NHS BLOOD AND TRANSPLANT
ORGAN AND TISSUE DONATION AND TRANSPLANTATION

THE FORTY THIRD MEETING OF THE LIVER ADVISORY GROUP AT 11:00 AM ON 02 NOVEMBER 2022 AT 12 BLOOMSBURY SQUARE, GREATER LONDON, WC1A 2LP

MINUTES

ATTENDEES:

Douglas Thorburn	DT	Chair, Liver Advisory Group / Royal Free Hospital
Anya Adair	AA	Royal Infirmary of Edinburgh
Varuna Aluvihare	VA	Kings College Hospital, London
Sarah Banks	SB	Recipient Co-ordinator Representative
Will Bernal	WB	King's College Hospital, London
Lisa Burnapp	LB	AMD for Living Donation and Transplantation, NHSBT
Ian Currie	IC	RAG Chair/ Royal Infirmary of Edinburgh
Audrey Dillon	AD	St Vincent's Hospital, Dublin
Tassos Grammatikopoulos	TG	King's College Hospital, London
Vanessa Hebditch	VH	Chief Executive, British Liver Trust
Brian Hogan	BH	Royal Free Hospital, London
Andrew Holt	AH	University Hospitals, Birmingham
Emir Hoti	EH	St Vincent's Hospital Dublin
John Isaac	JI	Deputy Chair LAG / University Hospitals, Birmingham
Maria Jacobs	MJ	Statistics & Clinical Research, NHSBT
Derek Manas	DMM	Medical Director, OTDT, NHSBT
Aileen Marshall	AM	Royal Free Hospital, London
Krishna Menon	KM	Kings College Hospital, London
Marumbo Mtegha	MM	Paediatric representative, Leeds Teaching Hospital
David Nasralla	DN	Royal Free Hospital, London
Raj Prasad	RP	National Liver Clinical Lead for Utilisation / St James Hospital, Leeds
James Richards		Royal Free Hospital, London
Ian Rowe	IR	Chair of the National Liver Offering Scheme Monitoring Committee
Tahir Shah	TS	University Hospitals, Birmingham
Sanjay Sinha	SS	National Surgical Lead, Clinical Governance, NHSBT
Rhiannon Taylor	RT	Statistics and Clinical Research, NHSBT
Lynne Vernon	LV	Lay Member Representative
Sarah Watson	SW	Specialised Commissioning, NHSE
Gwilym Webb	GW	Addenbrookes Hospital, Cambridge
Steve White	SW	PAG Chair/ The Freeman Hospital, Newcastle upon Tyne
Julie Whitney	JW	Head of Service Delivery - ODT Hub, NHSBT

IN ATTENDANCE:

Cherrelle Francis-Smith, Medical Director and Group Support, NHSBT
Kim Hewlett, Team Leader, Hub Ops, NHSBT
Alicia Jakeman, Medical Director and Group Support, NHSBT

APOLOGIES:

Ayesha Ali, Mike Allison, Lee Claridge, Rebecca Cooper, Ahmed Elsharkawy, Paul Gibbs, Anushka Govias-Smith, Pam Healy, Steve Masson, Sarah Matthew, Joerg-Matthias Pollok,

Thamara Perera, Tracey Rees, Peter Robinson-Smith, Ken Simpson, Chris Watson

	Item	Action
1	**Declarations of interest**	
	There were no declarations of interest.	
2.	**Minutes of the last Meeting, held on 27 April 2022 – LAG(M)(22)01**	
2.1	**Accuracy** There were no issues of accuracy raised.	
2.2	**Action Points - LAG(AP)(22)1** **AP1. SU appeals process using 2nd opinion process** Complete. **AP2. Impact of NLOS on re-transplant patients** On Agenda. D Thorburn noted an error in the wording on the Acton Point. **AP3. Flight costs** On Agenda **AP4. Colorectal liver metastases** Complete **AP5. Machine Perfusion Working Group** Complete **AP6. Liver CLU Scheme and Liver Utilisation** On Agenda **AP7. Multi-visceral and Composite Tissue Advisory Group (MCTAG)** Complete **AP8. IT Changes and Update - (Liver splitting criteria, FT trigger, update of NLOS & Crossmatch)** Complete	
2.3	**Matters Arising, not separately identified** No matters arising	
3.	**Medical Director's Report**	
3.1	**Organ and Tissue Donation and Transplantation (OTDT) Update** D Manas provided an update to the group; Dale Gardner has created two roles to assist and liaise with the Clinical Leads for Organ Donation (CLOD) due to donations being at their lowest. He confirmed that this is multi-factorial, even with opt-out, also even deemed donors' families are refusing donation. OTDT - have flat-funding, meaning less funding than three years ago. Organ Utilisation Group (OUG) - report is complete and has been sent to the Health Minister with 12 recommendations. There is a plan to have a launch meeting by the end of the month. Clinical Lead for Utilisation (CLU) - Lead CLU is funded (R Prasad) but there is no funding for local CLUs, some will continue without funding. Assessment and Recovery Centre (ARC) Programme - is part of Organ Utilisation Program (OUP), the plan is to have three centres across the country. When funding is agreed the big priorities are Lung and Liver transplants. OrganOx - is being assessed by NICE, they want to use it as a retrieval device. D Manas feels that this is better sat with ARCs, looking at interventions. Affiliated centres - Blood and Transplant Research Unit (BTRU) - they don't want to be exclusive to Newcastle and Cambridge. D Manas asked centres to approach him if they want to be affiliated, this will go through NIHR. Histopathology - trying to set up a national programme, this has stalled as they have not yet found funding. The Business case is written, recharging currently. Review of National Organ Retrieval Service (NORS) - to look at a different model to make it more efficient. Also, other work includes; Sustainability group (meeting planned for 3 November 2022), Network collaboratives, Living Donation Liver Transplantation, Xenotransplant.	**All**

	At a recent NICE meeting V Aluvihare had observed that OrganOx is being used in a different setting where the evidence isn't very strong. D Manas is concerned that NICE want it as a retrieval device and confirmed that another meeting is set for later in November 2022. S Watson advised the Group that NHS England (NHSE) is obligated to fund if NICE recommends.	
3.2	**Liver Utilisation Report for noting - LAG(22)29**	
4.	**Update on the National Liver Offering Scheme**	
4.1	**Compliance with Sequential Data Submission - LAG(22)30**	
	R Taylor highlighted that NHSBT have received 12000 forms ranging from between 1 and 49 forms for each patient. She reminded centres to please complete the sequential forms.	
4.2	**Follow-up form return rates in Annual report on liver transplantation- LAG(22)31**	
	Adult follow-up form return rates between October 2021 and September 2022 were reviewed, with all but nine transplant record forms returned. The overall form return rate for the one-year follow-up form was 58%. J Whitney informed members that a dashboard summarising form return and offer response rates is sent out to Coordinators on a monthly basis. It has been agreed that survival rates for transplant centres with a follow-up form return rate of less than 80% will not be presented in the annual report on liver transplantation. D Thorburn stressed that LAG Representatives need to go back to centres and address this. I Rowe asked if data from the NHS Spine could be linked with that collected by NHSBT. J Whitney will take this back to NHSBT to explore an NHS Digital/ IT based option.	**All** **JW**
4.3	**National Liver Offering Scheme (54 month data) and Summary Feedback of key points from NLOS - LAG(22)32**	
	I Rowe provided an overview of the Monitoring Group's 54-month report, with registration activity back to pre-pandemic levels. Historically post-registration outcomes were used to interpret the success of NLOS, with decreased mortality on the transplant list. Over the last 3 years, there is a reduction in early transplantation (within one month) from 30% to 25%, increasing more in the last six months. There is a decrease in DBD donors; 100 less livers this year. The number of livers retrieved and not -transplanted remains at 40%. DCD transplantation is back to pre-pandemic levels. The report highlights that in utilisation there is no variation in DBD donors over centres. There is an increase in the number of patients on the Waiting List. There is an increase in time for variant syndrome patients to transplant due to lower number of DBD organs. Increase in TBS of 1150 up to 1233 over last six months. Post-transplant outcomes remain excellent, 98%. At 1-year this ranges between 93-97% for DBD and DCD. The group will meet in three months to examine the impact of updating the TBS parameters. V Aluvihare asked if it was appropriate to have minimal listing criteria of a UKELD of 49. D Thorburn agreed this is being moved away from, I Rowe feels that UKELD provides complimentary information to M1. A Marshall feels that young people are being disadvantaged with TBS due to age. I Rowe stated that waiting list outcomes are reported by age-group and there hasn't been an increase in mortality. I Rowe advised that some simulated data was presented at BTS in September 2022 and showed the greatest risk of waiting list mortality remains with older patients.	
4.4	**Updating the TBS and future work**	
	R Taylor informed the group that the NLOS was updated on 4th October 2022 for both parameter estimates and baseline survivor functions. There have been no issues reported. Having looked at very early results, R Taylor advised that it appears that there were more named patients offers going to HCC patients.	

	D Thorburn advised that the calculator on transplantbenefit.org is going to be updated shortly. There will be virtual centre visits to discuss the issues in understanding what the new TBS will look like, the new cancer indications, changes for HPS patients, what the modifications were and the rationale behind them.	**DT/RT**
4.5	**Impact of NLOS on retransplant patients - LAG(22)33**	
	The paper was circulated prior to the meeting with D Thorburn also discussing the Re-do Liver Transplantation paper produced at King's College on the comparison of re-transplant pre-and post-NLOS. R Taylor detailed that 68% of the 4756 adult elective patients on the waiting list have been transplanted. She highlighted the registration outcomes as at 5 October 2022 for adult elective re-graft patients either active or suspended on the liver transplant list between 20 March 2018 to 19 September 2022, showing that 58% have been transplanted. Data was compared on the demographics of the patients, by donor type. The median waiting time shows no significant difference pre and post NLOS. The median estimated TBS score was lower if the patient was registered for a first graft rather than a re-graft. This difference is noted regardless of whether the current or updated estimates are used. Strategies differ across centres for re-transplant patients including utilisation of both Normothermic Regional Perfusion (NRP) and Normothermic Machine Perfusion (NMP), D Thorburn confirmed that discussions will take place at the Spring 2023 BTS meeting. It was agreed by LAG that there was no current evidence that the introduction of NLOS had disadvantaged re-transplant patients.	
4.6	**Flight costs & Blue light paper- LAG(22)34, LAG(22)35**	
	The Group acknowledged the reduction in number of flights for livers with an equivalent estimated road journey less than five hours, following previous discussions. It was agreed that those where the estimated road journey was between 4 to 5 hours could be looked at to in detail ascertain if these flights were necessary. J Whitney stated that there is no evidence of a correlation between the flight costs and blue light usage at present, but this will be looked at over time, specifically for livers. R Prasad asked if the data could be produced to include the Cold Ischaemia Time.	**RT**
4.7	**Appeals process for small HCCs**	
	The minimal listing for HCC FTWG is completed. J Isaac advised that they made recommendations that single HCC 2cm or smaller should be resected or ablated and not transplanted. J Isaac advised that centres wishing to transplant patients with a single HCC 2cm or less should submit an appeal to the National Cancer Appeals panel rather than the national appeals panel. There will be a prospective audit of these patients.	
4.8	**DCD zones - LAG(22)36**	
	D Thorburn advised that the zones for DBDs have not been reviewed since the current liver allocation zones were introduced on 8 January 2013. The current zones were derived on adult DBD donors only and did not consider DCD donors. Since the introduction of NLOS, the zones are only used for DCD and paediatric DBD offering. A statistically significant difference was noted for one centre when looking at 12 months' worth of registrations and three years of DCD livers retrieved and transplanted. Statistically significant differences were also observed when looking at a five year cohort as well as all DCD livers offered regardless of utilisation. D Thorburn questioned whether the zones should be altered, recognising that each centre has at least one linked centre' There is an excess in Northern offers compared with Midlands and South, compared with number of patients registered. R Prasad advised that in the North there is a variation in progression to retrieval conversion compared with the South. The Group discussed the increase in use of DCDs due to NRP and whether this is relevant. Some members are concerned on the unintended consequences of altering the zones, with some centres possibly becoming dis-incentivised, if getting	

	lots of DBD grafts, possibly waiting until the national implementation of NRP. J Isaac suggested to make it equitable they would advocate for a gradual readjustment. The majority view is that there may be an impact on utilisation and the group will re-visit this once NRP is implemented nationally.	
5.	**Update from FTWUs**	
5.1	**National waiting list - LAG(22)37**	
	B Hogan provided an overview of the final recommendations from the National Waiting list FTWU. The group recognised that some patients won't be suitable and there may need to be a case-by-case discussion. It was agreed that this should ideally start with low complexity patients. It was agreed that this will standardise the process at centres, although it was also agreed that image sharing may prove problematic. S Watson will take these back to NHSE, A Adair advised that to ensure equity this will require four-nation commissioning. A specification will need to be agreed after there is an understanding on how it will be implemented.	**SW**
5.2	**Colorectal liver metastases - LAG(22)38**	
	K Menon confirmed that this is ready to be rolled out with a virtual communication letter to centres of the indications and to gain an insight into the number of patients that are likely to fulfil the inclusion criteria, for registration. The FTWG will be approached if clinicians are unsure about the listing. The group are happy to write to Centres to confirm this.	**KM**
5.3	**Cholangiocarcinoma – LAG(22)58**	
	R Prasad advised that the Service evaluation can start with intrahepatic patients and LAG will write to Centres. R Prasad provided further information on the EMPHATIC Protocol, having overcome the NHSE commissioning hurdle for PBT. A working group to discuss the data collection will meet soon. This hasn't been funded by all four nations Commissioners. **Post-meeting note: The intrahepatic CCa cannot open until the documentation (e.g. liver selection policy) has been updated.**	**RP/RT/DT**
5.4	**ACLF - LAG(22)39**	
	W Bernal presented the ACLF paper, of the 20 patients who received a liver from a deceased donor, 17 (85%) were known to be alive at their last follow up and 3 (15%) were known to have died. They are halfway to 50 transplants under this scheme, with an assessment of resource use after a ACLF transplant. There are approximately 1.5 patients per month. A Adair asked for clarification whether the patient should be on some support on HDU with W Bernal confirming the inclusion criteria that they would be on high level monitoring and expected to be best served by being on ITU if the proposal is to proceed to OLT.	
5.5	**Machine Perfusion working group - LAG(22)59**	
	A Standard Operating Procedure (SOP) for transporting livers undergoing normothermic machine perfusion has been agreed. The governance of all cases will move to the ARCs eventually but this will sit with the Fixed Term Working Group (FTWG) that developed the guidance which will change to a standing group to govern and oversee the national utilisation of NMP until then. It is proposed to hold regular oversight meetings. NHSBT have developed two Microsoft Forms data collection proformas to be filled in on-line, the first detailing the perfusion characteristics of the livers and the second detailing the biochemistry in the subsequent 2 weeks.	
5.6	**Neuroendocrine Tumours - LAG(22)40**	
	T Shah summarised where the programme is with the first patient registered. 17 patients were discussed with 13 considered appropriate to be assessed for transplant. Some have had a resection of their primary tumour. The programme will be assessed on the tenth patient transplanted. They national programme has been developed with funding needed to collect the data which will determine the transplant benefit. There will be research funding opportunities for sub-studies however the programme remains a Service Evaluation.	

	D Manas raised concerns on attendance at the MDT. Regarding Everolimus this would need to go through NHSE again now that the evidence has changed since 2015.	
5.7	**HCV positive transplants into HCV negative recipients - LAG(22)41**	
	This updated paper detailing all seven liver centres active with transplants involving donors who were Hepatitis C (HCV) positive was distributed prior to the meeting. J Whitney will ask, during the Coordinator call, where centres are with their waiting list, with a review due when 75% of patients on the list have been consented. D Thorburn advised that A Elsharkawy should look at the virology of those patients transplanted.	**JW**
5.8	**UKTR data collection**	
	This will be discussed at the next meeting when finalised.	
5.9	**Adenoma listing**	
	Four patients have been discussed at LAG Core Group (LAGCG) with adenomas of increasing size. When an appeal went out, all were accepted. An FTWU will look at the sub-set of these patients coming up with recommendations where they should be listed for transplant. They will establish the group and look for people to be involved.	**DT**
6.	**Liver CLU Scheme and Liver Utilisation - LAG(22)42**	
6.1	**Offer review scheme - LAG(22)43**	
	R Prasad discussed the Offer review scheme, supported by LAG, for livers from January 2022, tracking organ utilisation. Over 10 months, 18 offer reviews letters were written to the Centre Directors with the local Centre CLUs copied in. In the first five months 13 letters were sent and this has reduced to 5 letters in the last five months. Every Centre received at least 1 letter and the maximum letters for any given Centre was 5. The commonest decline of a liver is Alcohol with a fatty liver or drug use in the past also stated as decline reasons. R Prasad queried whether further guidance could be provided to Centres on COVID 19 donors. D Manas advised that, in Policy 304 the paragraph has just been changed on the NHSBT website.	
6.2	**Right lobe utilisation and offering**	
	R Prasad advised that there are no conclusions currently drawn on this piece of work. The Local CLUs continue with this work, despite no funding.	
7.	**LDLT Project update - LAG(22)44**	
	L Burnapp advised that this project is progressing, embedded in the 2030 Strategy. In February 2023, there will be a wider engagement event for all centres. D Manas advised that this is the third iteration of this project. D Thorburn asked everyone to encourage representation from their centres.	**All**
8.	**RAG Update – National NRP development**	
	I Currie provided an update on NRP for DCD donors, restoring organs to a metabolic state. Six centres have an NRP programme, the business case for funding stated this could result in 158 additional livers. There is a comprehensive package of support for new teams in donor hospitals. In the UK last year there were 111 NRP team attendances. 62% of NRP utilisation results in a liver transplant.	
8.1	**Super-urgent liver pathway update**	
	J Whitney summarised the 9 months data of all SU livers, trying to shorten down offering by expediting cardiothoracic offering has saved an hour on the pathway. The offering pathway for every super-urgent liver offered where cardiothoracic organs were also offered is examined on a regular basis. J Whitney advised that direct calls are asked for so that this reduces the delay.	
8.2	**Paediatric offering pathway update**	
	I Currie advised that the Group were formed six months ago looking at paediatric liver transplants that are done overnight. There a lot of people involved on this pathway, extremely resource intensive and challenging to be used overnight.	

	In 2011 90% of transplants were re-perfused overnight compared with 2021where reperfusion is distributed over the whole day. This starts pre-offer, with reperfusion from midnight to midday disadvantageous on outcomes. The Group are currently finalising recommendations, and these will be presented at the next LAG meeting. Tassos confirmed that the hour difference within the super-urgent liver pathway will have a big significance.	
9.	**Liver Transplant Commissioning**	
9.1	**NHS England**	
	S Watson advised that Integrated Care System (ICS) specialised commissioning will be changing but this won't affect liver transplantation very much, as remaining under highly specialised commissioning. Additional funding will only be available if this is clear how it is spent. There are pending changes with the CRG.	
10.	**Governance Issues**	
10.1	**Non-compliance with allocation**	
	There was no non-compliance reported.	
10.2	**HTA B forms**	
	J Whitney confirmed that the results are much better due to the new monthly dashboard, with less than five forms outstanding for liver.	
10.3	**Governance**	
10.3.1	**Governance report - LAG(22)45**	
	S Sinha discussed cases related to mismatch ABO organ allocation that are currently going through Coroners court. There have been several cases reported relating to issues around flight availability for organ transportation with equity due to geography to be addressed.	
10.4	**CUSUM - LAG(22)46**	
10.4.1	**Summary of CUSUM monitoring of outcomes following liver transplantation - LAG(22)47** There were no national triggers for CUSUM, only one centre specific CUSUM.	
10.4.2	**Report on recent triggers (shared learning)**	
11.	**National Clinical Trials**	
11.1	**CTU update** - **LAG(22)48**	
	The DeFat Study has been delayed but will soon be recruiting.	
12.	**Statistics and Clinical Research Report**	
12.1	**Summary from Statistics and Clinical Research - LAG(22)49**	
	R Taylor summarised that new and updated reports, all Advisory Group papers and conference presentations continue to be posted on the ODT Clinical Site. Since the last meeting, the Annual Report on Liver Transplantation for 2021/2022 has been published and the latest infographic is currently being finalised. Risk communication tools for all organs have been developed using available data and are accessible from the ODT Site. R Taylor will examine the data for paediatric patients.	**RT**
13.	**Multi-visceral and Composite Tissue Advisory Group (MCTAG) update**	
	A Butler was not present and MCTAG was delayed until 16 November 2022. D Manas advised that they are working with the Leeds team to expand zones for Hand transplantation	
14.	**AOB**	
	L Burnapp advised that Sir Peter Morris died at the weekend. K Menon asked for date of virtual centre visits, D Thorburn advised that they will offer dates in the week. D Manas advised that EOS is being replaced and confirmed that photographs of organs cannot be taken on a non-NHSBT device. Patient Path is the new system where photographs will be uploaded, reminding	

	everyone not to take photographs on the personal mobile phones and not to send them to Colleagues other than by nhs.net.	
15.	**Date of next meetings –** TBC 24 May 2023 - MS Teams & 29 November 2023 - F2F.	
16.	**FOR INFORMATION**	
16.1	Group 2 Transplants - **LAG(22)50**	
16.2	HCC down-staging - **LAG(22)51 -** keep open, for discussion offline. Looking at tumour recurrence rate at 3 years. Global indications and UK criteria have been published.	
16.3	Outcome of appeals - **LAG(22)52**	
16.4	Prioritised paediatric patient outcomes - **LAG(22)53**	
16.5	Activity and organ utilisation monitoring (dashboard) - **LAG(22)54**	
16.6	Minutes of the MCTAG meeting - **LAG(22)55**	
16.7	Minutes of the Retrieval Advisory Group meeting - **LAG(22)56**	
16.8	QUOD Statistical Reports for LAG - **LAG(22)57**	
16.9	**IT Changes and Update - (Liver splitting criteria, FT trigger, Update of NLOS & Crossmatch)**	