Deceased Donor Transplantation: Strategies to Optimise Deceased Organ Donation Programmes

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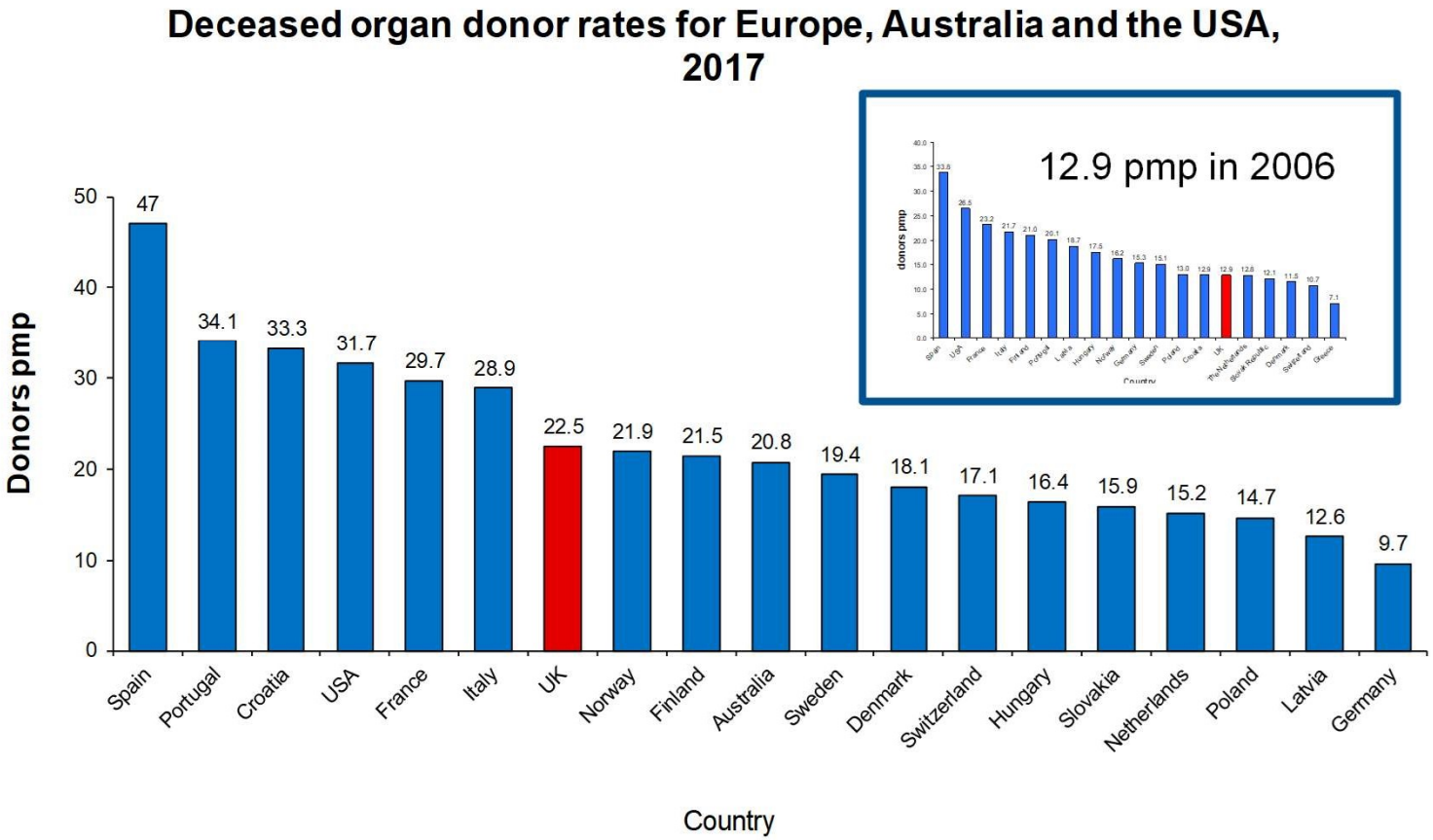
University of Cape Town

International comparisons – Deceased donor rates in 2017

NHS Blood and Transplant



Source: Council of Europe – Transplant Newsletter

UK Organ Donation Taskforce 2008

- Local Hospital Clinical Leads
- Specialist Nurses in Organ Donation : SNODs
- Organ Donation Committee
- UK Potential Donor Audit Trail
- National Organ Retrieval Service (NORS)

Specialist Nurses in Organ Donation: SNODs

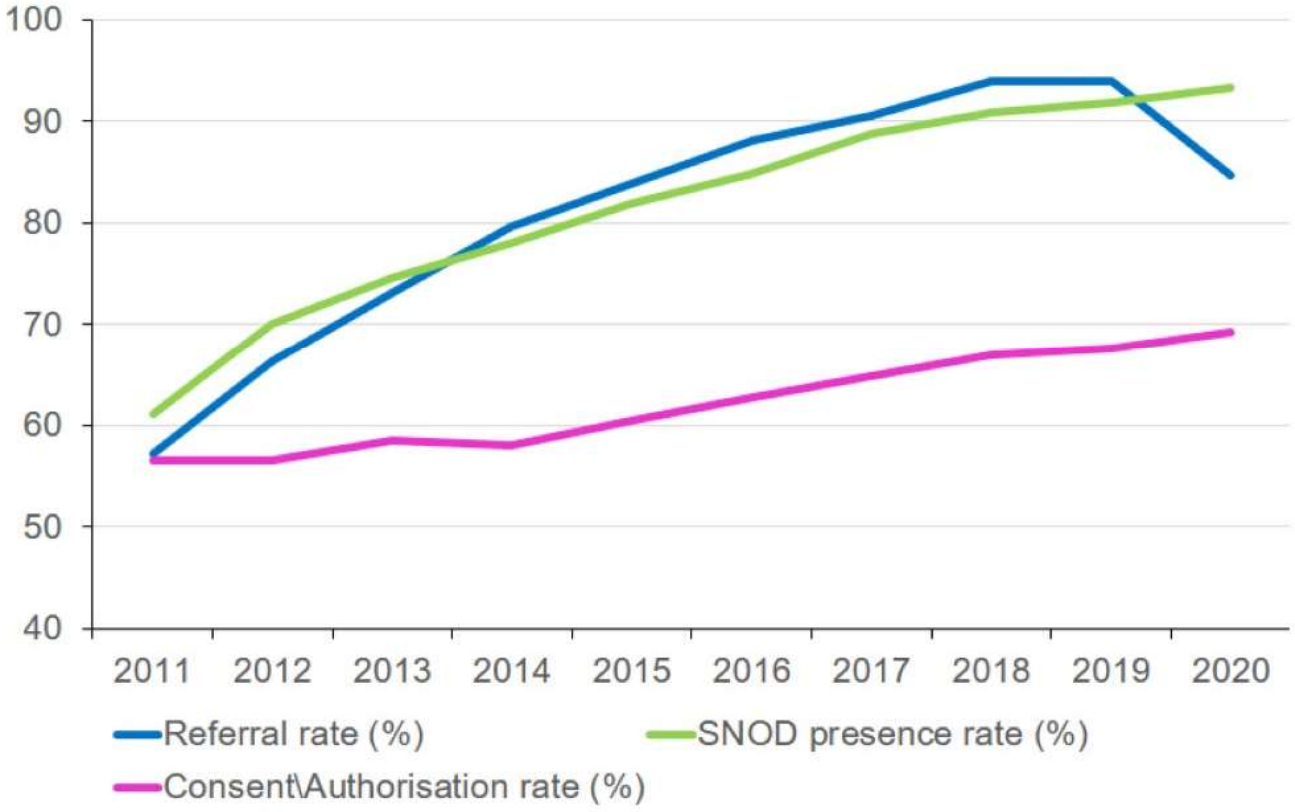
- Community-based teams across the UK

- Support potential Donor Families process of Organ Donation
- Training in Communication and Family Support
- Facilitate End of Life conversation : explore potential donor's wishes

- Refer to SNOD when intention to withdraw life sustaining treatment or perform brain stem death tests
- **PLANNING: DISCUSSING DONATION: UNDERSTANDING LOSS**
- **FAMILY AFTERCARE SUPPORT**

Potential donation over 10 years

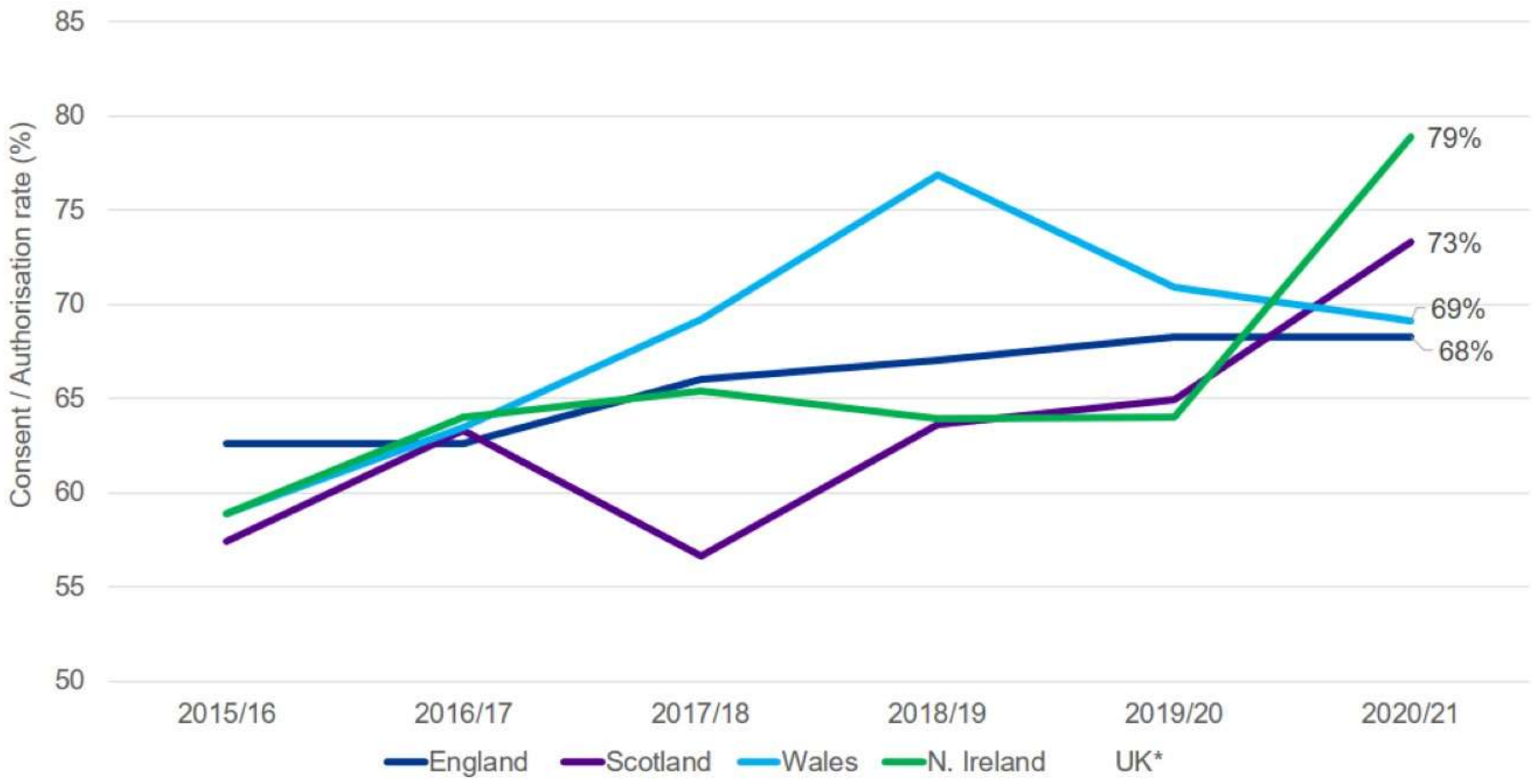
NHS Blood and Transplant



Yes I donate ORGAN DONATION

Trends in consent rates by UK nation

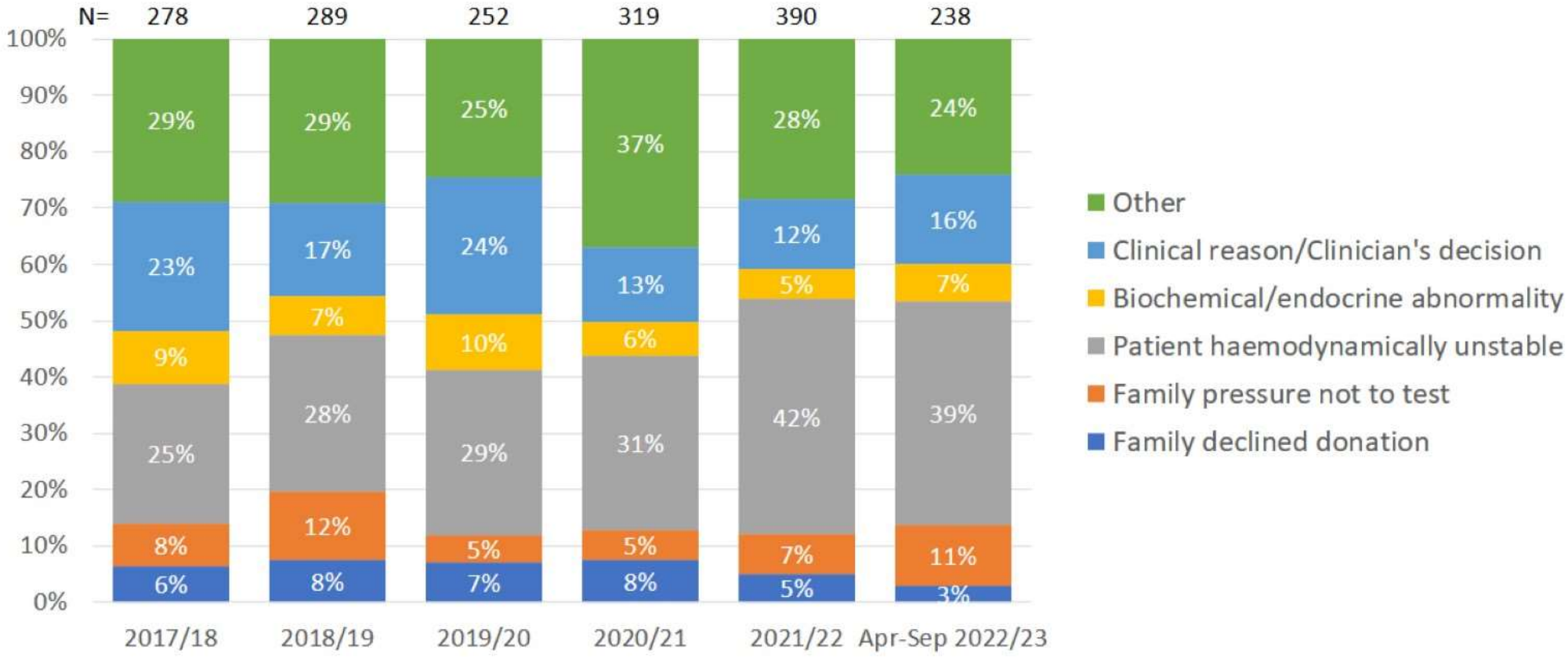
NHS Blood and Transplant



Reasons patients not tested

April 2017 – September 2022

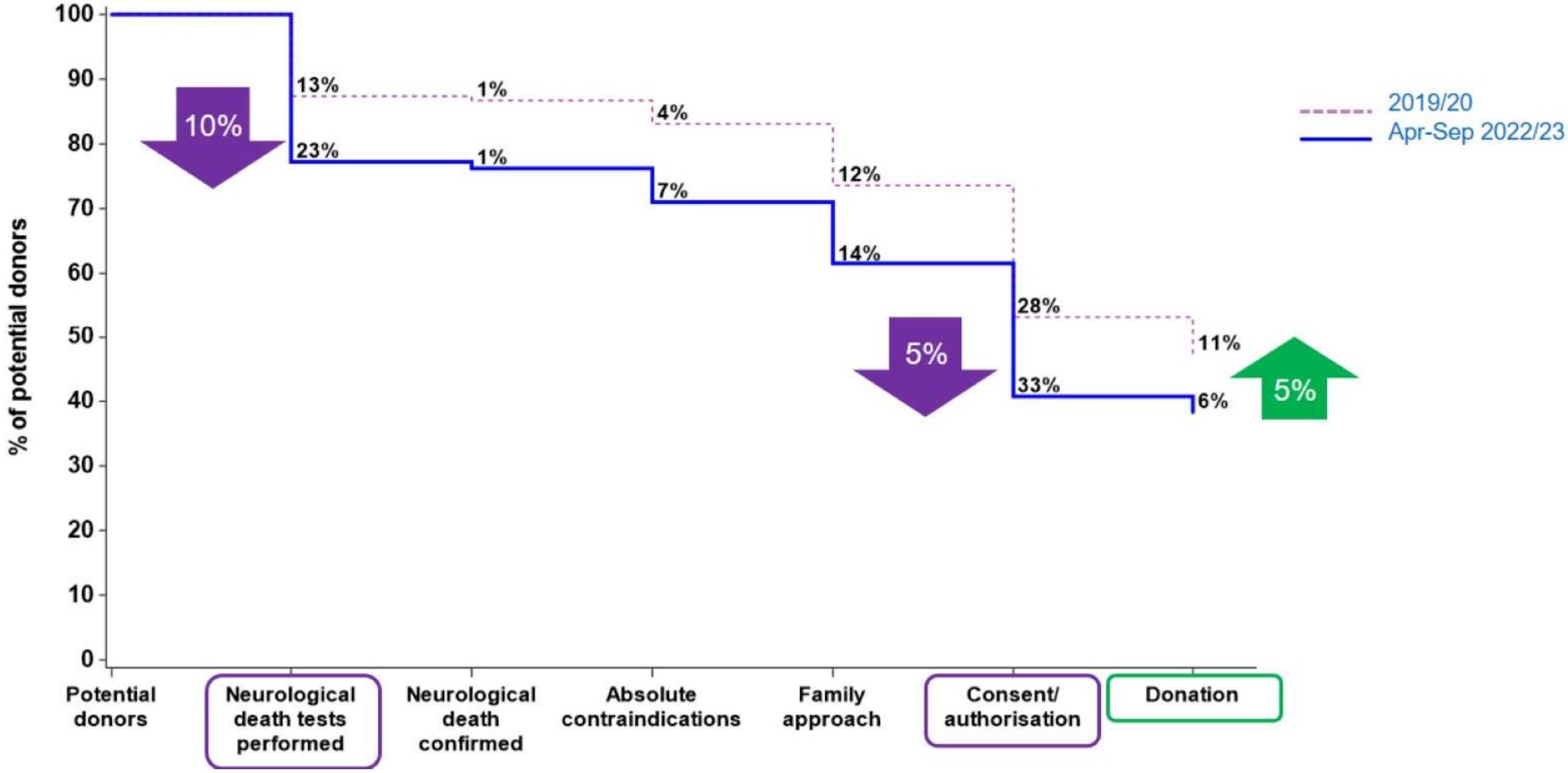
NHS Blood and Transplant



Key stages in DBD donation process

Apr-Sep 2022/23 compared to 2019/20

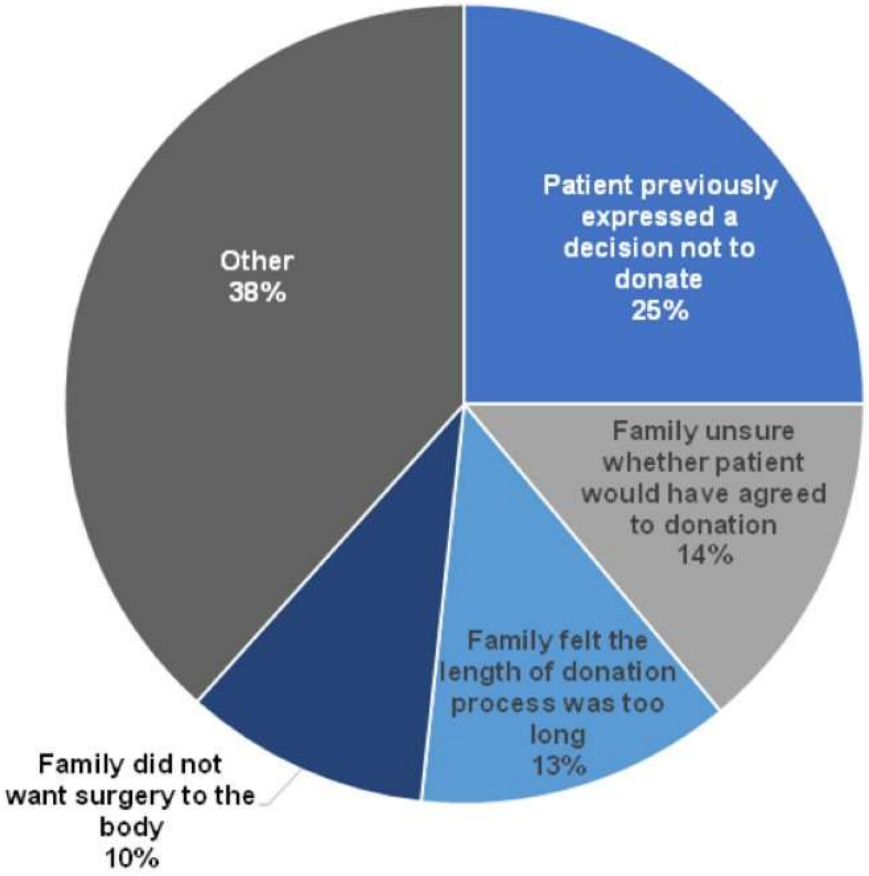
NHS Blood and Transplant



Why analyse factors influencing consent?

NHS Blood and Transplant

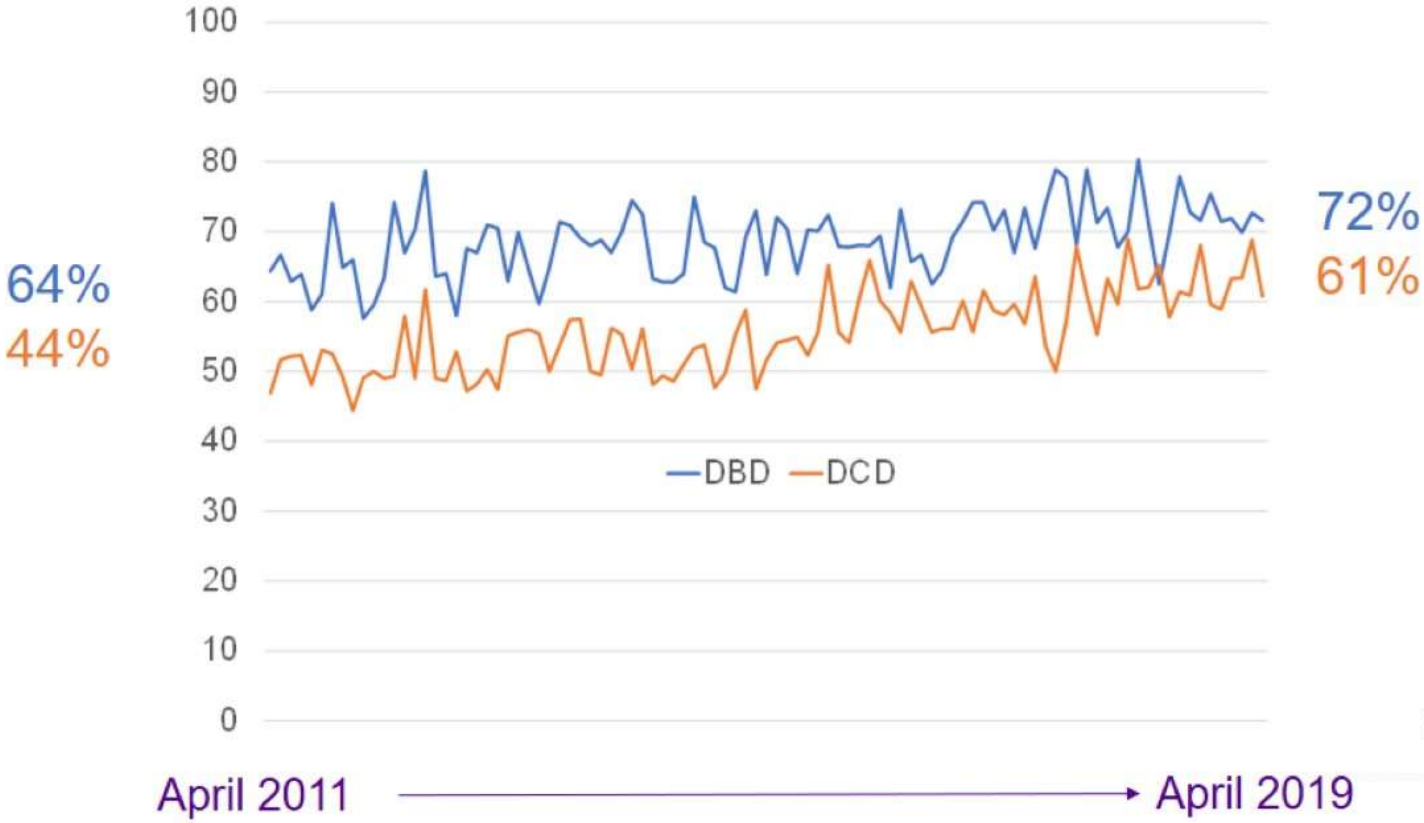
1,048 refusals for organ donation in 2019/20



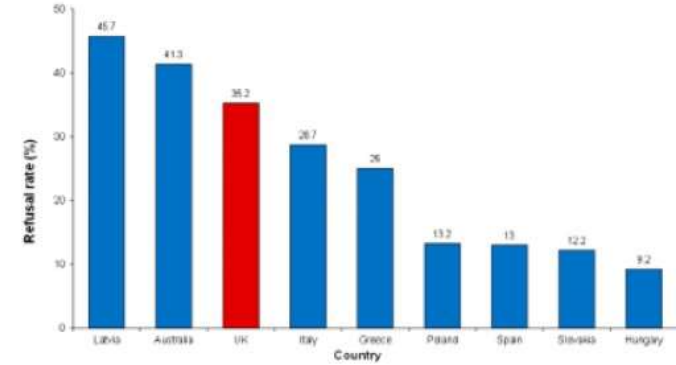
Why analyse factors influencing consent?

NHS Blood and Transplant

Consent rates in the UK are on the rise



UK still has high refusal rate



Note – limited international data available on family refusal rates
Source: Council of Europe – Transplant Newsletter

Patient Factors

NHS Blood and Transplant

Ethnicity

Socioeconomic category

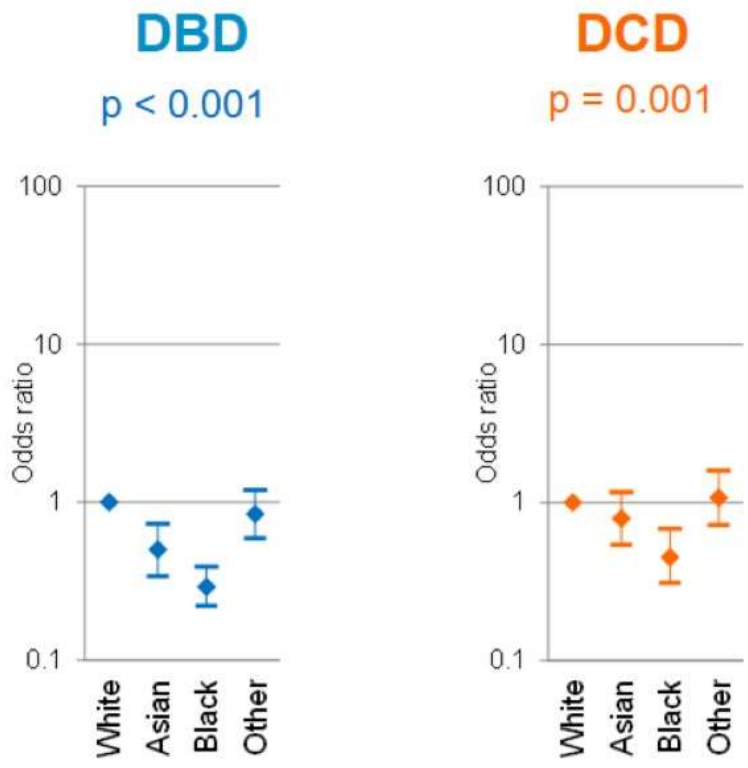
Patient's prior donation decision

Sex

Religion/Belief

Age

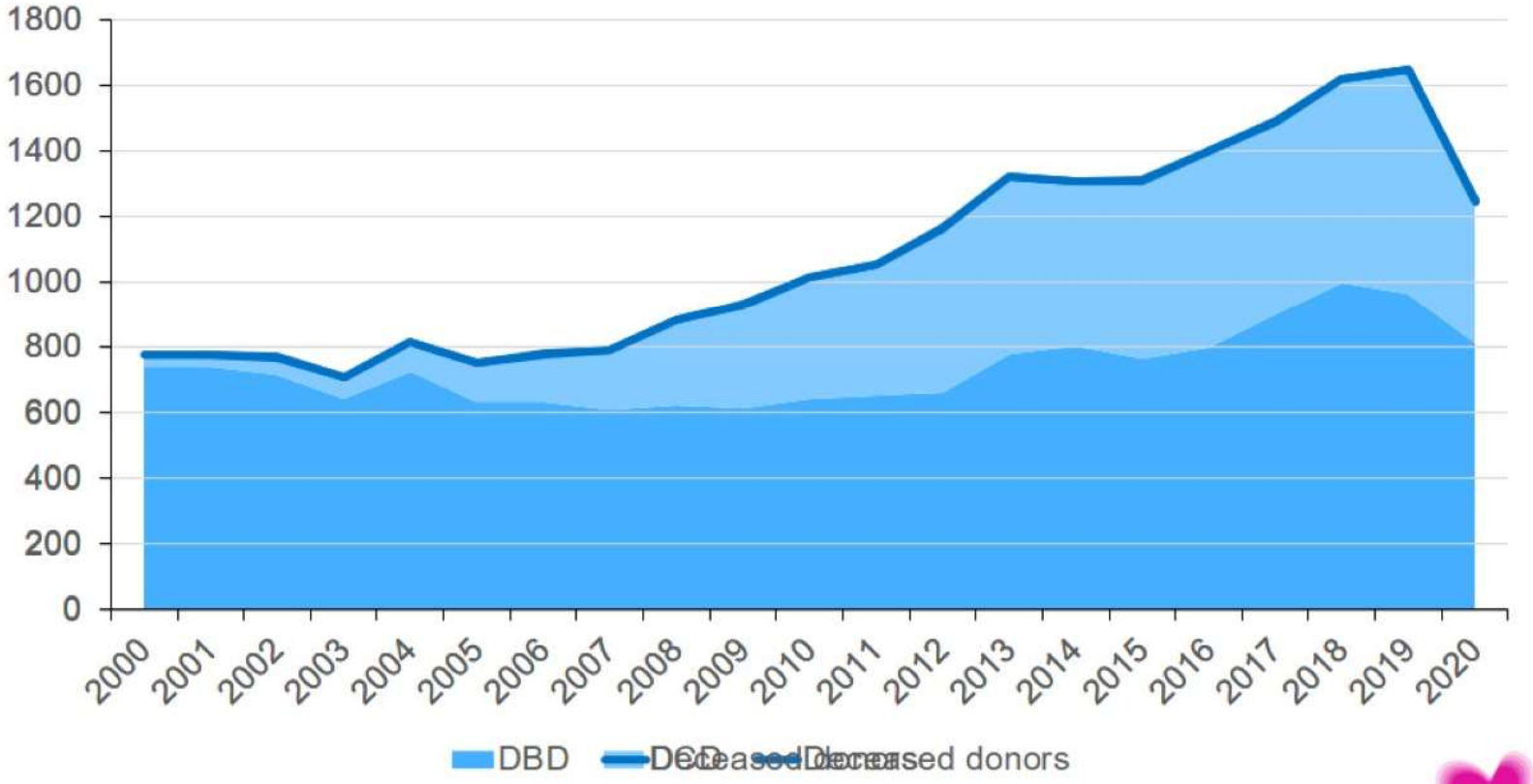
Cause of death



Consent less likely in patients from BAME communities

UK deceased donation

NHS Blood and Transplant

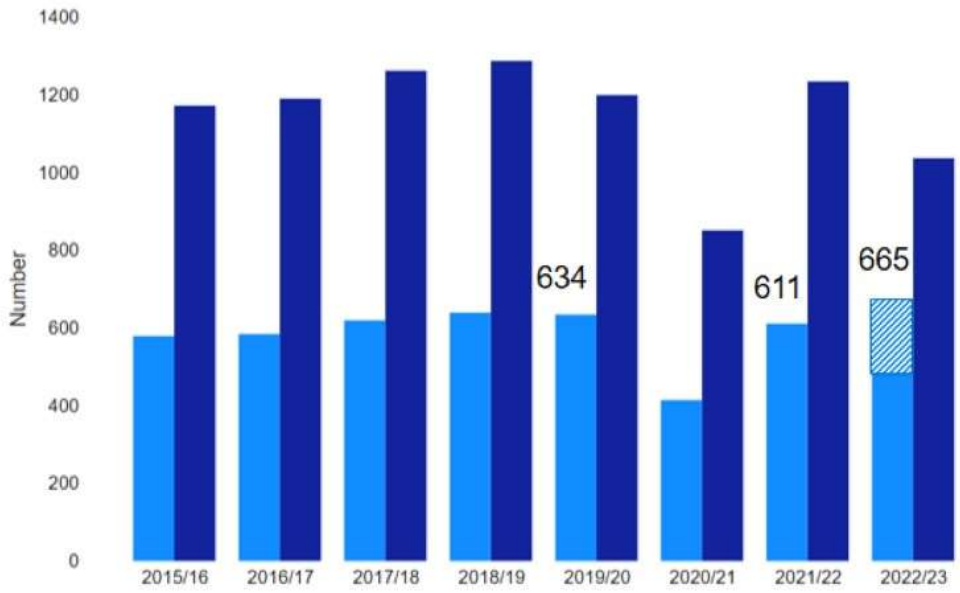


Yes I donate ORGAN DONATION

Trends in donation by donor type

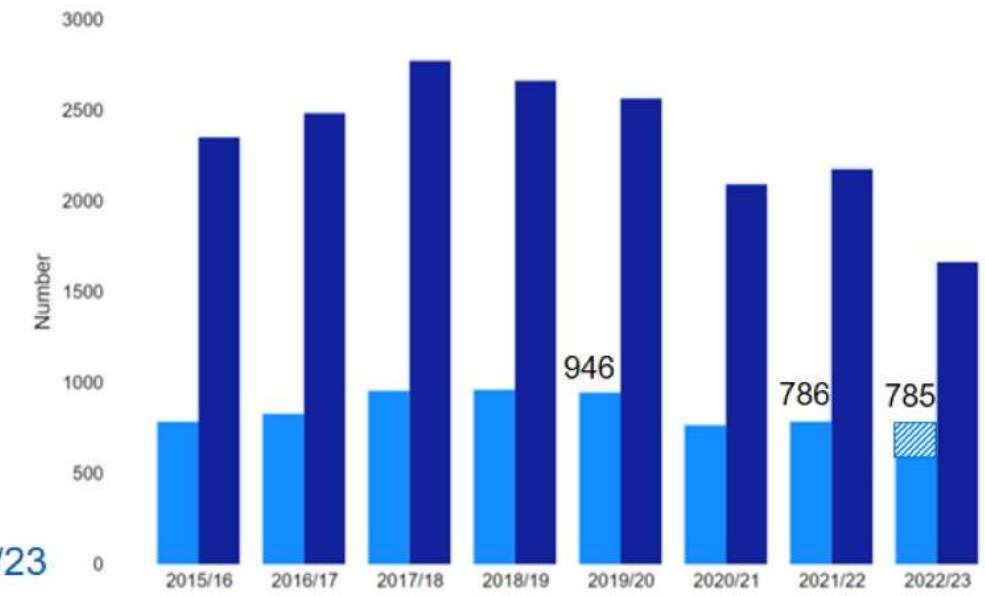
NHS Blood and Transplant

DCD



Since 2019/20:
DCD declined 4% - 2021/22
Projected to increase 5% - 2022/23

DBD



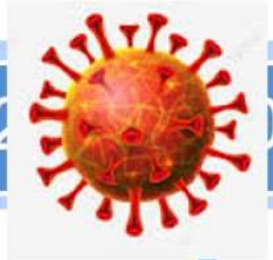
Number of donors
Number of resulting transplants

Since 2019/20:
DBD declined 17% - 2021/22
Projected to decline 17% - 2022/23

Legislation changes in the UK

NHS Blood and Transplant

2015 2016 2017 2018 2019 2020 2021



Wales
1 December 2015

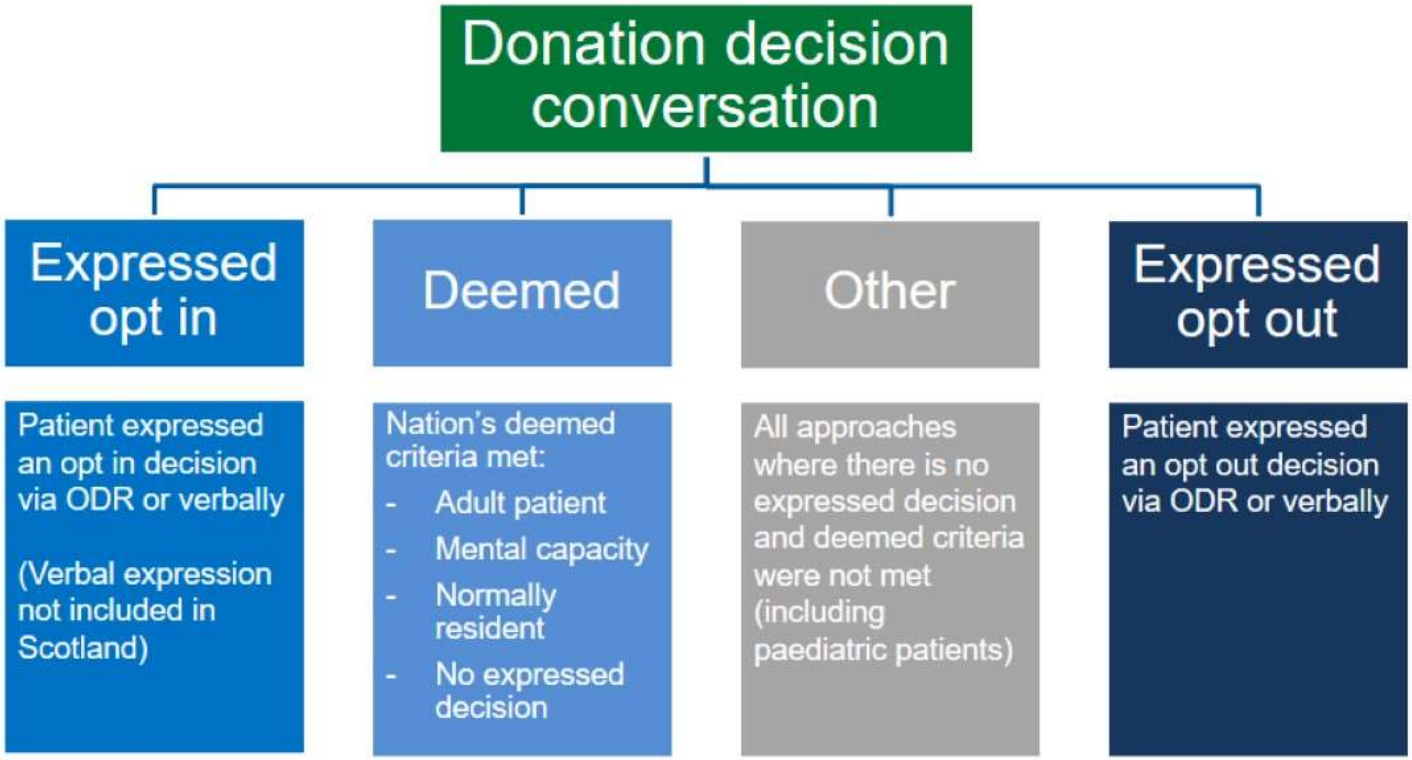
Scotland
26 March 2021

England
20 May 2020

Northern Ireland – proposed 2022

UK consent groups

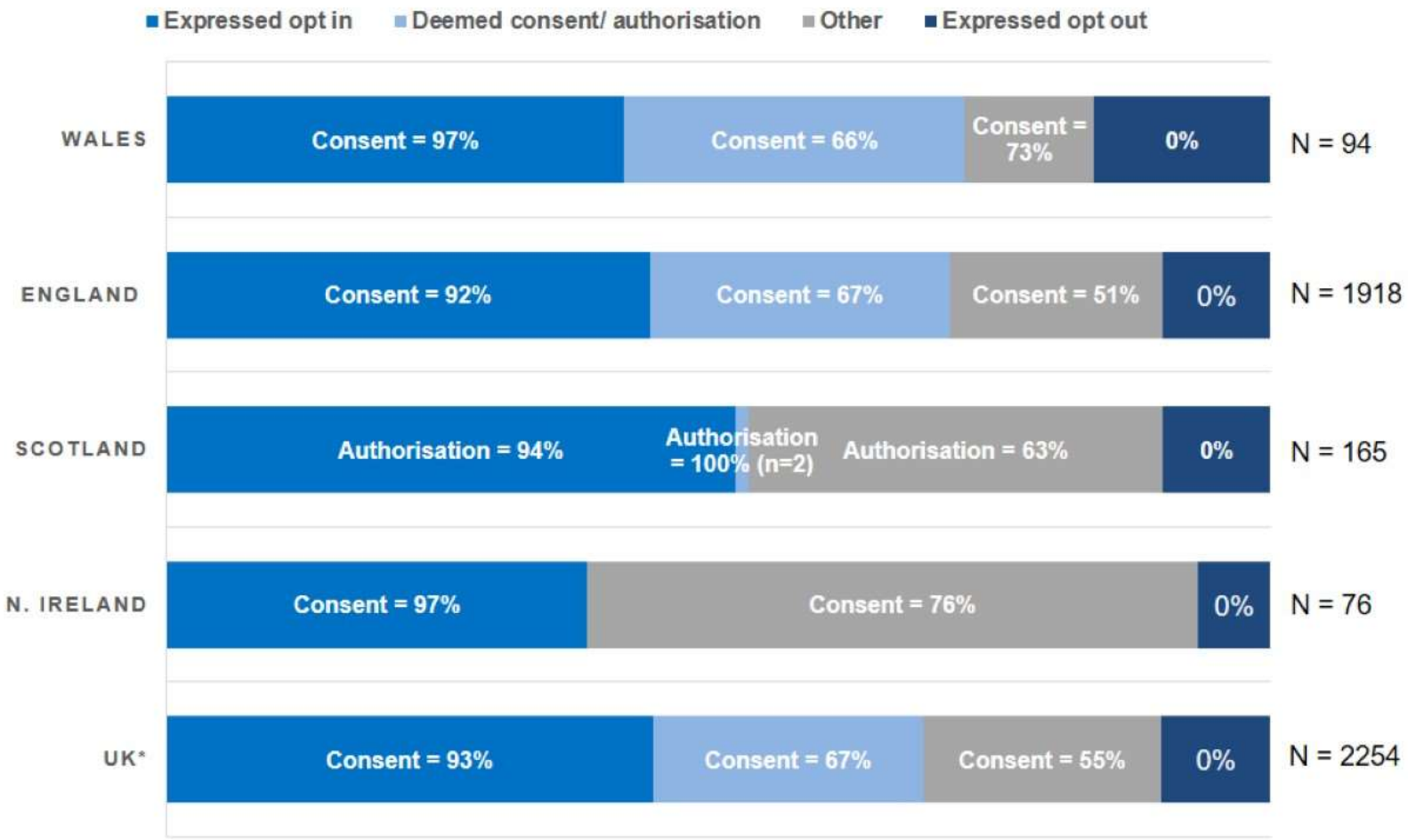
NHS Blood and Transplant



Yes I donate ORGAN DONATION

Consent breakdown 2020/21

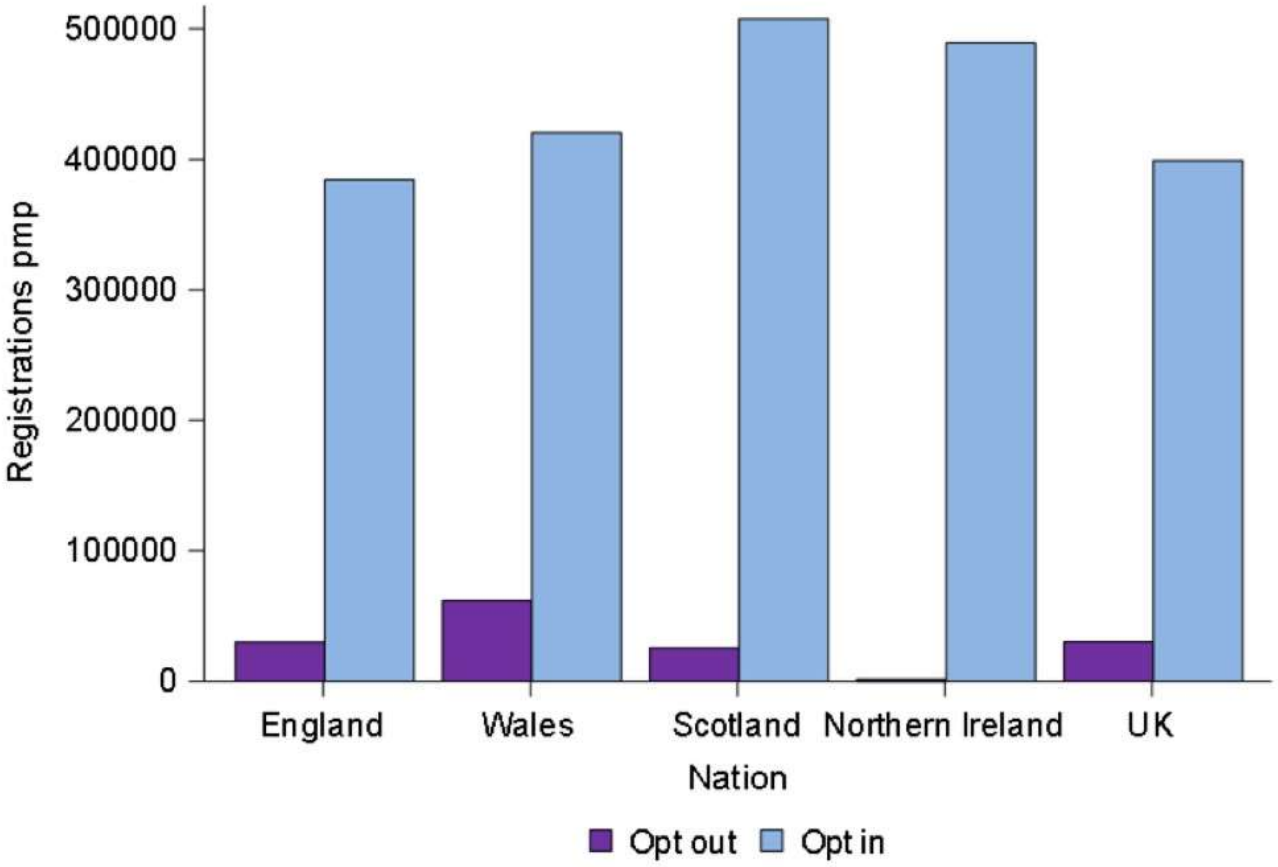
NHS Blood and Transplant



Yes I donate ORGAN DONATION

ODR registrations pmp by 31 March 2021

NHS Blood and Transplant



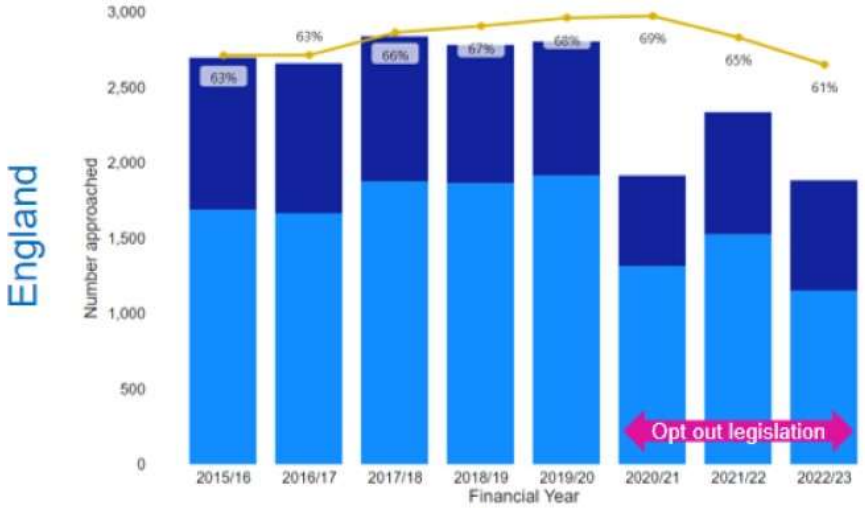
Nation (pop.)	Opt in
Scotland (5.5m)	51%
N. Ireland (1.9m)	49%
Wales (3.2m)	42%
England (56.3m)	39%
UK (66.8m)	40%

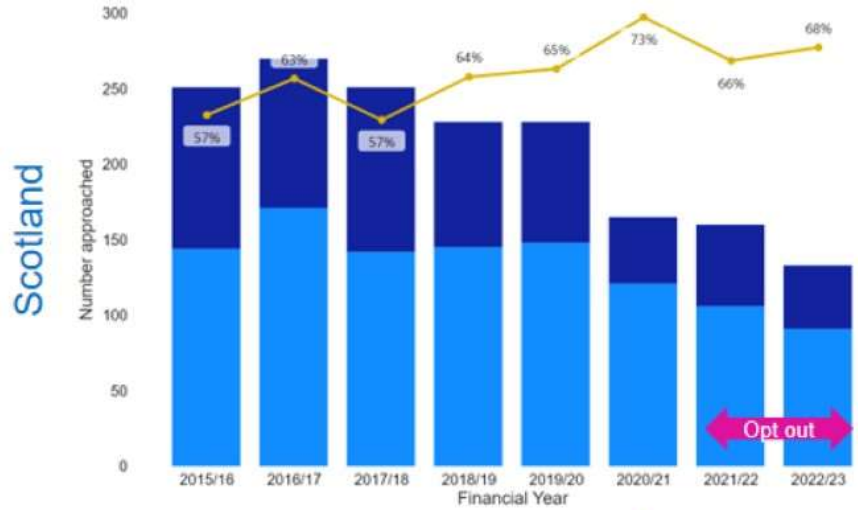
Nation (pop.)	Opt out
Wales (3.2m)	6%
England (56.3m)	3%
Scotland (5.5m)	3%
N. Ireland (1.9m)	<1%
UK (66.8m)	3%

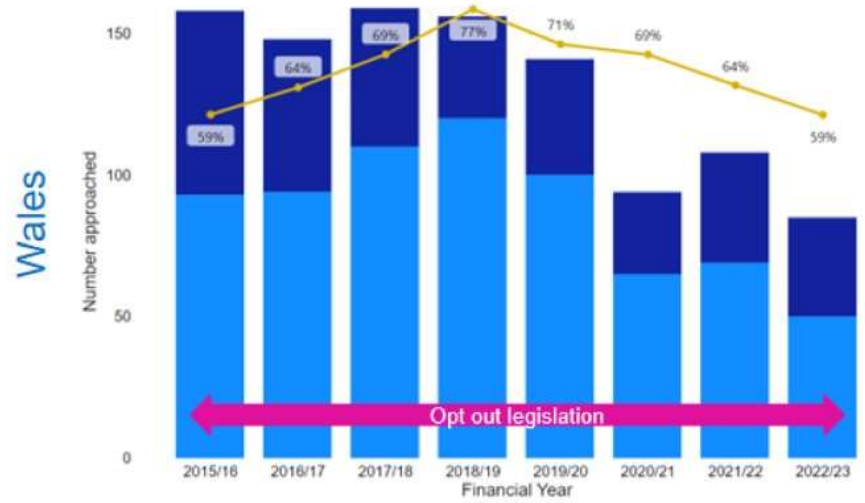
Yes I donate ORGAN DONATION

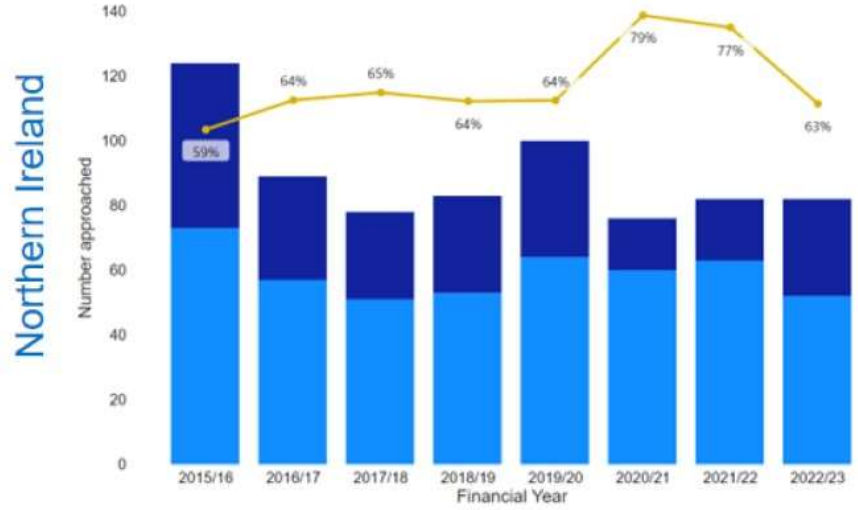
Consent / authorisation rates by UK nation

NHS Blood and Transplant





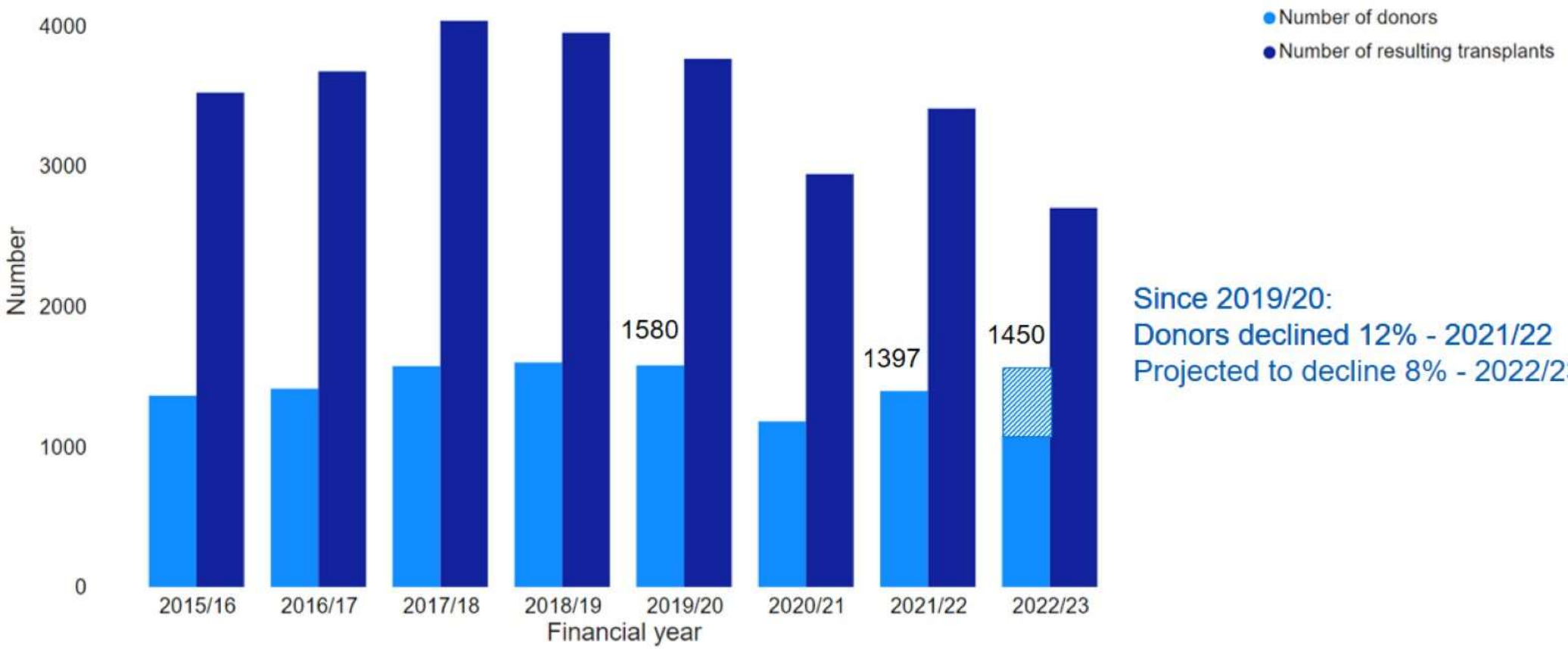




Number of donors and resulting transplants

April 2015 – December 2022

NHS Blood and Transplant



Since 2019/20:
Donors declined 12% - 2021/22
Projected to decline 8% - 2022/23

Analysis cohort

NHS Blood and Transplant

Data extracted from UK Potential Donor Audit

Revalidating previous analysis with new cohort and additional factors[1]

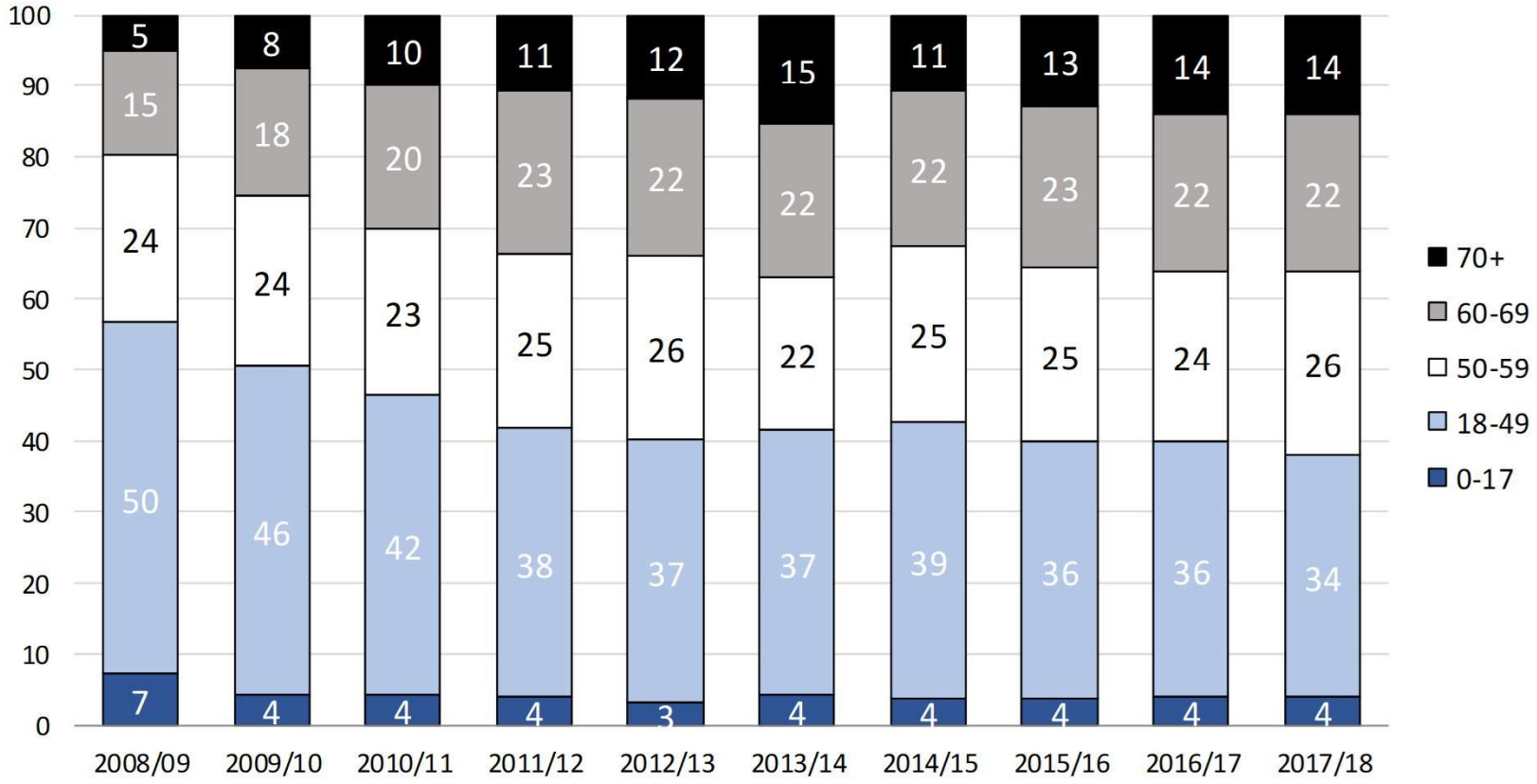
1st April 2014 – 31st March 2019

15,465 UK family approaches	6,060 DBD	9,405 DCD
9,905 consents	4,260 DBD	5,645 DCD
	70%	60%

[1] Hulme W, et al. Factors influencing the family consent rate for organ donation in the UK. *Anaesthesia* 2016 Sep;71(9):1053-63

Age of deceased donors

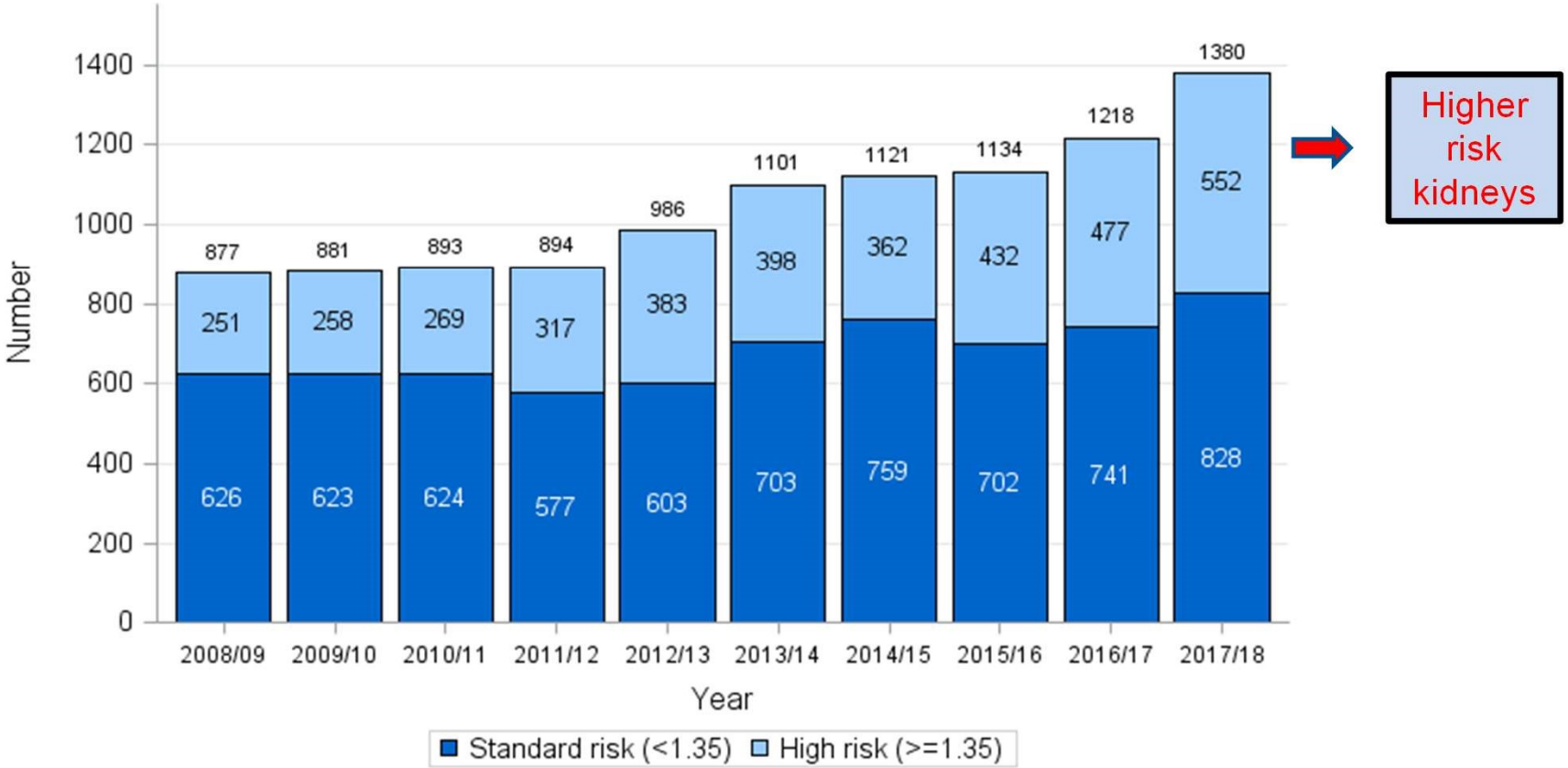
NHS Blood and Transplant



UK Kidney Donor risk index of transplanted DBD kidneys

NHS Blood and Transplant

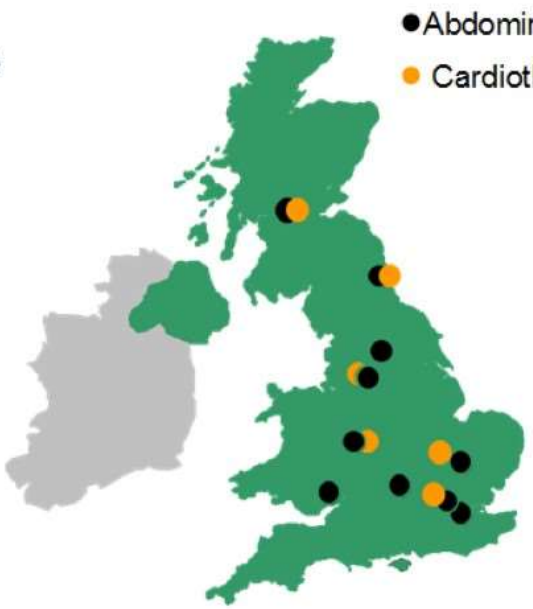
Figure 5.10 UK Kidney Donor Risk Index of transplanted DBD donor kidneys
1 April 2008 - 31 March 2018



The National Organ Retrieval Service (NORS)

NHS Blood and Transplant

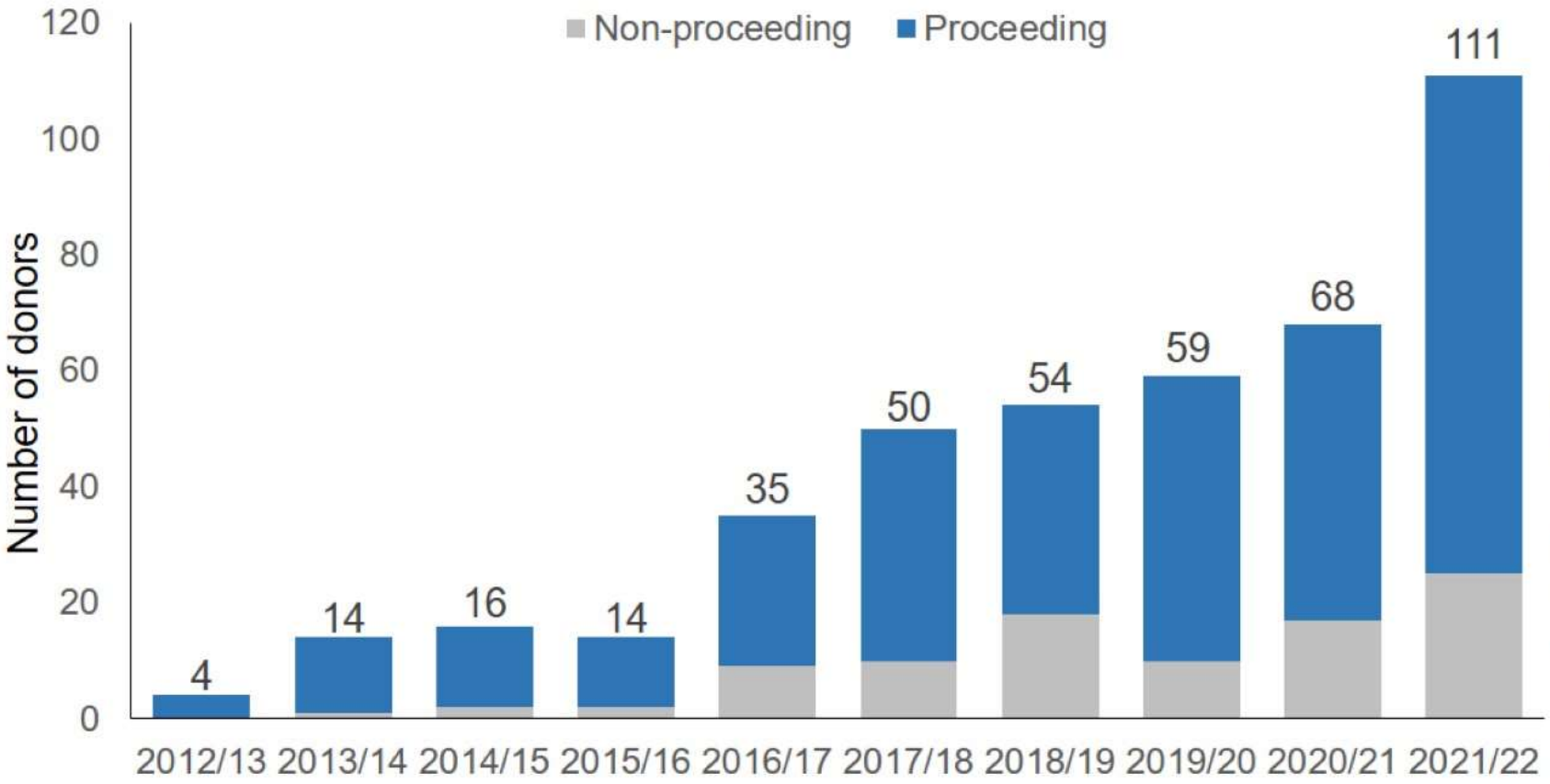
- NHSBT commission **10 abdominal** and **6 cardiothoracic** surgical teams to retrieve organs from deceased donors in the UK
- Teams are mobilised to donors when at least one organ has been accepted
- Introduced in 2010
- Several reviews since introduction leading to current structure
- At any given time, **8 abdominal** and **3 cardiothoracic** teams are on-call for retrieval



- Novel technologies are outwith the standard commissioned service

NRP donor attendances

NHS Blood and Transplant



425 attendances over decade

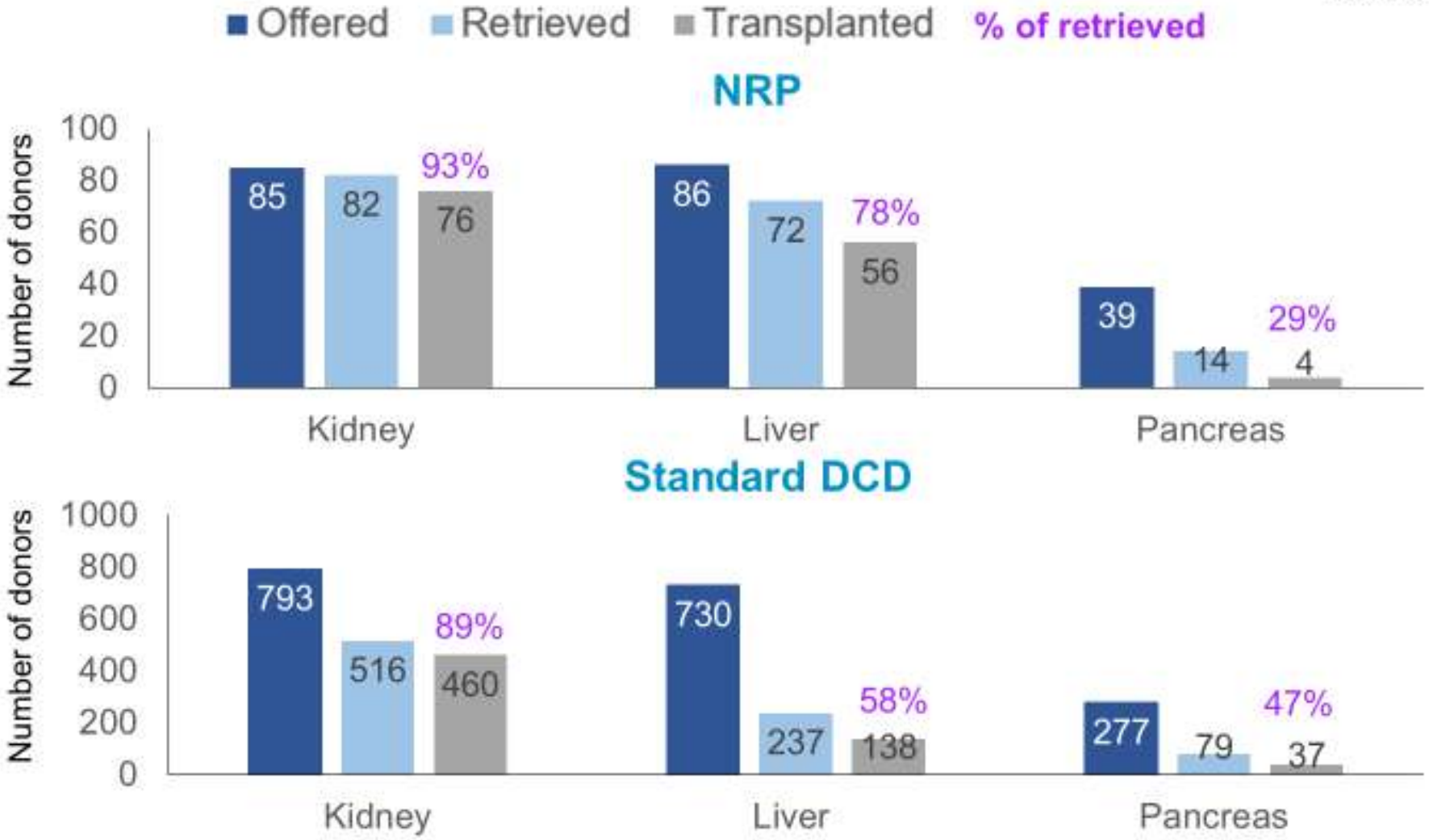
36 TA-NRP

63% increase last year

86 (77%) proceeded to donation in 2021/22

NRP organ utilisation in 2021/22

NHS Blood and Transplant

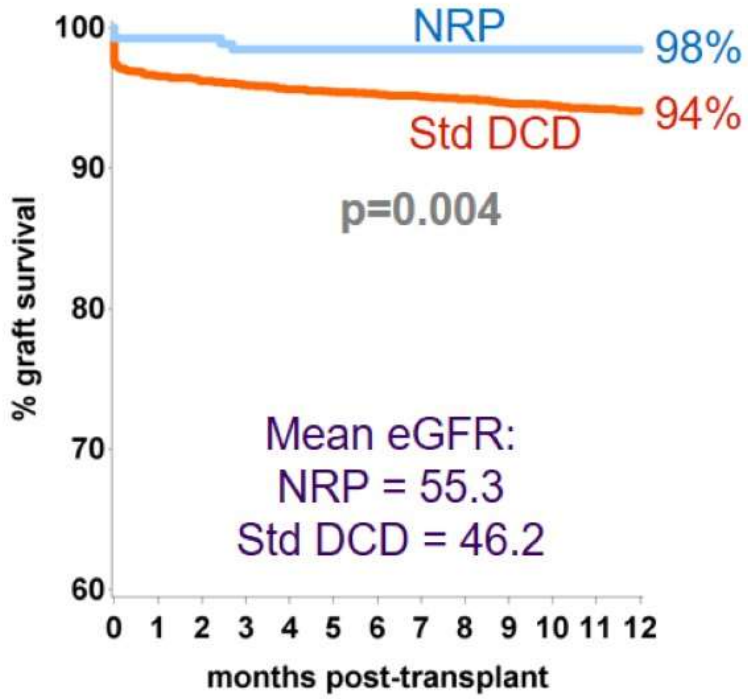


DCD kidney outcomes

NHS Blood and Transplant

- 1st adult DCD kidney only transplant, April 2016 – March 2021
- 258 NRP, 3,501 standard DCD

1 year unadjusted analysis



1 year risk-adjusted analysis

Significantly better outcomes for NRP

73% reduced chance of graft failure in NRP group – p=0.002

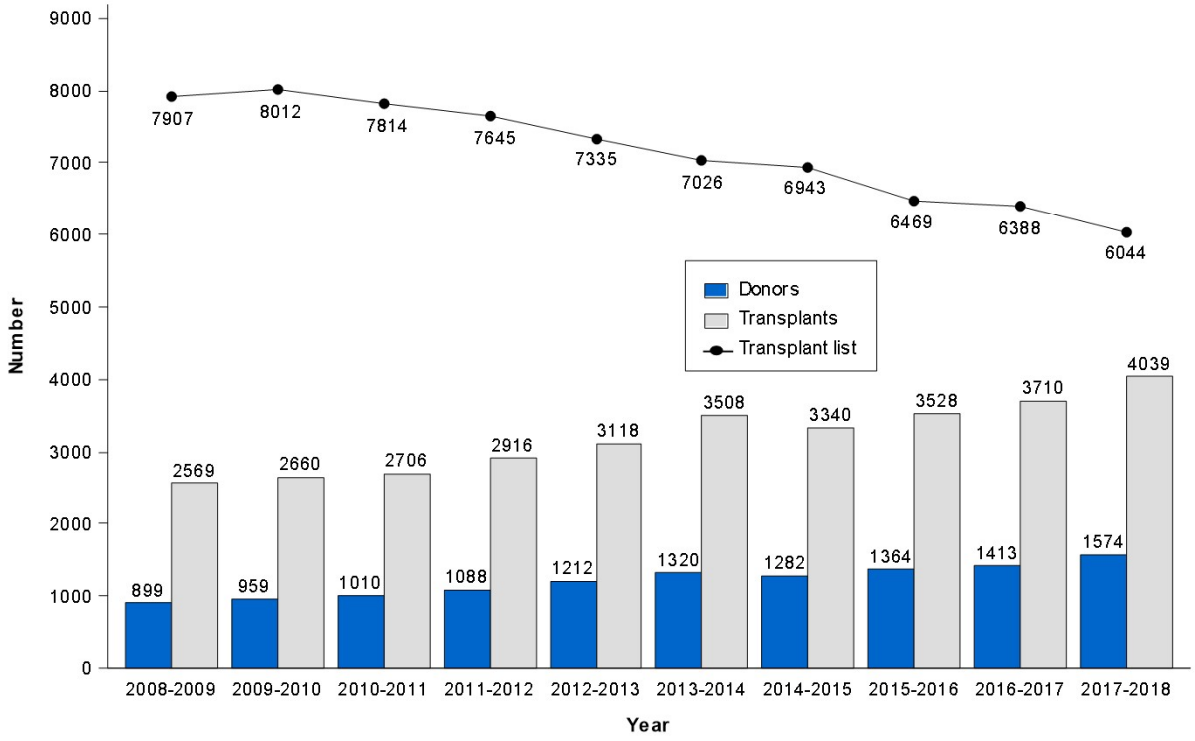
eGFR – 7.6 ml/min/1.73m² higher if NRP used – p<0.001

Deceased donors and transplants

NHS Blood and Transplant

Highest number of deceased donors in the UK last year - 1574 - resulting in 4039 transplants

Figure 2.1 Number of deceased donors and transplants in the UK, 1 April 2008 - 31 March 2018, and patients on the active transplant list at 31 March



Since Organ Donation Taskforce Recommendations (2007/8):

21% decrease in waiting lists

69% increase in transplants (all organs)

95% increase in deceased organ donors

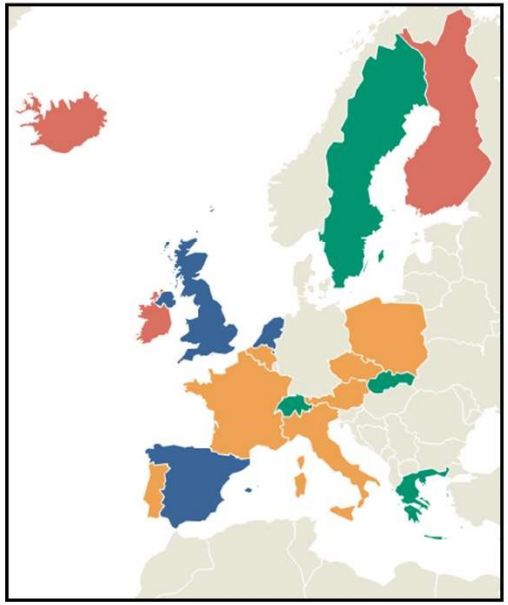
UK scheme - largest in Europe

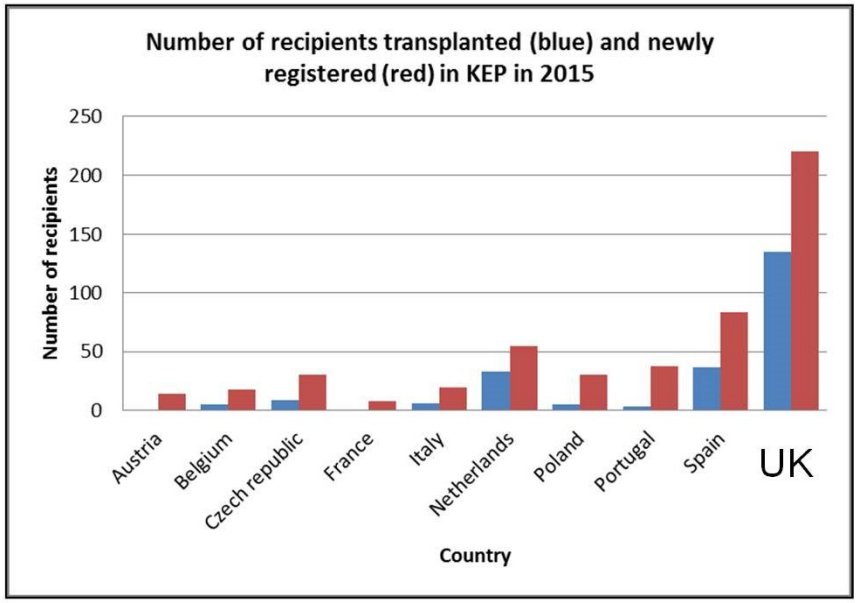
NHS Blood and Transplant

cost EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

European Network for Collaboration on Kidney Exchange Programmes (ENCKEP)

- Large, advanced programmes
- New, smaller programmes
- Programmes in development
- Countries with no programme





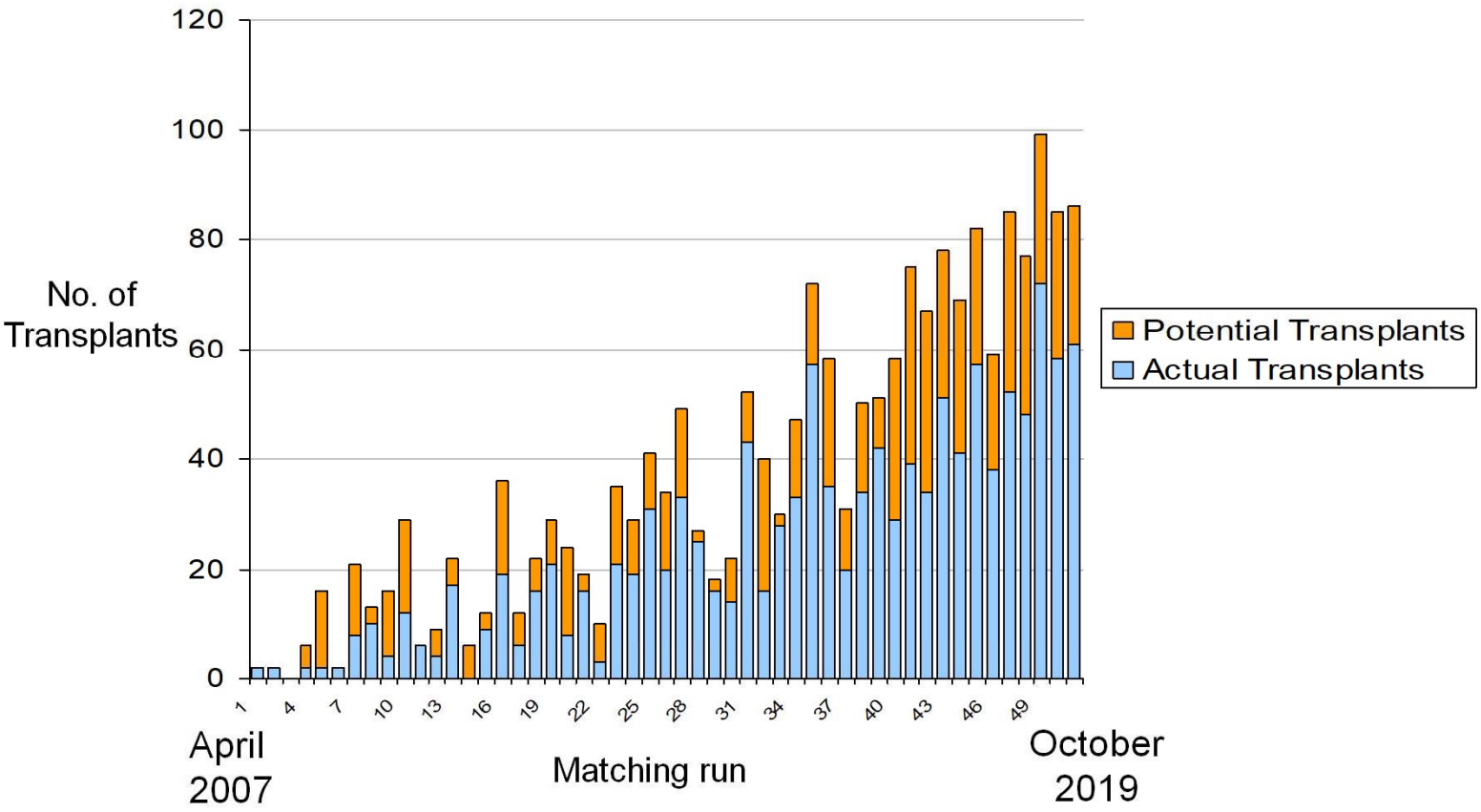
Transplantation

Building kidney exchange programmes in Europe - An overview of exchange practice and activities

Biró, P. et al. (2018) Building kidney exchange programmes in Europe - An overview of exchange practice and activities. *Transplantation*, (doi:10.1097/TP.0000000000002432) (PMID:30247314) (Early Online Publication)

Potential and Actual Transplants

NHS Blood and Transplant



1918 transplants identified

1241 transplants proceeded

65% proceeding

Over 70% proceeding in last 3 runs

Who are the patients in the UKLKSS?

NHS Blood and Transplant

- 2490 patients registered May 2007 – February 2020
  - Median age 47
  - 54% female
  - 46% paired donor partner/spouse
  - 58% of pairs HLA incompatible, 49% blood group incompatible

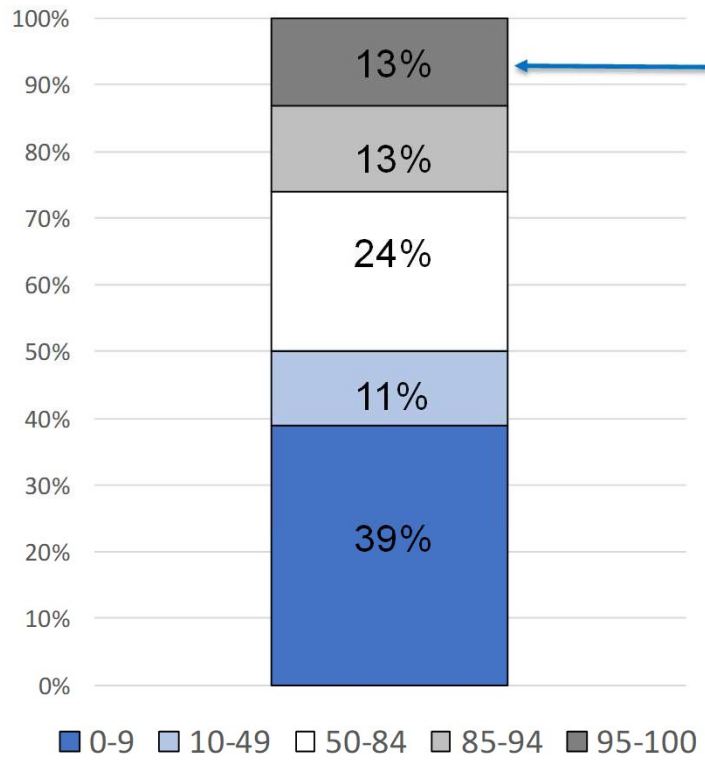
Blood Group	%
O	59
A	27
B	12
AB	2

cRF	%
0-49%	42
50-84%	19
85-94%	11
95-100%	28

Who has received a transplant?

NHS Blood and Transplant

- 1029 UKLKSS patients transplanted through the scheme (43%)
  - Sensitisation



95-100% cRF

102 patients transplanted

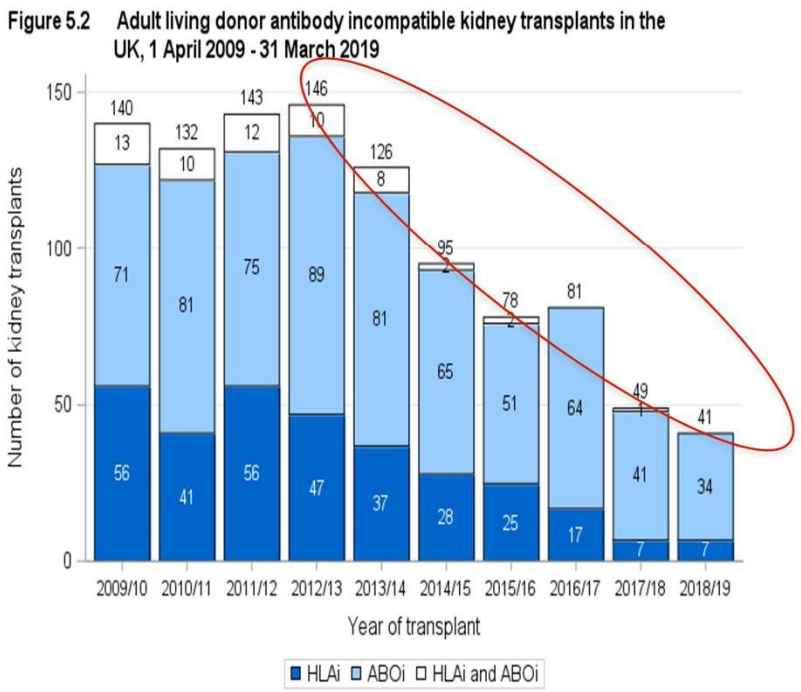
30% within 1 run

Antibody Incompatible Transplantation

NHS Blood and Transplant

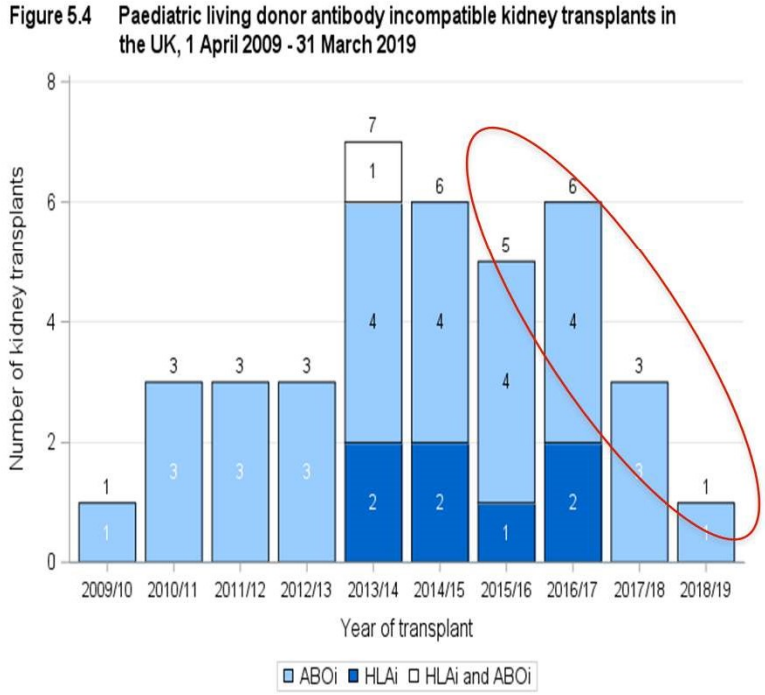
Adult

NHS Blood and Transplant



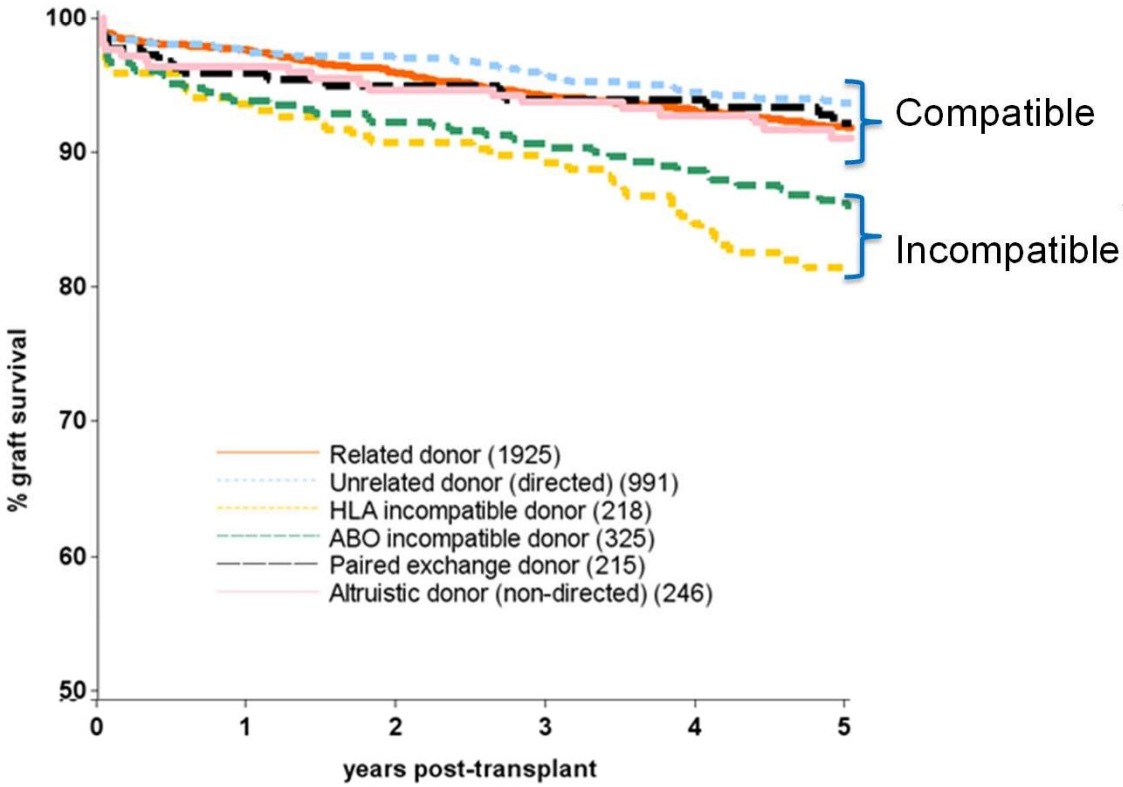
Paediatric

NHS Blood and Transplant



Survival Outcomes – Graft Survival

NHS Blood and Transplant



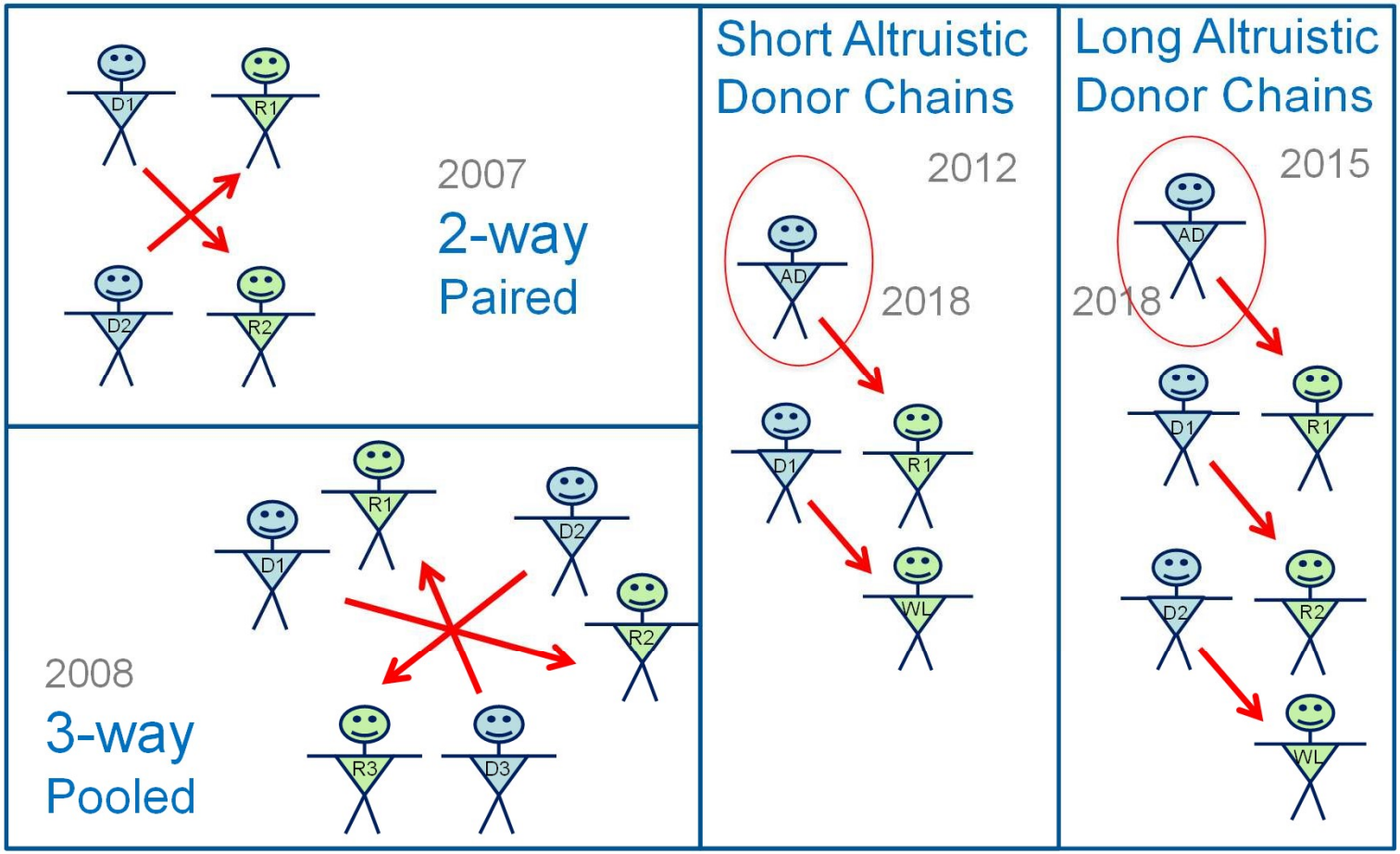
	Survival %	(95% CI)	N
Direct (unrelated)	93.7	(92, 95)	991
Paired exchange donor	92.1	(87, 95)	215
Direct (related)	91.8	(90, 93)	1925
Altruistic donor	91.0	(86, 94)	246
ABO incompatible	86.0	(82, 89)	325
HLA incompatible	81.4	(75, 86)	218

$p<0.0001$, log-rank test 5df

Based on transplants April 2010 - March 2014

Exchanges Identified

NHS Blood and Transplant



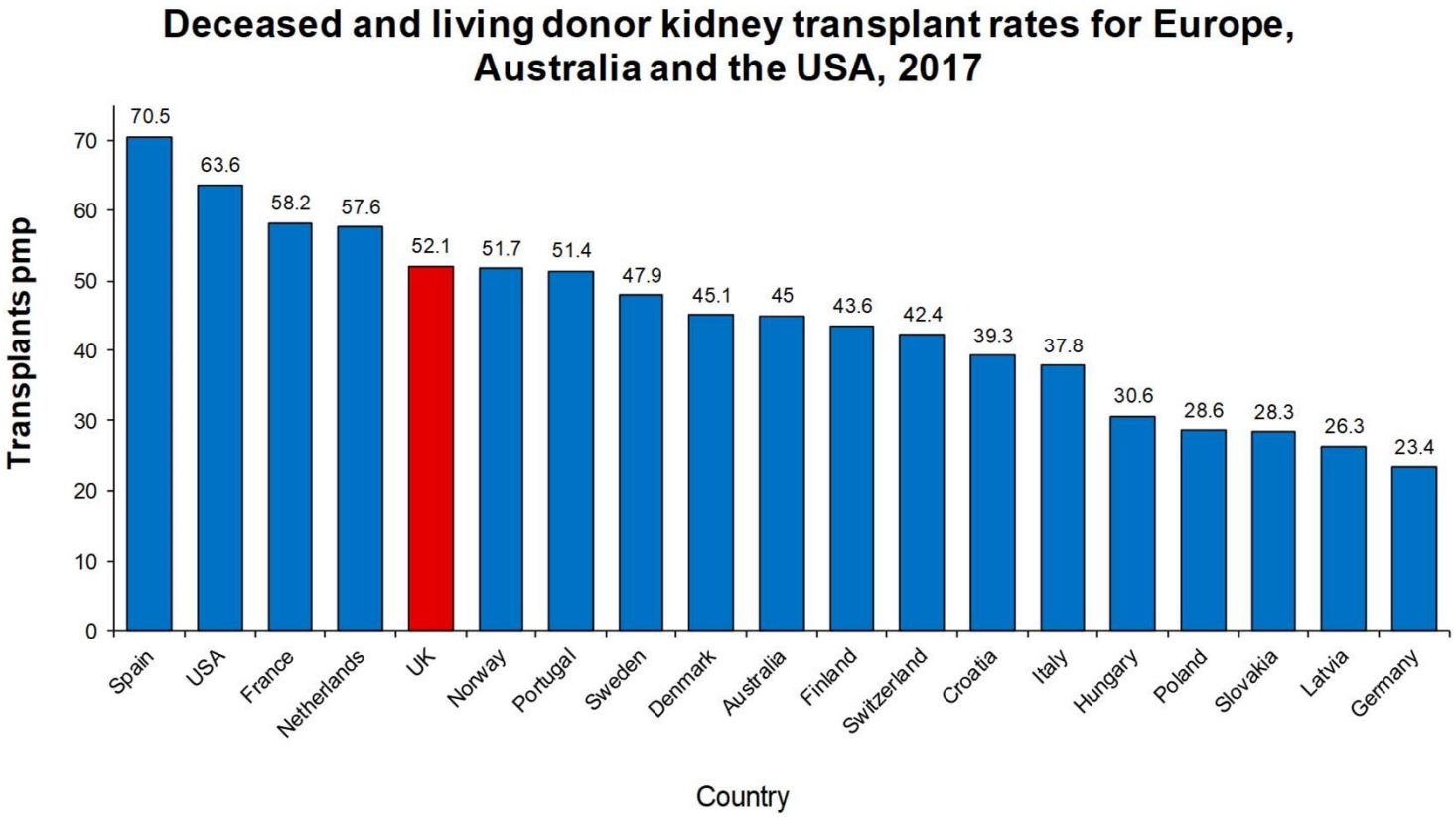
UK NHS Model

- NHS: Local Hospital Clinical Leads
- Specialist Nurses in Organ Donation : SNODs
- Organ Donation Committee
- NHSBT: National Organ Retrieval Service
- UK Potential Donor Audit Trail **COLLABORATION----IMPROVEMENT**
- Patient Groups
- Government: Change in Law

- Integrated Programme : DBD/ DCD ----- LRD/LURD----- UKKSS

Kidney transplant rates

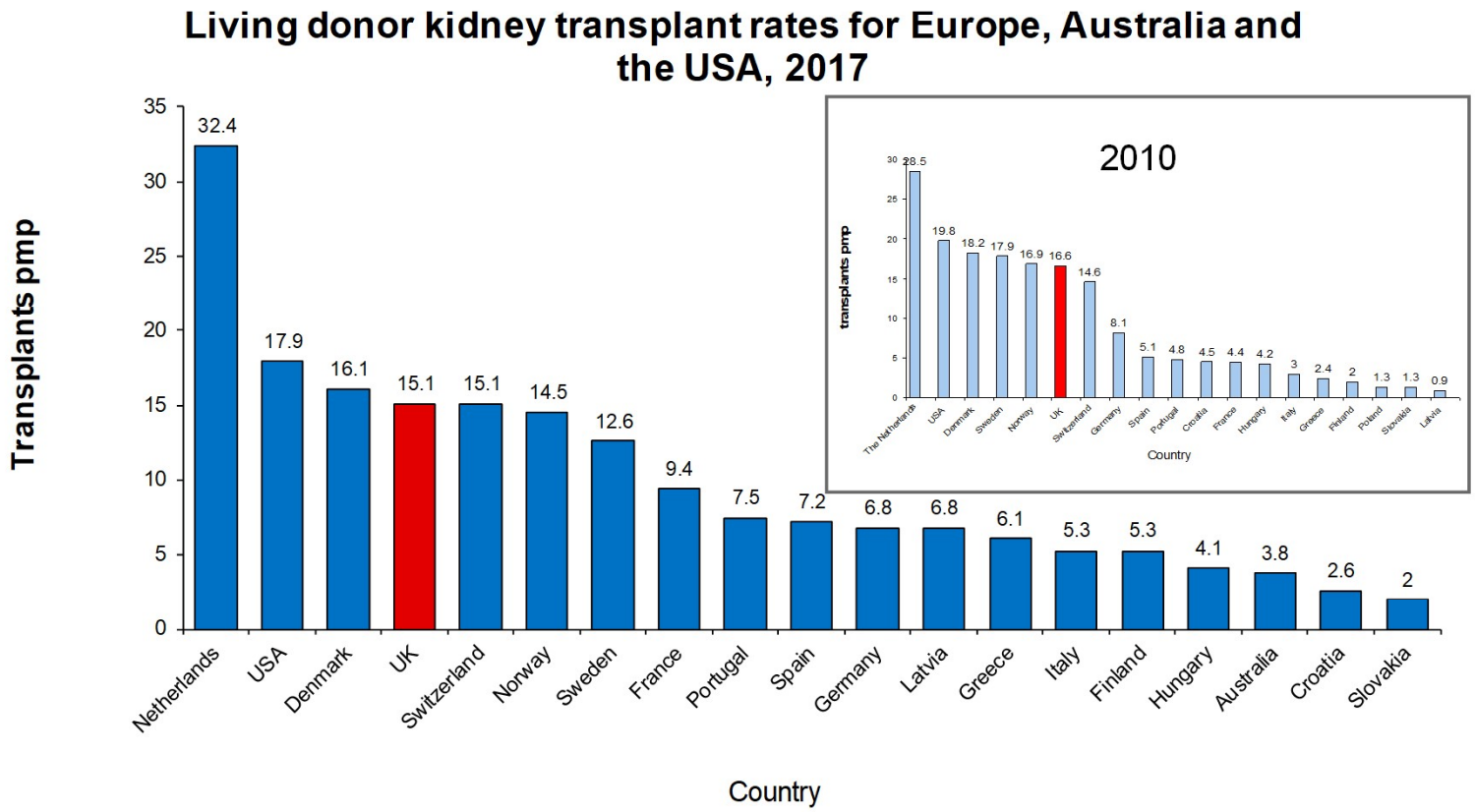
NHS Blood and Transplant



Source: Council of Europe – Transplant Newsletter

International data - living donor (LD) kidney transplant rates

NHS Blood and Transplant



Source: Council of Europe – Transplant Newsletter

Organ Donation and Transplantation 2030: Meeting the Need

- Currently 1% die in circumstances where organ donation is possible
- Promote Donation inside and Outside Hospital

- 26 million on Organ Donor Register: Consent 69%
- Join Spain, Poland Republic of Ireland: Consent >80%

- Living and Deceased Donation expected part of care for all
- Highly visible publicity campaigns: make an organ donation decision
- Organ Ambassador Programme