**NHS BLOOD AND TRANSPLANT**
**ORGAN AND TISSUE DONATION AND TRANSPLANTATION DIRECTORATE**
**THE THIRTY-SIXTH MEETING OF THE RETRIEVAL ADVISORY GROUP (RAG)**
**ON WEDNESDAY 14 MAY 2025**
**WESLEY HOTEL, 81-103 EUSTON STREET, LONDON, NW1 2EZ**

**MINUTES**

**Present:**

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| Marius Berman (Chair) | Associate Clinical Lead for Organ Retrieval |
| Elijah Ablorsu | NORS Lead, Abdominal, Cardiff |
| Aimen Amer | NORS Lead, Abdominal, Newcastle |
| Liz Armstrong | Head of Transplant Development, NHSBT |
| David Bartlett | NORS Lead, Abdominal, Birmingham |
| Jennifer Baxter | BTS Representative |
| Sarah Beale | Service Development Manager, OTDT, NHSBT |
| Emma Billingham | Head of Commissioning, NHSBT |
| Carlo Cerasa | NORS Lead, Abdominal, Royal Free Hospital |
| Ben Cole | Service Development Manager, NHSBT |
| Keziah Crick | Clinical Scientist, Royal Free Hospital |
| Cynthia Cruz | NORS Perioperative Lead, Leeds |
| Jeanette Foley | Deputy Chief Nurse, OTDT, NHSBT |
| Victoria Gauden | National Quality Manager, NHSBT |
| Shamik Ghosh | RAG Lay member |
| Henk Giele | Consultant Plastic Surgeon, Oxford |
| Rachel Hogg | Senior Statistician, Statistics and Clinical Research, NHSBT |
| Michael Hope | Abdominal Recipient Coordinator Representative |
| James Hunter | Clinical Science Coordinator, QUOD |
| Chris Johnston | Deputy Chair RAG / NORS lead, Abdominal, Edinburgh |
| Pradeep Kaul | NORS Lead, CT, Royal Papworth Hospital |
| Angela Losekann | NORS Perioperative Practitioner Lead, Oxford |
| Derek Manas | Medical Director, OTDT, NHSBT |
| Liz Middlehurst | Head of Operations, Organ Donation, NHSBT |
| Aamir Nawaz | Hepatology Transplant Physician, Kings College |
| John O'Callaghan | Consultant Transplant Surgeon, Coventry |
| Jas Parmar | CTAG Lungs Chair / Royal Papworth Hospital |
| Gavin Pettigrew | NORS Lead, Abdominal, Addenbrookes |
| Steven Potter | RAG Lay member |
| David Quinn | NORS Lead, CT, Birmingham |
| BC Ramesh | NORS Lead, CT, Newcastle |
| Afshin Tavakoli | NORS Lead, Abdominal, Manchester |
| Ian Thomas | Consultant Intensive Care, Bristol / CLOD NHSBT |
| Lu Wang | Cardiothoracic Registrar, Royal Papworth Hospital |
| Daniel White | Recipient Transplant Co-ordinator |
| Julie Whitney | Head of Service Delivery, OTDT Hub, NHSBT |
| Bart Zych | NORS Lead, CT, Harefield Hospital |

**In Attendance:**

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| Lawna Pugh | Advisory Group Support, NHSBT |
| Caroline Robinson | Advisory Group Support, NHSBT (Minutes) |

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| **1.** | **WELCOME, INTRODUCTIONS, APOLOGIES, ANNOUNCEMENTS AND THANKS** | |
| 1.1 | • M Berman (Chair) welcomed everyone to the meeting | |

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| | • Apologies were noted from Andrew Butler, Becky Clarke, Ian Currie, Anthony Davies, Shahid Farid, Louise Kenny, Debbie Macklam, Cecelia McIntyre, Kirsty McNally, Karen Quinn, and Sarah Whittingham. | |
| 1.2 | M Berman welcomed C Johnston as the new Deputy Chair of RAG. | |
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| **2.** | **DECLARATIONS OF INTEREST** | |
| | • No declarations of interest were reported.<br>• ***RAG members are asked to declare if any information in papers for this meeting is sensitive content that should not be published on the public facing NHSBT OTDT website as soon as possible. A request for papers not included on the website should be made in writing to advisorygroupsupport@nhsbt.nhs.uk*** | |
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| **3.** | **MINUTES, ACTION POINTS AND MATTERS ARISING FROM 7 NOVEMBER 2024** | |
| 3.1 | Minutes – **RAG(M)(24)02** – The Minutes of the last RAG meeting on 7 November 2024 were approved. | |
| 3.2 | Action Points – **RAG(AP)(24)02** - the following Action Points were discussed | |
| 3.2.1 | MCTAG Update – At the last meeting it was noted donor imaging using CT was being used where a modified MV graft is considered in aspiration to minimise delays and inappropriate travel for retrieval teams and recipients. This remains work in progress with a new workstream recently started and there will be further feedback at the next meeting. It was emphasised:<br>• Smaller hospitals have less opportunity to do CTs and ITU capacity can also be difficult.<br>• The rationale for the CT request should be specified.<br>• This will be difficult to deliver as radiologists may not have the capacity to deliver.<br>• If uploaded onto the PACs system, the onus will be on the recipient centre rather than on the donor centre.<br>• Although this is likely to improve utilisation of organs, it is unlikely this will become a mandatory requirement. While this would save time and there is a risk of donation numbers going down, the benefits of getting the CT don't carry through to the donor centres currently. | **ONGOING** |
| 3.2.2 | NORS Annual Report – The report will be published towards the end of the summer. The resilience of the CT workforce continues to be discussed at CT Centre Directors' meetings. | **COMPLETE** |
| 3.2.3 | Super Urgent Liver Report – At the last meeting it was agreed a) Comms to be agreed from CT teams to relevant parties. b) D White to remind co-ordinators that there is only one DCD retrieval team on call covering the whole of the UK. | **COMPLETE** |
| 3.2.4 | HTK/UW – At the last meeting it was noted the investigation with Bridge to Life was still ongoing with regular calls with the MHRA by way of update. E Billingham agreed to write to centres once the tender is awarded. | **COMPLETE** |
| 3.2.5 | Organ Damage Imaging Protocol **–** Previously L Armstrong to circulate SOP and MPD regarding organ imaging. | **COMPLETE** |
| 3.2.6 | Clinical Governance – It was previously reiterated that only one biopsy should be taken regardless of whether it is inadequate or not. M Berman sent an email to R Ravanan regarding two biopsy sites incidents and agreed to attend the KAG meeting in July to discuss these further. | **COMPLETE** |
| 3.2.7 | Registration for Peri-operatives and Surgeons in Novel Technologies **–** *See also Item 16.2* – Representatives at RAG expressed their wish to have their own dedicated Masterclass and a unified scheme given their different experiences, backgrounds and roles. It was emphasised that this needs to be initiated by the group in the first instance. | **COMPLETE** |
| 3.2.8 | A Feasibility Study of Uncontrolled Donation after Circulatory Death – D Summers previously agreed to liaise with M Berman re whether further ethical or HRA approval is needed prior to final decision at next RAG meeting. | **COMPLETE** |

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| 3.2.9 | Ex VIVO Lung Perfusion (EVLP) – Manchester – This programme has previously gone to CTAG Lungs and RINTAG but does not go through the research pathway as the lungs are for transplant. E Billingham previously agreed to circulate the HRA guidelines to establish whether this programme is classified as 'research'. | **COMPLETE** |
| 3.2.10 | Ex VIVO Lung Perfusion (EVLP) – Papworth – a) P Kaul previously agreed to send the proposal to NHSBT Commissioning/E Billingham b) Proposal to be discussed with G Pettigrew offline regarding whether this is 'research'. | **COMPLETE** |
| 3.2.11 | DCD Heart Retrieval – Signed off by Retrieval Surgeons – As the current equipment in use for DCD Hearts is the most expensive single use item it is important that this is used responsibly. A draft proposal for retrieval surgeons and peri-operative training and registration is to be completed. | **ONGOING** |
| 3.2.12 | Sustainability and Certainty in Organ Retrieval (SCORE) Update – S Beale previously agreed to look at impact on ITUs of new arrangements (both for donors and recipients) | **COMPLETE** |
| 3.2.13 | A-NRP Steering Group – It has been suggested that if teams are to provide NRP to DCD donors, teams could substantially increase the number of liver transplants that take place. Not all teams are funded centrally to deliver NRP. D Macklam, J Whitney and A Butler previously agreed to take this issue forward via the SCORE steering group. | **COMPLETE** |
| 3.2.14 | Graft pancreatectomy times – Anecdotal reports suggest sometimes the pancreas is being left until the liver is perfused, bagged and boxed. No graft pancreatectomy times in donors are collected. This leads to prolonged relative warm ischaemia which cannot be detected in the recipient centre. It leads to sudden unexpected severe graft pancreatitis or graft loss and can be a serious risk to patients. It was suggested that pancreas and renal graft times should be added to the A forms as a matter of clinical urgency and good governance. E Billingham and R Hogg agreed to look into this issue offline. | **COMPLETE** |
| 3.2.15 | DCD Heart Oversight Group – It was suggested use of flights are reviewed given the cost and environmental issues they have so they can be allocated more effectively. M Berman agreed to involve lay members (S Potter and S Ghosh) in discussions of this issue in future. | **COMPLETE** |
| 3.2.16 | Lung Retrieval with A-NRP – M Berman agreed to give E Billingham numbers and costings for staples to see how this can be taken forward. | **COMPLETE** |
| 3.3 | Matters Arising – No issues were raised | |
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| **4.** | **MEDICAL DIRECTOR UPDATE** | |
| 4.1 | CLU Heart Chair Update – The following updates were discussed:<br>• A Morley-Smith is confirmed as the new CTAG Hearts CLU replacing A Ranasinghe.<br>• D Garcia Saez has stepped down as the main CLU lead. V Gerovasili is covering this role in the interim.<br>• Carla Rosser has been appointed as H&I lead and will be invited to all the advisory groups.<br>• Plans for interviews to appoint a Deputy Medical Director and an AMD for Patient Engagement are ongoing.<br>• Finances – Baseline funding is agreed for DCD Hearts, ANRP, CLUs and ARCs and plans to develop a programme of centre leads and future work are ongoing. All centres are piloting moving organs around to go ahead with an outline business case for ARCs alongside engagement with industry.<br>• Histopathology – this project has stalled again due to the changes announced for NHSE and a spending freeze. A meeting will be planned soon to plan next steps.<br>• A Commissioning Summit will look at engagement for transplant. The Transplant Overview Group has been established.<br>• Work on NLOS and collaboratives is progressing well. | |

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| | • Consent – this remains poor and a Summit will be held in June to do an in depth review to find ways to improve this. An international audience including representation from Australia, Canada and Spain will look at the donation pathway, engagement with families and the role of the Specialist Nurse. The role of Comms will also be explored.<br>• Donation Ethics Committee – D Gardiner will lead work alongside other ethics committees to decide structure and membership of this group. This will sit under NHSBT or an umbrella organisation.<br>• OUG – ISOU work is mostly complete, and a patient engagement report has been issued. There are 14 recommendations most of which will be NHSBT's responsibility. A workforce meeting was also held last week to look at creating a sustainable and resilient workforce across transplantation. | |
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| **5.** | **SERVICE DEVELOPMENT** | |
| 5.1 | Update from DCD Paediatric Hearts workstream – MB chairs this group discussing 3 techniques currently under assessment in the UK.<br>• DCD – XVIVO HOPE – Newcastle/Papworth have reported a transplant using the world's youngest donor using this technology and work is ongoingto take this forward. Funding comes from trust charities and there are insufficient flights currently, so it is not yet possible to support DCD heart retrieval in Europe. Work is ongoing to see if this work is sustainable.<br>**ACTION: L Kenny will give an update on XVIVO HOPE at the next RAG meeting.**<br>• mOrgan – Work is delayed currently until at least the end of summer.<br>• TA-NRP – A UK trial (applicable for all age groups) has started with 2 A-NRP cases recruited. The requirement for aNRP cases prior to progress towards TANRP has been reduced from 5 to 3 based on data provided so far. | **L Kenny** |
| 5.2 | Paediatric Business Case Workstream -<br>This workstream comprises key colleagues from the paediatric CT transplant centres in Newcastle and GOSH, NHSE Commissioners, NHSBT Statistics and Clinical Research, Lead Nurse for Paediatric Donation and Service Development colleagues from NHSBT.<br>• The primary aim is to secure funding to utilise new XVIVO technology to retrieve hearts from paediatric DCD donors in the UK as currently smaller paediatric donors cannot be considered due to size constraints using the OCS.<br>• A secondary aim is to enable increased hearts to be accepted from greater distances across Europe for DBD paediatric donors.<br>• Together these will increase the number of paediatric hearts available for transplant across the UK. The group are currently working on the first draft of the business case.<br>It has been identified there may be opportunities to expand this to include other perfusion technologies within paediatrics, (eg NRP).<br>ACTION – Debbie Macklam to provide an update next RAG. | |
| 5.3 | EVLP Lungs – Overview – J Parmar reported that lungs are still low for organ acceptance and there is a gradual decline in donation and transplant rates for DBD organ donors in the UK. Data from Toronto shows that EVLPtechnology would increase the numbers of lungs that can be utilised.<br>• Papworth team following training in Groningen started program last July The organs which haven't met transplantation criteria initially, improved under perfusion for 2-3 hours and were transplanted into a recipientwho is doing very well.<br>• This year 71 organs have been accepted (more DCD than DBD). 25 were accepted, 8 were perfused and 7 transplanted. | **M Berman** |

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| | • There were additional 6 direct transplants facilitated by having the potential to do EVLP, without requiring it at the end. . 5 were affected by staffing issues and 5 were declined on acceptance.<br>• ICU stay – the routine median is 6 days, post EVLP 7 days<br>• Length of stay in hospital – median is 26 days, post EVLP 29 days<br>Due to there only being 6 transplant centres, ischaemic times are long. 52 lungs have been perfused, and utilisation is 56%. In summary:<br>• Early experience is positive with good development of knowledge and expertise<br>• This is a good model for ARCs<br>• Attempts are being made to democratise EVLP access for all centres. Preliminary discussions are ongoing with Birmingham and GOSH and there has been good support from NHSE and NHSBT.<br>• Waiting times have reduced significantly over last 5 years.<br>Harefield doing something similar with improved rates. There is enthusiasm at Newcastle where there are the longest waiting times and limited time and funding, but the centre is low for EVLP although modified protocols should improve the situation. It was noted that it is difficult for small centres to have individual systems, and a centralised mechanism is recommended as links with other centres should be possible. A dedicated team is needed.<br>Links with other centres should be possible.<br>**AGREED: RAG is supportive, and M Berman will send the protocol to all centres.** | |
| 5.4 | Overview of MOReS (Mobile Organ Refrigeration System) – Data shows that storing organs on ice is detrimental and alternative options need to be considered. This portable fridge (first used in 2021) stores organs at between 4-10 degrees. 7 hearts and 6 lung blocks have been done using this and there has been reduced dysfunction in these patients. At present, MOReS is only used when Papworth retrieves so it remains as a pilot proof of concept.. It is recommended that other units also take part in this so that organs can be exchanged between centres. The device will fit in an ambulance. The cost is £900, and each device is cleaned in the same way as an ice box and reusable.<br>• In the first instance, retrieval teams should speak to IMT.<br>• The device is designed for organs. Large boxes can be problematic as they are often not returned.<br>• Further validation is needed to ensure boxes hold their temperature.<br>**ACTION: P Kaul will circulate details and use of the box will be discussed with E Billingham/NHSBT** | **P Kaul** |
| 5.5 | Update on Paediatric abdominal A-NRP – In the absence of A Butler, this was not discussed. Further information will be circulated post meeting. | |
| 5.6 | Update on Uncontrolled DCD – G Pettigrew reported that this programme has been live for 6 months and reports encouraging outcomes to date.<br>• 1 donor was used for 2 recipients. 1 recipient died (not related to transplant)<br>• 1 other attempt has been made to retrieve organs.<br>• Donor families have been very receptive, and A&E and ambulance teams are also positive about the programme.<br>Although this involves a lot of work, the team is being selective in terms of offers. Timings and location are reasons given for turn downs. The team was congratulated for getting this off the ground. | |
| 5.7 | Operational Governance for Service Development – Although this is not formalised currently, a streamlined process is being introduced. Further information is in the paper circulated. A risk assessment or change control will be agreed and the aim is to have fortnightly meetings. Following the SMT meeting, this will be trialled for 6 months.<br>**ACTION: EB to circulate email address.** | **E Billingham** |
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| **6.** | **PATIENT SAFETY (FORMERLY CLINICAL GOVERNANCE)** | |
| 6.1 | Patient Safety Team- OTDT INC-8612 (ODT-OCC-10789) – **RAG(25)01** – This paper was circulated prior to the meeting:<br><br>OTDT INC-8612 was highlighted within the paper which related to a retrieval involving CT organs and ANRP. The liver was subsequently deemed untransplantable. This has been reviewed by M Berman and I Currie.<br><br>Since this case a further review has been completed, and it has been identified that there has been a small and short-term trend relating to the loss of liver for transplant when both A-NRP and CT organs are retrieved. On review it is noted that different teams were involved, and different CT organs were retrieved in these cases. It's noted that while abdominal NRP has a large acceptance rate, over the past few months the failure rate has increased where CT retrieval is involved. Two Masterclasses are dedicated to organs deemed unsuitable for transplant following CT and A-NRP retrieval (that were previously transplantable) and the big variation between teams/centres' practice has been highlighted. It was noted that some teams are funding staples from their own finances. There will be a follow up discussion of this before the next RAG meeting. D Manas requested to be included in any wider concerns relating to practice.<br>**ACTION: B Cole to take this forward the issues of consumables to Commissioning.**<br>**M Berman and I Currie to continue monthly debriefs and circulate lessons learned.** | **B Cole/M Berman/I Currie** |
| 6.2 | Organ Utilisation with NRP and CT retrieval **–** **RAG(25)02 –** This paper was circulated prior to the meeting for information. | |
| 6.3 | ANRP with inaccessible thorax; Use of Cardioplegia above the clamp – A workstream is being created and I Currie and M Berman will take the lead liaising with G Pettigrew.<br>Action -I Currie and M Berman to create the workstream. | |
| 6.4 | Difference between Organs for Research and Organs for Transplantation – In this incident, a heart was accepted for transplant and the lungs for research. Due to miscommunication at the retrieval between the lead surgeon and the SNOD, the lungs were retrieved as if for transplant creating a delay for the heart which was damaged in the process. Patient Safety is looking into this. It was emphasised that organs for transplant should take precedence over research, particularly for hearts.<br>**ACTION: M Berman will follow this up for heart/lung transplants** | **M Berman** |
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| **7.** | **SIGNING OFF PROCESS FOR NOVEL TECHNOLOGIES FOR SURGEONS AND OPP** | |
| 7.1 | DCD Heart Training – B Cole gave an update on actions from the DCD stabilisation group. Training for DCD heart teams who have been attending competency training with Transmedics was highlighted. Teams are not required to attend together to minimise the strain on the workforce. The next steps will be phased training on attending and observing retrieval and transportation. | |
| 7.2 | ANRP –<br>• The framework for surgeons is in place. Questions were raised about accountability and whether NORS registration indicates accepting liability. It was emphasised that surgeons maintain standards and it is important to follow the guidelines for training and registration of NORS surgeons.<br>• A similar process for peri-operatives is suggested and it was agreed that practitioners need to come up with the process. It was suggested that liaison with BTS could help to create a special interest group.<br>**ACTION: I Currie, G Pettigrew and M Berman to share accreditation for mentoring at Edinburgh and Cambridge** | |

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| **8.** | **SUSTAINABILITY AND CERTAINTY IN ORGAN RETRIEVAL (SCORE) – RAG(25)17** | |
| | In D Macklam's absence, S Beale gave a presentation which is circulated with these Minutes.<br>• SCORE roadshows are progressing around the UK. All CT Centres were visited between March and July 2024. All liver/pancreas centres and NORS teams are being visited currently. Renal collaboratives are being engaged via MS Teams. The purpose of these visits is to describe the rationale of SCORE, to highlight the impact across the system and to identify key responsibilities for delivering change locally.<br>• Access to theatre – this is a key concern with multi-organ centres having greater challenges.<br>• Logistics – morning activity and bottlenecks are another concern<br>• Transport provision – reassurances about availability are also sought.<br>• ANRP/DCD Hearts – Now that there is baseline funding, work is ongoing on operational issues for delivering the services.<br>• Digital discovery is now complete, and work is commencing on the delivery phase<br>• Shadow modelling – a real time review of activity and organ placement 'as if in PAW (Planned Arrival Window)' is taking place to identify blockers/issues<br>It is hoped that digital offering will come first in for Q1 2026/27with a settling in period before SCORE can be implemented. Transplant centres need to be ready for this, and NORS teams equipped. In the meantime, feedback from the roadshows is requested from centres. It was suggested that local working groups are set up to look at the challenges with theatre issues and that all elective work is cancelled when on call for transplant. | |
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| **9.** | **ORGAN DAMAGE** | |
| 9.1 | Organ Damage Report – **RAG(25)03** – Full details are given in this paper reporting organ damage rates between 1 July 2023 to 31 December 2024 circulated prior to the meeting. The new organ damage grading system went live on 22 July 2021 to allow for more objective damage recording, following work of a previous working group. Full details are available in the paper. In summary:<br>• For DBD donors, rates of damage-free retrieval across organs were high, ranging from 87% for lung to 97% for heart. DCD donors had similar rates, ranging from 87% for liver to 97% for heart<br>• Comparing to national rates, most teams were in line with the national rate of damage-free retrieval across donor type and organs with some significant differences:<br>○ DBD kidneys – Leeds significantly higher, Newcastle significantly lower<br>○ DBD livers – Cambridge significantly higher<br>○ DBD pancreases – all teams in line with the national rate<br>○ DBD hearts – Papworth significantly higher<br>○ DBD lungs – Glasgow significantly higher<br>○ DCD livers – Cambridge and Oxford significantly higher, Birmingham significantly lower<br>○ DCD pancreases – Oxford significantly higher<br>○ NRP/Standard DCD – NRP significantly higher for livers | |
| 9.2 | CUSUM – **RAG(25)04** – This summary of CUSUM monitoring of abdominal organ loss due to retrieval damage was circulated prior to the meeting and compares current organ loss due to retrieval damage rates with an expected rate, based on national data between 1 April 2016 and 31 March 2021 (November 2024 run) or between 1 August 2021 and 31 May 2024 (February | |

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| | 2025 run). Since the last RAG meeting, there have been no signals against the national rate for organ loss due to retrieval damage. | |
| 9.3 | Updating the kidney and liver HTA-A forms – **RAG(25)05 and RAG (25)06** - These changes (circulated prior to the meeting) will become effective on 16 June and have been sent out to everyone. The changes have been made in response to governance issues or as requested. Changes mean the kidney form now has an extra page. | |
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| **10.** | **KPIs – NEW NORS CONTRACT – RAG(25)18** | |
| | This presentation from E Billingham is circulated with the Minutes. In summary:<br>• The workstream started in September 2024 with meetings held in November and January<br>• The approach has been based on current data and ability to monitor performance and real-life examples of current issues<br>• The focus is on operational KPIs and quality standards (eg arrival times). Raw data is needed from IMT to validate this. If the arrival time is more than 30 minutes late, there will be a financial penalty of £10K. The cost of an Assistant Surgeon will be withheld from the contract payment.<br>• The next step is to build in NRP/DCD hearts into the contract.<br>Changes will be introduced in shadow form from next April. The fragility and lack of resilience in the workforce was noted and it is important for teams to inform the Hub in advance of any issues to avoid a breach of contract and penalties. | |
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| **11.** | **RETRIEVAL OF HEART VALVES** | |
| | This presentation is included in **RAG(25)18**. E Billingham stated:<br>• 11/168 theatre pulmonary valves from NORS-retrieved hearts were discarded as they were retrieved 'too short' and were unable for use for alternative grafts, i.e. pulmonary patches or conduits<br>• 103 pulmonary valves have been banked, only 50 bifurcated.<br>• 27 aortic valves have been banked, only 4 have the arch present.<br>This is a historical issue, and awareness has been raised with the teams. Rates had improved in the report at OTDT CARE in February when hearts being unsuitable for valves was raised. It was suggested that the guidance is reissued. | |
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| **12.** | **A-NRP STEERING GROUP** | |
| 12.1 | Non-recurrent funding for A-NRP – B Cole reported that 41 places were funded for the Edinburgh Masterclass with additional financial support to fund 18 places on the June 25 course.. Those unable to attend previously are prioritised. NRP will become a requirement of the NORS contract from April 2027 with engagement calls already underway with centres regarding how this will be incorporated into all DCD attendances. Issues to be covered include increases in activity, the agency bank system and challenges around recruitment, resilience and finances. Training for teams will also be included with finance teams needing assurance of this for staff.<br>• Feedback from national NRP debriefs has highlighted there are occasions it would be helpful for the NORS surgeon to view the donor, prior to WLST. For example, to mark the femoral artery in an NRP case; if the donor had significantly altered physique. It was recognised that this is currently happening in many regions, also that this was not limited to NRP cases, and that it would be helpful to have some national guidance to support practice for SNOD and NORS colleagues. RAG Chairs agreed to take forward as action to ascertain the need from the wider retrieval community and liaise with donation colleagues in order to progress this. | **M Berman, C Johnston and I Currie** |

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| | **ACTION: M Berman, C Johnston and I Currie will include issues raised on the NRP Steering Group agenda.** | |
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| **13.** | **DCD HEARTS** | |
| 13.1 | DCD Hearts Oversight Group (HOG) – B Cole stated that K Quinn is chairing this in the interim following the departure of A Ali from NHS England. The future of the meeting is unclear as it has been chaired to date by NHSE. Key issues currently are:<br>• Introduction of an 11-hour rest – this is welcome on most occasions, but it is noted that some teams mobilise before this.<br>• Teams face challenges around multiple activities<br>• Funding and workforce issues are critical. There are currently no more than 8 surgeons in the UK doing DCD transplantation and numbers are going down rather than increasing.<br>• One team cannot cater for 3 retrievals at the same time and stabilisation of the workforce is a major priority.<br>• ACTION – Ian Currie and Debbie Macklam to provide update at next RAG regarding DCD heart stabilisation progress. | |
| 13.2 | Factors Influencing DCD Heart Retrieval – **RAG(25)07** - This paper circulated prior to the meeting reviews DCD Heart data across the UK from April 2023-March 2025. The aim is to identify occasions when hearts have not been considered for transplant, (resulting in a 14% reduction in the number of heart transplants for 2024/25)<br>• The number of DCD Hearts accepted and transplanted now accounts for 27% of all heart transplants in the UK.<br>• This has proved challenging for both the teams facilitating DCD Heart retrievals due to the longer length of the process in delivering the heart on the OCS to the recipient centre and the donor families waiting for a team to be available.<br>The details in the paper have highlighted a need:<br>• To review the resource capacity as part of the DCD heart service review following the granting of substantive funding.<br>• To review clinical information available at the time of offering considering ancillary testing e.g. CT Angio and comprehensive ECHO's etc. | |
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| **14.** | **CRITICAL UPDATES** | |
| | No critical updates were discussed | |
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| **15.** | **NORS CLINICAL LEADS FORUM** | |
| | E Billingham reported that the last 2 meetings had not been quorate, so a decision needs to be made regarding continuation. Training and the NHSBT Masterclass have been suggested as subjects for future meetings and a date for the next one is yet to be set. The forum is a local level meeting to exchange experiences and to discuss how to overcome challenges, financial and workforce issues. Those present at RAG stated they would like the meeting to continue and there was agreement that a start time of 4:30 pm was preferred and more likely to get a quorum. | |
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| **16** | **EDUCATION** | |
| 16.1 | Masterclass Update / Future updates – Two Masterclasses (virtual and face-face-to-face) have been held since the last RAG meeting with virtual numbers increasing. M Berman stated that he and I Currie will be stepping back from the virtual Masterclass and 4 new members have been appointed to lead this (C Johnston, S Farid, P Kaul and H Smail). IC and MB will still lead he next cadaveric Masterclass will be held in Cambridge. | |

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| 16.2 | Learnpro retrieval video library – **RAG(25)22** – An update on this new platform for NORS surgeons and perioperative practitioners is circulated with these Minutes.<br>For retrieval surgeons:<br>• LearnPro have details of all NORS surgeons fully or provisionally registered<br>• Details are taken from registrations received by NHSBT (C Robinson) for individual surgeons from the NORS centre's lead surgeon.<br>• Details of every individual must be on the form provided to each NORS team lead. Lists of surgeons on the NORS team is not sufficient.<br>• Access is then provided to the video material<br>For perioperative practitioners:<br>• LearnPro have updated details of all NORS perioperative practitioners (2 centres remain outstanding)<br>• Access has been provided to the video material<br>Within the NORS established E Learning platform for NORS Perioperative Practitioners there are updates to the existing Core – Scrub and OPP modules are almost complete. Additions to the basic E Learning platform include: modules designed by the expert practitioners involved in the service, for information and awareness for all perioperative practitioners and are **not** intended to replace any established national or inhouse training/sign off.<br>Action – Cecelia McIntyre to update next RAG. | |
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| **17.** | **TA-NRP** | |
| | M Berman reported that 2 cases have been recruited, and some information was presented at BTS. The UK trial's results will be discussed at a future RAG meeting. 1 more A-NRP case is needed before moving onto TANRP. | |
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| **18.** | **ESIT (ENVIRONMENTAL SUSTAINABILITY IN TRANSPLANTATION) – RAG(25)09 / RAG(25)14** | |
| | John O'Callaghan (transplant surgeon in Coventry) reported that ESIT is a new group in NHSBT chaired by Matt Wellberry-Smith. Full details are given in the circulated presentations. The NHS is the first health system to embed net zero into legislation (Health and Care Act 2022). There is a duty on all NHS organisations to contribute towards reaching environmental targets<br>• For emissions directly controlled by the NHS the targets are:<br>  ○ To be net zero by 2040<br>  ○ To ensure 80% reduction by 2028-32<br>• For emissions the NHS can influence<br>  ○ To be net zero by 2045<br>  ○ To ensure 80% reduction by 2036-39<br>The **vision** is to enable an environmentally sustainable future for transplant services in the UK The **mission is to** provide the UK transplant community with the data, strategies and tools needed to improve environmental sustainability in the delivery of transplant services. The opportunities for retrieval were highlighted:<br>• To do a pathway analysis<br>• To place further emphasis on proximity as part of organ offering algorithms<br>• To develop NORS retrieval travel principles to standardise the UK's approach and identify opportunities for quality improvement.<br>• To reduce the number of non-proceeding call outs (eg virtual scouting)<br>• To review the kit used by the NORS teams (to impact positively for the triple bottom line)<br>Colleagues are encouraged to come forward with ideas and further information can be found at @ESIT-NHSBT or ESIT@nhsbt.nhs.uk | |
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| **19.** | **RESEARCH** | |
| 19.1 | Hearts for Research – **RAG(25)21** - G Pettigrew gave this presentation in E Lawson's absence. Through INOAR it has been possible to offer an additional 1342 organs for research.<br>• 33% (452) have been accepted.<br>• 24% (316) have been removed and utilised in research.<br>INOAR is only applicable to organs declined in advance of retrieval and where researchers want organs perfused to transplant standards. Potentially it would be more successful if organs declined at inspection could be included; this commenced for hearts in August 2024 resulting in 6 organs retrieved for research out of 20 hearts offered to researchers. A competent CT NORS surgeon is needed to work alongside abdominal retrieval surgeons. The current fragile CT workforce was again highlighted alongside the need to protect the NORS teams.<br>**ACTION – M Berman to ask for expressions of interest to work through the process.** | |
| 19.2 | Heart rehab - HEart Rescue for Transplant by REstoring pH via ASIC1a Blockade – **RAG(25)20** – L Wang attended the meeting to present details of this non-randomised pre-clinical research project. Details are given in the paper circulated with these Minutes. It was noted that initial approval from the R&D group is needed, and it was confirmed that an application has been made. Agreement will be needed for the research team to attend the retrieval, there were no delays related to the research project and they will need to self-fund return to the hospital as transport from IMT will not be available. There will be further discussion off-line following discussion at the R&D group. | |
| **19**.3 | SENTINEL – H Giele – skin flap retrievals – H Giele presented this trial for skin flap retrievals. A lung and skin flap donor is matched with a recipient and randomised to get the lung only or the lung and skin flap. 60 have been randomised to date resulting in 6 transplanted skin flaps and 12-15 lungs. 30 retrievals have been attended with 8 skin flaps retrieved and good feedback.<br>• Retrieval time takes between 15 mins and 1 hour.<br>• Transplantation has been another issue but has been mainly successful and after lung transplantation.<br>H Giele asked for feedback as the trial would like to proceed to DCD. No transport or equipment is required as the team has used the equipment already available and retrieval can happen at the same time as the organ retrieval process. Manchester and Birmingham are now on board, but feedback from other teams would be useful. Agreed the operational work up was needed before the extension to DCD to start.<br>Action – M Berman to set up a meeting with stakeholders and take this forward. | |
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| **20.** | **Regional Teams collaboration to provide Hypothermic Machine Perfusion for Kidneys at Donor Hospitals – RAG(25)19** | |
| | A Amer (Newcastle) presented the vision of the establishment of a national service for continuous HMP of deceased donor kidneys (when NRP is not used) embedded within the current NORS service and a potential future ARC service. Full details are in the presentation circulated with these Minutes. Agreement would be needed with the NORS and recipient teams and ideally, the service would go through the Hub (DBD and DCD). The following issues were raised<br>• The Retrieval service cannot consider this currently and implementation of ARCs depends on completion of pilot work. It is suggested that Newcastle pilots this on its own initially.<br>• Concerns were noted regarding equity of the service.<br>• The project is perhaps too ambitious and cuts across other work underway currently. The Newcastle team could consider it through regional collaborative work in the meantime.<br>• Pilot work and good outcomes would be needed prior to expansion across the UK. | |

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| **21.** | **ANY OTHER BUSINESS** | |
| 21.1 | Items for next RAG agenda – RAG Members are asked to send suggestions for the next RAG meeting in November to advisorygroupsupport@nhsbt.nhs.uk | |
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| **22.** | **KEY POINTS FROM TODAY'S MEETING FOR CASCADE TO CENTRES** | |
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| | 1. CT organ retrieval with ANRP - Continuous efforts to be made in the form of debrief, sharing feedback, updating protocols and looking into commissioning surgical staples in order to reduce complication rates.<br>2. ESIT (Environmental Sustainability in Transplantation) initiative – huge support from RAG and encourage to submit ideas and projects to promote organ retrieval becoming greener. | |
| **23.** | **FOR INFORMATION ONLY** | |
| 23.1 | QUOD Data and Governance Update – **RAG(25)11** - This paper of QUOD statistics at January 2025 was circulated prior to the meeting | |
| 23.2 | Blue Light Monitoring – **RAG(25)12** – This audit of journeys for organs and NORS teams where blue lights were used between 1 September 2024 – 28 February 2025, (data as at 26 March 2025) was circulated prior to the meeting. | |
| 23.3 | Update on XVIVO HOPE DCD Paediatric Hearts – **RAG(25)16** - Louise Kenny sent a video of progress with this work at Freeman Hospital, Newcastle. This will be uploaded onto www.odt.nhs.uk | |
| 23.4 | Date of the next meeting - Wednesday 19 November 2025 – via Microsoft Teams | |