NHS
Blood and Transplant

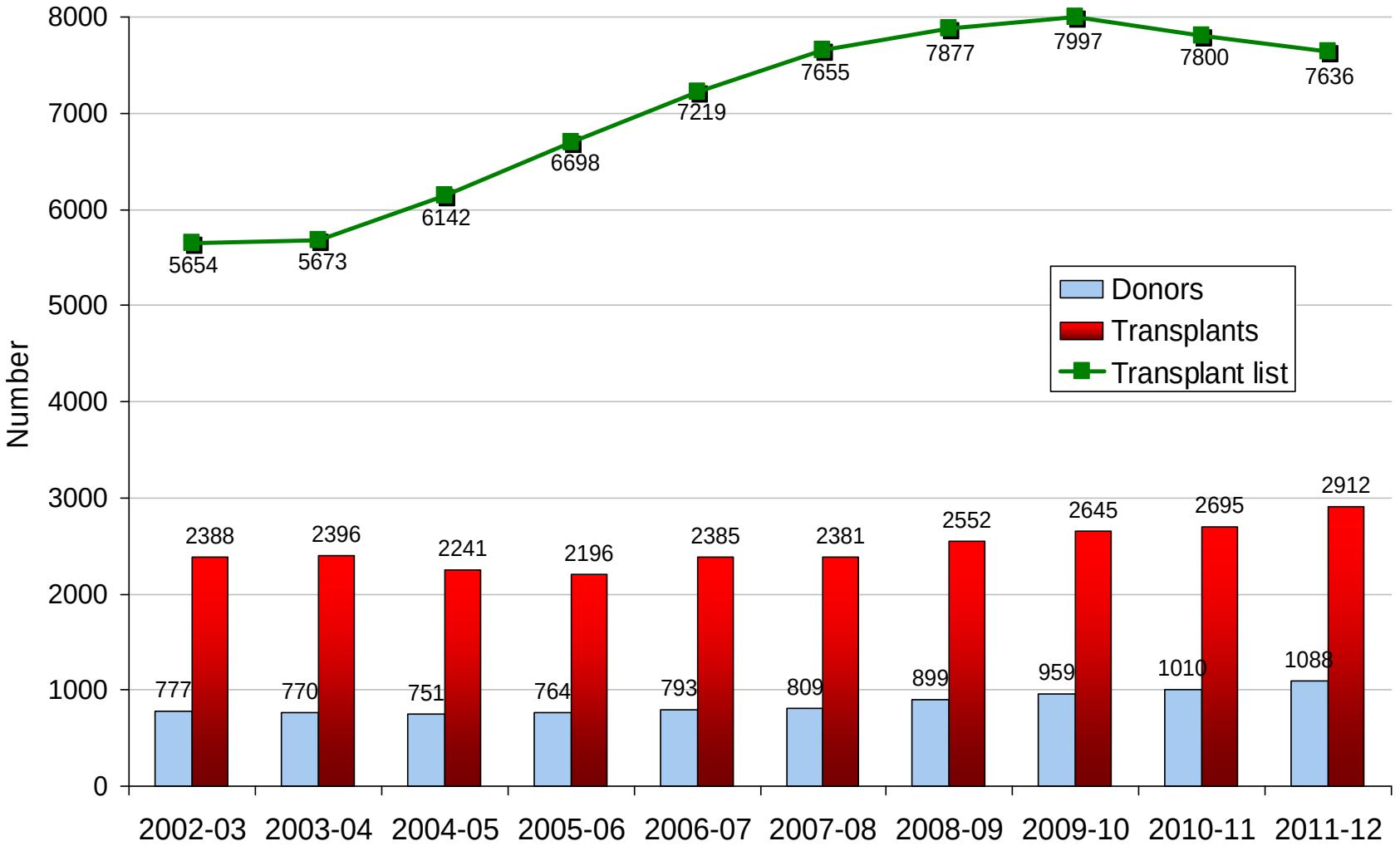
Organ Donation and Transplantation

Strategic Objectives to 2016/17

Portfolio of evidence

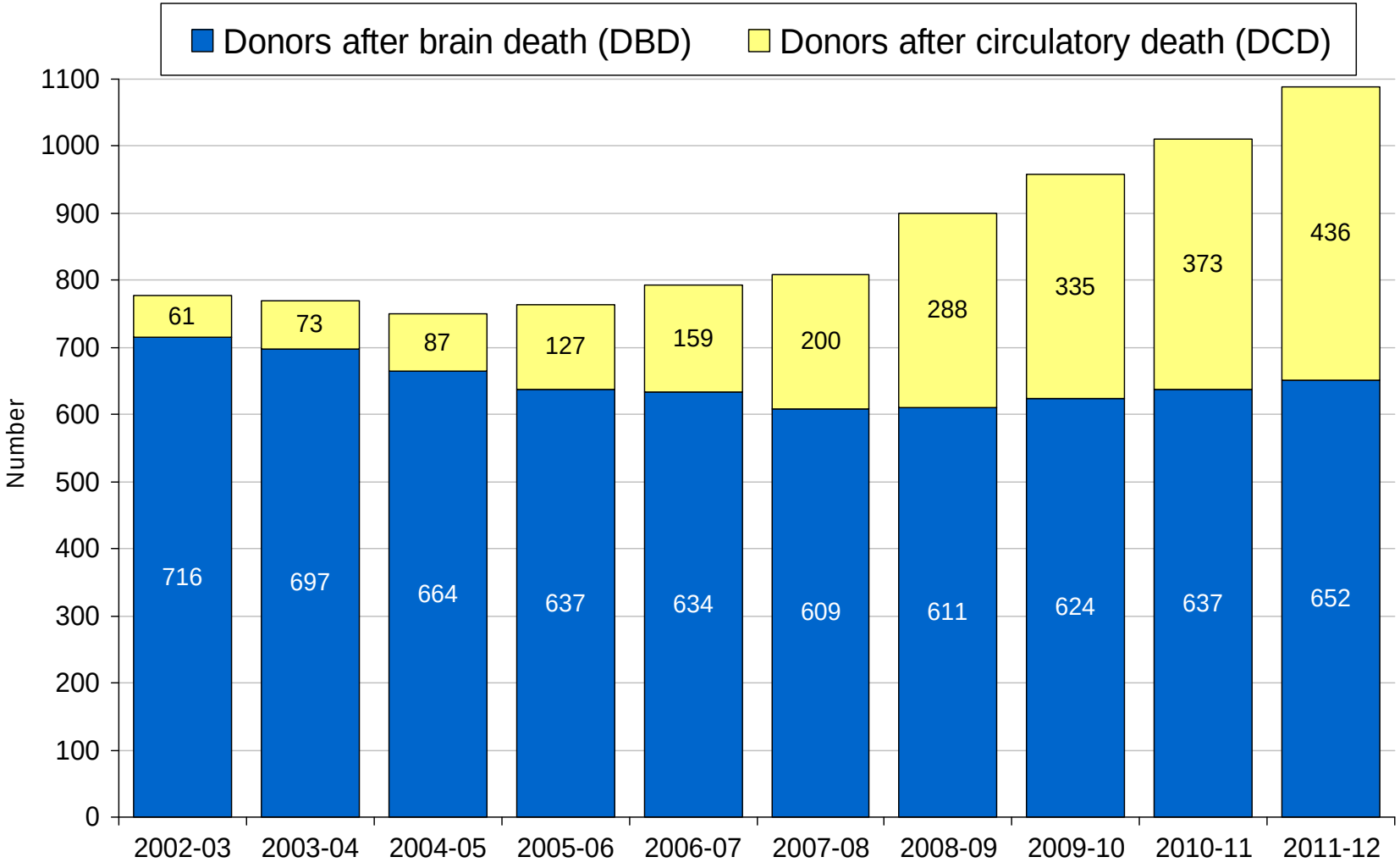
Deceased donors, transplants and transplant waiting list

NHS Blood and Transplant



Increase in number of deceased donors

NHS Blood and Transplant



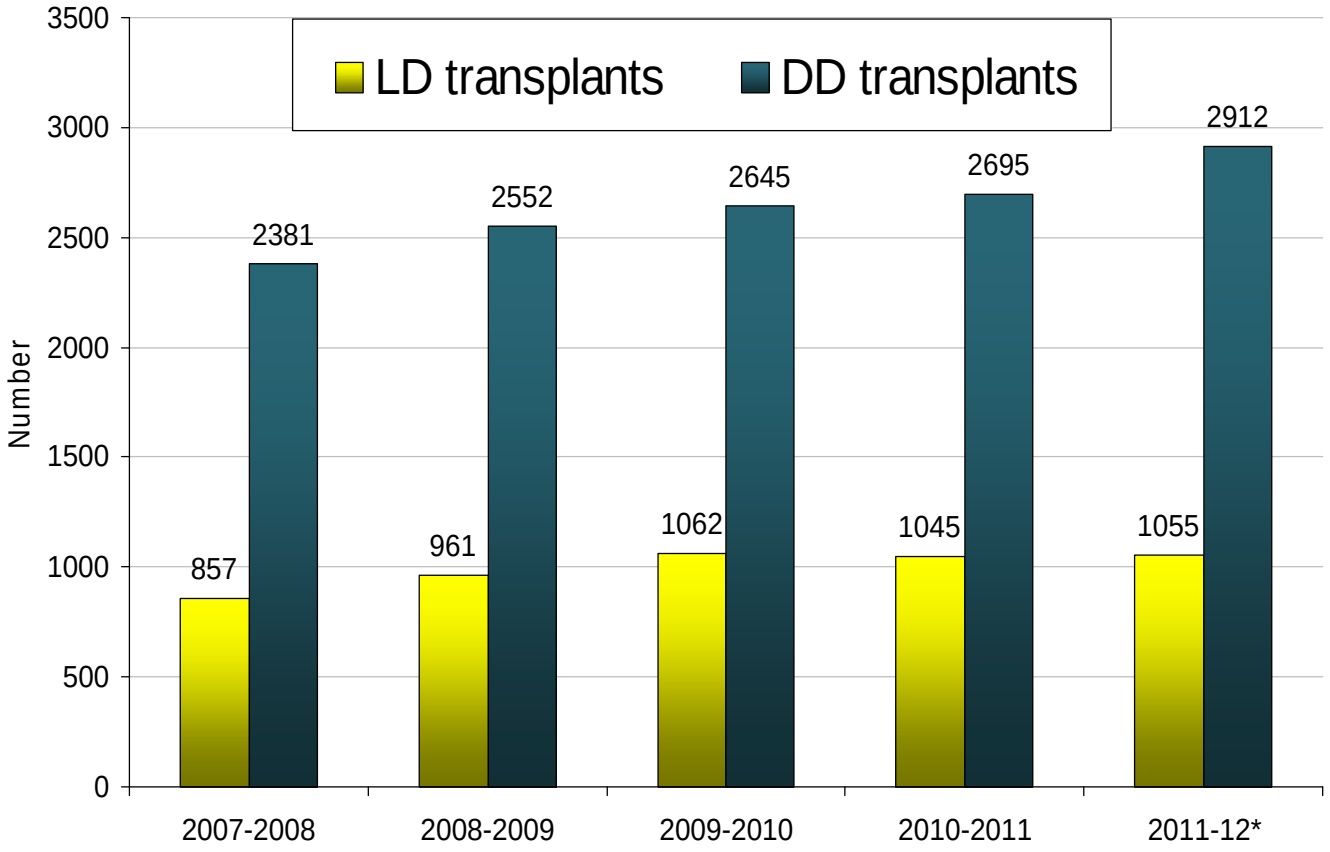
NHS
Blood and Transplant

Overview of current status in the UK

(1) Waiting list and transplant rates

Deceased and living donor transplants

NHS Blood and Transplant



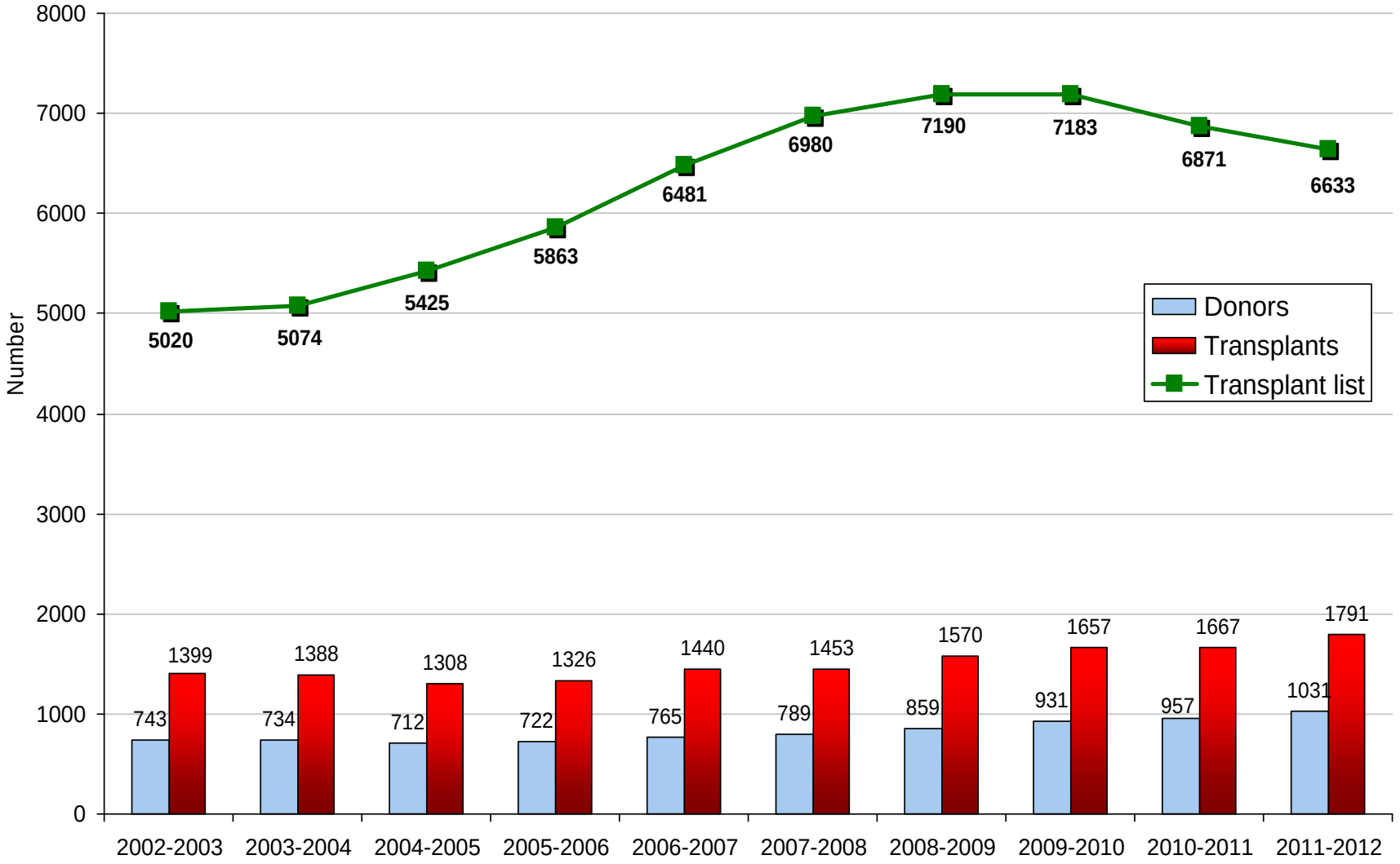
22% increase in DD transplants

23% increase in LD transplants

* Figure not yet confirmed for living donors due to late reporting

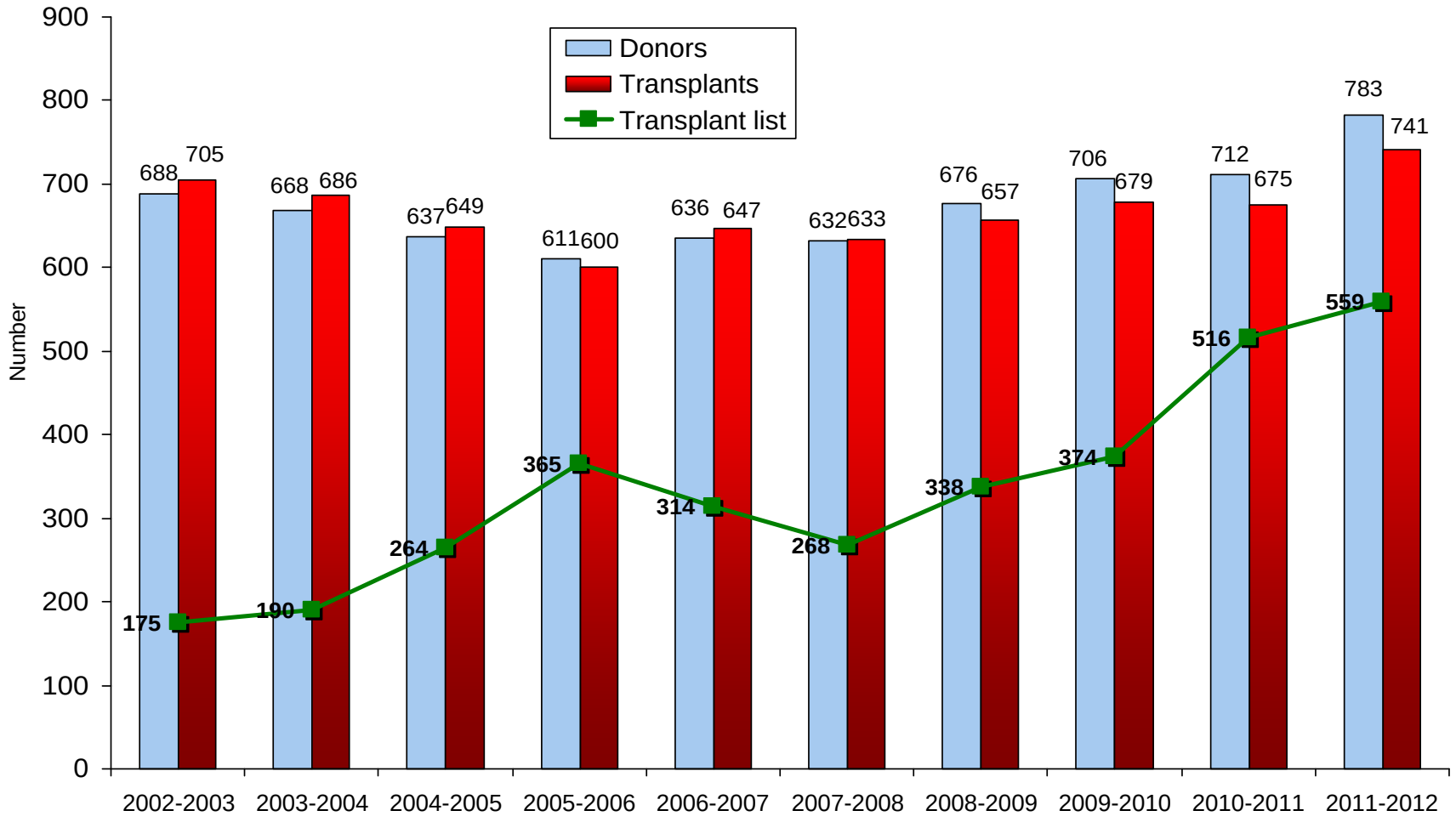
Deceased donors, transplants and transplant waiting list KIDNEYS

NHS Blood and Transplant



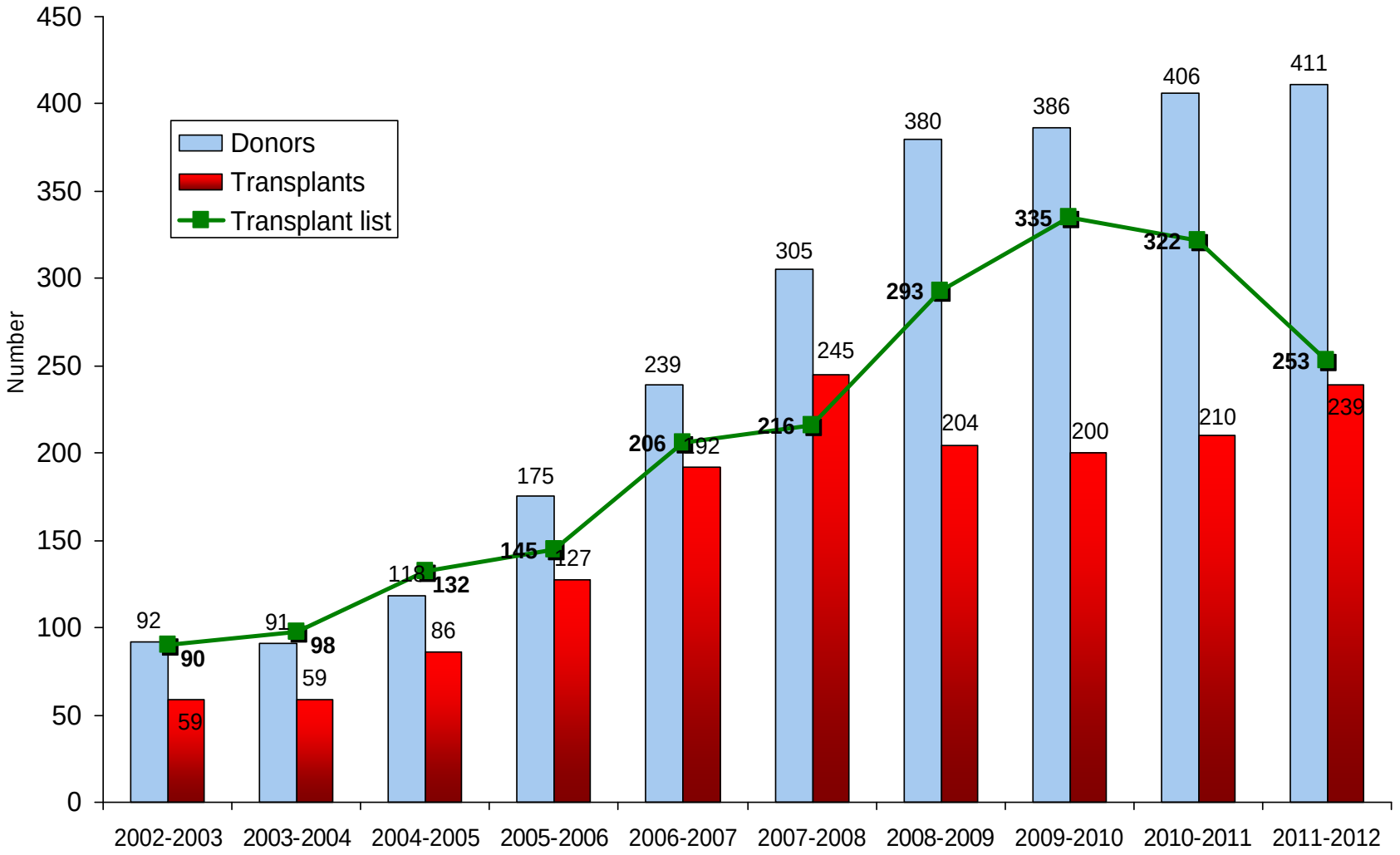
Deceased donors, transplants and transplant waiting list LIVERS

NHS Blood and Transplant



Deceased donors, transplants and transplant waiting list PANCREAS*

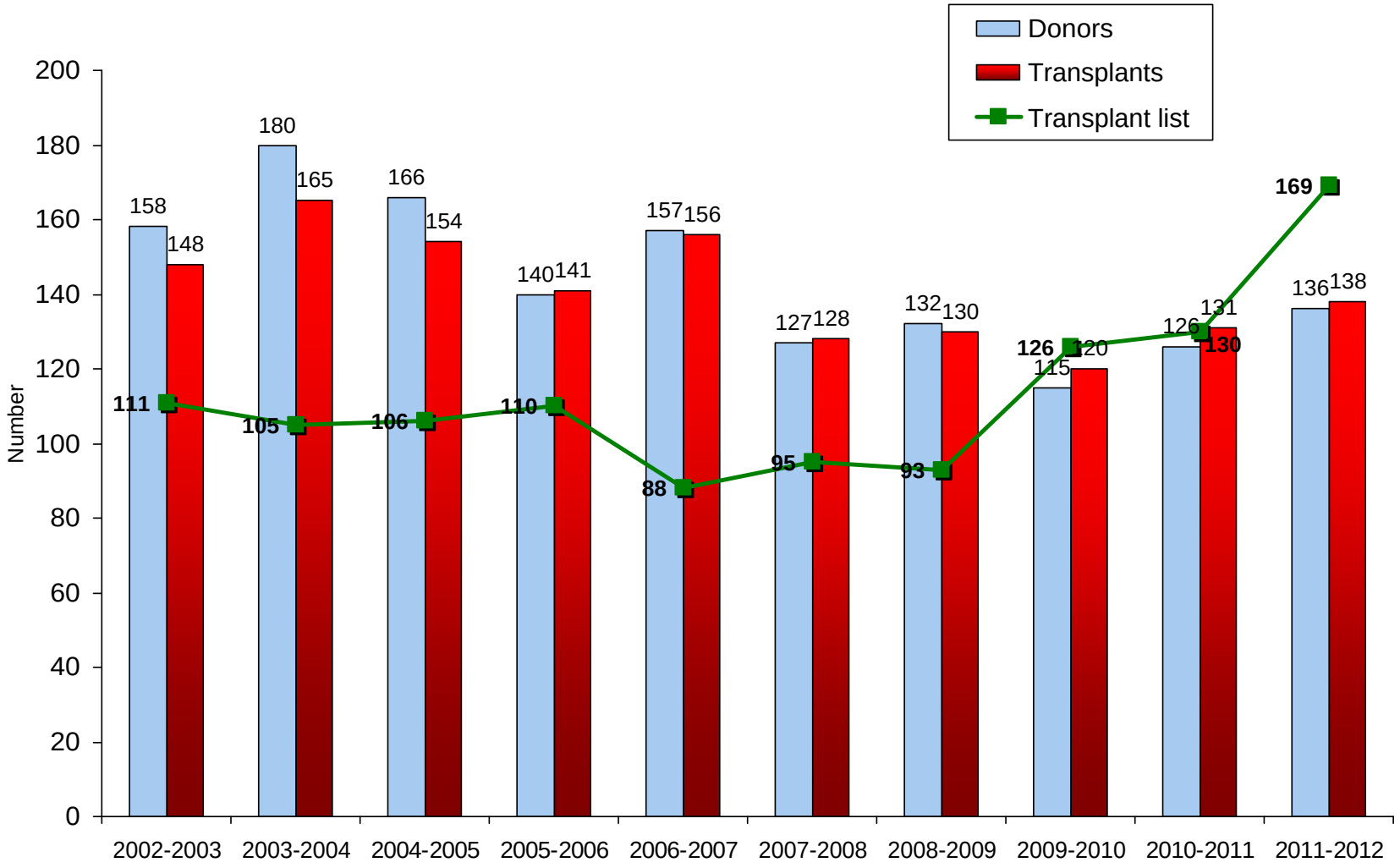
NHS Blood and Transplant



* Including whole pancreas only, simultaneous pancreas and kidney, pancreas islets

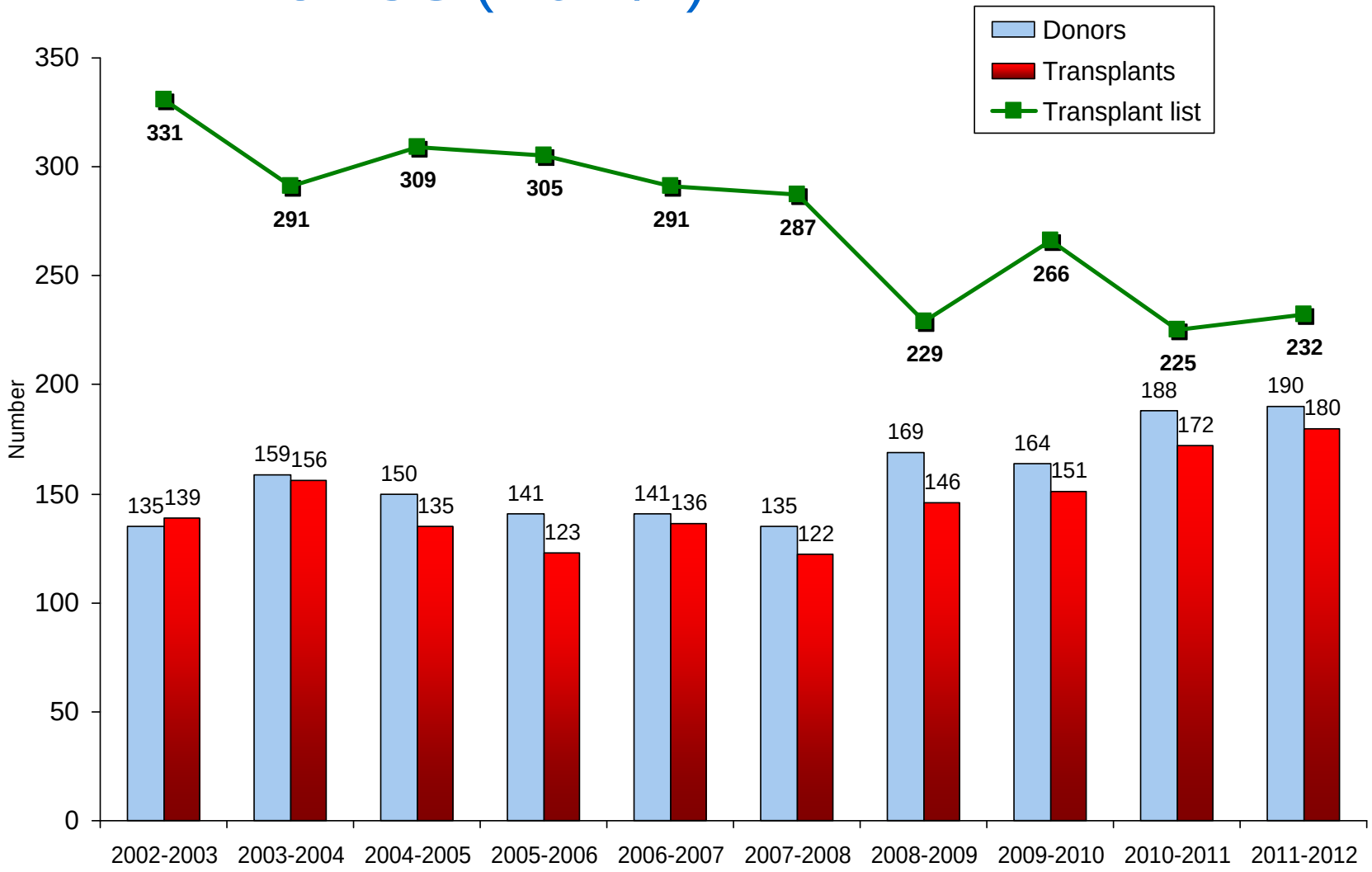
Deceased donors, transplants and transplant waiting list HEART

NHS Blood and Transplant



Deceased donors, transplants and transplant waiting list LUNGS (inc H/L)

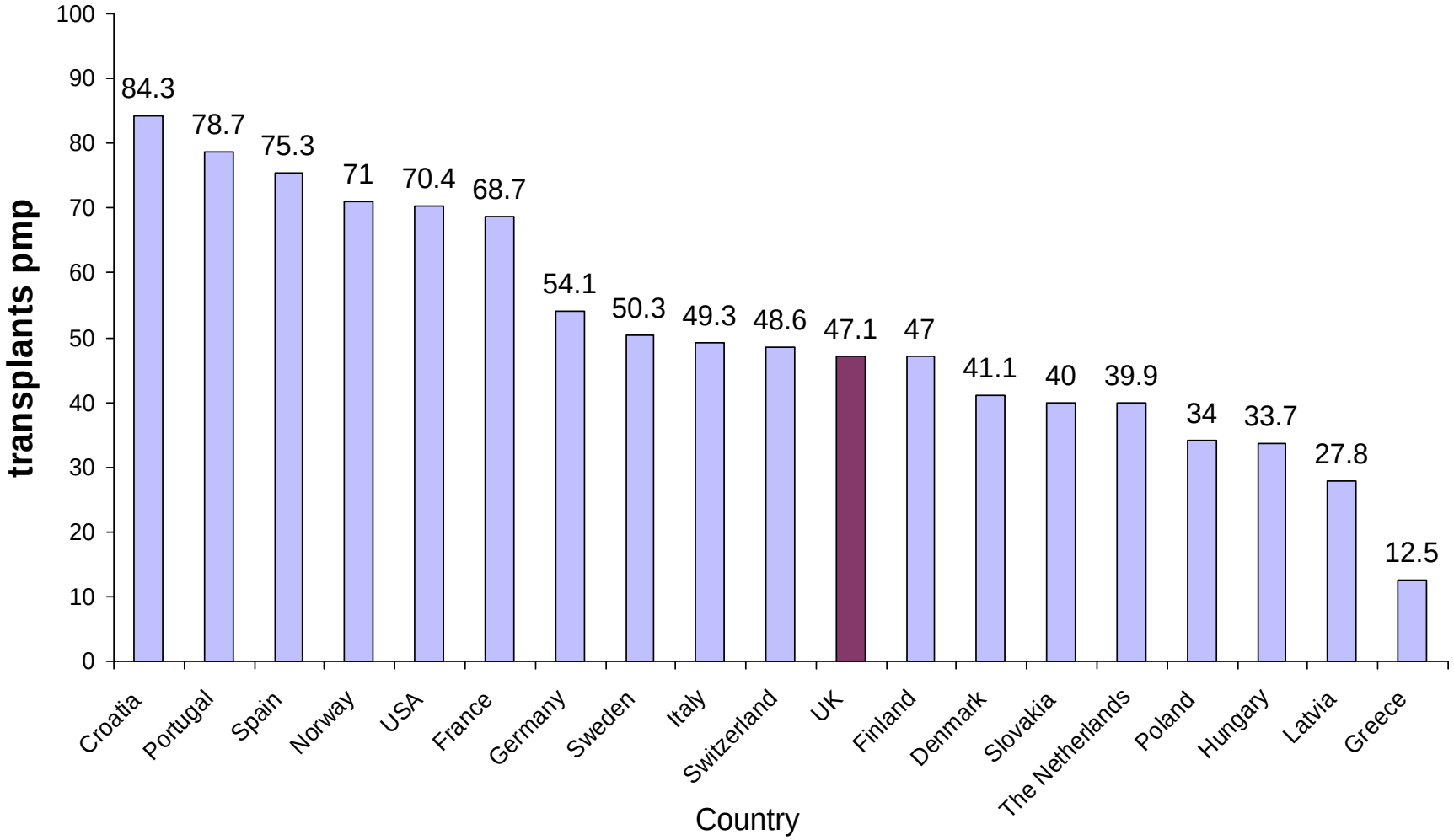
NHS Blood and Transplant



Deceased donor transplant rates

NHS Blood and Transplant

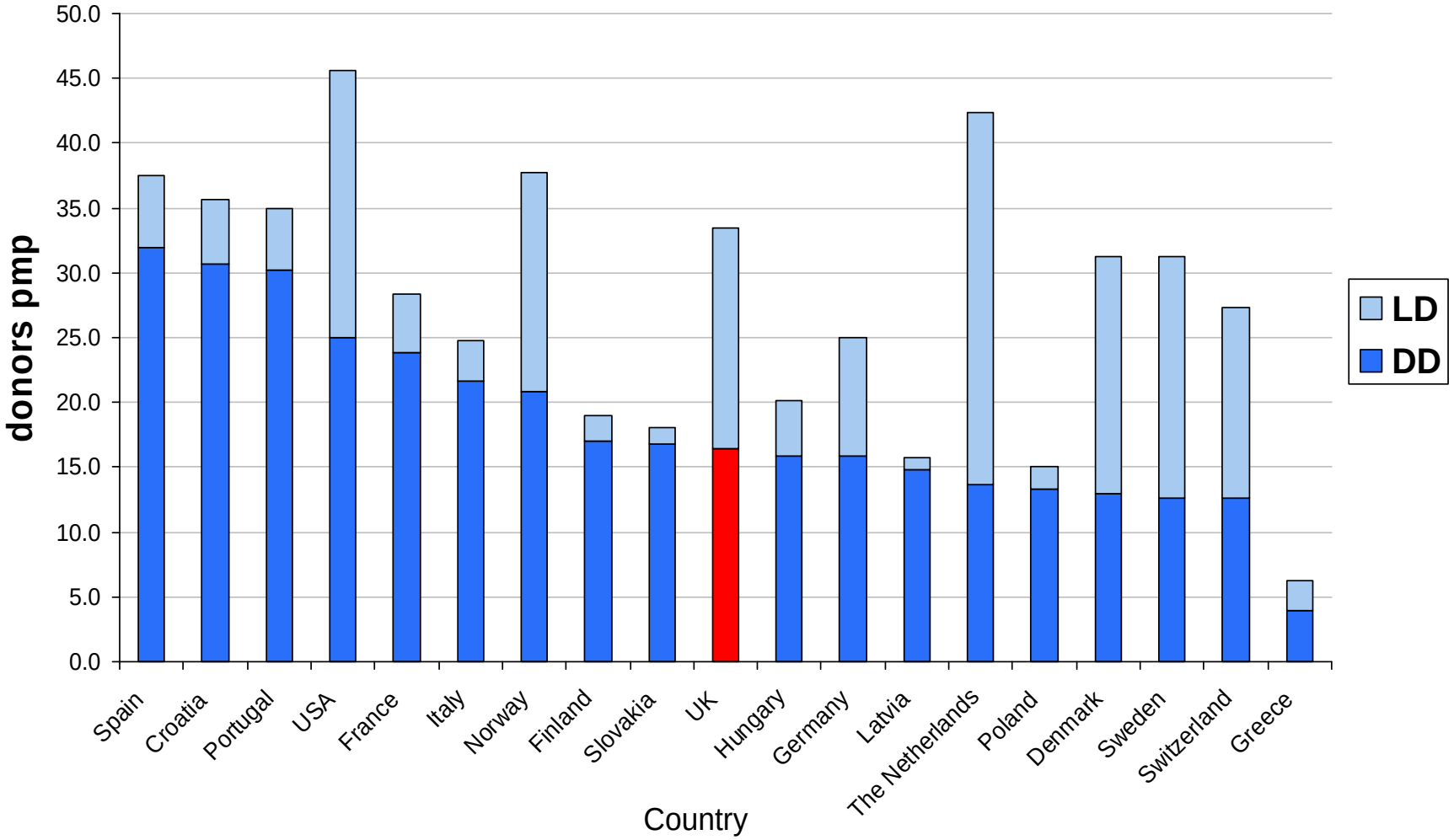
Total deceased donor transplant rates for Europe and the USA, 2010



What about living donation?

NHS Blood and Transplant

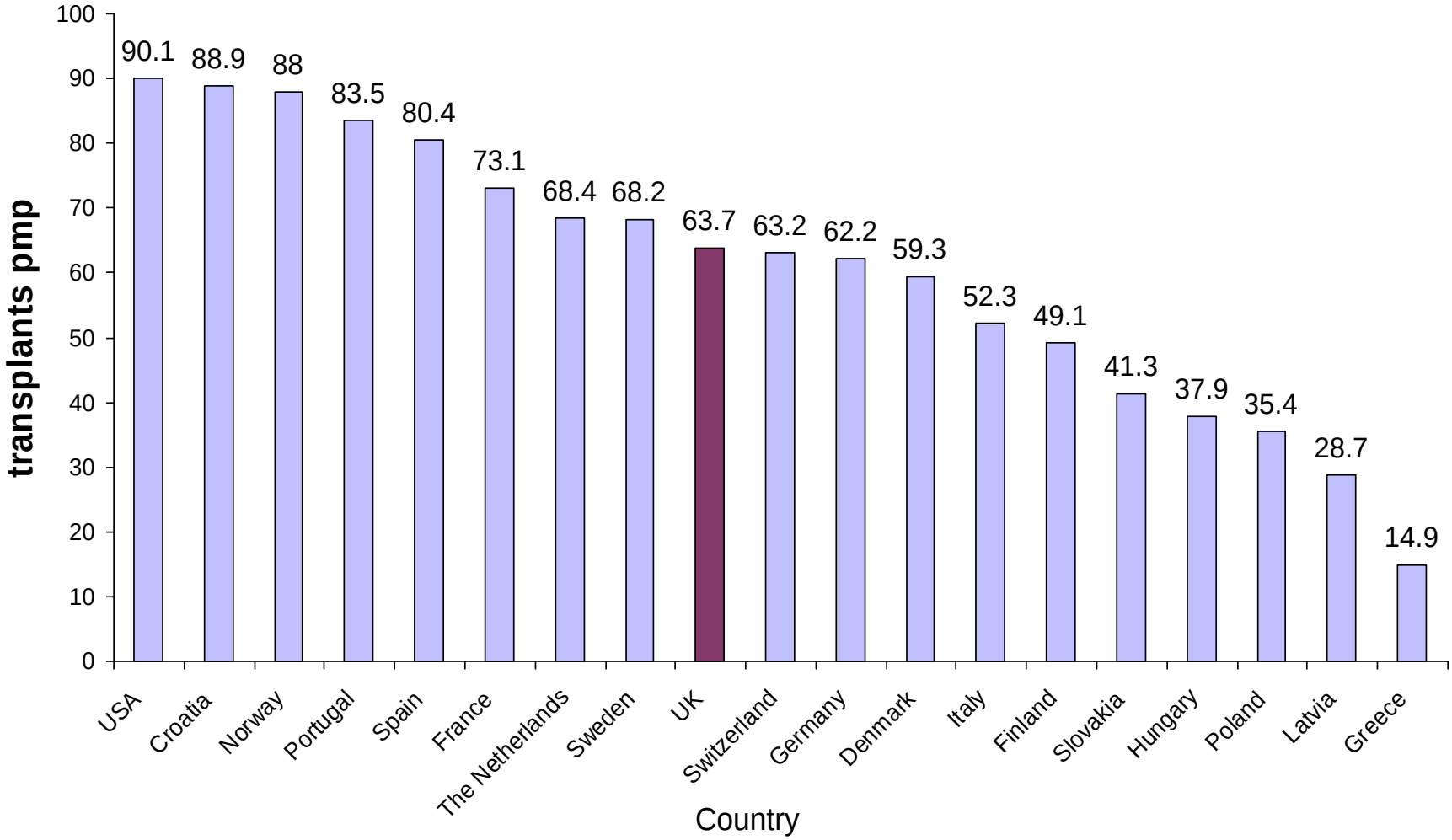
Total organ donor rates for Europe and the USA, 2010



Total transplant rates

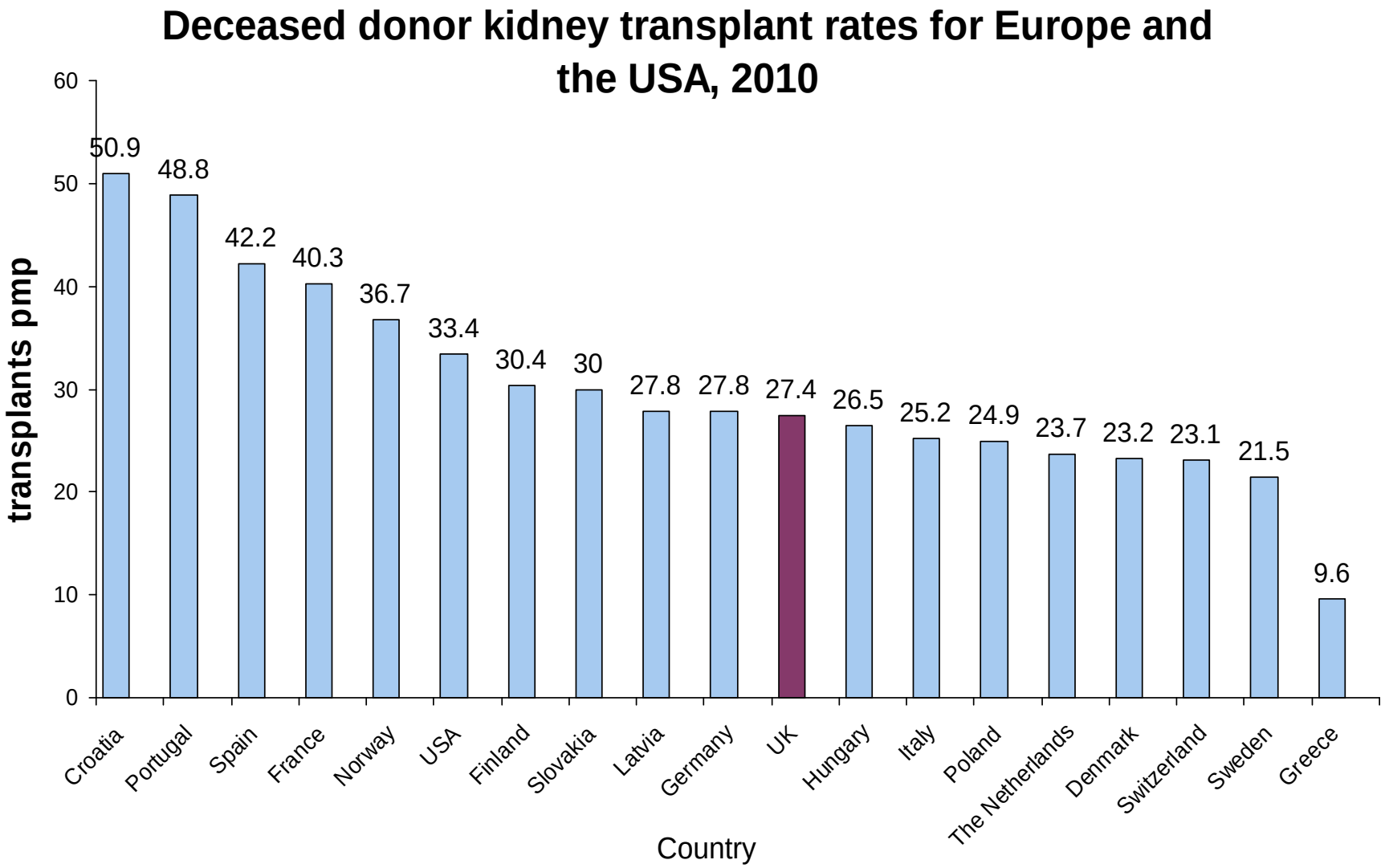
NHS Blood and Transplant

Total transplant rates from deceased and living donors for Europe and the USA, 2010



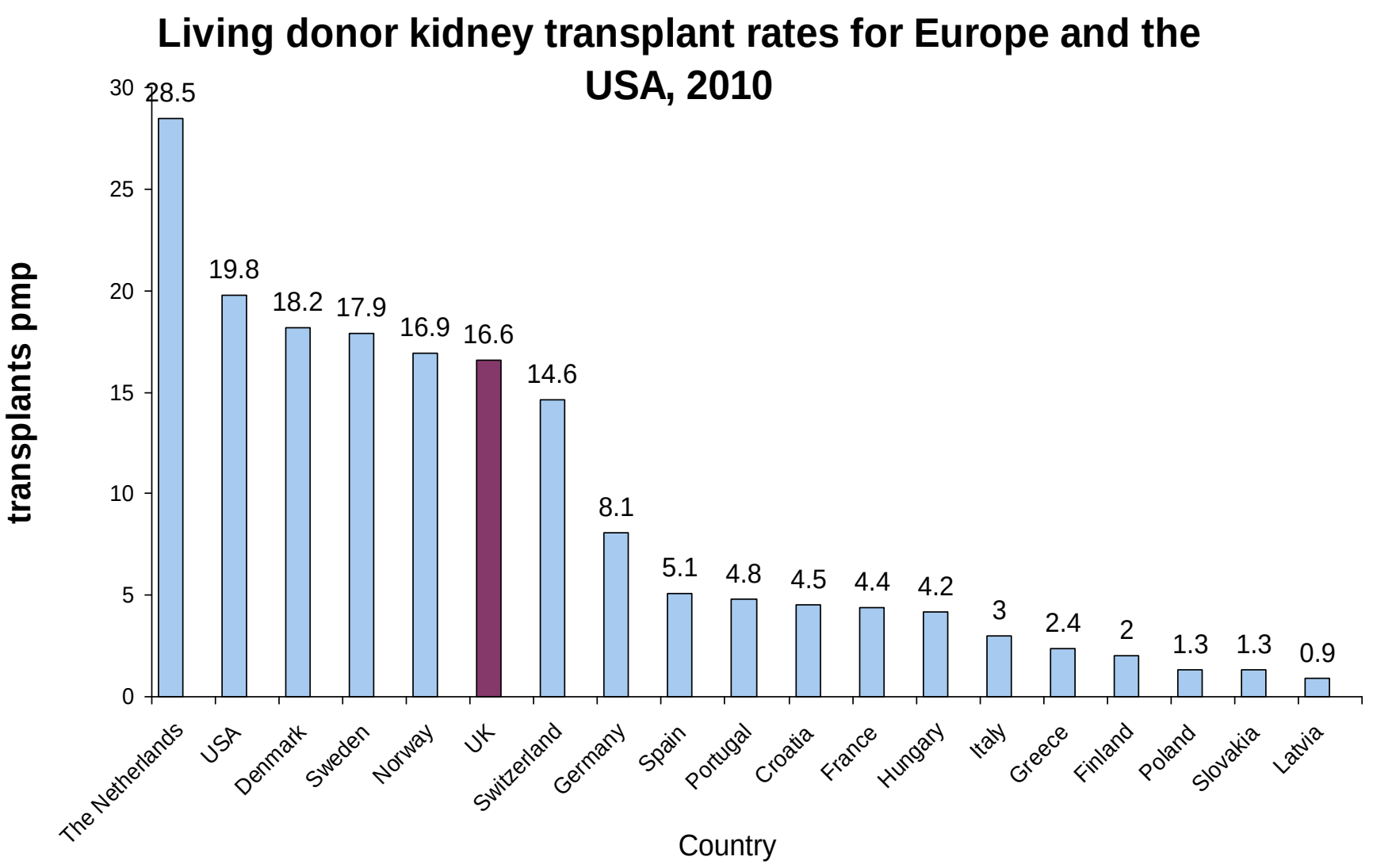
Deceased donor kidney transplant rates

NHS Blood and Transplant



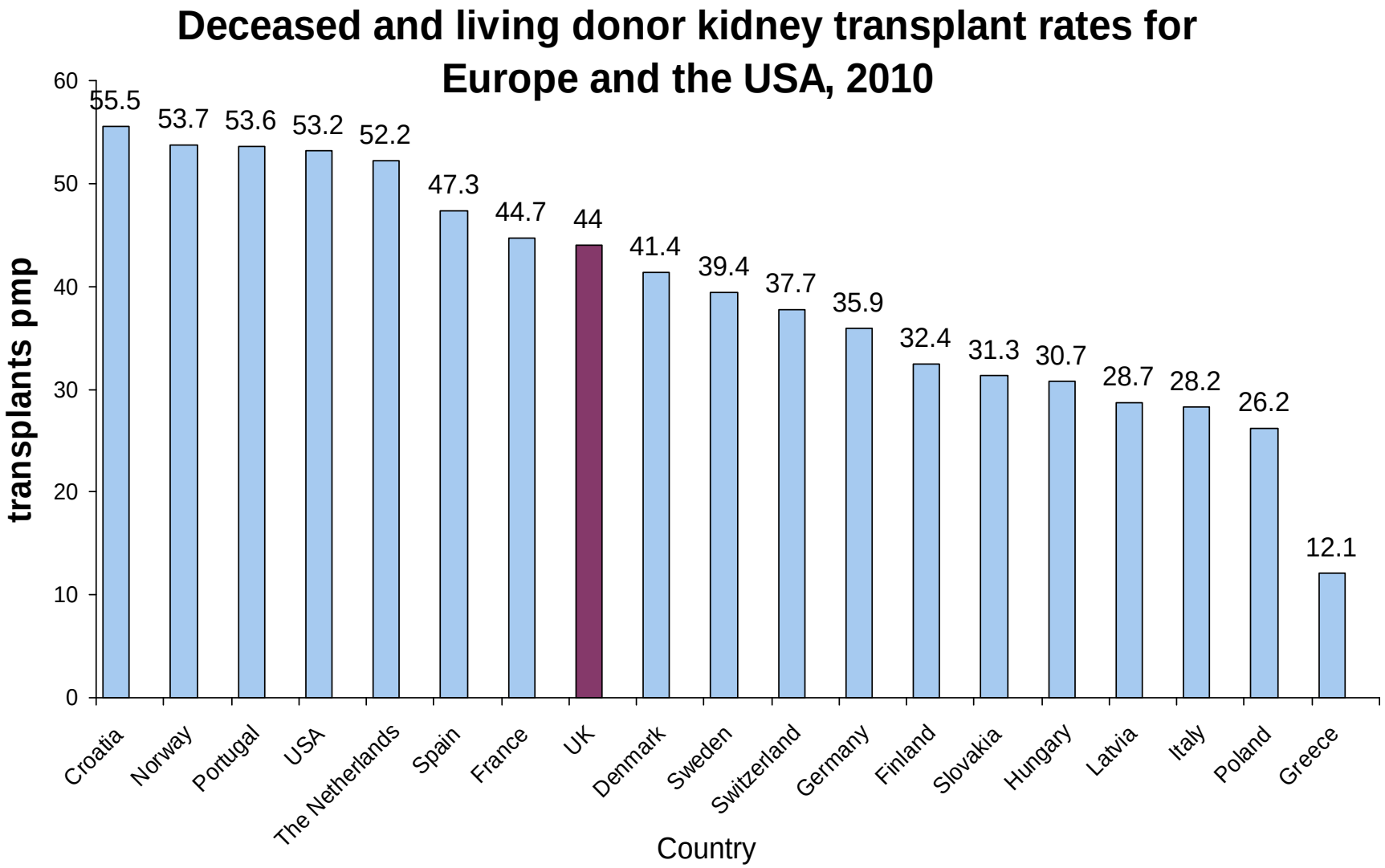
Living donor kidney transplant rates

NHS Blood and Transplant



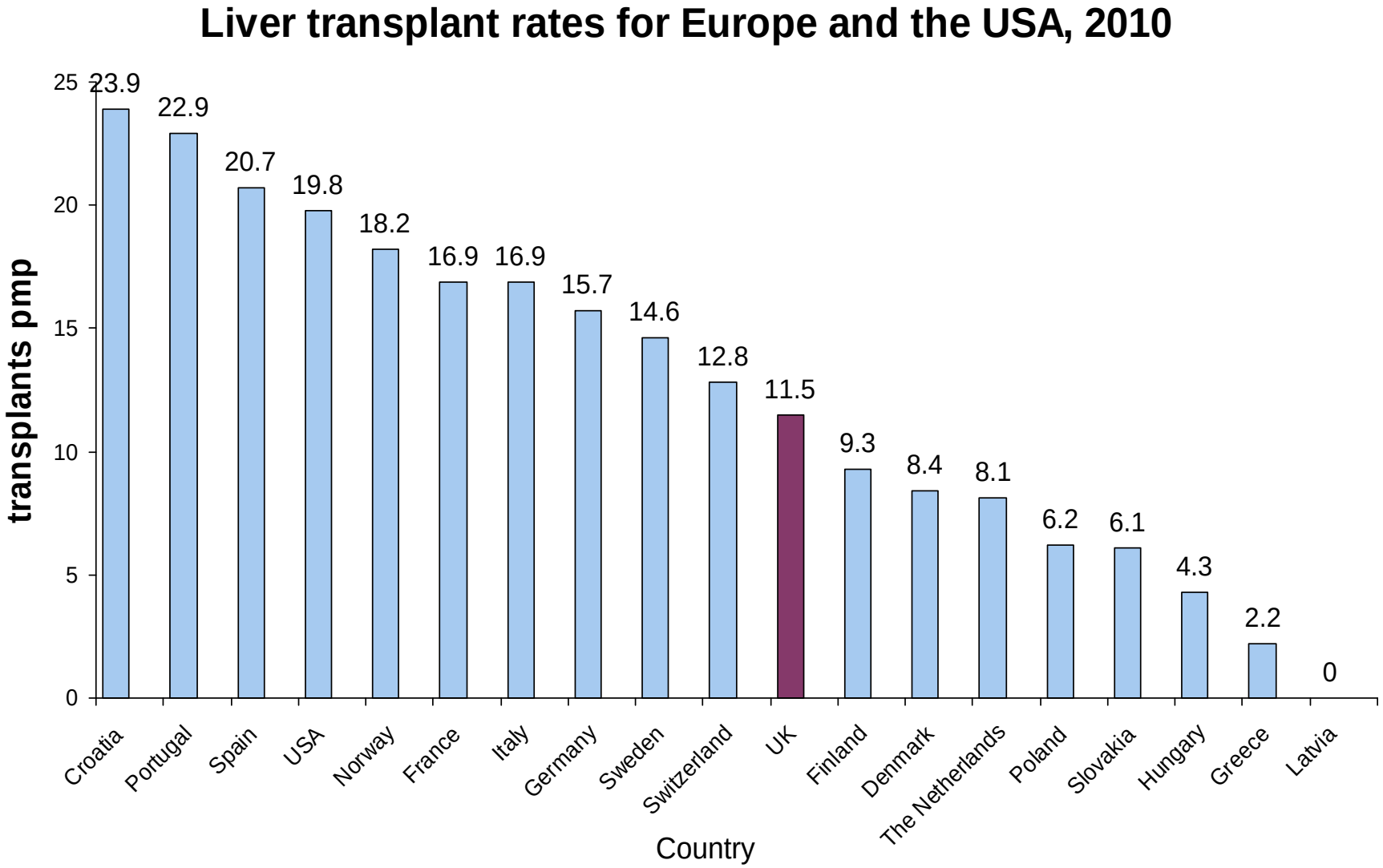
Kidney transplant rates

NHS Blood and Transplant



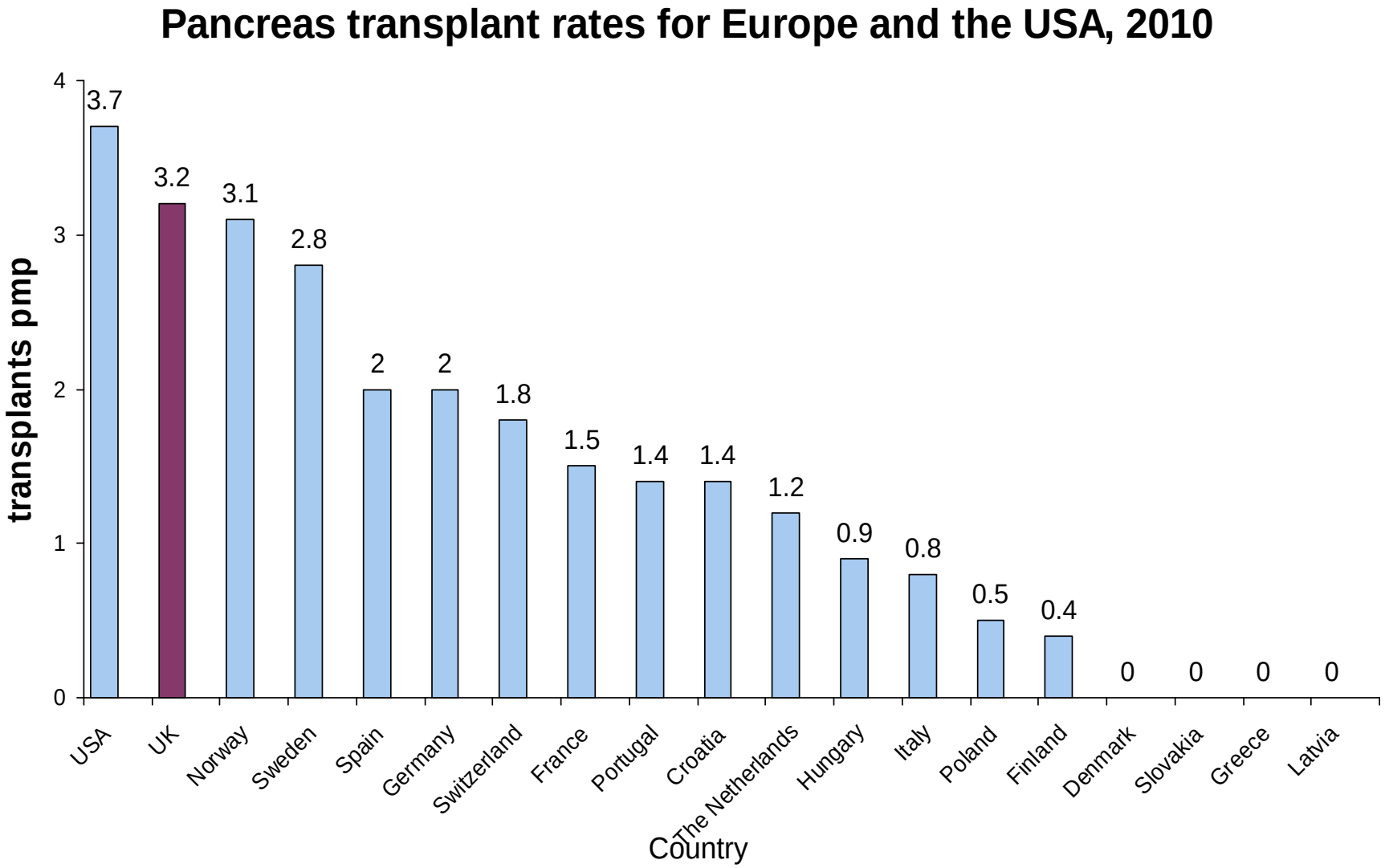
Liver transplant rates

NHS Blood and Transplant



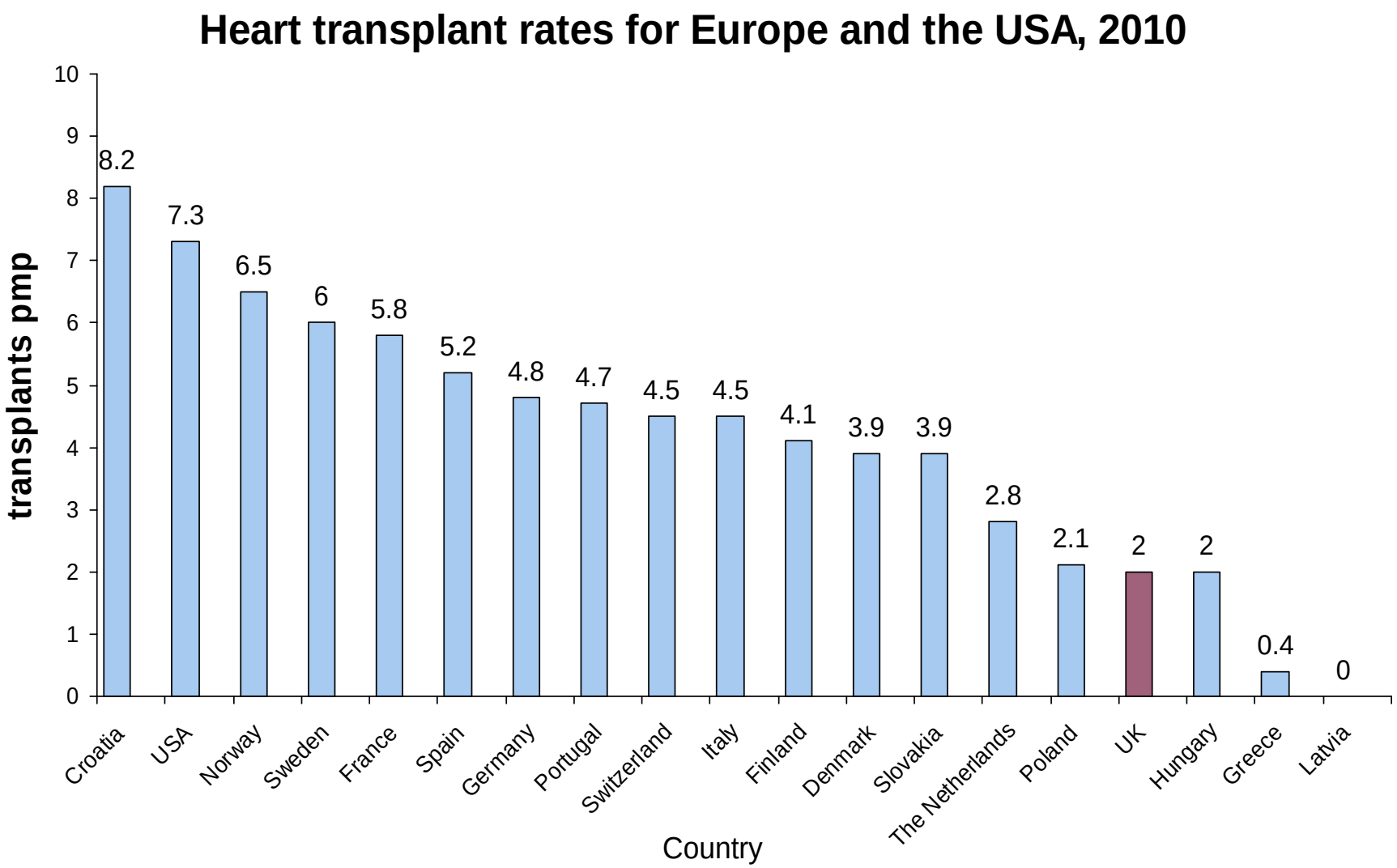
Pancreas transplant rates

NHS Blood and Transplant



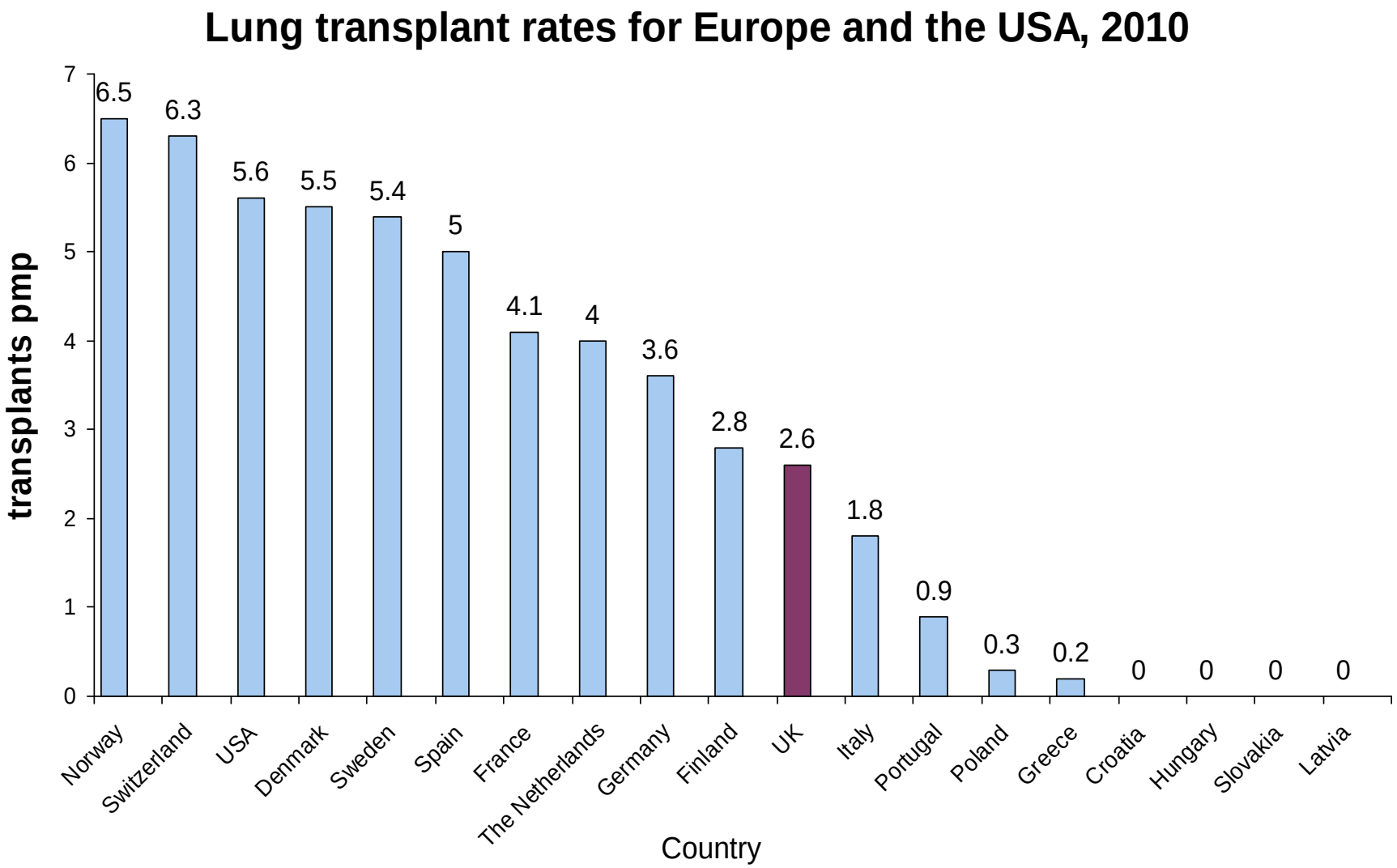
Heart transplant rates

NHS Blood and Transplant



Lung transplant rates

NHS Blood and Transplant



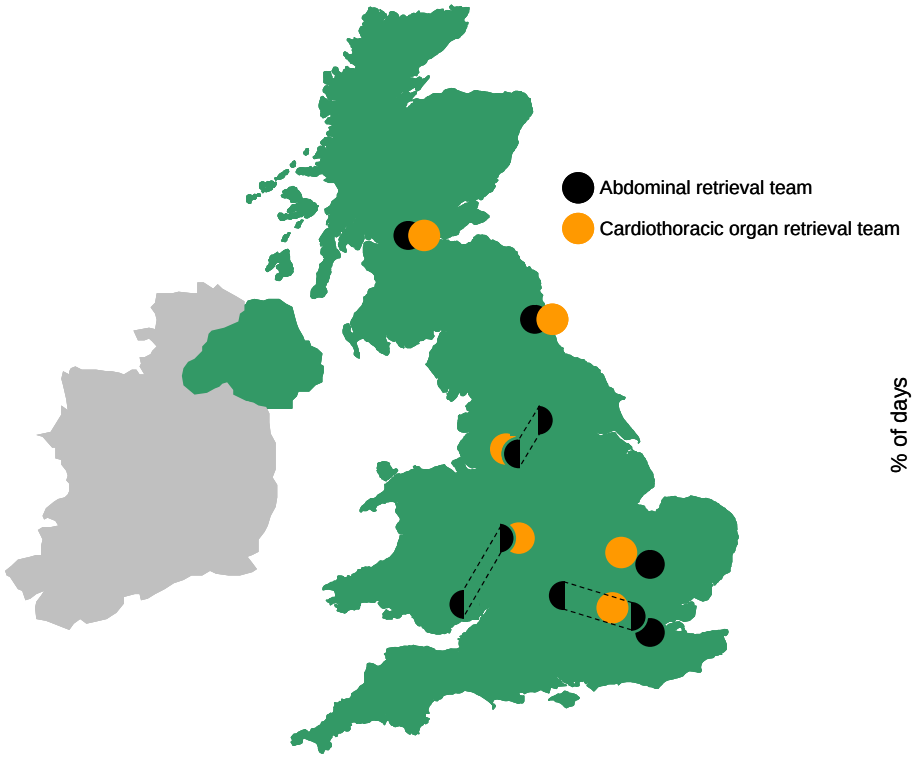
NHS
Blood and Transplant

Overview of current status in the UK

(2) Organ retrieval, organ allocation and post-transplant outcomes

National Organ Retrieval Service (NORS)

NHS Blood and Transplant



Allocation of deceased donor organs

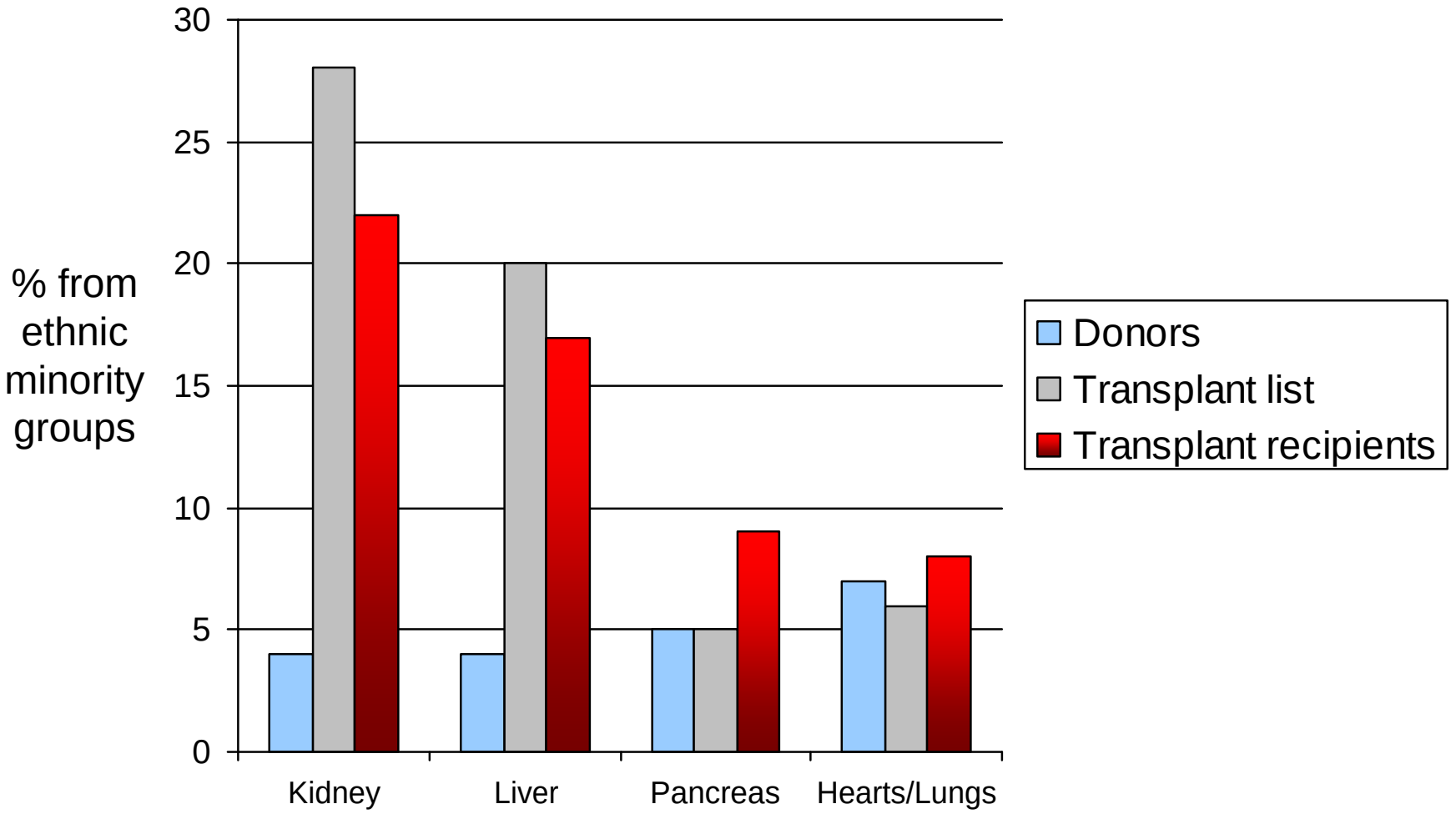
NHS Blood and Transplant

National allocation to individual, ranked patients	Local / regional allocation
Kidneys – DBD donors	Kidneys – DCD donors
Livers – super-urgent patients only	Livers – elective patients + DCD donors
Pancreas	
Bowel	
Hearts – urgent patients only	Hearts – elective patients
	Lungs – all patients

National, patient-specific schemes being developed

Ethnic minorities – donors, transplant list, transplant recipients (2010/11)

NHS Blood and Transplant



Outcome following transplantation

NHS Blood and Transplant

Transplantation is highly effective and the treatment of choice for many conditions

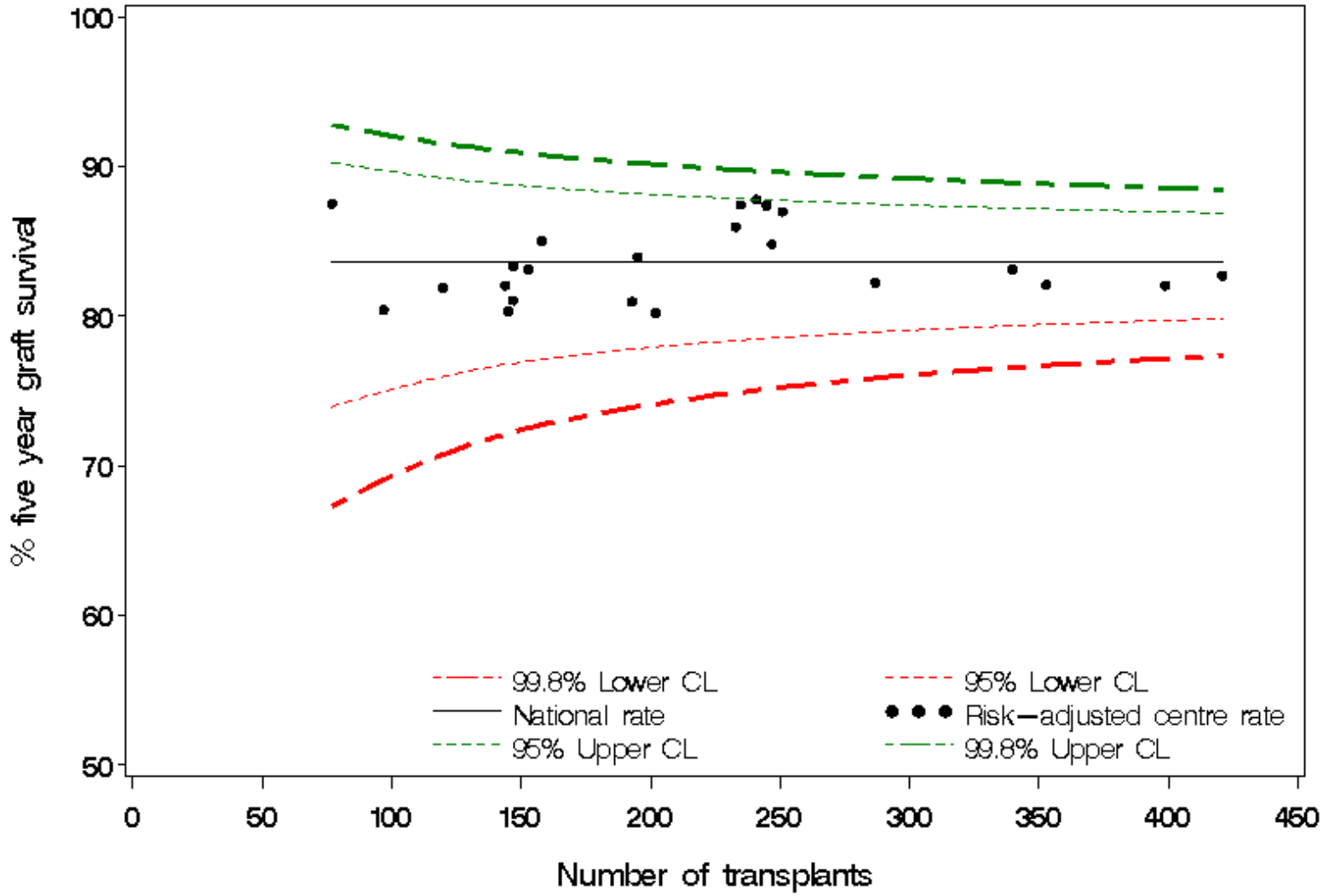
Unadjusted adult patient survival rates:

Organ	One year	Five years
Kidney (deceased donor)	96%	89%
Kidney (living donor)	99%	96%
Liver	92%	77%
Pancreas/kidney	95%	
Heart	84%	67%
Lung	81%	52%

Centre variability in outcomes

NHS Blood and Transplant

Risk–adjusted five year graft survival rates for deceased donor kidney transplants in adult patients, between 1 January 2001 and 31 December 2005



NHS
Blood and Transplant

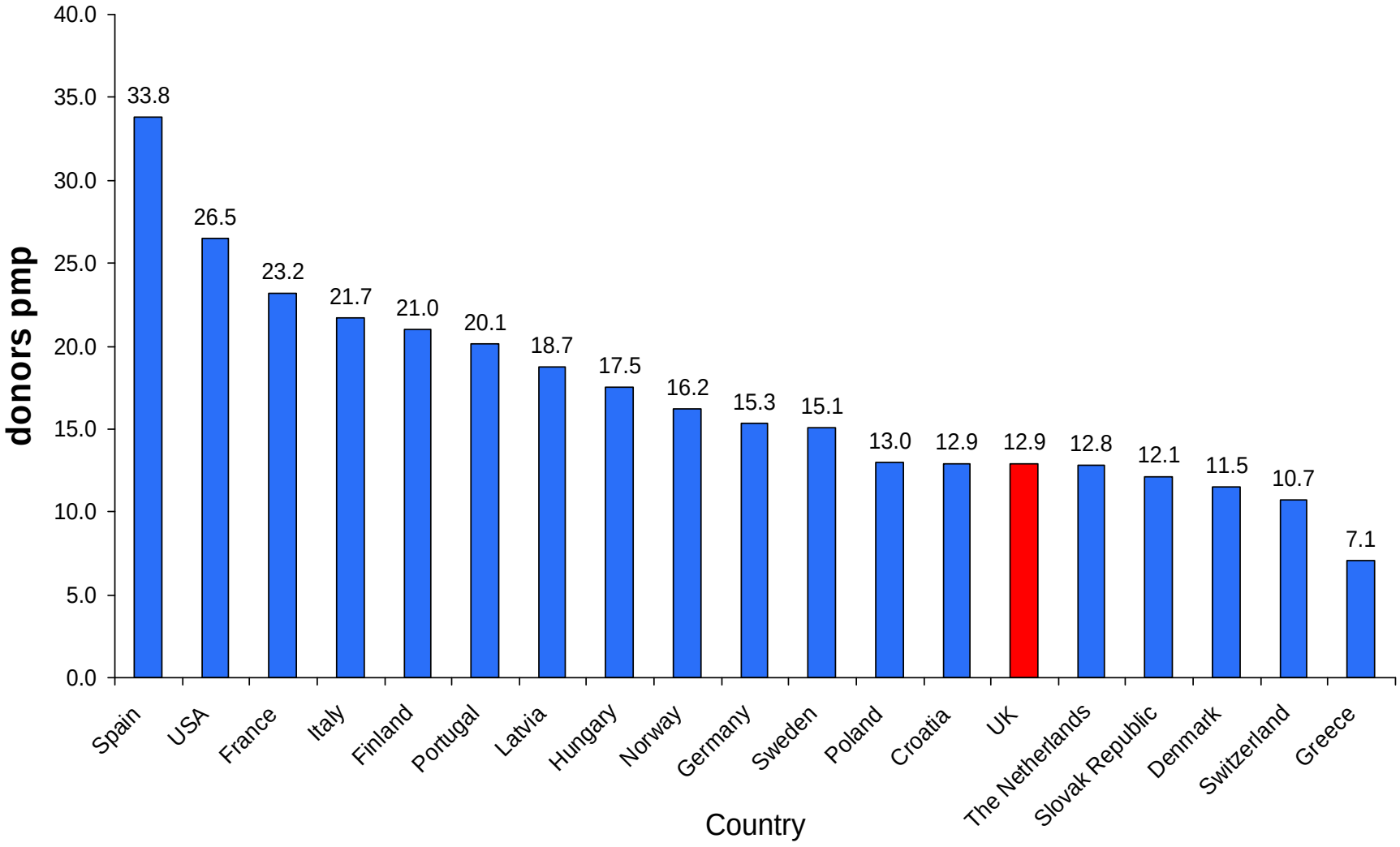
Overview of current status in the UK

(3) Organ donation

Where were we in 2006?
ODTF review of data

NHS Blood and Transplant

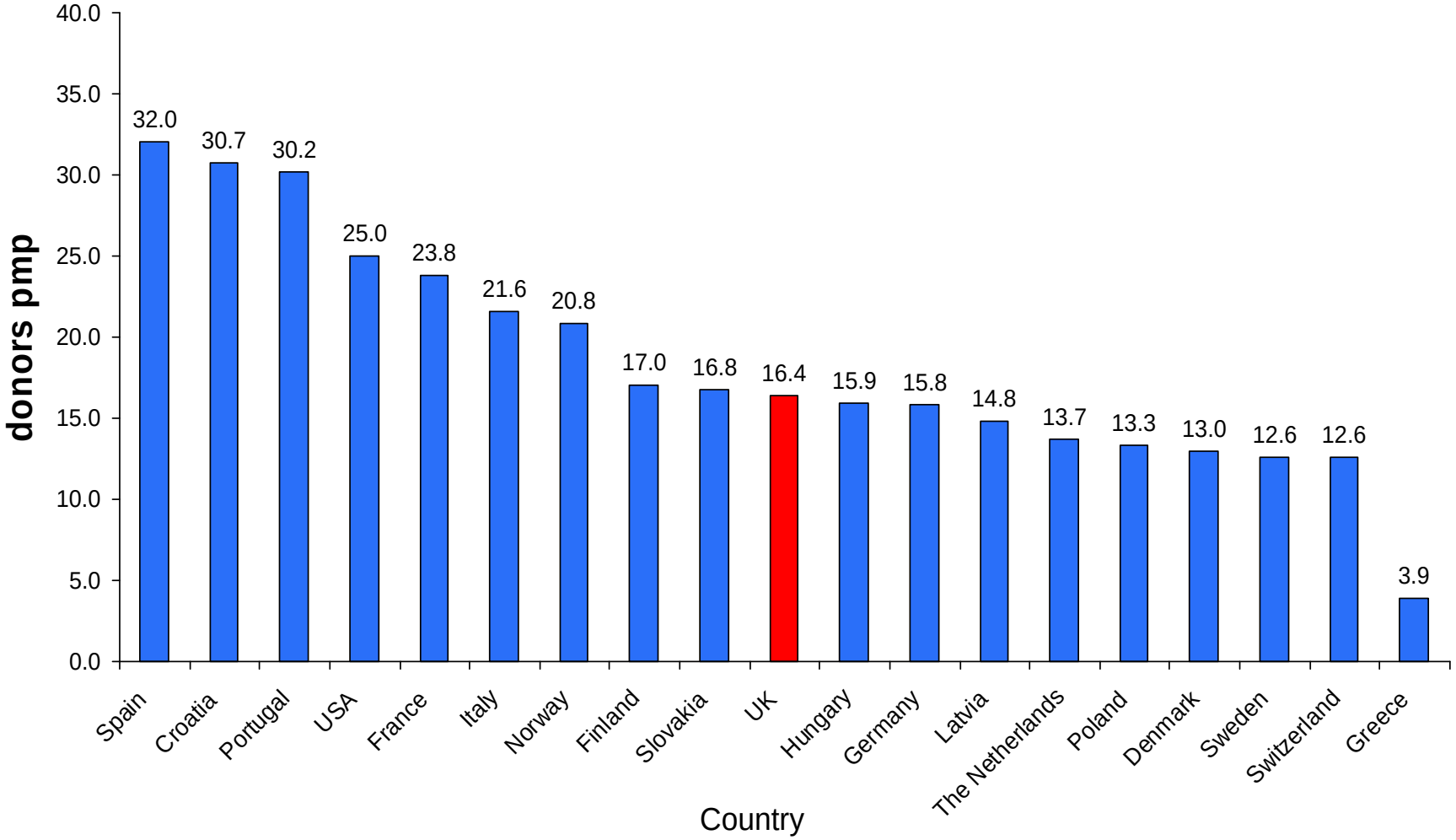
Deceased organ donor rates for Europe and the USA, 2006



Where are we now?

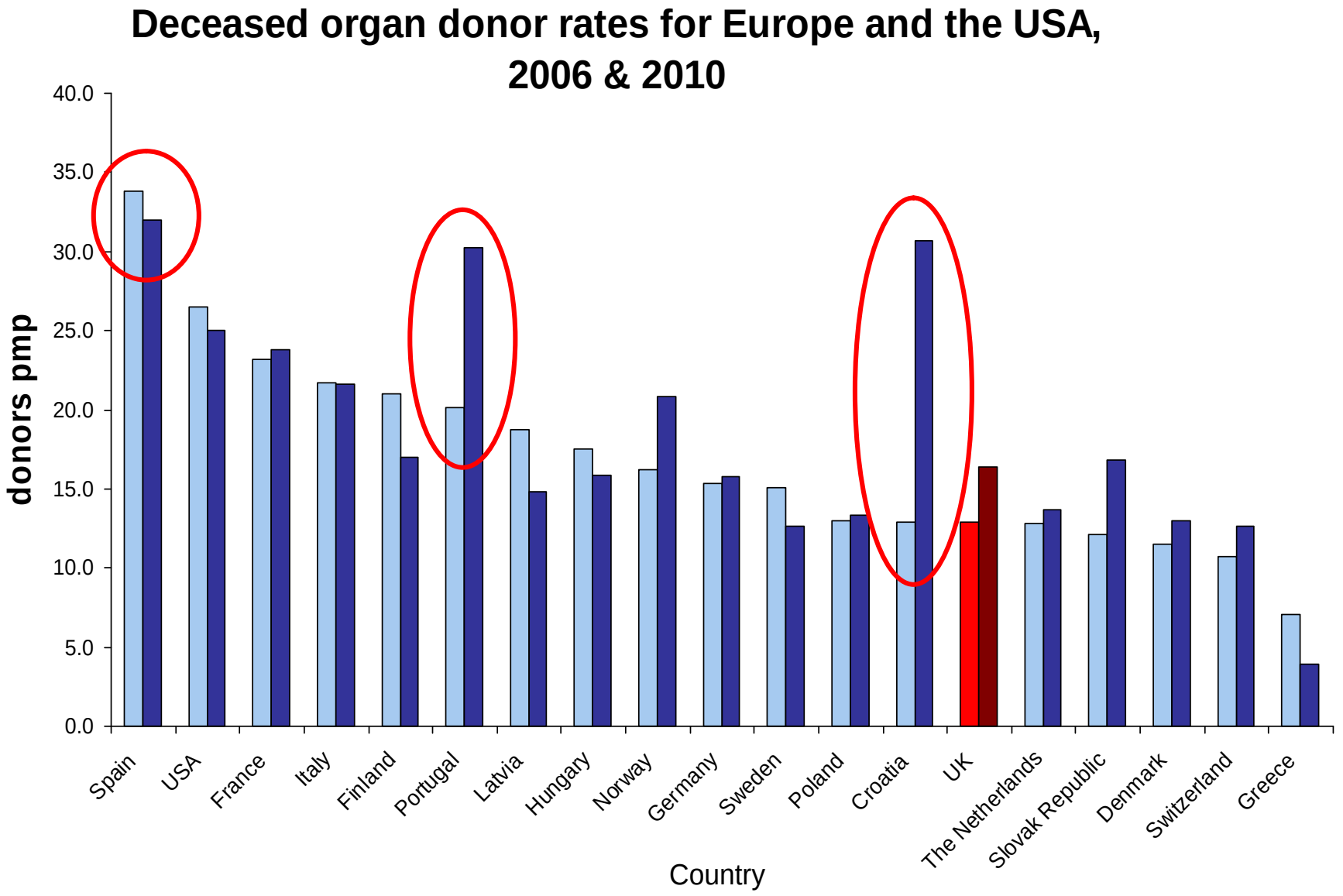
NHS Blood and Transplant

Deceased organ donor rates for Europe and the USA, 2010



Change in rates from 2006 to 2010

NHS Blood and Transplant



How have such high donor rates been achieved?

NHS Blood and Transplant

Spain
(47.0 mill)

- 1989 – the 'Spanish model'
- Organización Nacional de Trasplantes (ONT) established with network of professionals at local, regional and national level
- Medically qualified coordinators in each potential donor hospital
- Regular training for coordinators
- Good communication with public to engender trust & positive view of donation

Different circumstances in UK & Spain –

- *Spain has more intensive care beds than UK (87.5 pmp vs 27 pmp)*
- *Different admission criteria for ITU*
- *Different end-of-life practices re withdrawal of life support*

Portugal
(10.7mill)

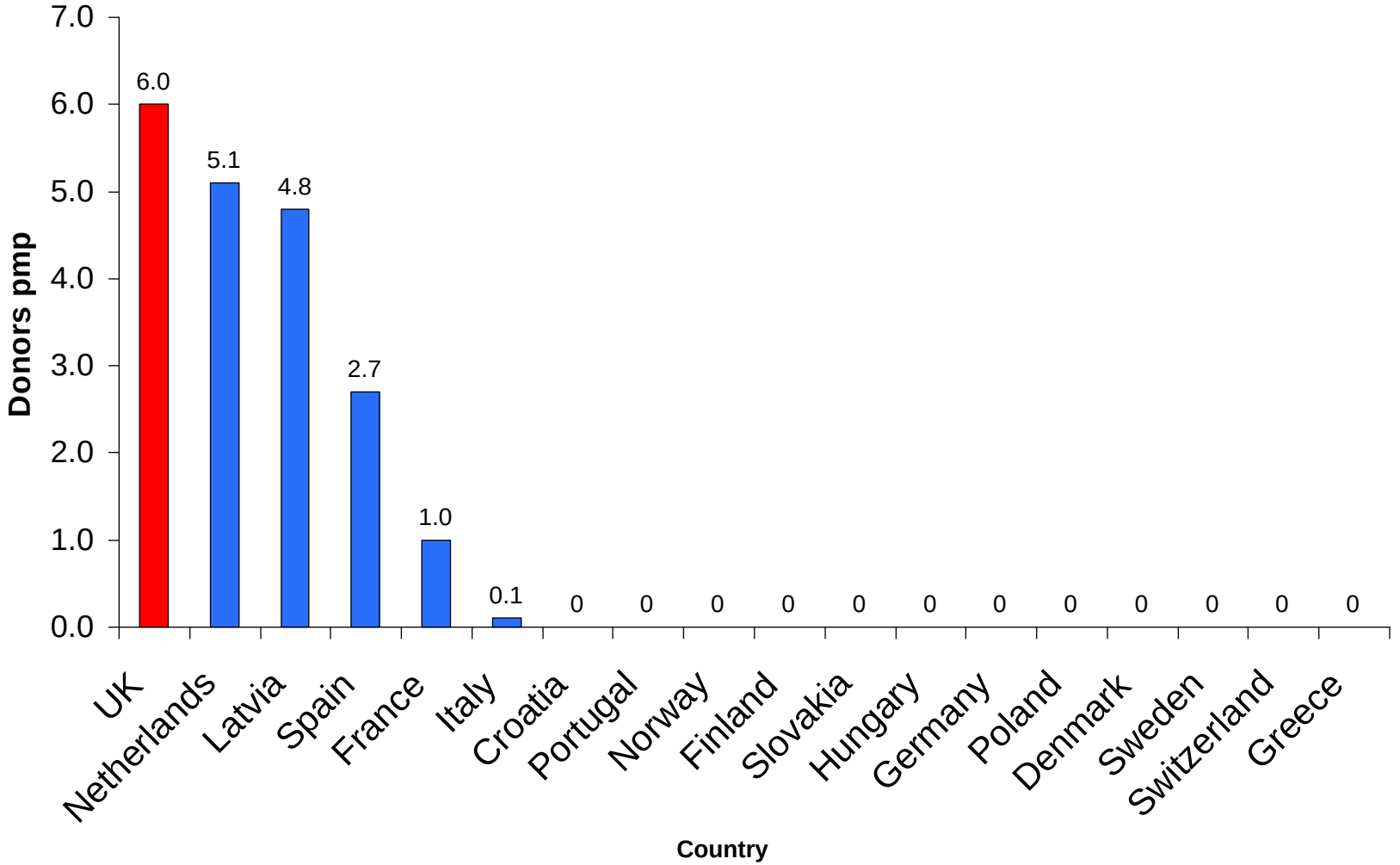
- 2006 – new organisation implemented
- New infrastructures based on 'Spanish model'
- Separation of organ procurement and transplant coordination
- Network of coordinators are all doctors
- 34 donor hospitals

Croatia
(4.4mill)

- Since 2000 - gradual implementation of infrastructure/procedures
- Some elements of 'Spanish model' (eg two-level network of transplant coordinators, incentives paid to donor hospitals, training programs)
- 32 donor hospitals

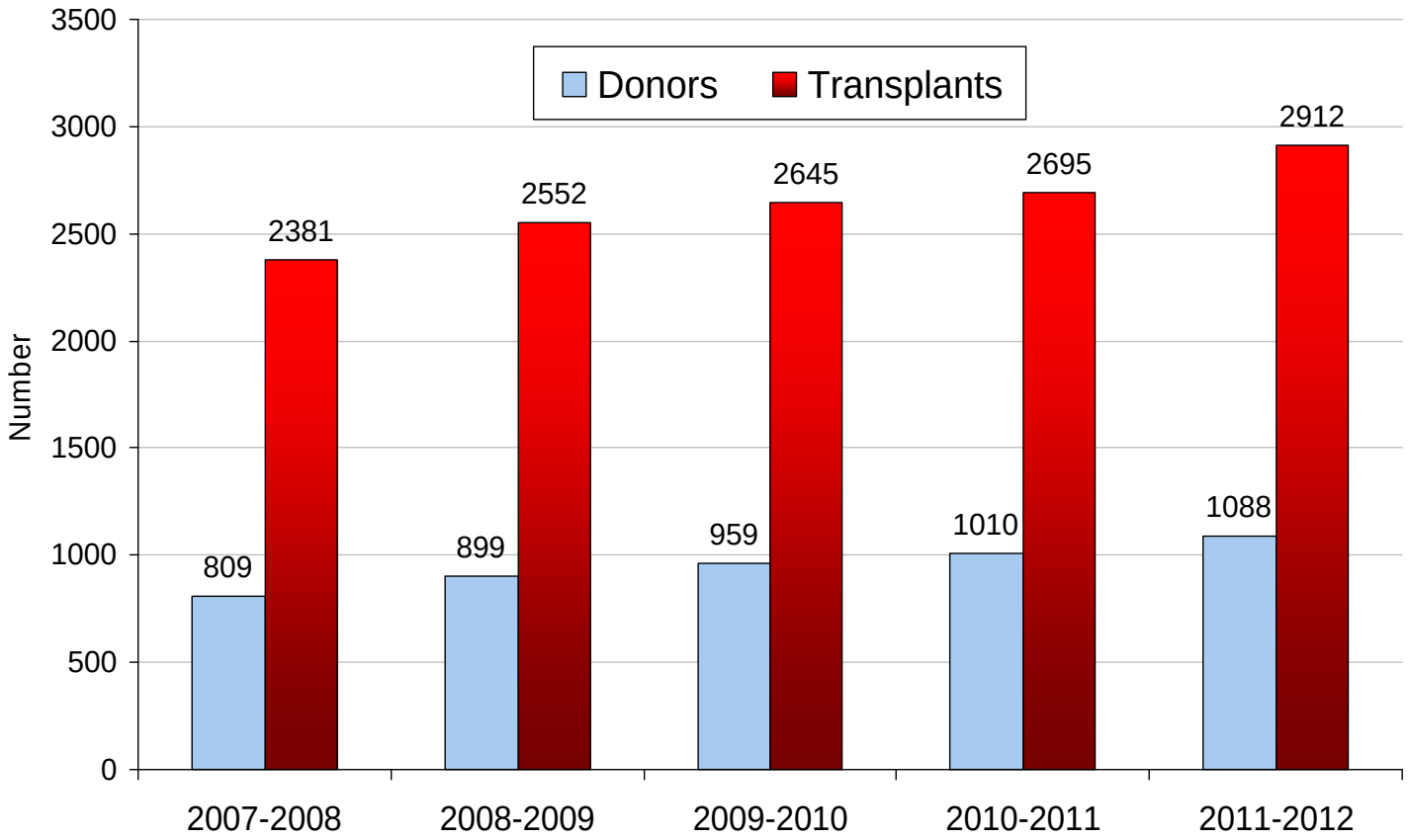
DCD donor rates (pmp) for Europe, 2010

NHS Blood and Transplant



Increase in donors & transplants

NHS Blood and Transplant



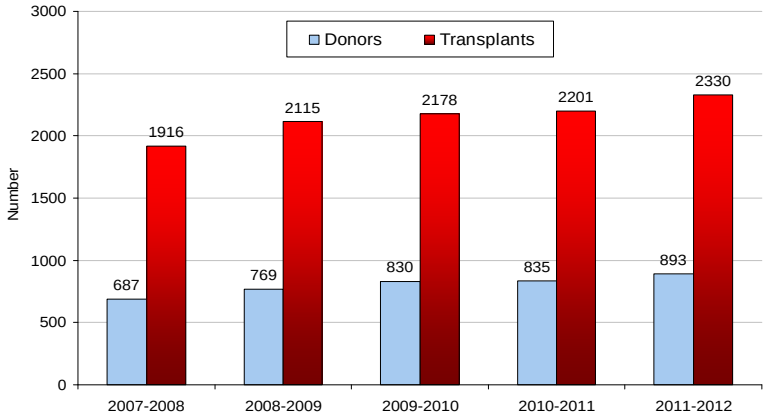
22% increase in transplants

34% increase in deceased organ donors

Trends by country
(deceased donation and transplantation)

NHS Blood and Transplant

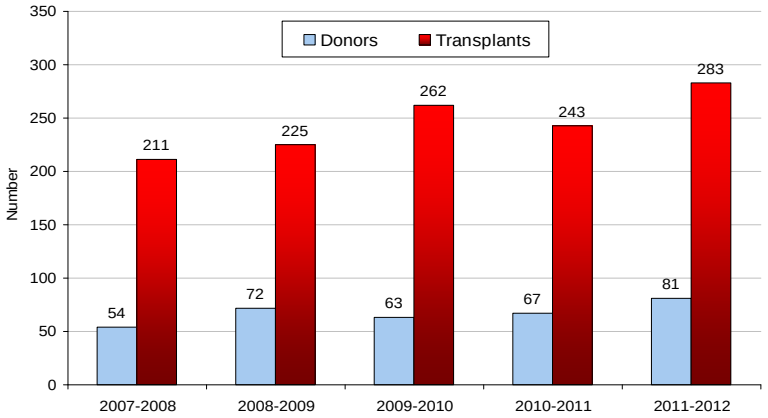
England



22% increase in transplants

30% increase in donors

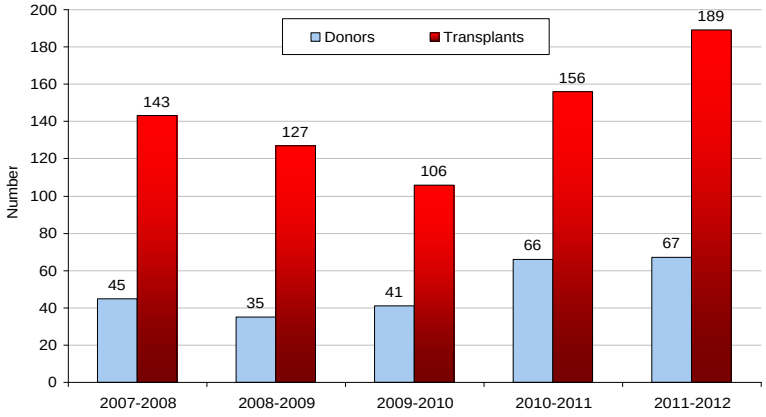
Scotland



34% increase in transplants

50% increase in donors

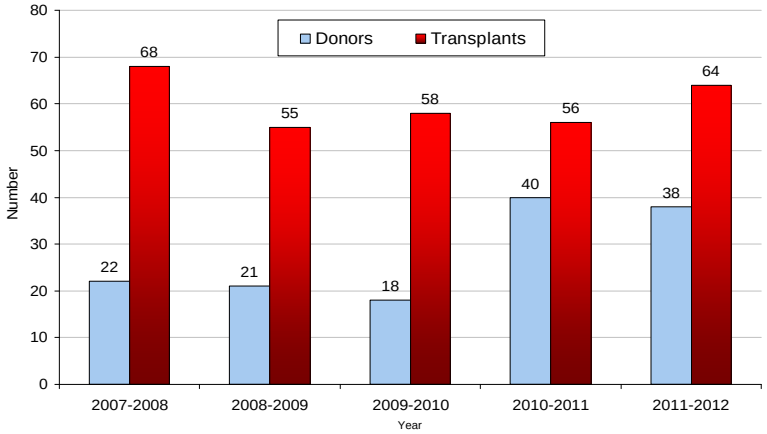
Wales



32% increase in transplants

49% increase in donors

N Ireland



6% decrease in transplants

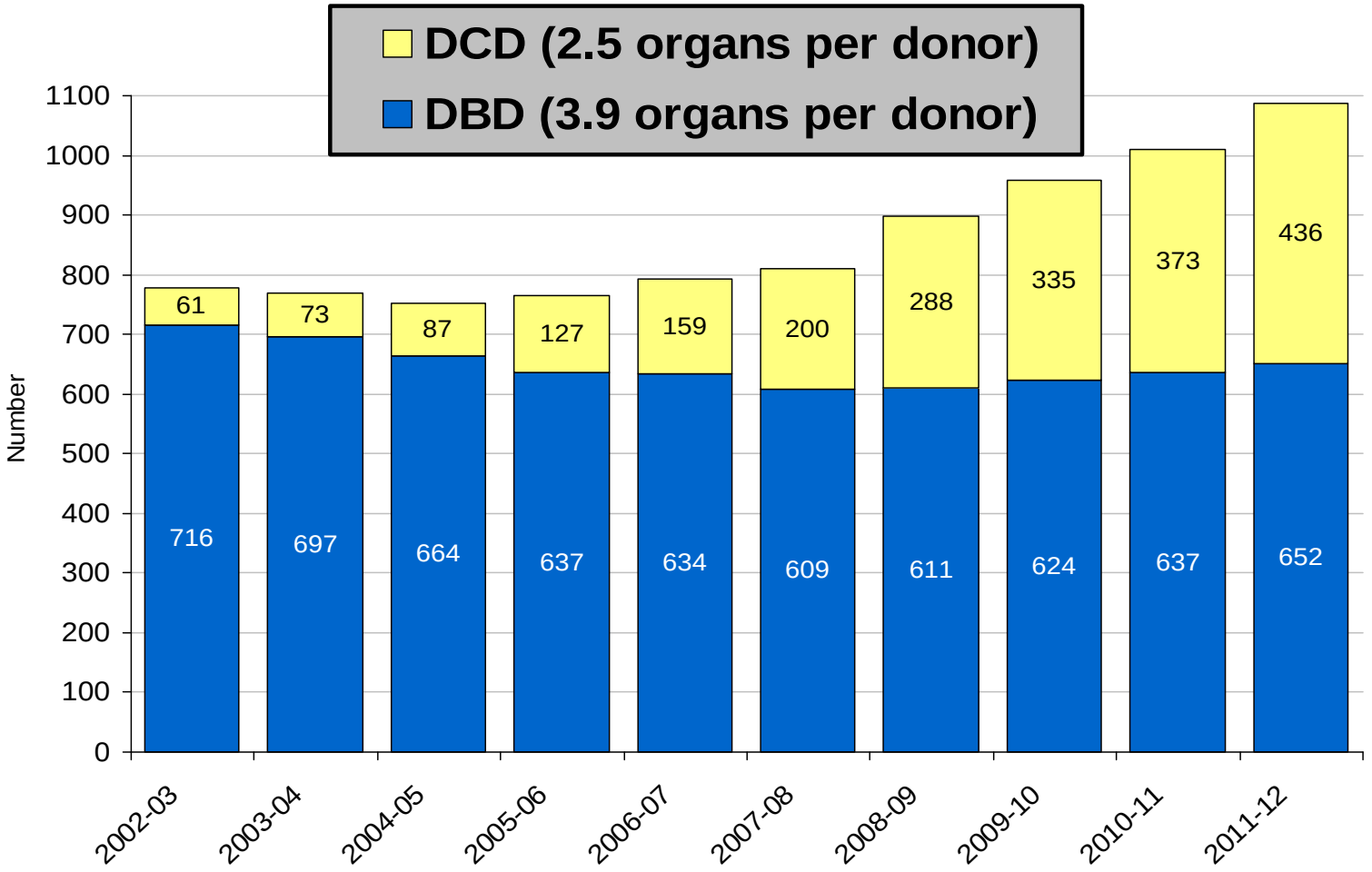
73% increase in donors

Based on country of donor hospital for number of donors and recipient postcode for number of transplants

Why has increase in transplants not matched donors?

NHS Blood and Transplant

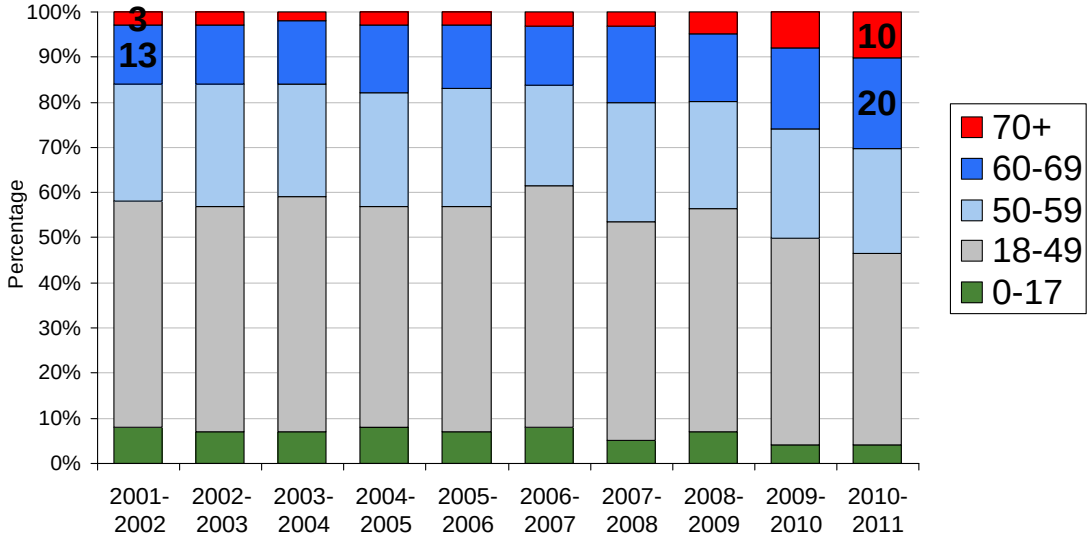
(1) More donors are DCD – fewer organs



Why has increase in transplants not matched donors?

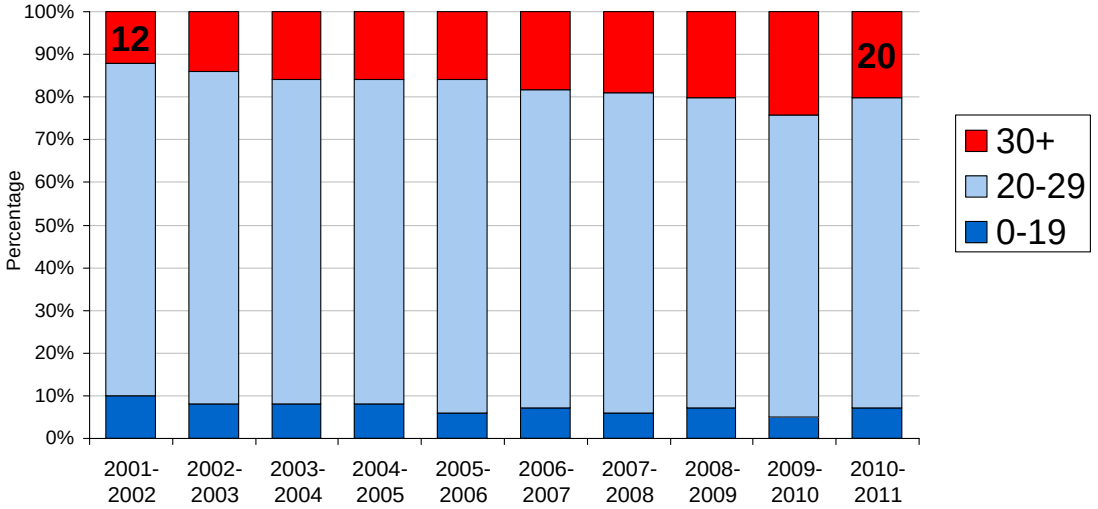
NHS Blood and Transplant

(2) Changing deceased donor characteristics



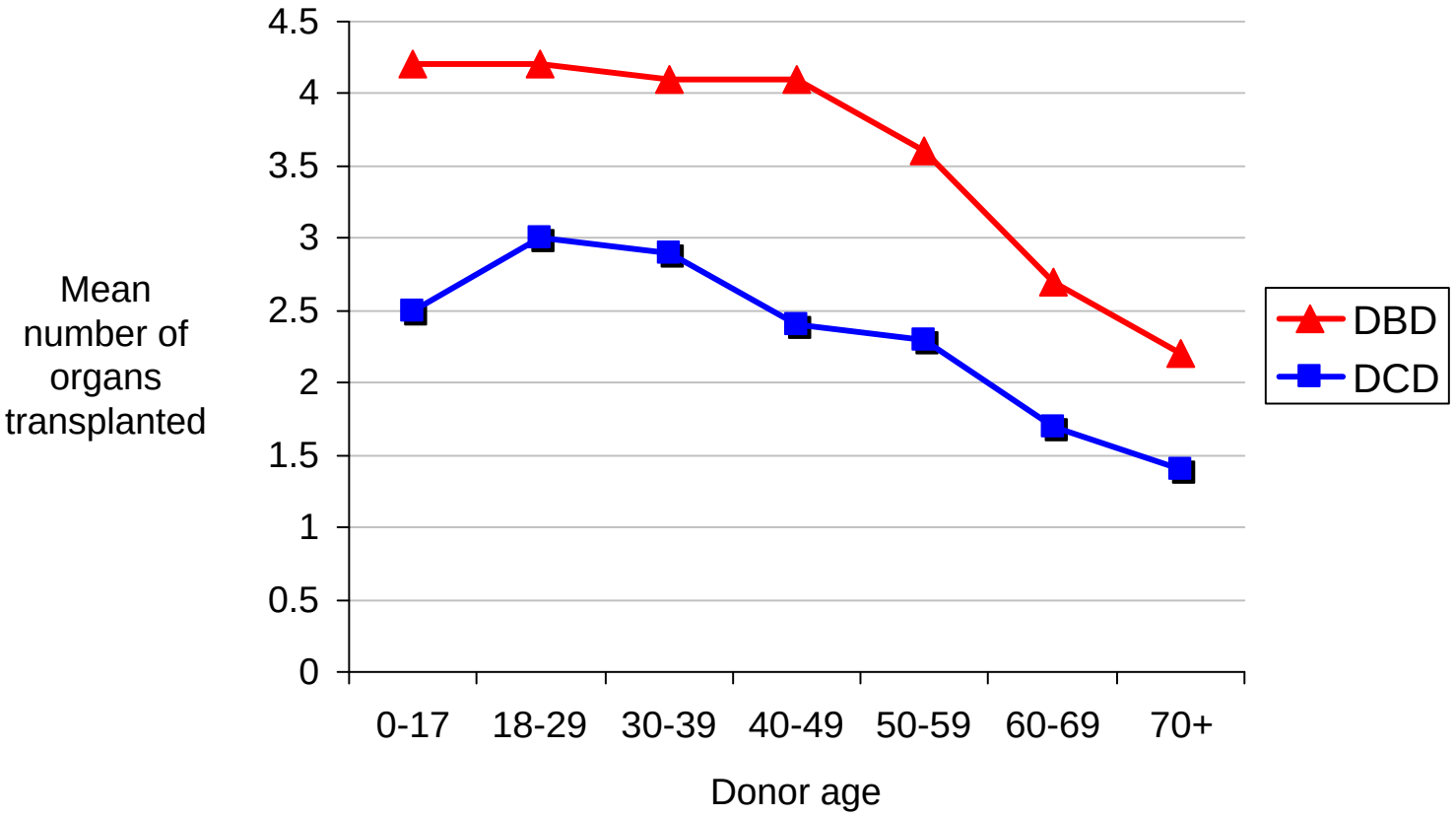
Age of deceased donors

BMI of deceased donors



Mean number of organs transplanted from deceased donors, by age, 2011/12

NHS Blood and Transplant



2% of DBD and 11% of DCD donors resulted in no organs being transplanted (6% combined)

Compare with 14% of donors in Spain in 2010

NHS
Blood and Transplant

Overview of current status in the UK

(4) What does the Potential Donor Audit (PDA) tell us?

PDA definitions

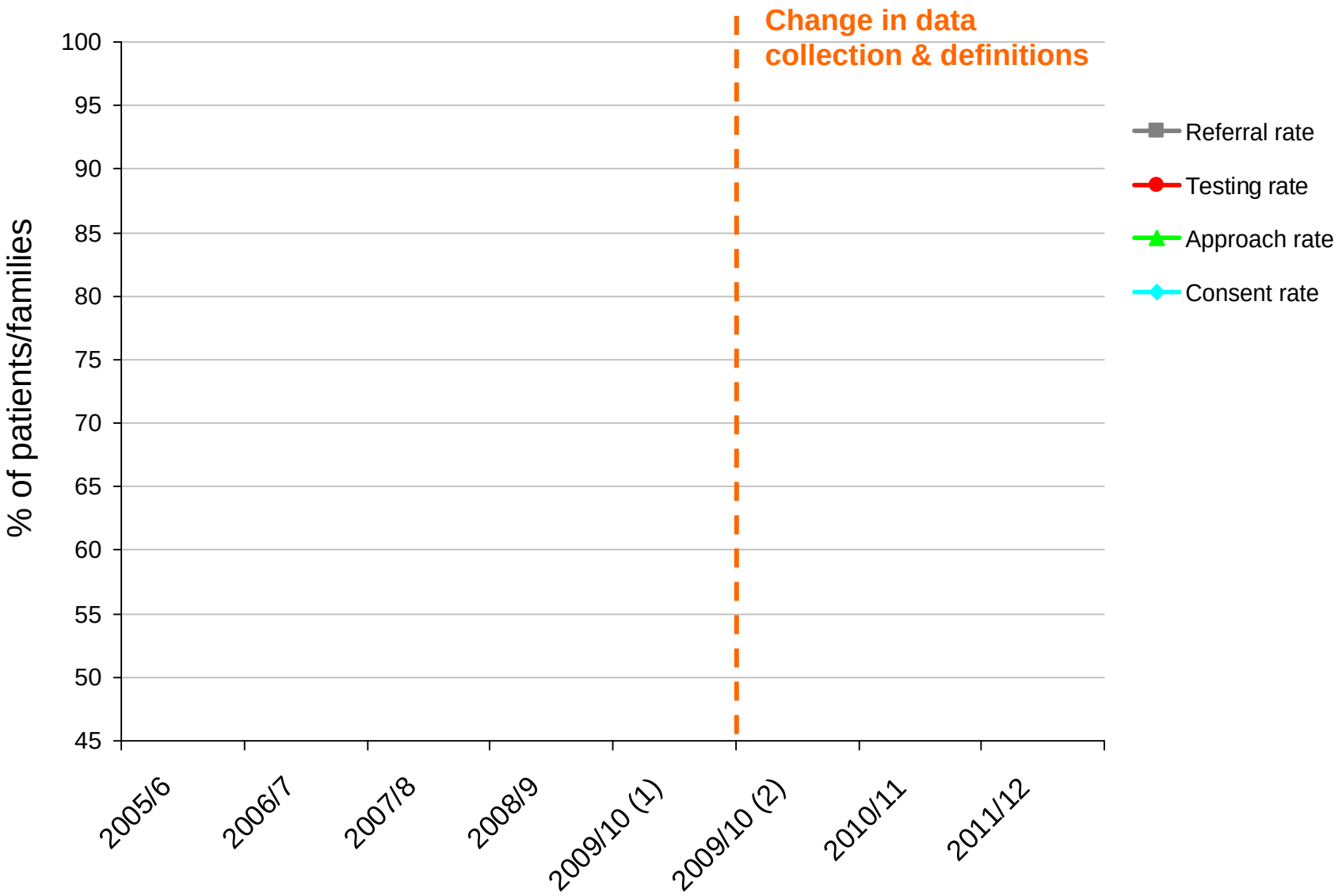
NHS Blood and Transplant

- Referral rate - percentage of neurological death suspected (or imminent death anticipated) patients referred to SN-OD
- Testing rate - percentage of neurological death suspected patients tested for brain death
- Approach rate - percentage of families of eligible donors (medically suitable, declared dead by neurological criteria) who are approached for consent to donation
- Consent* rate - percentage of families approached who grant consent/authorisation for donation

* Authorisation in Scotland

Potential Donor Audit – Key rates for DBD donation

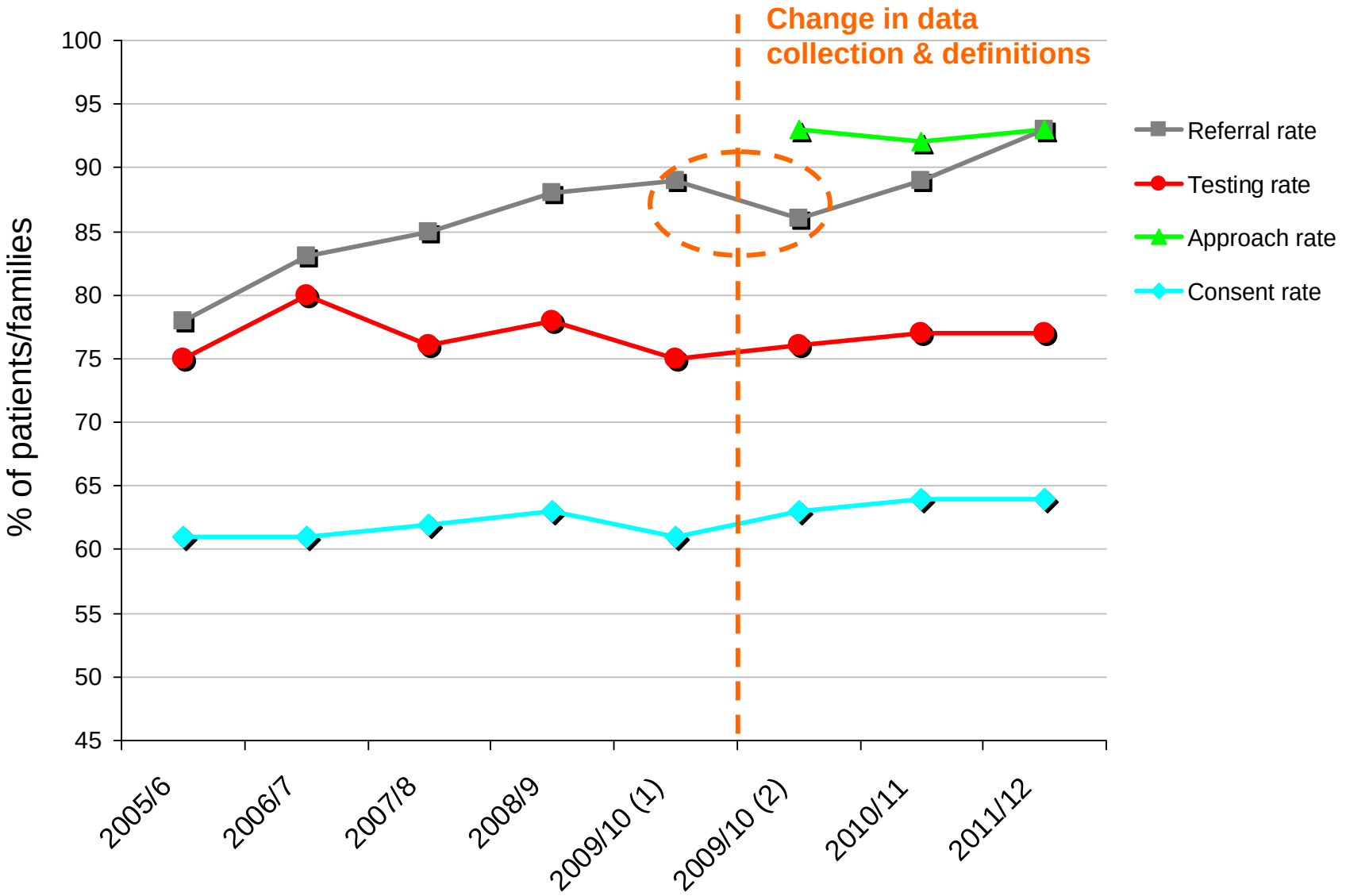
NHS Blood and Transplant



ED data excluded

Potential Donor Audit – Key rates for DBD donation

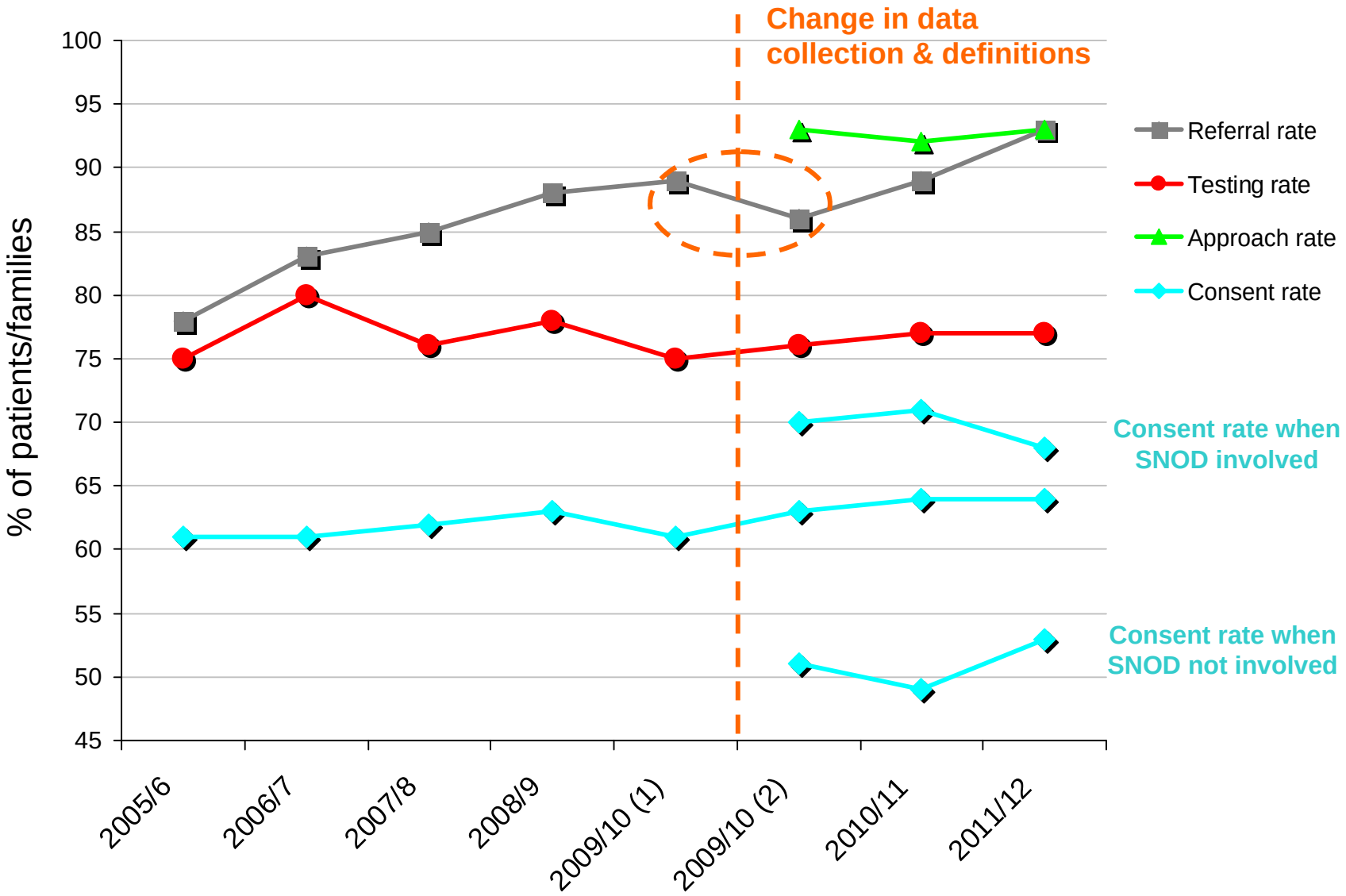
NHS Blood and Transplant



ED data excluded

Potential Donor Audit – Key rates for DBD donation

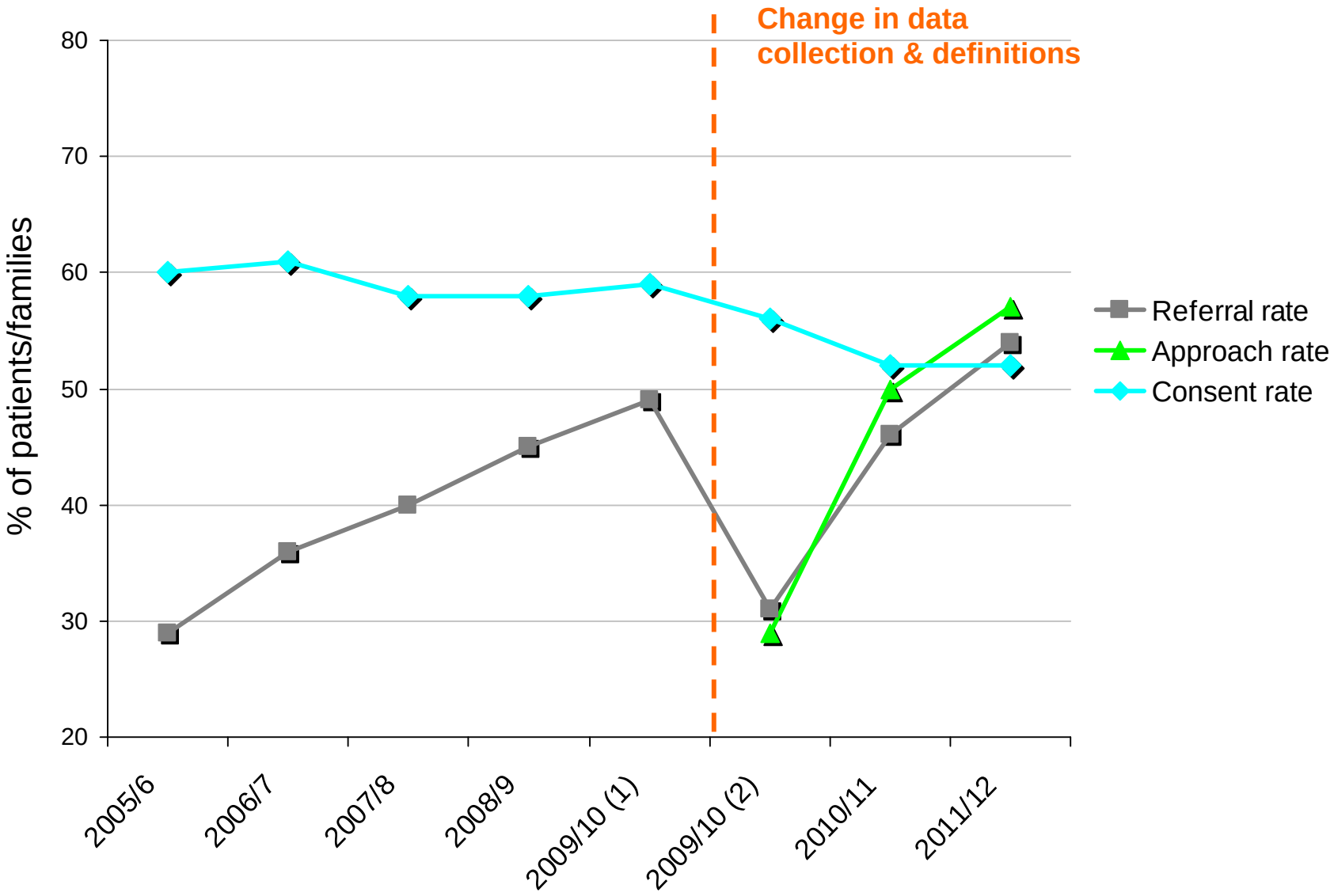
NHS Blood and Transplant



ED data excluded

Potential Donor Audit – Key rates for DCD donation

NHS Blood and Transplant



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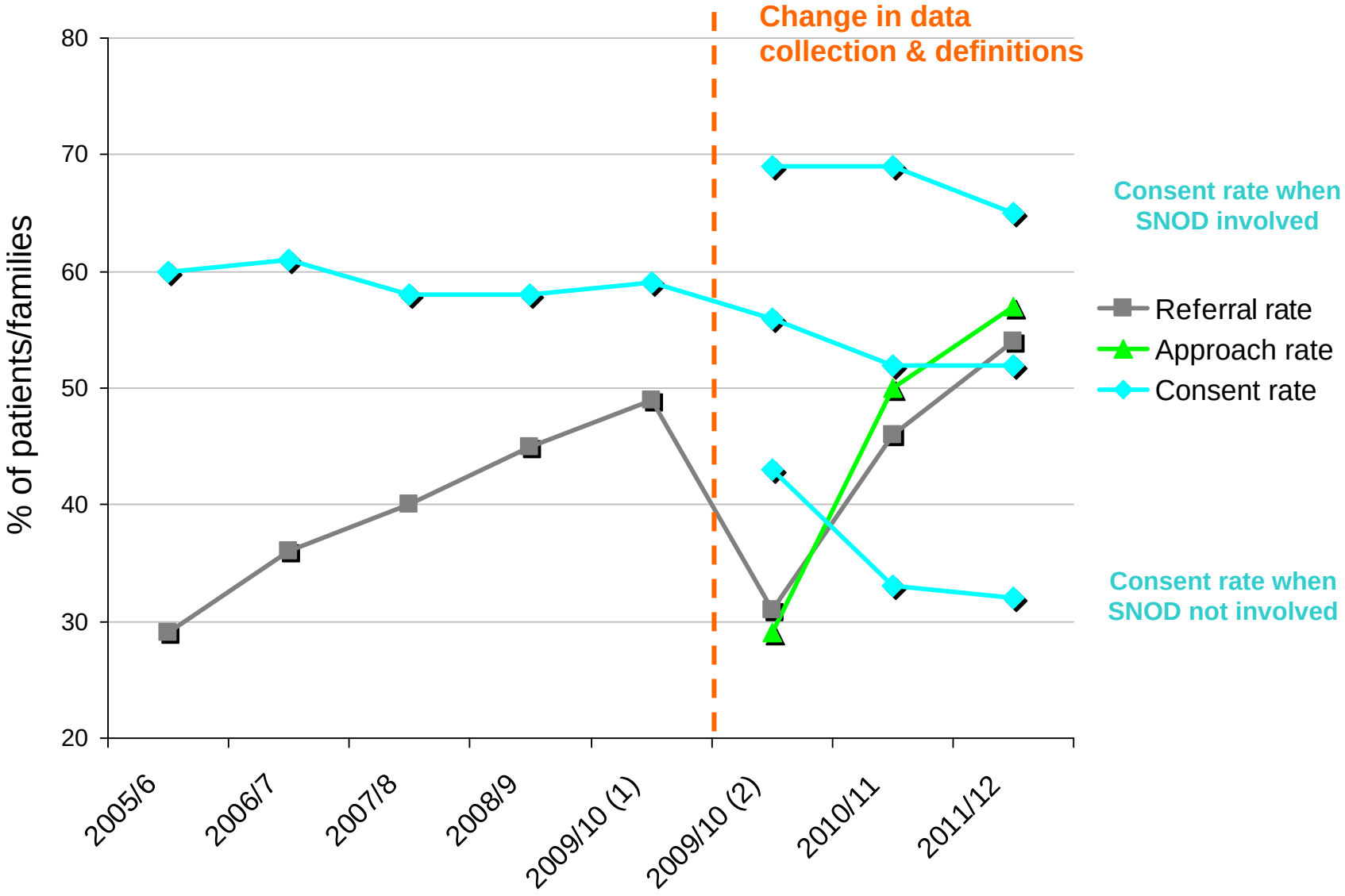
Potential Donor Audit – Key rates for DCD donation

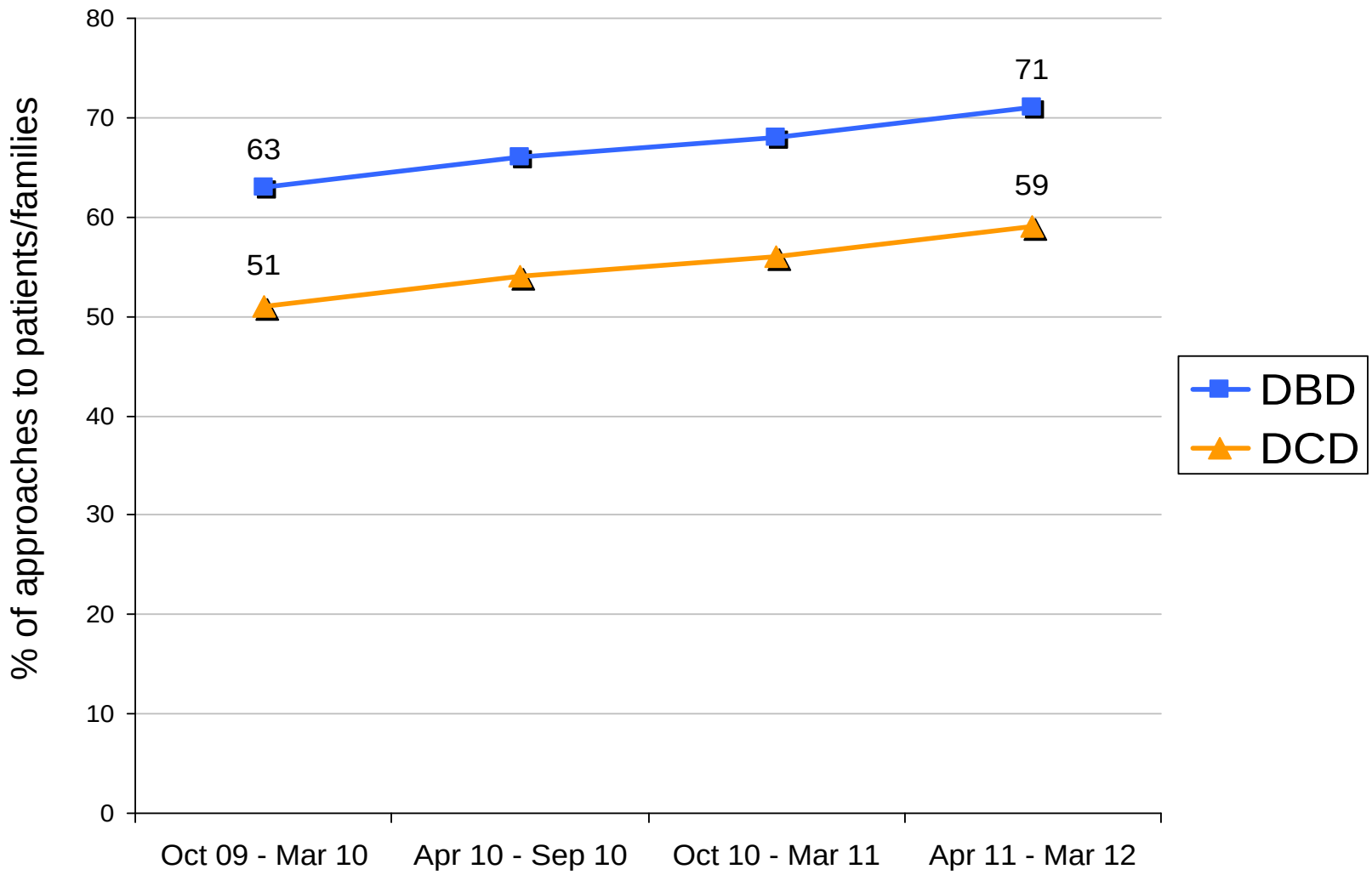
NHS Blood and Transplant



ED data excluded

Involvement of SNOD in approach to families

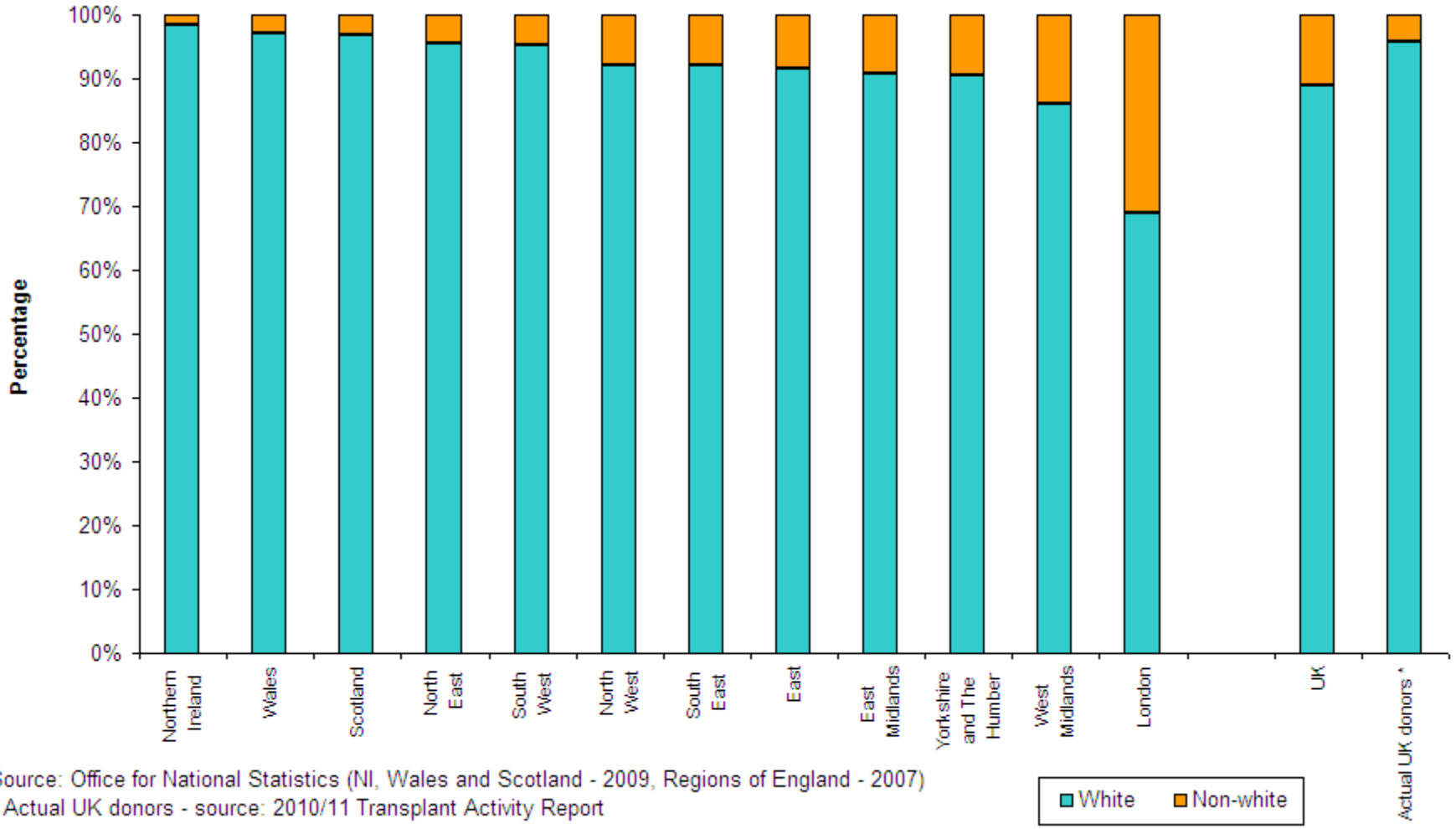
NHS Blood and Transplant



ED data excluded

Ethnicity of regional populations

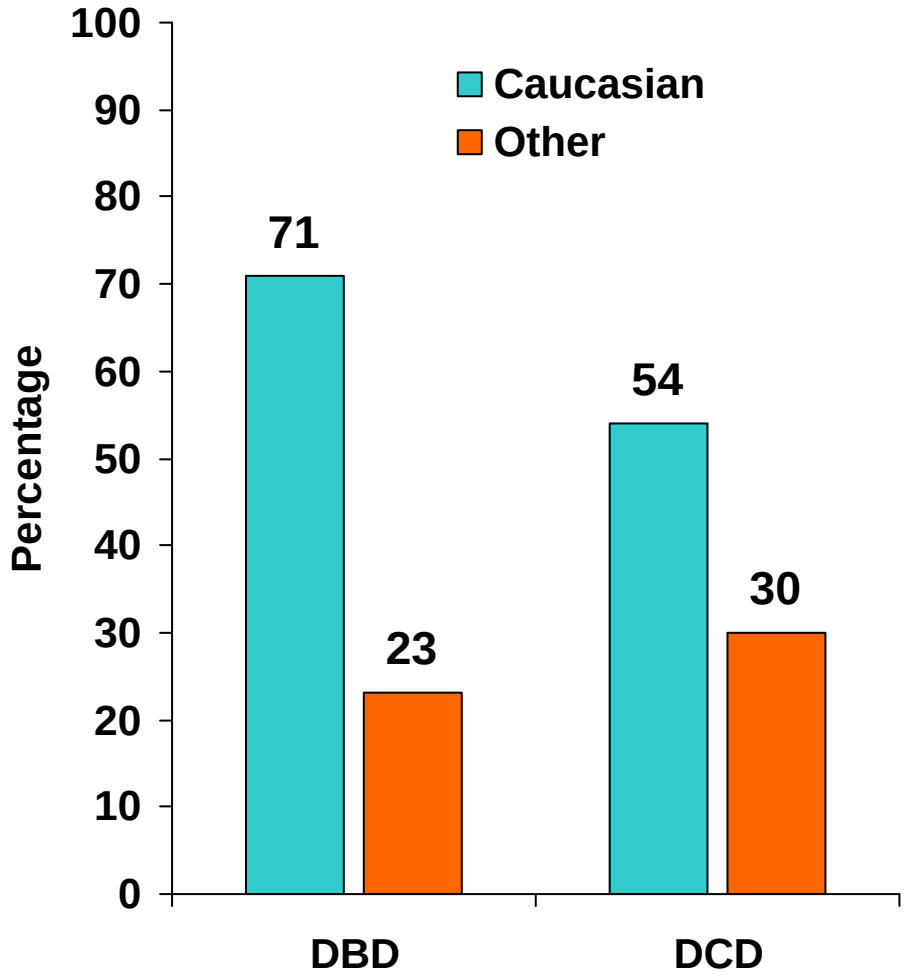
NHS Blood and Transplant



Source: Office for National Statistics (NI, Wales and Scotland - 2009, Regions of England - 2007)
* Actual UK donors - source: 2010/11 Transplant Activity Report

Consent/authorisation rate, 2010/11

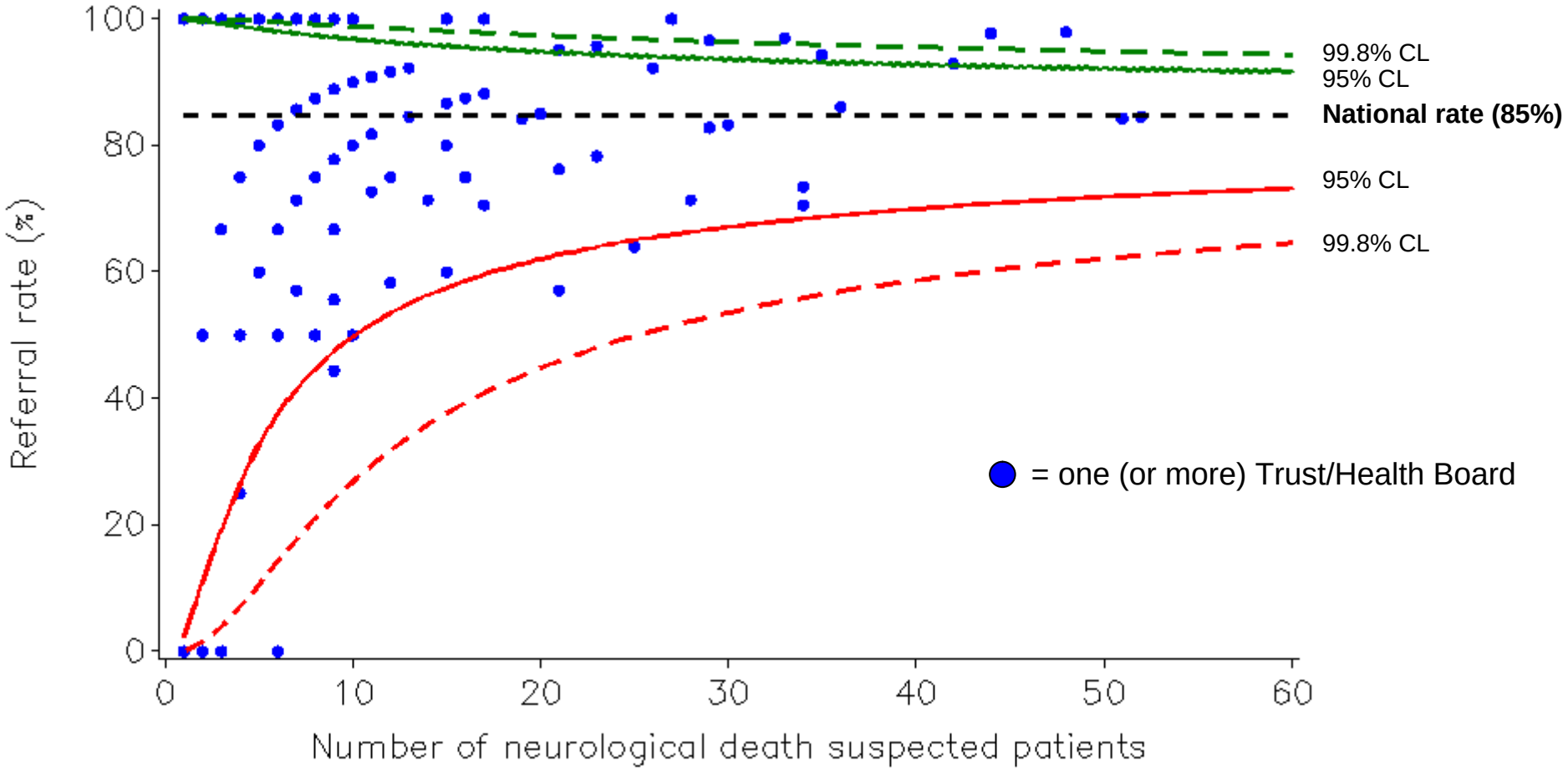
NHS Blood and Transplant



Funnel plot presentation

NHS Blood and Transplant

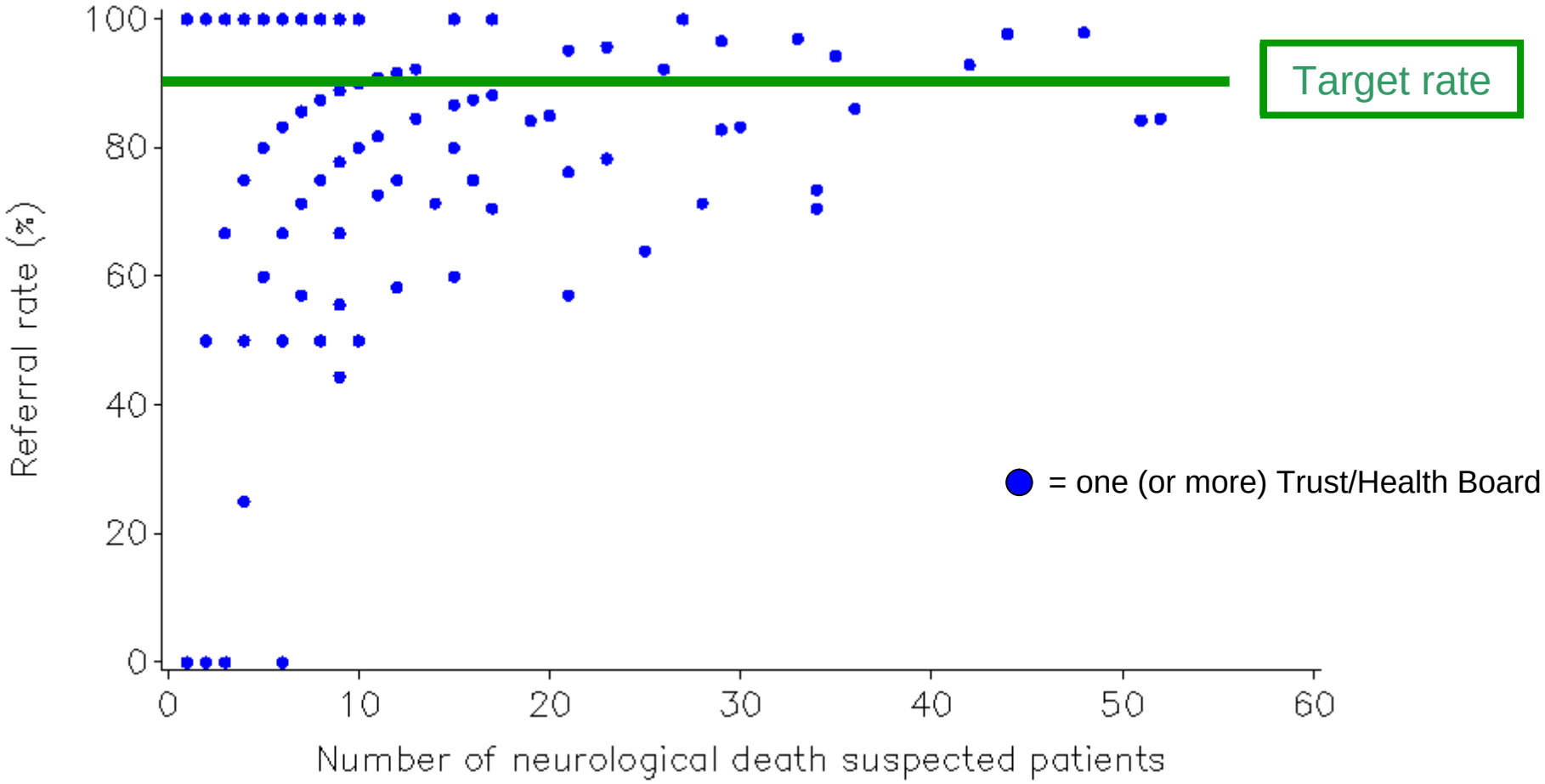
Referral rates for potential DBD donors by Trust/Health Board, 2010/11



Should target rates be set?

NHS Blood and Transplant

Referral rates for potential DBD donors by Trust/Health Board, 2010/11



Summary of key rates from Potential Donor Audit

NHS Blood and Transplant

	DBD	DCD
Referral	Increasing	Increasing
Testing	No change	N/A
Approach	No change	Increasing
Consent	No change	Falling*
Involvement of SNOD in approach	Increasing	Increasing

* Many more families being approached so *number* of consenting families is increasing

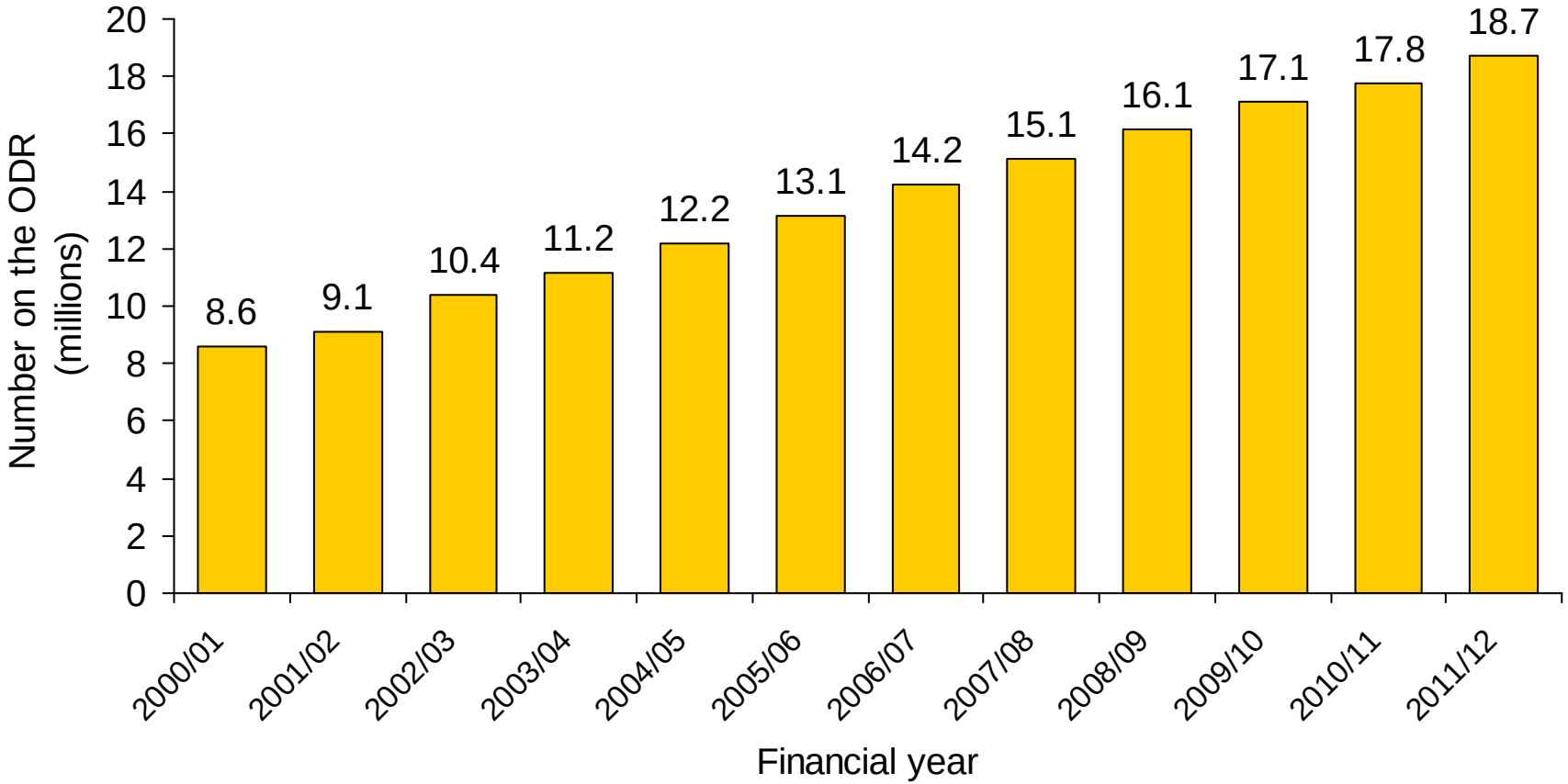
NHS
Blood and Transplant

Overview of current status in the UK

(5) Organ Donor Register

Number on the ODR at the end of each financial year

NHS Blood and Transplant



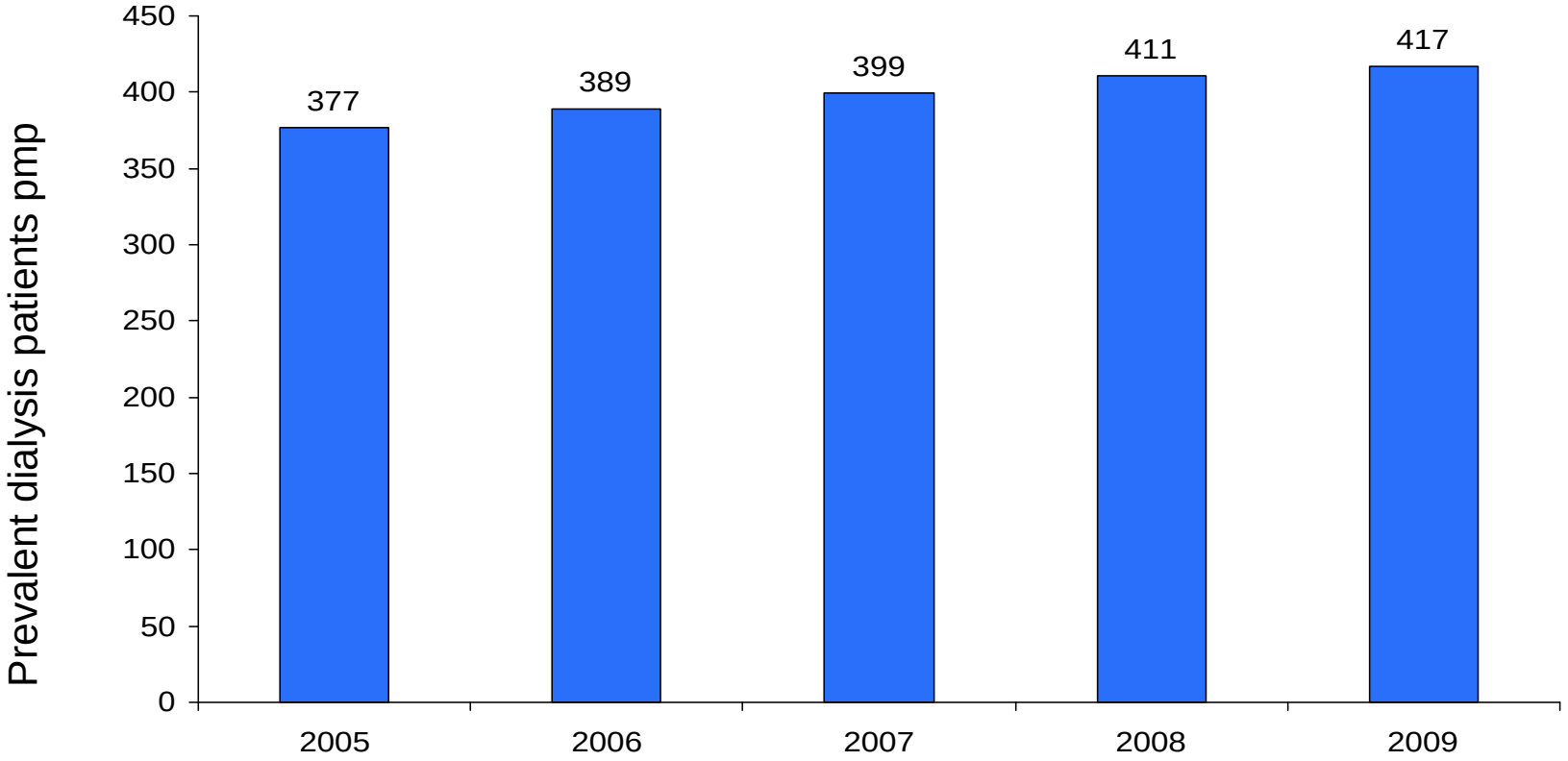
NHS
Blood and Transplant

Focus of future strategy

UK dialysis prevalence pmp

Blood and Transplant

Approx 3% growth per year in prevalent dialysis patients

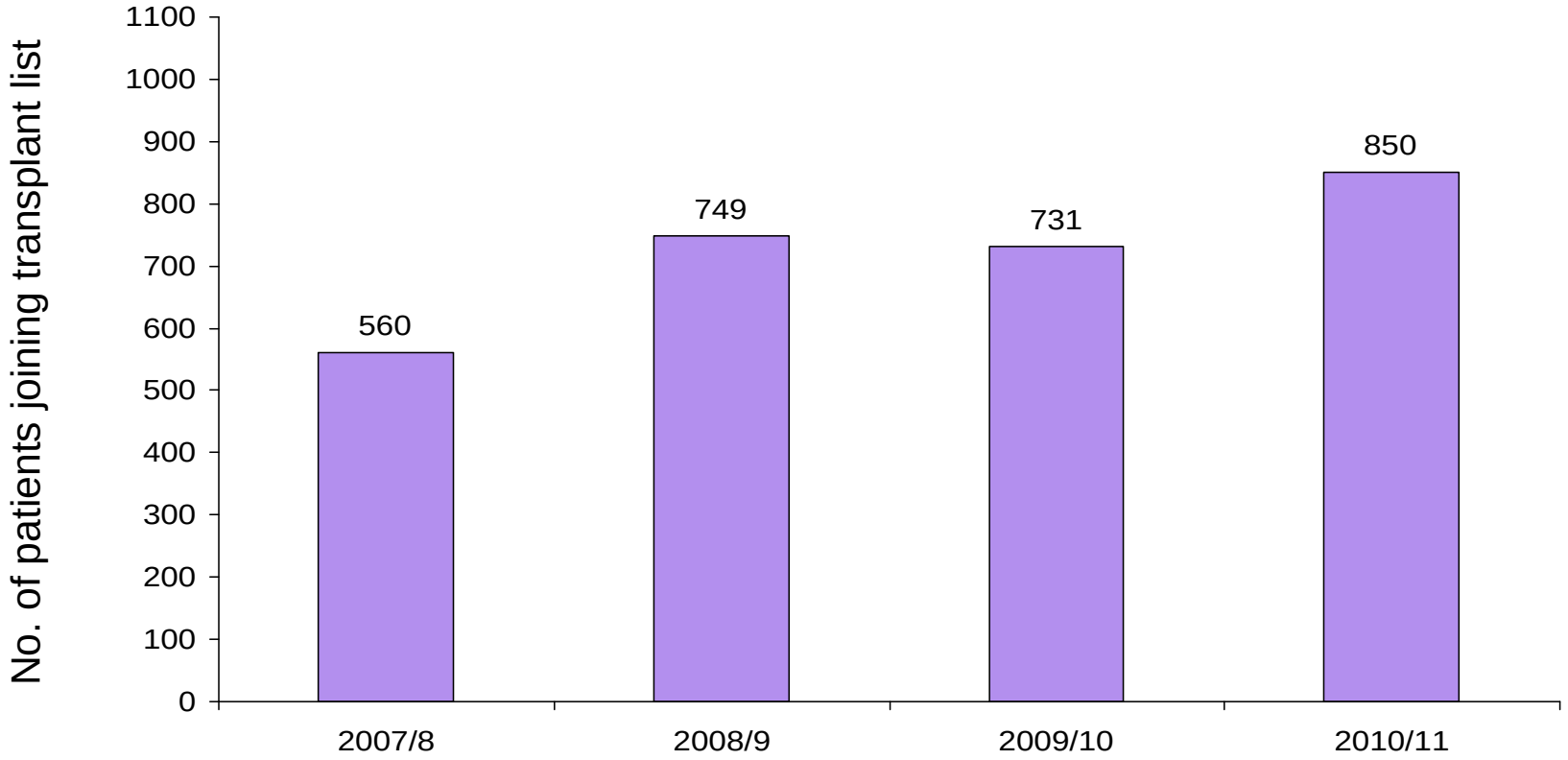


Source of data - UK Renal Registry, The Thirteenth Annual Report, December 2010

Increasing demand for liver transplantation

NHS Blood and Transplant

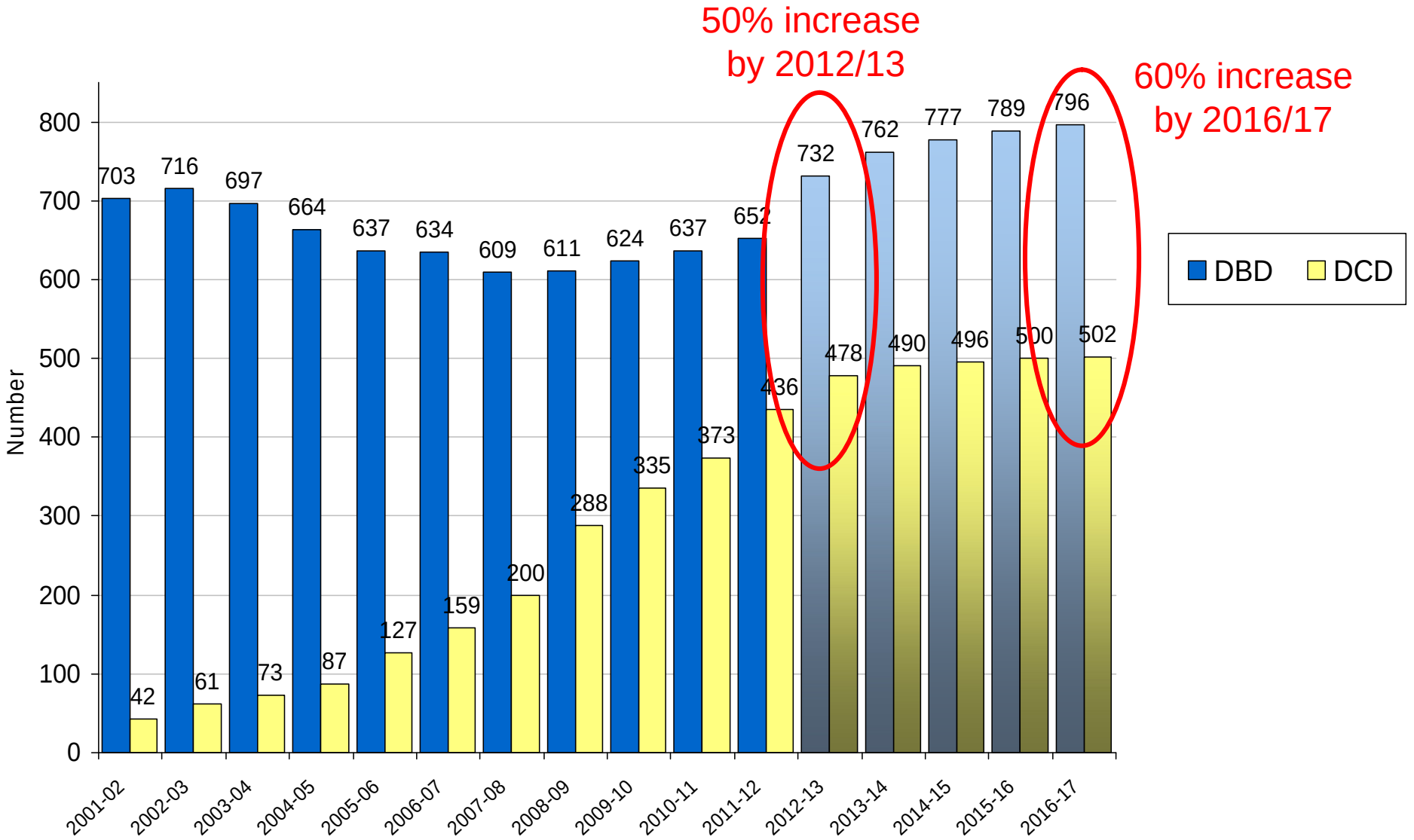
52% increase over 4 years in patients joining liver transplant list



Adult, Group 1 elective patients only

Further increase number of deceased donors

NHS Blood and Transplant



NHS
Blood and Transplant

Is the potential donor pool likely to increase?

Falling number of deaths per year in UK

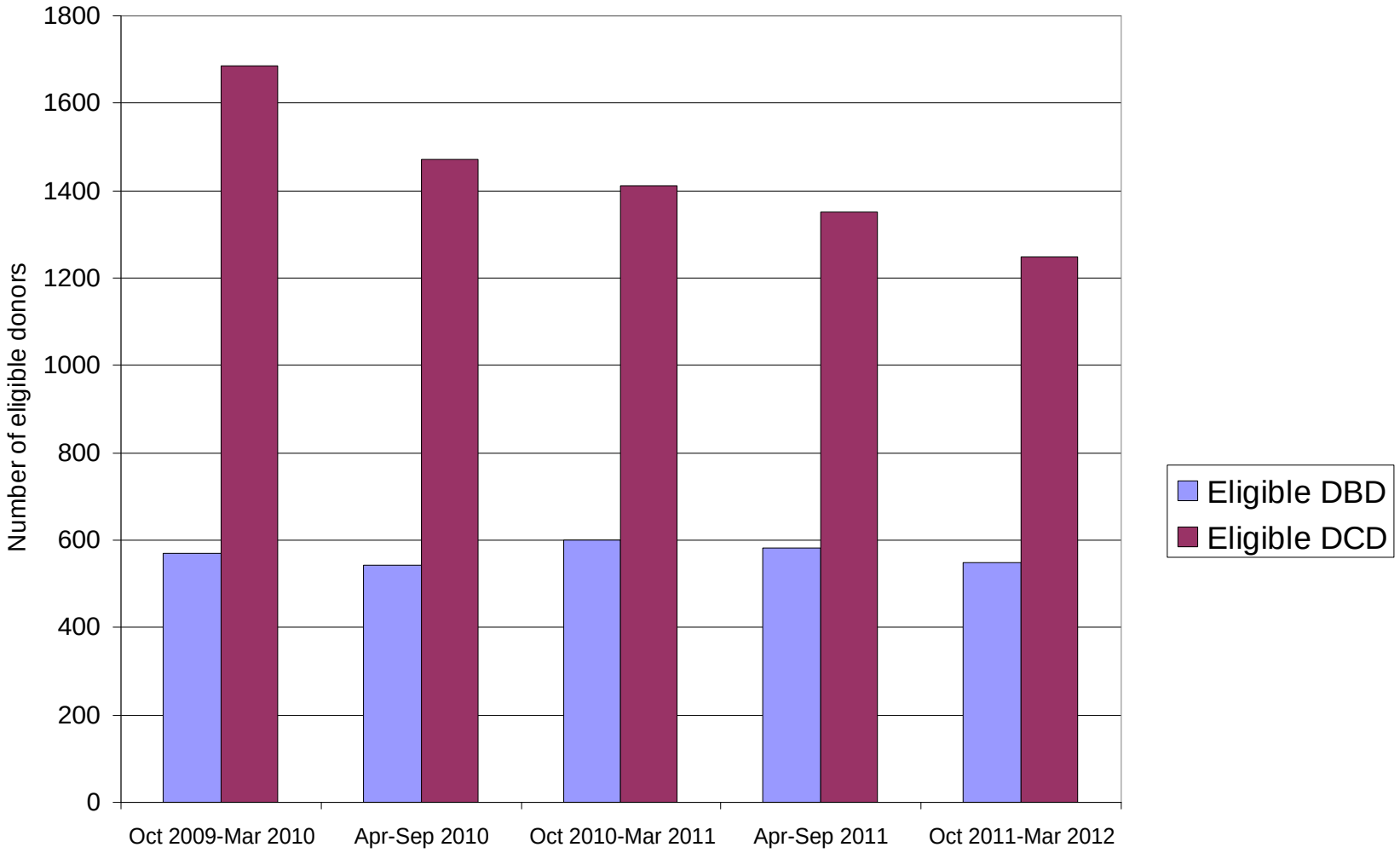
NHS Blood and Transplant

15% fall in deaths <75 yrs

Source: Office for National Statistics

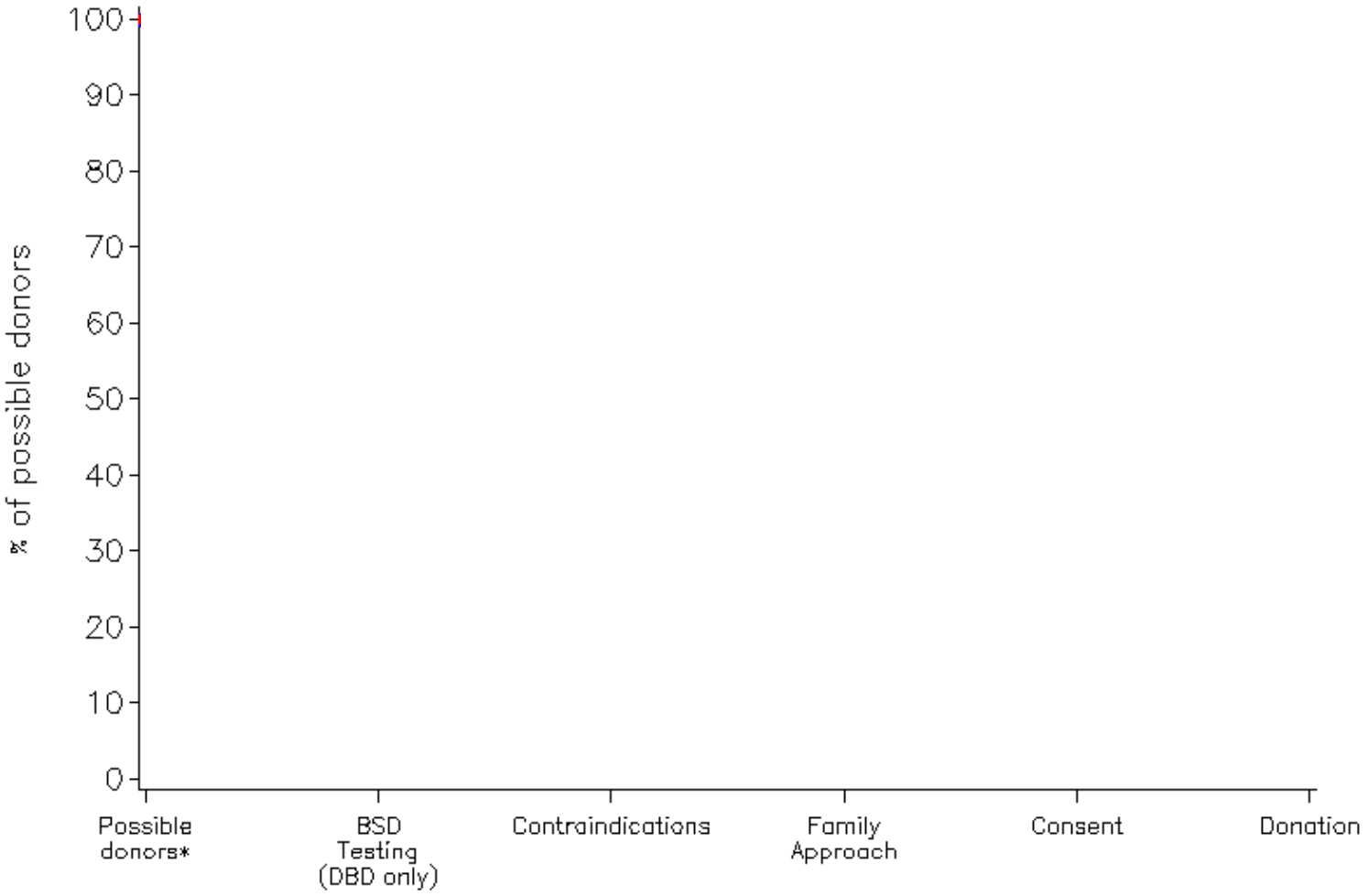
The eligible donor pools

NHS Blood and Transplant



Eligible DBD: Death confirmed by neurological tests and no absolute or relative contraindications to solid organ donation
Eligible DCD: Imminent death anticipated and treatment withdrawn with no absolute or relative contraindications

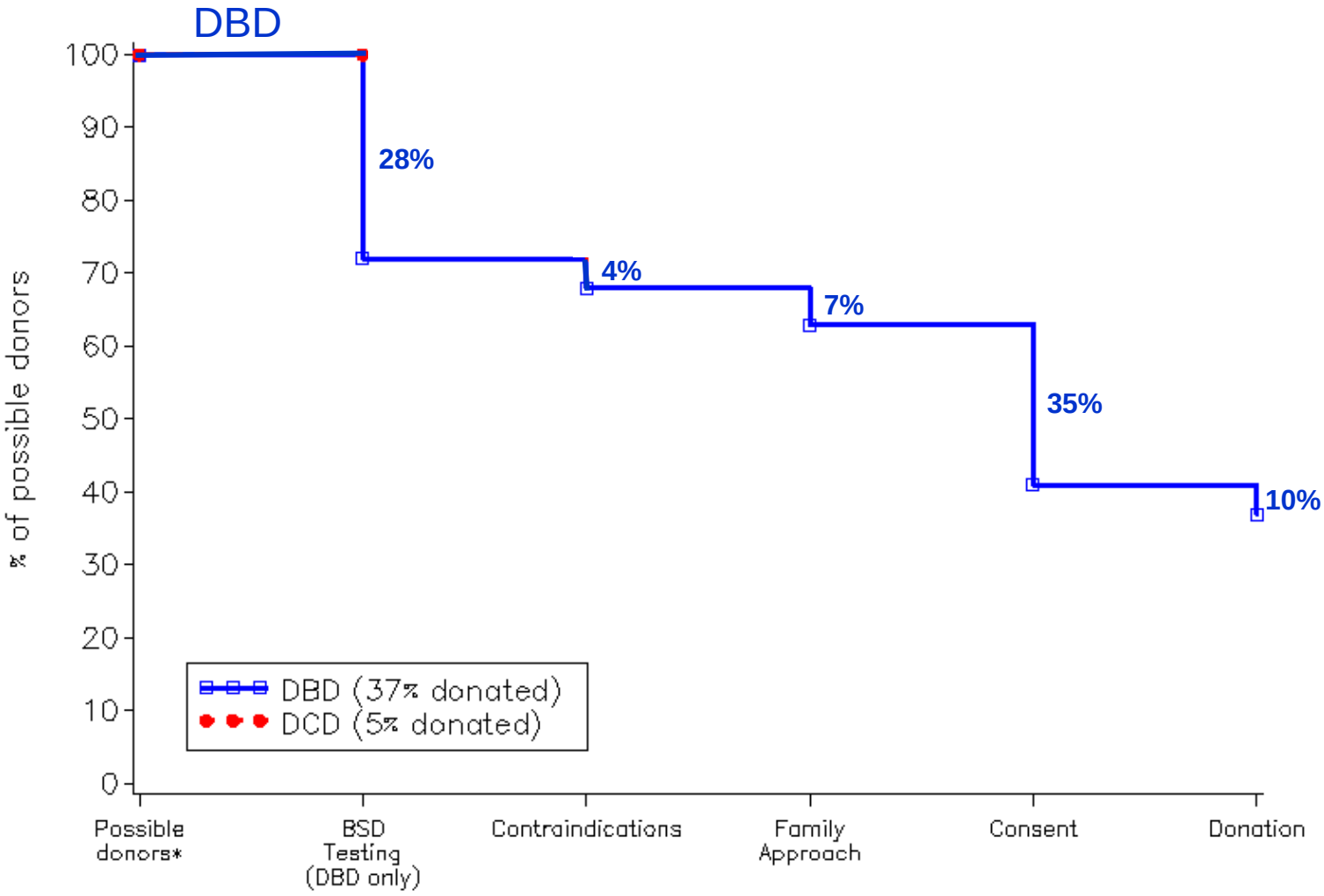
Where are opportunities lost pre-donation?



* DBD – possible donors meeting criteria for neurological testing
DCD – possible donors not confirmed dead by neurological criteria where imminent death anticipated and treatment withdrawn

Where are opportunities lost pre-donation?

NHS Blood and Transplant



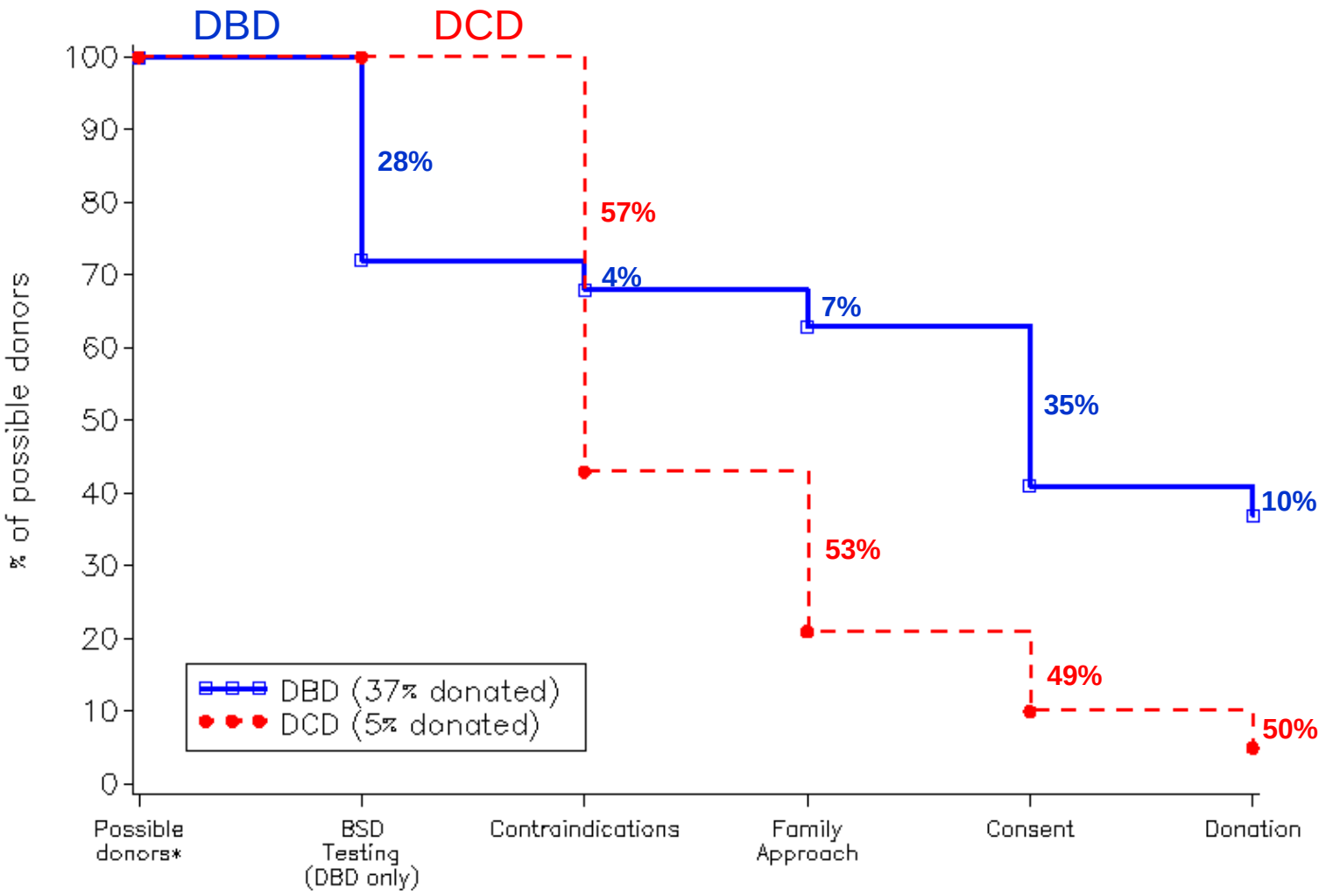
2010/11

637 donors
(37% of possible)

* DBD – possible donors meeting criteria for neurological testing
DCD – possible donors not confirmed dead by neurological criteria where imminent death anticipated and treatment withdrawn

Where are opportunities lost pre-donation?

NHS Blood and Transplant



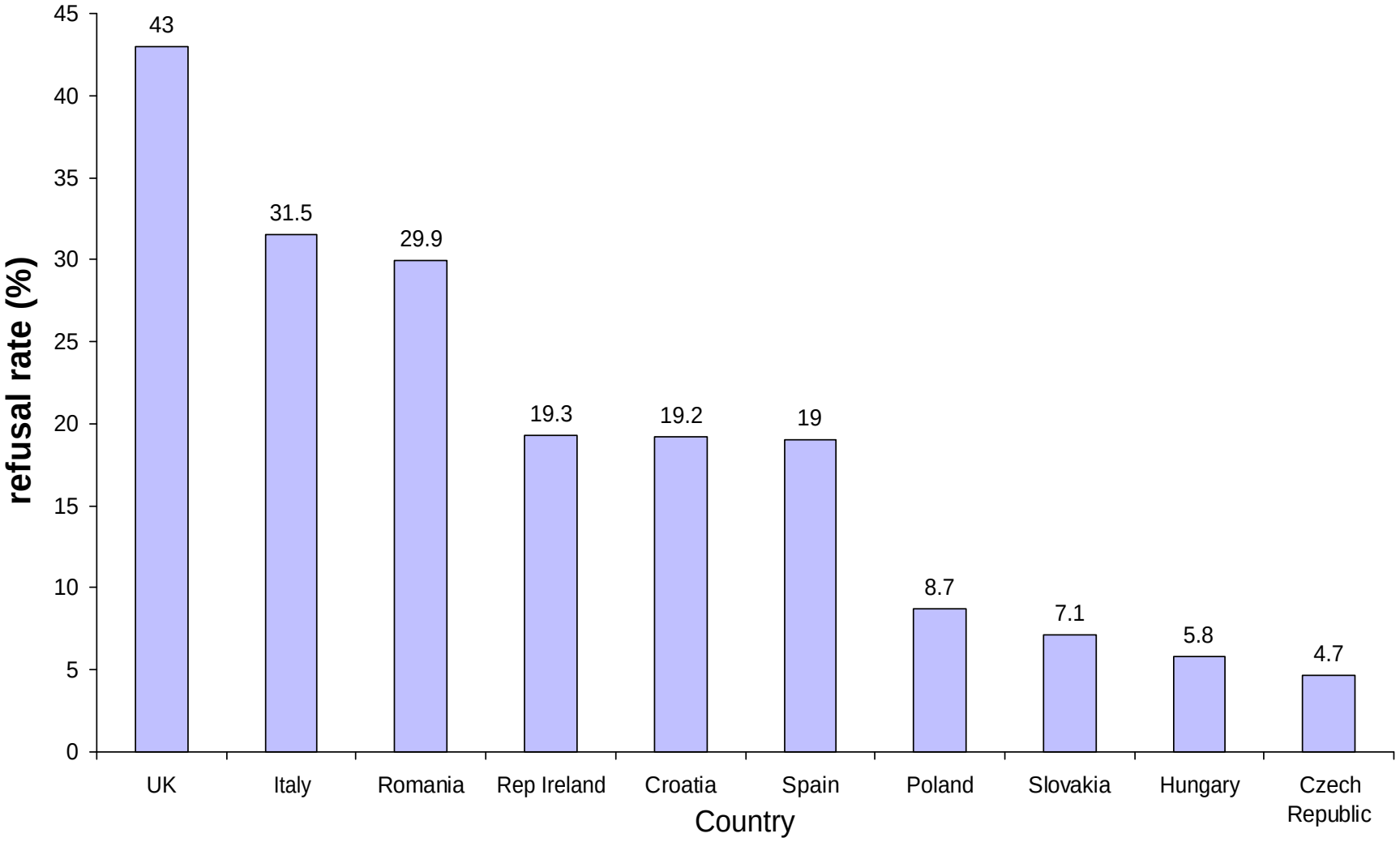
2010/11

637 donors
(37% of possible)

373 donors
(5% of possible, 12% of those not contraindicated)

* DBD – possible donors meeting criteria for neurological testing
DCD – possible donors not confirmed dead by neurological criteria where imminent death anticipated and treatment withdrawn

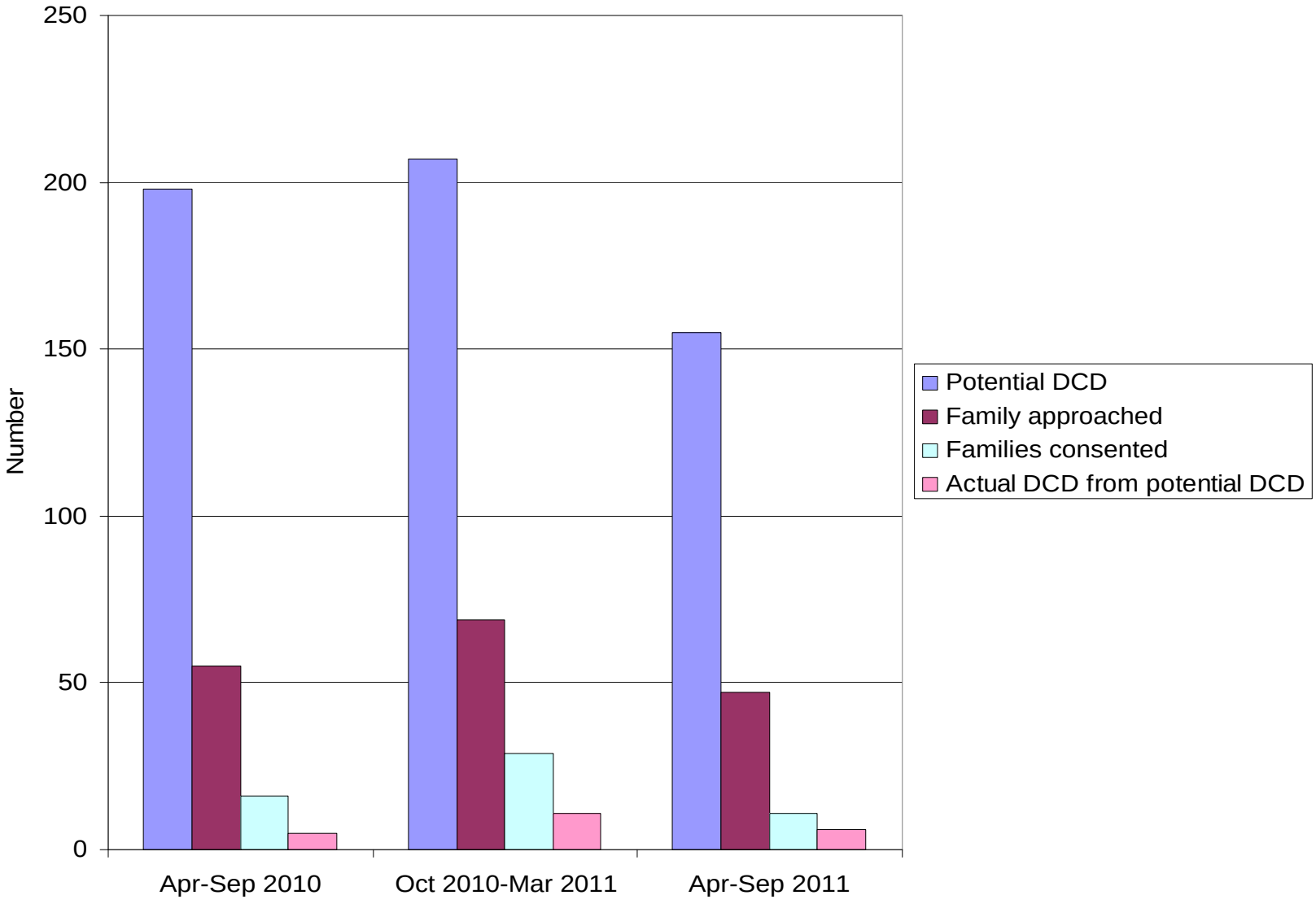
Family refusal rates, 2010



Note – limited international data available on family refusal rates

The potential from Emergency Departments

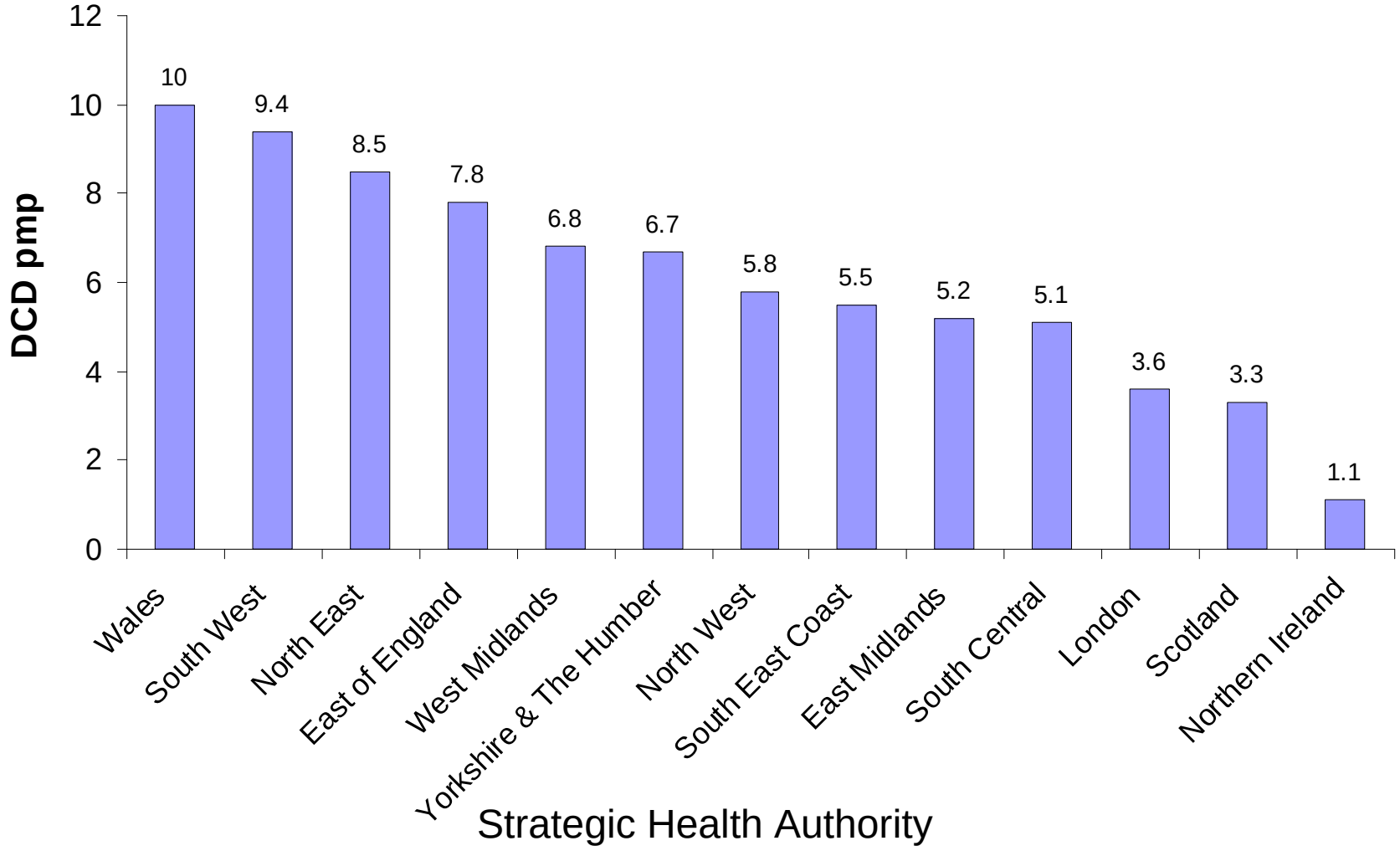
NHS Blood and Transplant



Regional variation in DCD donation rates

(DCD donors pmp by SHA/Country, 2010/11)

NHS Blood and Transplant

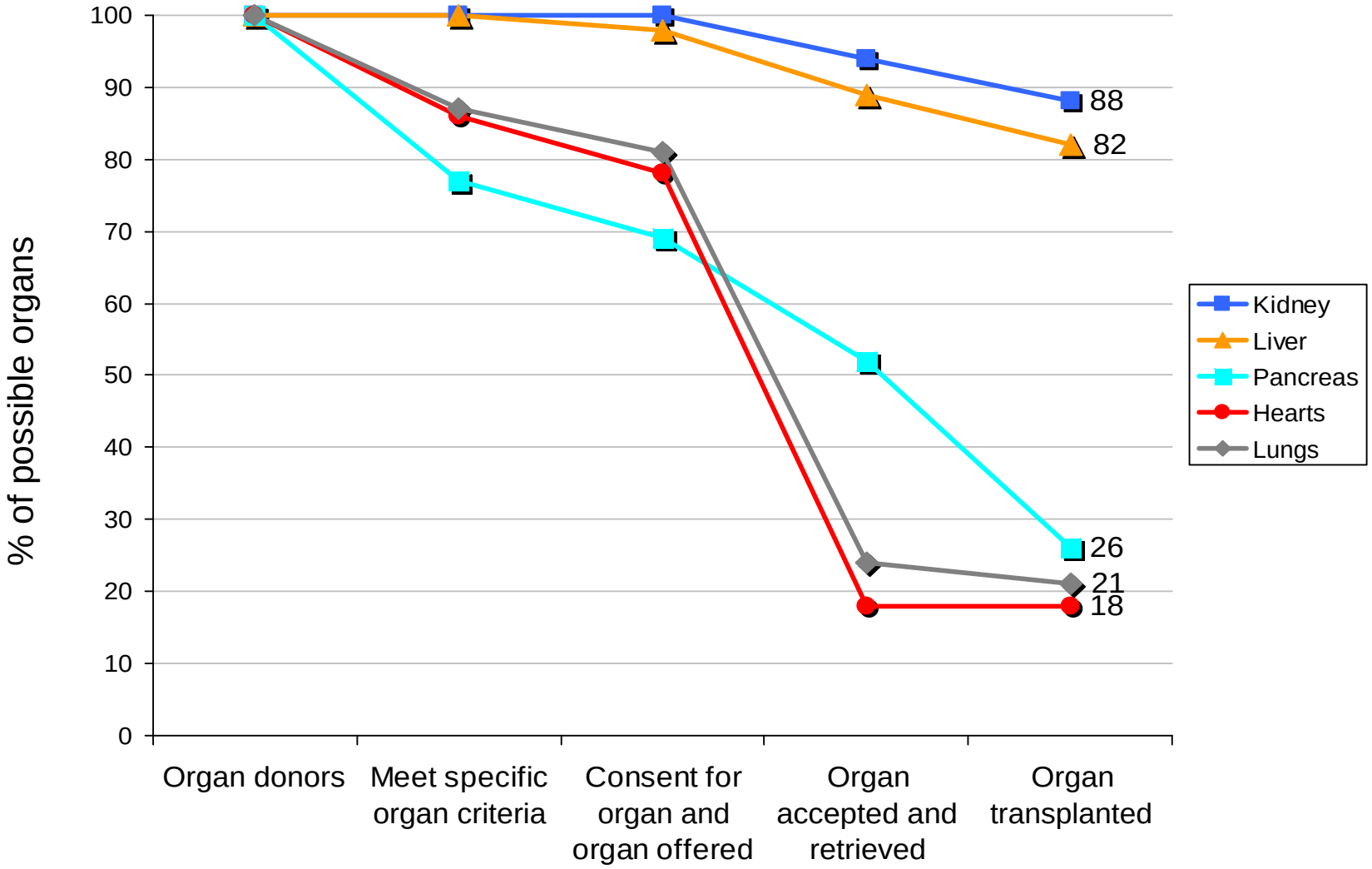


NHS
Blood and Transplant

Can organ utilisation be increased?

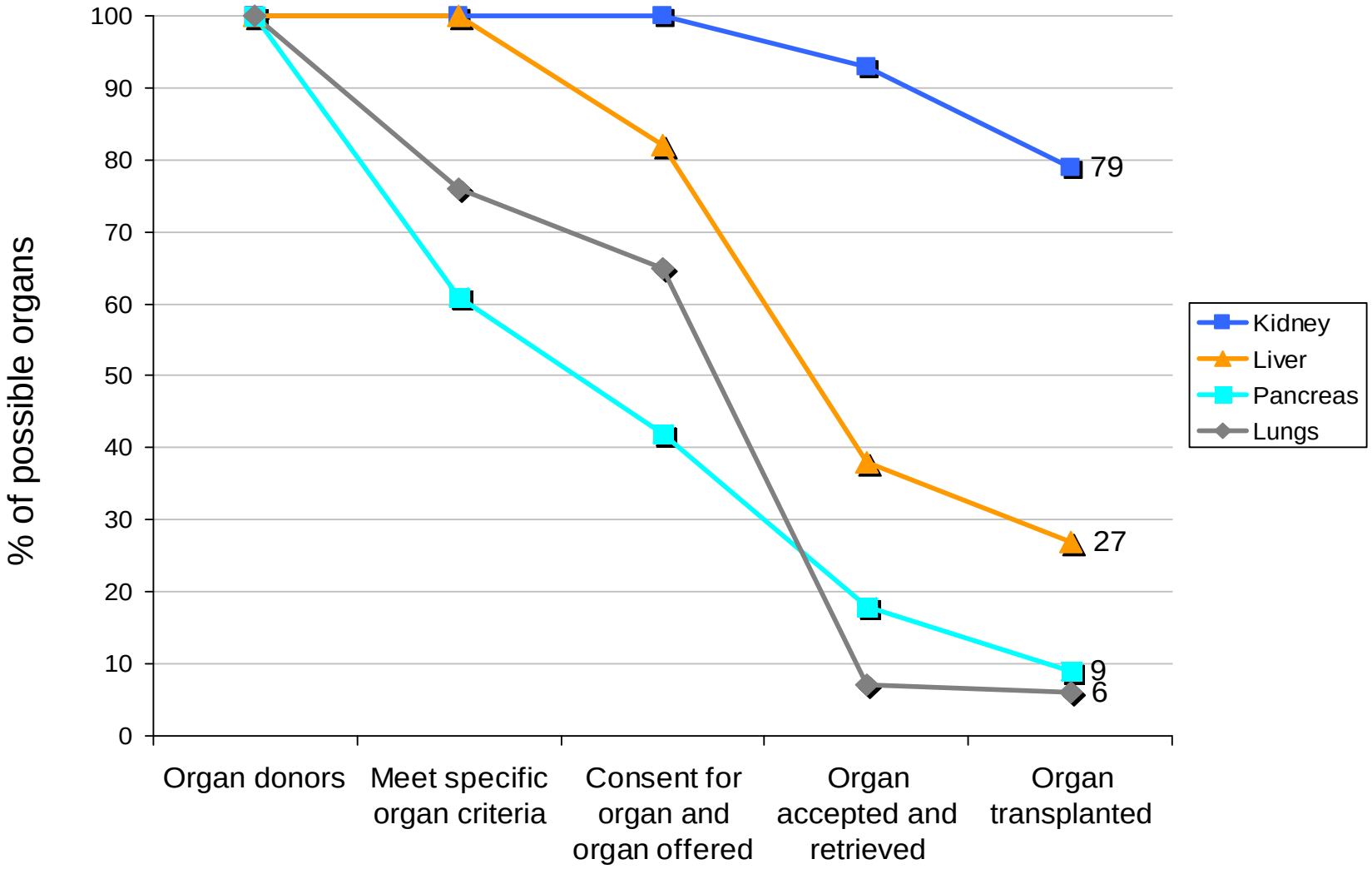
Use of organs from 637 DBD donors, 2010/11

NHS Blood and Transplant



Use of organs from 373 DCD donors, 2010/11

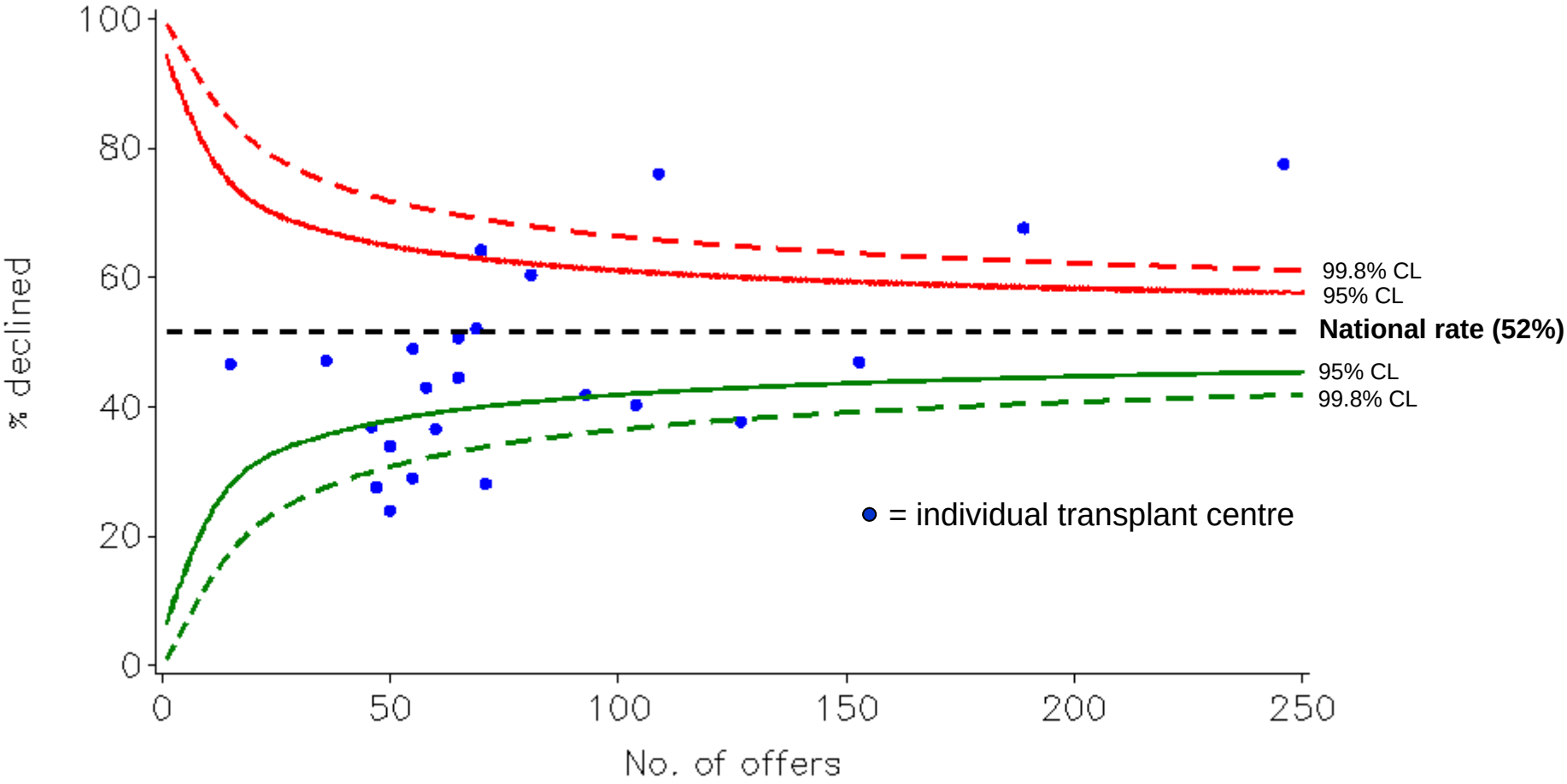
NHS Blood and Transplant



What is an acceptable kidney?
Centre variation

NHS Blood and Transplant

DBD kidney offer decline rate, 2011

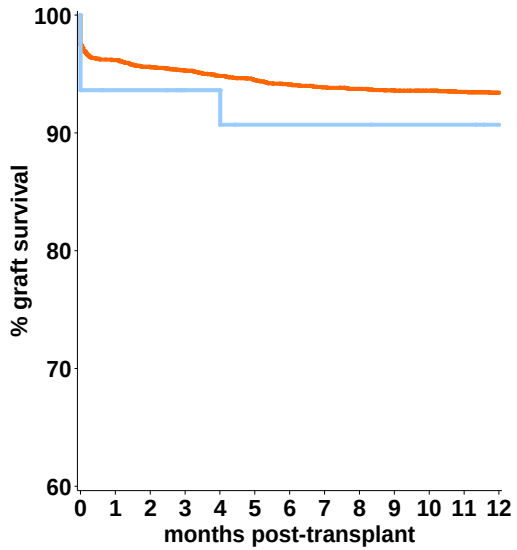


Declined Kidney Scheme

NHS Blood and Transplant

Kidneys declined by 5 centres for same donor or organ related reason

- offered in turn to small number of registered centres for patient of their choice
- formally only for DBD kidneys
- 40% of offered kidneys transplanted
- good graft outcomes



	% survival	(95% CI)	N
Not declined	93	(93 – 94)	3920
Declined	91	(77 – 97)	47

Log-rank p-value = 0.5

2010/11 - only 33% of kidneys offered but not transplanted met the criteria and were offered through the 'Declined Kidney Scheme'

→ New arrangements being agreed

Split liver transplantation – is this being maximised?

NHS Blood and Transplant

UK – 1.8 split liver transplants pmp in 2010, highest in Europe

Data: Oct 2010 – Sept 2011

75 livers available for splitting to benefit two paediatric recipients rather than one

36 (48%) offered for splitting with 22 (61%) subsequently split

39 (52%) not offered for splitting

→ only 22 (29%) of the 75 available livers were split for 2 transplants

Were all reasons for not splitting valid? Is there variation in practice?

The Liver Advisory Group are reviewing

NHS
Blood and Transplant

What about patient survival for those waiting for and receiving transplants?

Patient survival from listing

NHS Blood and Transplant

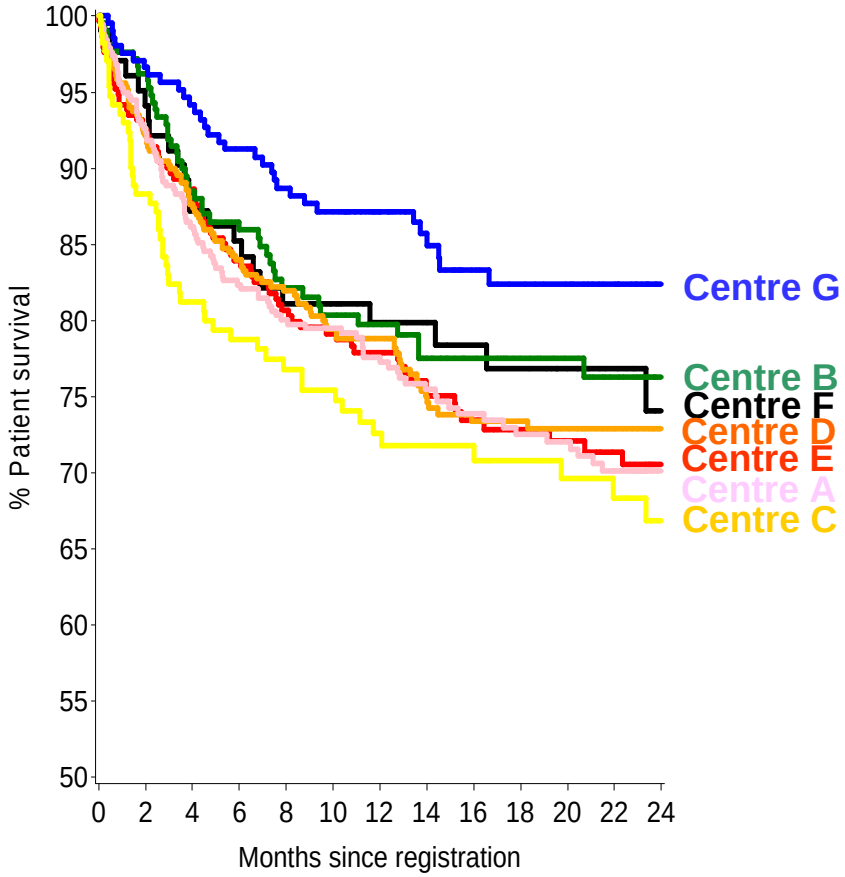
Need to examine survival from listing for transplant not just post-transplant survival – to give a more balanced view of patient outcomes

Example – liver patient survival after first adult elective transplant listing, 2006-2009

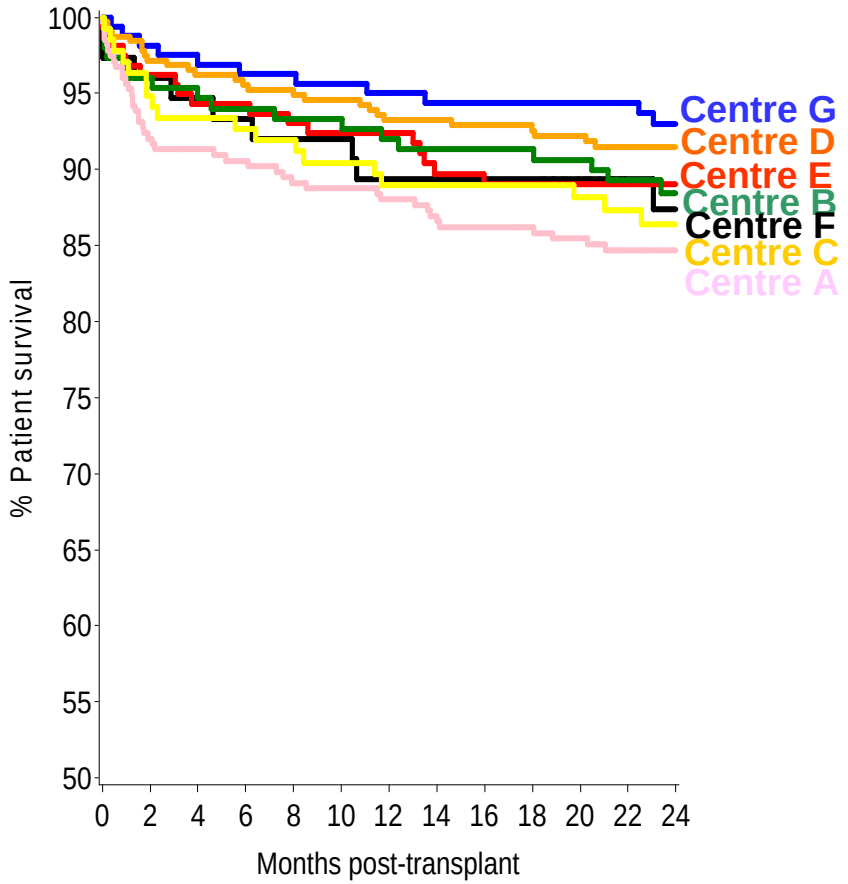
Liver patient survival

NHS Blood and Transplant

Survival on the transplant list

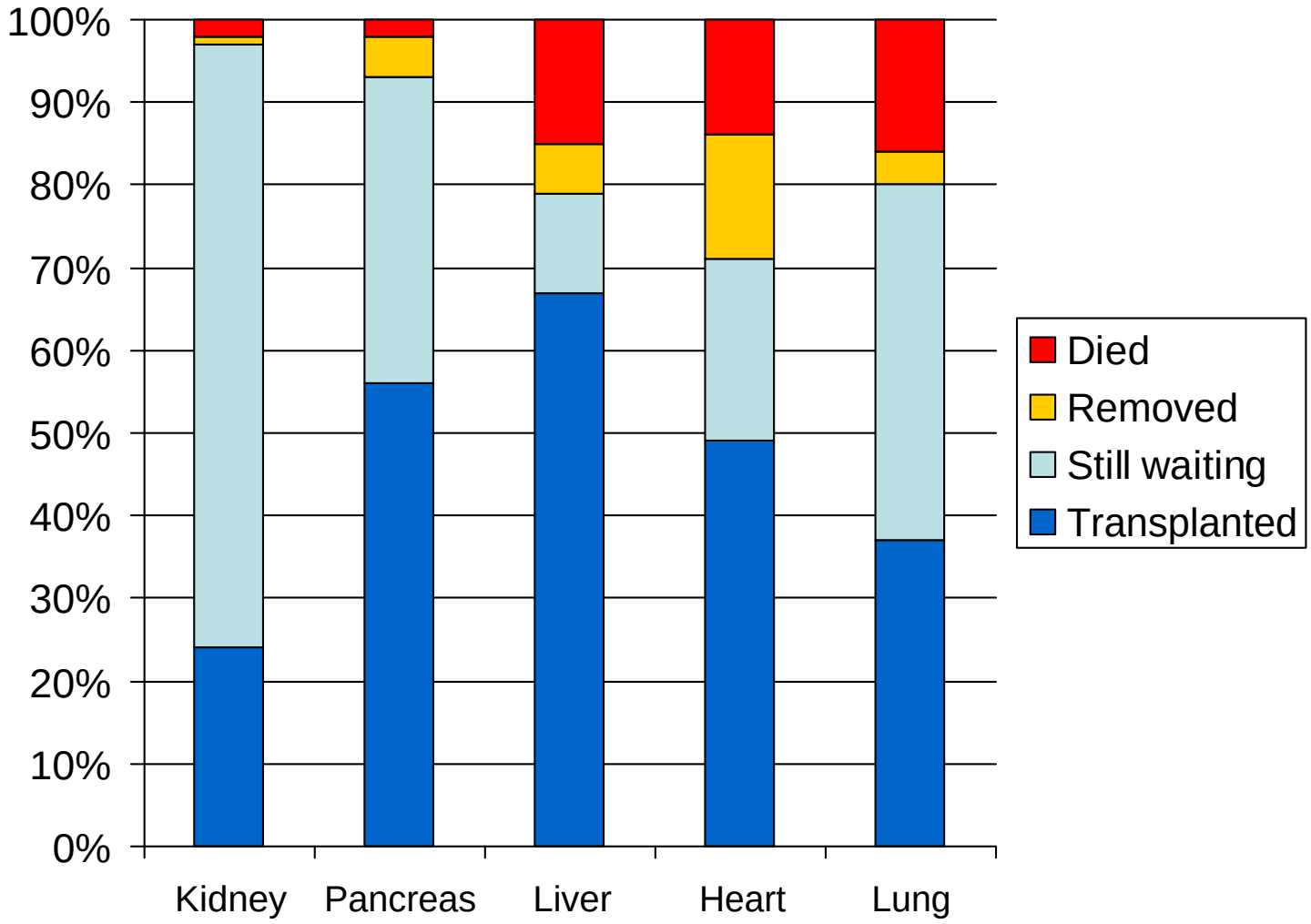


Survival post-transplant



Patient outcomes one year after listing for transplant

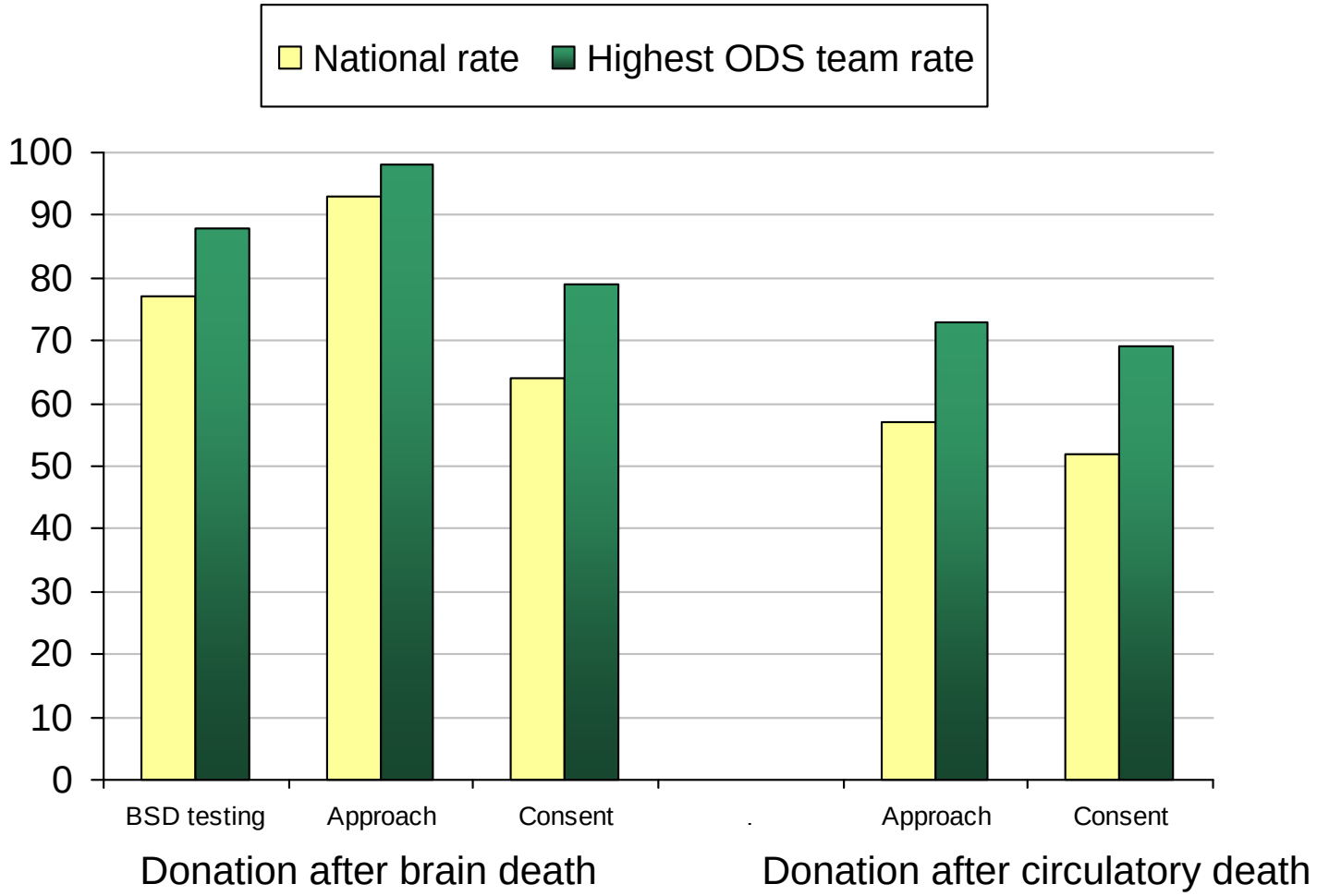
NHS Blood and Transplant



Urgent heart patients and super-urgent liver patients excluded

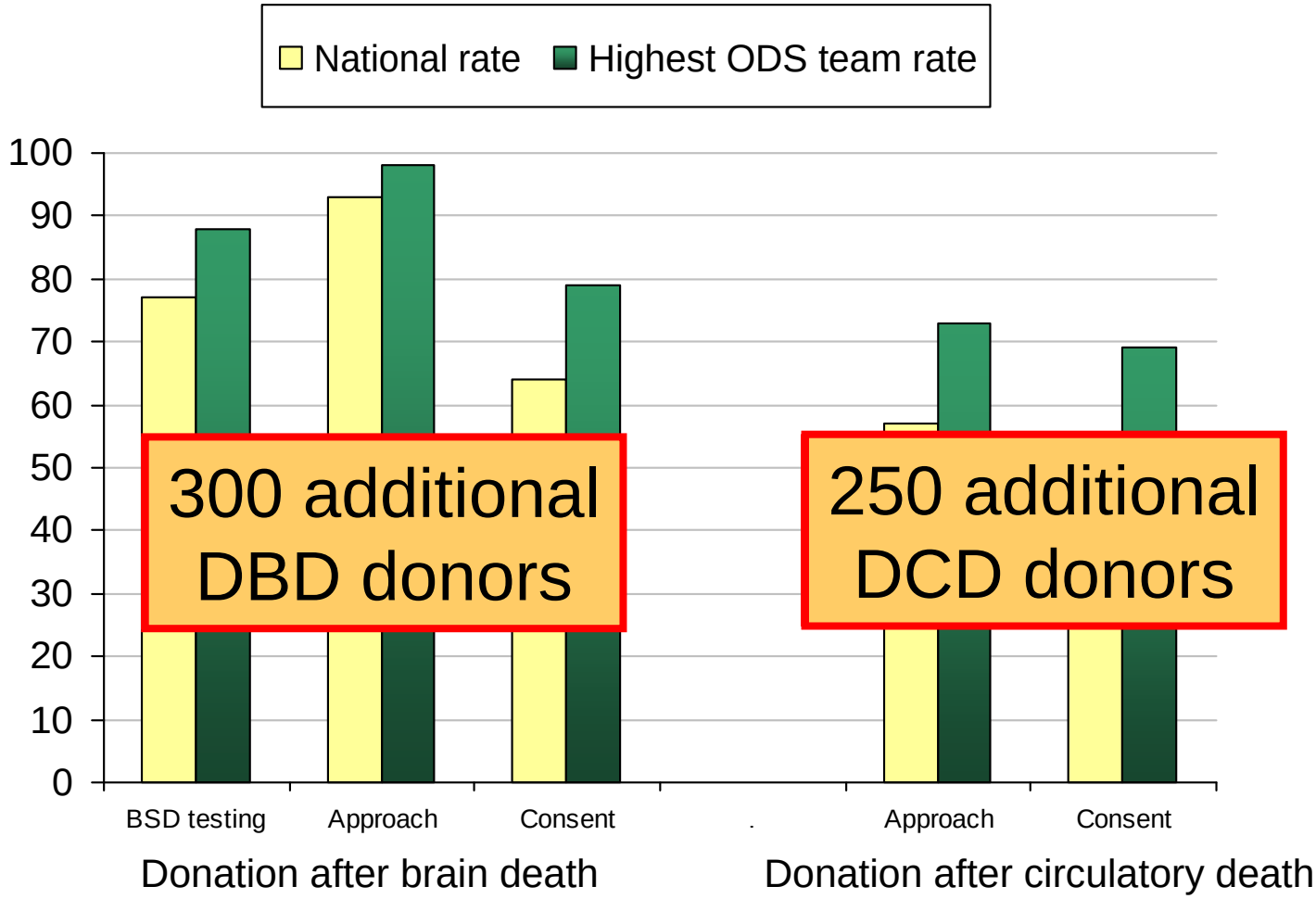
Donor numbers will increase further

NHS Blood and Transplant



Donor numbers will increase further

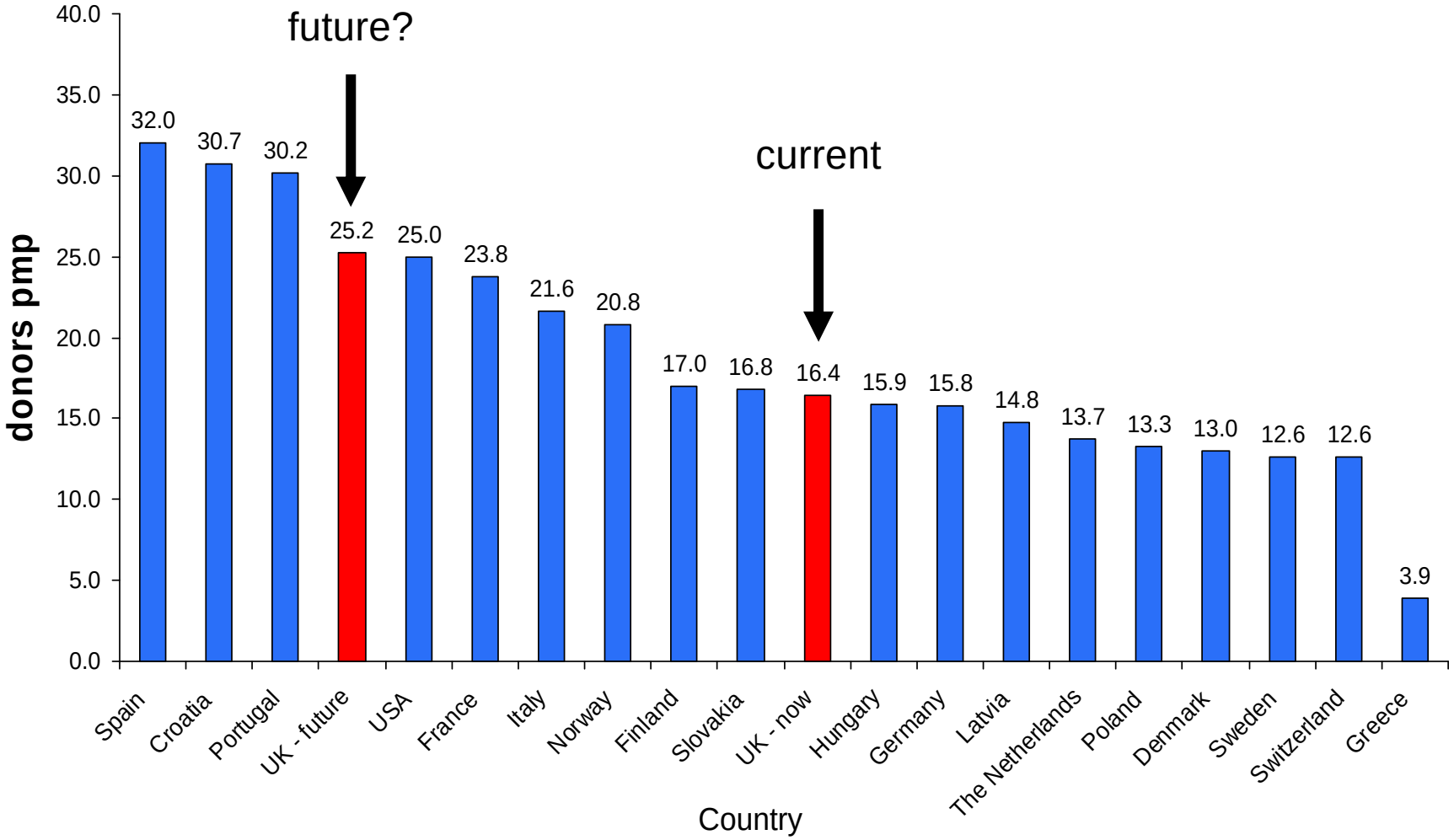
NHS Blood and Transplant



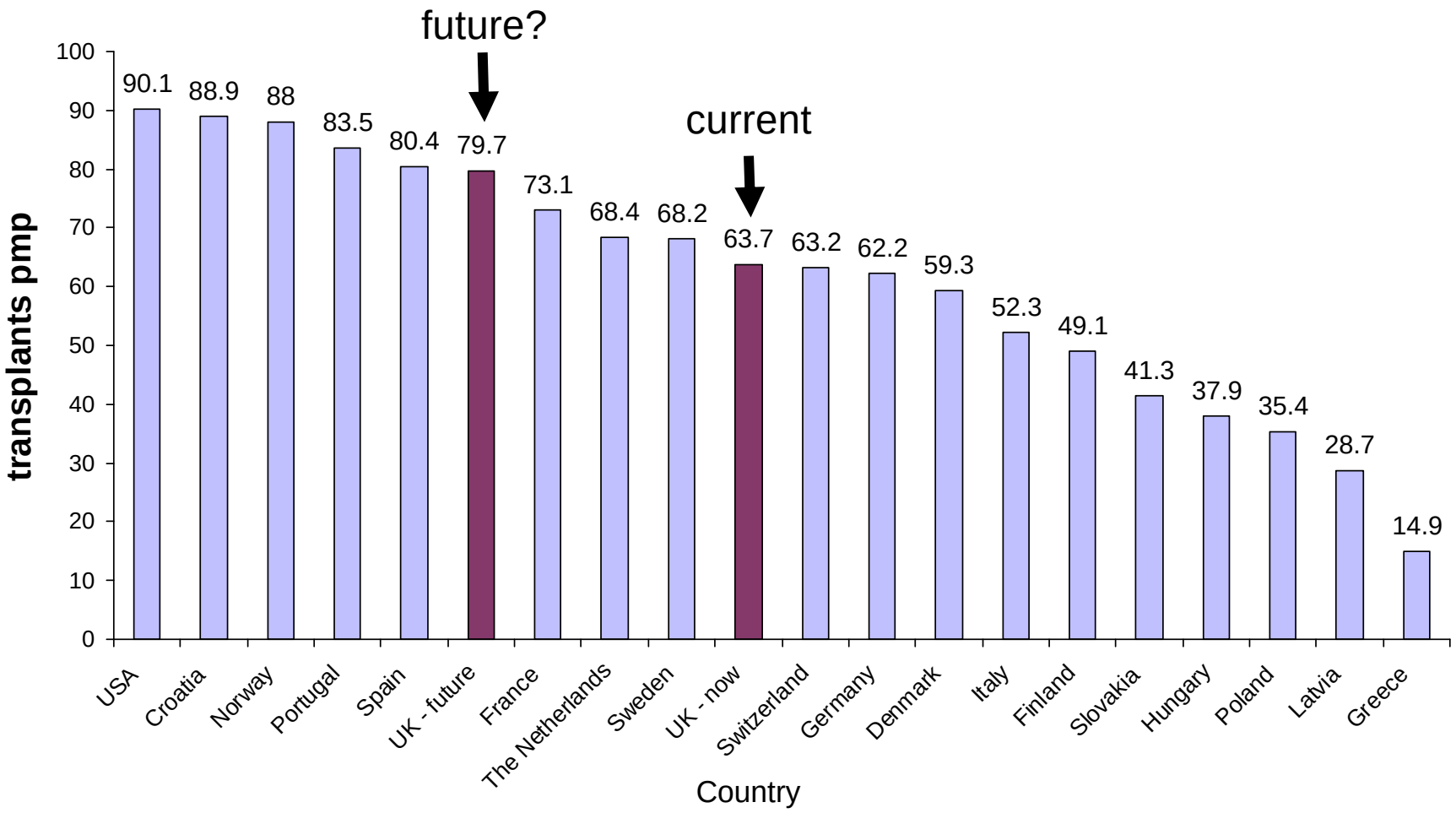
How would we compare then?

NHS Blood and Transplant

Deceased organ donor rates for Europe and the USA, 2010



Total transplant rates

NHS Blood and Transplant

Total transplant rates from deceased and living donors for Europe and the USA, 2010