

**NHS BLOOD AND TRANSPLANT
ORGAN AND TISSUE DONATION AND TRANSPLANTATION DIRECTORATE
THE THIRTY-FIRST MEETING OF THE RETRIEVAL ADVISORY GROUP (RAG)
ON WEDNESDAY 8 FEBRUARY 2023 FROM 10:30 TO 14:30
VIA MICROSOFT TEAMS**

MINUTES

Present:

Marius Berman (Chair)	Associate Clinical Lead for Organ Retrieval
Aimen Amer	NORS lead, Abdominal, Newcastle
Liz Armstrong	Head of Transplant Development, NHSBT
Sarah Beale	Service Development Manager, OTDT, NHSBT
Miriam Cortes Cerisuelo	NORS lead, Abdominal, Kings, London
Sarah Cross	National Operational Co-ordinator, QUOD
Ian Currie	AMD Organ Retrieval, NHSBT
Shahid Farid	NORS lead, Abdominal, Leeds
Jeanette Foley	Deputy Chief Nurse, OTDT, NHSBT
Victoria Gauden	National Quality Manager, NHSBT
Shamik Ghosh	Lay Member for RAG, NHSBT
Rachel Hogg	Statistics and Clinical Research, NHSBT
Michael Hope	Abdominal Recipient Coordinator Representative
Chris Johnston	NORS lead, Abdominal, Edinburgh
Jerome Jungschleger	NORS Lead, CT, Newcastle
Debbie Macklam	Head of Service Development, OTDT, NHSBT
Derek Manas	Medical Director, OTDT, NHSBT
Cecelia McIntyre	Retrieval & Transplant Project Lead Specialist, OTDT, NHSBT
Hynek Mergental	NORS lead, Abdominal, Birmingham
Majid Mukadam	NORS lead, CT, Birmingham
Jas Parmar	Chair, CTAG Lungs Advisory Group, NHSBT
Gavin Pettigrew	NORS lead, Abdominal, Addenbrookes; Chair, RINTAG
Theodora Pissanou	NORS lead, Abdominal, Royal Free, London
Isabel Quiroga	NORS lead, Abdominal, Oxford
Miguel Angel Reyes Roque	Statistics and Clinical Research, NHSBT
James Richards	Royal Free Hospital
Mark Roberts	Senior Commissioning Manager, OTDT, NHSBT
Afshin Tavakoli	NORS lead, Abdominal, Manchester
Ian Thomas	RCLOD for SW, North Bristol Trust
Douglas Thorburn	Chair, Liver Advisory Group, NHSBT
Chris Watson	Joint Chair, Novel Technology Implementation Group
Julie Whitney	Head of Service Delivery, OTDT Hub, NHSBT
Bart Zych	NORS lead, Cardiothoracic, Harefield

In Attendance:

Caroline Robinson	Advisory Group Support, NHSBT (Minutes)
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		ACTION
1.	WELCOME, INTRODUCTION & APOLOGIES	
	<ul style="list-style-type: none"> • M Berman (Chair) welcomed everyone to the meeting • Apologies were received from Elijah Ablorsu, Ayesha Ali, Emma Billingham, Andrew Butler, Chris Callaghan, James Hunter, Hannah Poulton, Karen Quinn, Karen Mercer, David van Dellen 	

	<ul style="list-style-type: none"> Both M Berman and I Currie thanked R Hogg for the huge amount of work she has done with the Retrieval Advisory Group which has been essential to support initiatives undertaken. Rachel will move onto support the Cardiothoracic Advisory Groups and stated that she was looking forward to taking forward the experience gained in retrieval to CTAG. She will continue to work with CUSUMs and Super-urgent Liver for RAG. L Mumford will work on RAG over the coming year with Miguel Reyes in support. 	
2.	DECLARATIONS OF INTEREST	
	<ul style="list-style-type: none"> No declarations of interest were reported. 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 ODTT website as soon as possible. A request for papers not included on the website should be made in writing to advisorygroupsupport@nhsbt.nhs.uk 	
3.	MINUTES, ACTION POINTS AND MATTERS ARISING	
3.1	<p><u>Minutes</u> – RAG(M)(22)02 – The Minutes of the last RAG meeting on 11 October 2022 were approved with one amendment in Item 9 which will now read as follows:</p> <p><i>'M Roberts stated that there have been issues regarding flight availability over the summer due to an increase in charter flights resulting in lack of aircrafts and crew. Airports have also had to adjust opening and closing times due to sickness, recruitment issues and retention of staff. Three planes have been dedicated from Jet Assist for the retrieval contract. A 4th plane more has now been made available which has reduced problems. Flight availability is also impacted by pilot hours and NORS teams are reminded that flight crew time starts when they are mobilised. The World Cup also starts next month, and this may affect flight availability.'</i></p>	
3.2	<u>Action Points</u> - RAG(AP)(22)01 - The Action Points from the previous meeting on 11 October 2022 were updated as follows:	
3.2.1	<u>AP1 - Certificate of Recognition for NORS Perioperative Practitioners</u> - S Farid has forwarded actions taken by Leeds to M Berman to improve nursing retention and recognition.	COMPLETE
3.2.2	<u>AP2 - MCTAG update</u> – Formation of a working group about computed tomography imaging by M Berman/A Butler is in progress. There will be involvement of SNODs, and CLODs in this group and I Thomas will now represent the work of the Donation Action Framework on behalf of D Gardiner. D Manas / I Currie will continue to look for a time to meet with all the imaging groups	ONGOING
3.2.3	<u>AP3 - Pancreas update</u> – I Currie has written to PAG and LAG regarding accessory arteries. I Currie / M Roberts have amended NORS Guidelines to ensure surgeons are not distracted for live information by phone calls during the cold phase. <i>See Item 14.2.</i>	COMPLETE
3.2.4	<u>AP4 - Super Urgent Liver Report</u> – I Currie and J Whitney gave a presentation on the super-urgent liver pathway at the CT Centre Directors' meeting on 14 October 2022 for later cascade to teams	COMPLETE
3.2.5	<u>AP5 - NORS Organ Damage Imaging Group</u>	See Item 8.1 COMPLETE

3.2.6	<p>AP6 – NORS Annual Report - D Manas commented that the issue of teams going out but not proceeding with retrieval has been raised at senior management meetings at NHSBT and it is suggested that the reason for this may be an increase in more complex marginal donors. DCD retrievals are also more complex procedures.</p> <p>ACTION: M Berman to contact D Manas about setting up a working group</p>	ONGOING
3.2.7	<p>AP7 - QUOD Data and Governance Report – M Berman has highlighted collection of BAL samples (which was stopped during COVID) to CT NORS teams.</p>	COMPLETE
3.2.8	<p>AP8 - INOAR – It has been agreed 2 abdominal NORS teams (Addenbrookes and Edinburgh) will be trained to perfuse hearts for research studies in the absence of a CT NORS team and will be reimbursed for additional perfusion fluid required for perfusion of INOAR hearts. Since the last RAG meeting:</p> <ol style="list-style-type: none"> M Berman has circulated the video from the Masterclass 2021 of an abdominal team doing heart retrieval. L Armstrong / E Lawson have circulated the SNOD perspective to G Pettigrew / I Currie 	COMPLETE <i>See also Item 10.2</i>
3.2.9	<p>AP9 - Update from RINTAG - Uterine transplantation – M Berman / I Currie have liaised with I Quiroga to circulate the uterine protocol to the RAG group. I Quiroga stated that only Oxford is involved in this programme currently and should the programme expand, the protocol will be circulated to other teams. No internal iliac vessels are compromised in the procedure.</p>	COMPLETE
3.2.10	<p>AP10 - Blue Light Audit –</p> <ol style="list-style-type: none"> L Mumford will bring a report regarding the relationship between flight and blue light use to the next RAG meeting. R Hogg / M Roberts have checked that small bowel blue light usage is correctly recorded. Blue light data does not specify whether the organ is abdominal or CT. 	a) ONGOING b) COMPLETE
3.2.11	<p>Masterclass – January 2023 - The Zoom licence regarding numbers of attendees has been checked.</p>	COMPLETE <i>See also Item 10.1</i>
3.3	<p>Matters Arising - No issues were raised</p>	
4.	CRITICAL UPDATES FROM THE OTDT MEDICAL DIRECTOR	
4.1	D Manas reported the following:	
4.1.1	<p><u>New appointments –</u></p> <ol style="list-style-type: none"> Parwez Hossain has been appointed as the new OTAG Chair and has attended his 1st clinical team meeting where he reported a recent increase in cornea donation. Ian Thomas and Tom Billyard replace Alex Manara M Berman has been appointed Chair of the RAG. I Currie is AMD for Retrieval at NHSBT. They will continue to work closely together. C Williment has become NHSBT Chief of Staff. 	
4.1.2	<p><u>Other Critical Updates –</u></p> <ol style="list-style-type: none"> <u>Advisory groups</u> requesting extra meetings are asked to be mindful that both the Stats and admin support teams already have a high workload. <u>Finances</u> continue to be very tight and there is no news regarding future funding of DCD Hearts and ANRP. Both abdominal and CT Advisory Group Chairs as well as BTS 	a) M BERMAN / I CURRIE b) ALL CENTRES / J WHITNEY

	<p>have written to DH emphasising the importance of this work.</p> <ul style="list-style-type: none"> c) <u>The OUG report</u> is still awaiting final approval by the minister with feedback expected around 14 February. Implementation will be a challenge and the support of the clinical team will be needed d) <u>Funding for CLUs</u> remains problematic despite NHSE and DH understanding their relevance and supporting continued payment currently for lead CLUs. e) <u>ARCs</u> are included in the OUG but there is no funding currently. Work is ongoing to develop a service specification to seek financial support from industry sponsors. f) <u>CTAG Lung Summit</u> will take place on 22 February to look at why utilisation continues lower than pre-pandemic levels (60% of what it was in 2017) and why there are difficulties in recruitment to surgical posts. It is hoped the event will come up with solutions to these issues. g) <u>The Living Donor Liver Engagement event</u> will take place on Friday 10 February h) <u>Consent</u> is now down to 62% with brain death testing also down. A meeting with the clinical team and Holly Mason from the Donor Experience team is planned to find ways to improve this. i) <u>Transplant CUSUMs</u> – There are no CT signals presently, but there are two other signals from Cambridge (Kidney) and Leeds (Liver) which are being reviewed. j) <u>Workforce</u> - Both Newcastle retrieval and Birmingham Paediatric Liver retrieval teams are experiencing workforce issues. Staff retention is problematic for all retrieval teams with nursing shortfalls a particular issue. Teams are asked to work collaboratively (and to contact Chris Johnston and Pradeep Kaul particularly regarding their work on this) and to share ideas on how this endemic problem can be improved. k) <u>Histology</u> – the business case for a national service is complete and going to NHSE for potential funding. l) <u>UW/HTK</u> – UW is not guaranteed currently to be safe due to a contamination issue. This is not a batch issue but can affect individual bags. HTK (which must be stored cold) is to be used routinely although there are problems getting enough supplies into the UK and approved for use. Other sources of UW are being sought. It was pointed out that in cold machine perfusion of kidneys and livers, for which HTK is not licensed, machine perfusion using MPS will continue as there is no other solution. There has also been feedback that HTK takes longer to run through. All are advised to follow the manufacturer's instructions and to check supplies in each of the transplant centres. The Hub will do a twice weekly call (Tues and Thurs) and need a named person to contact at each centre regarding this issue. <p>ACTION: a) M Berman / I Currie to meet with NORS leads regarding this issue and b) all centres to inform J Whitney/Hub regarding their named contact who will report stock levels.</p>	
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	m) <u>Two QUOD incidents</u> are being investigated regarding kidneys bleeding post biopsy.	
5.	CLINICAL GOVERNANCE – RAG(23)01	
	<p>J Foley presented the Clinical Governance report and further information can be found in the paper circulated prior to the meeting.</p> <p>The surgical safety checklist in relation to ABO transcription errors and whether reverting back to a paper format was needed that was raised at the last meeting was highlighted. Since the last RAG meeting, work has been undertaken to see if there are ways to strengthen the electronic format, but a simpler, condensed version of the paper form is now the preferred option in the interim before Transplant Path is introduced.</p> <p>ACTION: J Foley to discuss a mock-up of the condensed form with M Berman / I Currie before wider circulation to RAG group</p>	J FOLEY / M BERMAN / I CURRIE
6.	SUPER URGENT LIVER REPORT – RAG(23)02	
	<p>This report, covering the period 1 November 2021 and 31 October 2022, was circulated prior to the meeting. The super-urgent liver pathway was initiated in April 2021 for livers accepted for super-urgent patients who are more at risk of rapid deterioration and death between listing and transplantation. It was agreed that if a liver is accepted, CT organs will immediately switch to group offering. Since 1 November, every case has been reviewed by key stakeholders to identify good practice and areas for learning. The outcomes are shown in the paper circulated. The following issues were highlighted in the meeting:</p> <ul style="list-style-type: none"> Whenever CT organs are offered, the length of process time increases significantly (8.8 hours for CT compared with 5.4 hours for abdominal offering) <p>ACTION: J Whitney to remove the phrase ‘Expression of interest’ from the offering sequence and replace this with ‘accept’ or ‘decline’.</p> <ul style="list-style-type: none"> Work is needed to change the behaviour of CT centres particularly regarding ‘expression of interest’ when an organ is offered. CT teams should arrive for retrieval 2 hours before knife to skin and the abdominal team 1 hour before. However, frequently, both teams arrive at the same time which leads to delays. <p>ACTION: R Hogg will ensure CT and abdominal arrival and knife to skin times will be added to future reports. Organ departure times will be recorded as well.</p> <p>While there have been some positive cultural changes because of the pathway, there have been issues with some cases. Each case will now be reviewed further to understand why problems have arisen and to challenge decisions taken.</p>	<p>a) J WHITNEY</p> <p>b) R HOGG</p>
7.	FEEDBACK ‘NORS – BUILDING THE FUTURE’	
	<p>This meeting was held to focus on how NORS should develop in future. Machine perfusion has come in since NORS started 12 years ago, and there are problems with funding and staffing and delays in the whole process. Data supports positive change and the meeting agreed:</p>	

	<ul style="list-style-type: none"> Night-time retrieval and continuing donor characterisation throughout the day are key aims More controlled retrieval times will help give donor families and recipients more certainty about when events will take place and will also help SNODs and CLODs manage their workload. As commissioners of retrieval services, NHSBT can ask for more transparency regarding funding. It is clear some trusts don't share financial decisions with clinicians and there is very little re-investment in the team. There needs to be careful consideration regarding operational efficiencies and logistics with the Hub. Lengthening the process will have workforce implications. Commissioning is likely to issue penalties for delays in the process. <p>All the feedback from the meeting will be included in a report that will go to the Change Programme Board this month.</p>	
8.	ORGAN DAMAGE REPORT – RAG(23)03	
	<p>This regular report covering reported organ damage between 22 July 2021 and 31 October 2022 was circulated prior to the meeting.</p> <ul style="list-style-type: none"> The new organ damage grading system went live on 22 July 2021 to enable more objective damage recording. DCD and DBD are considered separately Rates for damage-free retrievals as recorded on the HTA-B forms completed by recipient centres can be found in the report. <p>In summary:</p> <ul style="list-style-type: none"> For DBD donors, rates of damage free retrieval across all organs were high (ranging from 87% for pancreas to 98% for heart) DCD had lower rates (ranging from 84% for lung to 97% for heart) Most damage reported was <i>mild effect</i> Most teams were in line with national rates for damage free retrieval. Significant differences are listed in the report. <p>R Hogg thanked M Reyes Roque who put the report together. ACTION: L Mumford to look at DCD organ specific damage rates by NRP status.</p>	L MUMFORD
8.1	<p><u>Organ Damage Imaging Pilot Study Protocol – RAG(23)06</u> – At the last meeting, E Ablorsu stated a group was working on a guidance protocol that can be made available to the accepting centre to provide more accurate photographic evidence of damage to retrieved organs at the time of retrieval. A pilot will now start on 1 March 2023 with support from the Hub. ACTION: D Manas to arrange a meeting with all imaging groups</p>	D MANAS
9.	CUSUM MONITORING – RAG(23)08	
	<p>H Mergental reported that he had been asked to set up a working group using CUSUM monitoring to record organ loss due to retrieval damage. Initial work showed that CUSUM monitoring would be possible for abdominal teams but not for CT. Retrievals including small bowel plus organs retrieved for research are</p>	

	<p>excluded from the report circulated which also explains the methodology used.</p> <ul style="list-style-type: none"> • Every organ loss per retrieval will be treated as an event in the report which will come out to teams quarterly. HTA-B data will be used to record any CUSUMs. • The report will enable global team monitoring so every NORS team should look at monthly organ damage figures to ensure robust data can be collected and should report back any discrepancies. Teams will only be able to see their own report. • This kind of monitoring will help highlight the rate of organ damage events over a period to distinguish random events from damage events occurring over a short period of time. • There will be no formal monitoring for the first 12 months, but teams may be asked to investigate any signals by the Medical Director or AMD for Retrieval. • After the first 12 months, there will be an assessment to review if the methodology is working as anticipated and any team feedback will be considered when making any changes. 	
9.1	<u>CUSUM experience feedback –</u>	
	<p>A Tavakoli gave a presentation highlighting his team's experience of looking at organ damage within a short period of 3 months and this is circulated with these Minutes.</p> <ul style="list-style-type: none"> • Within 3 months there were 8 incidences of retrieval injuries noted. • The process followed is to contact the NORS lead and to inform them of a potential trigger. (A Manchester/Leeds meeting is held regularly and there is an internal review of any CUSUM). • The issue(s) are identified, and any learning points are recorded. Photographic evidence is useful for learning and ideally any injury event would not be considered without this. However, any injury without this still needs investigation and introducing retrieval injury photography, a retrieval organ assessment form and a template for internal/future investigation will be useful. • Overall, despite some negatives, the process aids learning and identifies areas for improvement. It can also be useful for revalidation and appraisal. The exercise can also be reassuring and positive about processes in place. <p>A Tavakoli was thanked for giving feedback on what can be a very sensitive process for teams.</p> <p>ACTION: A Tavakoli to provide an anonymised version of his presentation which will be circulated with these Minutes and included on the website.</p>	A TAVAKOLI
10.	EDUCATION AND RESEARCH	
10.1	<p><u>Masterclass January 2023 - report and future developments – I</u> Currie gave a report on the recent NHSBT NORS Masterclass. Although virtual attendance provides a different experience to a face-to-face event, participant numbers are increasing year on year with 180 attendees this time (compared with 140 last year) from 10 different countries.</p>	

	<ul style="list-style-type: none"> • Day 1 was an introduction to retrieval with non-clinical colleagues, ICU representatives, military surgeons and trainees in organ donation also attending. Medical and nursing staff were also invited to this and the other days. • Day 2 concentrated on organ retrieval technique with CT and abdominal dissection in the afternoon. This year there was improved photographic and video content. • Day 3 looked at novel technologies with input from UK and international experts providing teaching materials. • The event was successful in reaching different groups, eg military surgeons keen to learn how to gain access to major structures when on the battlefield. Some of these surgeons will join the NORS rotas for hands on experience. <p>Feedback has been excellent. This allows support for other future initiatives such as a 2-day hands on cadaveric dissection event to take place probably in November/ December. It is also hoped to develop a Learn-pro forum to include lecture-based materials.</p>	
10.2	<p><u>INOAR: perfused heart retrieval for research</u> – RAG(23)04 – The report for February 2023 was circulated prior to the meeting.</p> <ul style="list-style-type: none"> • L Armstrong reported that the INOAR initiative has been successful in increasing numbers of lungs and diabetic pancreases for research. • Heart numbers have not been so good perhaps due to the need for perfusion and packaging as if for transplant. A pilot that went live in December is taking place training abdominal surgeons at Edinburgh and Addenbrookes to perfuse DBD hearts with UW. • So far, only 1 heart has been accepted for research and reasons given why 3 other hearts were not accepted included the holiday period, staff on leave or poor access to the labs. It was emphasised that there is a need for heart retrieval for research to understand whether they reach the standard and quality required. • The programme will continue as planned with the opportunity to include DCD hearts in time. However, until more DBD hearts are accepted this cannot happen. • Feedback from some researchers is that they are notified at the time of discard of the organ rather than at the time of offering. 	
10.3	<p><u>Offering Cardiothoracic Organs for research</u> – L Wang sent apologies for being unable to attend. The meeting agreed:</p> <ul style="list-style-type: none"> • A huge amount of time has gone into to making this work happen and researchers need to understand that NHSBT's role is to facilitate their work. • Offering hearts for research also has a lot of operational implications that need consideration and researchers need to consider what systems need to be in place. <p>ACTION: It was agreed to invite Akila Chandrasekar/Andrew Parry to the next RAG meeting to discuss homograft and valve requirements.</p>	M BERMAN
10.4	<p><u>Perioperative education</u> – C McIntyre reported on the peri-operative forum set up by after the NORS Survey in December 2021 to share good practice and ideas.</p> <ul style="list-style-type: none"> • The times of meetings have been varied to free up theatre practitioners and the next meeting will be at 	

	<p>lunchtime on 9 February when a representative from Oxford will discuss visceral retrieval and Papworth will talk about setting up the OCS machine. There will also be an update on HTK.</p> <ul style="list-style-type: none"> • The next meeting will focus on recruitment and retention of staff who are frequently under-recognised. • It was noted that there is a lot of learning material that is available to SNODs that cannot be accessed by peri-operative and other staff as they do not have an NHSBT email address. It would be good if information could be shared once the peri-operative learning platform is set up. 	
10.5	<p><u>TANRP</u> – M Berman stated that A Rubino is leading a group to do controlled TANRP within a research pathway to assess potential ethical questions and particularly retrograde cerebral perfusion. A dry run at Addenbrookes is due to take place. A query was raised whether the study will be scientifically credible and able to address current concerns. It was noted that the study needs to be acceptable to supporters and detractors and agreed up front and I Currie and M Berman must be involved in the final outcome.</p> <p>ACTION: M Berman to write to Antonio for update on the study</p>	M BERMAN
11.	BLUE LIGHT MONITORING	
	<p>Mark Roberts stated IMT is still providing regular information and data on blue light activation and a full statistical report will be available at the next RAG meeting.</p> <ul style="list-style-type: none"> • Between the beginning of August and the end of December there were 129 journeys on blue lights. Most of these were for transportation of livers. • There were 22 team journeys, and all these were from donor hospital back to base carrying an organ which is appropriate. • It has been highlighted in governance and documents that the team should not be transported on blue lights between the base and the donor hospital. Blood samples and histology should also not be transported on blue lights. • Requests for blue lights must be made by a consultant and organ viability or deterioration of the patient will be considered. • Monitoring will continue and additional wording clarifying when blue light usage is appropriate will be added to NORS contracts for the coming year. 	
12.	NHSBT ENDORSED NRP ACCREDITATION FOR SURGEONS	
	<p>C Johnston stated that NORS registration for surgeons has been useful for ensuring standardisation across units and for appointing new fellows, particularly when people move centres. It is now queried whether this could be expanded to include NRP for perfusion practitioners. It is felt that as there is considerable variation in standards, registration would help to make criteria transparent, will provide clear objectives and enable approval as independent practitioners. It was agreed:</p> <ul style="list-style-type: none"> • To have a short-term working group to include CT, abdominal and peri-operative practitioners who will 	M BERMAN / I CURRIE / C MCINTYRE

	<p>decide on the metrics of assessment. It is suggested P Kaul and C McIntyre take part.</p> <ul style="list-style-type: none"> It is suggested that Edinburgh and Cambridge take part, aiming to produce a draft by June. <p>ACTION: M Berman, I Currie, C McIntyre will meet first to discuss ideas for the group to draw up terms of reference.</p>	
13.	ANY OTHER BUSINESS	
13.3	<p><u>Future meetings in 2023</u> – these are provisionally scheduled as follows:</p> <ul style="list-style-type: none"> Weds 7 June – MS Teams <i>Tuesday 28 November – Face to Face – PROVISIONAL</i> 	
14.	CIRCULATED FOR INFORMATION ONLY	
14.1	<p><u>QUOD Data and Governance Update</u> – RAG(23)05 – It was noted that one centre has stated it was not aware QUOD was reactivated while another said it was not aware of current guidance.</p> <p>ACTION: To be discussed with NORS leads</p>	I CURRIE / M BERMAN
14.2	<u>NORS Guidelines</u> – RAG(23)07	