NHS BLOOD AND TRANSPLANT
ORGAN DONATION AND TRANSPLANTATION DIRECTORATE

THE THIRTY-FIFTH MEETING OF THE RETRIEVAL ADVISORY GROUP (RAG)
THURSDAY 7th NOVEMBER 2024
1030-1600

THE WESLEY HOTEL AND CONFERENCE VENUE, LONDON, NW1 2EZ

Mr Marius Berman	**RAG Chair**
Aimen Amer	Newcastle NORS Lead - Abdominal
Liz Armstrong	Head of Transplant Development
Elijah Albosuru	Cardiff NORS Lead - Abdominal
David Bartlett	Birmingham NORS Lead – Abdominal
Jen Baxter	Lead Retrieval Nurse, Papworth
Sarah Beale	Service Development Manager, NHSBT
Emma Billingham	OTDT Head of Commissioning, NHSBT
Andrew Butler	MCTAG Chair, NHSBT
Carlo Ceresa	Royal Free NORS Lead – Abdominal
Ian Currie	AMD Retrieval ODT, NHSBT
Jeanette Foley	Deputy Chief Nurse, OTDT NHSBT
Victoria Gauden	National Quality Assurance Manager ODT NHSBT
Shamik Ghosh	Lay Member
James Hunter	QUOD Representative
Rachel Hogg	Senior Statistician NHSBT
Michael Hope	Addenbrookes Transplant Coordinator
Wayel Jassem	KCH NORS Lead – Abdominal
Chris Johnston	Edinburgh NORS Lead - Abdominal
Pradeep Kaul	Papworth NORS Lead - Cardiothoracic
Cecelia McIntyre	Retrieval and Transplant Project Lead, NHSBT
Helen McManas	National Professional Development Specialist, NHSBT
Debbie Macklam	Head of Service Development, ODT NHSBT
Derek Manas	OTDT Medical Director, NHSBT
Vipin Metha	Manchester NORS Lead - Cardiothoracic
Zia Moinuddin	Manchester Transplant Clinical Lead
David Quinn	Birmingham NORS Lead - Cardiothoracic
Isobel Quiorga	Oxford NORS Lead – Abdominal
BC Ramesh	Newcastle NORS Lead - Cardiothoracic
Steve Potter	Lay Member
Sanjay Sinha	NHSBT Patient Safety Team Representative
Ian Thomas	Clinical Lead for Organ Donation, Bristol
David Wallace	Liver Transplant Surgeon, Royal Free
Daniel White	Papworth Transplant Coordinator
Julie Whitney	Head of Service Delivery, OTDT Hub
Sarah Whittingham	SN-OD Team Manager, ODT Yorkshire NHSBT
Bart Zych	Harefield NORS Lead - Cardiothoracic

In Attendance

Chloe Bainbridge	Advisory Group Administration Officer
Luke Williams	Clinical Research Fellow

Apologies
Shahid Farid, Louise Kenny, Steve Large, Mark Roberts, Antonio Rubino, Ben Stutchfield, Ines Ushiro-Lumb

1.	**Welcome, Introductions, Apologies, Announcements and Thanks**
	M Berman shared with the group that he was recently interviewed and offered a position as NHS NSA (National Speciality Advisor fo heart transplantation). There has been discussion and agreement with I Currie and D Manas that expressions of interest for a deputy RAG chair will be sought. Due to the success of the close working relationships between CT and abdominal surgeons, it would be ideal if there was an expression from an abdominal applicant to complement M Berman's CT background. Later, when M Berman steps down, the new Chair will be abdominal, and the deputy will have a CT background. M Berman extended to the group to feel free to discuss with himself, I Currie and D Manas if anyone is interested in putting their names forward for this position as deputy RAG chair. D Manas added that the NSA for CT is a 3-year position that M Berman will be covering.
1.1	**Eulogy for Yasser Hagazy, Glasgow CT NORS and DCD team**
	M Berman offered a eulogy of a dear colleague that recently passed away who was an active CT NORS surgeon from the Glasgow Team. I Currie and M Berman had brief encounters with Yasser who was a great, diligent college. P Curry from Glasgow was going to provide a eulogy as a close colleague of Mr Hagazy, though unfortunately has not been able to attend the meeting today. There will be a eulogy shared after the meeting to honour a colleague who was an important part of the transplant community.
2.	**Declarations of interest**
	Nothing was declared.
3.	**Minutes of RAG 02/05/2024**
3.1	**Accuracy**
	The previous minutes were circulated shortly after the previous meeting that took place on 2nd May 2024 and were circulated prior to the current meeting. There were no queries or requests for amendments raised for these minutes.
3.2	**Action points**
	AP1 – Ongoing. M Berman gave an update where there is work trying to implement CT assessment which provides advantages for CT and abdominal donors. I Currie, I Thomas, J Whitney, M Berman, A Butler among others have met on several occasions. It has been difficult to get going, the group reached to the Royal College of Radiologists President. There has been somebody appointed recently who could help with this work. The group has reached out to this individual regarding the implementation. The main hurdle has been that the RCoR was supposed to issue guidelines for when the CT should be done. They appointed a radiologist from Papworth, but as there were many personnel changes issues that have affected this. There have been local initiatives at Birmingham and London. D Bartlett was not able to update the group at the time of the meeting but said some of the issues with reporting. Not all small hospitals can report a CT and there are issues with bringing the heart rate down deliberately to get a good CT. D Bartlett will liaise with a colleague and ask them to email M Berman for an update on Birmingham's work towards this. A Butler reported that there was work that had started internally to institute a local approach via the organ donor committee and intensive care unit to start doing CTs on all donors. If they can demonstrate benefits in one unit, then this will help getting this work out further. D Manas queried if this was service evaluation and who would be funding this to which A Butler confirmed it was service evaluation and it would be funded internally [at Addenbrookes]. S Sinha queried why RAG needs to go through the RCoR for guidelines as Radiologists are usually there to report but it is not clear why they are involved in getting the CT work off the ground. M Berman clarified that there was a need for guidance for what kind of CT, radiation, timings, injections (contrast/low contrast), if there is a need for just cardiothoracic. A Butler

had previously pointed out there were huge advantages for CT focus on meseteric anatomy etc.

D Manas highlighted two areas to consider: the ICE reports very clearly state that there should be exploration for CT of cardiothoracic donors as currently practice is out of kilter with the rest of the world; secondly, there should not be CTs of all donors, therefore RAG needs to decide which is easiest to institute. The cardiothoracic group are the priority at the moment, so the barriers here need to be moved quickly.

M Berman asked I Thomas to clarify that this work is out of the SCORE scope. I Thomas confirmed that this is not under scope. I Thomas asked if it was DBD post-verification of death or ante-mortem DCD, A Butler confirmed that there will be work to try and do both due to huge advantages for hospitals for cost and resource savings, while also considering that ECHOs are already being performed ante-mortem on DCD donors. I Thomas recognised the logistics around the process, and it would be of interest of the outcome of the work while offering support that can be given as a donation community that will improve the prospect of a retrieval and transplantation.

C Johnston suggested that the demands on radiology may not be great, however there are some concerns on the critical care teams particularly, for example some of the smaller hospitals in Scotland where most donors require critical care transfer for each donation. C Johnston queried if there was concern this would reduce the referral rate because of all the variability of factors such as out of hours radiologists alongside usual factors of variability. C Johnston added there may not be an impact but still queried the consideration of the risk. M Berman assured that this is the reason that this work must be on a national level because while it is a protocol, there is also signing off staff who are trained to transfer patients for CT. A Butler indicated that performing this as a pilot study at a local institution was an ideal way of demonstrating benefit, such as potential finding that there are a reduced number of ECHOs that require contribution from very pushed areas within hospitals, therefore also reducing time for delays waiting for retrieval availability then it shows there is a good chance of improvement at other hospitals.

M Berman clarified that this would not necessarily prevent doing ECHO as this is a complementary intervention i.e. CT won't give indication of function but will give indication of coronary disease.

D Manas raised that there is governance around this to consider. For example, if there is reporting of a scan that is inaccurate which leads to poor outcomes, who owns the governance out of the Trust where the scan was performed, the donation team or NHSBT? M Berman suggested creating a working group looking into this and other areas for this work.

Action: M Berman to form working group for donor imaging using CT, covering issues such as Governance, liaising with Royal College of Radiologists and retrieval and donation teams.

APs 3, 4, 5, 6, 8, 10, 12, 14, and 16 are complete.
AP2: To be discussed further as agenda item 10.1
AP7: To be discussed further as agenda item 7
AP9: To be discussed further as agenda item 5.3
AP11: To be discussed further as agenda item 5.1
AP13: To be discussed further as agenda item 12 **AP amendment - not part of SCORE.*
AP15: To be discussed further as agenda item 21.3
AP16: Complete.

While this may be addressed later in the agenda, M Berman wished to make the group aware that I Currie and M Berman have monthly debriefs regarding incidents and there are frontline clinicians and governance where the feeling is that combined retrievals of abdominal and CT

	organs are becoming safer. We have many more good outcomes for organs rather than bad outcomes which was the situation before the training was delivered 2 years ago. I Currie stated the most recent data was very encouraging, particularly when looking at 5-year averages. However, the number of lungs that are retrieved are fewer in A-NRP donors but those that are retrieved are transplanted at the national rate of DCD lungs. It's hard to know if the lower retrieval rate is due to much older donors which are suitable as liver donors but are marginal lung donors resulting in lungs being declined. M Berman updated the group that the draft paper of the data is currently being reviewed and will be shared soon (co-authored by R Hogg, RAG members and relevant clinicians and NHSBT representatives).
3.3	**Matters Arising**
	There were no matters identified for discussion at the meeting.
4.	**Medical Director Update**
	<u>New Appointments/Role Changes:</u> -R Venkateswaran is leaving his CTAG heart chair role due to him securing a position in the US. A Ranasinghe has been appointed a the CTAG Heart chair and will commence in post 1st December, S Pettit will become the CTAG Heart Deputy chair. -Lead Heart CLU role will be appointed to in due course following A Ranasinghe's appointment to CTAG Heart chair role. -KAG Chair R Ravanan has come to the end of his second term as KAG chair, replaced by G Jones and will commence as KAG chair 1st December 2024. G Jones will continue in National Collaborative lead role. No deputy has been appointed as yet. -B Stutchfield, Dep National Collaborative lead to support G Jones and the National Collaboratives. -D Garcia Saez has stood down from her National Clinical Lead in Cardiothoracic Organ Utilisation post. V Gerovasili has agreed to undertake the role for an interim period until spending review decisions are made and communicated regarding future CLU finding. -H&I Consultant Clinical Scientist David Briggs is retiring and there are plans to replace him. -L Barton OUG Programme Manager has commenced their role and has already provided great support. -L Marson has moved on from their role as lead for R&D and become a non-Executive member of the NHSBT Board. <u>Meeting Updates:</u> -RINTAG disestablished and now ROFG, co-chaired by G Pettigrew and E Lawson. -R and D steering group, co-chaired by S Marwaha (lay member) and R Ravanan, interim AMD R and D. The first meeting is taking place 19th November 2024. -M Wellberry Smith appointed into Environmental Sustainability in Transplantation (ESiT) Lead role. Role will include engagement within NHSBT will overlap with SCORE program including transport task force and other external groups. <u>Finance:</u> -Spending review baseline bid includes aNRP/ DCD heart and CLU funding. Funding is essential to maintain/improve OU, expect to hear funding decision by end of 2024. -ARCS bid submitted to DHSC, likely to receive notification of decision by April 2025. – Co chaired by S Ghosh and John Casey. SG aiming for a report to be generated soon. There is a

concern that if money is not received there will be ARCs popping up uncontrolled by NHSBT that are not owned in a safe way. Due to report and conclude over the coming months.

-Histopathology interim solution in place with funding identified. Aim will be to reduce the loss or organs due to lack of histopathology, PITHIA scanners will be used to process samples for reporting. There is an overall business case that went to NHSE that went 18 months ago which covers all of access to pathology to cover rotas, transport, BMSs, there is still no news on this. There is an interim plan. There is an ongoing audit of missed opportunities. The plan is there – remote access for pathologists, scanners used for PITHIA, etc. Every time they look at an image, there will be a charge. E Billingham is awaiting a date with NHS England. The money is there, it just needs to be allocated.

Other:
-Liver allocation system is being reviewed now; it is hoped middle of next year there will be some recommendations.

-OUG – the work is being done and DMM thanked all of Donations, L Armstrong and L Barton for their hard work on this.

-ISOU subgroups for Xeno, ARCS and H & I and trust engagement, trusts to take responsibility for transplantation, there is currently good responsibility for donation, however there is not the same level for transplantation. The trusts have been told timelines where they can provide a template to how they are going to perform assessments.

-Trust engagement, Stakeholder engagement and Patient engagement subgroups established and supporting the delivery of OUG recommendations.

- ICE report published, next steps will be for the Cardiothoracic Transformation Programme to convene, Marius Berman and Anna Reed have been appointed as clinicians on this Programme.

https://nhsbtdbe.blob.core.windows.net/umbraco-assets-corp/34815/report-on-uk-heart-and-lung-transplantation-services.pdf

-Request made too complete CUSUM reviews in a timely manner. Majority of liver centres are positive regarding CUSUM reviews and view as an and opportunity for learning and improvement.

-Consent rate – still at 61% for organ donor consent rate. Next year there will be a donation summit, there needs to be engagement within own organisation and the stakeholders so see the issue between different directorates. D Manas raised that with blood there are amber alerts but there is no equivalent alert for organ donation. DVLA partnership has been helpful but there is evidence that the campaigns don't engage with people and it hasn't improved donation rate.

-CUSUM – D Manas thanked R Hogg for their hard work for CUSUMs for organ damage.

-Council of Europe – D Manas is on the council where there is constantly a question about retrieval surgeons coming into the UK to perform retrieval, especially CT retrievals. There have been occasions where we have retrieved elsewhere in Europe, but we haven't allowed anyone to retrieve in our own country. D Manas had argued that this was about quality assurance. It has been agreed now that if NHSBT set some standards then we can allow those who meet the standards to come to the country to retrieve.

M Berman commented that CT Teams have been required to carry a passport. There have been incidents where there were visa issues because of type of passport, or some passports weren't valid on way in but were missed and there were issues returning. Each visa is a one-time entry and there are not any long-term visas granted for this purpose. There is also an issue

	where some surgeons may have to travel via their own countries as part of travel. Overall, there have been many issues with visa and passport access which will need to be discussed at working group. V Gauden reminded the group that retrieval in the UK is a licensable activity so something will need to be worked out around the HTA licences and what licence the visiting retrieval teams will work under. **Action**: **D Manas, M Berman and I Currie need to clarify the process and set up a working group and cover the HTA licences the visiting retrieval teams will work under.**
5.	**Service Development**
5.1	**Update for DCD paediatric hearts workstream**
	M Berman is chairing this workstream where the goal is to combine technologies to increase utilisation for paediatric hearts. mOrgan – S Large is leading on this development, however he has given his apologies for this meeting. M Berman updated on S Large's behalf that there are still tests to be done. This will go into Spring 2025 for completion of test flights. There will be a more robust update at the next RAG. TA-NRP – A Rubino is leading on this development and has also sent his apologies for this meeting. TA-NRP was paused in 2019 and the study was put in place for assessment of CT angio for donors in Addenbrookes for those initially having A-NRP only and then TA-NRP. The study went live 1st October 2024. At time of meeting, no patients have yet been recruited into the study.
5.2	**XVIVO HOPE DCD Paediatric Hearts**
	Overview given by L Kenny via a pre-recorded video for DCD Paediatric programme for donors less than 50kg utilising the XVIVO machine. *Latest Update:* Small child cannulation concept has now been proven, previous evidence from Australia now further supported by cannulation of a small child weighing 15kg in UK. Thanks were given to the team that were present for the day of retrieval of heart from small donor for their tolerance given it was the team's first XVIVO small child retrieval. MDTs with L Kenny's team of perfusionists, cardiologists etc have met with Belgian colleagues which has been helpful for the team to move forward. The Belgian team reports short ICU stays (3-6 days) and hospital stays (12-20 days) and patients have a full review after 30 days (including ECHO). L Kenny clarified how assessment performed of whether the heart works or not. A 'heart stop' MDT approach used by the Belgian team will be used: following a retrieval, all factors need to align (donor, co-morbidities, cause of death, ECHO, drug history). It is noted that children's hearts which have rarely been exposed to anything that may limit their potential as donors. The MDT will occur once the heart has been retrieved and is being perfused following implant on the device. Any concerns regarding the heart will lead to a decline. Data for hyperthermic preservation is good with XVIVO, myocardial recovery in hyperthermic conditions does occur and children's hearts are resilient to ischaemic times and rarely have potential for coronary or valve disease. The study so far has proven it has been technically amenable for a small child, proven that it is technically and conceptually possible for DCD recovery. Next is to perform a small child DCD. *Criteria:* -DCD donor not for OCS -Able to cannulate - Bodyweight 50kg and below (no lower weight as depends on cannulation)

	Moving Forward: -There has been in-house approval in Newcastle. -NHSBT change control is underway which is being led by L Armstrong. -Retrieval team will be consultant led by congenital team in Newcastle including L Kenny and M Nasser for cannulation and decision making around the heart. The rest of the retrieval team will be a hybrid team consisting of Newcastle and Papworth (depending on availability on the day). -MHRA waiver is being reviewed. -GOSH have applied to their ethics panel. *Protocol:* Mostly the same as a DCD heart adult apart from a few differences which were discussed in detail. There are currently 7 children on VADs in hospitals who have not received matched for DCD hearts due to their sizes, it is hoped this improves with the XVIVO DCD Paediatric programme. M Berman added that there is a lot of data emerging including a 15-centre international study published recently in *The Lancet* reporting good outcomes. L Armstrong updated that there is a current extension on the MHRA waiver for the use of the device for DBD hearts. There is a wait for the waiver for the use of device on DCD hearts. There are regular calls with NHSBT commissioning team. Once the waiver comes through, there will be work towards any comms required for the SN-ODs. GOSH have been advised that Newcastle patients will also be receiving the opportunity for DCD hearts retrieval and transportation of the heart on the XVIVO device but would not be available for GOSH patients which they have acknowledged. If GOSH would like to be involved in the future, NHSBT need to re-advise them of the need for NHSBT's oversight via a change control. D Macklam updated on potential funding routes for paediatric DCD heart retrieval. The original business case included adults only due to lack of capability to retrieve paediatric hearts. There have been smaller adults retrieved for larger paediatric patients. The business case will be reviewed again once there are outcomes from XVIVO and Morgan to show capability exists. **Action: M Berman to capture XVIVO and Morgan developments into DCD Paediatric Hearts workstream. Also to include how Papworth will be available for retrievals to support the Newcastle retrieval teams for paediatric DCD retrievals.**
5.3	**EVLP Lungs**
	M Berman provided an update: *Harefield* – no update provided offline or at meeting. *Manchester* - The perception of EVLP at the last RAG meeting was that it was research rather than a clinical protocol. It was agreed that the new Manchester protocol has been worked up by M Berman, V Metha and L Armstrong. D Manas will be involved in forthcoming meetings about the protocol to progress the protocol. *Papworth* – went live for EVLP in July 2024. Three lungs were perfused, two were deemed transplantable, both recipients did well post-transplant and were eventually discharged. One lung was perfused but there were concerns of its transplantability resulting in it being discarded. M Berman stated there has been formal EVLP training with XVIVO. There are training sessions every 2 weeks. On the night of the retrieval there was live EVLP support. P Kaul and J Parmar

	have been in Toronto for training. P Kaul reported that they had good feedback from Toronto which shows the training has been effective. For internal assessment, Papworth are training under standard criteria. ICE document shows there is a specific item about EVLP (DHSE website). EVLP should be limited to no more than 2 centres. At Papworth there will be at least two EVLP medics and EVLP operator involved in each run and the decision will be made by at least two consultants who are separated from the transplant consultants.
6.	**Clinical Governance**
	J Foley presented and discussed the Clinical Governance Report (RAG(24)10). Recipients of paper to note that there was a typo of March 2023 instead of March 2024 for the first incident. S Sinha thanked the group for their engagement and their input for cases and investigations. D Manas reminded the group that lack of engagement may lead to visits for centres that do not engage with the investigation process.
6.1	**Cardiothoracic Protocols with A-NRP**
	M Berman reported all protocols are on ODT Clinical website https://www.odt.nhs.uk/retrieval/policies-and-nors-reports/ There are now six smaller protocols relating to A-NRP to make it easier for teams attending multi-organ donors to read and practise correct protocol. New protocols will be live on website from 18th November.
6.2	**Death Verification by ACCPS for DCD**
	A brief outline was given, there will be more information to be circulated to the group later. (Dale Gardiner will communicate and let CB know when to disseminate).
6.3	**Code of Practice for Diagnosis and Confirmation of Death**
	A brief outline was given, there will be more information to be circulated to the group later. (Dale Gardiner will communicate and let CB know when to disseminate). **Action: D Manas, I Currie and M Berman to meet to ensure the wording that's being circulated is supportive of retrieval surgeons and does not place them in any level of predicament in terms of the responsibility of the checking the forms. Query who to involve legally.**
7.	**Signing off process for novel technologies for surgeons and OPPs**
	There are more NRP teams and such expansion requires a signing-off process for novel technologies for surgeons and organ perfusionists (both abdominal and CT) for standardisation of practice. C Johnson and F Hunt shared at previous RAG an initial document which has been taken on board and resulted in a new workstream. A draft of competencies for surgeons and OPPs will be circulated when ready. At NHSBT there are provisional registration and full registration processes for surgeons already, so the novel technology signing-off process will be similar. It is hoped the draft will be completed end of 2024 and it will be finalised by end of next RAG. **Provisional** – someone who can do the procedure and is still training under proctorship.

	Registration – to recognise someone being fully trained. D Manas raised whether this should be incorporated into the new NORS registration rather than a separate process, however I Currie raised that not all centres can support training for novel technologies, M Berman stated that the training for technologies is not funded currently. D Macklam further added that due to inadequate funding in place for novel technologies and centres not being able to self-fund, a mechanism is needed to put governance in place. V Metha added that they are regulated by GMC and there isn't accreditation for any other procedures, therefore it may be difficult to regulate something where there is currently no funding. **Action: Further discuss the practicalities and risks involved in the signing-off process for novel technologies.**
8.	**Sustainability and Certainty in Organ Retrieval (SCORE)**
	RAG(24)11 was shared prior to the meeting. D Macklam also provided further updates: <u>Support services (D Macklam)</u> Looking at the impact of the dedicated window on offering and the lab services and transport. i.e. moving from a 24/7 period to a fixed window of 2000-0300. The overall timeline looking at soft launch in 2026-2027 with full contract change in 2027/2028. The engagement piece for the community will happen in the next 3-4 months. There will be some sessions arranged and D Macklam encouraged people to attend any sessions at their local hospitals. <u>NORS Workforce stream (C McIntyre)</u> C McIntyre gave a presentation on the aims and overview of the workstream. In summary, there will be a focussed spotlight of each NORS team, their wellbeing and what's going on within these teams. This will provide recognition of the teams for the work they do and increase awareness of Trusts and Health Boards of work NORS teams do. E Billingham added that the NORS Forums are not mandated but they are for the benefit of the clinical teams and NORS team.
9.	**Organ Damage**
9.1	**Organ Damage Report**
	RAG(24)12 was shared prior to the meeting and was presented by R Hogg at the meeting. J Whitney added there are forms returned where damage is reported related to donor anatomy but no surgical damage. These cases should be picked up in monthly NHSBT review meetings.
9.2	**CUSUM 47.21**
	RAG(24)13 and RAG(24)14 were shared prior to the meeting and were presented by R Hogg at the meeting. B Stutchfield gave his apologies. Since last RAG, there have been no CUSUM signals to report. Proposal for formalising CUSUM damage was raised by R Hogg, who provided a refresher for the group that reports of organ damage are routinely reviewed by D Manas, I Currie, S Sinha and J Whitney with R Hogg. If there is a signal, D Manas will review what requires further investigation. There had previously been consideration of need to change what causes a signal, however the number of signals received do not signify a requirement to change.

	The monthly organ damage report will continue to be disseminated. There will be an SOP which has been included in the appendix of the paper. The main part of formalisation proposal is that there is now an SOP for teams to follow after a signal has arisen. M Berman gave the group an opportunity to raise objections to the proposal, for which there were no objections, only support given. The proposal will be taken to CARE for review for approval.
10.	**NORS Annual Report**
10.1	**NORS Annual Report**
	RAG(24)15 was shared prior to the meeting. The paper was not discussed further at the meeting due to time constraints. M Berman took the opportunity to thank the group for their work. Novel technologies will now be referred to as '*perfusion technologies'* as they are no longer novel.
10.2	**Items for future NORS Annual Report**
	Year on year Stats have been adding to the report based on feedback from the group at RAG. It was queried what the benefits to the report would be, timings were discussed where DBD hearts should be leaving within 20 minutes from cross clamp. The critical point of SCORE is that teams arrive when they are supposed to arrive – metrics such as a heat map might be beneficial (such as requested time of arrival). I Currie would like for this to be established before SCORE is implemented as teams arriving late will have more consequences once SCORE has been implemented. M Berman asked the group to consider any potential items/metrics for the NORS Report to let R Hogg know. **Action: Deadline for All to send ideas for inclusion in NORS Annual Report to R Hogg by end of March 2025.**
11.	**Adherence to NORS Standards**
11.1	**Team Compliance and Organ Extraction Times**
	RAG(24)16 was shared prior to the meeting. E Billingham presented and introduced the paper, including work taking place to review NORS contracts and use of KPIs as part of the SCORE programme. The new contract will reflect changes in SCORE and quality standards for recording the timings. There may be trigger points where there is a fall of standards against agreed commissioned standards. R Hogg discussed the data within the paper of adherence to NORS Standards. M Berman reminded the group of the NORS standards: Surgeon, Assistant Surgeon, Scrub Nurse and Organ Perfusionist. The term 'assistant surgeon' can be any one where the lead surgeon is happy for them to assist i.e. nurse, trainee surgeon.
12.	**A-NRP Steering Group**
12.1	**Non-recurrent funding for A-NRP**
	I Currie updated that the NRP Steering Group last met September 2024. - The work for NRP passport uploaded to transplant path is underway - Ben Cole is progressing with this work. - B Cole also visiting base SNOD centres to discuss perfusion technologies with new starters.

	- £1million funds have been allocated for NRP for centres that applied for fund allocation. D Macklam updated that £650,000 have been allocated which includes: £307,000 to staffing to increase rota cover, some over weekend and some over the week for covering NRP retrievals which is happening towards end of year; 55 masterclass places to increase capability across all abdominal teams; £250,000 for consumables. In total everything will increase capacity to deliver NRP. - Discussion about having resident perfusion device in Northern Ireland, B Cole is looking into this and will report back. - Uncontrolled DCD to start imminently in Cambridge 14th November 2024. - TA-NRP – programme has gone live. C Johnston queried whether TA-NRP could be included in the NORS contract, E Billingham said she could investigate how the TA-NRP would work within the NORS contract.
13.	**DCD Hearts**
13.1	**DCD Hearts Oversight Group (HOG)**
	D Macklam provided an update of the discussion that took place when HOG last met: - Centres are outlining where the working pressures are i.e. sickness, people leaving the DCD heart rota. There are currently 7 people covering the rota now which has meant it has become a fragile service. - While there is a loss of people in the service, the pathway bringing people in does not appear to be sustainable either so there is work into making it more sustainable. - There has been an update from Great Ormond's Street and Newcastle and there are a few patients awaiting heart transplants which has meant the ICU capacity across both hospitals is full. There is increased pressure to provide increased heart transplants for paediatric patients. There is currently funding for 10 patients for DCD paediatric hearts (referring to L Kenny's presentation at agenda item 5.2), there is a need to find permanent sustainable funding to roll out the technology. - Update regarding funding requested as part of spending review - £4.7 million has been requested to roll out DCD hearts. This does not include recommendations that have come out of SCORE. - New allocation policy for DCD hearts has moved from centre-based allocation to a named patient allocation. If there is not a named patient, the heart will then be offered to a centre to be more in line with how DBD hearts are offered.
13.2	**DCD Heart retrieval service stabilisation workstream**
	I Currie gave an overview of the DCD Heart retrieval service stabilisation workstream as a heart stabilisation group consisting of NHSBT and cardiothoracic colleagues: - As a proof of concept, there was a 'prototype' of 3 teams retrieving for the UK. There has been personal commitment (such as working beyond their actual roles) from people involved to make DCD Heart work go well but there are issues with sustainability with the service. - Potentially if one or other teams on the service now were to withdraw, this would have a large impact on DCD hearts availability in the UK. The group was set up to consider what work needs to be done in the future for sustainability of the service. - How much control of money do centres have, how is money spent supporting on-call rotas, to which answers vary. There are also queries of what incentives can be brought in and ways DCD heart teams' work is recognised. - Hybrid teams so workload is reduced in terms of hours per retrieval. - Finance options to encourage accountability of how consumables are paid for and utilised. - Necessity of a surgeon to accompany a machine until the organ reaches the recipient hospital, which results in prolonged hours for those surgeons, how can this be mitigated?

	- How can the workload problems be resolved – what steps can be taken to temporarily reduced the workload. - How there can be an expansion of the cohort of individuals who are contributing to DCD, such as surgeons who were previously trained but are not active on the rota can be supported and mentored and having hybrid teams where there may be an available perfusionist at one centre who can assist another centre (though it is recognised there are complexities to address). The lead is that there has been very good engagement from all the centres on how to make it more sustainable. D Manas noted the importance of resilience of the as there is a difficulty in obtaining more money and resources, therefore resilience of what we already have is important. D Manas also added there is a need to reach out to newly qualified surgeons to appeal to new surgeons to join the transplant community. M Berman said from a cardiothoracic point of view that there are difficulties in promoting the career where the younger generation are more wary of the work-life balance and pay. There are schemes where ST2 and ST3 trainees can have tasters of 3-6 months, though this means exposure becomes more limited for existing transplant-fellows. P Kaul added that there are surgeons in the community who are willing, but they are not able due to the job descriptions within their main contracted roles. MB encouraged the NORS leads to reach out and discuss further on NORS Clinical Leads calls for further discussion for the workstream. **Action: Derek and Marius to have a discussion to appeal to Rowan Parks, President of Royal College of Surgeons of Edinburgh to represent retrieval services and examine how there is a need for work for improving retrieval training as part of routine medical training.**
14.	**Critical Updates**
	<u>Positioning during NRP</u> I Currie raised an issue with DCD lung retrievals for NRP where bleeding in the chest occurs. I Currie suggested that it seemed reasonable to employ a method of putting patients head up (as is performed with hepatobiliary surgery) to minimise this. This has not previously been discussed with the CT community, there is a protocol being worked on, there will be cases and debriefs to assess whether this is beneficial. This has not been added to the most recently updated protocols as there needs to be more learning ahead of this being incorporated into protocol. **Action: Carry out a case by case work up and fine tuning of protocols to reduce chest bleeding in DCD lung retrievals. This will be added to national protocol in the future.**
15.	**NORS Clinical Leads Forum**
	C Johnston provided an update and overview of the meeting. The Clinical Leads Forum is to give support to NORS Leads. It operates as a Forum/area for expressing concern i.e. calls for support that may be discussed further at RAG. C Johnston stated that it is acknowledged that there is no overlap between the Forum and RAG and that it is understood RAG being for strategic decision making while the Forum is a support for the NORS Leads level of implementation). D Manas stressed that RAG is the core group, but items can be discussed at forums, but they need to be brought back to RAG.

	M Berman encouraged NORS Leads to engage as much as possible in the meeting, if they can't attend, please let someone attend to represent. There is opportunity to get to know each other and to learn from each other as there is no formal training for NORS Leads. C McIntyre shared that as part of the workforce workstream, it was identified that there was a need for an immediately identifiable graphic or logo. The logo presented to the meeting was designed by one of the NORS Lead. They designed it to represent teamwork, the 4 members of staff on a commissioned NORS team and the UK
16.	**Education**
16.1	**Masterclass Update / Future updates**
	I Currie reported that the NHSBT NORS Retrieval Masterclass was in its 5th year running. There has been a huge amount of work organising and it's been a great way to engage the with the community. I Currie and M Berman would like for there to be bids for directorship, ideally as a joint directorship between a CT and abdominal lead for how they might run the class for 3 years to present new ideas to refresh the masterclass. The individuals don't need to be geographically close. It will still be a 3-day long event but ideas for future developments are welcomed. **Action: All NORS Leads to let M Berman and I Currie know of expressions of interest for ideas.**
17.	**TA-NRP**
	See item 5.1 for update.
18.	**Recruitment for Investigation of myocardial gene expression in the transplantable heart by RNA sequencing**
	L Williams shared a presentation of the study that had been discussed at RAG previously. 53 potential recipients have consented for participation in the study thought he recruitment of hearts has been low (3 hearts in 7 months). This may be due to only Papworth taking ownership of taking the 3mm punch biopsies required for the study, therefore Papworth needing to be the retrieving team. Papworth are also limited in that they seldom retrieve for themselves due to how NORS is set up. They also need to retrieve in a QUOD hospital due to licencing agreements. L Williams asked if this can therefore be expanded to other CT NORS teams who will take the first biopsy in the donor hospital under licence of QUOD, send with heart back to Papworth where the second biopsy will be taken to continue with the study. Training will be provided to NORS teams and NORS surgeons who would sign a delegation log to show they have undertaken training. Papworth will send out biopsy kit and equipment needed. Papworth will be responsible for identifying Papworth recipients who have consented to taking part in the study. Once offer is accepted, Papworth will communicate to NORS team which retrievals require a biopsy. There will be a worksheet to complete to document who has taken the biopsy and the time of biopsy which is returned to Papworth. The NORS Leads will also be asked to attach QUOD stickers to HTA-A form. M Berman had previously written to the NORS Leads regarding this request and wished to bring to RAG for further discussion.

	D Quinn (Birmingham NORS Lead) confirmed happy to do but to make sure the research governance is in place. B Zych also agreed to deliver once training had been given. P Curry emailed before the meeting and agreed. L Armstrong added that there was a need for an additional change control to manage this expansion. She queried whether teams would perform biopsies once trained or will there be a plan for everyone to be trained and on board before going ahead and going live. L Williams stated that as sponsors, once delegation log has been signed and training completed, Papworth will allow those first biopsies to be taken as soon as there is a suitable recipient. L Williams confirmed that he has spoken to Emma Lawson (OTDT Research and Innovation Lead) and Maggie Stevens (Research and Service Delivery Nurse Specialist) – there is an action plan for making the change including discussion at RAG, going through a REC to make an amendment to original submission for subsequent sponsor approval. V Gauden queried whether the biopsy is taken under NHSBT licence. L Williams confirmed it was taken under NHSBT's research licence hence why only QUOD approved hospitals. It is considered a QUOD study as they take responsibility for the samples and recording who the samples have come from, but the samples are not taken to QUOD biobank for storage. Papworth are taking the samples and are being recording that they have them for the study. V Gauden fed back that the original study was originally kept on a small scale in terms of NORS team involvement on the basis that it's biopsies from transplantable hearts. However, V Gauden will need to discuss further with NHSBT's DI Helen Gillan to discuss the risks involved where hearts may be biopsied that may not end up with a non-Papworth recipient. **Action: L Armstrong to raise change control for Papworth training.** **Action: Set up a meeting to discuss further progress involving V Gauden's response from NHSBT DI, REC and sponsor approval.**
19.	**Any other Business**
19.1	**Perfadex for Lung Transport**
	For lungs retrieved for transplantation, the first bag used will be in Perfadex and the other two bags will be cold saline. Perfedex has now been commissioned and this practice puts the retrieval practices the UK in line with the rest of the world. The practice has been approved and has a go-live date for implementation on 1st April 2025.
19.2	**Report on Use of Flights**
	RAG(24)17 was shared prior to the meeting. D Manas provided an update that there's a letter going out explaining the wider use of flights. There has not been consistency between looking at distance by road. There is no national overview of flights. J Whitney requested that NORS team members receiving calls to share flights to bring organs back should try to accommodate wherever possible. This is an effort to avoid loss of organs or loss of donors and significant delays.
19.3	**Use of weighing scales at Retrieval**
	M Roberts gave his apologies and did not attend the meeting. C McIntyre provided an updated that hospital weighing scales may be more reliable at donor hospitals as they remain at the hospital where they will be tested yearly, recalibrated and PAT tested every six months. Scales in retrieval kits may be affected by transportation with retrieval teams leading to them being temperamental. There needs to be a protocol detailing how to set

	up scales prior to weighing organs. It may also include having a marker of a known weight as a tester to indicate whether the scales are accurate or not. **Action: Create protocol and video for retrieval teams for weighing organs at donor hospitals to reduce the occurrence of discrepancies of weight of donated organs taken at donor hospitals and recipient centres.**
19.4	**CT NORS teams to bring cardioplegia to all retrievals for hearts for research**
	M Berman reported a plea for cardiothoracic teams to take cardioplegia even if retrieval is just for lungs to increase utilisation of hearts for research.
19.5	**Key points from today's meeting for cascade to centres – to be circulated in the Minutes**
	None raised at the meeting.
19.6	**Items for next RAG agenda**
	The agendas are set through several meetings with NHSBT stakeholders, but M Berman has not received any responses when reaching out to clinicians to put forward agenda items. M Berman has requested again that the group would be interested to hear ideas from clinicians for any agenda items in the future as it is uncertain whether previous agendas cover all areas of interest for clinicians.
20.	**For information only**
20.1	QUOD Data and Governance Update
	See RAG(24)18.
20.2	**Blue Light Monitoring**
	See RAG(24)19
	Next Meeting: Wednesday 14th May 2025, Face to Face (Venue TBD)

Commented [CB1]: For Marius, Ian, Mark and Cecelia?

Commented [MOU2R1]: yes