NHS BLOOD AND TRANSPLANT
ORGAN DONATION AND TRANSPLANTATION DIRECTORATE

THE SEVENTEENTH MEETING OF THE NHSBT CTAG(L) LUNGS ADVISORY GROUP ON WEDNESDAY 31st MARCH 2021, 10:00-13:30 VIA MICROSOFT TEAMS/TELECON

Attendees:

Jayan Parameshwar	JyP	**CTAG Chair**, Royal Papworth Hospital
Amit Adlakha	AA	Respiratory Physician, Queen Elizabeth Hospital Birmingham
Marius Berman	MBe	Joint Associate Clinical Lead Organ Retrieval, NHSBT
Malcolm Brodie	MBr	Paediatric Respiratory Physician, Newcastle
John Forsythe	JF	Medical Director, OTDT, NHSBT
Diana Garcia Saez	DGS	Specialty Doctor Cardiothoracic Surgery and Transplantation, Harefield
Shamik Ghosh	SG	CTAG Lay Member Representative
Rob Graham	RG	Co-Chair, CTAG Patient Group
Gill Hardman	GH	CTAG Clinical Audit Group Cardiothoracic Fellow, Freeman Hospital
Margaret Harrison	MH	CTAG Lay Member Representative
Delordson Kallon	DK	Head of H&I Laboratory, Barts Health NHS Trust
Jim Lordan	JL	Respiratory Physician, Freeman Hospital, Newcastle
Derek Manas	DM	Associate Medical Director - Clinical Governance, Retrieval and Transplantation, NHSBT
Jorge Mascaro	JM	Centre Director, Queen Elizabeth Hospital, Birmingham
Jasvir Parmar	JsP	Respiratory Physician, Royal Papworth Hospital
Katherine Pretty	KP	Statistics and Clinical Studies, NHSBT
Anna Reed	AR	Respiratory Physician, Harefield Hospital
Tracey Rees	TR	Scientific Advisor, NHSBT
Rachel Rowson	RR	Specialist Nurse Organ Donation
Sally Rushton	SR	Principal Statistician, NHSBT
Karthik Santhanakrishnan	KS	Respiratory Physician, Wythenshawe Hospital
Sophie Smith	SS	Recipient Transplant Coordinator, Birmingham
Helen Spencer	HS	Centre Director, Respiratory Physician, Great Ormond Street Hospital
Ulrich Stock	US	Centre Director, Surgeon, Harefield Hospital
Sadie Von Joel	SVJ	Lead Nurse Recipient Coordinator, NHSBT
Hester Ward	HW	Consultant in Public Health Medicine, NHS Scotland
Julie Whitney	JW	Head of Service Delivery, OTDT Hub, NHSBT
Colin Wilson	CWi	Renal Transplant Surgeon, Royal Free Hospital

In attendance:

Jacqui Bennett	JB	PA/Secretary, Clinical & Support Services, NHSBT (Minutes)
Caroline Robinson	CR	Clinical and Support Services, NHSBT

Apologies:

Ayesha Ali	AyA	Highly Specialised Services, NHS England
Lynne Ayton	LA	Transplant Managers Forum Representative
Stephen Clark	SC	Centre Director, Surgeon, Freeman Hospital, Newcastle
Catherine Coyle	CC	NI Public Health Consultant
Anushka Govias-Smith	AGS	Commissioning Programme Manager, Edinburgh Royal Infirmary
Ben Hume	BH	Assistant Director; Strategy, Transformation & Business Development
Stephen Pettit	SP	Centre Director, Cardiologist, Royal Papworth Hospital
Philip Seeley	PS	Transplant Co-ordinator, Freeman Hospital
Michael Stokes	MS	Head of Hub Operations
Rajamiyer Venkateswaren	RV	Centre Director, Consultant Surgeon, Wythenshawe Hospital
Craig Wheelans	CWh	National Services Division, NHS Scotland

Item		Action
	Apologies and welcome The Chair welcomed everyone to the meeting. He will be standing down as CTAG Chair after this meeting and welcomed Jasvir Parmar as the new Chair of CTAG Lungs. The Chair thanked all present for their support over the last few years; in particular John Forsythe, Julie Whitney and the Statistics team from NHSBT, especially Sally Rushton. This year has been particularly challenging with only half the numbers of lung transplants completed due to COVID. He stated	

	that a surgeon championing the cause of lung transplantation in each centre would be of great benefit.	
1	**Declarations of interest** There were no declarations of interest raised in relation to today's agenda. ***NB: It is the policy of NHSBT to publish all papers on the website unless the papers include patient identifiable information, preliminary or unconfirmed data, confidential and commercial information or will preclude publication in a peer-reviewed professional journal. Authors of such papers should indicate whether their paper falls into these categories.***	
2	**Minutes of the CTAGL Meeting held on 17/09/20 – CTAGL(M)(20)02**	
2.1	The Minutes of the previous CTAG Lungs meeting held on 17th September 2020 were accepted as a true and correct record.	
2.2	**Action Points CTAGL(AP)(20)02**	
	Many of the Action Points from the previous CTAG Lungs meeting were addressed on the agenda, and reports were given for the following:	
	AP1: Clinical Governance Report: Surgical leads were asked to discuss communication issues between abdominal and cardiothoracic teams (including retrieval and implanting teams) with their teams/units. Communication has improved - **COMPLETE**	
	AP2: Clinical Governance Report: GH/IC GH agreed to email IC to discuss collaborative work re. human performance psychology in the context of organ retrieval surgery, to involve the performance psychology group and build something which would be useful and relevant for retrieval teams as part of the Organ Retrieval Masterclass. GH contacted IC, copying in MBe from a cardiothoracic point of view. Due to meet next week to discuss how to take forward, hoping to build more into the education side - **ONGOING**	
	AP3: ODT Hub Update; Changes in offering process: Ensure that recipient co-ordinators have seen the newsletter which details some of the operational changes and scheme changes JW confirmed regular updates and newsletters are sent out to RTCs – **COMPLETE**	
	AP4: ODT Hub Update; Changes in offering process: JW/JyP/SVJ Consider how the offering process can be made to work better for all concerned without extending the length of the donation pathway. The deviation process (which was put in place during COVID) will be reviewed to ensure the best way of sending out offers. This has been discussed and JW confirmed things have been put in place a much as possible - **COMPLETE**	
	AP5: ODT Hub Update; Changes in offering process: JW/HS It was suggested that GOSH and Newcastle have an agreement whereby European offers would go to super-urgent, then urgent paediatric patients, and then to a listed patient. Discuss this further offline and then communicate to the Hub Operations the decision on how the offering should work. JW will email HS to pick up after meeting to explore what can do to support - **ONGOING**	
	AP6 and AP7: Uncontrolled DCD lung: GH There is some concern that while utilisation of controlled DCD is poor, exploring uncontrolled DCD may not be worthwhile. Interested clinicians should form a working group to consider this further. GH contacted centres asking for expressions of interest, just Freeman at the moment have indicated a wish to be part of this. Working on logistics and scope to work - **ONGOING**	
	AP8: Update of Allocation Zones: LM Explore what change in number of donors/registrations is required to trigger a change in the zones – will be covered later in agenda.	
	AP9: Lung Referral Proforma: MC Share the first iteration of the national lung transplant referral platform with centres once received. AR confirmed local funding in place to develop the platform, but in an early phase - **ONGOING**	
	AP10: Quality of Life Measurement: HS/MC Collaborate before the September meeting, and have 'quality of life and functional status information' included as an agenda item at the ALTP meeting. HS said IT infrastructure may hold up national database. Feeling was need to do separately, not NHSBT dbase. Meeting on 7 May. JsP is in discussion with NHS England regarding QoL and Bridge to Lung Transplantation - **ONGOING**	

	AP11: CTAG Clinical Audit Group (CAG) Chairs report: JyP Investigate matter raised around the lack of involvement of all centres in Audit Group projects. **COMPLETE**	
	AP12: Any other business: More flexibility for MS Teams meetings being scheduled in either the morning or afternoon; consider this and please email any preferences. **COMPLETE**	
3	**Medical Director's report**	
3.1	**Developments in NHSBT** ▪ **Covid pandemic** Regular bulletins have been circulated over the last year regarding COVID-19 to update the position for donation and transplantation. JF said how much he appreciates support of whole team from donation ICUs and staff through to transplant units; the coordinated efforts over last few months has been incredible. All transplant centres are open again, with a significantly reduced active waiting list in some. Currently addressing an issue with one unit where routine transplantation not available yet. Activity data is now up to 30 donors and 60-65 transplants p/week Aware of number of donors recently who appear to have a COVID vaccination induced syndrome of thrombosis with thrombocytopaenia. NHSBT is involved in providing data and getting expert haematological opinion regarding management of organ offering and retrieval. Will provide communication clearly to centres as and when appropriate. ▪ **Scottish opt-out legislation** Came into effect in Scotland from 26 March 2021. Scotland and NI consultation just closed. ▪ **Strategy** A number of the attendees have been involved in developing post-2020 10-year strategy. Unfortunately, UK Government found too much on their plate immediately before deadline hit and therefore not able to launch our strategy. The intention is to do so as soon as possible, but after Scottish and Welsh elections completed. Clinical leads for utilisation been introduced in all units and have been supported by other clinicians. NHSBT and CTAG are grateful to Diana Garcia who has led for cardiothoracic transplantation. This initiative will continue, hoping to get funding into next financial year.	
3.2	**New appointments** ▪ Changes are being made in the OTDT Clinical Team as part of reorganisation of NHSBT to emphasise the importance of donation and transplantation in future strategy as follows: • Dale Gardiner becomes Associate Medical Director for Deceased Donation. • Derek Manas becomes Associate Medical Director for Governance, Retrieval and Transplantation. • Chris Callaghan becomes Associate Medical Director for Organ Utilisation ▪ An AMD role for Transplant Medicine has now been advertised and details of the appointment will be circulated in due course. ▪ **CTAG Chair** Jayan Parameshwar is completing his term as Chair of CTAG. The role is being split in two: • J Parmar will be taking over as Chair of CTAG Lungs. • R Venkateswaran appointed as Chair of CTAG Hearts. JF thanked those who had shown an interest in these two roles. J Forsythe offered grateful thanks to J Parameshwar for his superb work, diligence and wise counsel as Chair of both CTAGs over the last three years and for his thoughtful, diplomatic yet decisive leadership during a challenging period. It has been good to have him in post during the pandemic and he will be a hard act to follow. Other members of CTAG Lungs present also offered their thanks and appreciation.	
4	**Governance issues**	

	▪ DM reported organ damage rate is low. Communication between cardiothoracic and abdominal retrieval teams has improved but needs constant emphasis. Delays in the retrieval process still occur; when this happens, good communication is vital. ▪ There have been some issues during paediatric cardiothoracic retrievals to do with young children who had undergone CPR; this is being dealt with through the retrieval teams. There has been a change in the way injury is reported, but injury rates are fairly low.	
4.1	**Non-compliance with Lung Allocation** ▪ Issue arose with a patient listed for Urgent Heart-Lung transplantation. The NHSBT system has no good way of recording this; the patients are listed under the Urgent Heart and Routine Lung categories. A recent update of an IT system caused an error whereby any change in clinical information on a patient resulted in the patient being treated as a new registration, thereby losing priority. A safety net is in place but requires manual checking and reversing this error. A longer-term IT fix is required. ▪ JyP asked whether Urgent Heart-Lung could be listed for Urgent Heart and Urgent Lung. SR has set up a meeting for next month with JyP/SR/JW to discuss this.	
4.2	**Clinical Governance report - CTAGL(21)01** Members received CTAG Clinical Governance report for March 2021. It was discussed at CTAGH that a fixed-term working group to look at multi-organ offering may be needed, but initial discussions are taking place between JW, JyP and SR.	
4.3	**CUSUM Monitoring of 90-day outcomes following lung transplantation - CTAGL(21)02** Members received a summary of CUSUM monitoring of 90-day outcomes following lung transplantation. The report is brought to the meeting every 6 months summarising number of CUSUM reports produced since last CTAG and number of signals arising. For lung transplantation, 36 reports were sent out with no signals.	
4.3.1	**Update to baseline mortality rates - CTAGL(21)03** Members received a report regarding an update to the baseline mortality rates used in CUSUM monitoring. ▪ SR advised that we aim to update the baseline against which mortality rate is compared every 2-3 years. This was last updated 2018. ▪ Currently the baseline is 2013-16, the proposal is to update to 2015-18. ▪ Paper describes inclusion criteria for baseline period 2013-16, including DCD and DBD lung transplants but excluding heart lung transplants and other multi-organ transplants. Patient mortality is defined as death within 90 days of first transplant. - National mortality has decreased from10.5% to 9.2%. - If a centre has a lower mortality rate than the national rate, it receives two CUSUM charts every month; one monitoring against the national rate and one against their centre specific rate. - One centre, Papworth, will no longer be receiving a centre specific chart against their own mortality rate because their centre specific rate has gone up from 7.5% to 9.8%, which is higher than the national rate. - For paediatric patients, national 90 day mortality rate is 7.8% in current baseline period and has gone up to 10.3% in the revised period. ▪ A retrospective analysis was performed for transplants performed since 1/1/19 to see whether we would expect any additional signals as a result of updating baseline mortality rates. It was found that there would have been one additional signal at Harefield in Jan 2020, when measured against their centre specific rate. This is **not** considered to be a formal CUSUM trigger. ▪ For paediatric patients, no additional signals were observed as a result of updating the baseline period. ▪ Proposal is that following this meeting, rates as shown in report will be updated to the new baseline ▪ Feedback from CTAGH about other changes they would like to consider: - Inclusion of DCD heart transplants in the baseline period. - Moving to a 90-day outcome as opposed to a 30-day outcome.	
4.4	**Group 2 transplants** SR advised none to report.	
5	**ODT Hub update**	

	JW reported instigation of monthly calls with Recipient Transplant Coordinators (RTC), along with Sadie von Joel, which seem to be working effectively; provides a forum for RTCs to raise any concerns, specifically around the operational way we make offers, enabling more effective working.	
5.1	**Changes in offering process** ▪ In the spring meeting last year Ian Currie brought a paper to CTAG regarding super urgent livers and the system we were planning to implement to shorten the allocation pathway. It was agreed at the meeting but not implemented due to the Covid outbreak. ▪ This is going live on 8 April 2021. If a super urgent liver is accepted by one of the liver centres, the Hub will expedite offering of other organs, allocated as per the usual allocation scheme, so no patient will be disadvantaged. ▪ After a 6-month pilot, the plan is to review the system with advisory groups and decide what changes are required.	
5.2	**Organ Offering and Fast Track** JW reported that it is a little too early to look at a detailed analysis in terms of the length of the pathway and the time taken. She hopes to be able to share some data at the next meeting.	
5.3	**Single point of contact** JW reported implementation of single point of contact for donor offers last summer. ▪ Offers go directly to RTCs via telephone (rather than previous paging). ▪ Instigated minimum dataset at offering. There were previously frustrations with quality of information, especially blood gases and chest x-rays at the time of offering. The Hub now has information in place at point of registration and will not commence offering until all core information is in place. ▪ Also instigated holding a copy of the chest x-ray in Hub Ops so that when speaking to the coordinators the HUB is able to send this information directly on to the RTCs. ▪ Feedback from RTCs has been good and centres usually keep to the 45 minute time target for accepting a donor offer. ▪ All these changes have had a positive impact on the length of pathway for both heart and lung offering, making it more effective and efficient.	
5.4	**Update on Lung Offering Scheme changes - CTAGL(21)04** Members received an update report on lung offering scheme changes. ▪ SR gave an update on changes made to UK Lung Offering Scheme on 13/10/20 that had previously been discussed and agreed with CTAG and were awaiting NHSBT IT input. ▪ All paediatric patients will now receive an offer of a paediatric donor before any adult patients. This involved moving the super-urgent adult and small adult tier from the top of the paediatric donor sequence to the fourth position. ▪ The non-urgent small adult tier (introduced same time as the super-urgent lung and urgent lung tiers introduced in 2017) has been removed ▪ A review of activity since changes made revealed: 5 paediatric donors where lungs have been offered; none were accepted and used. In 4, there were no named patients, only centre offers, so this change in the sequence order did not have an impact. This was also the case for the 5th donor, although there was one urgent adult patient, there were no super-urgent patients, so therefore no impact to analyse in terms of the change so far. ▪ In terms of the other change to remove an entire tier of the sequence, from time of change to 18 March 2021, there were 312 donors offered for lung donation and the median number of steps in the sequence was 8 (ranging from 7-13), compared with 12 (ranging from 8-19) previously. This showed that by removing this tier, we are significantly reducing the length of the lung offering sequence by 33%.	
5.5	**Length of the CT offering process analysis** See 5.2 above.	
6	**Lung Utilisation**	
6.1	**CLU update - CTAGL(21)05** Members received an update from the Clinical Leads for Utilisation (Lung) second engagement call held on 22/1/21.	

- DGS reported that the programme had been in place for 4 months. Following the change in law to an Opt out System, we are expecting c.700 more donors within the next 5 years.
- Number of lung transplants in last 10 years in UK remains static, whereas number of patients on the waiting list continues to increase. UK has a low transplant rate for lungs when compared internationally.
- In terms of lung utilisation, it continues to go down and lung utilisation rates pre-Covid went down from 20% to 15% for DBD donors and was 5% for DCD donors, which is very low compared with other countries around the world.
- The CLU initiative was launched in November; for lung transplantation two transplant physicians and four transplant surgeons were appointed to the role.
- Timeline for scheme Nov-March, included 3 engagement calls with all CLUs asking them to complete two surveys; the data is being reviewed.
- Work continues on a business case to secure funding to continue the project. The aim is to restart by the end of the year.
- Organising a National Utilisation Conference (probably 20 May 2021).
- During first call with CLUs (11/12/20), discussed:
  - Local and national issues for lung utilisation;
  - Ideas for survey 1;
  - Ideas for new national and local utilisation projects
- A part of 2nd engagement call, discussed preliminary findings from survey 1 and identified local and national barriers. Also discussed risk tolerance (see report for details).
- In 2nd survey, asked to identify barriers. Main issues were:
  - Imaging, particularly CT chest;
  - Lack of funding for novel technologies;
  - Donor assessment and optimisation;
  - Funding for organ donation pathway;
  - Reduced ICU capacity/staff;
  - Access to donor organs during Covid pandemic.

  Priorities suggested were:
  - Imaging (CT chest, platform for image sharing);
  - Funding for scouting and donor optimisation;
  - Funding for ex-vivo lung perfusion;
  - NORS team recruitment and retention;
  - Funding for CLU leads;
  - Donation refusal rates, particularly paediatric and neonatal;
  - Improved communication between Hub and Tx teams;
  - Accuracy of data collection and analysis.

  Further projects requested:
  - Review of rejected organs;
  - Encourage surgeons/coordinators/physcians to engage in meetings;
  - Encouraging two consultants to be involved in decline of organs;
  - Increase LRVS to use larger lungs in small recipients.

  Update on future projects:
  - Imaging – Smart Glasses live streaming. Working towards national platform for image sharing;
  - Multicentre cardiothoracic organ decline meeting – first call held on 5 March, next on 9 April.
  - .

  See report for further details.

Feedback

- JsP thanked DGS for the work done on this. He asked how we intend to measure success of project. DGS said this is under discussion but engagement has been excellent from all units. Hoping to increase utilisation rate. Any suggestions welcome.

- DM agreed difficult to measure success. Perceptions of risk differ between surgeons and they often have to make decisions without all the information. DG wondered how involved physicians are, they are likely to know the potential recipient better. DGS confirmed this was mentioned by two CLUs. At Harefield, for the last 18 months, physicians have been more involved in decision making.

- JsP advised that in some countries, e.g., Australia, all donor assessment is done by physicians. Melbourne has a lung donor utilisation rate of 60%; so there are models to base developments on.

- DM said that in renal transplant programmes, where physicians are almost always involved in decisions, there has been a significant improvement in utilisation. JsP agrees it should not be

	down to one person making the decision. Wondered if it may be incorporated in the CLU project going forward as a measurable metric. ▪ US agreed it is a great initiative, but funding would be required to implement it. ▪ AR supported initiative and reiterated it is something they have been looking at and discussing benefits. Agrees funding would be important and there is learning curve in terms of understanding processes that go with organ offers. One initiative set up is meeting weekly to discuss patients on the waiting list, this is particularly helpful when focussing on higher risk patients. ▪ AA said the Birmingham team are hoping to pilot virtual donor optimisation in the next couple of months in the West Midlands. Will be happy to feedback from that when data is available. ▪ JyP said in 2019, funding first made available for us to use HepC positive donors. Only two centres have signed up to the process, Birmingham and Papworth, but the initiative was put on hold due to pandemic. Probably time to restart the project. ▪ JsP confirmed that funding was available through NHS England, Scotland & Wales. ▪ JyP asked centres what the barriers were. US said that if HepC was often associated with other factors that made the donor marginal. JyP confirmed need to go through the established process to get approval to receive offers from Hep C positive donors. US and AR very keen. JyP will arrange for the papers to be recirculated. ▪ KS said there was no local liver unit for the Manchester team to collaborate with. KS will discuss how to establish a programme with the centre director. ▪ JsP said Dr Alsharkawy (National lead for HepC programme) is talking to ALTP at the beginning of May. JyP felt unlikely to be huge number of organs, but any increase is worthwhile.	
6.2	**Audit Fellow project updates** GH working Aug 2019-22 on projects to improve lung transplantation and utilisation. ▪ **Project 1 - Lung risk index** - GH thanked everyone for support so far. Planning to develop a lung risk index that will predict mortality and PGD based on donor and recipient characteristics. First phase is to collect PGD data which we don't currently collect as part of the UK transplant registry. - Looking to form a retrospective dataset back to 2002, started locally in individual centres. Travel restrictions permitting, GH is hoping to be able to get to centres from May onwards to support within the centres. - Working to ensure retrospective PGD dataset will be made available to others in future. - Working closely with SR to establish PGD heart and lung data fields on the NHSBT database. ▪ **Project 2 - Donor management to improve lung utilisation** - Conducted survey with all SNODs and CLODs to understand current donor care bundle practice. Survey closed at the beginning of March and GH is analysing data. - Took provisional results to NODC at beginning of March and plan with steering group is to develop a new protocol for donor management, based on current donor care bundle model (rather than a scouting model). - Hope to take prototype to NODC in June then trial within 3 regions and monitor how that works in terms of uptake of donor care bundle and whether or not that increases number of available suitable donors. ▪ **Project 3 – focussed around understanding decision making** - Work to understand human psychology around decision making by surgeons. - Simulated offering questionnaire study as part of UK ODT Research network on all organs (heart, lung, liver, kidney). Identified there isn't currently any consistent universal practice across UK around how decisions are made and whether or not all offers are discussed with decision maker. - Discovered a great variation in practice and when given simulated offers (based on real-life offers which had been declined by one centre but accepted and transplanted elsewhere), no consistent response across all participants of the survey. - Paper will be presented at BTS and will also be part of a poster at ISHLT.	

	- Ethics application underway to carry out a study for surgical decision making, to involve interviews to understand some of the thought processes at the time of offering. ▪ **Project 4 – Impact of Covid on heart and lung transplantation** - Two papers published with data from the first wave; thanks to those who participated. **Feedback/questions** ▪ DH asked about Hawthorne effect with decisions based on scenarios when they think they are being watched; practices will be different when completing a form as people want to show their best side, but in practice they often don't make those decisions and this will be a problem with this kind of survey. GH said the Hawthorne effect very specifically refers to an improvement in performance, but in this case showed the opposite of what was expected; risks were low in setting with no impact on donor/recipient. Expecting people to accept offers, but actually people declined frequently and made comments for reasons why declining, such as 'this is too good to be true', 'I don't trust these numbers' 'I would like to see these numbers myself/send my own team out' etc. However, we know that's not the practice in heart and lung transplant at the moment; we decline a lot of offers at the time of information delivery on the telephone. There is always bias at play; whatever method of study we use to understand this will always have drawbacks, but interesting exercise to lead to rest of work. No evidence of Hawthorne effect in study. ▪ MH asked about decision making - when no consistent response, is that in a percentage of the cases or across all of them? GH said study was designed to identify consistency and not how or why surgeons are making decisions. There were 3 heart cases and 3 lung cases sent to CT transplant surgeons, asking whether they would accept, decline or ask for further information. In each of the 6 cases, approximately 0% accepted and 40% declined; they were based on real offers in last 6 months that had ultimately been accepted and transplanted elsewhere in order to target those interventions. ▪ HS asked whether we should be targeting co-ordinators to train them to make assessments. GH confirmed they are already doing some of that. Not all offers are discussed with surgeon. The coordinators are very skilled and experienced and are pivotal in decision making. ▪ US asked when the 6 cases were sent out. GH advised were done end of last year by email from mailing list from NHSBT / BTS with anonymised responses. Questionnaire only sent to consultant transplant surgeons, but asked about decision making practice and layers in discussion. ▪ JyP asked what percentage responded. GH advised 60% across UK, some centres (eg. Papworth) 100%, but all centres represented. ▪ JsP asked if there were themes from operational issues etc which may affect decision making. GH performed a thematic analysis; themes were along lines of trust/confidence in information being provided and the overriding suggestion they would like 'my team to assess this donor'. Some issues around donor age, other tests to understand condition, eg. angiogram/angiography for heart, CT chest for lung etc. Nothing about logistics, as asked to exclude issues of matching, availability of a team etc. All cases were not ideal donors, but were actual cases from previous 12 months who had been declined by some centres but later accepted/transplanted and followed up to confirm the recipients were still alive.	
7	**Lung Allocation**	
7.1	**Summary of Adjudication Panel appeals - CTAGL(21)06** Members received a summary of the CTAG Lung adjudication panel appeals for 18/5/17-28/2/21 and CTAG Heart-Lung adjudication panel appears from 26/10/16-28/2/21. ▪ Over time period of c.4 years, 30 adult patients referred to adjudication panel for urgent listing, with 22 approved; 73%. ▪ Highest number of referrals came from Newcastle (13), who also registered the highest number of urgent patients in the time period. ▪ For paediatric patients, there were 9 patient referrals, all approved, and a total of 13 urgent lung registrations. ▪ During the 4 years, there were 27 appeals for urgent heart-lung listing; Harefield had the highest number and the approval rate was 70%, with 24 registrations.	

	Feedback/questions ▪ JsP asked whether the approvals are broken down by underlying disease process and whether there is a recurring theme which might indicate a need to adjust the listing criteria. SR confirmed that information is stored but would need reviewing. The data is saved and JsP/JyP and AR agreed this should be looked at.	
7.2	**Trigger for updating allocation zones - CTAGL(21)07** Members received the CTAG trigger for updating allocation zones report for March 2021. ▪ SR advised that the allocation zones are reviewed on annual basis in the autumn. There has not been a trigger to adjust zones, even though some differences have been observed between percentage share of registrations and of donor offers for each centre. NHSBT stats had been asked to look at what sort of difference would have to be observed to trigger a change to the zones and this paper addresses this question. ▪ Analysis includes 2 years' registration data and 3 years' donor data and the numbers are compared per centre/zone. For lungs, the biggest difference was observed for Harefield's list/zone, but the difference was not statistically significant. A 7% difference would yield a significant p-value before adjustment, whereas a 9% difference would be required to be significant after applying the Bonferroni correction. ▪ Recommendation was to remove the Bonferroni correction and make the test a little more sensitive which would lead to more frequent adjustments to the zones. ▪ Only cardiothoracic transplantation relies heavily on allocation zones. Therefore the decision lies with CTAG as to how they would like to make any changes to the zonal boundaries. **Feedback/questions** ▪ JyP feels makes sense to remove the Bonferroni, which is what CTAGH agreed, but opened the discussion to group. No objections were raised. ▪ JsP feels the failing of this methodology is that it is based purely on registrations and should consider outcomes, waiting list mortality etc. JyP felt this may be ideal but is a complicated and difficult piece of work. ▪ SR said will need to adjust for period of Covid, as that will affect the number of donors, particularly for lungs. **ACTION: SR to take up with JsP going forward**.	
7.3	**Lung-Liver update - CTAGL(21)08** Members received a report of Cardiothoracic and Liver registrations for March 2021. ▪ SR has provided data on these combined cardiothoracic and liver patients and outcomes in the past. They remain quite rare, but this report provides an update on current activity levels for these patients. ▪ Last analysis covered 20 years when there were 10 cardiothoracic and liver transplants with a breakdown of different combinations and found that 6 of these patients were alive post-transplant at last follow-up. ▪ Since Feb 2020, identified 2 new patients registered for a cardiothoracic and liver transplant, both on the urgent heart list, one has been removed and one has since died. ▪ Re liver/lung, there is a patient currently on the list at Newcastle, but because they were registered prior to this period they are not reported in the paper. This patient also referenced in the clinical governance report earlier in the agenda; because they were on the non-urgent lung list, they didn't appear as a named patient offer in both the liver and lung schemes simultaneously and therefore offers were missed. The HUB finds these patients difficult to handle because the two offering systems work differently. The main problem is an inability to get IT support to make any alteration in the systems once they are set up. ▪ ACTION: JyP confirmed a short-term working group will be needed to look at this further, JsP will lead on this.	
7.4	**Selection and Allocation Policy updates** ▪ SR has been making minor edits to lung selection and allocation policies. They are quite minor; they include removing some of the operational detail in the policies and mention of faxing, which is no longer current practice. ▪ One item in the policy was included prematurely is category 93, which is a super-urgent category for patients who don't meet the standard super-urgent listing criteria. This is a	

	category that was agreed more than two years ago and that is required. Unfortunately NHSBT IT have not been able to do the work to include this in the system yet and it needs to be removed from the policy for now.	
8	**Statistics and Clinical Studies Reports**	
8.1	**Summary from Statistics and Clinical Studies: Spring 2021 - CTAGL(21)09** Members received a summary from Statistics and Clinical Studies for Spring 2021. ▪ SR now back from maternity leave and resuming role as cardiothoracic lead within the Stats team. ▪ Statistics and Clinical Studies, comprising the Statistics Team and the Clinical Trials Unit, are joining together with the Research and Development (R&D) Office and the Systematic Review Initiative (SRI) within NHSBT to become "Statistics and Clinical Research" as of March 2021. ▪ Published interim cardiothoracic report since last CTAG meeting. ▪ Been involved with Covid related papers. ▪ Still working with Winton Centre to develop tools to communicate risks with patients. ▪ VAD – concentrating on updates to VAD database ▪ Listed various ongoing working groups/projects/reports. ▪ Been looking into follow up return rates for centres over Covid period; great to see most forms still coming in. ▪ Discussions ongoing with Harefield as they asked to skip a large number of forms during pandemic. ▪ AR confirmed received documentation at Harefield, the data is there and a Clinical Nurse Specialist is dealing with it.	
8.2	**COVID-19 Update - CTAGL(21)10** Members received the COVID-19 weekly report for the period 1/3/20-3/3/21, which is updated every Friday and circulated to Centre Directors; it is available on the ODT clinical website. A lengthy report, but the following was highlighted: ▪ Looking at Covid-19 patients in transplant population. Covers year from start of pandemic. Data comes from NHS Digital, as well as from Public Health England and other sources and directly from the centres. ▪ Shows trend in number of donors and transplants in last year; less significant impact in second wave compared to the first, when numbers dropped to very low levels. ▪ Fig.2 shows cumulative incidence of COVID-19 patients. ▪ Page 29 of the report shows demographics of all patients with a functioning lung transplant compared with those that have tested positive and those that have died of COVID-19 post-transplant. Also a breakdown of the waiting list recipients active on the list compared with those who have tested positive. See report for full details.	
9	**Reports and Discussion Points from the Chair**	
9.1	**RAG update** CWi had already left meeting due to urgent kidney transplant, so MBe covered item.	
9.1.1	**DCD Lung + ANRP protocol - CTAGL(21)11** Members received the UK National Protocol for direct retrieval and perfusion (DRP) of DCD Hearts and Lungs with or without abdominal NRP (A-NRP) to Ex-situ Normothermic perfusion. ▪ MBe reported on change of practice for DCD lung retrieval. Together with I Currie and colleagues from Harefield, Cambridge and Edinburgh, looked into how to make retrieval protocol as safe as possible. ▪ Few clear messages. Chris Watson and colleagues showed NRP has significant advantages compared to direct procurement for liver transplantation. Over past two years, a few incidents of organ loss or CT retrieval not attempted when A-NRP was associated. Cardiothoracic teams had to find a way to facilitate abdominal NRP whilst doing a safe cardiothoracic retrieval.	

	▪ After numerous consultations, a new protocol was agreed. A few successful retrievals have been performed using the new protocol. ▪ Presented protocol to centre directors a few weeks ago, across the board agreement to try this protocol. **Feedback/questions** ▪ JsP supportive of initiative. However, one question is how the warm ischaemic time for the lung is measured; slightly concerned about issues in terms of primary graft dysfunction and ischaemic airways. Keen there is a focus on PGD and complication rates in procured organs. Other than that, felt it could be a workable solution. ▪ JM agreed it's an interesting and exciting piece of work. Asked whether thoracic organs used have they gone into any type of organ perfusion system once they have been retrieved. US said they were transported cold and implanted. All need to work closely on retrieval process, as it is challenging and requires good communication. JyP agreed monitoring is important and we need to ensure lungs are used. Ideally, a team should include someone of experience when doing for the first time. ▪ MBe confirmed Harefield were involved in both masterclasses and shared step by step videos, proving it can be done safely. They have offered support and expertise to help other teams.	
9.1.2	**Organ quality assessment - CTAGL(21)17** Members received a report on Organ Quality Assessment; potential for online image platform in thoracic transplantation. ▪ Planning to invite all those interested in imaging to join forces and discuss all these imaging initiatives. ▪ DM advised two forms of imaging; one to help make clinical decisions and then imaging for injury. Reminded there is a governance issue in storing images. Should not be stored for too long and if are storing, will require patient consent. Separate platform being developed by Bradford University. ▪ MBe confirmed this is the plan. Will be seeking full RINTAG approval on governance. As so many local initiatives, plan to put retrieval under one umbrella for imaging; clinical decision, retrieval, injury etc. JsP noted one of parameters assessing lungs on is texture and asked what metrics were around that. MBe explained it was platform that CWi developed and will adjust wording for lungs.	
9.2	**QUOD update - CTAGL(21)12** Members received QUOD statistics for March 2021. ▪ MBe reminded colleagues national bio bank is up and running and samples are collected. Don't see many applications for research, samples there waiting for any research proposals. ▪ JsP noted the BAL collection virtually non-existent, asked if still running. MBe said it was suspended during Covid pandemic to minimise risk. Planning to restart when Covid restrictions eased.	
9.3	**Workplan** – **CTAGL(21)13 –** The workplan has not been updated for some time. **ACTION: J Parameshwar to discuss this with the new Chairs of CTAG Hearts and Lungs**	
9.3.1	**BTS initiative and funding** ▪ JsP advised of a request from BTS. BTS has a series of excellent guidelines for transplantation and has acquired some charitable money to support the development of both cardiothoracic retrieval and lung transplantation guidelines. ▪ Have a well-defined process of producing guidelines and would be beneficial to build close liaisons with this organisation. ▪ MBe has agreed to lead on cardiothoracic retrieval guidelines. ▪ If anyone is interested in supporting this, contact JsP.	

10	**Reports from sub-groups**	
10.1	**CTAG Clinical Audit Group (CAG) Chair's report - CTAGL(21)14** Members received the minutes of the CTAG Clinical Audit Group meeting held on 10/12/20. ▪ JyP has been considering whether group should continue in its current form. Previous Chair stepped down last year and JyP took over. Had approached all centre directors, all but one would be happy for a change. Not everyone is keen to disband the Group and it is important to maintain some of the functions of the Group regardless of what change is made. **ACTION: JyP will discuss way forward with incoming CTAG Chairs.** ▪ Work ongoing to look at data to support (or not) any change to the urgent listing criteria for lungs. Not been able to get an update from Mo Al-Aloul since the audit group's last meeting four months ago. ▪ JsP asked whether project was a CTAG aligned project. JyP confirmed Mo Al-Aloul was asked to do it by ALTP. SR said Mo Aloul was previous Chair of lung allocation working group (a sub-group of CTAG), so was continuing that role. AR thinks came about after NHSBT published data regarding super-urgent and urgent listing 18 months/2 yrs ago. Had some meetings after that but dwindled, so would be a positive step to rejuvenate, particularly given earlier conversations about the adjudication panel. SR was working with Mo Al-Aloul on a manuscript prior to going on maternity leave but this was never submitted. **ACTION – HS, as Chair of ALTP, to invite Mo Aloul to join next meeting and update the group on any progress**.	
10.2	**CTAG Patient Group - CTAGL(21)18** Members received the minutes of the CTAG Patients Group meeting held on 18/11/20. **Update** ▪ RG advised the Patient Group normally meets twice a year, but given the current issues, have met four times in the last year. Expressed thanks to NHSBT and the transplant centres on behalf of patients to keep the transplant programme running during the pandemic. ▪ No intention to split patient group to heart and lungs; next meeting is on 12 May and thanked all who have agreed to present; will invite Jas and Venkat to next meeting and look forward to working with them. ▪ Much of the meetings focus on the subject of realities of shielding for the transplant community and prospects of getting back to normality with vaccination programme rolling out. Recent news of non-urgent transplants recommencing was very welcome. ▪ Besides ongoing need to increase donor utilisation and the number of transplants which is always a key focus of meetings, a major issue is end of shielding today and prospect of transplant patients returning to work (whether or not they feel comfortable with this), due to financial issues (eg. losing SSP). Aware that some transplant patients enrolled in Octave study, results in c.6 months. Suggested NHSBT could consider updating the FAQs on the website ▪ It is felt there is a general lack of psychological and emotional support for post-transplant patients. Centres do their best, but often support shared with other units. Patient groups do what they can. ▪ RG thanked Jayan, on behalf of patient group, for significant support over the last 3 years. **Feedback** ▪ JyP advised that NHSBT are in the process of updating FAQs, being led by MH and Lisa Burnapp. ▪ Agreed psychological support is important, and the degree of help available can vary from one centre to another. However, access to psychological services in primary and secondary care is generally poor, so this is a national issue. Centres slowly accruing more resource for psychological support. Will remain under review and keep trying to improve. ▪ DM confirmed Q&A includes section on upcoming research. ▪ JF confirmed having spoken to Lisa Burnapp yesterday who confirmed work being done on updating the FAQs. A research grant proposal was submitted, looking in detail at transplant patients and their immune status, post-vaccination, but unfortunately this was not supported. However, a group of researchers looking at whether we can get further information by linking databases and submitting further proposals for funding. In last couple of days been able to agree to link the data for waiting list and transplant patients who had suffered from Covid.	

	▪ HS advised GOSH just submitted a research protocol to look at immunity for 16-18 year olds post-vaccination for heart, kidney and lung transplant paediatric, so hopefully will get some more data about not just antibodies but looking at immunity as well. ▪ AR said know from data that vaccine responses, after one dose, in terms of antibodies are less than in the immunocompetent population as we would expect. There are recent guidelines published by ISHLT which suggest we should be pushing to vaccinate our transplant patients within the timeline suggested by the vaccination trials. There was discussion about whether we should lobby JCVI to alter UK guidelines for post-transplant patients. Timelines indicate vaccinations should be completed soon, so should become less of an issue. Data on whether two doses will work better in the post-transplant population is not available yet. ▪ JsP suggested providing letters for GPs to request transplant patients are prioritised for vaccination. There is the prospect of a study to look at antibody responses after 2nd dose of vaccine.	
11	**For Information**	
11.1	**Transplant Activity report - CTAGL(21)15** Members received a copy of the Donation and Transplantation monthly activity report for February 2021 (data as at 12/3/21), showing activity over the last two financial years.	
11.2	**NHSBT ICT update for Advisory Groups - CTAGL(21)16** Members received the NHSBT ICT update report for Advisory Groups for March 2021.	
12	**Any Other Business**	
12.1	MH – thanked JyP for great job pulling different teams together on this and for support provided.	
12.2	**Date of next meeting** Wednesday 8th September 2021 - TBC	