

KQuIP/UKRR Regional Day
East Midlands

11.00 – 11.20 - REFRESHMENTS

**‘THINK
KIDNEYS’**

KQuIP

KQuIP/UKRR Regional Day

East Midlands

11:20 - 12:00

- **NHSBT – Highlights from the NHSBT report and the recent national transplant peer review**
- **Update on Transplant Improvement Group activity Followed by Q & A**

Rob Preston, Chair, East Midlands Transplant Improvement Group

**‘THINK
KIDNEYS’**

KQuIP

Kidney Transplantation East Midlands

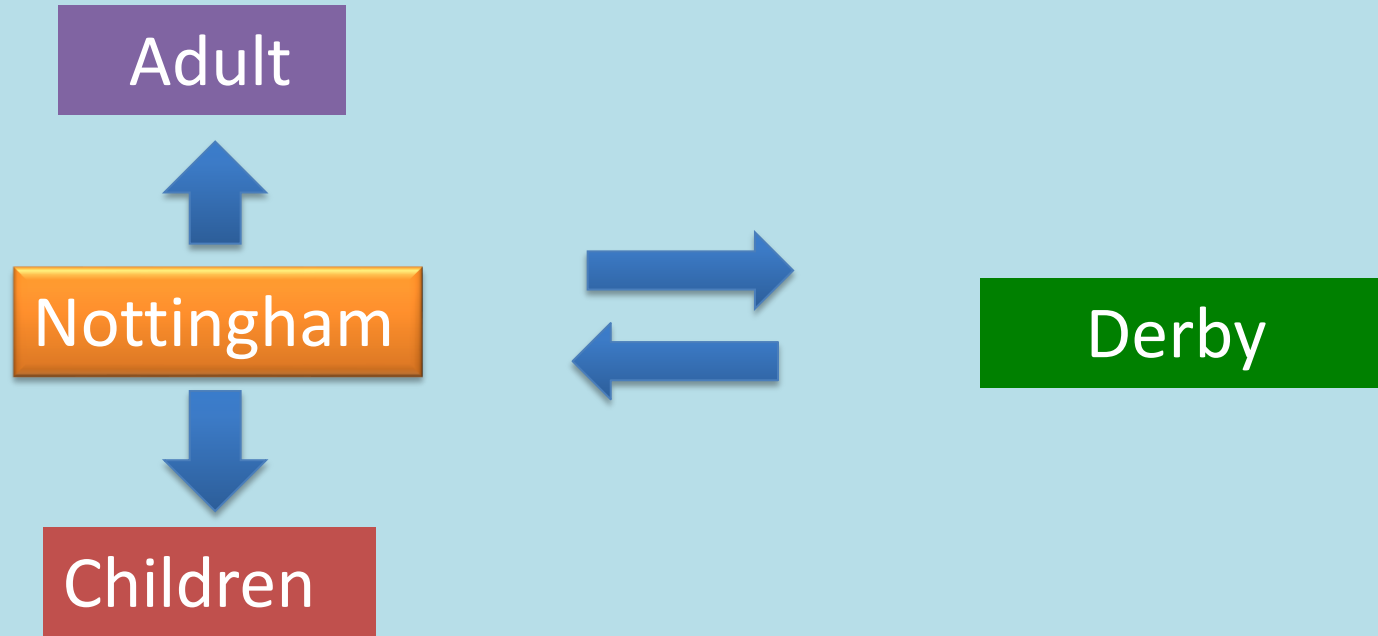
Rob Preston
Consultant Nephrologist
Chair, East Midlands Transplant Improvement Group

KQuIP/UKRR Regional Day – East Midlands
12th September 2017

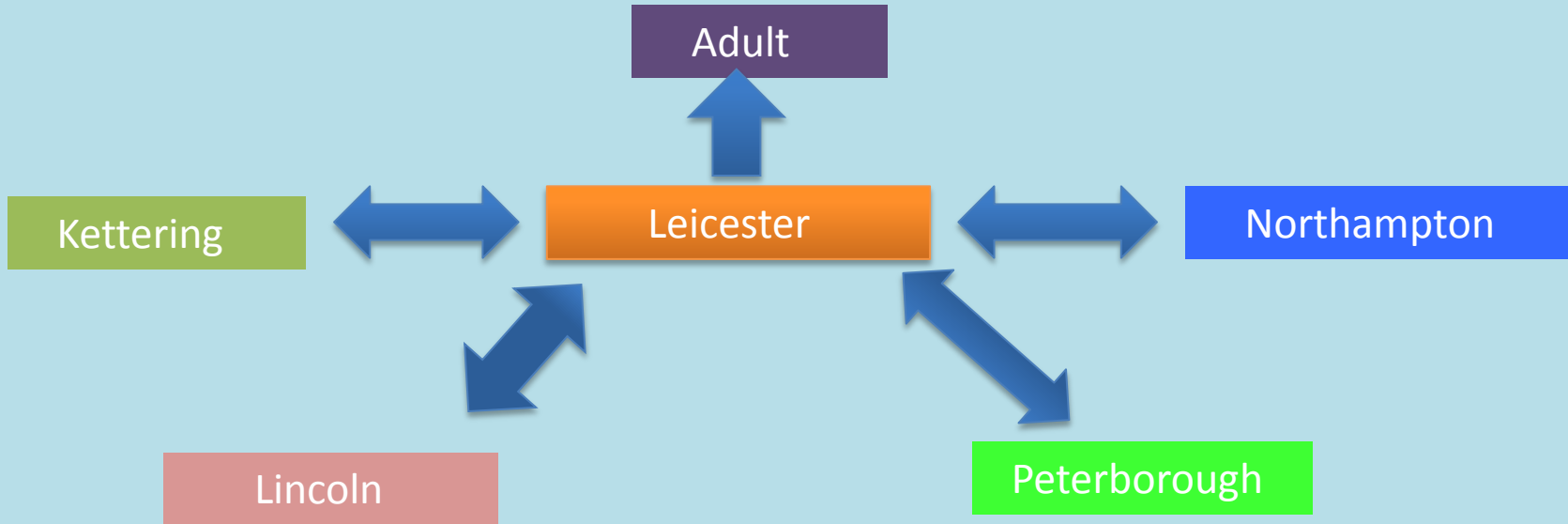
Objectives

- NHSBT – Highlights [East Midlands]
- National Transplant Peer Review
- Transplant Improvement Group [TIG]

Kidney Transplant Services East Midlands



Kidney Transplant Services East Midlands



A thick, blue, wavy line that curves across the top of the slide, separating the header from the main content.

Annual Report on Kidney Transplantation 2016/17

SLIDE SET

Figure 2.1 Patients on the kidney transplant list at 31 March

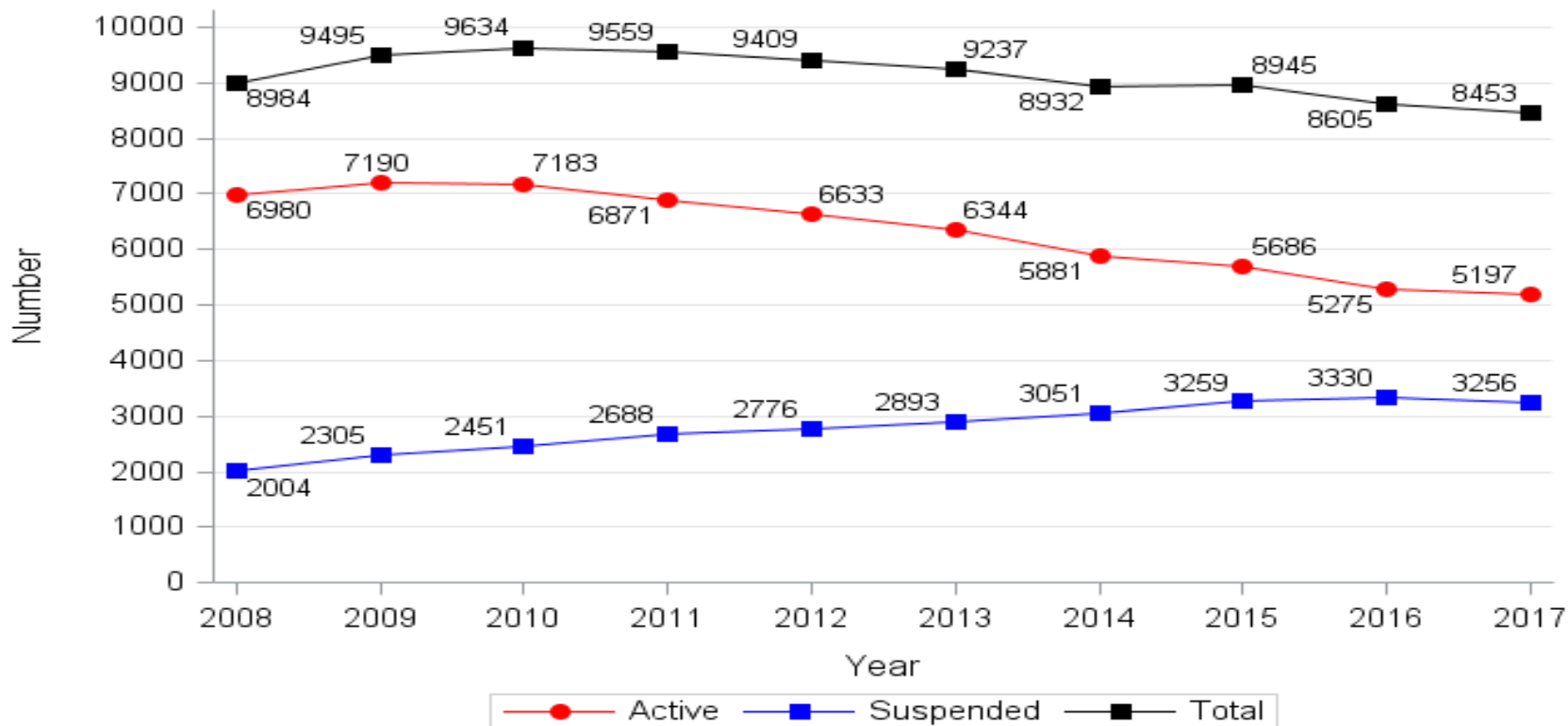


Figure 2.2 Patients on the active kidney transplant list at 31 March 2017, by centre

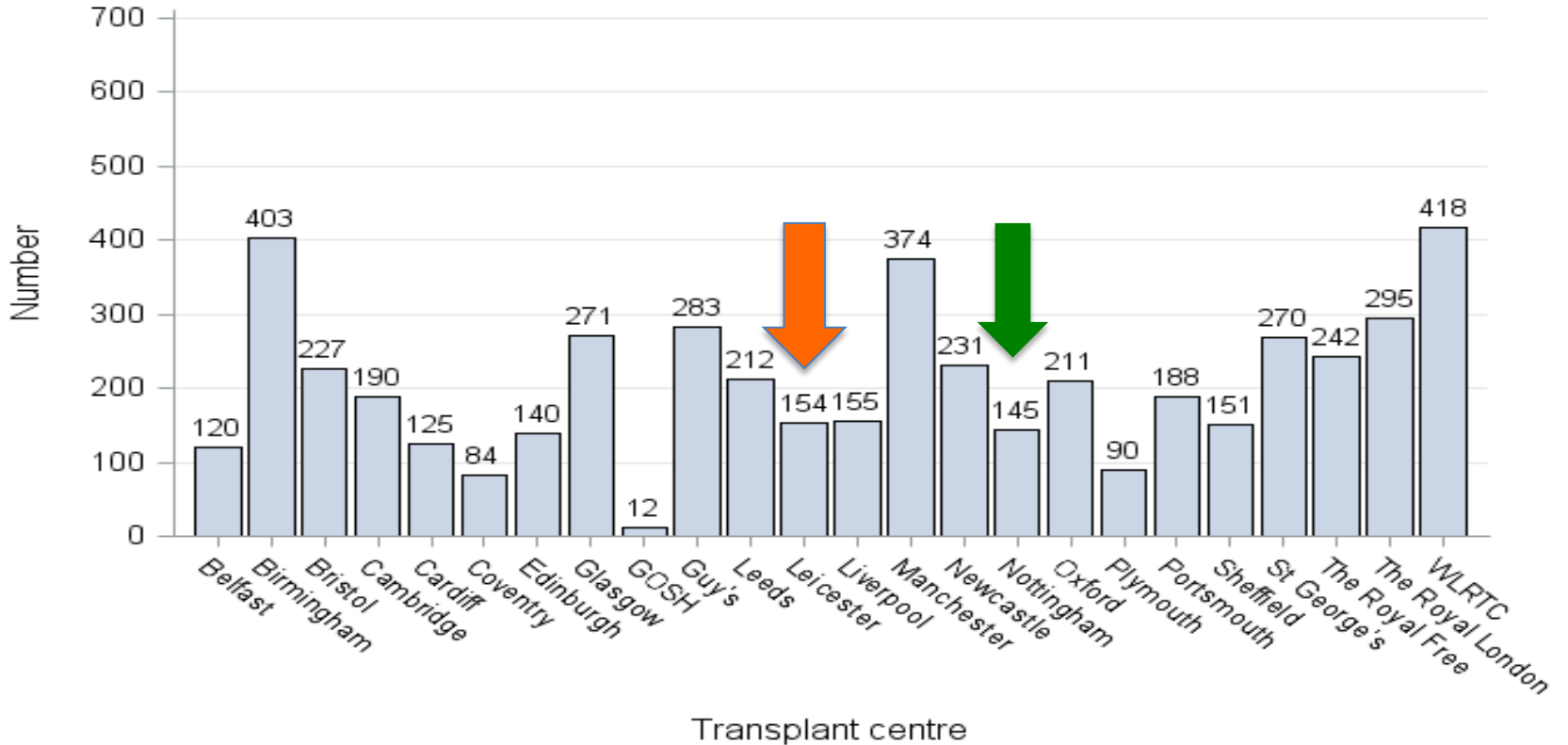


Figure 2.3 Kidney transplants, 1 April 2007 - 31 March 2017

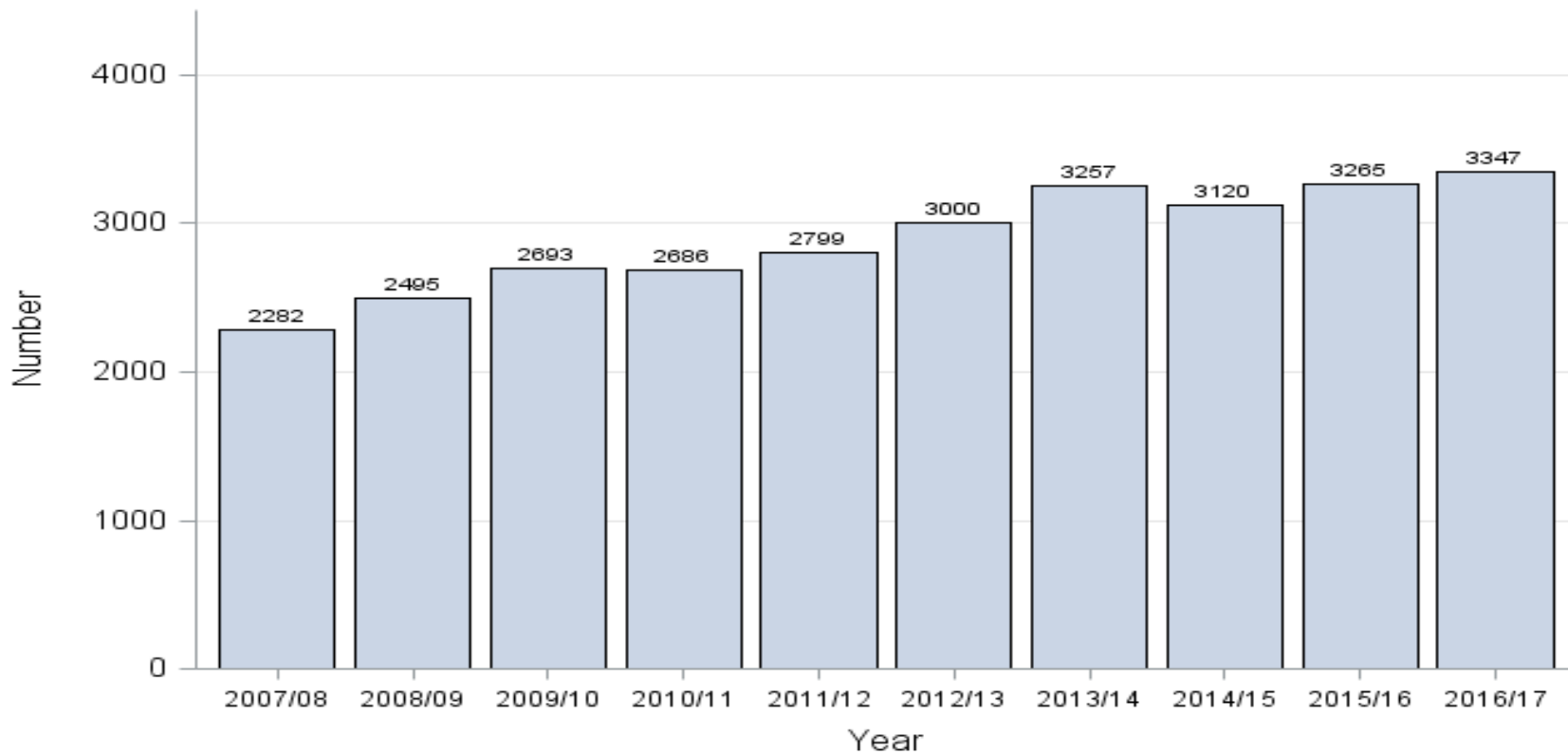


Figure 2.4 Kidney transplants by centre, 1 April 2016 - 31 March 2017

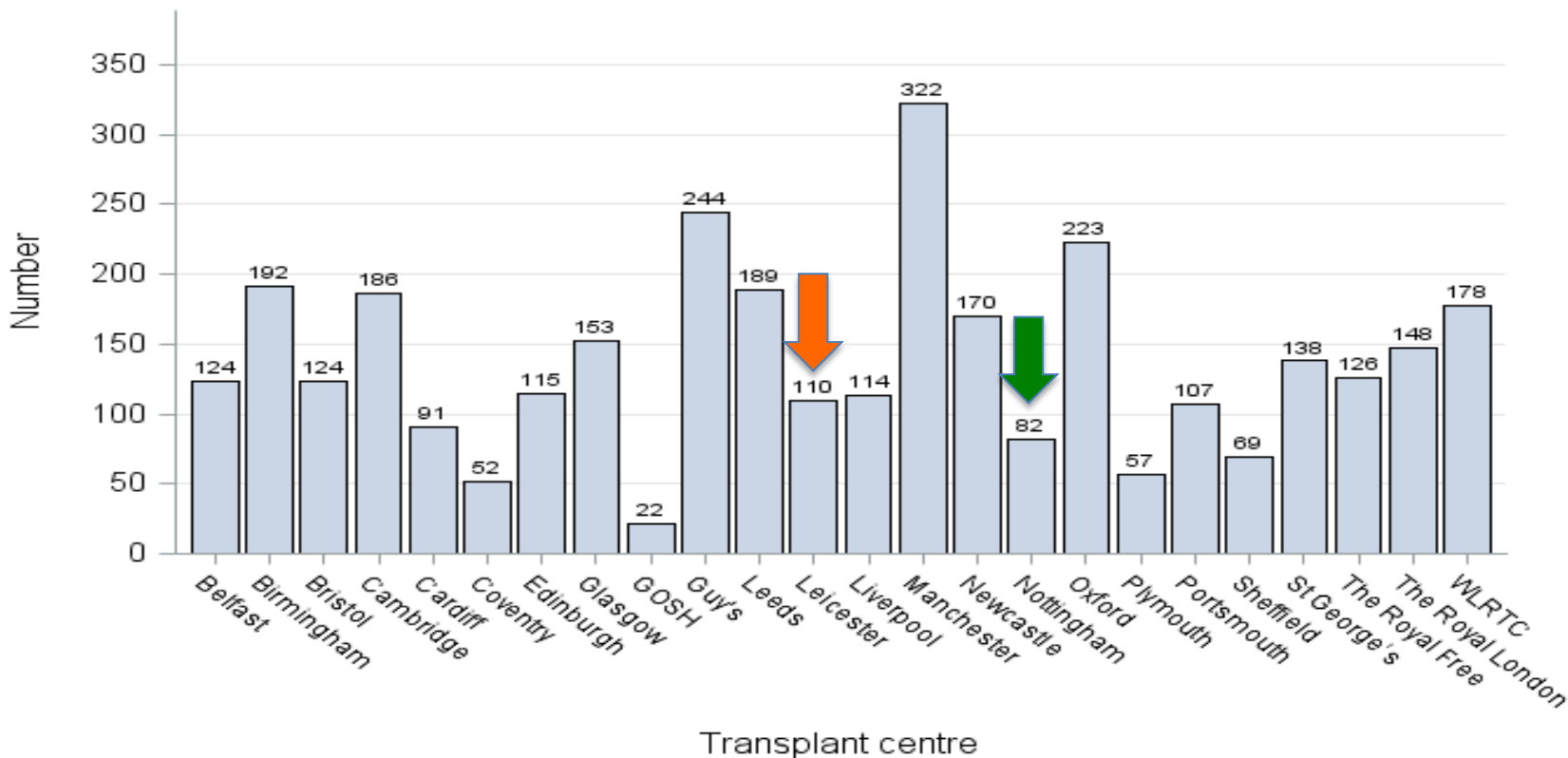


Figure 2.5

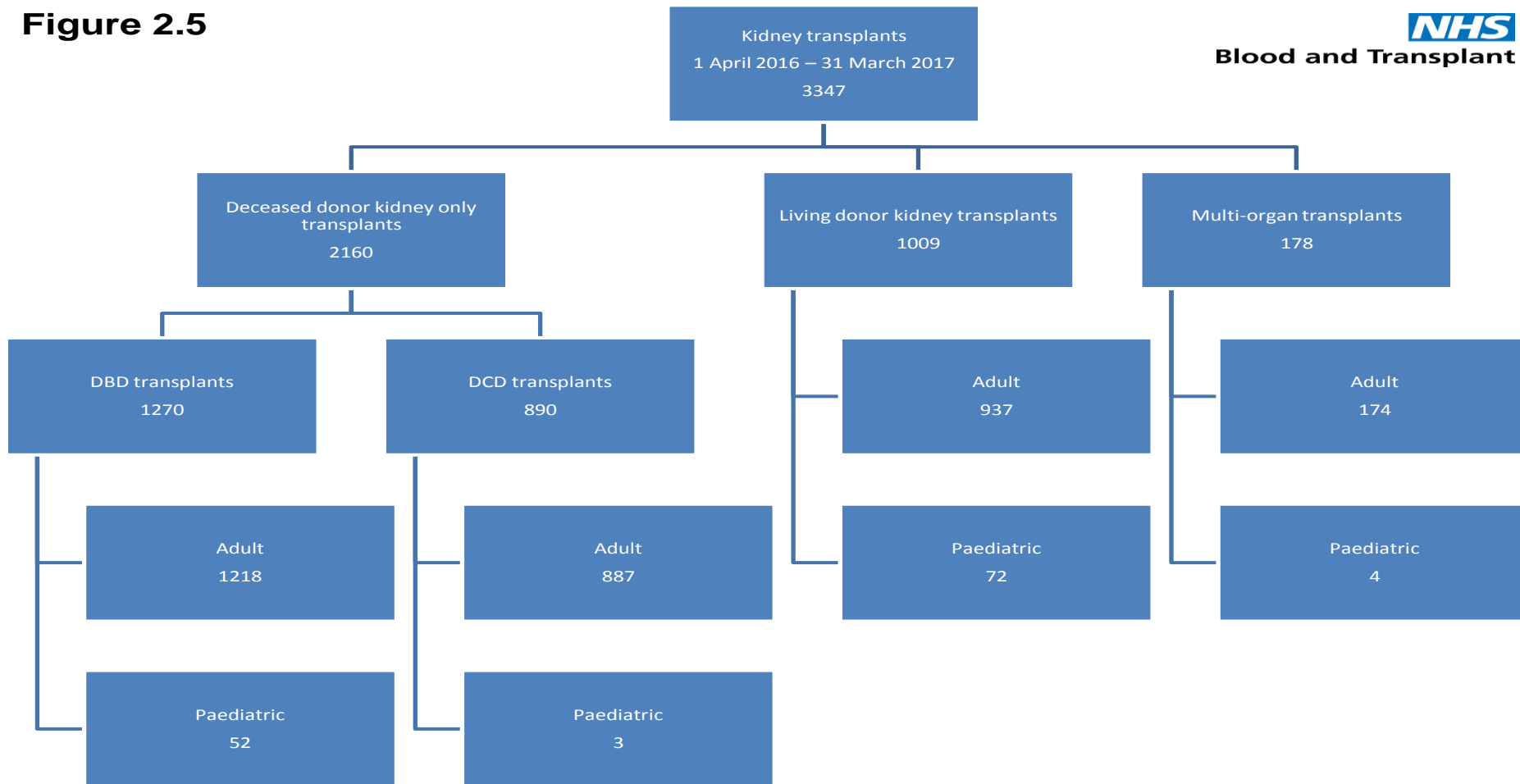


Figure 2.6 Comparison of kidney registration rates (pmp) with deceased donor transplant rates (pmp) by recipient country/Strategic Health Authority of residence

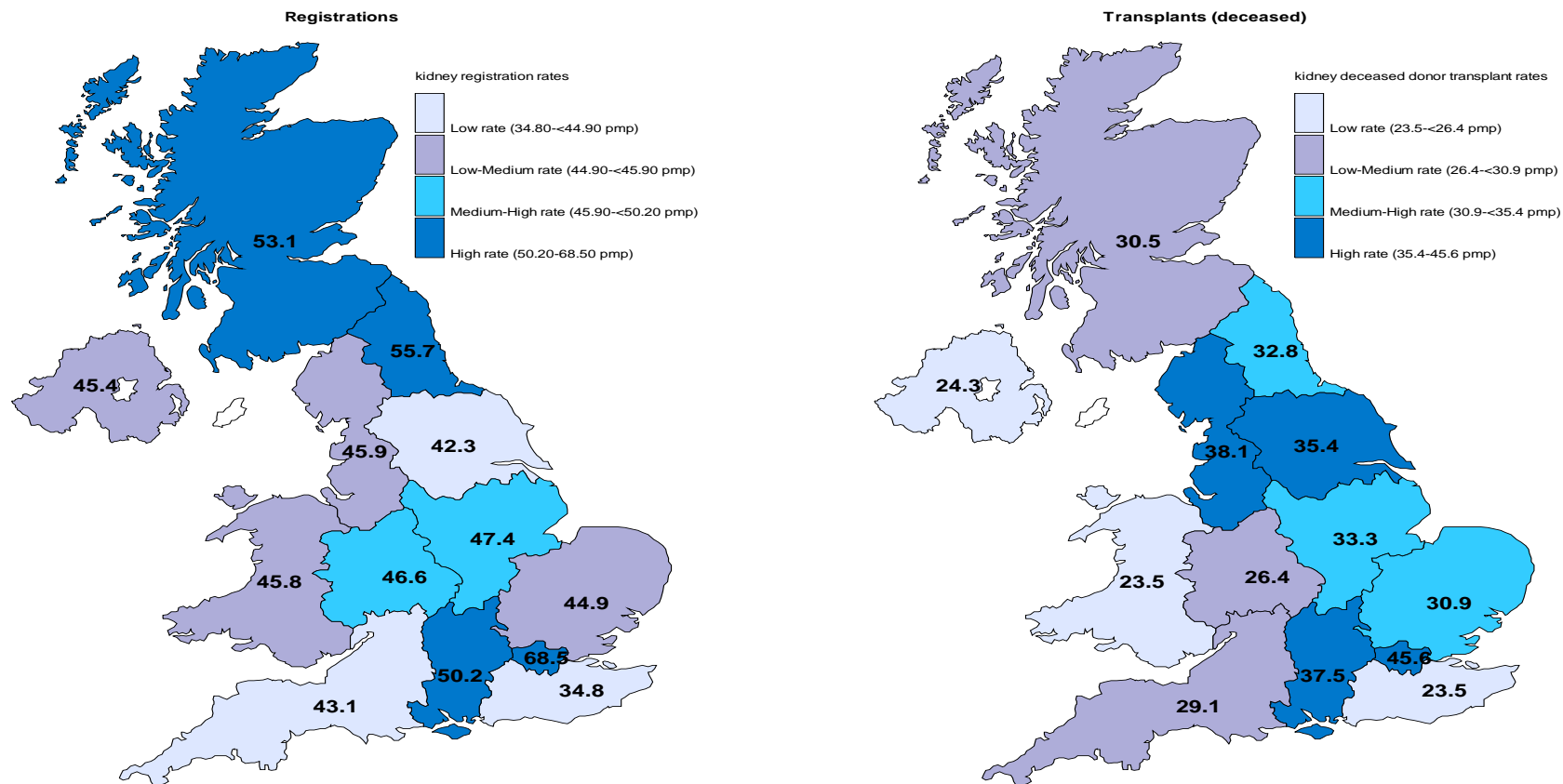
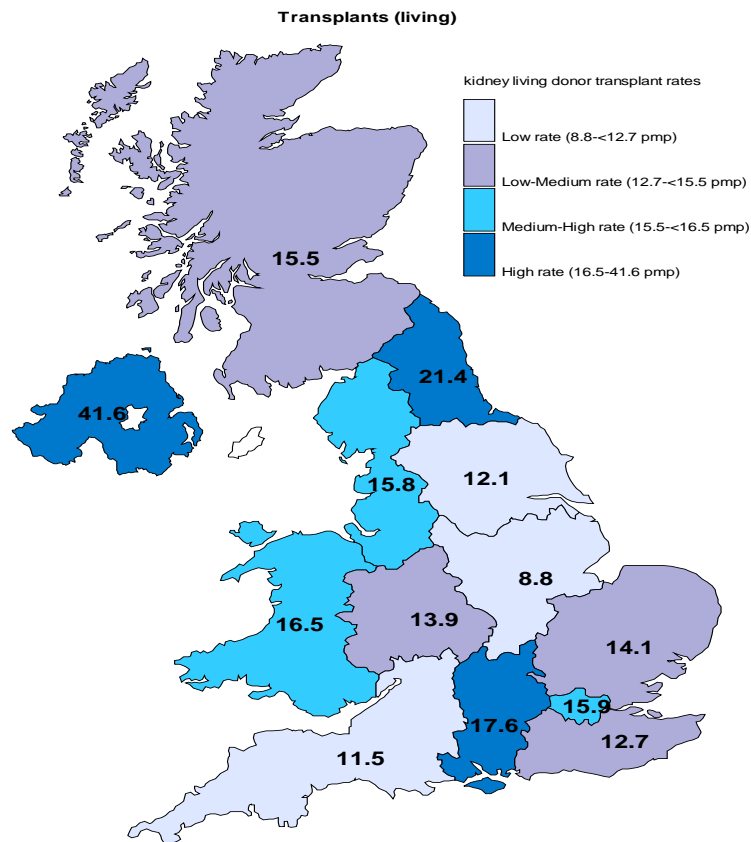


Figure 2.7 Living donor kidney transplant rates (pmp) by recipient country/Strategic Health Authority of residence



Adult Kidney Transplant List

A decorative graphic at the bottom of the page consisting of a solid blue area with a white, wavy border that curves across the width of the page.

Figure 3.1 Adult patients on the kidney only transplant list at 31 March

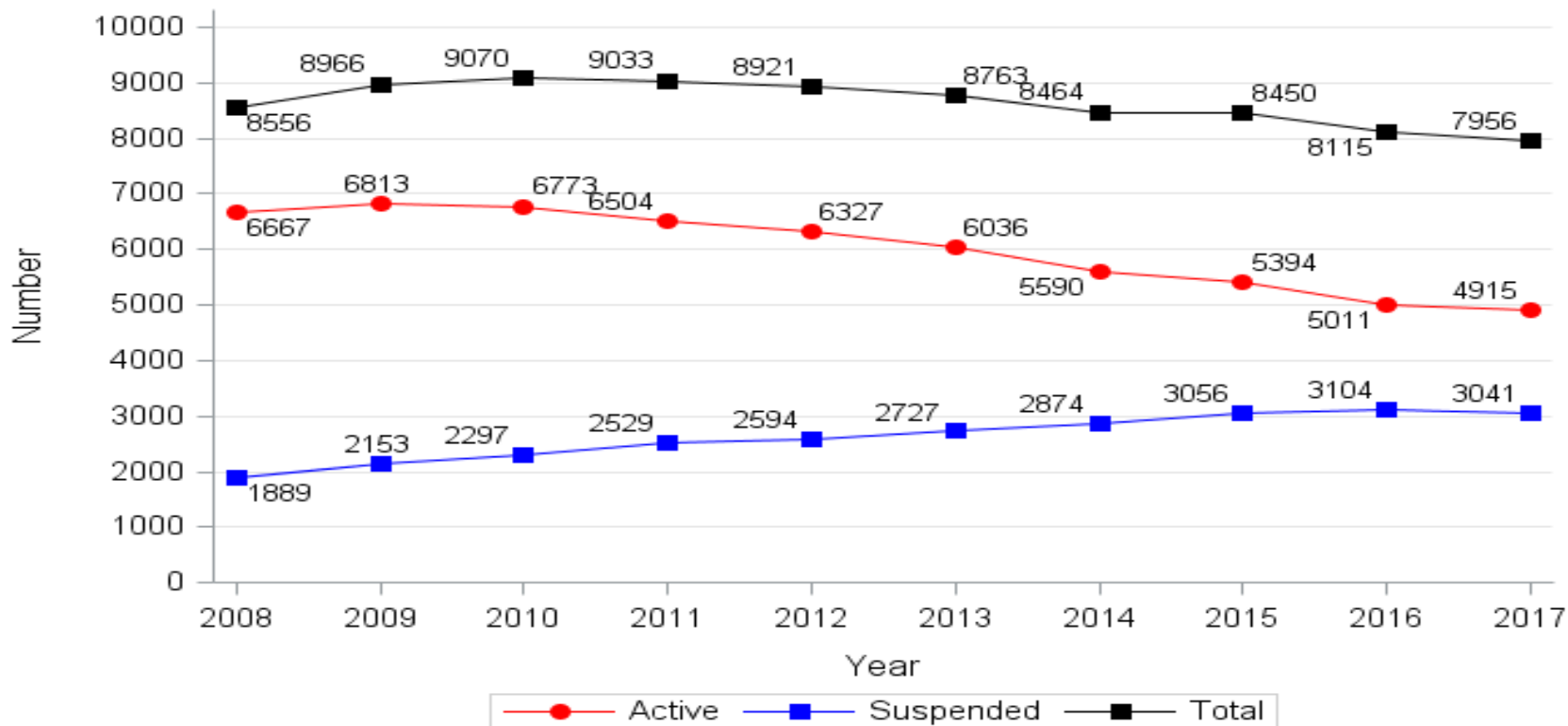


Figure 3.2 Adult patients on the active kidney only transplant list at 31 March 2017, by centre

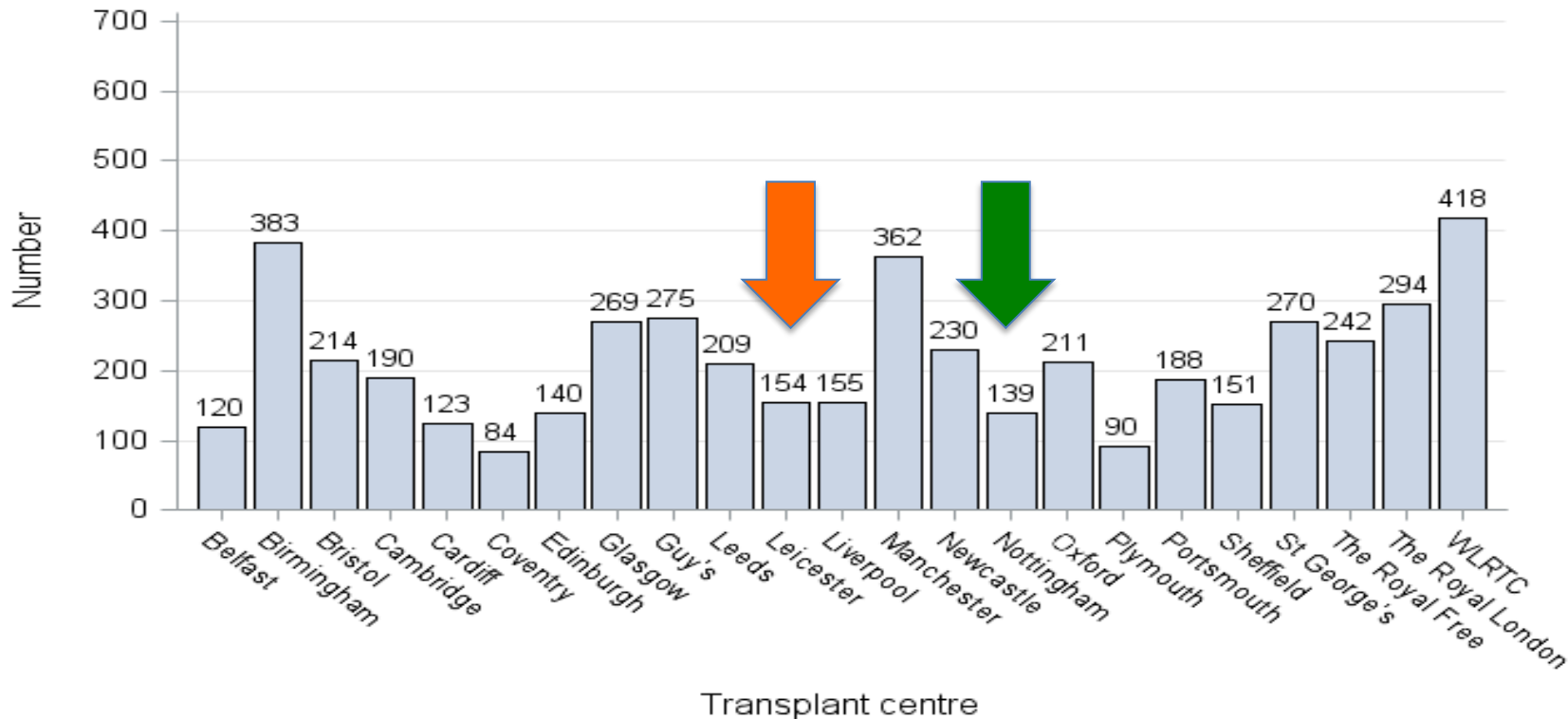


Figure 3.4 Post-registration outcome for 3003 new adult kidney only registrations made in the UK, 1 April 2013 - 31 March 2014

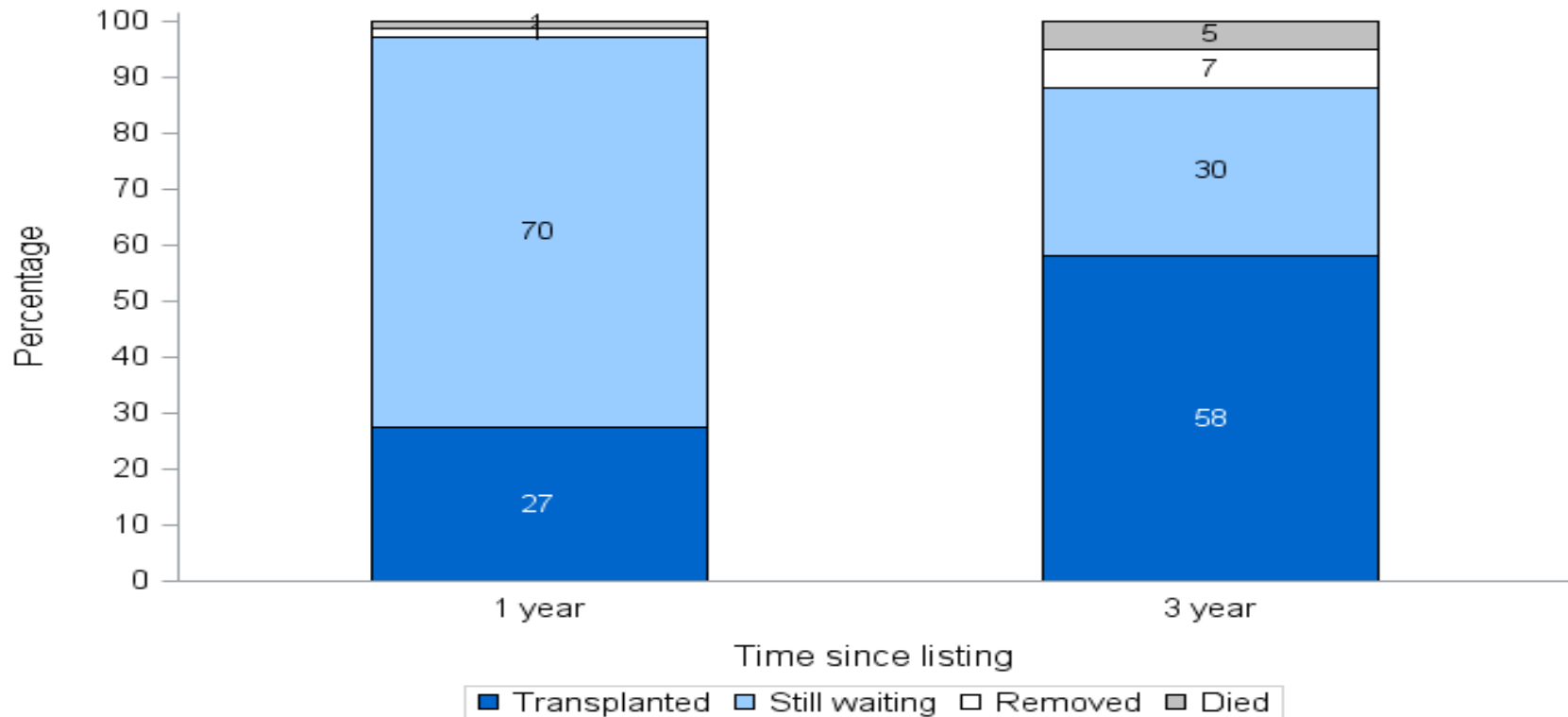


Figure 3.5 Three-year post-registration outcome for 3003 new adult kidney only registrations made in the UK, 1 April 2013 - 31 March 2014, by centre

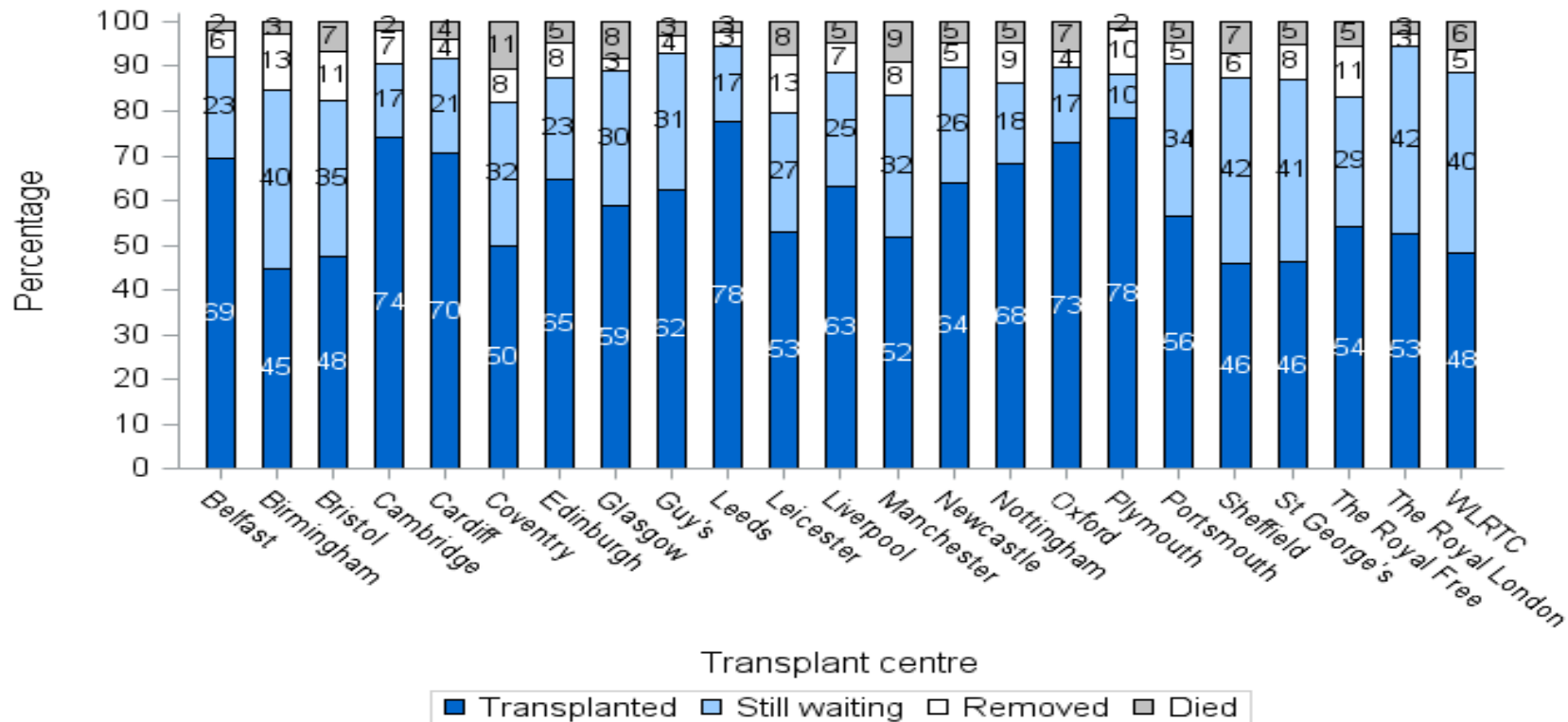
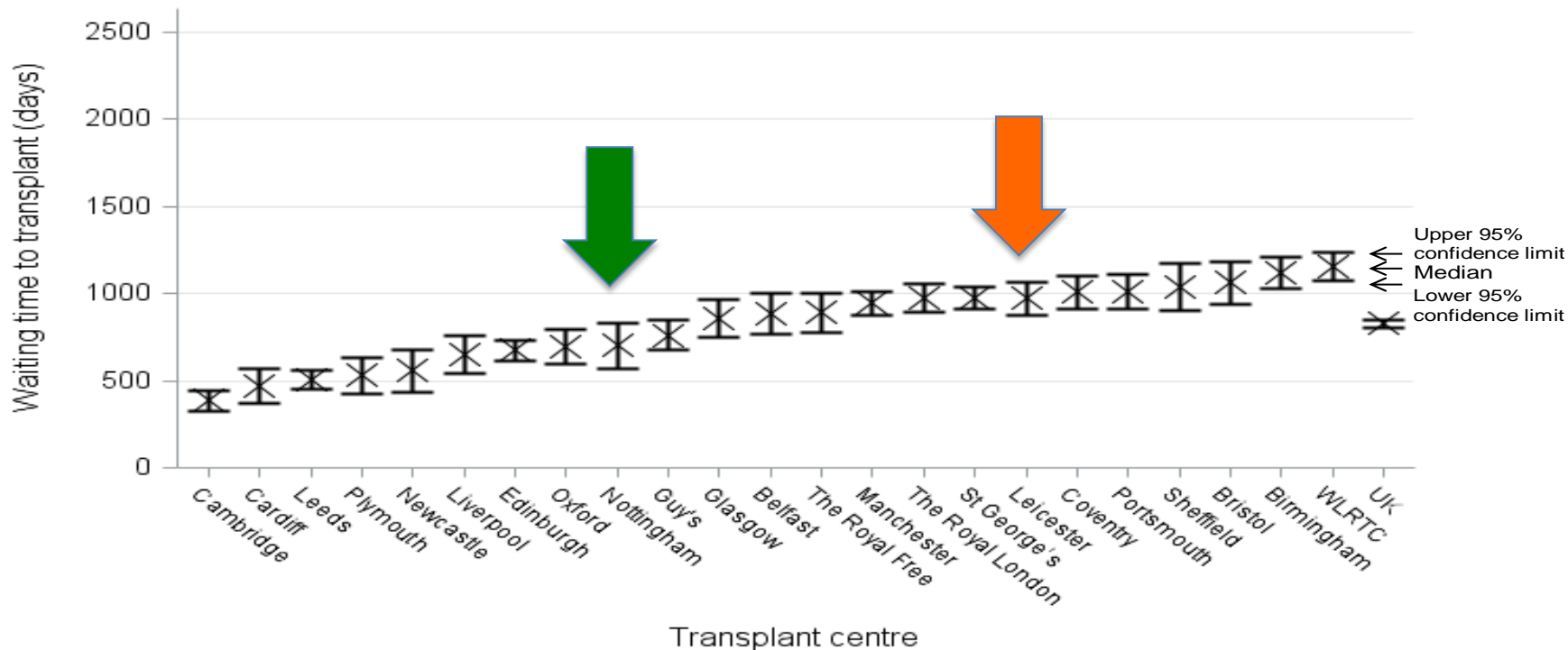


Figure 3.10 Median waiting time to deceased donor transplant for adult patients registered on the kidney transplant list, 1 April 2011 - 31 March 2014



Median Wait Time by Centre 2013-7

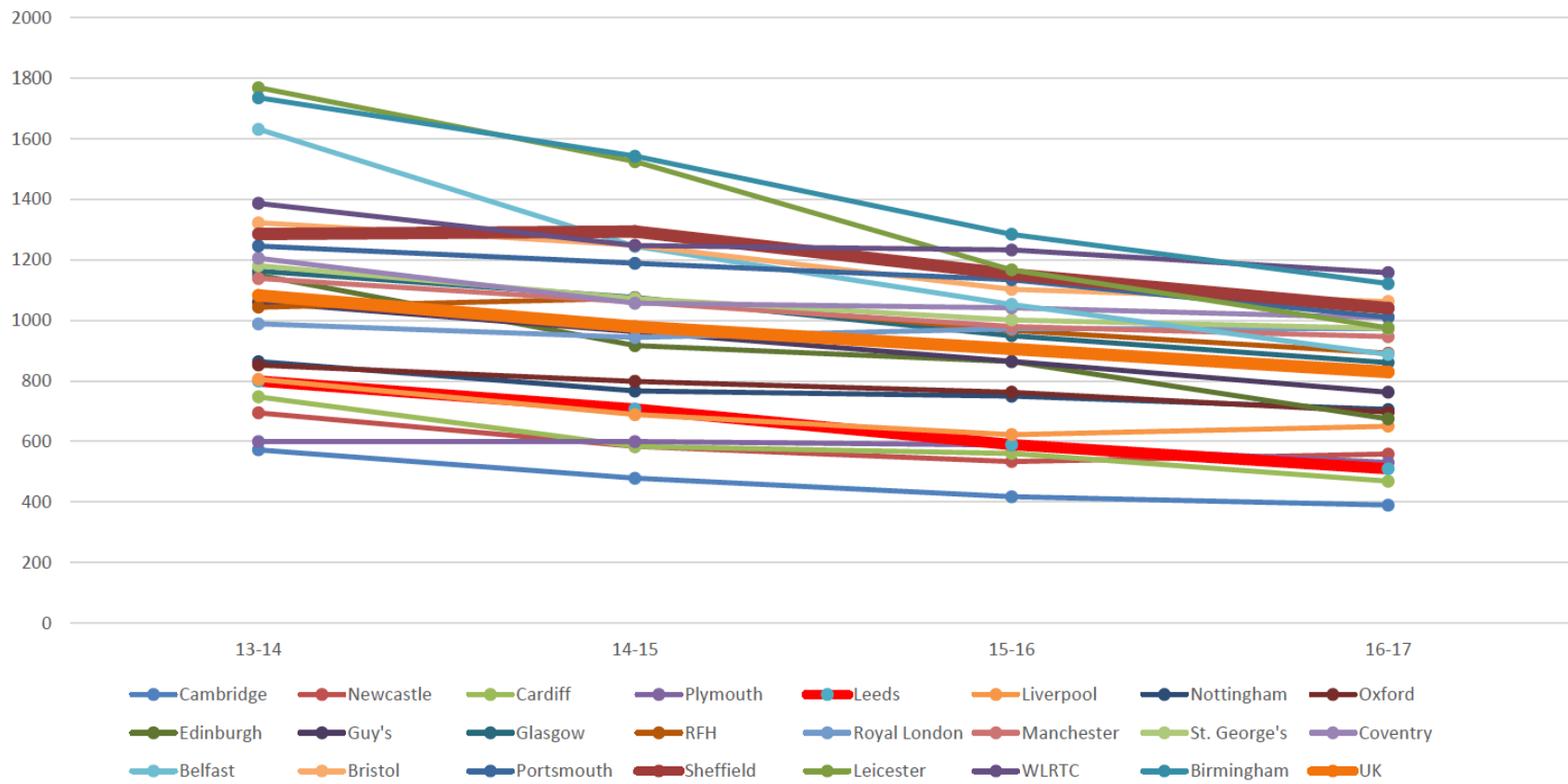


Figure 3.11 Adult pre-emptive listing rates by centre, registrations between 1 April 2015 and 31 March 2016

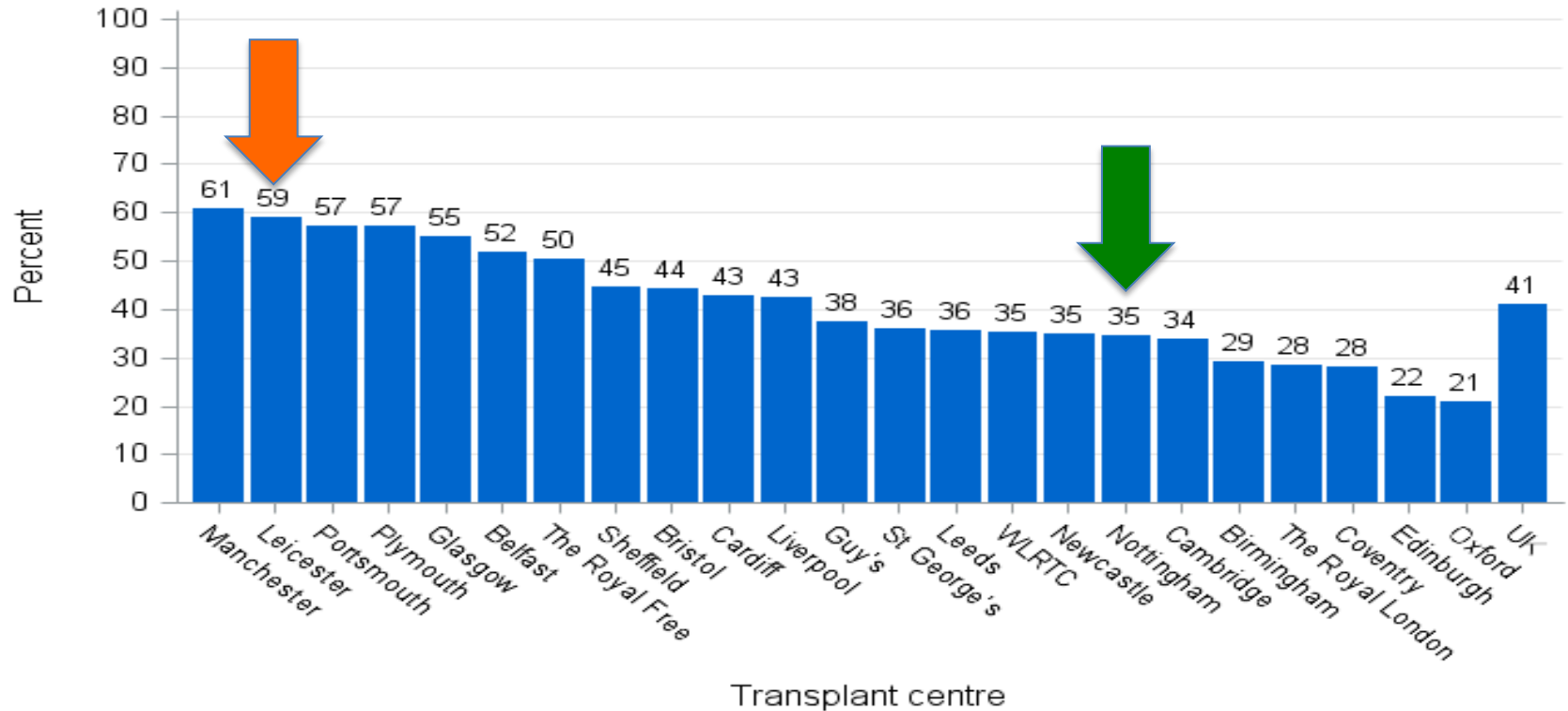
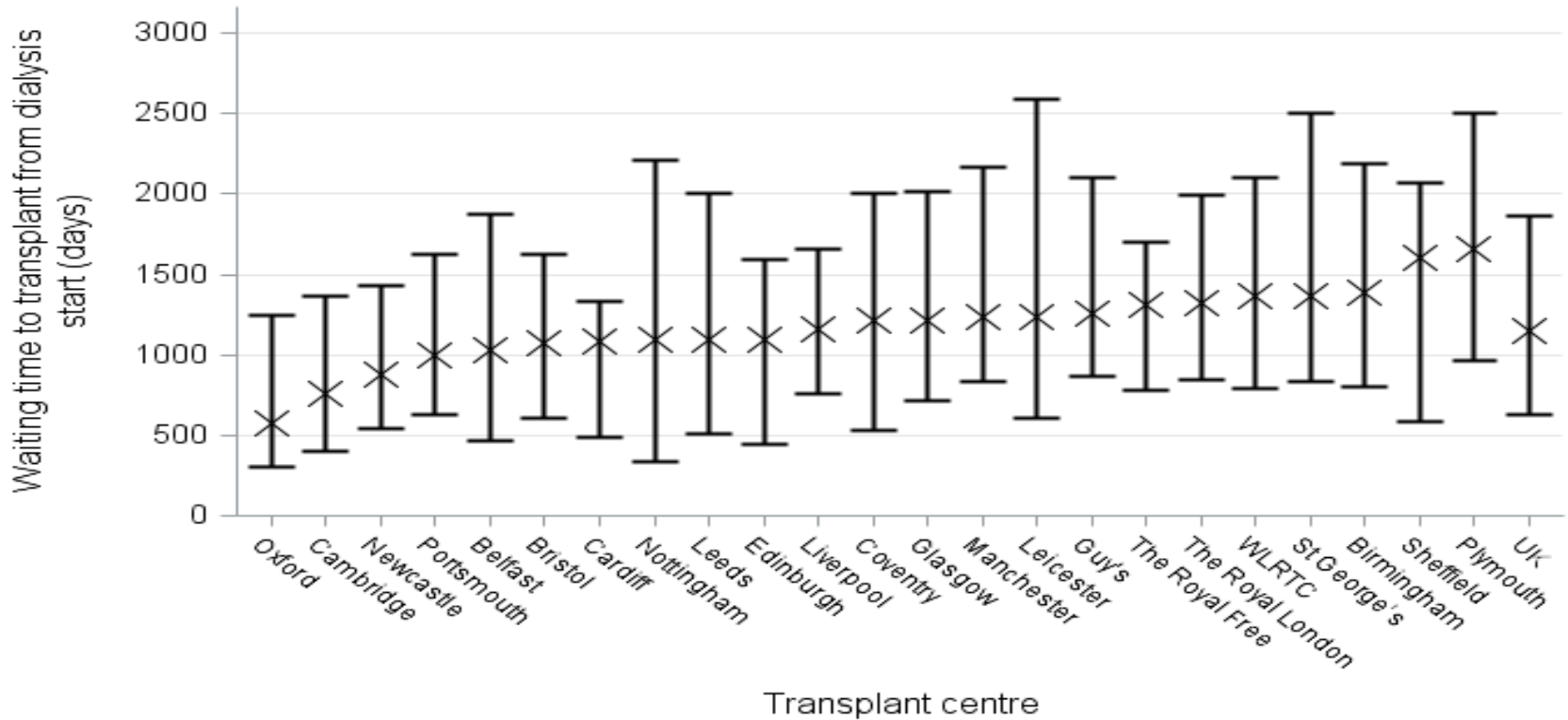


Figure 3.12 Median days from dialysis start date to deceased donor transplant for adult patients transplanted, 1 April 2016 - 31 March 2017

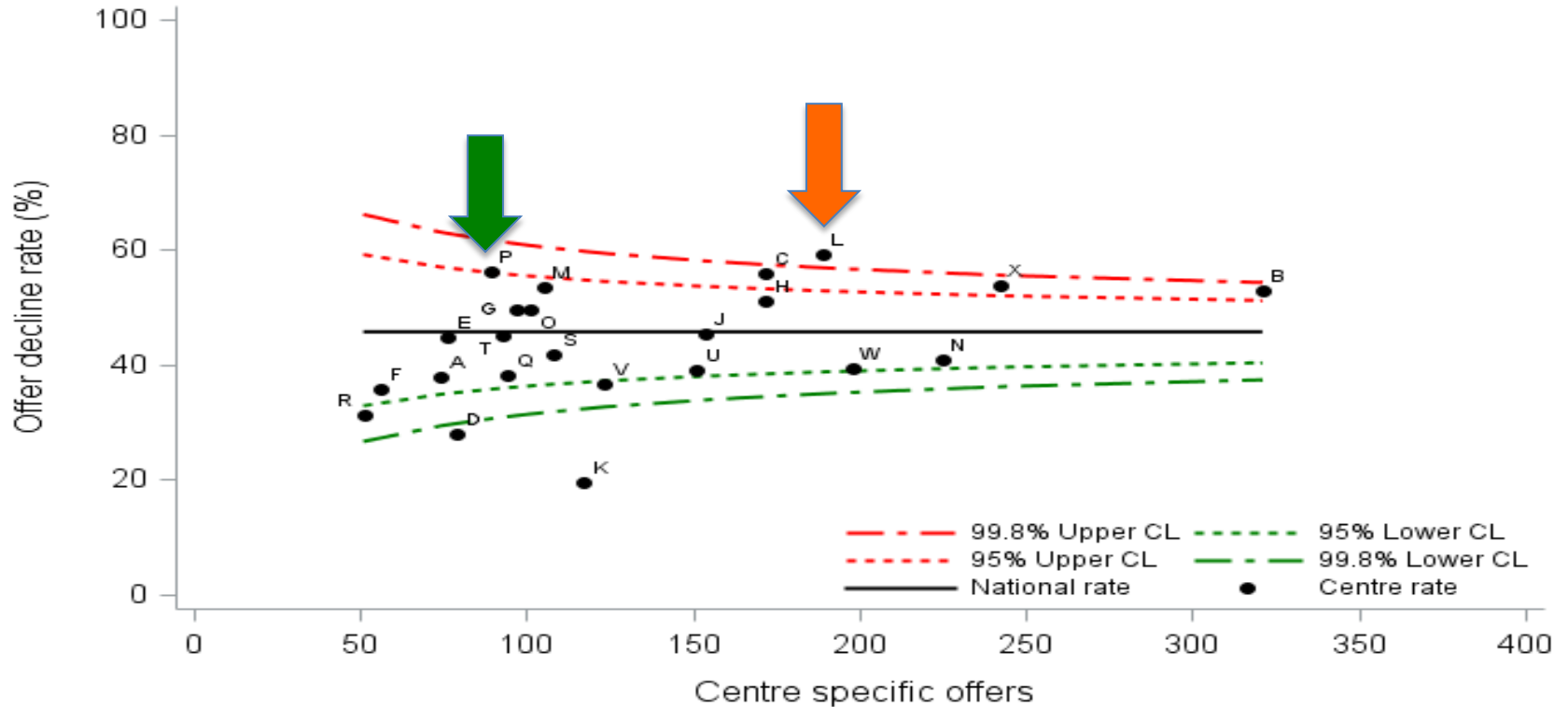


Response to Adult Kidney Offers

A decorative graphic at the bottom of the slide, consisting of a solid blue area with a white wavy line separating it from the rest of the page.

Figure 4.1

Adult standard criteria DBD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2014 and 31 March 2017



Adult standard criteria DBD donor kidney offer decline rates 2014 - 2017

		N	(%)	N	(%)	N	(%)	N	(%)
Belfast	A	33	(42)	18	(39)	23	(30)	74	(38)
Birmingham	B	102	(49)	103	(52)	116	(57)	321	(53)
Bristol	C	59	(58)	49	(55)	64	(55)	172	(56)
Cambridge	D	32	(25)	20	(35)	27	(26)	79	(28)
Cardiff	E	24	(46)	26	(42)	26	(46)	76	(45)
Coventry	F	24	(38)	13	(46)	19	(26)	56	(36)
Edinburgh	G	26	(46)	40	(48)	31	(55)	97	(49)
Glasgow	H	46	(39)	58	(47)	68	(63)	172	(51)
Guy's	J	38	(45)	55	(44)	61	(48)	154	(45)
Leeds	K	33	(18)	39	(23)	45	(18)	117	(20)
Leicester	L	106	(70)	42	(55)	41	(37)	189	(59)
Liverpool	M	35	(60)	41	(56)	29	(41)	105	(53)
Manchester	N	85	(42)	63	(33)	77	(45)	225	(41)
Newcastle	O	24	(67)	33	(45)	44	(43)	101	(50)
Nottingham	P	30	(57)	28	(50)	31	(61)	89	(56)
Oxford	Q	24	(38)	30	(23)	40	(50)	94	(38)
Plymouth	R	18	(33)	18	(28)	15	(33)	51	(31)
Portsmouth	S	38	(45)	22	(41)	48	(40)	108	(42)
Sheffield	T	38	(45)	32	(47)	23	(43)	93	(45)
St George's	U	48	(27)	51	(41)	52	(48)	151	(39)
The Royal Free	V	52	(40)	37	(30)	34	(38)	123	(37)
The Royal London	W	60	(37)	61	(48)	77	(35)	198	(39)
WLRTC	X	80	(51)	65	(54)	97	(56)	242	(54)
UK		1055	(46)	944	(44)	1088	(46)	3087	(46)

Figure 4.2

Adult extended criteria DBD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2014 and 31 March 2017

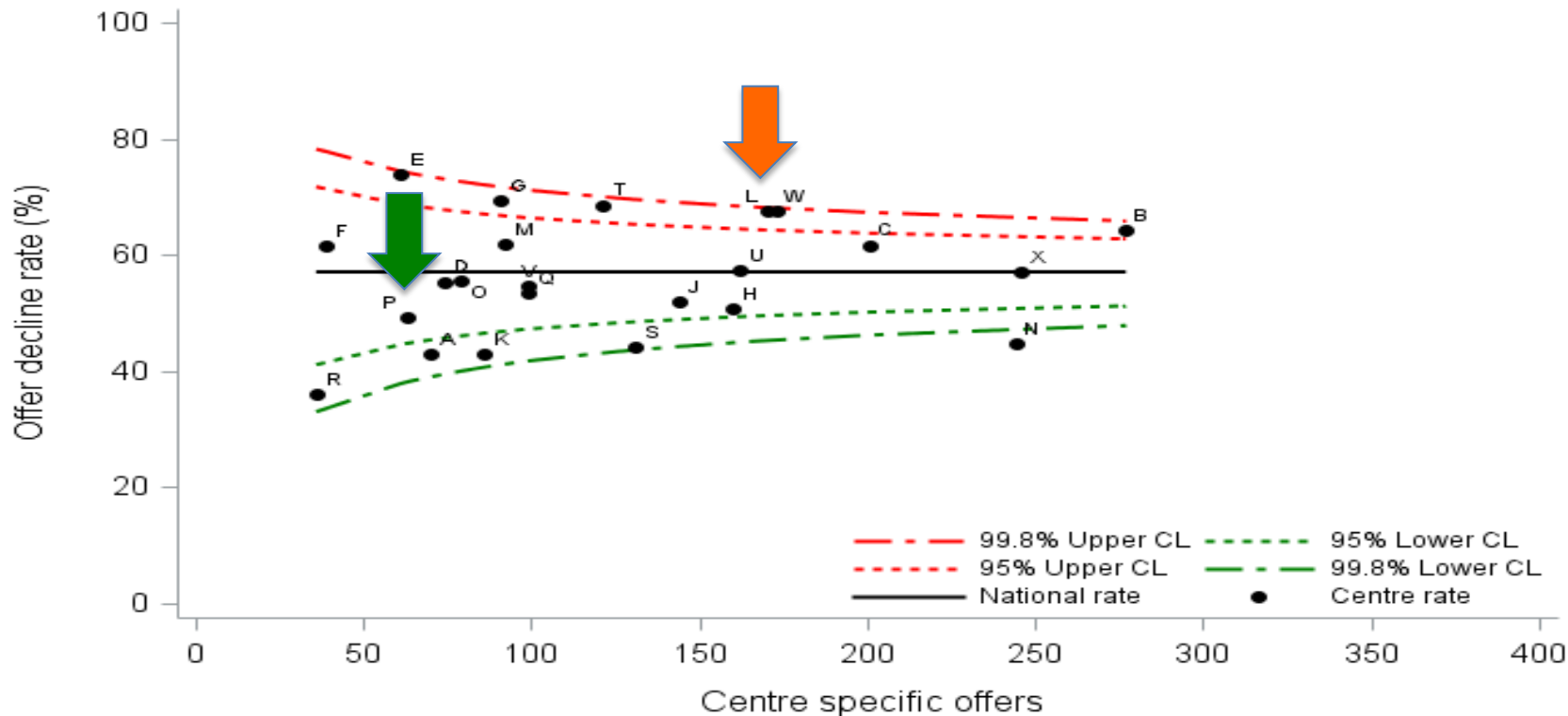
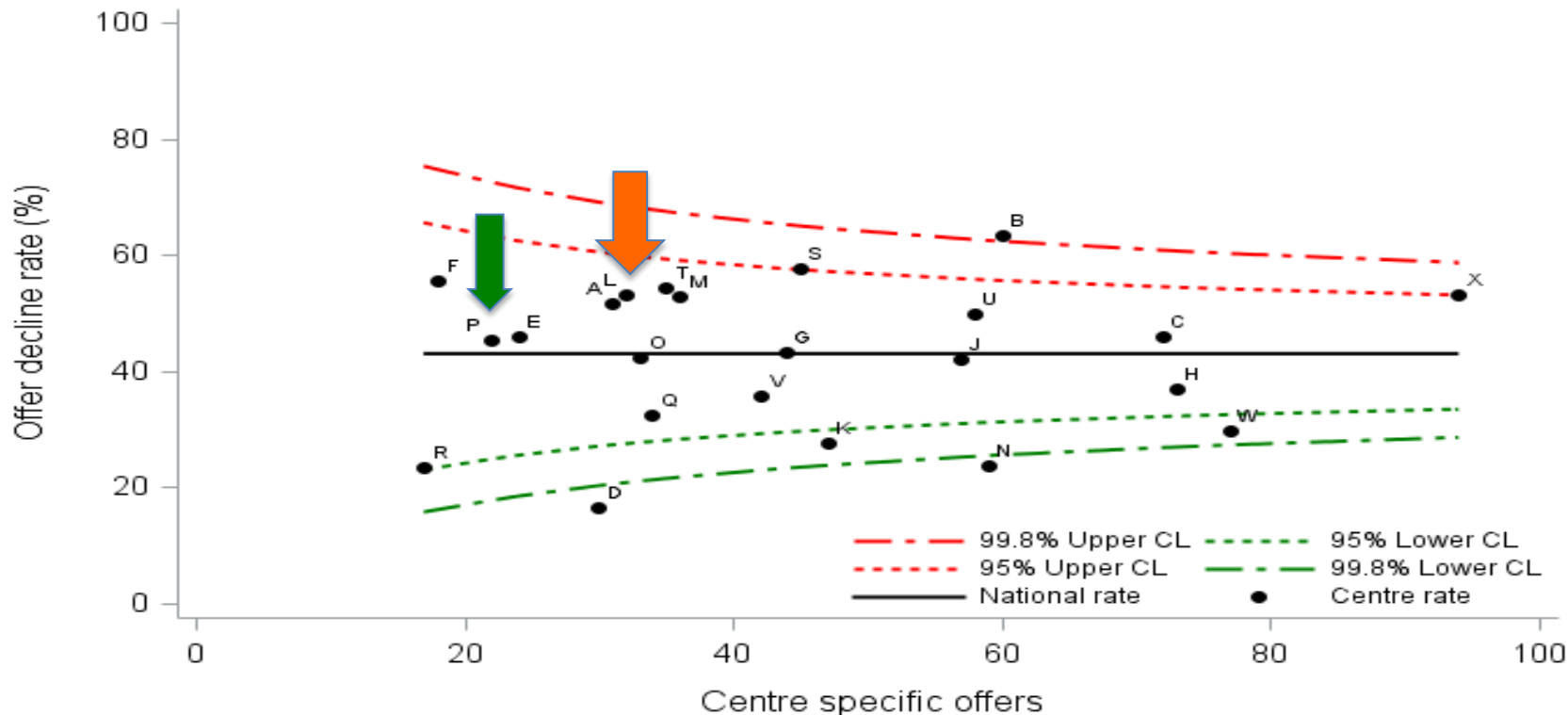


Figure 4.3

Adult standard criteria DCD donor kidney offer decline rates for kidneys that resulted in a transplant, 3 September 2014 and 31 March 2017



Adult Kidney Transplants

A decorative graphic at the bottom of the page consisting of two overlapping, wavy blue shapes that create a sense of movement and depth.

Figure 5.1 Adult kidney only transplants, 1 April 2007 - 31 March 2017

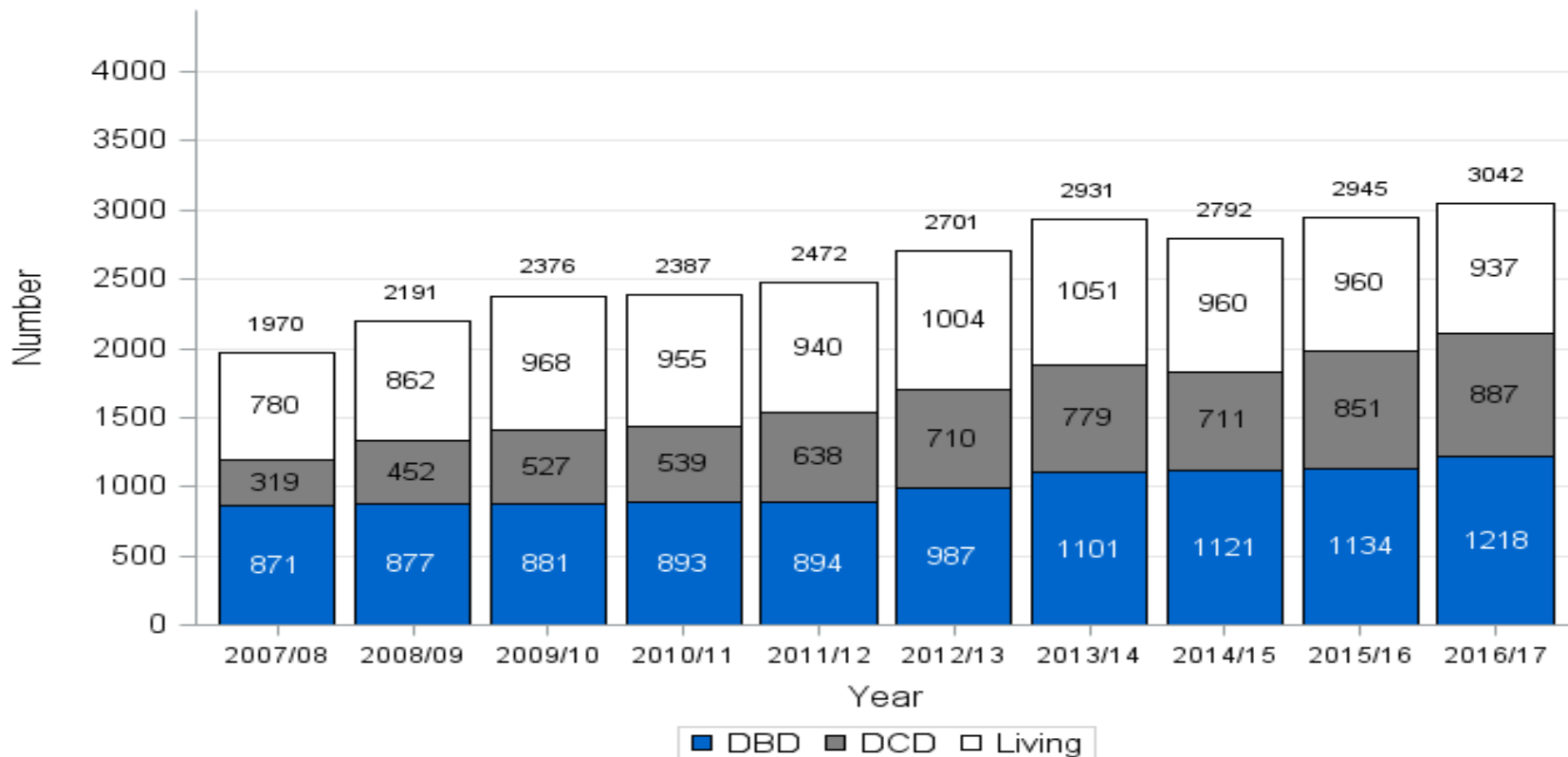


Figure 5.2 Adult kidney only transplants, 1 April 2016 - 31 March 2017

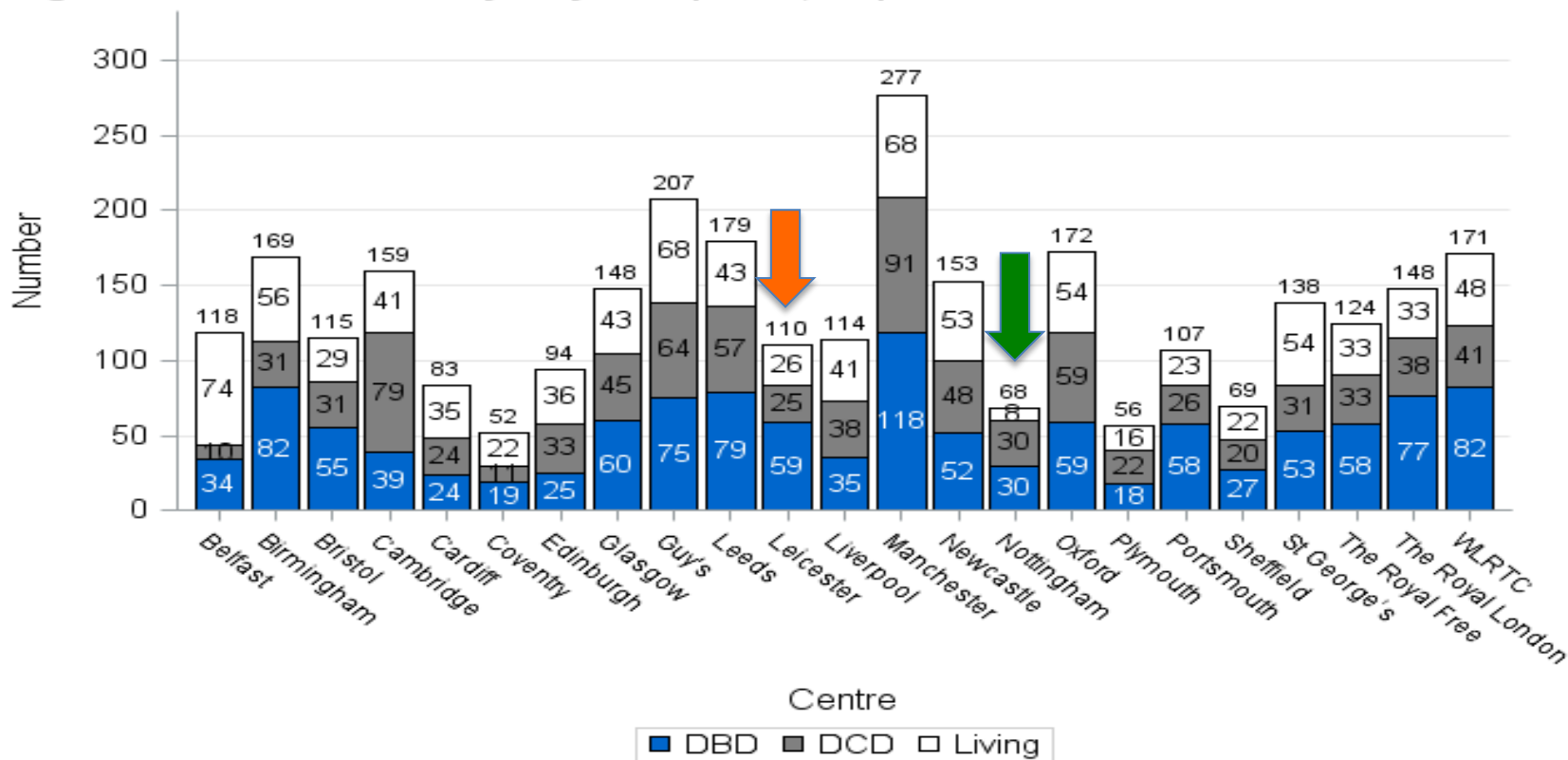


Figure 5.3 Adult kidney only transplants, 1 April 2016 - 31 March 2017

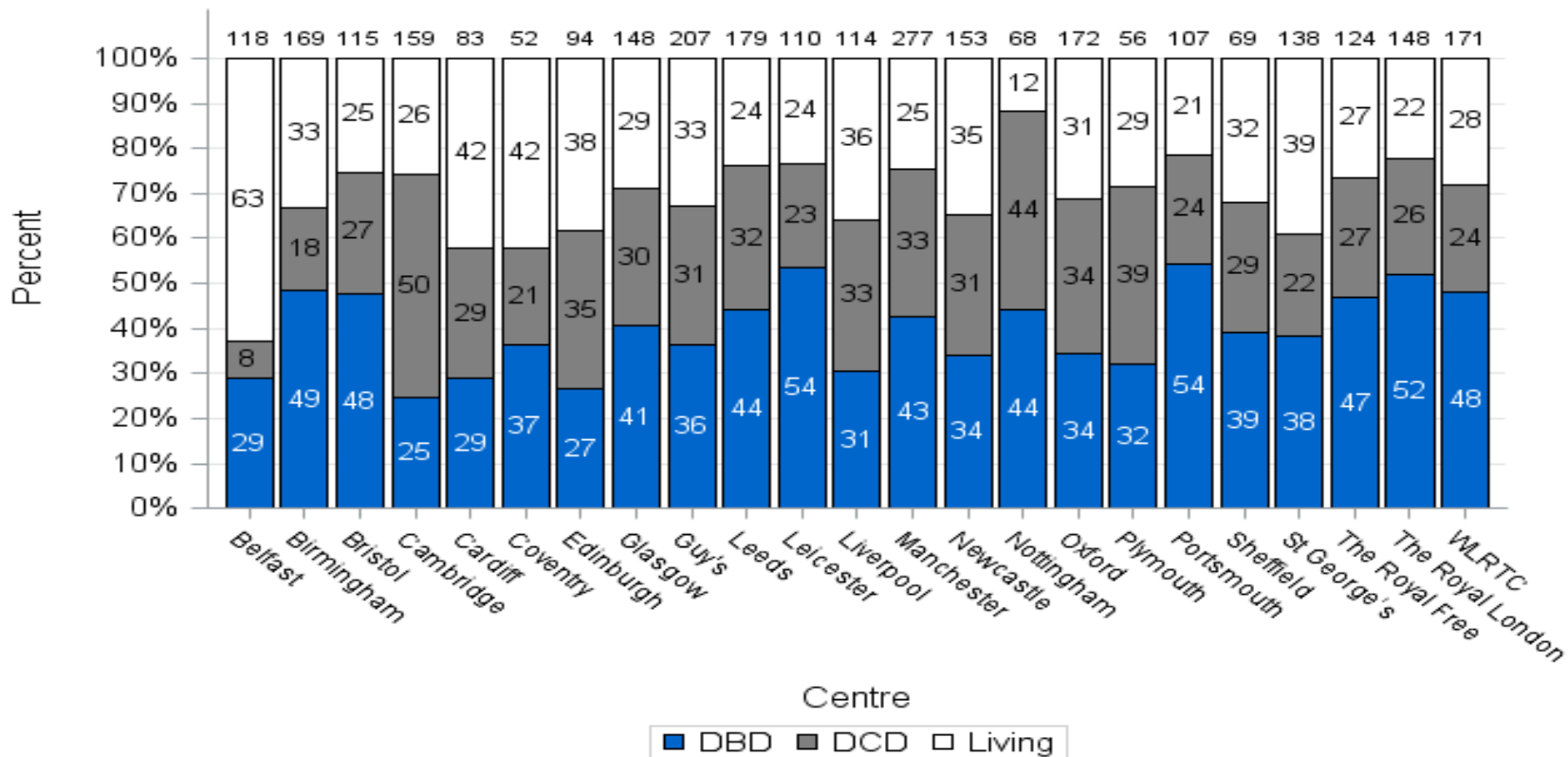


Figure 5.8 Adult deceased donor pre-emptive transplant rates by centre, 1 April 2016 - 31 March 2017

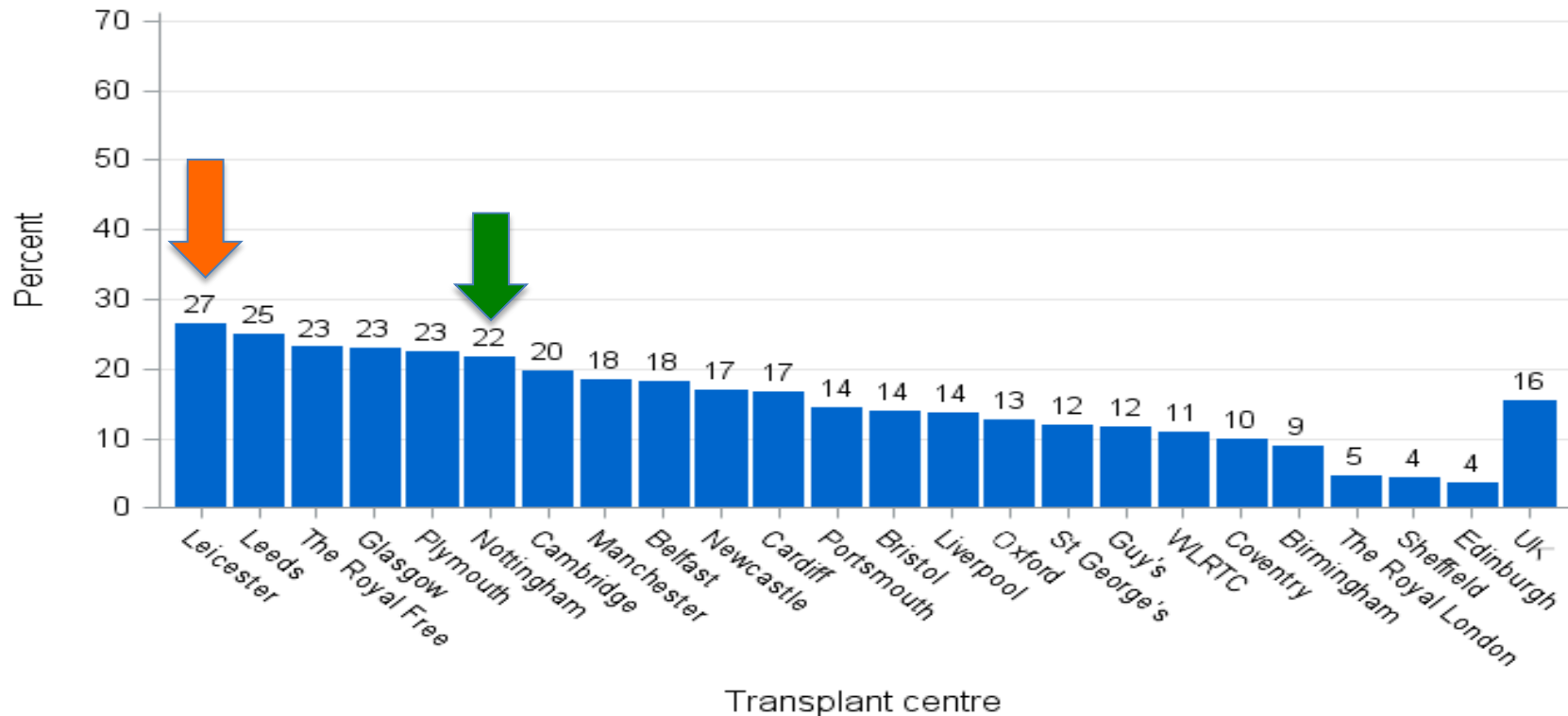
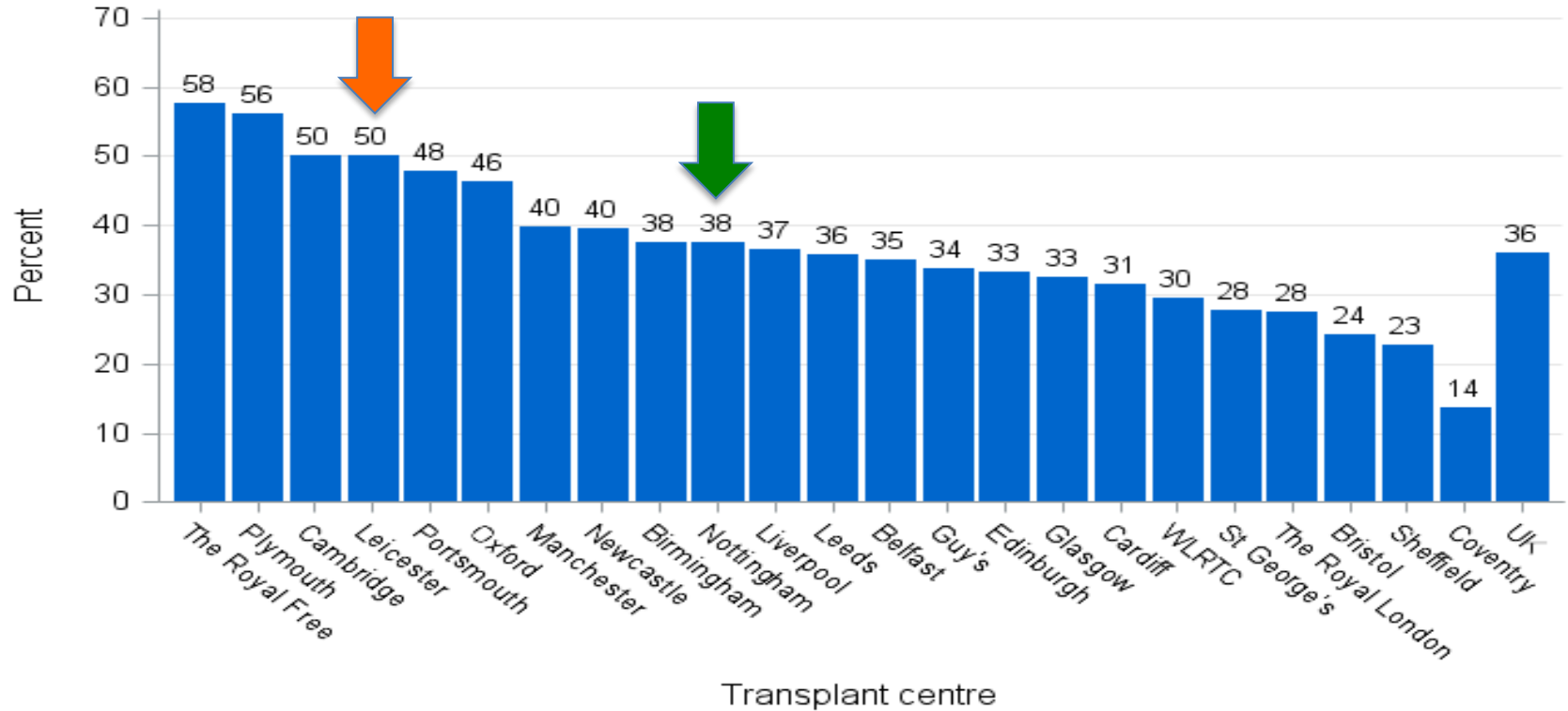
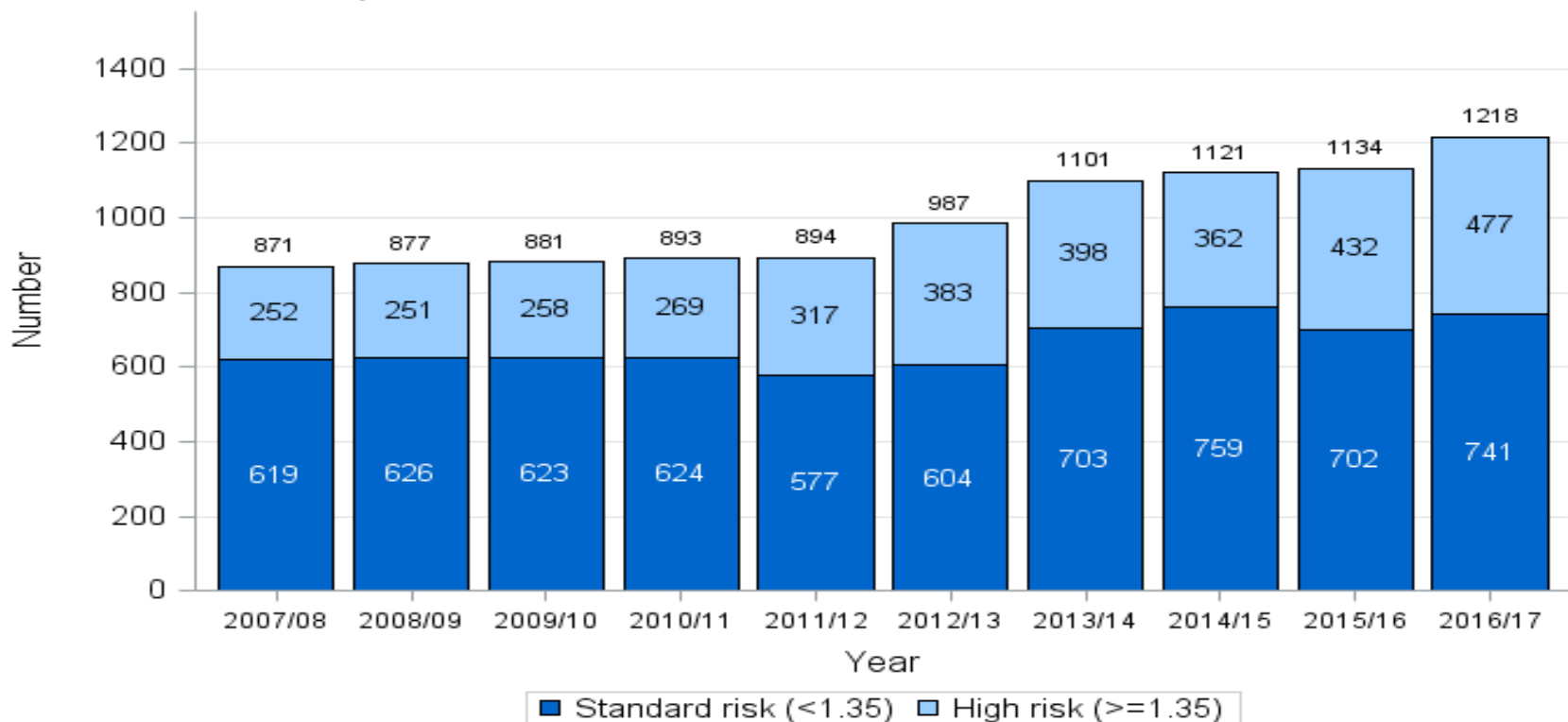


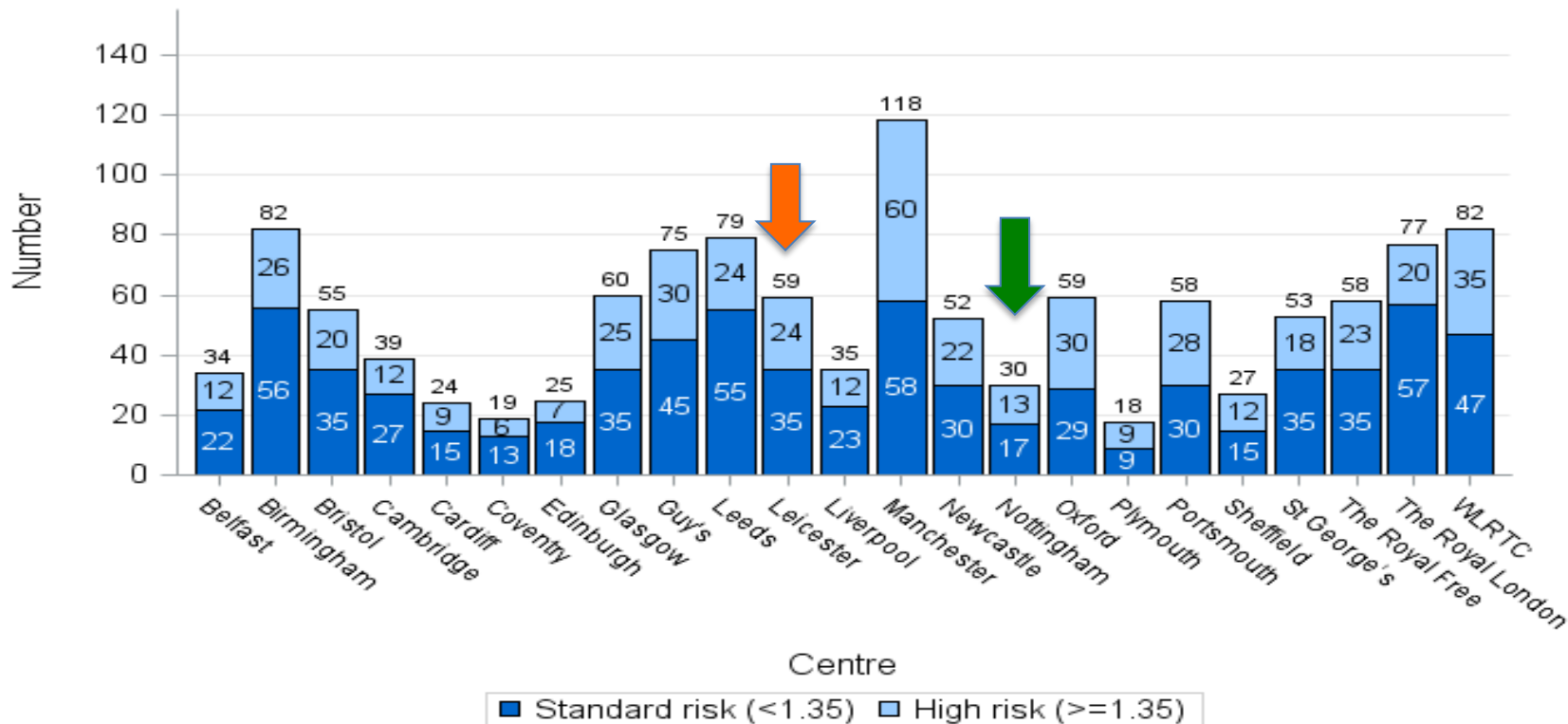
Figure 5.9 Adult living donor pre-emptive transplant rates by centre, 1 April 2016 - 31 March 2017



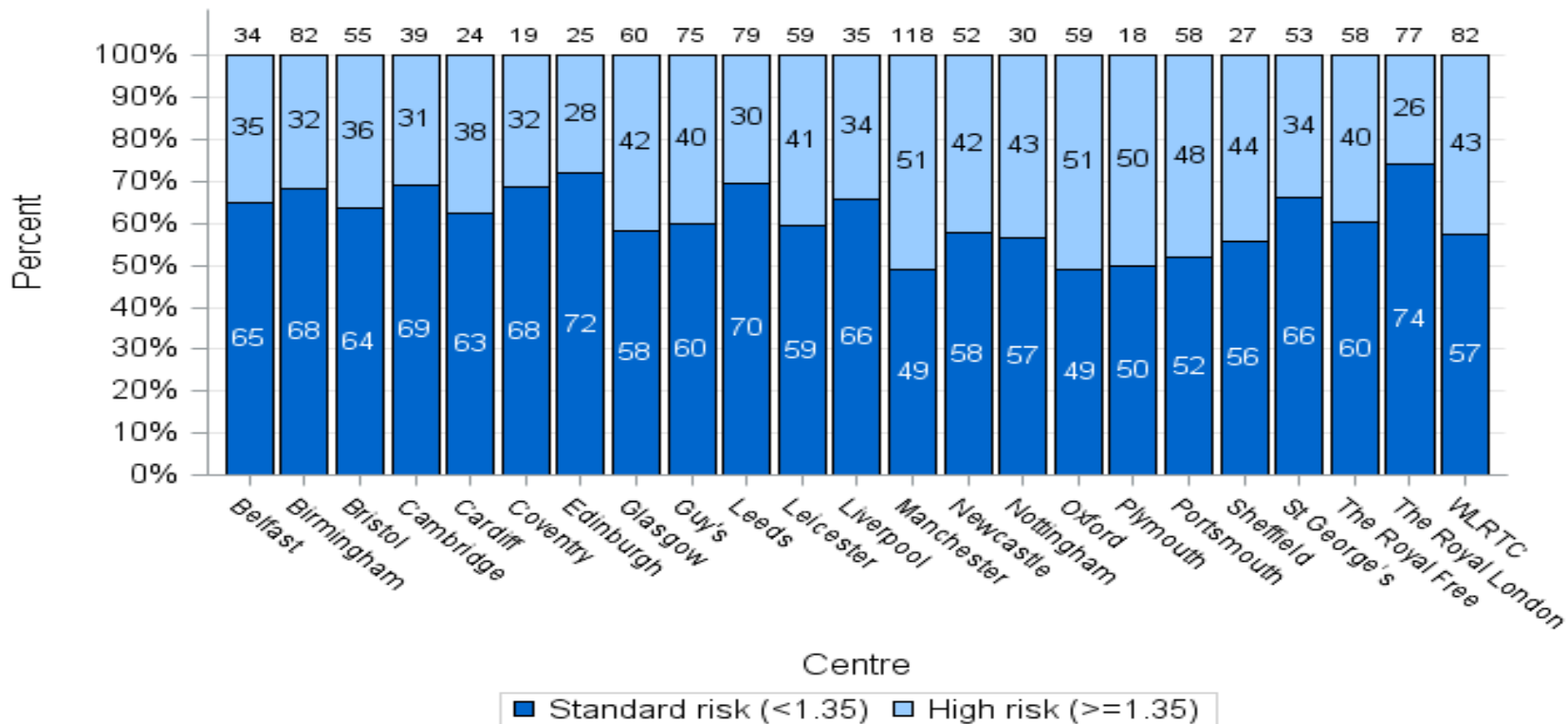
**Figure 5.10 UK Kidney Donor Risk Index of transplanted DBD donor kidneys
1 April 2007 - 31 March 2017**



**Figure 5.11 UK Kidney Donor Risk Index of transplanted DBD donor kidneys
1 April 2016 - 31 March 2017**



**Figure 5.12 UK Kidney Donor Risk Index of transplanted DBD donor kidneys
1 April 2016 - 31 March 2017**



Adult Kidney Outcomes

A decorative graphic at the bottom of the slide, consisting of a solid blue wave shape that curves upwards from the left and right sides towards the center.

Figure 6.1 Risk-adjusted one year graft (death censored) survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2012 and 31 March 2016

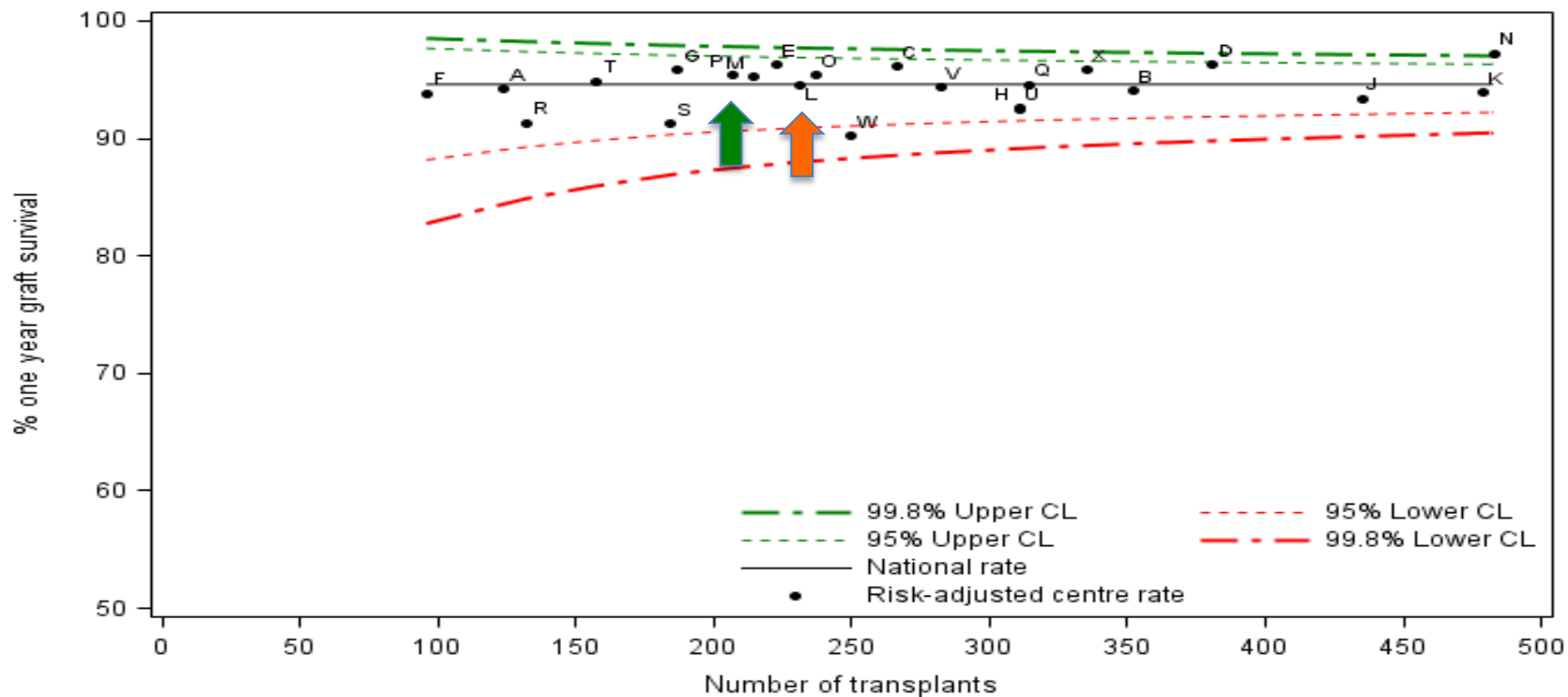


Figure 6.2 Risk-adjusted one year patient survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2012 and 31 March 2016

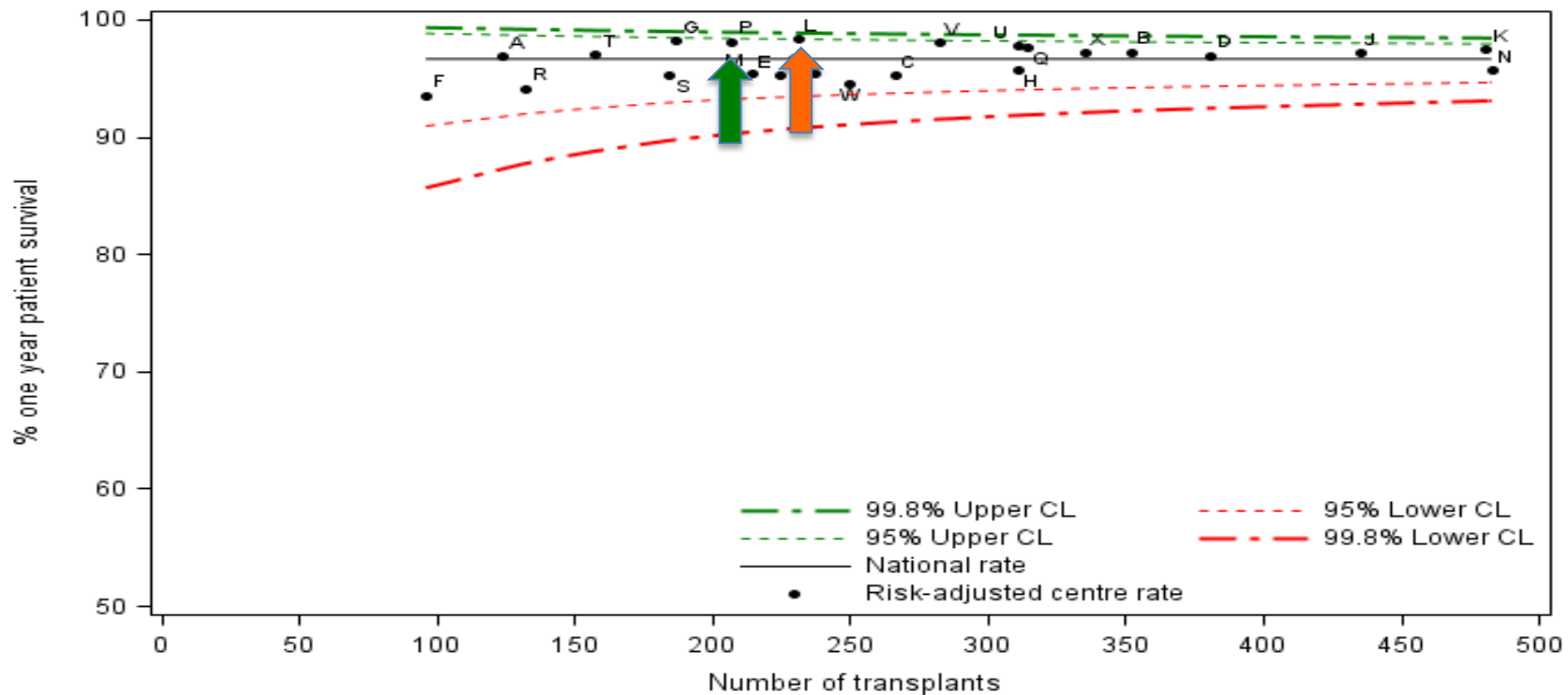


Figure 6.3 Risk-adjusted five year graft (death censored) survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2008 and 31 March 2012

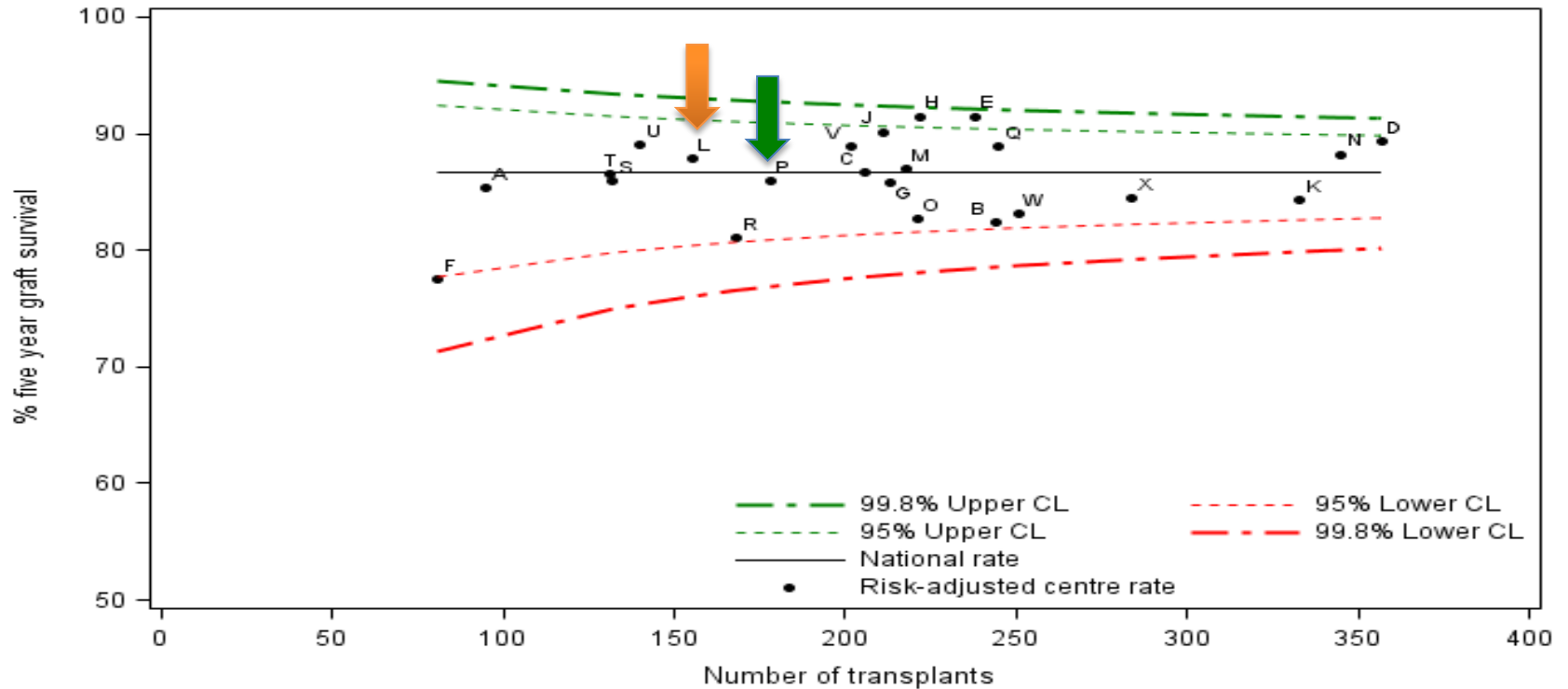


Figure 6.4 Risk-adjusted five year patient survival rates for first deceased donor kidney transplants in adult patients, between 1 April 2008 and 31 March 2012

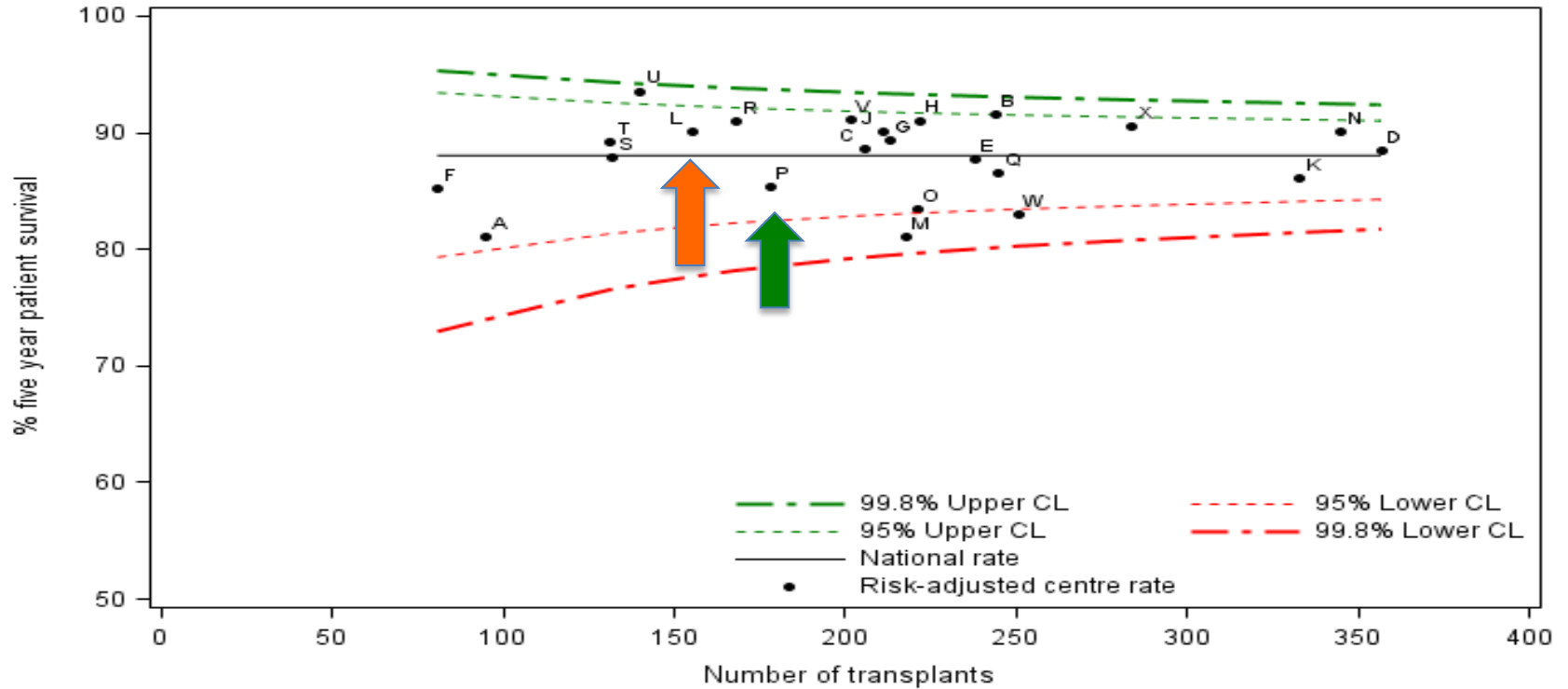


Figure 6.5 Risk-adjusted one year graft (death censored) survival rates for first live donor kidney transplants in adult patients, between 1 April 2012 and 31 March 2016

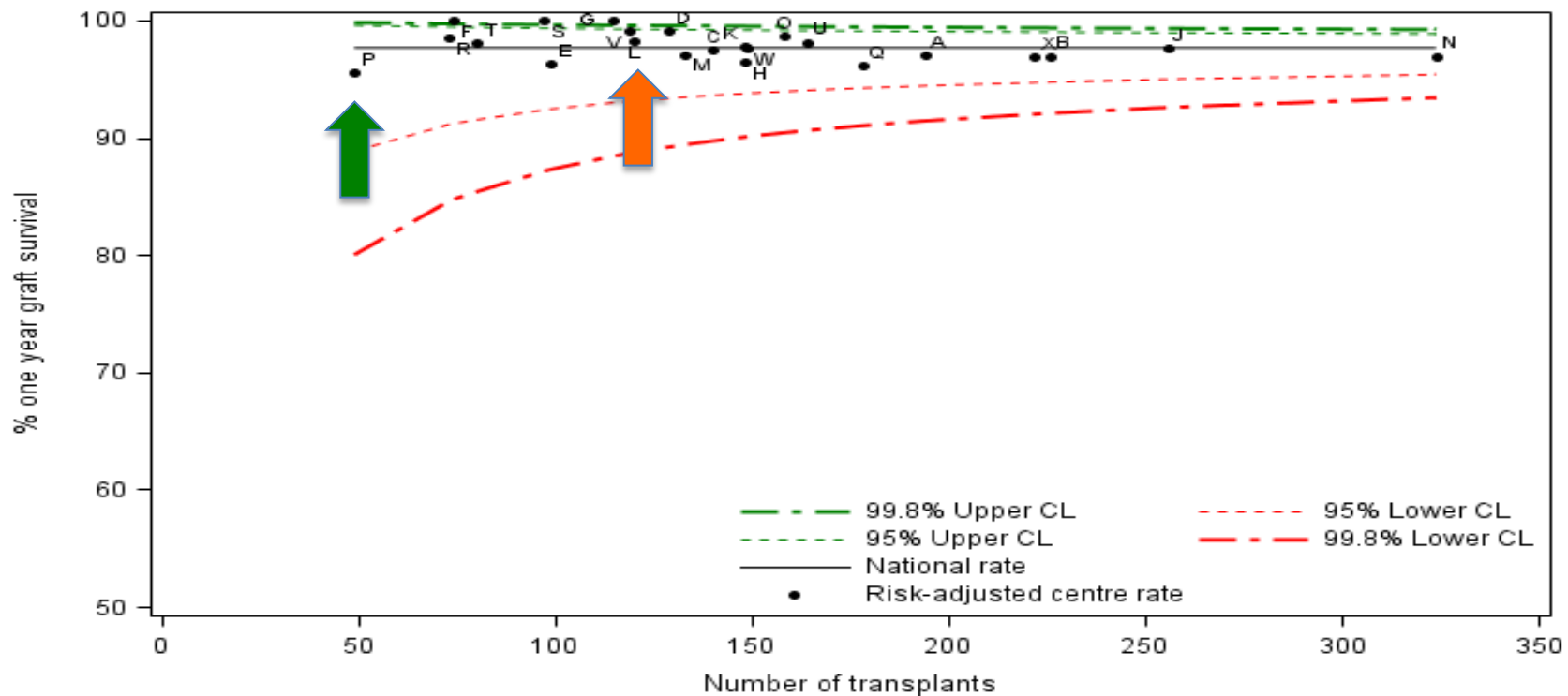


Figure 6.6 Risk-adjusted one year patient survival rates for first live donor kidney transplants in adult patients, between 1 April 2012 and 31 March 2016

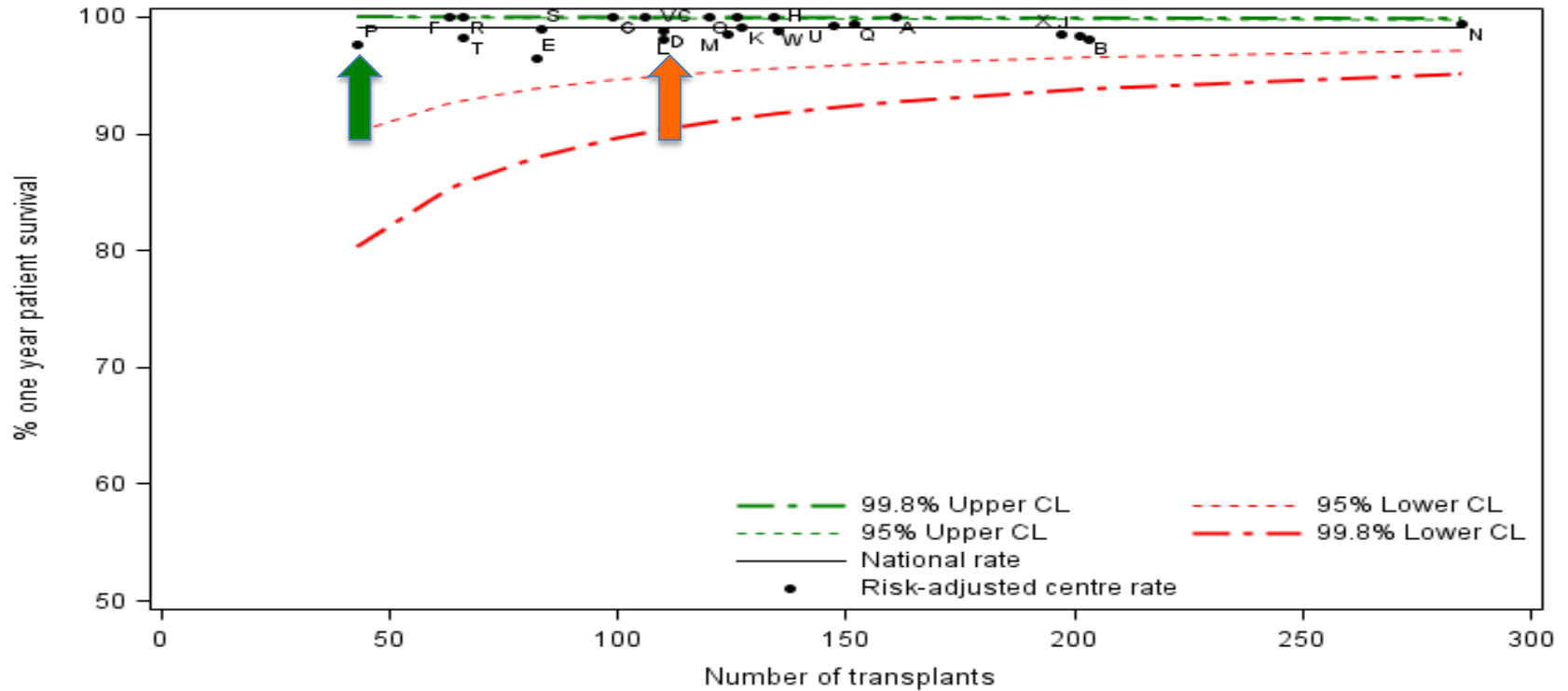


Figure 6.7 Risk-adjusted five year graft (death censored) survival rates for first live donor kidney transplants in adult patients, between 1 April 2008 and 31 March 2012

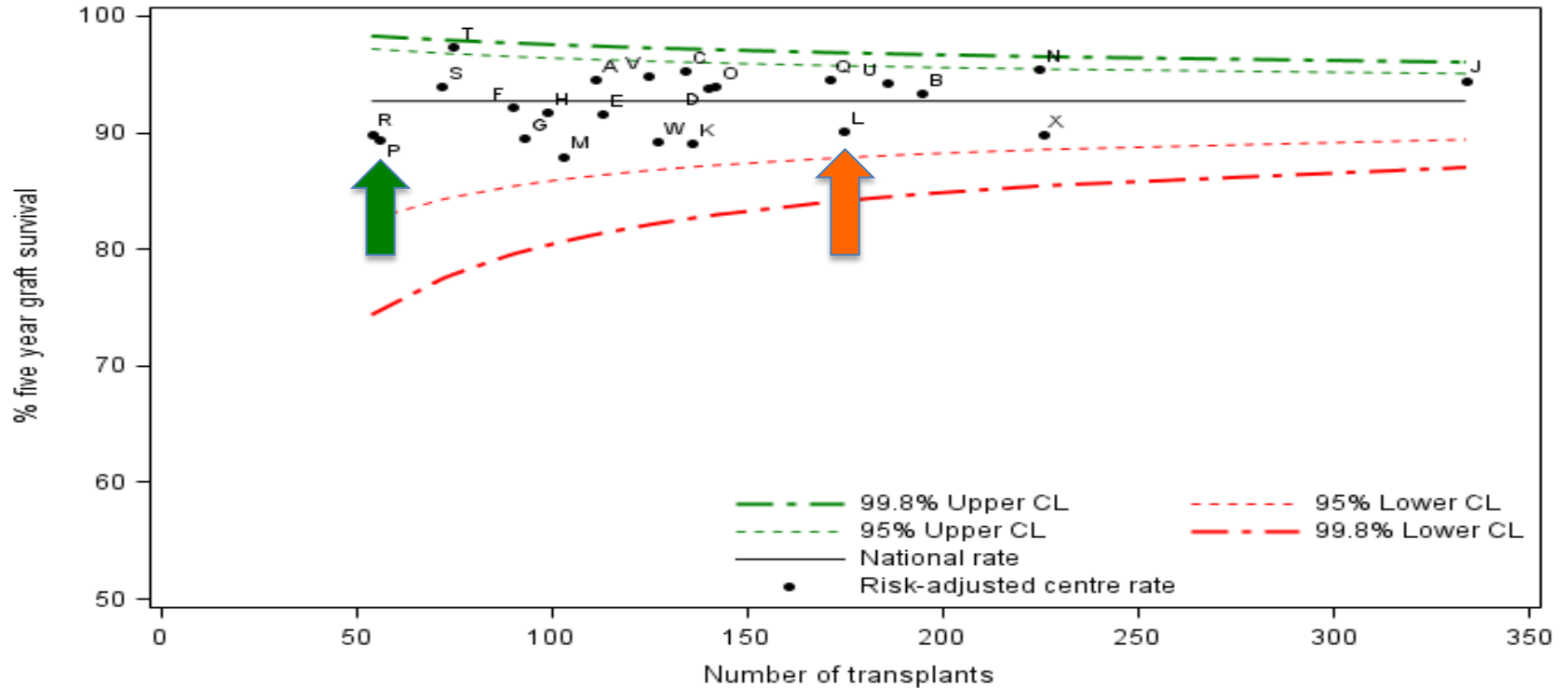


Figure 6.8 Risk-adjusted five year patient survival rates for first live donor kidney transplants in adult patients, between 1 April 2008 and 31 March 2012

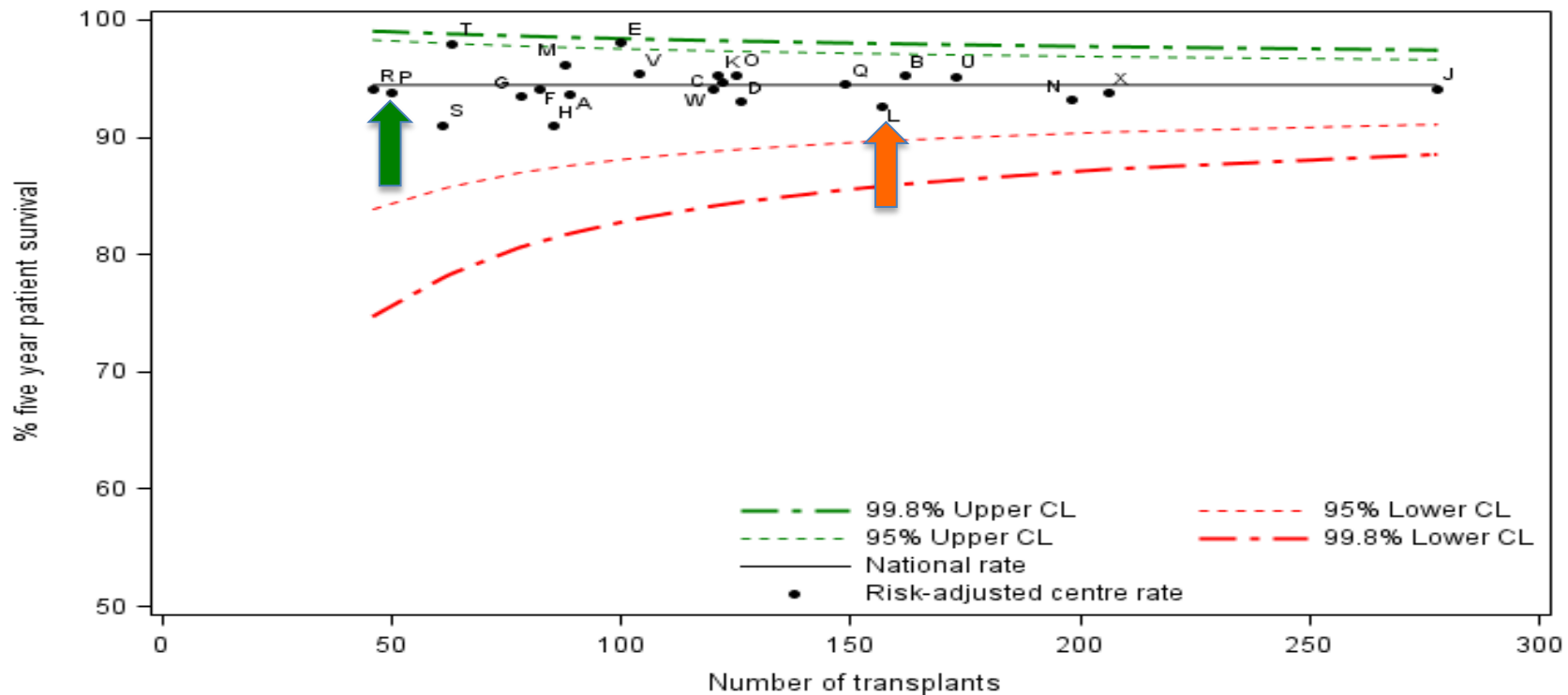
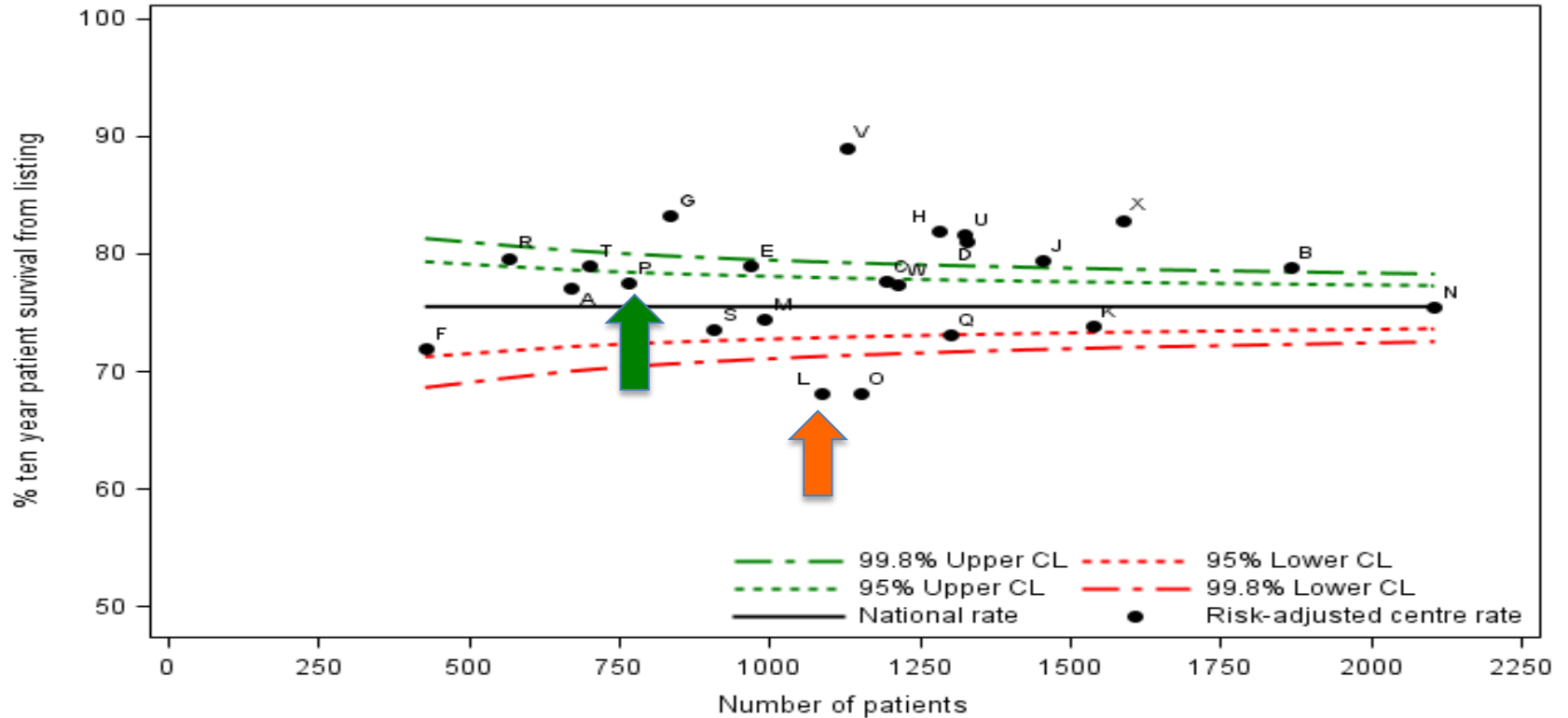
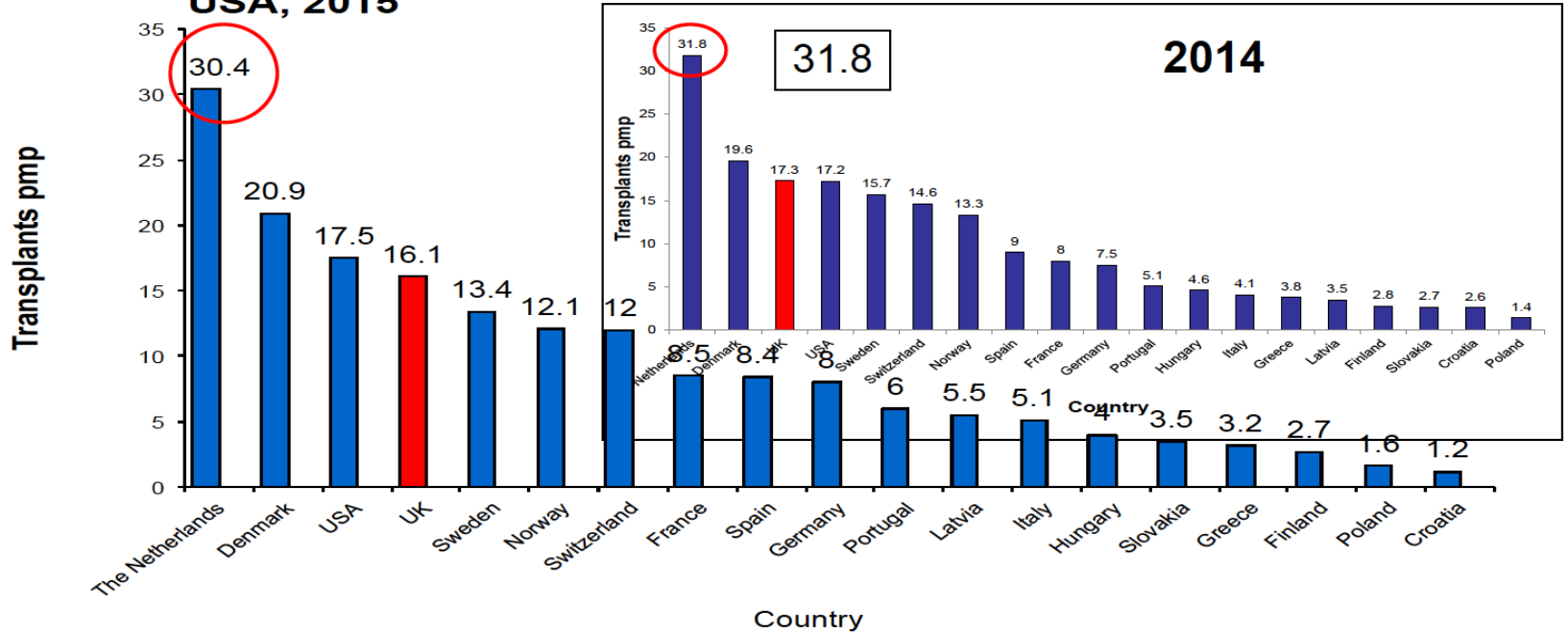


Figure 6.9 Risk-adjusted 10 year patient survival from listing in adult patients registered between 1 January 2005 and 31 December 2016 for deceased donor kidney transplants



What does world class mean?

Living donor kidney transplant rates for Europe and the USA, 2015



Source: Council of Europe – Transplant Newsletter

Peer Review

- East Midlands Peer Review
- National Peer Review
- External Review [UHL] – 2014 and 2017

East Midlands Peer Review

- East Midlands peer review
 - Late 2015 [Specialist Commissioners]
 - TIG [supportive but critical review of TX services at NUH and UHL]
 - Recognised areas of good practice and areas for improvement
 - Relatively low LD rates at NUH
 - Long median wait times and high kidney offer decline rate at UHL

National Peer Review [NUH]

Peer Review Visit Date 11/Oct/2016

Compliance

Renal and Pancreas Transplantation Service

Self Declaration

87.0%

Peer Review

91.7%

Submitted By Anna Eccleston

Job Title Systems and Information Manager

Date Completed 06/Jan/2017

Agreed By Lisa Cunnington

National Peer Review [NUH]

Significant Achievements

Strong leadership and cohesive team

Nurse base follow-up model

Nurse prescribers

High standard of documentation presented to the review team

Easy access to emergency theatres to carry out a DCD kidney transplant was reported to the review team

Strong collaborative relationship with Derby renal unit

Recruitment of a patient to offer peer support across the transplant service to other transplant patients

* TIG commended by peer review team

National Peer review [NUH]

Immediate Risks

No immediate risks logged

Serious Concerns

No serious concerns logged

Areas Of Improvement

Insufficient dedicated time for the clinical lead to fully carry out the role and this is achieved by flexibility from the clinical lead and colleagues

Unsustainable consultant surgical on-call rota

Inadequate dedicated time for consultant clinical psychologist for the transplant programme

Lack of access to day case facilities to facilitate post-operative biopsies

Lack of comprehensive patient information

National Peer review [UHL]

Peer Review Visit Date 04/Oct/2016

Compliance

Renal and Pancreas Transplantation Service

Self Declaration

95.8%

Peer Review

91.7%

Submitted By Marie Cummins

Job Title Senior Quality Manager

Date Completed 15/Feb/2017

Agreed By Lisa Cunnington

National Peer Review [UHL]

Significant Achievements

Well led, motivated and cohesive team.

Dedicated transplant pharmacist, attending out-patient clinics and able to build strong relationship with patients.

High standard of written patient information leaflets available in different languages and formats.

Full establishment of ward nursing staff.

Recruitment of transplant nephrologist, now part of a 1:3 ward duty rota.

Flexibility within the national kidney shared scheme.

Annual review clinic to find out why some patients are waiting a-long time; it is a surgical-led clinic, with a dedicated consultant anaesthetist to assist with the patient assessment.

* TIG commended by peer review team

National Peer Review [UHL]

Immediate Risks

No immediate risks logged

Serious Concerns

No serious concerns logged

Areas Of Improvement

Insufficient numbers of WTE transplant co-ordinators in order to sustain the service going forward; however it was acknowledged that a business case has been submitted to increase the establishment of transplant co-ordinators.

East Midlands Transplant Improvement Group [TIG]

- TIG formed 2009
- Sub-group of East Midlands Renal Clinical Advisory Group [Chair, Richard Fluck]
- Variation in practice and outcomes across the East Midlands [Equity of access and outcomes]
- Single Transplant Centre in the East Midlands?

East Midlands Transplant Improvement Group [TIG]

- Asked to Chair TIG [Richard Fluck]
- Employed by UHL but clinical work mostly in Northamptonshire
- Particular interest in transplantation
- Member of Renal CAG

East Midlands Transplant Improvement Group [TIG]

- TIG membership – clinical
- Surgical, Medical, Nursing, Pharmacy, Patients
- Meeting every 3 months
- Improve co-operation between the 2 main transplant centres

East Midlands Transplant Improvement Group [TIG]

- 2010 – review of Kidney Transplant Services across the East Midlands
- Options appraisal – MPT and Management from NUH and UHL and patient representatives.
- Outcome – East Midlands Transplant Centre on 2 sites

East Midlands Transplant Improvement Group [TIG]

- Early years [2009 – 2012]
- Policies and guidelines [East Midlands]
- Annual Audit meeting [November]
- Comprehensive Transplant patient survey

East Midlands Transplant Improvement Group [TIG]

- Recent years [2013 – 2017]
- Strategic Clinical Network [SCN]
- Cardiovascular Disease [Renal]
- TIG supported by SCN

East Midlands Transplant Improvement Group [TIG]

- Task and Finish Groups
 - Transplant listing
 - Transplant follow-up
 - Transplant list maintenance
 - Transplant laboratory services
 - Adult/paediatric transition [Workshop next week]

Engagement from management [NUH and UHL]

East Midlands Transplant Improvement Group [TIG]

- TIG meeting Agenda
 - Review National Data [outcomes]
 - Review number and types of transplant
 - Discuss clinical incidents
 - Present and discuss kidney offer declines [JL – derby]
 - Operational updates [Tx centre and referring units]
 - Review of policies, guidelines etc
 - Transplant laboratory update

East Midlands Transplant

Improvement Group [TIG]

- What next for TIG? – Provide best access to and outcomes from kidney transplantation
- Quality Improvement/Quality assurance
- Annual Audit Meeting [Develop QuIP based on results of audit]
- Present QuIP at next years Audit meeting

Transplantation in the East Midlands

Questions?

KQuIP/UKRR Regional Day

East Midlands

12:00- 13:00

QI Activity in the East Midlands

- AKI – James Medcalf, on behalf of UKRR
- Egfr Surveillance Programme – Assist CKD - Martin Cassidy
- CKD in an Evolving Health Care Environment - Challenges and Opportunities - Mark Jesky
- Tackling AKI Health Foundation - Nick Selby, Derby

Focus on AKI Data - AKI in East Midlands

James Medcalf

John Walls Renal Unit, Leicester



Background – The High Cost of AKI

In the UK up to 100,000 deaths each year in hospital are associated with acute kidney injury. Up to 30% could be prevented with the right care and treatment

NCEPOD. Adding insult to injury, 2009



It is estimated that one in five people admitted to hospital each year as an emergency has acute kidney injury

Wang, et al. 2012



National Algorithm Mandate to Report



Patient Safety Alert

Stage Three: Directive
*Standardising the early
identification of
Acute Kidney Injury*

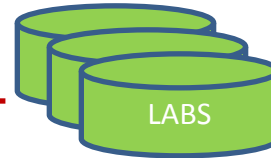
9 June 2014

- **Work with local LIMS supplier to ensure the test result goes to local Patient management systems and into a data message sent to a central point for national monitoring purposes**



The UKRR: AKI Direct from Labs

From renal IT systems
CKD4/5, Acute Dialysis,
RRT



Direct from labs
AKI in 1y and 2y care



Which Data?

1. Alert Files - The Warning Grade Test Result

- Patient Identifiers
- The index creatinine and eGFR

2. Creatinine files - Retrospective and Prospective Lab Data

- All creatinine and eGFR data from preceding 15 months
- All creatinine and eGFR data from next 15 months

“The Master Patient Index”

Linkage to:

- UKRR
- HES
- ONS
- ICNARC

Alert File Data Items

NHS Number

Local Patient Identifier

Forename

Surname

Sex

DoB

Address 1

Address 2

Address 3 (Town)

Address 4 (County)

Post Code

Lab Code

Specimen Number

Source of Request

Primary/Secondary Care Indicator Field

Date of Sample

AKI Warning stage test result

Serum Creatinine Result (micromol/l)

eGFR Test Result

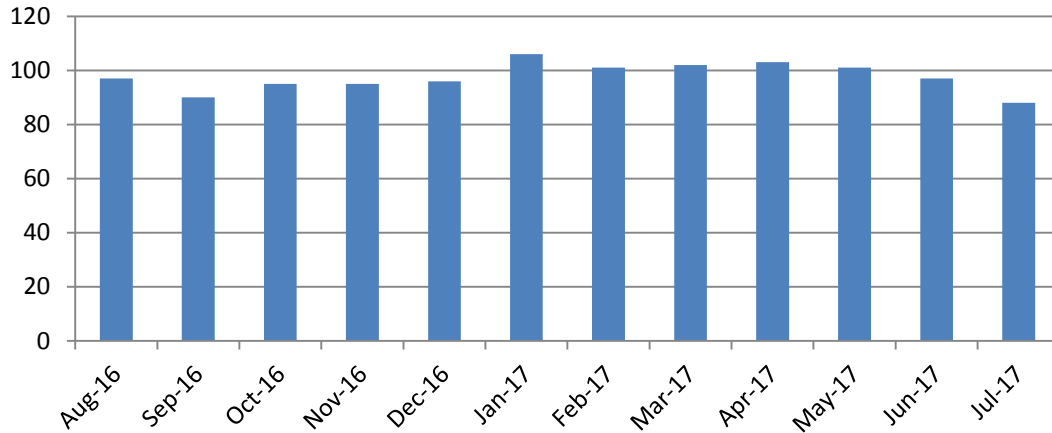




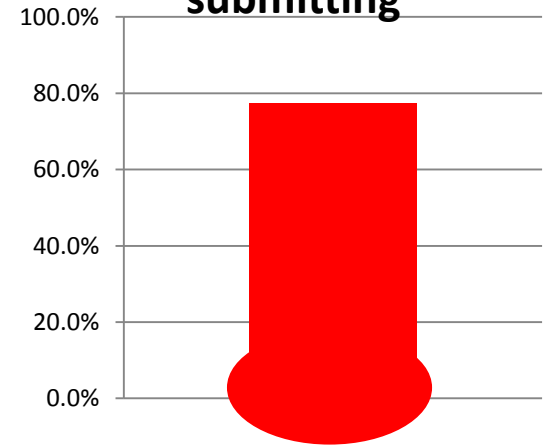
Progress

Currently 123 labs have submitted some AKI alert files (123/159), 77.4%

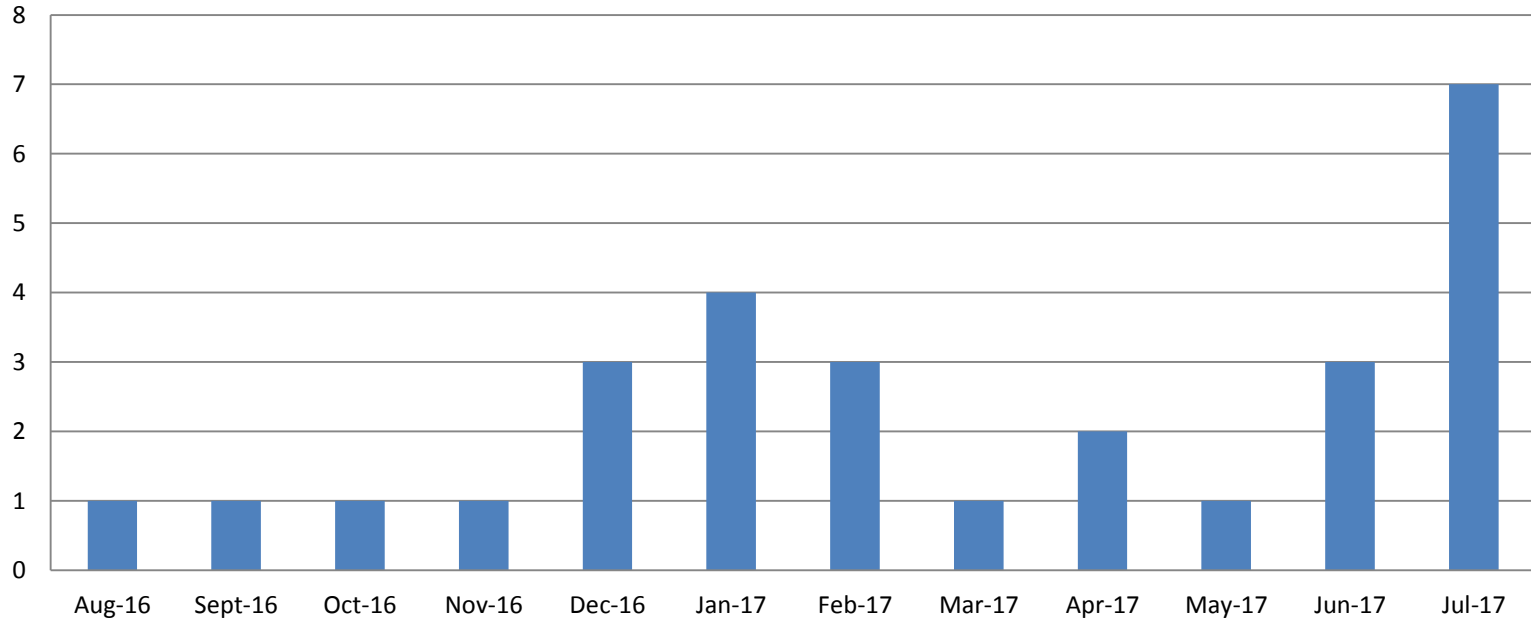
Number of labs submitting data by month



Total number of labs submitting



Number of labs submitting data for the first time



East Midlands labs reporting alerts

Lab Name	Lab code	2016					2017						
		Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
DERBY HOSPITALS	69160												
DONCASTER ROYAL INFIRMARY	69180												
LEICESTER ROYAL INFIRMARY	692M0												
LINCOLN COUNTY HOSPITAL LABORATORY	692P0												
NORTHAMPTON GENERAL HOSPITAL	693C0												
NORTHERN GENERAL HOSPITAL LABORATORY	693E0												
PILGRIM HOSPITAL LABORATORY	693P0												
STEPPING HILL HOSPITAL	69570												
TAMESIDE GENERAL HOSPITAL	695A0												
KING'S MILL HOSPITAL	696H0												
BASSETLAW DIST GEN HOSP LABORATORY	69080												
BURTON HOSPITALS NHS FT LABORATORY	690M0												
ROYAL HALLAMSHIRE HOSPITAL LABORATORY	690V0												
CHESTERFIELD & NORTH DERBYSHIRE ROYAL HOSPITAL LABORATORY	690Y0												
KETTERING GENERAL HOSPITAL LABORATORY	692F0												
PETERBOROUGH HOSPITAL LABORATORY	693N0												
NOTTINGHAM UNIVERSITY HOSPITALS LABORATORY	69790												



Number of people with AKI

Between January 2016 and July 2017 (19 months):

- 134,825 e-alerts were reported for East Midlands (England 1,451,209)
- 46,099 individual patients were identified as having AKI (England 451,882)



AKI Data Completeness – East Midlands



	East Midlands	UK
Total number of labs:	8	100
Total number of alerts:	134,825	1,451,209
Total number of patients with NHS number:	46,099	451,882
Data Item	% Complete	
NHS no	99.6	98.7
Sex	100.0	100.0
DOB	99.6	100.0
Postcode	99.5	97.3
Care Ind	99.9	97.8
AKI stage	100.0	99.9
eGFR (either CKD EPI or MDRD)	93.1	82.5
Creatinine	98.7	99.5

Up to date to
July 2017

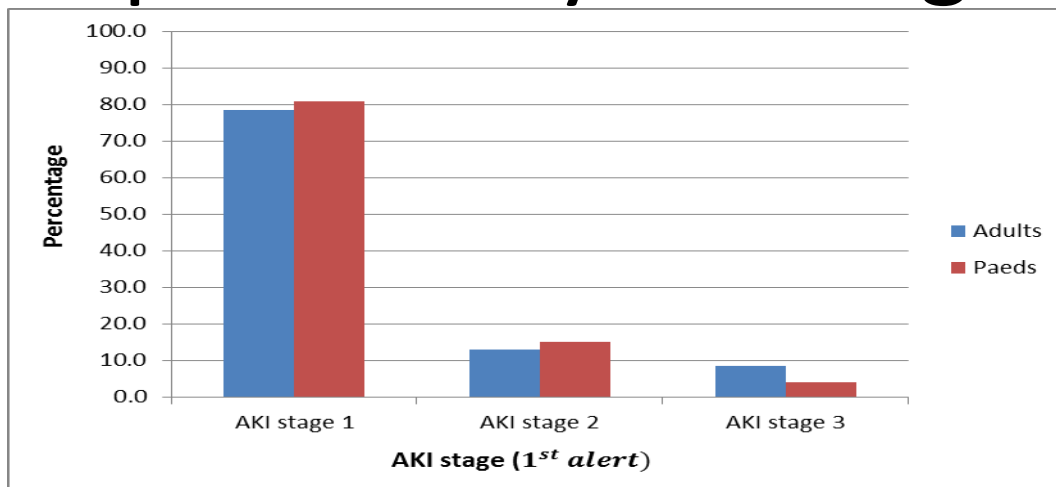
Number and Percentage of Adult Patients by AKI Stage

AKI stage (first alert)	Number	Percentage	UK
Stage 1	35,577	78.4	78.1
Stage 2	5,894	13.0	13.1
Stage 3	3,900	8.6	8.7
Missing	0	0.0	0.1
Total	45,371	100.0	100.0





Percentage of Adult and Paediatric patients by AKI stage



Adults			
AKI stage	N	%	UK%
1	35,577	78.4	78.1
2	5,894	13.0	13.1
3	3,900	8.6	8.7
Missing	0	0.0	0.1

Children			
AKI stage	N	%	UK%
1	446	80.9	79.2
2	83	15.1	12.6
3	22	4.0	8.1
Missing	0	0.0	0.1

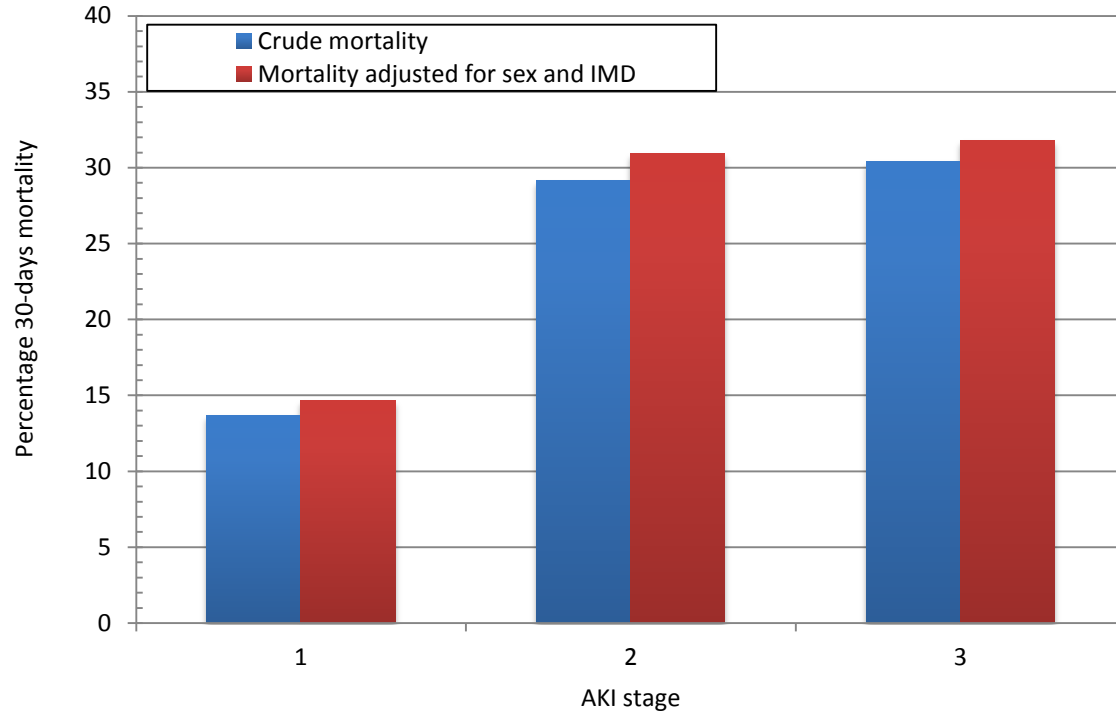
Percentage of patients by AKI stage, gender, age and deprivation

Data item	Group	AKI stage 1	AKI stage 2	AKI stage 3
Total (number)		32,117	7,890	6,031
Age (median)		73.8	75.4	73.0
Age group (%)	< 18	1.3	1.3	0.6
	18-39	10.3	5.4	4.9
	40-64	21.4	20.6	24.6
	65-74	19.5	21.6	24.6
	75+	47.6	51.2	45.3
Gender (%)	Male	45.4	47.6	58.1
IMD group (%)	1-3	38.6	38.2	38.9
	4-7	37.4	37.3	37.9
	8-10	24.1	24.5	23.3

* Peak alert within 30 days



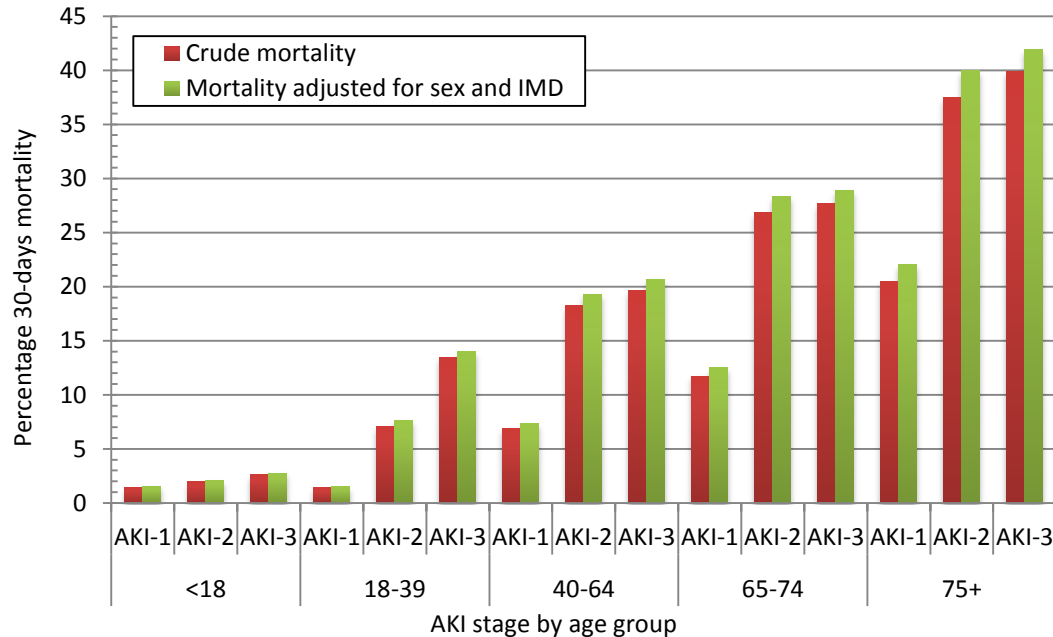
30 Day mortality by AKI stage



* Peak alert within 30 days



30 Day mortality by AKI stage and age group



* Peak alert within 30 days



AKI: 30-Day Mortality



AKI cases for 6 months: 1 January 2017 to 30 June 2017

Analysis restricted to data from labs that sent files for at least 5 of 6 months considered

UK Area	Name	Code	Total CCG Population	N patients with AKI	N Deaths with AKI	%30-day crude mortality	Estimated incidence of AKI
Derbyshire & Nottinghamshire	NHS Erewash	E38000058	94,930	183	42	23.0	3.9
	NHS Hardwick	E38000071	109,250	196	37	18.9	3.6
	NHS Mansfield & Ashfield	E38000103	193,906	882	214	24.3	9.1
	NHS Newark & Sherwood	E38000109	116,953	420	100	23.8	7.2
	NHS North Derbyshire	E38000115	272,156	218			**
	NHS Nottingham City	E38000132	310,837				*
	NHS Nottingham North & East	E38000133	147,625	53			**
	NHS Nottingham West	E38000134	111,243				*
	NHS Rushcliffe	E38000142	112,835				*
	NHS Southern Derbyshire	E38000169	518,167	1780	323	18.1	6.9
Hertfordshire & South Midlands	NHS Corby	E38000037	64,212	21			**
	NHS Nene	E38000108	626,575	272			**
Leicestershire & Lincolnshire	NHS East Leicestershire and Rutland	E38000051	321,922	1348	222	16.5	8.4
	NHS Leicester City	E38000097	333,812	1516	262	17.3	9.1
	NHS Lincolnshire East	E38000099	229,424	1220	248	20.3	10.6
	NHS Lincolnshire West	E38000100	229,624	972	207	21.3	8.5
	NHS South Lincolnshire	E38000157	142,563	319	67	21.0	4.5
	NHS South West Lincolnshire	E38000165	122,842	545	91	16.7	8.9
	NHS West Leicestershire	E38000201	377,259	1371	235	17.1	7.3

* = blanked cells for areas with < 20 patients with AKI-alert reported

** = blanked cells for areas where ≥ 20 AKI-patients reported but with a low estimate of incidence (< 3.5 per thousand persons per year).

Next steps

- CCG level reports on rate of first AKI alert.
- Continued drive to increase coverage.
- Providing feedback on data content to drive up quality and completeness – quarterly lab report.
- Establish the linkages - HES/ONS, UKRR, Intensive Care National Audit and Research Centre.
- Novel statistical analysis and health economics to maximise benefit from the data.

➔ **Use for audit, quality improvement and research**



Acknowledgements

Thank you to all the healthcare professionals and patients who are participating in the Registry's National Programme on AKI.

Thank you to colleagues at NHS England for their support and advice in delivering this programme.

Thank you also to all the people at the UKRR who work in the background to make all this possible.

A programme in partnership with  *England*

ASSIST-CKD

Improving the identification and management of progressive chronic kidney disease in East Midlands

Martin Cassidy

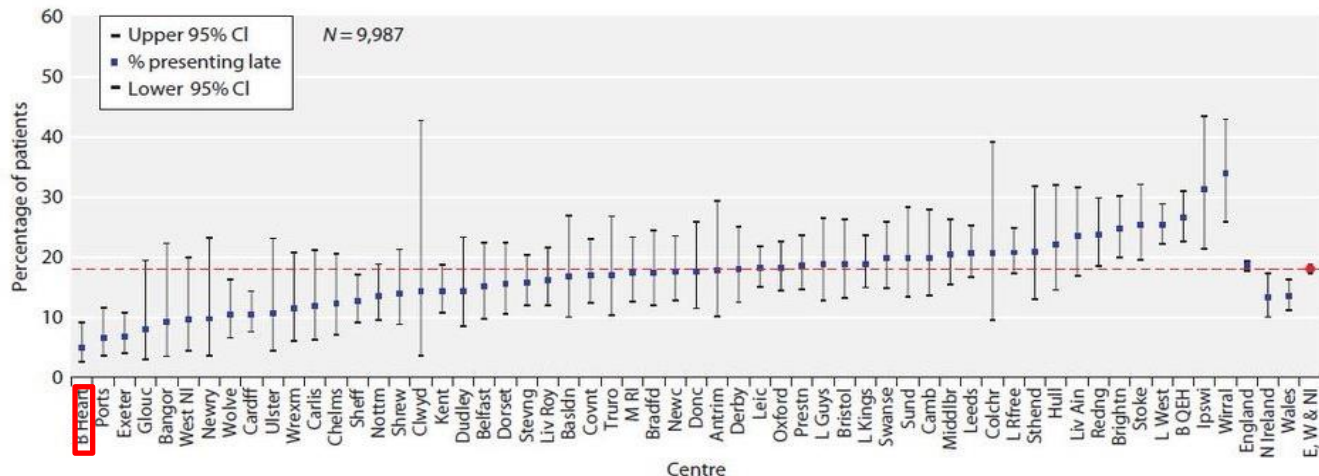
Network Senior Quality Improvement Manager
East Midlands Cardiovascular Clinical Network

7 September 2017

ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Rationale: reduce variation in late referral rates



Gilg J, Caskey F and Fogarty D. UK Renal Registry 18th Annual Report: Chapter 1 UK Renal Replacement Therapy Incidence in 2014: National and Centre-specific Analyses. Nephron 2016;132(suppl1):9-40.

Project supported by:



www.kidneyresearchuk.org

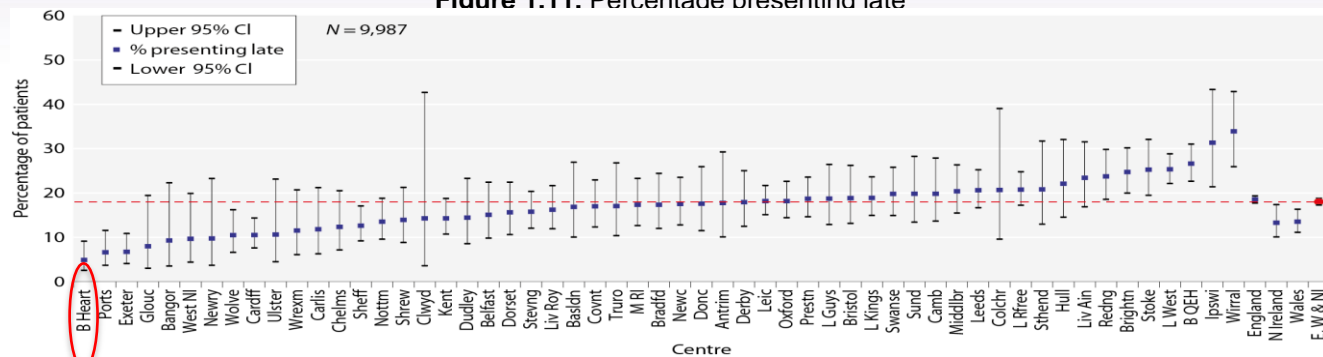
Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Figure 1.11. Percentage presenting late



	HEFT %	E, W & NI %
2009-10	9.9	20.6
2010-11	9.1	20.1
2011-12	7.4	19.5
2012-13	5.7	18.6
2013-14	4.9	18.0

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Late Presentation for RRT

	2010-12	2013-15
	Percentage presenting <90 before start	Percentage presenting <90 before start
CCG/Renal Unit		
NHS Erewash	11.8	9.4
NHS Hardwick	28.0	21.1
NHS North Derbyshire	24.4	10.7
NHS Southern Derbyshire	22.2	18.8
Derby Renal Unit	23.0	18.5
NHS Mansfield & Ashfield	2.0	14.5
NHS Newark & Sherwood	9.1	17.9
NHS Nottingham City	13.8	14.4
NHS Nottingham North & East	11.9	15.0
NHS Nottingham West	16.1	5.6
NHS Rushcliffe	25.8	8.3
Nottingham Renal Unit	11.8	13.7
NHS Corby	26.3	17.4
NHS Nene	21.8	23.0
NHS East Leicestershire and Rutland	14.8	13.1
NHS Leicester City	14.7	9.9
NHS West Leicestershire	17.6	22.4
NHS Lincolnshire East	12.5	14.5
NHS Lincolnshire West	14.6	23.6
NHS South Lincolnshire	16.3	16.3
Leicester Renal Unit	17.6	18.6

	% Late presentation for RRT 2013-15
NHS South West Lincolnshire	24.1
NHS Lincolnshire West	23.6
NHS Nene	23.0
NHS West Leicestershire	22.4
NHS Hardwick	21.1
NHS Southern Derbyshire	18.8
NHS Newark & Sherwood	17.9
NHS Corby	17.4

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Overall 2-fold increased risk of death in group referred late
(*Chan Am J Med 2007*)

Consequences of late referral	Benefits of early referral
Low prevalence of permanent access	Greater proportion with permanent access
Delayed referral for transplant	Reduced need for urgent dialysis
Greater initial hospitalisation rate	Reduced hospital LOS and costs
Higher mortality	Improved survival
Reduced patient choice of RRT modality	Greater choice of treatment options
Anaemia and bone disease	Improved nutrition
Severe hypertension & fluid overload	Better CVD and comorbidity management
Worse psychosocial adjustment	Delay need to initiate RRT

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

The Intervention

Age \leq 65y, eGFR \leq 50ml/min/1.73m² OR
Age $>$ 65y, eGFR \leq 40ml/min/1.73m²



Graph of eGFR over time reviewed and identified as “high risk” by lab scientist



Graph and tailored advice sent by post to primary care physician

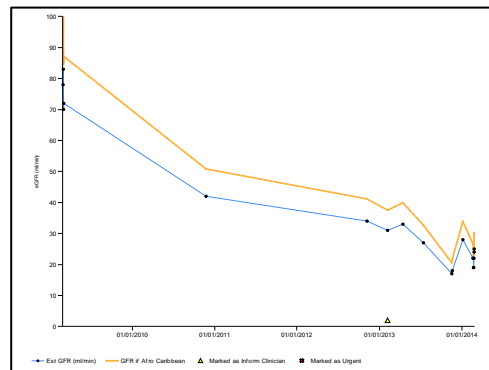
Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245

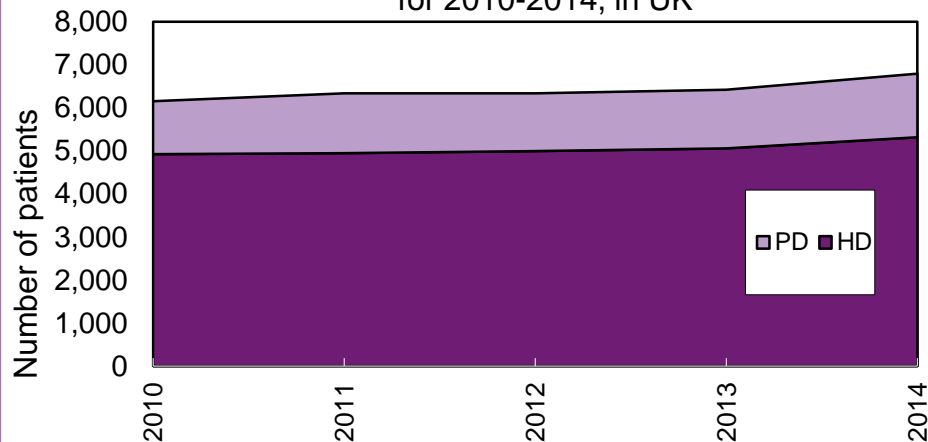
Chronic Kidney Disease Monitor (ASSIST-CKD)



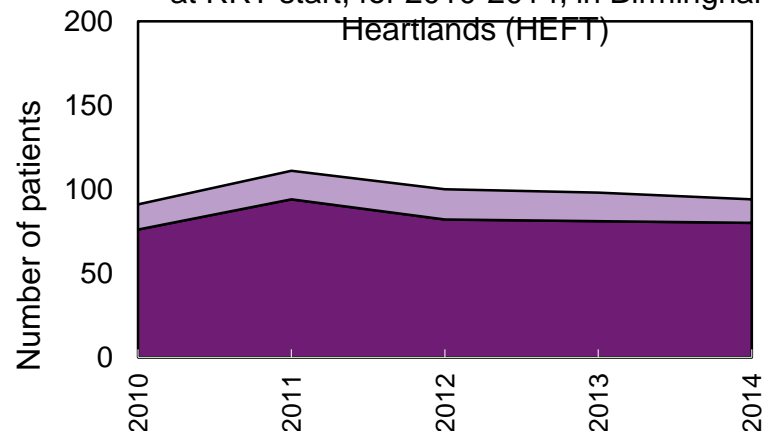
ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Incident patients by treatment modality at start, for 2010-2014, in UK



Incident patients by treatment modality at RRT start, for 2010-2014, in Birmingham Heartlands (HEFT)



Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Progress to date - National

- 8 live sites to date, further 8 by end of October
- Learning events November 2015, 2016 and November 2017
- Software redesigned and improved
- Web portal and helpdesk
- Qualitative evaluation of wave one and 2 sites part complete (5 sites) - labs/primary care/renal unit staff
- Communications - newsletter, targeted local communications campaign 'Innovation on Your Door Stop' - 3 pilot sites
- Business case support - infographic
- Sustaining and spreading

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Progress to date – East Midlands

- Funding for labs for 1st year and initial CCG/Lab/nephrology engagement by East Midlands Cardiovascular Clinical Network
- Implementation facilitated by Lesley Woolnough, ASSIST-CKD
- Site position:
 - Kettering commenced August 2016
 - Leicester commenced September 2017
 - Sherwood Forest – data testing – go live mid to late Sept 2017
 - Northampton – Clinical Scientists have passed exam, require IT support with installation and data processing
 - Chesterfield - on hold awaiting recruitment of Clinical Biochemist to lead the laboratory
 - Nottingham – on hold due to lack of clinical scientists
 - Derby – part of step wedge – go live end of October 2017
- Business case for CCGs to support sustaining the programme after year 1

Project supported by:



www.kidneyresearchuk.org

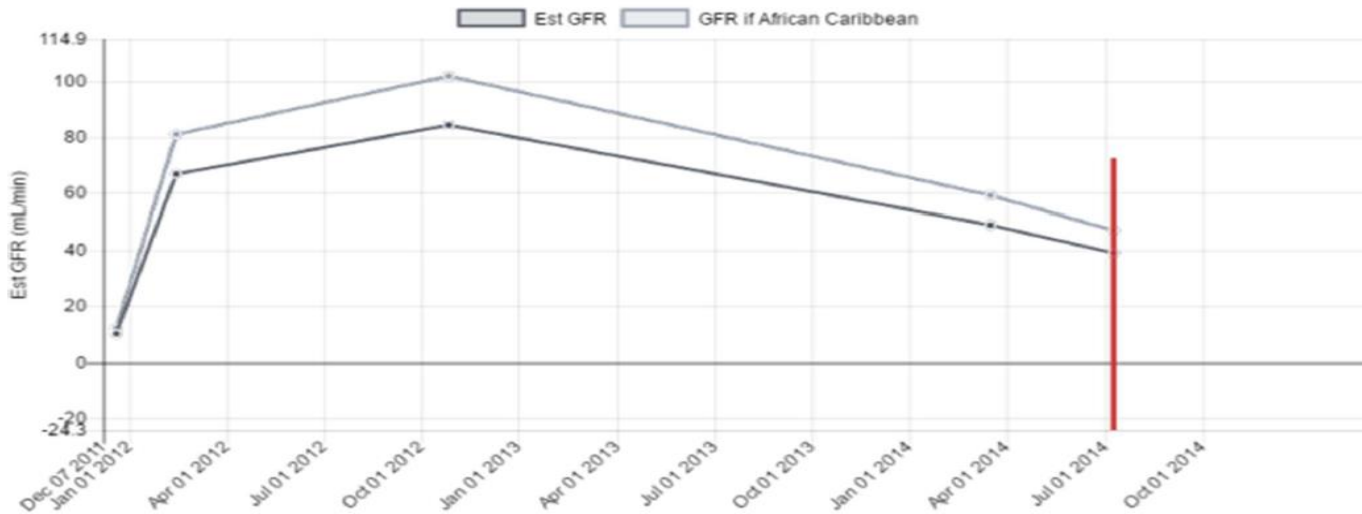
Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

eGFR Graph



Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



Graph Report Personalisation

****This patient has been identified as having a substantial fall in GFR****

If this patient is not under active follow-up by Renal services suggest either:

- a) Review guidance on www.emrn.org.uk*
- b) Contact the Renal team for advice via the 'advice and guidance' facility on Choose and Book*
- c) Refer the patient to the Renal Clinic via Choose and Book.*

This biochemistry data does not of course take into account this individual person's overall health or frailty. If after review of the information provided today you feel comfortable to monitor the patient's CKD without contacting the Renal team then please do so.

For information about this service please contact Clinical Biochemistry on 01536 493385

ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Kettering Experience

After 2 months takes 30 mins

19 eGFRs <50 (<65yr olds) 2 graphs reported (11%).

78 eGFRs <40 (>65yr olds) 15 graphs reported (20%).

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Summary: implications for primary care

- A simple but effective evidence-based intervention based in the path lab
- Number of graphs received is low (2-3 per GP practice/month)
- Improved co-ordination between primary care and secondary care
- Better referral management
- Anticipated reduction in bed days (reduced unplanned starts on dialysis)
- Long-term benefits - reduced kidney disease progression

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Summary: benefits for patients

- eGFR graph helps understanding of a decline in kidney function
- Promotes patient activation and empowerment in managing their disease
- Reduced morbidity and mortality and increased quality of life through:
 - Earlier intervention to slow progression of kidney disease and possibly delay/prevent end stage kidney failure including its physical, psychological and social consequences
 - A reduction in (higher risk) emergency dialysis
 - Better access to pre-emptive transplantation and home therapies for dialysis

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



ASSIST-CKD

A programme to spread eGFR graph surveillance for the early identification, support and treatment of people with progressive chronic kidney disease

Delaying dialysis for 1 patient for 1 year will fund ASSIST-CKD for at least 5 years (190 new RRT patients every 5 years per CCG with 300,000 population)

ASSIST-CKD: A Quality Improvement Programme for the UK Identifying people with chronic kidney disease (CKD) at greatest risk

The problem

- Dialysis as direct replacement is linked to poor survival and quality of life and has a big impact on NICE resource
- Late referral for dialysis (less than 90 days) is linked to quality, mortality and healthcare costs
- The risk of dying from cardiovascular disease is on average 10-30% even higher in a patient on dialysis than in the general population

Dialysis treatment costs per person per year

£25,000
Dialysis treatment cost per year by NHS England
£5,000 to £10,000
Healthcare costs for CKD in other stages (pre-dialysis) (based on 2015)

+4% increase a year on year in patients on renal replacement therapy (RRT)/dialysis

4% increase
100 new RRT patients every five years
Based on 300,000 population and 40 incidence, 11 per cent on patients

The solution

A person-centred system that highlights patients at greatest risk of end stage kidney disease (ESKD)

- Use surveillance graphs of all eGFR Falls Data (eGFR is a marker for CKD)
- Conducted within an existing system that is generally used for the laboratory and patient records (prevalence used for eGFR records)
- Use surveillance graphs of all eGFR Falls Data (eGFR is a marker for CKD)
- Use surveillance graphs of all eGFR Falls Data (eGFR is a marker for CKD)



- Send to GPs and Saving Lives
- Focus on planned and emergency admissions
- Create opportunities to avoid or delay ESKD, low volume dialysis treatment
- Increase access to home dialysis and transplantation

The benefits

Using a GFR graph surveillance, Heart of England Foundation Trust (HEFT), Birmingham have delivered:

Patients starting RRT treatment (2010-2014)



30% reduction in patients on dialysis age band 65-74 years old



A 3% reduction in patients on dialysis in the UK and England (2010-2014)



Delaying dialysis for just 1 patient for one year will fund eGFR surveillance for at least 5 years (figures based on 300,000 population, cost of eGFR surveillance at £5,000/year vs cost of dialysis at £25,000 (plus ancillary) per patient per year)

Our local perspective (for sites to complete)

Population	No of RRT patients requiring RRT (1% per 1000 a year)	Self tested cost of preventing dialysis per patient (NHS) (£1000/1000 people per year)	Late presentation to dialysis	Cost of CKD surveillance programme per year	Impact required for eGFR surveillance to be cost saving

Mark's renal failure was diagnosed the day after he was admitted to hospital. "I had been tired and small and tests showed my creatinine was rising, but I was assured everything was ok. 4 years later I had classic symptoms of end stage kidney disease - itchy, nausea and dark urine. My creatinine was now over 7,000. I was rushed into hospital and started dialysis immediately". Mark had known dialysis for three years, three times a week before receiving a kidney transplant from his partner Claire. He feels very strongly that he didn't need to "wait for a transplant" and speaks of the shock of how everything happened. "I am very supportive of the ASSIST-CKD project and feel if I had been diagnosed earlier I could have made some lifestyle changes and taken blood pressure medication which could have slowed my progression into kidney failure, giving me more time to come to terms with it. By seeing blood results on a graph, the difference is more obvious and it should be easier to detect a problem and therefore be diagnosed sooner".

Mark Davis, member of ASSIST-CKD Patient Project Team

Benefits to Patients:

- eGFR graph helps understanding of a decline in kidney function and promoting patient education and empowerment to manage their disease
- Reduces morbidity and mortality and improves quality of life through:
 - earlier intervention to slow progression of kidney disease and possibly delay/prevent end stage kidney failure including physical, psychological and social consequences
 - a reduction in high risk emergency dialysis
 - better access to pre-emptive transplantation and home therapies for dialysis

Benefits to GPs:

- Increased efficiency
- Detects situation at small number of high risk cases (not the majority with stable, stable disease)
 - prompts an earlier referral of patient
 - Report is report to CKD guidelines, email or telephone and referral options, and offers a list of alternative options of long term trends of kidney function
 - Prompts a later referral but also prevents a premature referral and reduces need for on-going hospital follow up or dialysis with stable kidney function

Email: assist@kidneyresearchuk.org
www.kidneyresearchuk.org Registered Charity No. 252892 Scottish Charity No. SC039245

Project supported by:



www.kidneyresearchuk.org

Kidney Research UK Registered Charity No: 252892 Registered Scottish Charity No. SC039245



CKD in an evolving health care environment: challenges and opportunities

Mark Jesky

Nottingham University Hospitals

Outline

- Starting position in East Midlands
- Challenges
 - Changing population and healthcare landscape
- What added value do we provide?
- Identifying those at greatest risk
- Opportunities

We start from a position of strength

- Significant QI infrastructure
- Local (and national) experts
- Involvement in key CKD studies in UK nephrology
 - RRID
 - CRISIS
 - RIISC
- NURTuRE

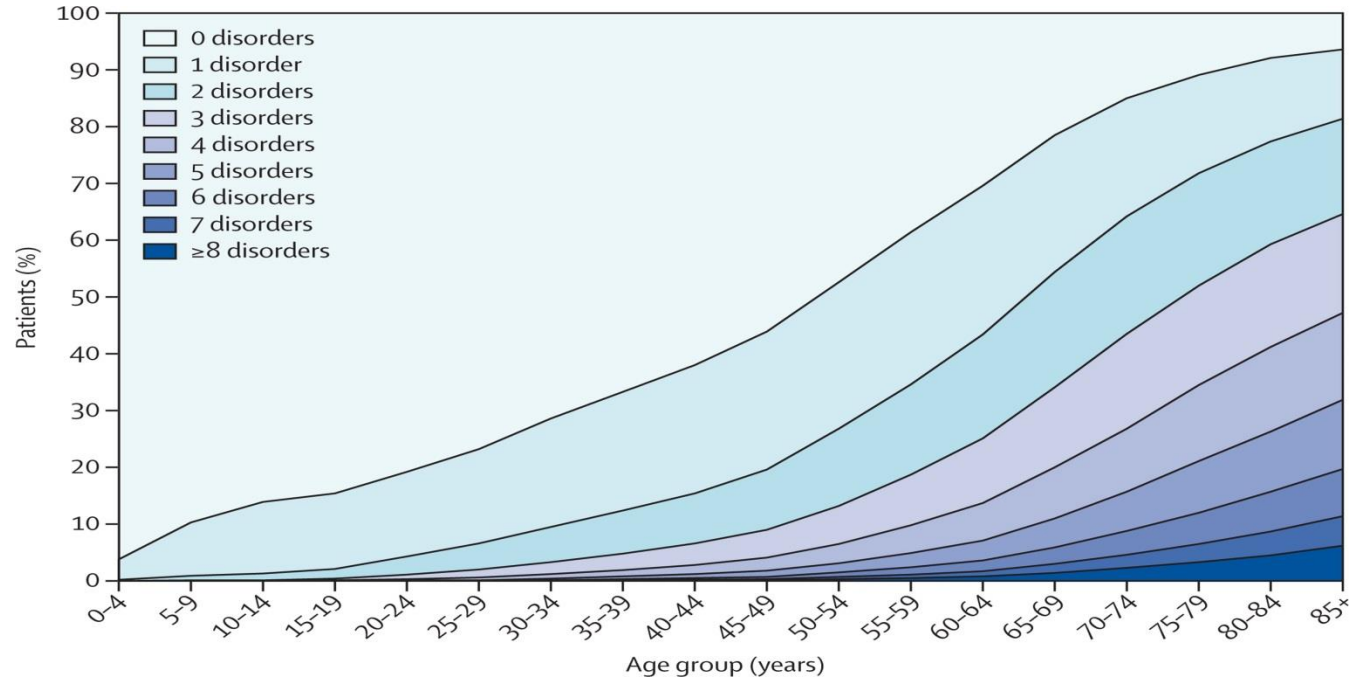
Changing Health Care landscape

- Financial constraint
- Sustainability and transformation plans
 - Aspirational
 - Vision: Sustainable, joined up high quality health and social care services that maximise the health and wellbeing of the local population
 - Systems gap
 - Closing this gap would require a reduction of 4.5% in spending growth every year against out historic performance of 2%
 - Organise care around individuals and populations – not organisations
 - Work in multi disciplinary teams across organisational boundaries
- Increasingly need to justify
 - who to see
 - who not to see

Changing Patient Population

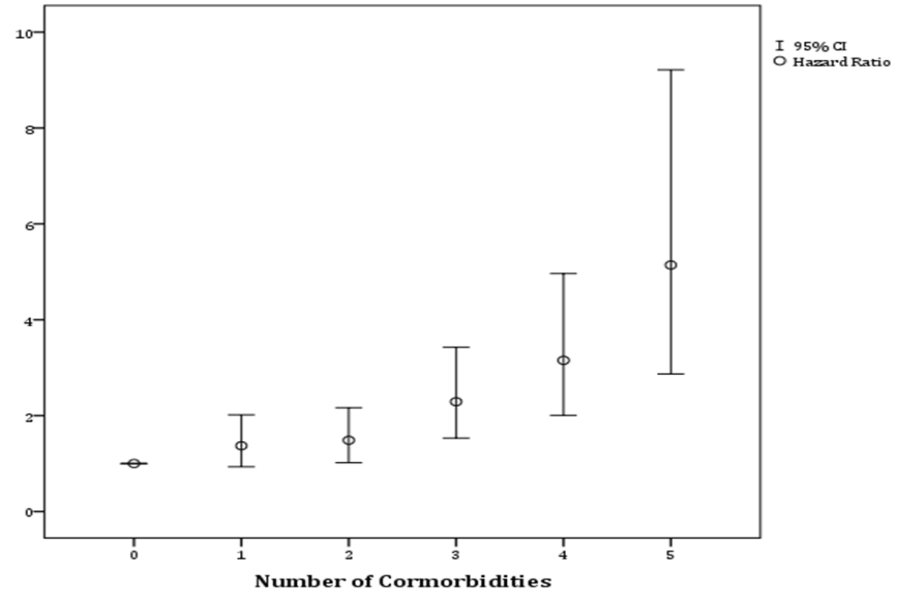
- Population living longer
- Better management of long term conditions
- How often do we get referred people who only have renal disease with no comorbidity?

All too familiar...



More Multimorbidity Equals

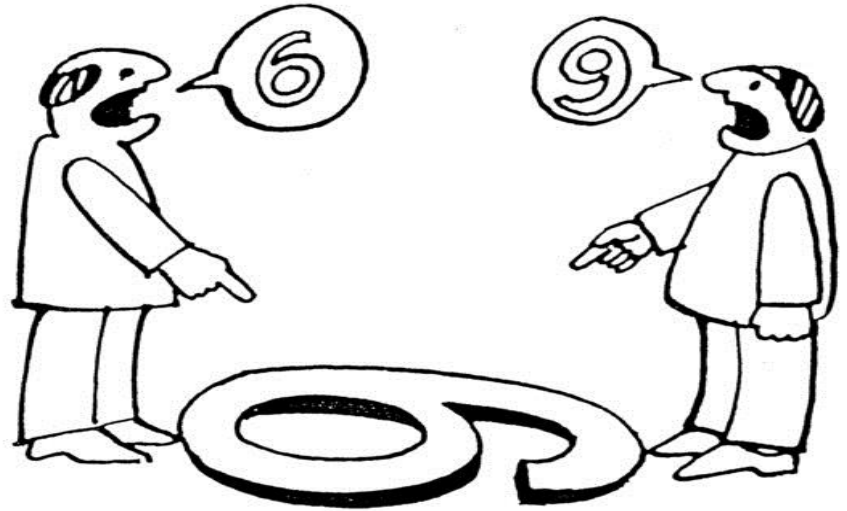
- Higher risk of death
- Lower quality of life
- Potentially input from multiple health care professionals
 - ↑visits



What added value do we offer?

Depends on whose perspective

- Primary care
- Patients
- Nephrologists



SONG HD



1 CORE OUTCOMES

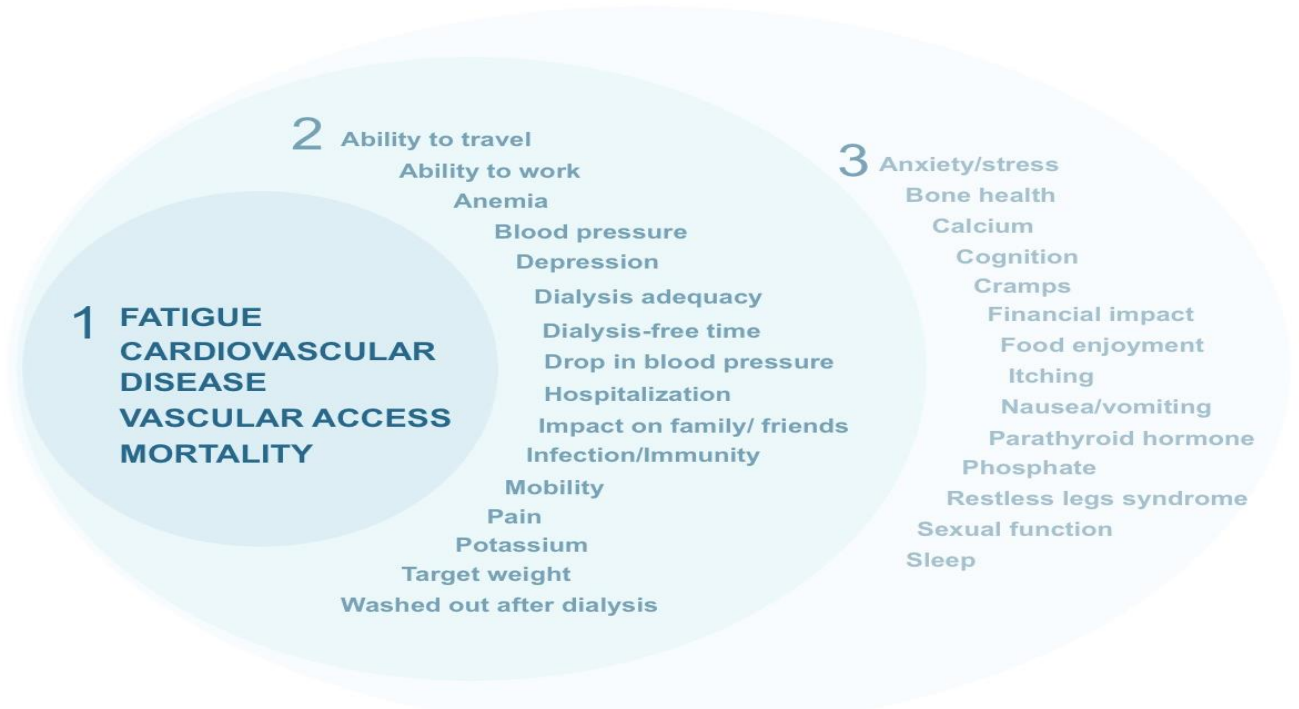
Critically important to all stakeholder groups
Report in all trials

2 MIDDLE TIER

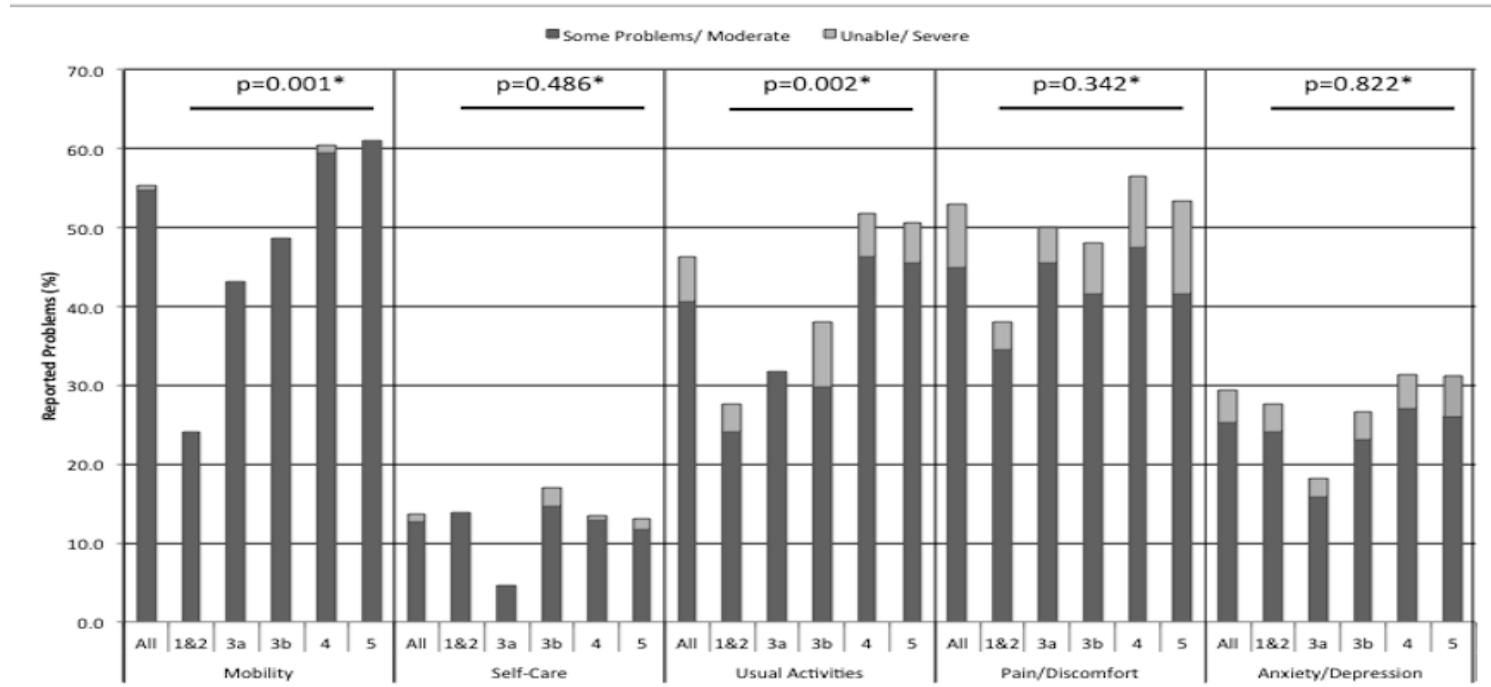
Critically important to some stakeholder groups
Report in some trials

3 OUTER TIER

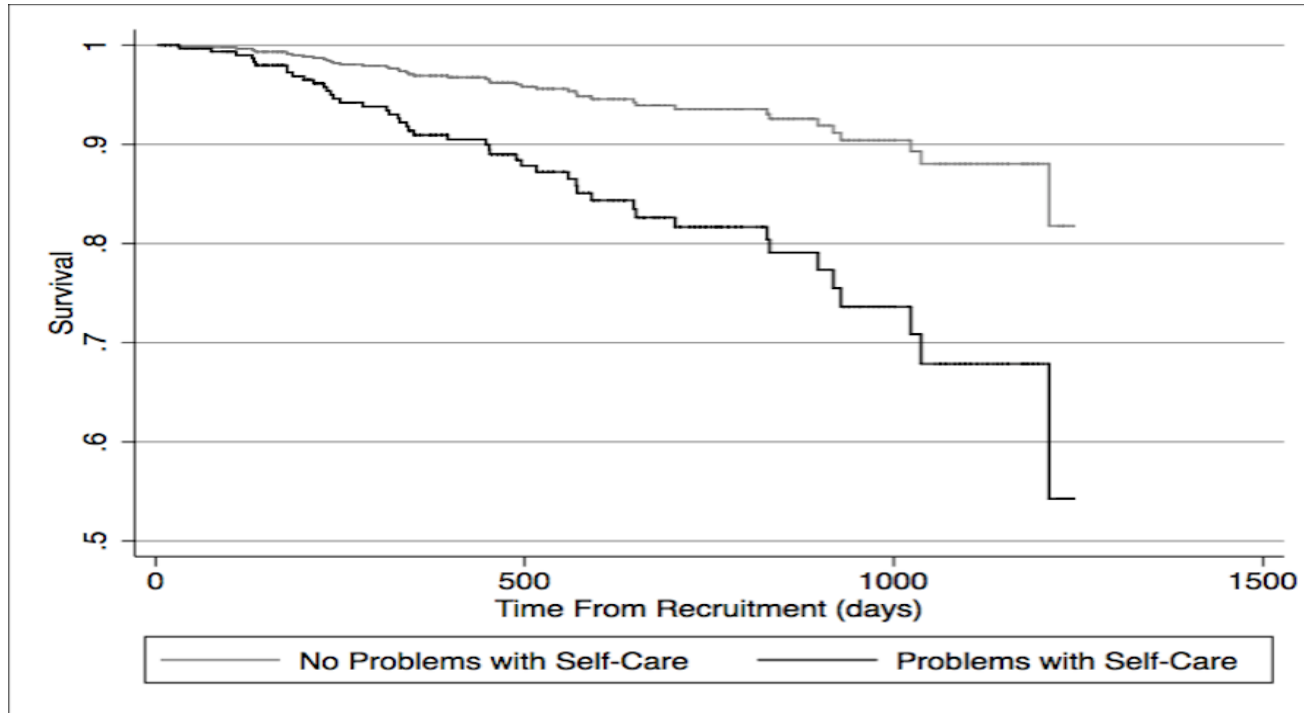
Important to some or all stakeholder groups
Consider for trials



HRQL in CKD



HRQL in CKD



Potential Value

- Manage those at greatest risk of progression to ESRD
 - Evidence based risk modification
 - Timely access to transplantation
- Manage complications associated with CKD
 - ESA one of few therapies we have which is shown to improve QoL
- Access to research
 - Tracking health outcomes
 - Novel interventions
 - Progression
 - HRQL
- Collaborative management of multimorbidity
- Management of CV risk

Risk Stratification

- Kidney failure risk equation
 - Well established
 - Internationally validated in large cohorts
- Only 4 variables needed
 - Age
 - Gender
 - eGFR
 - ACR

Yet...

- Many referrals do not have ACR information
- High risk central Birmingham population
 - ACR recorded in 35%
- Previous QoF
 - *‘the percentage of patients on the CKD register whose notes have a record of a urine albumin creatinine ratio (or protein creatinine ratio) test in the preceding 12 months’ .*
- Now (QoF 2015-2016)
 - *‘The contractor establishes and maintains a register of patients aged 18 or over with CKD with classification of categories G3a to G5’*

Opportunities ahead

- Changing landscape increases need for collaboration with primary care
 - Opportunity for new models of care
 - Needs to be based on sound methodology
 - Understanding of what primary care want from nephrology
 - Has to be a two (or three) way discussion
- Key data for referrals vital to risk stratify
- Challenge certain assumptions
 - New: follow up ratios for chronic disease
 - Disincentive to offer advice rather than review
- Discharge needs effective primary care or informatics monitoring



mark.jesky@nuh.nhs.uk

Tackling Acute Kidney Injury

Dr Nick Selby

Associate Professor of Nephrology

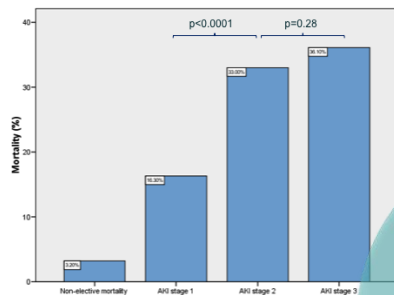
Centre for Kidney Research and Innovation

Division of Health Sciences and Graduate Entry Medicine

University of Nottingham

Royal Derby Hospital



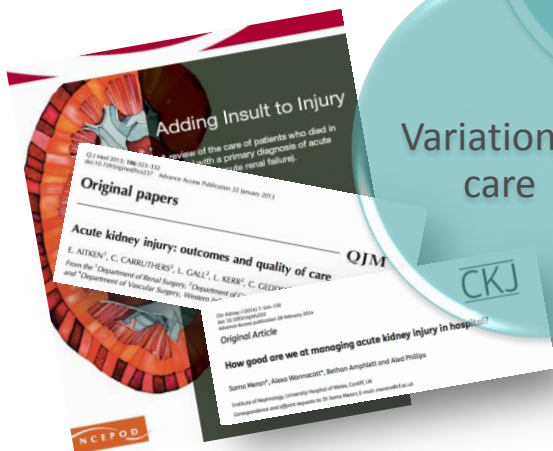


5-15% of hospital admissions,
mortality ~25% and >35% in AKI

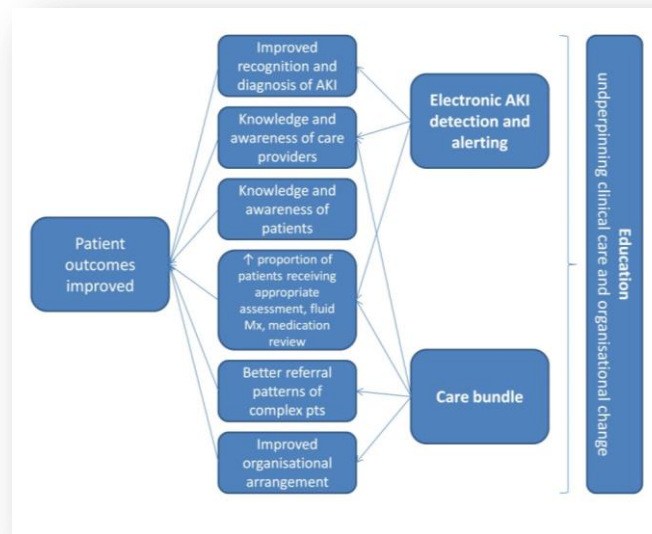
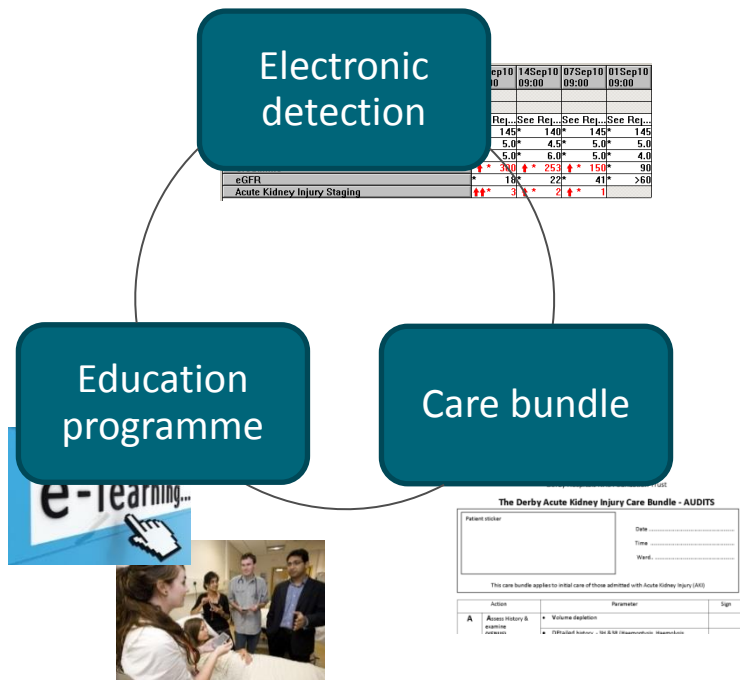
High incidence,
poor outcomes

Variation in
care

No specific
therapies



...the introduction of a package of interventions for AKI will improve both basic standards of patient care and patient outcomes...



Selby NM et al. Clin J Am Soc Nephrol. 2012
 Selby NM. Curr Opin Nephrol Hypertension 2013
 Xu G et al. BMJ Open 2014
 Kolhe et al. submitted PLoS ONE 2014

Lead organisation:

Derby Teaching Hospitals 
NHS Foundation Trust

Evaluation partners:



Dissemination partner:




Think Kidneys is a national programme led by
NHS England in partnership with UK Renal Registry

Funder:



Implementation partners:



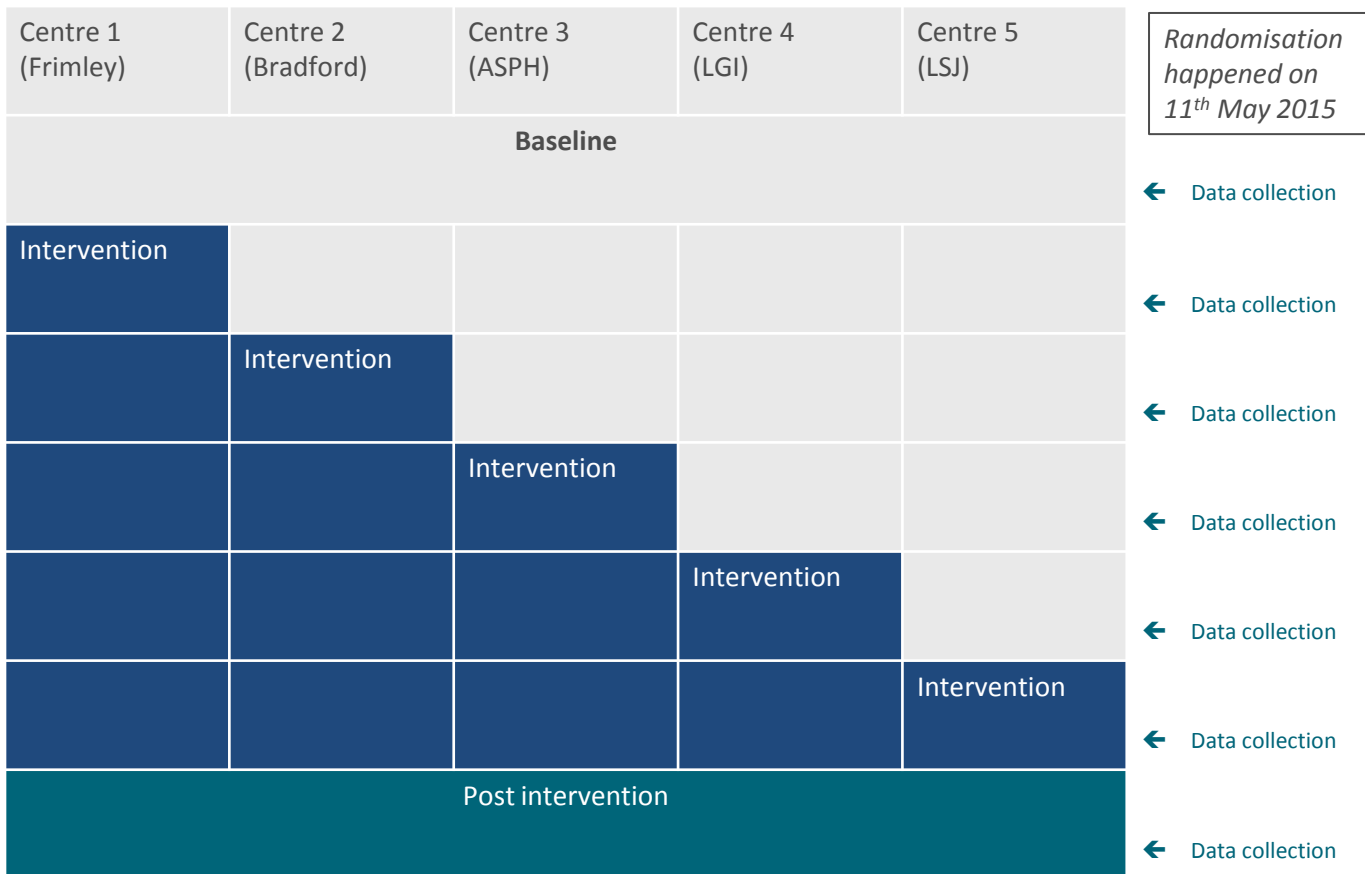
Bradford Teaching Hospitals 

Ashford and St. Peter's 
Hospitals
NHS Trust

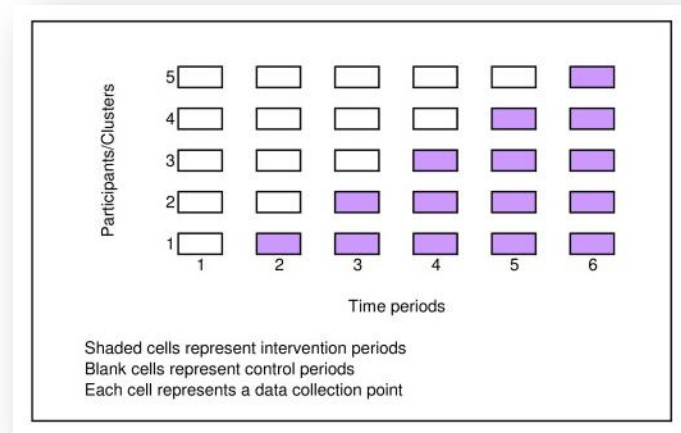
Frimley Health 
NHS Foundation Trust



Stepped wedge design



- Avoids contamination of groups
- Overcomes ethical problems w.r.t. failure to address variation in care - all centres are exposed to intervention
- Improvement over time-series design; differentiation between treatment effect vs. time-related factors
- Designed within CONSORT 2010 Cluster RT guidance
- Allows quality improvement approach



1. Patient outcome data

- IT based
- All patients with one or more results from laboratory detection of AKI
- Detection runs in control periods but results not visible to end-users
- Data specification developed

2. Audit of process of care

- Recurrent audit throughout project (7 cycles in total)
- 30 cases per centre audited per cycle
- Audit standards and data collection variables constant between centres
- Requires manpower to deliver

3. Qualitative

- Why do elements of the intervention work/not work?
- Can we develop a 'how to' guide for scaling/implementing an AKI package?

Primary endpoint: 30 day mortality rate in patients with AKI

Secondary endpoints

a) Patient outcome measures:

1. Incidence of hospital acquired AKI (h-AKI)
2. Incidence of AKI progression (AKI that increases by ≥ 1 stage from that at first detection)
3. Incidence of individual AKI stages
4. Length of hospital stay of patients with AKI
5. Number of critical care bed days used by patients with AKI
6. Proportion of patients with AKI who achieve complete renal recovery by hospital discharge

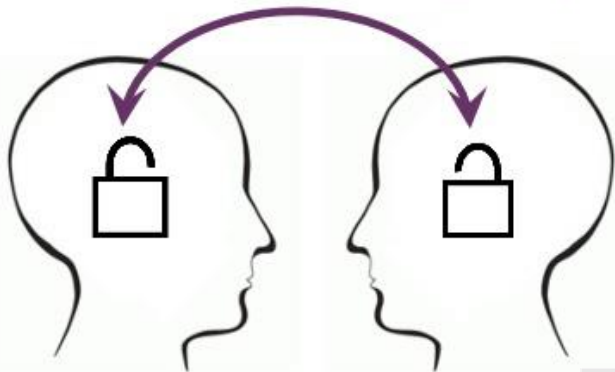
b) Measures of basic care:

- Clinical audit of metrics of basic care

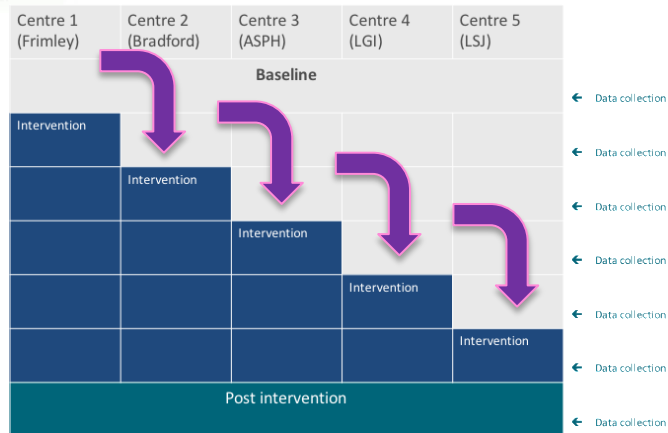
c) Qualitative data

- **Locally led**
 - Key AKI team members engaged from outset
 - Education/care bundles can be locally tailored
 - Centres can explore AKI ‘alerting’ above the minimum requirement
- **Wider local project team in each hospital**
- **Change methodology**
 - Peer assist and review events: ‘pass on learning’
 - Measurement for improvement
 - Logic model to demonstrate theory of change
- **Ensure executive support**
- **Project manager support**
- **Shared materials/experiences**
 - Repository, monthly updates, periodic learning events
- **Move from implementation to sustainability within life of project**

‘proven critical knowledge capture....’

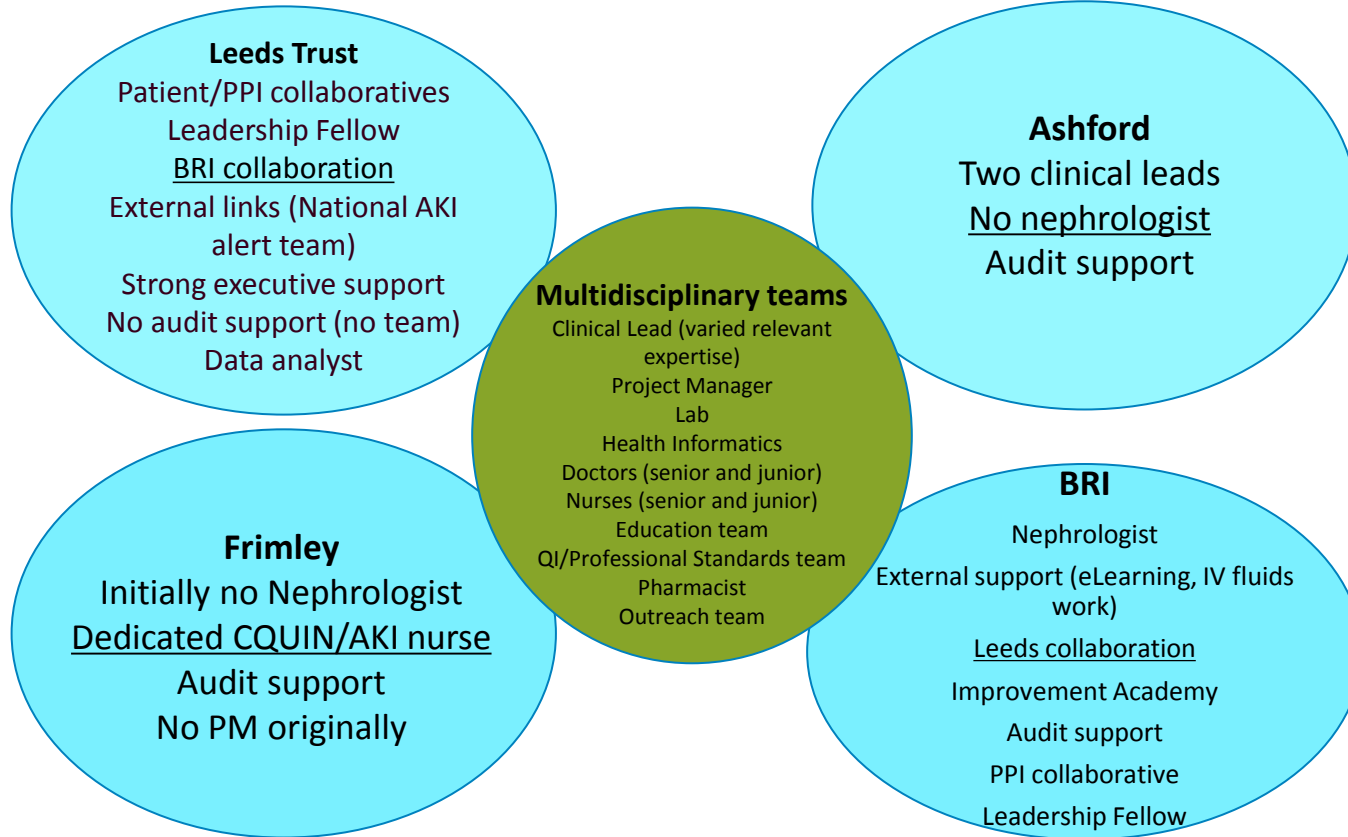


advice, tactics, and lessons learned





Project teams



Care Bundle Development

Bradford Teaching Hospitals NHS
NHS Foundation Trust

AKI 8 – Care Bundle for suspected/ confirmed Acute Kidney Injury

Please complete the care bundle and affix/tile within the patient's clinical notes

- Assess for volume status/ sepsis, consider iv fluids/ antibiotics
- STOP nephrotoxic medications (eg prils, sartans, NSAIDs, diuretics)
- Perform a urine dip for Blood/Protein/Leucocytes/Nitrites
Absent in most pre-renal AKI, present in infection (BPLN – request urine culture), nephritis (BP – send for urine PCR) and some cases of obstruction (B)
- Manage hyperkalaemia as per intranet guidelines
- Check acid-base balance (venous bicarbonate +/- ABGs)
- Consider additional tests eg serum calcium/CK/CRP/ autoimmune and myeloma screen, and renal USS (avoid radiocontrast if possible)
- Monitor fluid balance/ specify frequency of NEWS assessments and repeat blood tests
- Contact renal registrar (#5581) or consultant if AKI Stage 3 +/- hyperkalaemia, fluid overload and metabolic acidosis, plan repeat tests/ review escalation of care/ inform patient or family as appropriate

In the patient DISCHARGE SUMMARY, to comply with AKI CQUIN please state:

1. HIGHEST stage of AKI during the admission
2. Medication changes made – state YES or NO/ if YES, explain ALL changes, stating whether DUE TO AKI and whether or not medication is to be RESTARTED and WHEN
- 3/4. Blood tests required post-discharge – state both TYPE and FREQUENCY

Date and time of completion:

Signature and bleed:

Care Bundle for suspected/ confirmed Acute Kidney Injury

Care bundle commenced: Date: Time:

Please complete the care bundle and affix/tile within the patient's clinical notes

Initial action when completed

1. Assess for volume status/ sepsis, consider iv fluids/ antibiotics Yes/NA
2. Review medication and consider stopping nephrotoxic medications (eg prils, sartans, NSAIDs, diuretics) Yes/NA
3. Perform and review urine dip for Blood/Protein/Leucocytes/Nitrites. Absent in most pre-renal AKI, present in infection (BPLN – request urine culture), nephritis (BP – send for urine PCR) and some cases of obstruction (B) Yes/NA
4. Manage hyperkalaemia Yes/NA
5. Check acid-base balance (venous bicarbonate +/- ABGs) Yes/NA
6. Consider additional tests eg serum calcium/CK/CRP/ autoimmune and myeloma screen, and renal USS (avoid radiocontrast if possible) Yes/NA
7. Monitor fluid balance/ specify frequency of NEWS assessments and repeat blood tests Yes/NA

Signatures register - initial and add name when completing each bundle element	
Name	Initial

In the patient DISCHARGE SUMMARY, to comply with AKI CQUIN please state:
1. HIGHEST stage of AKI during the admission
2. Medication changes made – state YES or NO/ if YES, explain ALL changes, stating whether DUE TO AKI and whether or not medication is to be RESTARTED and WHEN
3/4. Blood tests required post-discharge – state both TYPE and FREQUENCY

Simplified wording

Some interventions are not always appropriate - we added an N/A to allow for full completion

Bradford Teaching Hospitals NHS
NHS Foundation Trust

AKI 8 Care Bundle for suspected/confirmed Acute Kidney Injury

Care bundle commenced: Date: Time:

Please complete the care bundle and affix/tile within the patient's clinical notes

Initial action when completed	Yes/NA	Initial
1. Assess for volume status/ sepsis, consider iv fluids/ antibiotics	Yes/NA	<input type="checkbox"/>
2. Review medication and consider stopping nephrotoxic medications (eg prils, sartans, NSAIDs, diuretics)	Yes/NA	<input type="checkbox"/>
3. Perform and review urine dip for Blood/Protein/Leucocytes/Nitrites. Absent in most pre-renal AKI, present in infection (BPLN – request urine culture), nephritis (BP – send for urine PCR) and some cases of obstruction (B)	Yes/NA	<input type="checkbox"/>
4. Manage hyperkalaemia	Yes/NA	<input type="checkbox"/>
5. Check acid-base balance (venous bicarbonate +/- ABGs)	Yes/NA	<input type="checkbox"/>
6. Consider additional tests eg serum calcium/CK/CRP/ autoimmune and myeloma screen, and renal USS (avoid radiocontrast if possible)	Yes/NA	<input type="checkbox"/>
7. Monitor fluid balance/ specify frequency of NEWS assessments and repeat blood tests	Yes/NA	<input type="checkbox"/>

Signatures register - Initial and add name when completing each bundle element

Name	Initial

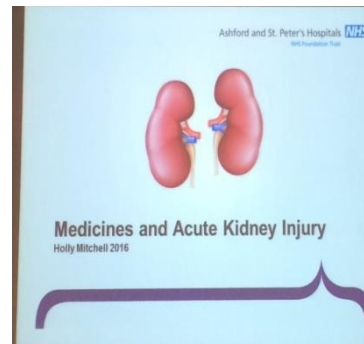
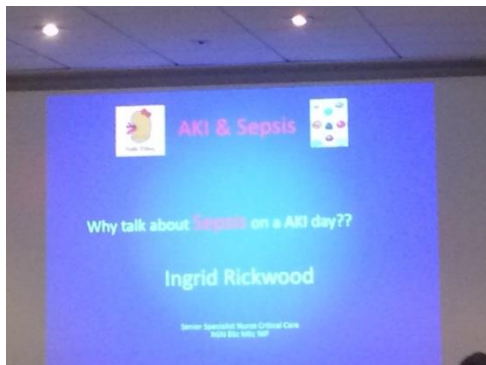
In the patient DISCHARGE SUMMARY, to comply with AKI CQUIN please state:
1. HIGHEST stage of AKI during the admission
2. Medication changes made – state YES or NO/ if YES, explain ALL changes, stating whether DUE TO AKI and whether or not medication is to be RESTARTED and WHEN
3/4. Blood tests required post-discharge – state both TYPE and FREQUENCY

THINK KIDNEYS

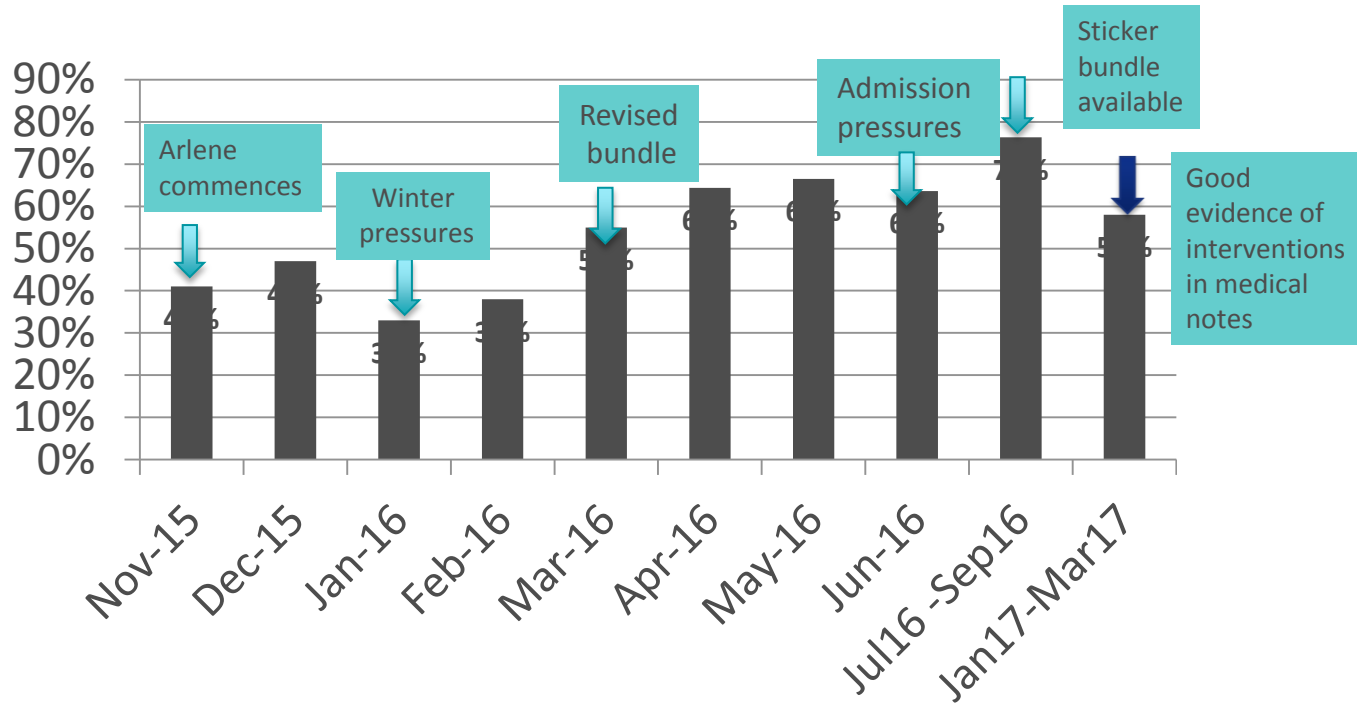
The full MDT can contribute to completing the bundle – we added a box to allow for each item to be signed off individually

Staff wanted the bundle to look simpler – we put non bundle interventions outside the border

Staff wanted the bundle to stand out in the notes



AKI Bundle Compliance at one centre:



Ashford and St. Peter's Hospitals NHS Foundation Trust

Medicines Optimisation in Acute Kidney Injury (AKI) for Adults

Decisions may vary dependent on overall clinical picture.
Contact your ward pharmacist, renal registrar or on-call pharmacist (out of hours) for advice.
If you are unsure if a drug can pre-dispose AKI then please check BNF or the SPC www.drugs.com.uk/

NURSE TO WITHHOLD THEN DOCTOR TO REASSESS WITHIN 24HR

NSAIDs (e.g. Ibuprofen, naproxen)
ACE inhibitors (e.g. Ramipril, perindopril, enalapril)
Angiotensin 2 Receptor Blockers (e.g. Losartan, candesartan)
Metformin

Withhold

URGENT REVIEW BY DOCTOR BEFORE THE GIVING THE NEXT DOSE

Gentamicin (See Trust Antibiotic Guidelines and Gentamicin Calculator)
Potassium Sparing diuretics (e.g. Spironolactone)
Thiazides (e.g. Bendroflumethiazide)
Loop diuretics (e.g. Furosemide & bumetanide)
Aminosalicylates (e.g. Mesalazine)
Contrast Media
Lithium
Digoxin

Urgent
Review

DRUGS WHICH MAY REQUIRE CLOSE MONITORING

Digoxin Warfarin Phenytoin
Lithium Clozapine Tacrolimus

Monitor

Copyright Free Medicine Information on Drugs (FIM) 2011. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of the copyright owner.

AKI cards for nursing staff

The Leeds Teaching Hospitals NHS Trust

Acute Kidney Injury

This leaflet tells you information about

What acute kidney injury is
How it is diagnosed
How it can be treated

Patient facing material

The Leeds Teaching Hospitals NHS Trust

Acute Kidney Injury (AKI)

Information for patients

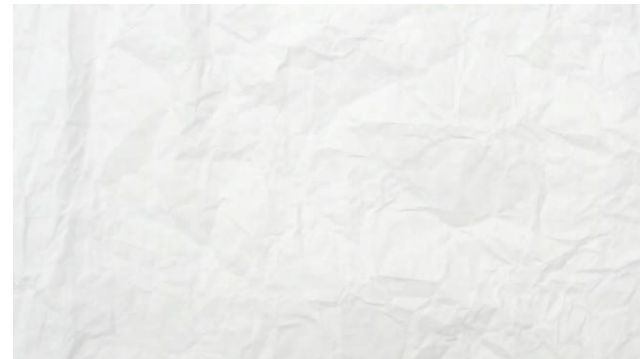
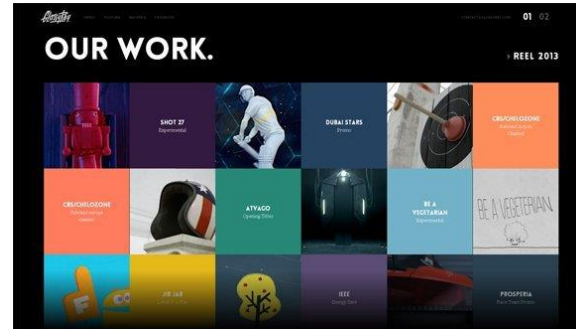
DEFINITE

- Project managers earlier
- Better understanding of THF requirements
 - University of Bradford earlier
- Measurement for improvement resources or alternatives
- Engagement with division of medicine in each hospital

POSSIBLE

- Ward walks from the beginning
- Nurse/MDT engagement from the beginning
- Geography of the programme

- Legacy
 - In hospitals, sustainability
 - Make resources available
- Reports and publications
- Dissemination
 - After results



- Tackling AKI is a multi-centre quality improvement study
- Rigorous data collection and statistical plan
- Stepped wedge design particularly suited to QI study design
- Change methodology provides a framework to successfully introduce and sustain interventions

KQuIP/UKRR Regional Day
East Midlands

13.00 – 13.45 - LUNCH

**‘THINK
KIDNEYS’**

KQuIP