NHS Blood and Transplant

Organ utilisation: where are we?

Chris Callaghan

National Clinical Lead for Abdominal Organ Utilisation, NHSBT

Consultant Transplant Surgeon, Guy's Hospital, London

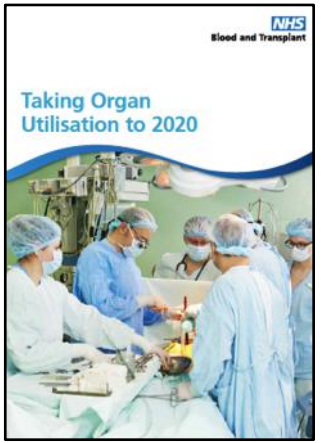
BTS Congress, March 2018

Caring Expert Quality


CHANGED
PRIORITIES
AHEAD
SLOW

Outline

- Background
- OU Strategy Document
- Current projects and progress
- Ongoing challenges



Background

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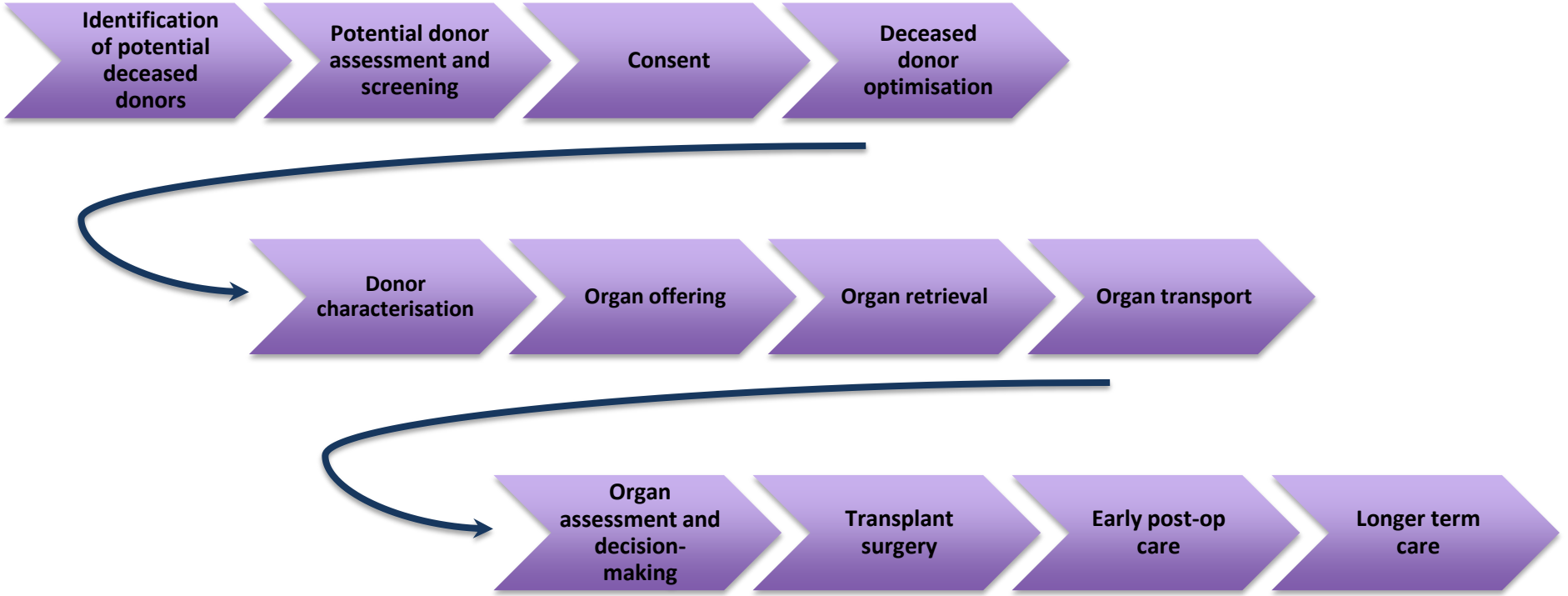
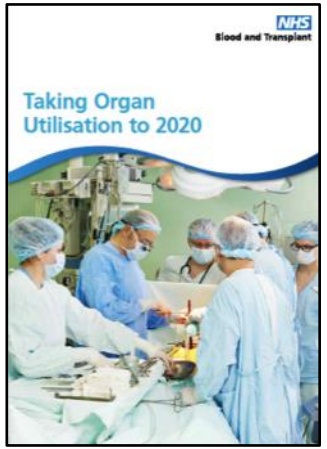
- What is ‘organ utilisation’?
  - ***‘The action of making practical and effective use of deceased donor organs’***

Background


Identification of potential deceased donors
Potential donor assessment and screening
Consent
Deceased donor optimisation
Donor characterisation
Organ offering
Organ retrieval
Organ transport
Organ assessment and decision-making
Transplant surgery
Early post-op care
Longer term care

Taking Organ Utilisation to 2020

- **Themes**
  - Improved screening and management of potential deceased donors
  - More effective, and efficient, donor-recipient matching
  - More information on organ declines, and greater scrutiny of transplant clinician decision-making
  - Improved organ retrieval services
  - Better recognition of best practice, and of barriers to organ utilisation



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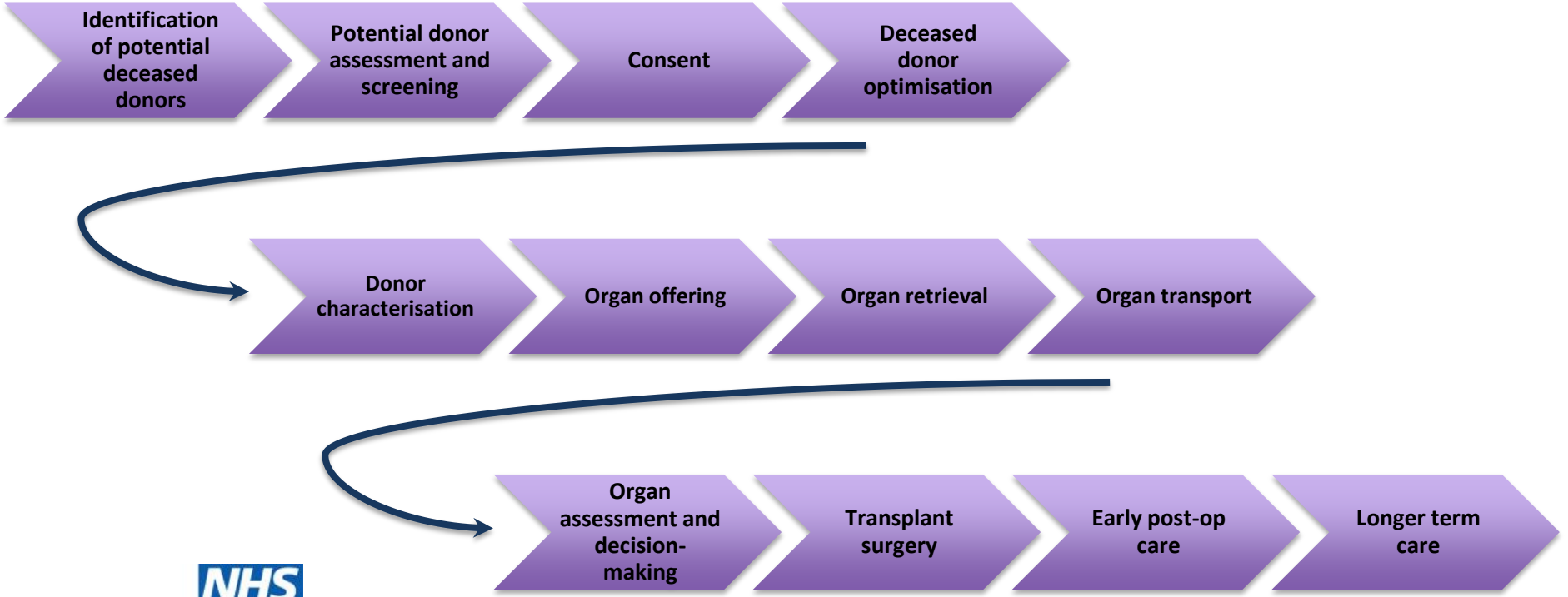
Taking Organ Utilisation to 2020



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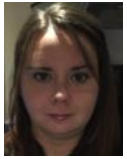
Taking Organ Utilisation to 2020









Identification of potential deceased donors

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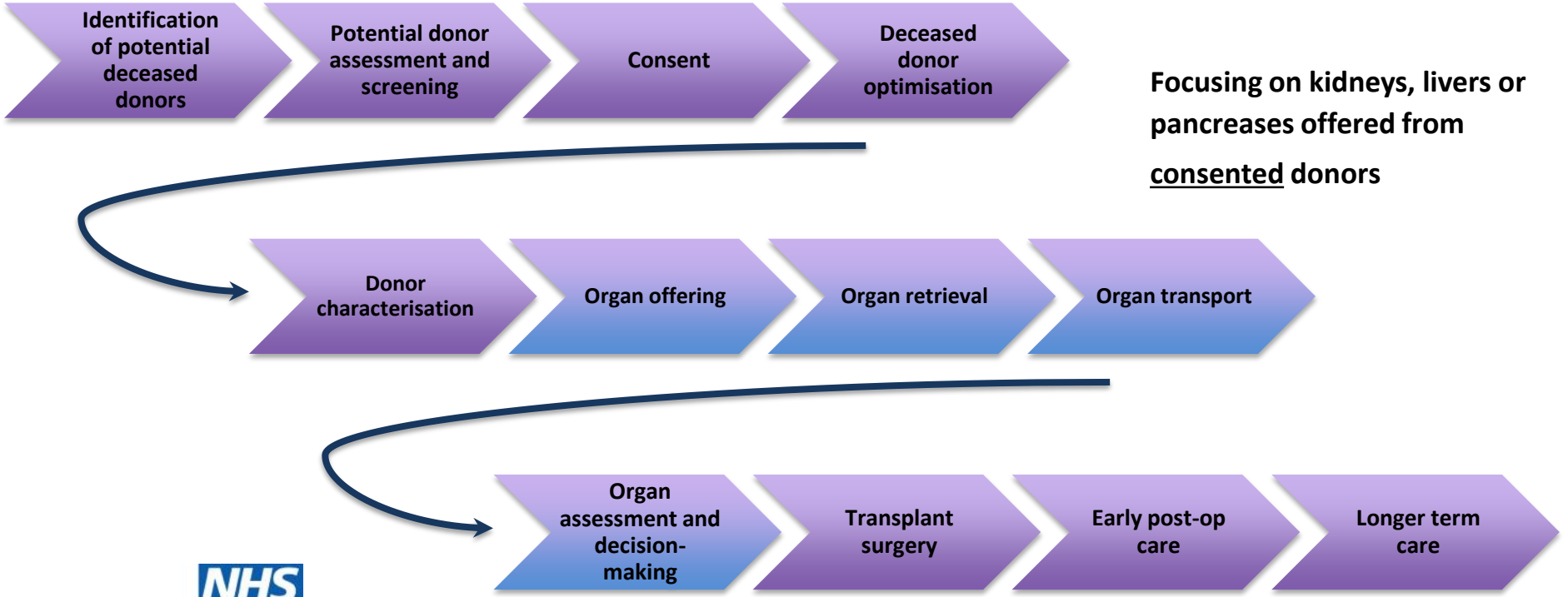
Taking Organ Utilisation to 2020



Focusing on kidneys, livers or pancreases offered from <u>consented</u> donors

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Measuring organ utilisation

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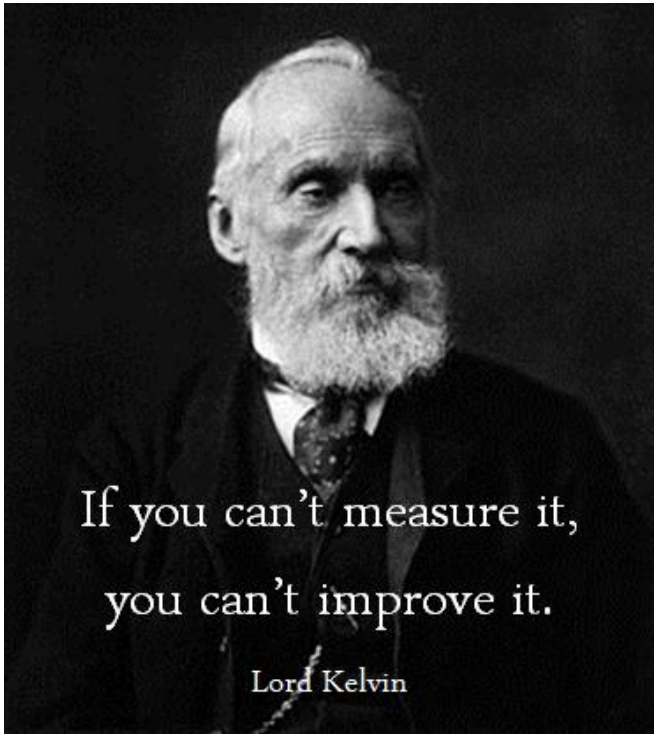

"Mirror, mirror, on the wall ... 'It's so subjective' is not an acceptable answer."

Measuring organ utilisation

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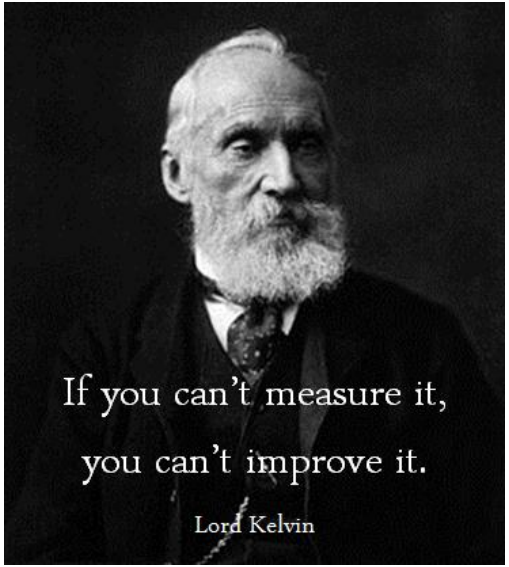
- Stratified by organ ‘quality’
  - **Donor risk index quartiles**
    - New UK kidney DRI (Mumford et al)
    - LDRI (Collett et al, *Transplantation* 2017)
    - PDRI (Axelrod et al, *Am J Transplant* 2010; Mittal et al *Transpl Int* 2015)



Measuring organ utilisation

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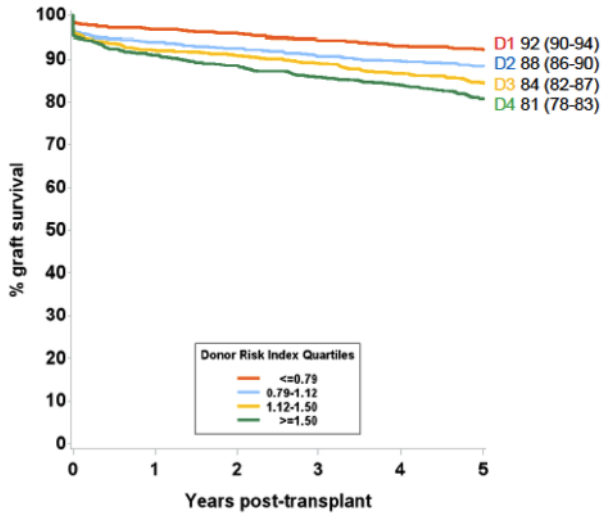
- Stratified by organ ‘quality’
  - **New UK kidney DRI**
    - Donor age, height, history of HT, CMV status, gender, hospital stay, eGFR at time of offer



Lisa Mumford, RTSM 2018

Measuring organ utilisation

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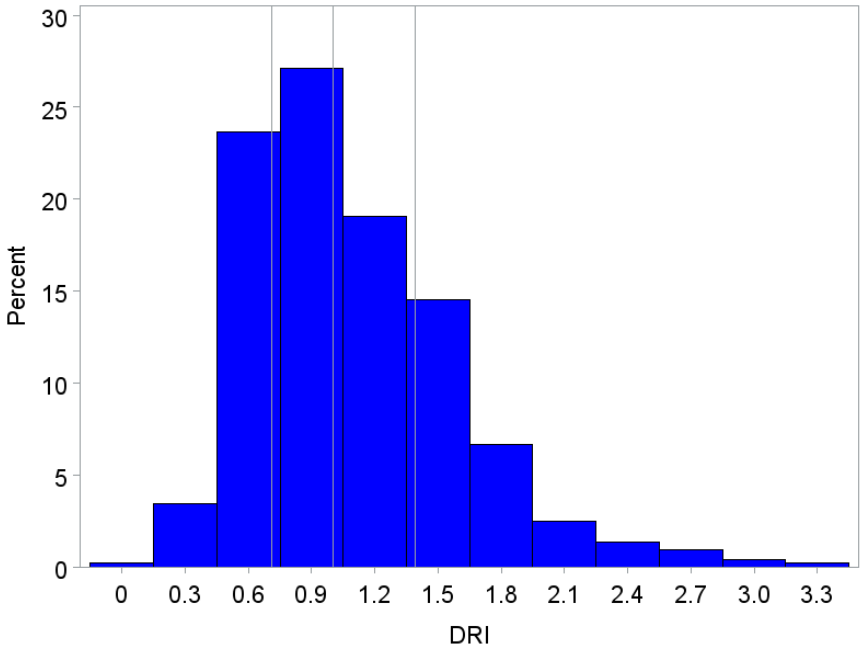
Distribution of DRI values for donors in 2006 where at least one kidney was retrieved

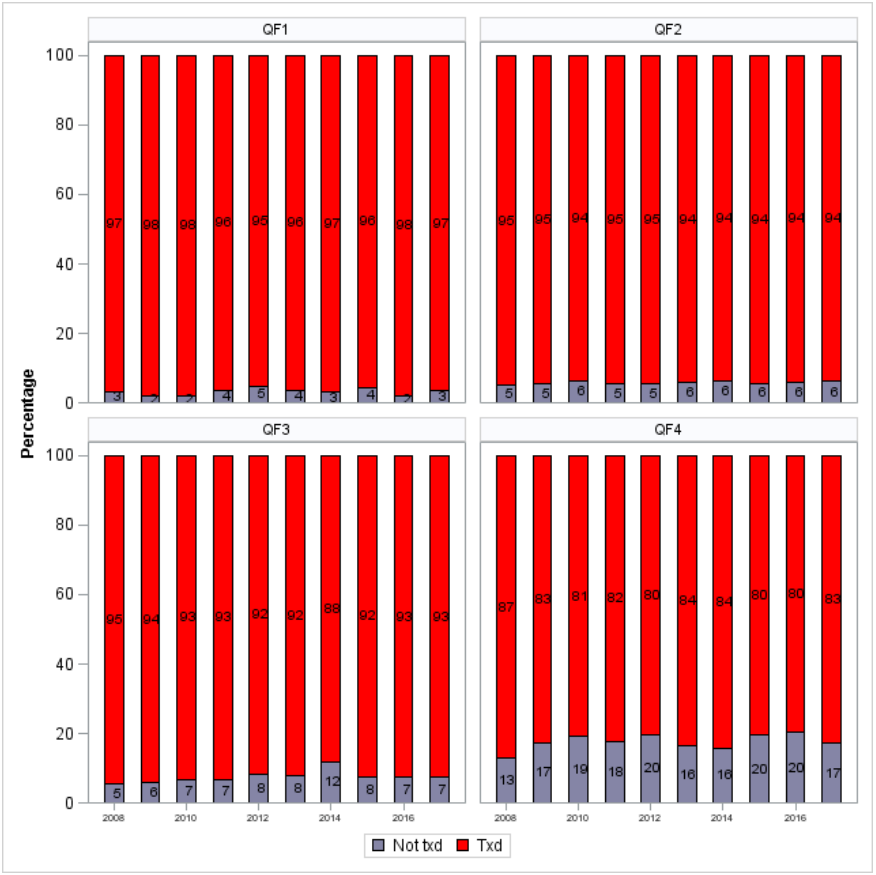


Use these data to define DRI quartiles

Quartile	Range
Q1 (highest quality donors)	DRI <0.71
Q2	0.71 ≤ DRI < 1.0
Q3	1.0 ≤ DRI < 1.39
Q4 (lowest quality donors)	DRI ≥ 1.39

Jenny Mehew, NHSBT

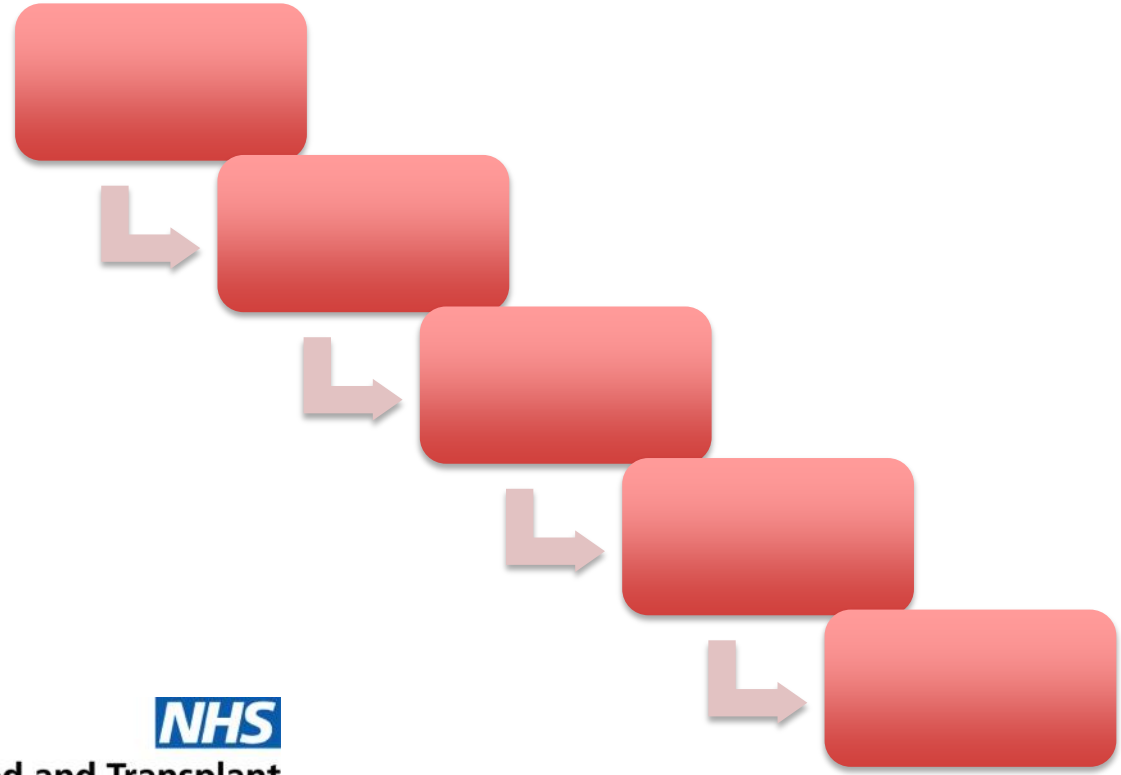
Measuring organ utilisation



- Utilisation rates of retrieved kidneys by new UK kidney DRI quartile
- Suggests that deceased donor kidney utilisation is **not** improving over time

Jenny Mehew, NHSBT

Scrutiny of utilisation decisions



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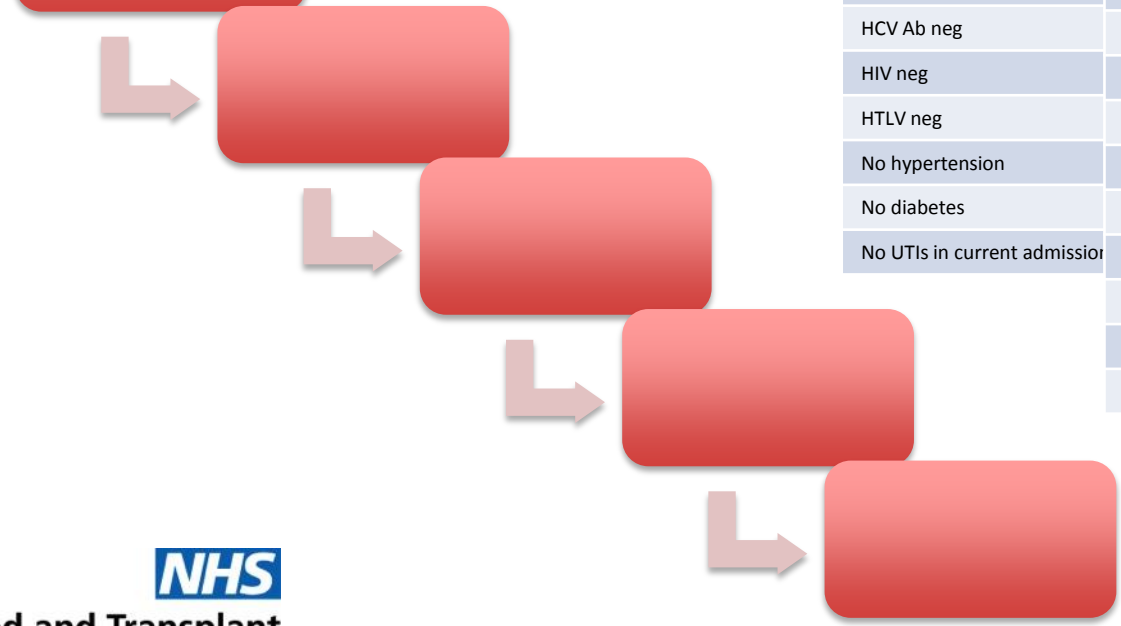
Scrutiny of utilisation decisions

Definition of 'ideal' donor using CDDF variables



Kidney 'ideal' donor CDDF criteria
Age >10 and <50 years
No malignancy
HBs Ag neg
HCV Ab neg
HIV neg
HTLV neg
No hypertension
No diabetes
No UTIs in current admissio

Pancreas 'ideal' donor CDDF criteria
Age >15 and <50 years
No malignancy
HBs Ag neg
HCV Ab neg
HIV neg
HTLV neg
BMI <27 kg/m^2
DBD donor
No cardiac arrest >60 mins du
ITU stay <10 days

Liver 'ideal' donor CDDF criteria
Age >15 and <60 years
No malignancy
HBs Ag neg
HCV Ab neg
HIV neg
HTLV neg
BMI <30 kg/m^2
DBD donor
Serum ALT <50 at retrieval
ITU stay <10 days

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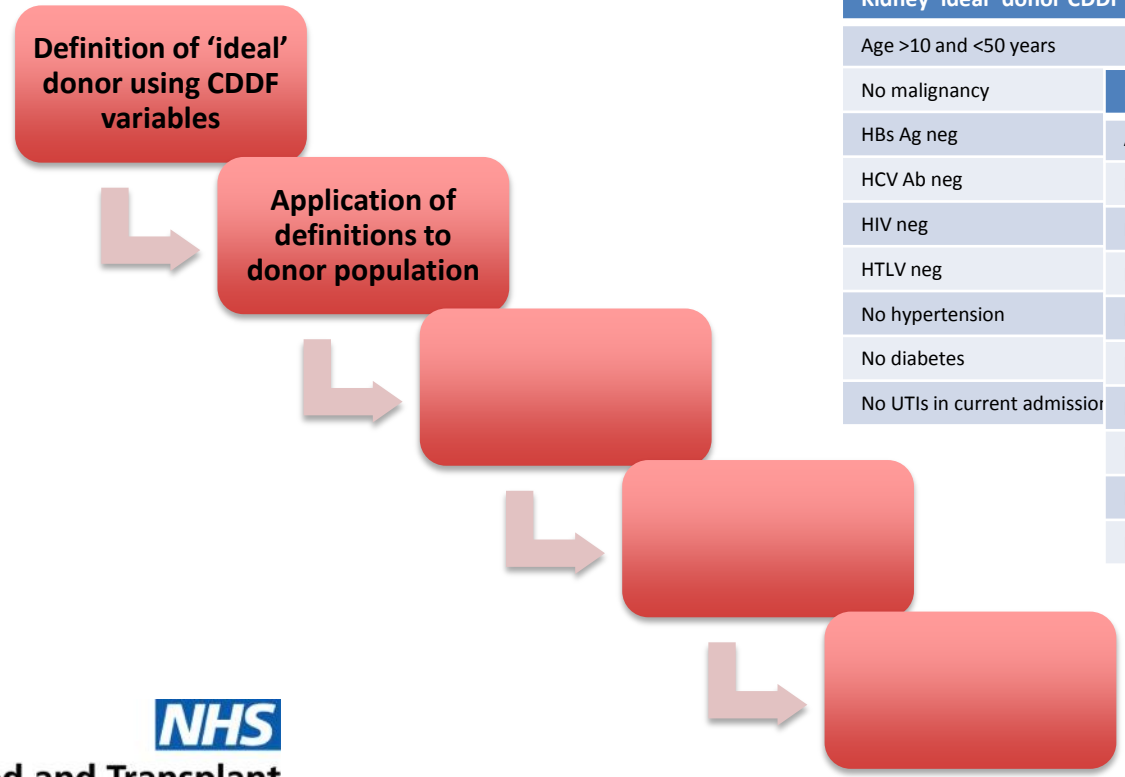
Scrutiny of utilisation decisions



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HIV neg
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DBD donor
Serum ALT <50 at retrieval
ITU stay <10 days

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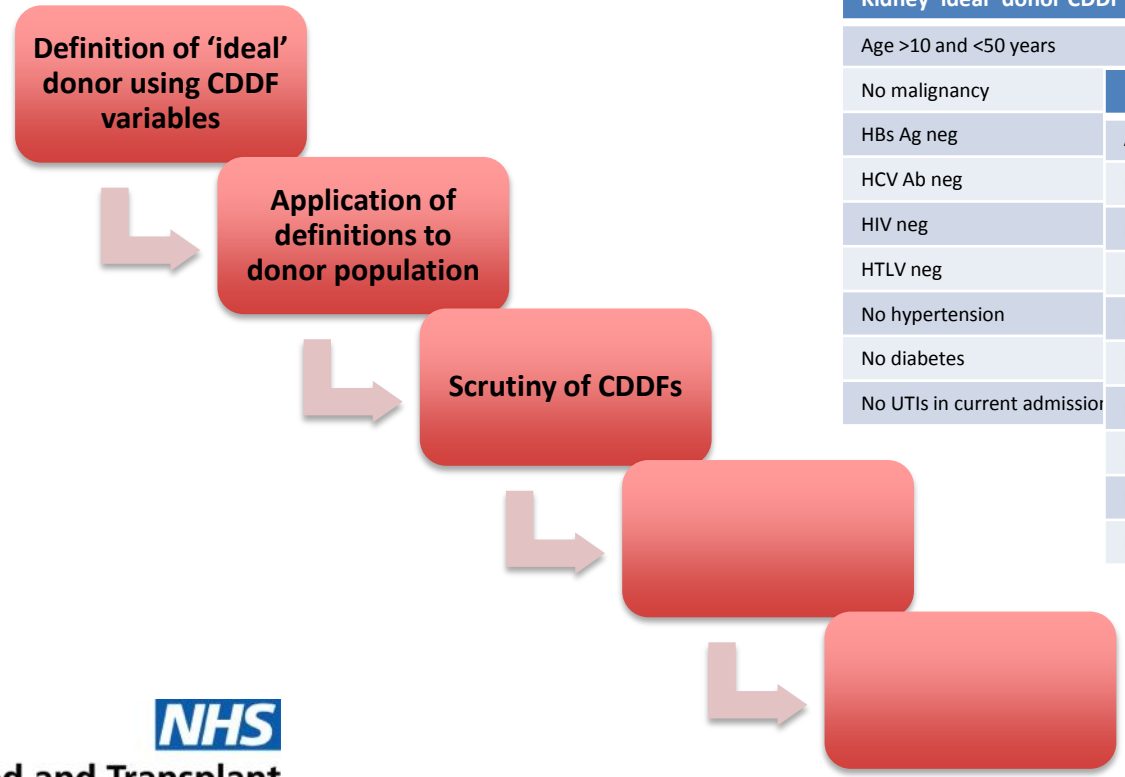
Scrutiny of utilisation decisions



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Serum ALT <50 at retrieval
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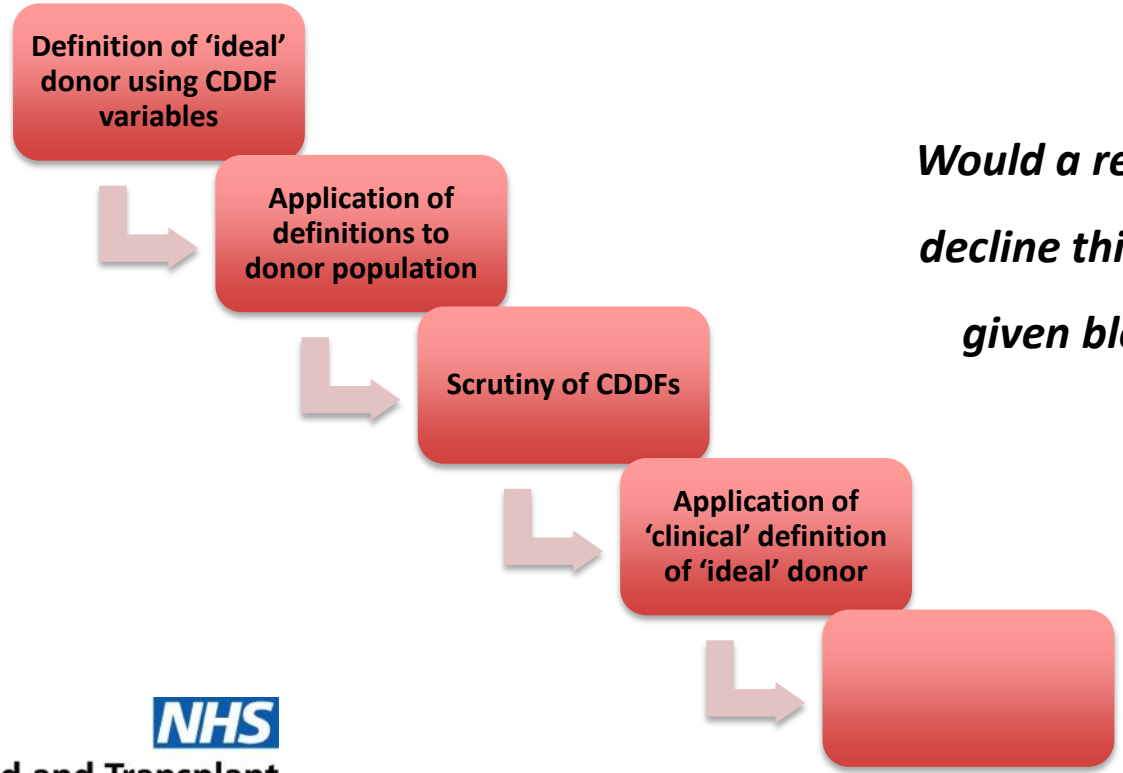
Scrutiny of utilisation decisions



Would a reasonable transplant clinician decline this offer (or discard this organ) given blood group (size) matching?

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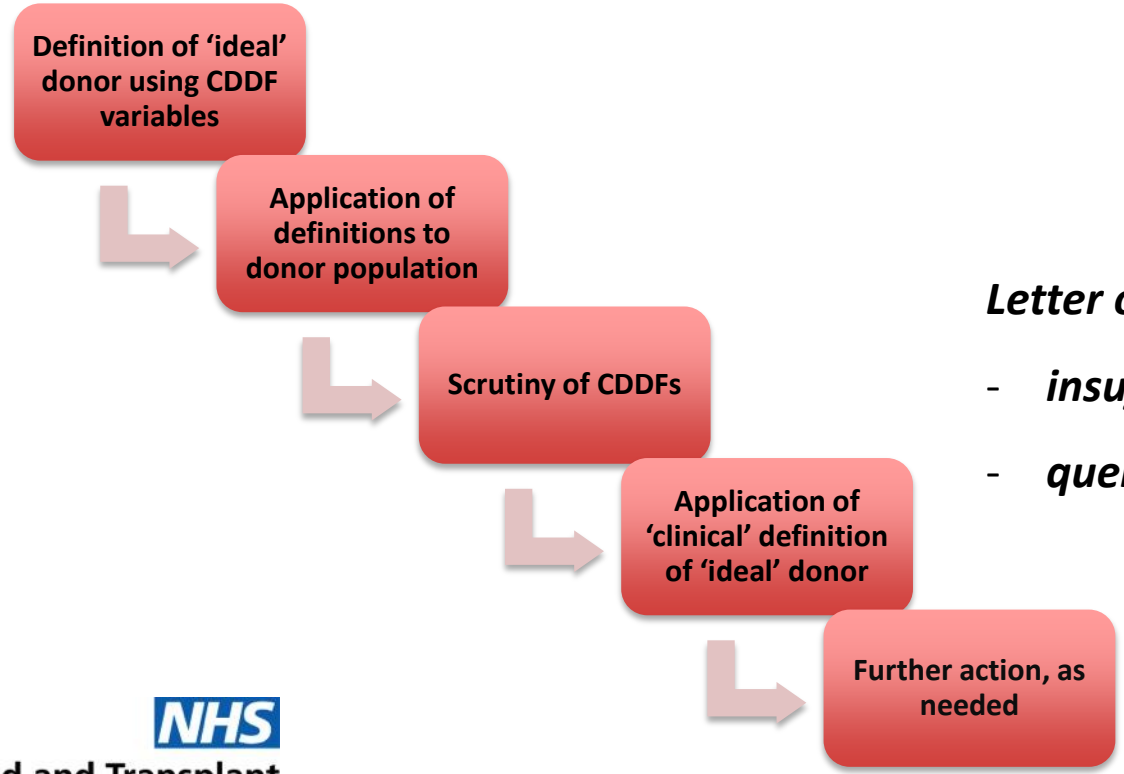
Scrutiny of utilisation decisions



Letter of enquiry to unit lead if:

- ***insufficient NHSBT data and/or***
- ***queries about utilisation decisions***

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Scrutiny of utilisation decisions

Donor group	Recipient group	Utilisation decision analysis	Scheme open	Letters sent
'Ideal' kidney donor	NKAS[1] named-patient offer	Organ **discard**	13.11.17	2
'Ideal' kidney donor	NKAS[1] named-patient offer	Offer **decline**	27.11.17	6
Standard criteria kidney donor[2]	NKAS[1] named-patient offer to high priority patient[3]	Offer **decline**	5.2.18	1

[1]National Kidney Allocation Scheme

[2]Port FK et al, *Transplantation* 2002

[3]Waiting time >7 years, cRF >85%, or 0-0-0 MM

Expansion of scheme to:

- ***'ideal' pancreas donor offer decline and organ discard***
- ***'ideal' liver donor offer decline and organ discard***

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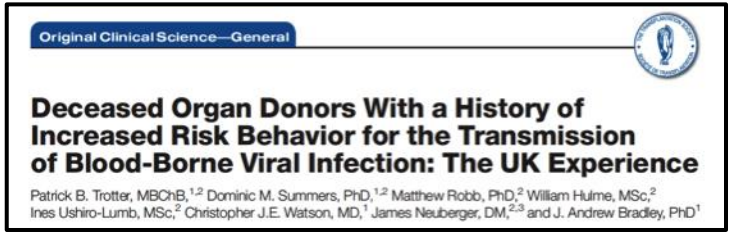
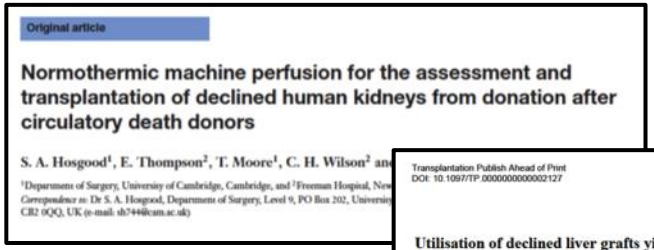
Evidence to assist utilisation decisions



Original Clinical Science—General

Deceased Organ Donors With a History of Increased Risk Behavior for the Transmission of Blood-Borne Viral Infection: The UK Experience

Patrick B. Trotter, MBChB,[1,2] Dominic M. Summers, PhD,[1,2] Matthew Robb, PhD,[2] William Hulme, MSc,[2] Ines Ushiro-Lumb, MSc,[2] Christopher J.E. Watson, MD,[1] James Neuberger, DM,[2,3] and J. Andrew Bradley, PhD[1]



Original article

Normothermic machine perfusion for the assessment and transplantation of declined human kidneys from donation after circulatory death donors

S. A. Hosgood[1], E. Thompson[2], T. Moore[1], C. H. Wilson[2] an

[1]Departments of Surgery, University of Cambridge, Cambridge, and [2]Freeman Hospital, New

Correspondence to: Dr S. A. Hosgood, Department of Surgery, Level 9, PO Box 202, Universit

CB2 0QQ, UK (e-mail: sh744@cam.ac.uk)

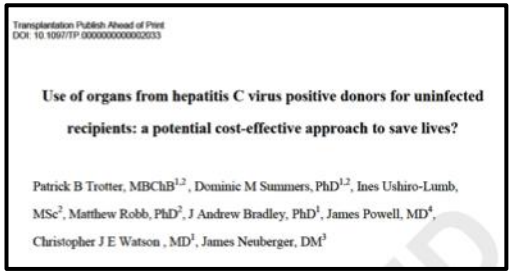
Transplantation Publish Ahead of Print
DOI: 10.1097/TP.0000000000002127

Utilisation of declined liver grafts yields comparable transplant outcomes and previous decline should not be a deterrent to graft use

, David Bartlett[1], Marit Kalisvaart[1], Dawn Bishop[1],

Darius Mirza[1], John Isaac[1], Paolo Muiesan[1],

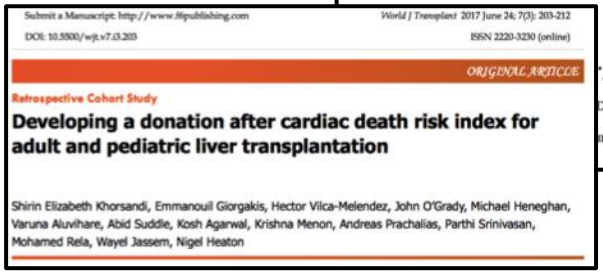
ara Perera[1†]



Transplantation Publish Ahead of Print
DOI: 10.1097/TP.0000000000002033

Use of organs from hepatitis C virus positive donors for uninfected recipients: a potential cost-effective approach to save lives?

Patrick B Trotter, MBChB[1,2], Dominic M Summers, PhD[1,2], Ines Ushiro-Lumb, MSc[2], Matthew Robb, PhD[2], J Andrew Bradley, PhD[1], James Powell, MD[4], Christopher J E Watson , MD[1], James Neuberger, DM[3]



Submit a Manuscript: http://www.f6publishing.com — *World J Transplant* 2017 June 24; 7(3): 203-212

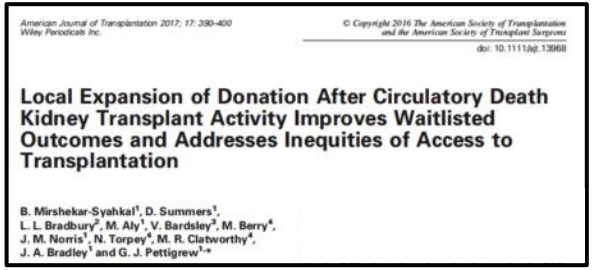
DOI: 10.5500/wjt.v7.i3.203 — ISSN 2220-3230 (online)

ORIGINAL ARTICLE

Retrospective Cohort Study

Developing a donation after cardiac death risk index for adult and pediatric liver transplantation

Shirin Elizabeth Khorsandi, Emmanouil Giorgakis, Hector Vilca-Melendez, John O'Grady, Michael Heneghan, Varuna Aluvihare, Abid Suddle, Kosh Agarwal, Krishna Menon, Andreas Prachalias, Parthi Srinivasan, Mohamed Rela, Wayel Jassem, Nigel Heaton



American Journal of Transplantation 2017; 17: 390–400
Wiley Periodicals Inc.

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doi: 10.1111/ajt.13968

Local Expansion of Donation After Circulatory Death Kidney Transplant Activity Improves Waitlisted Outcomes and Addresses Inequities of Access to Transplantation

B. Mirshekar-Syahkal[1], D. Summers[1], L. L. Bradbury[2], M. Aly[1], V. Bardsley[2], M. Berry[4], J. M. Norris[1], N. Torpey[4], M. R. Clatworthy[4], J. A. Bradley[1] and G. J. Pettigrew[1,*]

Research Article
Transplantation

JOURNAL OF HEPATOLOGY

The UK DCD Risk Score: A new proposal to define futility in donation-after-circulatory-death liver transplantation

Andrea Schlegel[1], Marit Kalisvaart[1], Irene Scalera[1], Richard W. Laing[1], Hynek Mergental[1], Darius F. Mirza[1], Thamara Perera[1], John Isaac[1], Philipp Dutkowski[2], Paolo Muiesan[1,*]

[1]The Liver Unit, Queen Elizabeth University Hospital Birmingham, Birmingham, UK; [2]Department of Surgery and Transplantation, Swiss HPB Centre, University Hospital Zurich, Zurich, Switzerland

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Evidence to assist utilisation decisions

- Reference resource on odt.nhs.uk website
  - **Criteria (January 2018)**
    - **Kidney, pancreas, liver, multi-organ, or islet transplantation**
    - **Related to organ utilisation / recipient selection**
    - **Published after 2000, based on UK data, deceased donor**
    - **Accessible via PubMed**

116 references

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Challenges

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Conclusions

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- Increasing recognition of the importance of organ utilisation
- Array of strategies to improve organ utilisation in the UK
  - Increasing scrutiny of utilisation decisions and provision of an evidence base to support decisions
- Development of tools to better measure organ utilisation and determine if the above are effective

Acknowledgements

NHSBT

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Rachel Johnson
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Claire Williment and Liz Armstrong
Sarah Belgium and Caroline Willis
John Dark
James Neuberger

Chairs of AGs

Chris Watson
John Casey
John O'Grady

Colleagues at Guy's and elsewhere