NHS BLOOD AND TRANSPLANT
ORGAN AND TISSUE DONATION AND TRANSPLANTATION DIRECTORATE
THE THIRTIETH MEETING OF THE RETRIEVAL ADVISORY GROUP (RAG)
ON TUESDAY 11 OCTOBER 2022 FROM 10:30 TO 15:30
AT CORAM CAMPUS, 41 BRUNSWICK SQUARE, LONDON, WC1N 1AZ

MINUTES

Present:

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
Andrew Butler	NORS lead, Abdominal, Addenbrookes; Chair, Multi-visceral Advisory Group, NHSBT
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
James Hunter	Clinical Science Coordinator, QUOD
Chris Johnston	NORS lead, Abdominal, Edinburgh
Pradeep Kaul	NORS lead, Cardiothoracic, Papworth
Debbie Macklam	Head of Service Development, OTDT, NHSBT
Derek Manas	Medical Director, OTDT, NHSBT
Jorge Mascaro	CT Centre Director, QEH, Birmingham
Cecelia McIntyre	Retrieval and Transplant Project Lead Specialist, OTDT, NHSBT
Hynek Mergental	NORS lead, Abdominal, Birmingham
Gavin Pettigrew	NORS lead, Abdominal, Addenbrookes; Chair, RINTAG
Hannah Poulton	Lay Member, NHSBT
Mark Roberts	Head of Commissioning Development, OTDT, NHSBT
Afshin Tavakoli	NORS lead, Abdominal, Manchester
Ian Thomas	RCLOD for SW, Southmead Hospital, Bristol
Chris Watson	Joint Chair, Novel Technology Implementation Group
Julie Whitney	Head of Service Delivery, OTDT Hub, NHSBT
Sarah Whittingham	Team Manager, Donor Care and Co-ordination
Claire Williment	Accountable Executive – Organ Utilisation Programme; Legislation Implementation, NHSBT
Bart Zych	NORS lead, Cardiothoracic, Harefield

In Attendance:

Caroline Robinson	Advisory Group Support, NHSBT

		ACTION
1.	**WELCOME, INTRODUCTION & APOLOGIES**	
	• M Berman (Chair) welcomed everyone to this first face-to-face meeting of the Retrieval Advisory Group (RAG) since 2019. • Apologies were received from Richard Baker, Emma Billingham, Dale Gardiner, Shamik Ghosh, Jerome Jungschleger, Emma Lawson, Vipin Mehta, Majid Mukadam, Jas Parmar, Theodora Pissanou, Andreas Prachalias, Karen Quinn, Isabel Quiroga, Aaron Ranasinghe, Antonio Rubino, Avinash Sewpaul, Rajamiyer Venkateswaran, Steve White	

2.	**DECLARATIONS OF INTEREST**	
	No declarations of interest were reported. RAG members are asked to declare if any information in papers for this meeting are sensitive content that should not be published on the public facing NHSBT OTDT website.	
3.	**MINUTES, ACTION POINTS AND MATTERS ARISING**	
3.1	Minutes – **RAG(M)(22)01** – The Minutes of the last RAG meeting on 29/03/2022 were approved.	
3.2	Action Points - **RAG(AP)(22)01** - The Action Points from the previous meeting on 29/03/2022 were updated as follows:	
3.2.1	AP1 – Update from Advisory Group Chairs - MCTAG **-** A Butler attended both CTAG Hearts and Lungs in Spring 2022 and there is now agreement re starting procedures to allow MV retrieving teams to begin retrieval procedures to reduce delay in cross clamp.	**COMPLETE**
3.2.2	AP2 - NORS Report 2020-21 - R Hogg has updated the report to include DCD Heart hybrid team deployment in future	**COMPLETE**
3.2.3	AP3 – NORS Report 2020-21 - the length of retrieval figure to include those retrievals involving flights has been added to the NORS report 2021-22	**COMPLETE**
3.2.4	AP4 – Organ Damage Interim Report – R Hogg agreed to look at DCD lung results in the context of DCD heart donation. The information has been sent to M Berman and no cases of DCD lung damage have involved DCD Hearts	**COMPLETE**
3.2.5	AP5 - NORS Damage Imaging Group - It has been agreed that the 3 groups discussing imaging need to come together to discuss the work they are doing on how accurate imaging for quality is achieved, where images are stored and how pictures are taken. D Manas emphasised that guidelines need to be followed regarding imaging. Photos need to be stored following consent on an NHS server. C Johnston reported that good progress has been made in Edinburgh with only cameras registered for medical photography being used. Photos are stored on an NHS server and there is a separate NHS consent form regarding local and national teaching. However, this is restricted to NHS Lothian use only. It was agreed that a general consent form should be developed to be stored on the NHSBT server with involvement of lay members and families of donors. Clear differences between utilisation, damage and education issues need to be recorded. It was also noted that the way in which SNODs discuss consent with families is critical as length of process is the most common complaint reported regarding the donation process. Work to streamline the consent form will continue. D Manas will determine the linkage between the imaging groups and will discuss this with I Currie.	**COMPLETE**
3.2.6	AP6 - Updated RTI Form – M Berman highlighted a recent incident where a heart was retrieved which then waited in theatre for the spleen and lymph nodes. This had a negative effect on the recipient who remains on ECMO, and it was agreed that M Berman would send details of the incident to J Foley.	**COMPLETE**
3.2.7	AP7 - Updated Pancreas A Form – R Hogg has added the option *'pancreas removed from body'* to the list of requests for inclusion on the Pancreas A form in the future.	**COMPLETE**
3.2.8	AP8 - NHSBT contracts – Blue Light Activation Data – Jan-March 2022 I Currie has re-circulated this report to other advisory groups which gives a detailed breakdown of each journey and how often the blue light is activated.	**COMPLETE**
3.2.9	AP9 - Super Urgent Liver Report – The super-urgent liver pathway has been proposed for cases where the liver has been accepted for a super-urgent pathway to minimise the length of process. This report has been circulated at CTAG meetings for the CT teams	**COMPLETE**

3.3	Matters Arising - No issues were raised	
4.	**OTDT MEDICAL DIRECTOR'S REPORT**	
4.1	D Manas reported the following: • Appointments and Changes - A Manara is retiring and will be replaced by 2 people who will support D Gardiner operationally; Desley Neil will work for 2 years on an interim plan project for which funding is being sourced. Gareth Jones will work with the collaboratives, particularly on renal transplantation issues. • Funding – there is limited funding available this year. DCD Hearts will be funded for 1 year. Lead CLUs will continue to be funded for the next two quarters of this financial year. However, there is no funding for local CLUs, although many have agreed to continue pro bono for the moment to continue work to improve organ utilisation rates. • OUG – the report making 12 recommendations is complete and is awaiting appointment of and approval by a minister – *see Item 14.* • ARCs – There is an aspiration to have 3 ARCs with lung and liver taking priority. The Kidney group is still waiting to see what perfusion is needed. • Organox – a meeting with NICE has taken place who are keen to see how utilisation can be improved. Lung utilisation is at its lowest for many years and a Lung Summit will take place in 2023 to discuss potential improvements that can be made. There is some conflict between heart and lung utilisation as CT teams are small and theatre access is limited. If a heart is accepted, a lung transplant cannot go ahead either simultaneously or after the heart operation. Scouting was suggested as a potential way of improving utilisation to be discussed at the Lung Summit. • Histopathology – the business case is now with NHSE, and it is hoped to have the programme up and running in the next 2 years. D Manas also reported that all units are open currently and there are no CUSUMs to discuss; Plymouth has a longstanding CUSUM which should be resolved shortly.	
5.	**Certificate of Recognition for NORS Perioperative Practitioners – RAG(22)20 / RAG(22)21**	
	C McIntyre highlighted this scheme to reward peri-operative practitioners who have been in post for 5 continuous years or more with a certificate of recognition. NORS leads are also informed of the award. It is hoped that this will aid retention of staff and that financial recognition can be awarded in due course by lifting the peri-operative retrieval role into Band 6 (AfC). It was noted that the retrieval shift is frequently at night when it is 'unseen' and therefore less likely to receive recognition or appropriate banding. It was suggested that NORS leads and trust Medical Directors/CEOs are copied in when the certificate is sent out to highlight the role in the trust. The lack of nursing staff currently and unwillingness of trusts to use agency staff has also resulted in some teams being unable to mobilize and it was suggested that a penalty is issued if this is the case. At present warning letters are sent by NHSBT when this becomes a regular occurrence, but it is suggested that these are sent more frequently given cost implications for failure to mobilize. **ACTION: S Farid to forward actions Leeds have taken to M Berman to improve nursing retention and recognition.**	**S Farid / M Berman**

6.	**FOCUSSED UPDATE FROM ADVISORY GROUP CHAIRS**	
6.1	MCTAG - **RAG(22)36** – A Butler reported the following: • In April 2022 Kings and Addenbrookes collaborated to undertake the first adult full MV transplant using a split liver. The left lateral segment was transplanted into a super urgent paediatric patient and will hopefully address issues associated with transplants for patients who are very small. • The profile of upper limb transplantation is being raised by the team at Leeds who are liaising with SNODs around the UK regarding the donor characterisation process and requirements. • Donor imaging using CT in circumstances where a modified MV graft is being considered is an aspiration to minimise delays and inappropriate travel for retrieval teams and recipients. **ACTION: M Berman/A Butler to form a small working group to discuss involvement of SNODs, CLODs and the Donation Action Framework in this.** • Time constraints relating to cold ischaemia times for intestinal containing grafts will necessitate ongoing need for blue lights. *(See also Item 16)*	**M Berman / A Butler**
6.2	Cardiothoracic (CTAG Hearts and CTAG Lungs) – In the absence of J Parmar and R Venkateswaran, M Berman reported that poor lung utilisation is causing the most concern and will be discussed further at the Lung Summit in 2023. Conversely, heart activity is increasing so it is felt poor resource capacity is directly contributing to low lung utilisation figures. It was agreed that lungs retrieved but not utilised is a waste of money and time and needs further investigation.	
6.3	Kidney (KAG) – No report given	
6.4	Liver (LAG) – No report given	
6.5	Pancreas – S White commented by email that a right accessory artery was dissected out of the pancreas due to the liver surgeon stating he needed it. This is not an isolated incident despite being an event that should not happen. It was noted that although retrieval surgeons should not answer calls during explant procedures, incidents like this can be avoided by better communication between liver and pancreas surgeons at the time of retrieval. It was suggested this procedure could be discussed at the Masterclass in January. **ACTION: I Currie/M Roberts to amend NORS Guidelines to prevent distraction of retrieval surgeons during explant** **I Currie to write to LAG and PAG regarding accessory arteries**	**I Currie / M Roberts** **I Currie**
7.	**CLINICAL GOVERNANCE**	
7.1	NHSBT Clinical Governance Report - **RAG(22)22** – J Foley highlighted 3 cases in this report relating to mismatched ABO organ allocation; one of these was a near miss and the other two were identified early in the pathway. The retrieval checklist which includes the blood group was emphasised as a particular area for vigilance as in 10% of cases this is not completed. This is a NORS team responsibility, but it was noted that the checklist is only now available electronically via the SNOD's IPAD rather than on paper which could mean it is missed by the retrieval team. It is also perhaps completed retrospectively which is not good practice and may mean it is inadvertently missed. Teams are reminded that completion of this form is a requirement of the retrieval process.	
8.	**SUPER URGENT LIVER REPORT - RAG(22)23**	
	Recipients listed for super urgent liver transplant are at risk of rapid and fatal deterioration during the time between listing and transplantation. Deterioration may take place over hours, meaning a patient can become un-transplantable. Experience suggests that avoidable	**I Currie / J Whitney**

	retrieval delay is common for these patients. The super-urgent liver pathway was proposed for cases where the liver has been accepted for a super-urgent patient to minimise the length of process and to avoid such situations. When a liver has been accepted for a super-urgent patient, if CT organs are under offer, CT offering switches to group offering to reduce the length of time taken. A pilot of this pathway began on 1 November 2021 for all super-urgent liver acceptances where CT offering occurs. The super urgent registrations and outcomes between 1 November and 31 July are shown in the report circulated prior to this meeting. Between 1 November 2021 and 1 September 2022, 73 cases were reviewed by key stakeholders. In total, 14 different areas for development were identified and 11 areas of good practice and these are listed in the report. CT Centres are reminded that agreeing acceptance of an organ (rather than stating an 'expression of interest') is essential in ensuring the pathway proceeds smoothly. It is also important that there is no reluctance to wake surgeons at night if a definite offer is likely. **ACTION: I Currie and J Whitney to give a presentation on the super-urgent liver pathway at the CT Centre Directors' meeting on Friday 14 October for later cascade to teams.**	
9.	**FLIGHT PROVISION**	
	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. NORS teams are reminded that 4 hours is the limit of time available for crew and the time starts from the initial call requesting a flight. The World Cup also starts next month, and this may affect flight availability.	
10.	**UK TRANSPLANT AND UK RETRIEVAL SURVEYS**	
	I Currie gave a presentation of the work of the Pathway Intelligence Group which aimed to look at making changes to retrieval and transplantation timings due to pressures including: • More retrievals taking place during the day • Transplantations taking place at night more than ever • These factors are challenging for current employees and a discourage new recruitment • There are considerable funding pressures Issues noted in 2021 that adversely affect donor hospitals, retrieval teams, transplant teams and recipients were: • Family decision to first offer is taking 6 hours longer than it did in 2011 (donor characterisation) • Time from first offer (AB) to first AB mobilisation is 2-3 hours later • Team deployment is much later meaning teams are often out after the shift has ended. • Day time retrievals have an adverse effect on elective surgery. • Transplants take place more often overnight, especially liver and pancreas transplants Surveys were undertaken regarding preferred times for transplants and retrievals which indicate a preference for setting 90% of retrievals at specific times and a stop to mobilisation at 4 am. However, it is	

	important to understand the effects of the length of the donation process for donor families, the views of SNODs and how more daytime work would affect elective surgery that is scheduled. Re-formatting of NORS and the expansion of DCD will depend on expertise in the teams, training, technology and improving the timings of the pathway.	
11.	**ORGAN QUALITY**	
11.1	Organ Damage Report – **RAG(22)24** - A fixed term working group was set up in 2019 to review and improve data collection for damage and improve reporting. More robust definitions for organ damage grades resulted to collect data on the Retrieval Team Information (RTI) form and the HTA-B form to provide more objective damage recording. These new grades went live on 22 July 2021 to both retrieval teams and recipient centres. The report circulated gives results for the first twelve months of use of the new grades and compares team rates of non-damage across donor type and organs. Across all organs and donor types, team specific damage-free retrieval rates are all either in line with the national rate or significantly better than national.	
11.2	Organ Damage Review Process – A small group was set up to look at discrepancies between the RTI form and the B form. If severe effect damage is indicated, this triggers a governance investigation. For moderate effect damage, e.g. if the liver is fatty, a letter is written to ask if this is surgical damage to see whether the B form should be changed. The word 'surgical' will be added in an update to the B form.	
11.3	NORS Performance Data Group - **RAG(22)25** – This working group was set up to develop a system for auditing NORS performance. The Group's remit is to review the organ damage data, and to develop and implement a robust and clinically relevant tool for continuous monitoring of NORS service quality performance. When developed, the CUSUMS will be produced quarterly and distributed to centres along with the organ damage reports. Since last RAG, the group looked at the number of events in the baseline period (1 April 2016 – 31 March 2021), which led to the decision to not use CUSUMs for cardiothoracic teams due to low event rates. Simulations were performed for abdominal teams to decide key values for the CUSUMs. From this, it has been agreed that to use a chart limit of 2 and the change of interest will be a doubling of mortality. This gave the best trade-off between a long time for a team to have a false signal to occur (~2 years) but will pick up a true signal quickly. The next steps are now working on creation of CUSUM charts using data so far, which will be presented to RAG for sign-off.	
11.4	NORS Organ Damage Imaging Group – **RAG(22)26 / RAG(22)27** – E Ablorsu stated that this group was set up to develop a guidance protocol to provide more accurately photographic evidence of damage to retrieved organs at the time of retrieval that can be made available to the accepting centre. It is hoped that implementation of this program into daily practice will increase organ utilisation, shorten the process of organ acceptance, improve transplant outcomes, and support the governance process in cases where there is a clinical incident related to a damaged organ. The pilot at Manchester and Leeds will last 3 months and aims to: • assess the benefit of taking photographic evidence of every damage identified at the time of retrieval and impact on organs allocation process • assess the benefit of introducing the checklist to guide the surgeon to assess a graft and help to detect any damage • help to identify any potential issues The key stakeholders and their roles and responsibilities along with the Organ Damage Assessment Checklist (excluding CT) are in the papers	**E Ablorsu**

	circulated. The SNOD impact assessment was also circulated. It is anticipated that the NHSBT server will be used as the platform to share images. **Action: E Ablorsu to provide update**	
12.	**NORS ANNUAL REPORT – RAG(22)28**	
	The annual report for April 2021-March 2022 was circulated prior to the meeting and is available on the ODT website. 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. **ACTION: D Manas to discuss setting up a working group to look into this issue and updating of the protocol with I Currie** **Post meeting comment: M Berman to contact D Manas about setting up working group**	**D Manas / I Currie** **M Berman**
13.	**NTIG**	
13.1	DCD Heart Programme Update – This now has funding up until March 2023. The program has increased by 30% and the JIF programme has enabled all centres to do transplants. As yet implant data is not available but 90-day survival for both DBD and DCD is 90%.	
13.2	ANRP Steering Group – The business case is being developed and is now waiting to hear more from the Department of Health and Social Care. The group is overseeing the development of protocols. 6 teams out of 10 have implemented NRP; Cambridge and Edinburgh are leading with Birmingham, Cardiff, Newcastle and Royal Free at different stages of mentoring.	
13.2.1	NRP Quarterly Report – There were approximately 50 attendances for Cambridge and Edinburgh last year with significantly better survival for livers after NRP for DCD transplantation.	
13.2.2	ANRP and CT Activity - There were 209 DCD heart donors April 2015 – March 2022 – 178 DRP only, 22 underwent TA-NRP, and 9 A-NRP with no difference in transplantation rates between these groups. 5 A-NRP hearts were transplanted into first adult heart only recipients – all of which were alive with a functioning graft at 90 days. In the same period, there were 269 DCD lung donors – 253 DRP only, 3 TA-NRP, and 13 A-NRP with no difference in transplantation rates between these groups. Between April 2011 and March 2022, there were 12 A-NRP first adult lung only transplants – all of which were alive with a functioning graft at 90 days.	
13.3	National NT Debriefing Sessions - **RAG(22)30** - This paper detailing current information was circulated after the meeting. This forum has enabled clinical colleagues to share practice, review and discuss clinical decisions made and assess complex cases. All NORS leads are asked to encourage their team members to attend these shared learning sessions to maximise utilisation of organs. All agreed this has been a very useful process.	
13.4.1	TA -NRP - **RAG(22)37** – On behalf of A Rubino, M Berman reported: • The clinical protocol and study protocol have been completed and circulated for feedback. • A dry run at CUH has been planned for Friday 14 October at 08:00 to simulate an abdominal retrieval involving A-NRP and feasibility to perform a portable CT-angio in Theatre 12. • Study funding has been approved in principle from CUH and RPH once IRAS and protocols are completed. • The R&D and IRAS application being processed with CUH. Further information on this and 13.4.2 below is shown in the paper circulated with these Minutes.	

13.4.2	Increased DCD Activity & Retrieval Implications – *See Item 13.4.1*	
13.5	XVIVO heart preservation; UK progress – This is part of a multi-centre trial. No cases have been randomised.	
14	**ORGAN UTILISATION GROUP**	
	C Williment reported that the final report has gone to the Department of Health and now awaits ministerial approval. It will then be re-published with timescales and details of any resources that are needed. An implementation programme will then follow.	
15.	**RESEARCH AND DEVELOPMENT**	
15.1	QUOD Data and Governance Report - **RAG(22)31** – J Hunter attended the meeting to give an update on QUOD: • The latest statistics were circulated prior to the meeting. The numbers of donors are increasing and there are now 70 research projects using samples and 35,000 samples in the biobank. However, BAL samples (which were stopped during COVID) remain low. **ACTION: M Berman to highlight BAL samples to CT NORS teams** • The change in kidney biopsy size for QUOD from 2 mm to 3 mm went live in May. Feedback indicates that this is easier to do and there have been no governance issues.	**M Berman**
15.2	INOAR – **RAG(22)32** – This paper was circulated prior to the meeting. Heart acceptance and removal remains a concern with some researchers reporting that hearts retrieved by abdominal NORS teams (unperfused) are not suitable for research studies and the preference is for perfused hearts to be retrieved by the CT NORS team. It has been agreed that 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 they will be reimbursed for additional perfusion fluid required for perfusion of INOAR hearts. This will enable 10 hearts to be perfused for research. Following approval of the initiative by RAG ongoing costs and SMT approval will be agreed. Some final SNOD communications are to go out. **ACTION: a) M Berman to circulate the video from the Masterclass 2021 of an abdominal team doing heart retrieval.** **b) L Armstrong/E Lawson to circulate the SNOD perspective to G Pettigrew/I Currie**	**a) M Berman** **b) L Armstrong / E Lawson**
15.3	Update from RINTAG – G Pettigrew gave the following update: • Novel Transplant Discussion – **Official Sensitive** • mOrgan Programme – this project is still active but has not yet been utilised. • DeFat – this programme aims to give fatty livers machine perfusion with NMP as the only control. • INOAR – *see Item 15.2*	
16.	**BLUE LIGHT GROUP UPDATE**	
16.1	Blue Light Policy and Governance – **RAG(22)33** – This document was circulated prior to the meeting for information	
16.2	Blue Light Audit – **RAG(22)34** – RAG Members are reminded that no blue light requests should be made for equipment or bloods and it is prohibited to travel with a blue light without an organ on board. **Units should have a policy for the use of blue lights, in order to keep individual surgeons safe**. Concern was expressed at the meeting that it is hard for surgeons to sign a contract for the use of blue lights when they feel a patient's life is at risk without it. However, the purpose of the governance structure is to prevent harm to patients, and it is noted that the Department of Transport will remove the use of blue lights	**R Hogg** **R Hogg/M Roberts**

	altogether if it is felt the system is being abused. There was discussion about potential relationship between flights and blue light use and if impact of flight availability is increasing blue light use for some centres. It was noted that there was no mention of small bowel blue light use in the report, and whether it is grouped in with the other organs being transported as part of the bowel transplant. **ACTION: a) R Hogg to look into relationship between flight and blue light use** **b) R Hogg/M Roberts to check small bowel blue light usage is correctly recorded**	
17.	**MASTERCLASS JANUARY 2023**	
	Following record numbers of attendees last year, the next NHSBT Masterclass will take place in January 2023 and will follow the same process as last year combining face-to-face attendance in Edinburgh with a virtual hybrid option. All RAG members are asked to encourage any new surgeons to attend as well as anyone who would like some refresher training/education. The ICU community, CLODs and TRODS are also being invited. **ACTION: I Currie to check the zoom licence regarding numbers of attendees.** **Post meeting comment: Tapestry AV confirmed Masterclass will use their Zoom licence**	**I Currie (COMPLETED)**
18.	**NORS GUIDELINES**	
18.1	NORS Guidelines Version 10 – **RAG(22)35** – M Roberts highlighted the changes to the guidelines: • Clarification of vessel retrieval if the liver is to be split • Actions if the heart is to be donated for tissue • Updated guidance should there be a return of effective, sustained cardiac output in DCD after death • Guidance on kidney biopsy for NORS surgeons • Updated abdominal perfusion protocol in Appendix 3 • Addition in Appendix 9; Guidance for the Surgical Count. • Addition in Appendix 10; NRP National Protocol Changes to the guidelines are highlighted in purple in the circulated document. The guidelines will be reviewed annually.	
19.	**ANY OTHER BUSINESS**	
19.1	Dates of next meetings: 3 shorter meetings are planned for 2023 as a trial to see if this works better than 2 longer meetings: • Weds 8 February 2023 – MS Teams (potential education/research focussed) • June – face to face – venue and date to be confirmed • November – MS Teams – date to be confirmed	