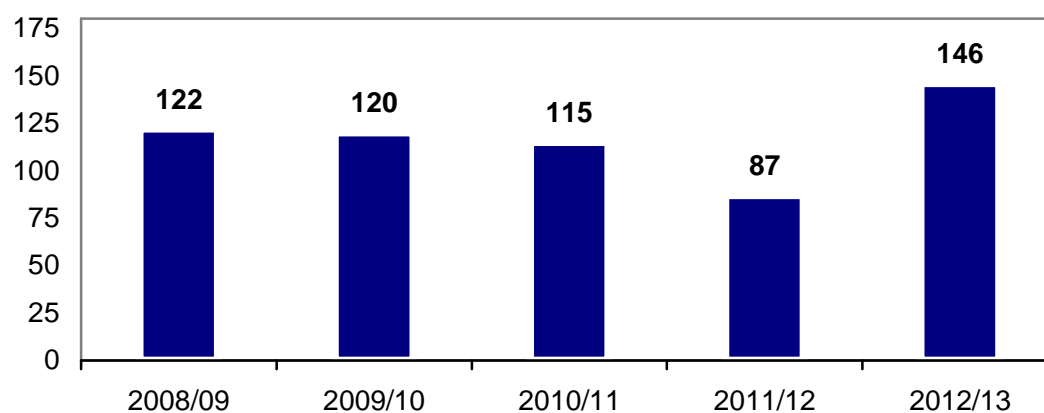
Clinics are run by both the surgeon and transplant co-ordinator – total number of 63 clinics in the last financial year. The clinic template consists of the following assessments: x1 kidney pancreas patient, x1 renal new patient, x2 renal repeat patients and x1 live donor patient. The appointments last between 30 and 60 minutes. Input is also provided by the anaesthetist and psychiatrist when required.

### DNA rates for Transplant Assessment Clinic for 2012/13

NP appointments 11.76%

RP appointments 5.98%

**Patients added (kidney only, as active or suspended) to the East of Scotland waiting list 1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013**



**Number of patients who died or were removed from Kidney Transplant Waiting List 1<sup>st</sup> April 2012 - 31<sup>st</sup> March 2013**

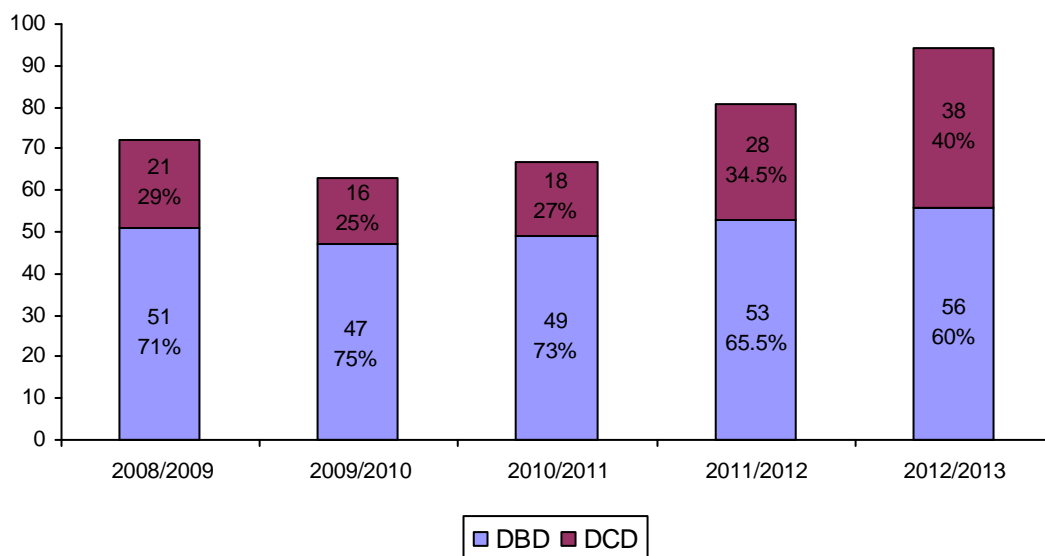
Dialysis centre	Died on list	Removed from list
Inverness	-	-
Aberdeen	-	1
Edinburgh	7	-
Dundee	-	-
Total	7	1

## Donor Statistics

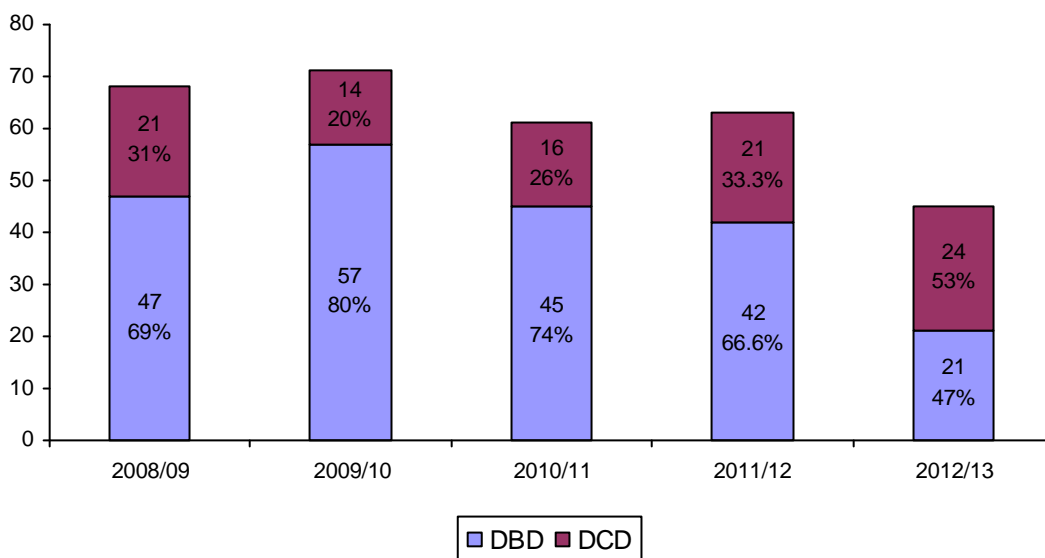
### Deceased solid organ donors in Scotland 1<sup>st</sup> April 2008 – 31<sup>st</sup> March 2013

<i>Donating hospital</i>	Solid organ donors				
	<i>2008/2009</i>	<i>2009/2010</i>	<i>2010/2011</i>	<i>2011/2012</i>	<i>2012/13</i>
Kilmarnock	3	1	2	0	2
Ayr	1	3	0	0	3
Borders	0	0	0	1	0
Greenock	1	0	0	1	6
Paisley	6	1	3	5	4
Kirkcaldy	2	0	0	1	2
Dunfermline	1	5	3	6	0
Glasgow	19	16	13	11	16
Inverness	1	2	2	2	4
Airdrie	0	0	1	1	3
Wishaw	0	2	1	3	5
East Kilbride	2	3	0	1	2
Aberdeen	6	5	4	3	8
Edinburgh	20	18	27	24	19
Dundee	7	2	6	10	7
Livingstone	2	0	2	5	4
Perth	0	2	1	2	3
Falkirk (Larbert)	0	0	0	2	3
Stirling	0	1	1	1	0
Dumfries and Galloway	1	2	1	2	3
<b><i>Scotland</i></b>	<b>72</b>	<b>63</b>	<b>67</b>	<b>81</b>	<b>94</b>

**Table below shows proportion of DBD versus DCD deceased donors in Scotland 1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013**



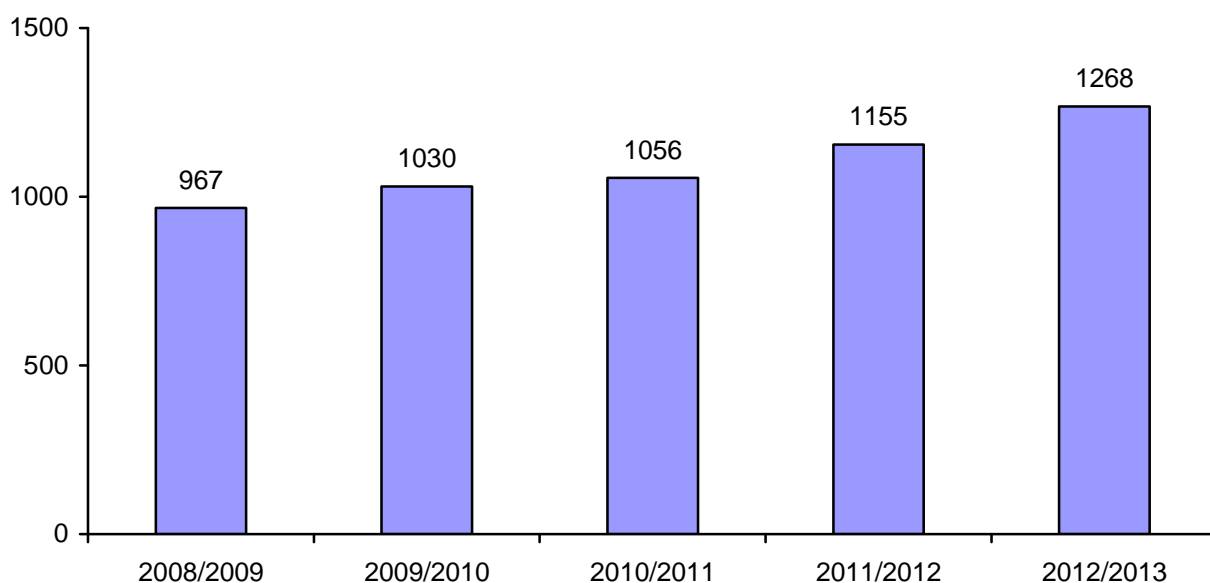
**Proportion of DBD versus DCD kidney transplants in East of Scotland 1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013**



\*2012/13 data includes 1 liver kidney and 1 islet after kidney



**UK and Ireland figures for deceased solid organ donors  
1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013**



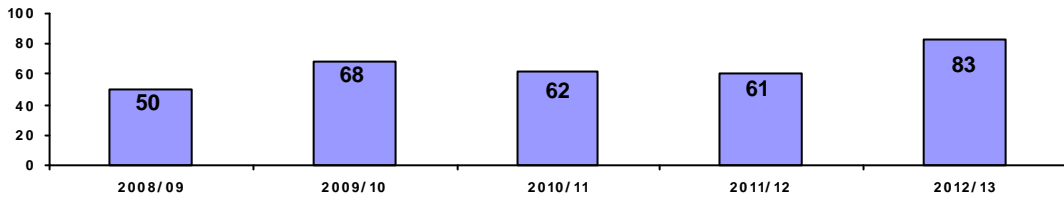
**UK and Ireland figures for deceased solid organ donors  
1<sup>st</sup> April 2012 – 31<sup>st</sup> March 2013**

<b>Donor Type</b>	<b>England</b>	<b>Scotland</b>	<b>Wales</b>	<b>N Ireland</b>	<b>Republic of Ireland*</b>	<b>Total</b>
<b>DBD</b>	583	56	35	29	58	761
<b>DCD</b>	441	38	17	11	0	507
<b>Total</b>	<b>1024</b>	<b>94</b>	<b>52</b>	<b>40</b>	<b>58</b>	<b>1268</b>

\*Data for Republic of Ireland not complete

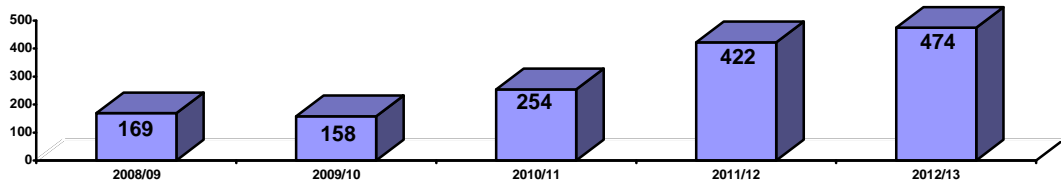
## Kidney Transplant Statistics

### Kidney transplant offers declined

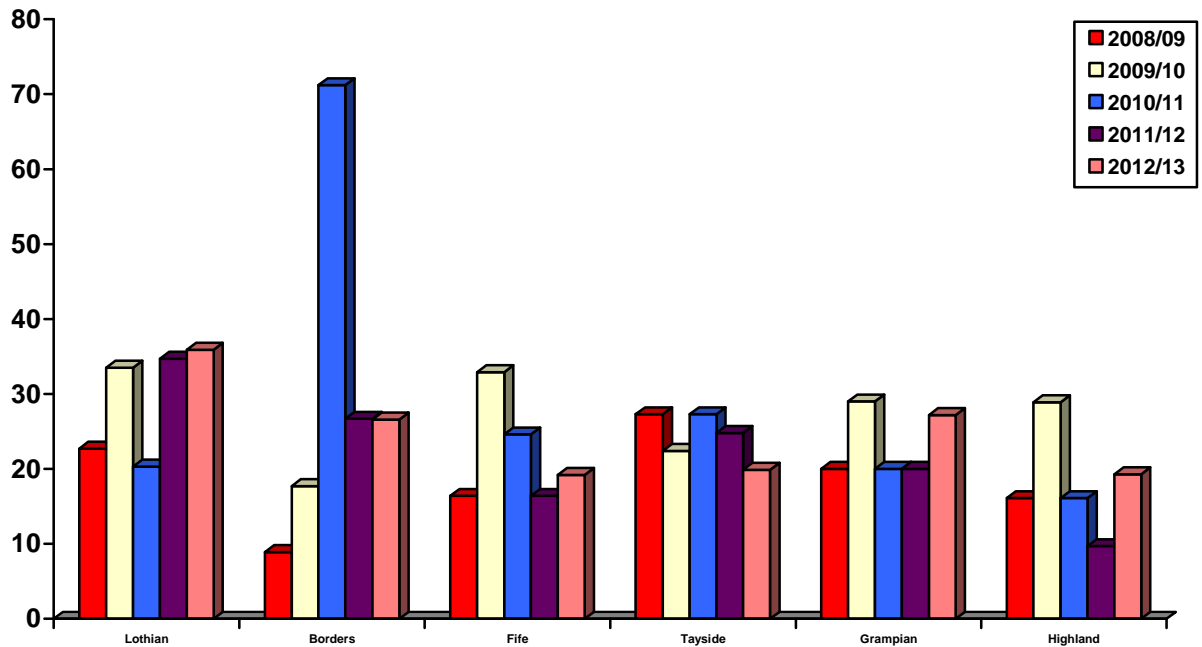


2012/13 - DCD declines: 55, DBD declines: 28

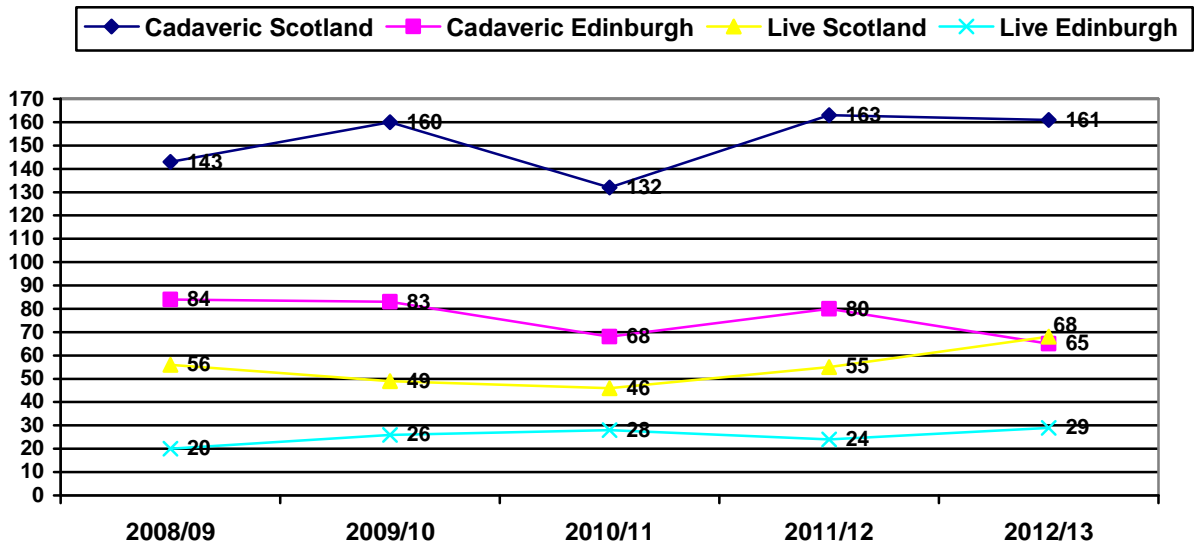
### Kidney/pancreas transplant offers declined



### Deceased donor kidney transplants per million population by region, 1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013



## Number of kidney transplants\* carried out in Edinburgh and Scotland 1<sup>st</sup> April 2008 – 31<sup>st</sup> March 2013



\* includes kidney/pancreas and liver/kidney transplants

Edinburgh cadaveric 08/09 includes 16 SPK, 1 liver/kidney, 67 kidney  
Edinburgh live 08/09 includes one altruistic donor

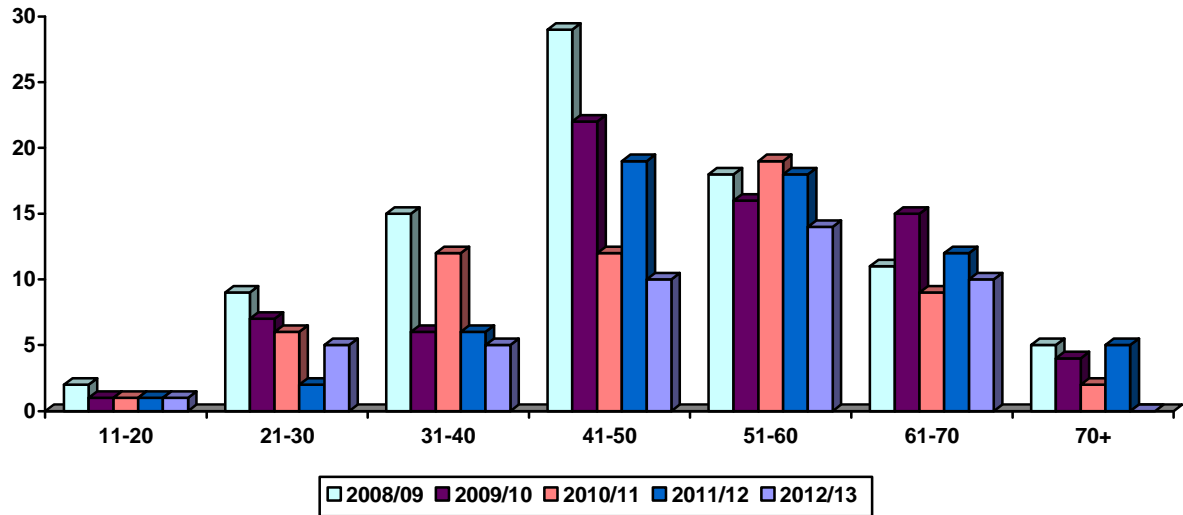
Edinburgh cadaveric 09/10 includes 12 SPK, 1 liver/kidney, 70 kidney  
Edinburgh live 09/10 includes two altruistic and 2 paired/pooled donors

Edinburgh cadaveric 10/11 includes 6 SPK, 1 liver/kidney, 61 kidney  
Edinburgh live 10/11 includes two paired/pooled donors

Edinburgh cadaveric 11/12 includes 17 SPK, 2 liver/kidney, 61 kidney

Edinburgh cadaveric 12/13 includes 20 SPK, 1 liver/kidney, 44 kidney  
Edinburgh live 12/13 includes four altruistic and three paired/pooled donors

**Deceased donor kidney transplant recipient age group  
1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013**



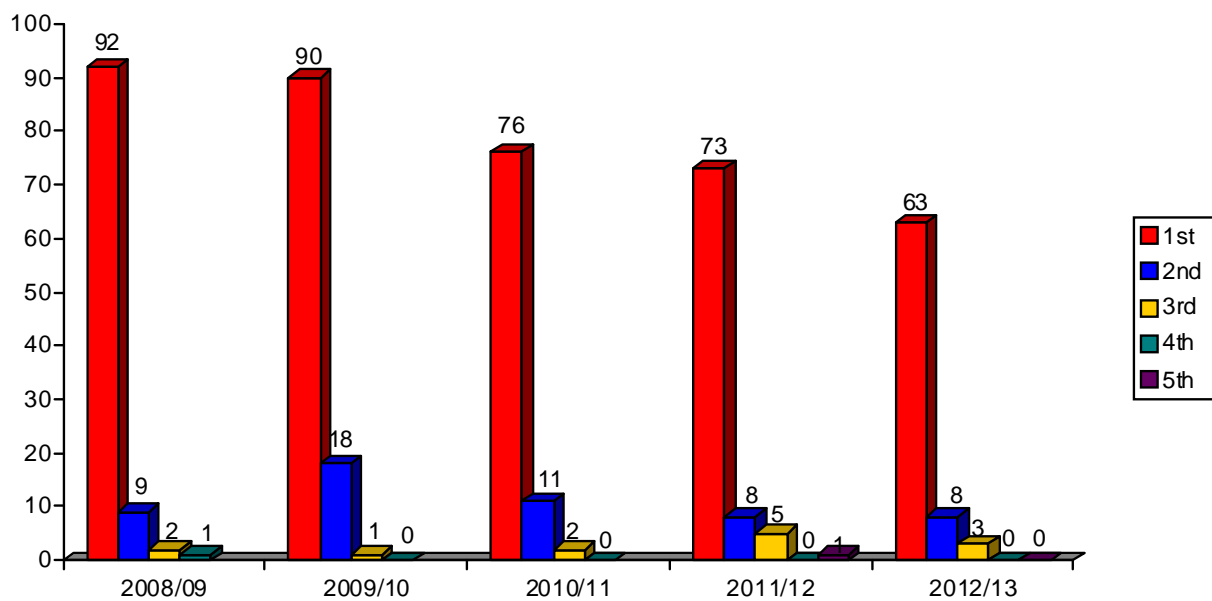
**Number of DR mismatches for all renal transplants**

	<b>0</b>	<b>1</b>	<b>2</b>
<b>2008/09</b>	50	41	13
<b>2009/10</b>	44	57	8
<b>2010/11</b>	44	38	7
<b>2011/12</b>	41	38	8
<b>2012/13</b>	38	30	6

## Dialysis treatment prior to deceased donor kidney transplant

	Hospital haemodialysis	CAPD / APD	Pre-dialysis	Home haemodialysis
<b>2008/09</b>	61	20	7	0
<b>2009/10</b>	58	21	4	0
<b>2010/11</b>	40	18	1	2
<b>2011/12</b>	45	9	6	3
<b>2012/13</b>	35	5	2	3

## All kidney patients transplanted showing graft number 1<sup>st</sup> April 2008 to 31<sup>st</sup> March 2013



**Length of stay for all kidney transplant patients from 1 April 2012 to 31 March 2013**

	Mean	Range
Ward	9.4 days	4 to 28 days
HDU	4 days	1 to 10 days
ITU	2 days	2 days

**One and five year kidney graft and patient survival estimates (unadjusted) following deceased donor transplants**

**One and five year graft survival estimates following first deceased kidney only transplant – adults only, at Edinburgh**

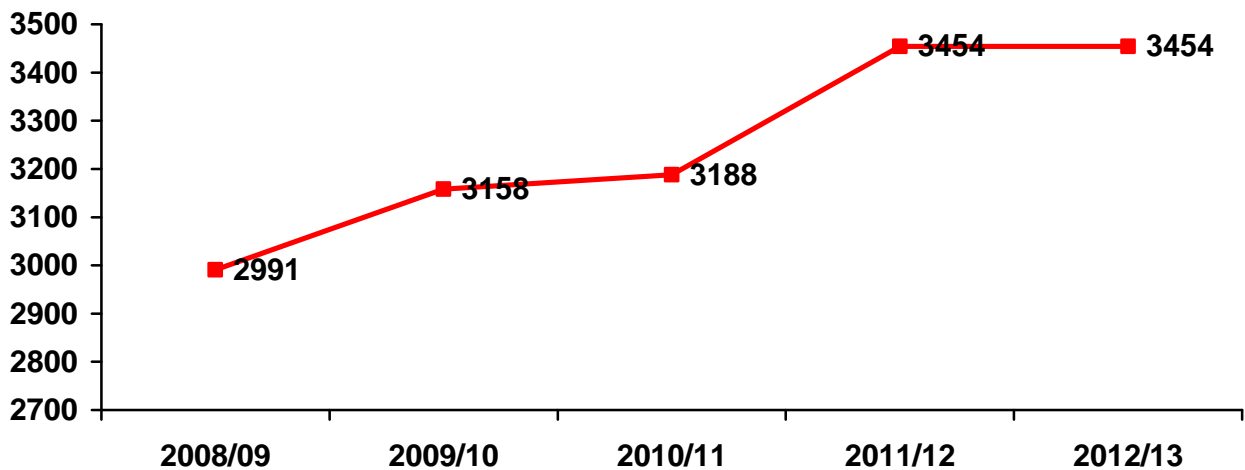
Survival period	Year of transplant	No. in analysis	Survival rate	95% confidence int.
1 year	2007 - 2011	128	94%	88 – 96%
5 years	2003 - 2007	246	86%	80 – 90%

**One and five year patient survival estimates following first deceased kidney only transplant – adults only, at Edinburgh**

Survival period	Year of transplant	No. in analysis	Survival rate	95% confidence int.
1 year	2007 - 2011	128	98%	92 – 100%
5 years	2003 - 2007	246	84%	74 – 90%

## Post Transplant Outpatient Activity

The increase in kidney and kidney/pancreas transplant outpatient activity year on year is shown in the graph below. This consists of patients attending outpatient Consultant and Registrar clinics at the Royal Infirmary of Edinburgh, Borders General and St John's Hospital. The nurse-led annual review clinics also include the Royal Infirmary of Edinburgh, Queen Margaret Hospital, Dunfermline, Victoria Hospital, Kirkcaldy and St John's Hospital.



\* Figures for 2012/13 includes 426 patients who attended the ward for outpatient appointments

DNA rate for clinic 2012/13 is 9.5%