

Deceased Donor Liver Distribution and Allocation

<i>This Policy replaces</i> <i>POL196/4</i>	Copy Number
	Effective 14/12/2015
<div>Summary of Significant Changes<ul style="list-style-type: none">• Offering to Group 2 patients• Super – urgent registrations• Timing of fast-track offers</div>	

Policy

This policy has been created by the Liver Advisory Group on behalf of NHSBT.

The policy has received final approval from the Transplant Policy Review Committee (TPRC), which acts on behalf of the NHSBT Board, and which will be responsible for annual review of the guidance herein.

Last updated: November 2015

Approved by TPRC: April 2015

The aim of this document is to provide a policy for the allocation and acceptance of organs to adult and paediatric recipients on the UK national transplant list. These criteria apply to all proposed recipients of organs from deceased donors.

In the interests of equity and justice all centres should work to the same allocation criteria.

Non-compliance to these guidelines will be handled directly by NHSBT, in accordance with the Non-Compliance with Selection and Allocation Policies

<http://www.odt.nhs.uk/transplantation/tools-policies-and-guidance/policies-and-guidance/#noncompliance>

It is acknowledged that these guidelines will require regular review and refreshment. Where they do not cover specific individual cases, mechanisms are in place for the allocation of organs in exceptional cases.

1. Policy development and overview

1.1 The guidelines set out below are those agreed within the Liver Advisory Group and administered on the transplant community's behalf through ODT, NHSBT. The principles behind the policies have also been discussed at annual meetings with patient groups. The policies are reviewed by a Core Group, which reports to the Liver Advisory Group.

1.2 The guidance describes the mechanism by which a percentage share of all organ donors within the UK is distributed to individual transplant centres (donor distribution) and the process by which they are allocated (organ allocation).

Deceased Donor Liver Distribution and Allocation

1.3 Organs are allocated to a national transplant list for super-urgent cases because such cases have a very high risk of mortality without transplantation and need to have access to the whole national pool of donors to have a chance of receiving an organ in the short period of time before they deteriorate and transplantation would become futile.

1.4 Organs for elective transplantation are first allocated to a transplant centre, in whose zone the donor occurs, which is able to decide to whom on their elective transplant list the liver should be offered. Should the organ not be suitable for any local zonal recipients the organ is offered in sequence nationally (see section 2.10 Distribution of donors).

2. General considerations

2.1 Donor and recipient definitions

2.1.1 An adult donor for liver is defined as being a patient aged 16 years or over and with a body weight of 35kg or over at the time of death.

2.1.2 A paediatric donor is defined as being either a patient aged less than 16 years or with a body weight of less than 35kg at the time of death.

2.1.3 Paediatric patients are defined as patients aged 16 years or under at the time of offer and will receive priority within the offering sequence for non-super-urgent patients for any paediatric donor.

2.1.4 A centre may register a small adult, weighing 45kg or less, as paediatric at their discretion.

2.2 Paediatric cases

2.2.1 Paediatric donor organs will be offered first to paediatric patients, then to adult patients before being offered to European organ exchange organisations.

2.2.2 Organs from older paediatric donors aged over 12 years may be used for adult patients of small intestine/liver composite grafts and adult patients of multi-organ heart/lung/liver grafts.

2.3 Donor information

2.3.1 All potential liver donors in the UK or Republic of Ireland must be reported by telephone to the Organ Donation and Transplantation (ODT) Duty Office as soon as the brain-stem death tests have been confirmed, or relative's consent has been obtained, or Coroner's consent has been obtained.

2.3.2 The Core Donor Data Form and Liver Donor Information Form contain the information required for all liver donors and must be used when reporting a case to NHSBT.

2.4 Contraindications to donation

2.4.1 With the increasing disparity between supply of donors and patients registered for a transplant, as well as evolving experience with donors previously considered to be contraindicated, the absolute criteria contraindicating donation changes with time. All donors carry some risks which should be perceived as a continuous spectrum of risk.

2.4.2 To maximise the potential for organ donation, every potential organ donor should become an actual donor where appropriate. However, to prevent families being approached needlessly, it is important to define those characteristics of potential donors that preclude donation in any circumstance.

It should be recognised that it is the responsibility of the recipient surgeon to decide whether to accept an organ and this decision will depend on both donor and recipient factors. Organs from all donors will carry some degree of risk and the risks associated with transplantation must be balanced against the benefits of transplantation and the risks of awaiting a further offer.

Deceased Donor Liver Distribution and Allocation

The criteria listed below were drawn up by a group of transplant surgeons, physicians, intensive care clinicians and specialist nurses in organ donation and are based on past experience. Each Advisory Group has developed contra-indications for donation for each organ.

As with all guidelines, these should be used with clinical judgement and, if a clinician feels that a person excluded by this list, should be offered the opportunity to donate, then the family should be approached for consent/authorisation.

2.4.3 Donor contraindications to organ donation are reviewed regularly and revised as needed. These criteria define those potential deceased donors where no organ would be accepted for transplantation and so the families would not be approached

2.4.4 Liver donor contraindications to organ donation can be viewed within the Contraindications to Organ Donation policy (<http://www.odt.nhs.uk/transplantation/tools-policies-and-guidance/policies-and-guidance/#contraindications>)

2.4.5 Neither donor centres nor the ODT Duty Office will offer livers from donors who have not been tested for Hepatitis B surface antigen, Hepatitis C antibody or HIV antibody.

2.4.6 Livers from donors found to be positive for Hepatitis B surface antigen, Hepatitis B core AB, or for Hepatitis C antibody may be offered by the ODT Duty Office to transplant centres for transplantation. The final decision to accept the organ lies with the transplant surgeon and the potential recipient.

2.4.7 Where a donor is found to fall into any of the risk categories defined as contraindications to donation for organ transplantation, the ODT Duty Office will actively seek, record and pass on **all** donor information for the transplant centre to make the decision on the suitability of the donor organ.

2.5 Offering time

2.5.1 Offers will be made in accordance with the liver allocation sequence, on the basis of a firm offer being made to the first centre and a provisional offer to the second in line.

2.5.2 For all cases, centres with a firm offer must advise the ODT Duty Office within 60 minutes whether they wish to accept or decline the offer. If the organ is declined, it will be offered to the second in line as a firm offer and to the third in line as a provisional offer, and so on through the liver allocation sequence.

2.5.3 Centres must declare within the 60 minute offering time if they wish to accept a kidney to accompany a liver. Beyond the 60 minutes, kidneys will only be allocated by the kidney allocation scheme and the pancreas allocation scheme (see **Appendix C** for more details).

2.5.4 For first offers made to a centre previously advised provisionally, the ODT Duty Office must be advised within 45 minutes whether they wish to accept or decline.

2.5.5 Only once all centres have declined for Group 1 patients, will Group 2 patient requirements be considered. It is the responsibility of centres with Group 2 patients registered to inform the Duty Office when declining an offer for a Group 1 patient that they wish to accept for a Group 2 patient if offered.

2.5.6 A centre to which an offer has been made will retain its place on the liver allocation sequence while a decision is pending, although the ODT Duty Office will use discretion in offering a second

Deceased Donor Liver Distribution and Allocation

time to centres which are currently considering an offer. A centre declining an offer will retain its place on the liver allocation sequence.

2.6 Use of blood group O livers

2.6.1 Blood group O donor livers should be offered in the following priority order:

- 1 blood group O patients locally*
- 2 blood group O patients nationally*
- 3 blood group A, B or AB patients locally
- 4 blood group A, B or AB patients nationally

* B blood group patients can be considered for liver left lateral segments

2.6.2 Non-compliance will be followed up by NHSBT.

2.6.3 Super-urgent patients take priority in all blood groups.

2.6.4 These rules will be waived for fast track liver offers.

2.6.5 These rules will be waived for children under 2 years of age who require a liver transplant.

2.7 Domino livers

2.7.1 The transplantation of domino livers is a developmental procedure and is therefore outside of the formal liver allocation process. Centres may use domino livers for patients outside the current selection criteria for liver transplantation. (See *Liver Transplantation; Selection Criteria and Recipient Registration* document, section 3 Selection criteria). Priority should be given to Group 1 patients over Group 2 patients.

2.8 Donors after circulatory death (DCDs)

2.8.1 Donors after circulatory death (DCDs) are increasingly used for transplantation, as numbers of deceased liver donors fall. DCDs carry a higher risk of graft dysfunction and failure. All donors carry some risk but that described with DCDs increases the risk of graft failure approximately two fold. Despite that, they represent an important resource in view of the increasing disparity between those registered for a transplant and donors that can be used for transplantation.

2.8.2 All potential patients at registration should be informed of the risks associated with DCDs and other donor types and where appropriate specific consent obtained for their use.¹

2.8.3 The use of livers from DCD donors is currently outside of the formal liver allocation process. Livers from DCD donors will be allocated to the centre in whose donor zone a DCD appears. If they do not wish to use the donor, it is first offered to their linked centre (Northern – Edinburgh/Newcastle/Leeds; Central–Birmingham, Cambridge; Southern – Kings College, Royal Free). When offered to a super-urgent patient the patient will not be removed from the super-urgent transplant list until it is known that the DCD donor liver has been retrieved and found to be suitable for transplantation.

2.8.4 Livers from paediatric DCD donors will be offered in a similar way to livers from paediatric DBD donors.

2.8.5 Group 1 patients will take priority over Group 2 patients.

2.8.6 If not required regionally the liver will be offered through the fast track scheme to those centres that have registered their willingness to consider offers of livers from DCDs; the acceptance of such offers for Group 1 patients will take precedence over acceptance for Group 2 patients.

Deceased Donor Liver Distribution and Allocation

2.8.7 No blood group restrictions apply to the use of livers from DCD donors.

2.9 Liver splitting

2.9.1 Donors after brain death who are less than 40 years of age, weigh more than 50kg and have stayed in ITU for less than 5 days meet the basic criteria for liver splitting. All such donors must be offered for splitting (if there is an appropriate paediatric recipient) if there is no super-urgent, multivisceral or combined lung/liver patient waiting (see Figure 1).

2.9.1.1 First the left lateral segment is offered for a paediatric patient in UK paediatric liver centres in accordance with the liver allocation sequence. If there is a suitable paediatric patient for the left lateral segment splitting must proceed and must not be stopped because an adult patient requires a whole liver.

2.9.1.2 If a donor, eligible to be split and for whom a paediatric recipient has been identified, becomes available within a retrieval zone of a non-paediatric centre then the liver will be split locally if there is a surgeon deemed adequately competent to undertake the procedure. If no such surgeon is available the paediatric centre receiving the left lateral segment may choose where the liver is split; either by transporting the liver to the paediatric centre to be split there and returning the right segment back to the adult centre, or by sending a splitting team to the retrieval centre.

2.9.1.3 Each centre will maintain a list of surgeons deemed capable of splitting a liver. The outcomes of imported and exported liver will be monitored frequently.

2.9.1.4 Prior to splitting a liver in a non-paediatric centre, a designated splitting surgeon must liaise with the relevant surgeons from the paediatric centre who will receive the left liver for the paediatric case and the implanting paediatric transplant centre has the right to over-rule.

2.9.1.5 Left lateral segments from O blood group donors must be offered for O and B blood group paediatric patients nationally before consideration is given to other blood group paediatric patients.

2.9.1.6 Should the left lateral segments be declined by the paediatric centres then the retrieval centre can transplant the liver as a whole liver.

2.9.1.7 Any **lobes** (right lobe/left lobe) will be offered to all UK centres in accordance with the liver allocation sequence.

Deceased Donor Liver Distribution and Allocation

2.10 Distribution of donors

2.10.1 Currently each UK centre is supplied with donors from their donor zone. The size of that zone and which hospitals are included in it, is dictated by that centre's percentage share of all new registrations onto the national elective liver transplant list.

2.10.2 For the purposes of the calculation, a registration is any adult patient aged 17 years or older at the time of registration who is registered for a Group 1 elective liver transplant during a previous specified one year period.

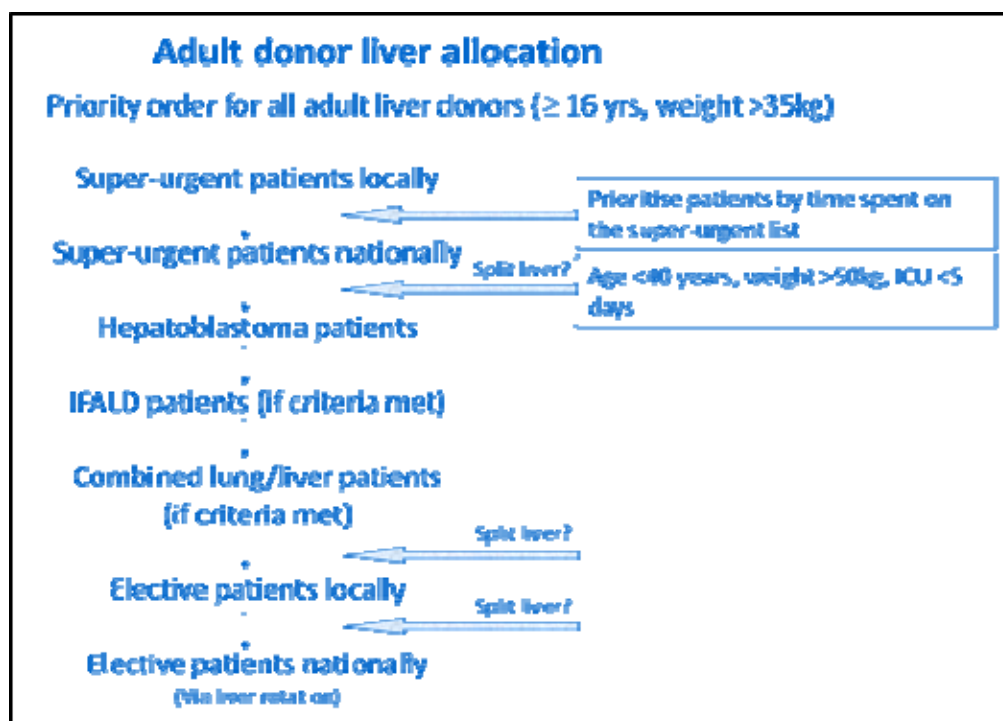
2.10.3 Also, for the purposes of the calculation, the number of donors in a hospital is averaged over a previous specified three year period. Only livers from DBDs which result in a transplant are considered and DBDs used for super-urgent transplantation are excluded. If a donor liver is split and transplanted into two elective patients, this is counted as one donor liver. If a donor liver is split and part transplanted into a super-urgent patient and part into an elective patient then this too is counted as one donor liver. Paediatric donors who donated whole livers to adult patients are included so too are adult donors whose livers are transplanted into paediatric patients only.

2.11 Re-calibration of zones

2.11.1 The zones are reassessed annually, prior to the Autumn Liver Advisory Group meeting.

2.11.2 If there is a statistically significant difference between any centres' percentage share of registrations and their percentage share of donors from their donation zone (as calculated above) then all zones must be re-drawn so that the imbalance is eradicated.

Figure 1:



IFALD: Intestinal failure-associated liver disease

Deceased Donor Liver Distribution and Allocation

3. Super-urgent liver scheme

3.1 Super-urgent diagnosis

Criteria for selection to the super-urgent transplant list are described elsewhere (see *Liver Transplantation; Selection Criteria and Recipient Registration* document, section 3.4 *Selection criteria for adult super-urgent transplantation*).

3.2 Super-urgent liver scheme ranking

3.2.1 The sequence of offers for patients registered as super-urgent will be strictly in relation to blood group and the time of registration; the blood group compatible patient having been registered the longest at any one time taking priority, and thereafter in reverse-chronological order by time of registration. For this purpose, NHSBT will maintain a list of super-urgent registrants.

3.2.2 Offers for paediatric patients under 2 years of age may be accepted for incompatible blood groups.

3.3 Exceptions

3.3.1 Centres which have a super-urgent patient registered, and subsequently identify a suitably matched blood group local donor, may retain the local donor for their super-urgent patient irrespective of other super-urgent patients registered at the time. However, the super-urgent patient must already be registered with NHSBT.

3.3.2 If a centre has accepted an offered liver for a super-urgent patient and subsequently identify a suitably matched blood group donor, they should either give up the right to the offered liver if the offered liver is not *en route* to them or retain the offered liver and the local liver if the offered liver has been received or is *en route* to them.

3.3.3 Disputes at 3.3.1 and 3.3.2 should be decided by mutual consent, surgeon to surgeon. Until the ODT Duty Office received further clarification, the patient will remain on the super-urgent list.

3.3.4 When a super-urgent patient is registered at NHSBT after a liver has been offered to and accepted by a centre for a non-super-urgent patient but is not yet implanted, the registering centre of the super-urgent patient has the responsibility of approaching any centres who have accepted a liver with a view to requesting they relinquish their offer. The Duty Office can provide information on which centres have accepted which livers from which donors to aid this process. Where a recipient has been notified of an offer then this should not be withdrawn unless the two surgeons have agreed.

In such cases it will not be possible for NHSBT to organise peer review prior to advising the transplanting centre of the newly registered super-urgent patient. If the patient does not receive the previously accepted liver, peer review will be carried out in the normal way.

3.3.5 When a liver has been accepted for a super-urgent patient and the transplant does not proceed, for recipient reasons, the organ should first be offered back to the zonal team. If not accepted by the zonal team, the liver will be offered through the fast track offer scheme.

4. Adult donor organ allocation

4.1 Allocation – Adult donor organs

4.1.1 All livers donated in the Republic of Ireland will be used in that country for any patient on the transplant list, whether super-urgent or elective. Livers from the Republic of Ireland which cannot be used in that country will be offered to centres in the UK through the ODT Duty Office.

Deceased Donor Liver Distribution and Allocation

4.2 Liver and composite liver and small intestine (Figure 1)

4.2.1 All livers or composite livers and small intestines donated in the UK, and those livers declared surplus in the Republic of Ireland, will be offered by the ODT Duty Office in the following priority order for Group 1 patients at:

4.2.1.1 Any centre in the UK or Republic of Ireland for super-urgent patients (see section 3).

4.2.1.2 Patients with hepatoblastoma.

4.2.1.3 Designated centres in the UK or Republic of Ireland for combined liver/small intestine graft adult patients (where donor is aged between 16 and 65 years and weighs less than or equal to 100kg, with a BMI less than or equal to 30kg/m²), currently Addenbrooke's Hospital, Cambridge for adult patients.

4.2.1.4 If a suitable combined lung/liver patient is identified through the lung allocation, designated centres in the UK or Republic of Ireland for combined lung/liver adult patients (where donor after brain death and aged between 16 and 55 years), currently Papworth/ Addenbrooke's Hospital, Cambridge and Freeman Hospital, Newcastle for adult patients.

4.2.1.5 The designated zonal centre.

4.2.1.6 Designated centres in the UK or Republic of Ireland.

Offers will then be made to centres in the following priority order for Group 2 patients at:

4.2.1.7 Any centre in the UK or Republic of Ireland for patients requiring an emergency re-transplant.

4.2.1.8 The designated zonal centre.

4.2.1.9 Designated centres in the UK or Republic of Ireland.

Thereafter, the ODT Duty Office will offer any organs which remain surplus, to organ exchange organisations in Europe and elsewhere. **As is practice across Europe, this will be on a first response basis.**

4.3 Allocation – Adult donor organs – Small intestine

4.3.1 All isolated small intestines donated in the UK and Republic of Ireland will be offered by the ODT Duty Office in the following priority order for Group 1 patients at:

4.3.1.1 Designated centres in the UK or Republic of Ireland for isolated small intestine graft, currently, Addenbrooke's Hospital, Cambridge and the Churchill Hospital, Oxford.

Offers will then be made to centres in the following priority order for Group 2 patients at:

4.3.1.2 Designated centres in the UK or Republic of Ireland for isolated small intestine graft; currently, Addenbrooke's Hospital, Cambridge and the Churchill Hospital, Oxford.

Thereafter, the ODT Duty Office will offer any organs which remain surplus to organ exchange organisations in Europe and elsewhere as follows:

Deceased Donor Liver Distribution and Allocation

4.3.1.3 Organ exchange organisations in EC and other Group 1 countries.

4.3.1.4 Organ exchange organisations in Group 2 countries.

4.4 Allocation within centres

4.4.1 Currently there is no universal allocation scheme nationally or within centres describing which patient, matched for blood group and size, will receive the first available deceased donor graft.

4.4.2 Most centres allocate the liver graft to the patient with the greatest need, but a number of additional factors will also need to be considered to obtain optimal outcomes. Donor factors that are relevant include age, size, liver function, damage to graft, virology status, history of malignancy, history of diabetes and other relevant donor history, type of donor (DCD or DBD), whole or segmental graft, and BMI; recipient factors include severity of liver disease, aetiology of liver disease, age, size, renal replacement therapy and hospital status (out-/in-patient, HDU) and projected cold ischaemia time.

4.4.3 For adult elective patients the transplant list at each centre will be ranked by the patients' UK End Stage Liver Disease (UKELD) score, the patient with the highest UKELD score appearing at the top. This list will be updated regularly, usually every week. When a liver graft becomes available, the clinicians may select a patient who is not the highest ranked due to the additional factors listed above. If a liver from a DBD donor is transplanted into a patient who is not the highest ranked patient, centres will need to document a reason why each of the higher ranked patients was not transplanted with the organ. A form has been developed to document the reasons and completed forms should be retained by centres. NHSBT reserves the right to inspect these records to provide external reassurance that due process is followed.

4.4.4 Discussions are necessary with all patients concerning the varying risk associated with some donors and appropriate consent must be obtained.¹

5. Paediatric donor organ allocation (Figure 2)

5.1 Allocation - Paediatric donor organs – Liver and composite liver and small intestine

5.1.1 All paediatric donor livers or composite livers and small intestines donated in the UK, and those surplus in the Republic of Ireland, will be offered in the following priority order for Group 1 patients at:

5.1.1.1 Any centre in the UK or Republic of Ireland for super-urgent patients.

5.1.1.2 Patients with hepatoblastoma.

5.1.1.3 The designated centres in the UK or Republic of Ireland for paediatric patients in need of liver and small intestine (where a donor is less than 16 years of age or weighs less than 35kg) are currently, Children's Hospital Birmingham and King's College Hospital, London.

5.1.1.4 Designated centres in the UK or Republic of Ireland for combined liver/small intestine graft adult patients, currently Addenbrooke's Hospital, Cambridge for adult patients.

5.1.1.5 The designated zonal retrieval centre for paediatric patients.

5.1.1.6 Designated centres in the UK or Republic of Ireland for paediatric patients.

Deceased Donor Liver Distribution and Allocation

Offers will then be made to centres in the following priority order for Group 2 patients at:

5.1.1.7 Any centre in the UK or Republic of Ireland for patients requiring an emergency re-transplant.

5.1.1.8 The designated zonal centre.

5.1.1.9 Other designated centres in the UK or Republic of Ireland.

Thereafter, the ODT Duty Office will offer any organs which remain surplus to organ exchange organisations in Europe and elsewhere as follows:

5.1.1.10 Organ exchange organisations in EC and other Group 1 countries for emergency patients.

5.1.1.11 Organ exchange organisations in EC and other Group 1 countries.

5.1.1.12 Organ exchange organisations in Group 2 countries.

5.2 Allocation – Paediatric donor organs - Small intestine

5.2.1 All paediatric isolated small intestines donated in the UK and Republic of Ireland will be offered first for paediatric patients and then for adults in the following priority order for Group 1 patients at:

5.2.1.1 Designated centres in the UK or Republic of Ireland for paediatric patients in need of isolated small intestine graft.

5.2.1.2 Designated centres in the UK or Republic of Ireland for adult patients in need of isolated small intestine graft.

Offers will then be made to centres in the following priority order for Group 2 patients at:

5.2.1.3 The designated zonal centre

5.2.1.4 Designated centres in the UK or Republic of Ireland for paediatric patients.

5.2.1.5 The designated zonal retrieval centre for adult patients.

5.2.1.6 Designated centres in the UK or Republic of Ireland for adult patients.

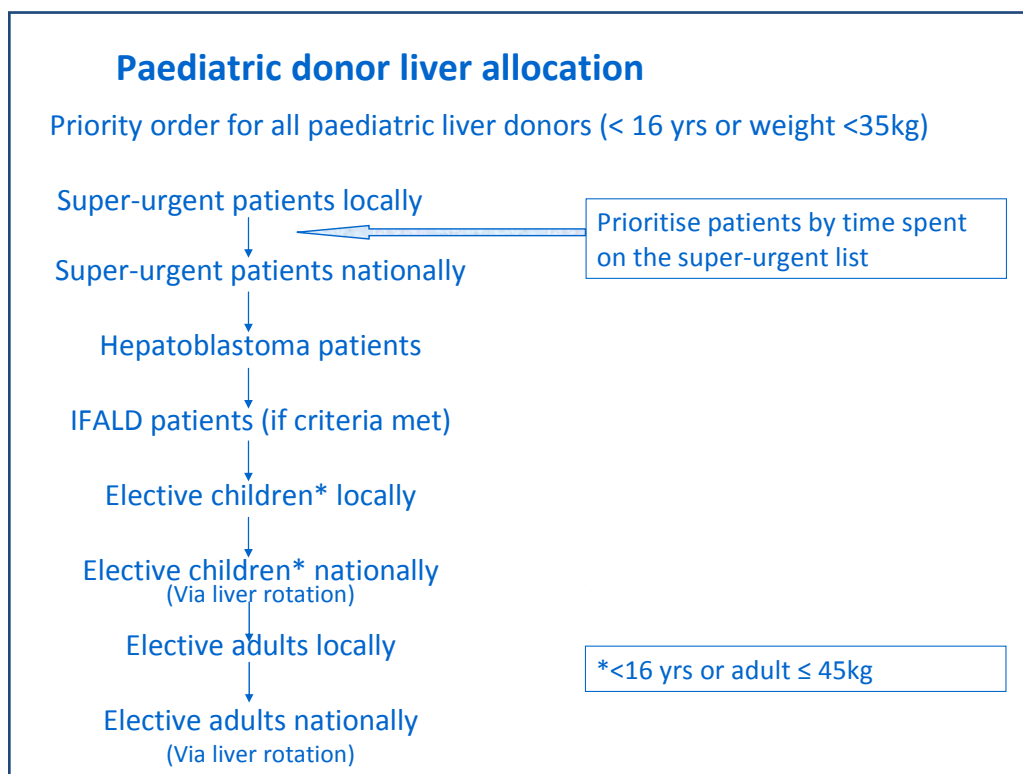
Thereafter, the ODT Duty Office will offer any organs which remain surplus to organ exchange organisations in Europe and elsewhere as follows:

5.2.1.7 Organ exchange organisations in EC and other Group 1 countries.

5.2.1.8 Organ exchange organisations in Group 2 countries.

Deceased Donor Liver Distribution and Allocation

Figure 2:



IFALD: Intestinal failure-associated liver disease

6. The Northern Liver Alliance (NLA)

6.1 There is a Northern Liver Alliance Top Band Allocation and Payback Scheme between Edinburgh, Leeds and Newcastle transplant centres (see **Appendices A & B**). The NLA operates a single 'Top Band' waiting list for all patients with a UKELD score equal to or greater than 62. There is no limit to the number of patients listed by each centre. UKELD is recalculated weekly for in-patients and 4 weekly for out-patients. Zonal offers for these centres are made in the usual way and the three centres administer between themselves allocation to any suitable 'Top Band' patient and advise the ODT Duty Office accordingly. Top Band patient registrations will be received by the ODT Duty Office for statistical monitoring purposes to allow analysis of the NLA scheme to take place.

7. The liver allocation sequence

7.1 Donor organ offers for non-super-urgent patients will be in accordance with the liver allocation sequence. The sequence comprises designated centres, headed by the zonal centre.

7.2 The liver allocation sequence will be used to advise designated centres of the availability of a donor organ, regardless of whether a patient of the appropriate blood group is registered from their centre on the UK Transplant Registry at the time.

7.3 The liver allocation sequence will be sequenced according to each centre's transplant activity, based on a rolling 4 week period (not including the most immediate week to allow for transplants to be recorded on the UK Transplant Registry). The centre with the least number of transplants during this period will appear at the top of the sequence, down to the centre with the most number of transplants during this period.

Deceased Donor Liver Distribution and Allocation

7.4 NHSBT will maintain the liver allocation sequence for each centre which will be calculated as follows:

7.4.1 The 4 week period does not include the past week most immediate to the liver to be allocated. Instead, a 1 week window is used to allow the ODT Duty Office to record liver transplants on the UK Transplant Registry. For example, if a liver allocation sequence is produced on Saturday 20 May, the 4 week period used to determine a centre's transplant activity will be to Saturday 15 April to Saturday 13 May.

7.4.2 Livers transplanted from DBD, DCD and domino donors are included in the calculation. Livers offered and transplanted from donors from European organ exchange organisations are included in the calculation.

7.4.3 Live liver transplants are not included in the calculation.

7.4.4 Centres with an identical activity count on the liver allocation sequence will be ranked in reverse-chronological order according to the date on which a transplant took place.

8. Fast track liver offer scheme

8.1 UK and Republic of Ireland

8.1.1 Liver centres in the UK and Republic of Ireland are required to notify the ODT Duty Office of all livers that have been declined for any reason, or have yet to be accepted, at or after cross-clamp. These livers will be offered to the remaining centres on the liver centre rota by the fast track offer scheme.

8.1.2 Non-zonal livers accepted for a super-urgent patient but not transplanted for recipient reasons and not accepted by the zonal centre will be offered on the fast track offer scheme.

8.1.3 If not already offered, the ODT Duty Office will telephone the centre of a super-urgent patient to give the offer verbally.

8.1.4 Livers offered on the fast track offer scheme may be accepted for blood group compatible or identical patients: the usual blood group O priority will be waived.

8.1.5 The scheme will operate as follows:

8.1.5.1 Offers of livers meeting the criteria as described above will be made by the ODT Duty Office to designated centres on the liver centre rota by simultaneous facsimile transmission of donor information. Telephone offers will not be made.

8.1.5.2 In all cases centres must respond by telephone within 45 minutes to advise whether or not they wish to accept or decline the offer. If a centre does not respond to a fast track offer, the ODT Duty Office will assume that the offer has been declined.

8.1.5.3 If a liver is accepted by more than one centre it will be allocated to the centre placed highest on the liver centre rota at the time of the offer.

8.1.5.4 Centres accepting for Group 2 patients must wait until the 45 minutes and follow up have elapsed to ensure that no centre is accepting for a Group 1 patient.

8.1.5.5 Within 45 minutes of receiving the referral, the ODT Duty Office will advise the offering centre of the outcome.

Deceased Donor Liver Distribution and Allocation

8.2 Fast track liver offers from Europe

8.2.1 Designated liver centres may register with the ODT Duty Office to receive offers of livers which are available from other centres in Europe. The scheme will come into play for all offers of whole livers and liver lobes from European organ exchange organisations. The scheme will operate as follows:

8.2.2 ODT Duty Office will accept all offers from other centres in Europe. Offers of livers meeting the fast track offer scheme criteria will be made only to centres registered in the scheme.

8.2.3 Offers will be made by the ODT Duty Office by simultaneous facsimile transmission of donor information. Telephone offers will not be made.

8.2.4 If a liver is accepted by more than one centre it will be allocated to the centre placed highest on the liver centre rota at the time of offer. Centres not responding will be deemed to have declined the offer.

8.2.5 Centres accepting for Group 2 patients must wait until the 45 minutes and follow up time have elapsed to ensure that no centre is accepting for a Group 1 patient.

8.2.6 Within 45 minutes of receiving the referral, the ODT Duty Office will advise the offering European organ exchange organisation of the outcome.

References

NHS Blood and Transplant and British Transplantation Society. Guidelines for consent for solid organ transplantation in adults.

<http://www.odt.nhs.uk/transplantation/tools-policies-and-guidance/policies-and-guidance/#consentsolidorgan>

APPENDIX A

Northern Liver Alliance (NLA) Top Band Allocation Scheme (revised January 2014)

This scheme is effective ONLY for all DBD liver donors in the Edinburgh, Newcastle and Leeds zones. It does not affect livers offered to the national sequence scheme or DCD grafts.

With effect from 6th January 2014 Leeds, Newcastle and Edinburgh transplant centres co-ordinate directly the allocation of liver grafts to top-band patients and subsequently inform the ODT Duty Office (DO). Essentially, the NLA will operate a single waiting list for all patients with a UKELD score equal to or greater than 62.

That change in practice also applies to the pay back system agreed within the Northern Liver Alliance (see **Appendix B**).

1. Registration

Patients with a UKELD score greater than or equal to 62 are registered on a 'top band' waiting list. There is no limit to the number of patients listed by each centre. UKELD is recalculated weekly for inpatients and 4 weekly for outpatients.

All top band registrations are communicated to the DO (for documentation and to be added to the 'Active' section of the 'Top Band' file) as well as to the remaining NLA centres. The listing co-ordinator is responsible for informing the DO and Newcastle transplant centre, where the central registry for NLA is kept.

Notification of the new listing is made by (1) fax and (2) contacting the on-call co-ordinators within the NLA (phone or email) over the weekend.

DO no longer maintain a "white board" to monitor top band registrations. Ideally, in addition to the registry kept/maintained in Newcastle, each NLA centre maintains an "in house" record of all registrations.

Patients registered are added (1) into each of the other centres' waiting list (single common list for top band patients in NLA) and (2) to the respective "white board" of the two other centres.

During the week following a new registration, an email is circulated amongst all the NLA co-ordinators, NHSBT and other relevant people with the most up-to-date list and balance of exchange. This is circulated by Newcastle transplant centre. *During the weekend* the listing on call co-ordinator informs DO and their counterparts within NLA.

Patients are always placed on the routine waiting list with an ODT recipient number before joining the 'top band' list. This number is entered onto the top of the 'Top Band' registration form.

NLA also maintains a database in addition to NHSBT to be able to monitor and audit outcomes.

Deceased Donor Liver Distribution and Allocation

2. Offering sequence

Offers are made in the following order:

- a) Super Urgent recipients
 - b) Hepatoblastoma patients
 - c) Liver/Small bowel (if applicable)
 - d) NLA Top Band patients
 - Blood group identical
 - Ordered by descending score of UKELD
1. Should 2 patients have the same UKELD score and a Top Band patient be registered at the same centre as the donor allocation zone unit, these 'local' patients will have priority.
 2. Should 2 patients have the same UKELD score and there be no 'local' patient, priority should be given to the patient registered on the Top Band list the longest.
- e) Zonal centre routine patients
 - f) Through ODT sequence

If an NLA centre declines an offer for a top band patient, the recipient will remain on the waiting list until a new offer is made and accepted.

3. Allocation

The SNOD or DO will contact the zonal centre when a donor is identified. Within the NLA every on call co-ordinator will have access to all top band patients in Leeds/Edinburgh and Newcastle being able to operate a single common waiting list. This is updated routinely. Once an offer is made, the donor allocation zone centre co-ordinator will identify the centre with the priority top-band patient and report to the SNOD / DO.

4. DCD Donors

Livers from DCD donors may be offered around the Northern Liver Alliance before being fast-tracked on a national basis. DCD livers offered do not have to be considered for 'Top Band' patients ahead of other elective patients. If accepted, the pay back rules will apply as per routine (DBD) graft.

If declined by the other alliance centres, the liver will then be offered on nationally via the fast-track scheme.

5. Split Livers

Those livers meeting the splitting criteria must be offered nationally and this takes priority over top band patients. There is a requirement for splitting within-criteria donor livers when the liver is offered to Hepatoblastoma, NLA Top Band patients, Zonal centre routine patients or patients through ODT sequence. It is the responsibility of the implanting centre to make sure the LLS is offered to the paediatric centres. This is monitored by the Liver Advisory Group.

6. Coding

Recipient class is coded as 36 Top Band Liver Patient and offer type code entered as 98 – with the text '**Top Band**'.

7. Removal of Recipients

If a request to remove a patient from the Top Band list is received, ODT Information Services are notified if the patient should also be removed from the routine waiting list. The Top Band registration form is taken from the 'Active' section of the file and put into the 'Removed' section. The date/time is added to the bottom of the form along with the relevant removal code.

Deceased Donor Liver Distribution and Allocation

Definitions

Implanting NLA co-ordinator: NLA centre where top-band priority patient is located

Donor Allocation zone NLA co-ordinator: designated NLA retrieval centre where donor is located

NLA: Northern Liver Alliance


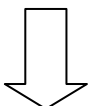

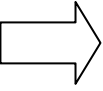
DO: Duty Office

SNOD: Specialist Nurse in Organ Donation


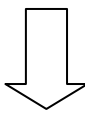
SLG: Split liver graft

WL: Waiting list

LLS: Left lateral segment

STEP	DETAILS		INFORMATION
1.- NLA liver offering	DBD		No SU, hepatoblastoma or Liver/SB registrations
2.-SNOD/DO contacts Donor Allocation zone centre			
3.- Donor Allocation zone NLA co-ordinator centre identifies appropriate top band patient	a) Checks common WL including patients from all 3 NLA centres. b) Identifies highest UKELD score. c) Identifies implanting transplant centre. d) checks pay-back (See SOP for Pay-back)		1. Highest UKELD 2. Should 2 patients have same score, priority will be given to the longest WL. 3. Should 2 patients have same score, priority will be given to the one registered at the designated retrieval centre (Local patient).
4.- Donor Allocation zone NLA co-ordinator centre reports to DO/SNOD	DO/SNOD will contact future implanting NLA co-ordinator		
5.- Is it a split liver graft (SLG)?	Yes  6	No  Go to 7	The implanting NLA centre is ultimately responsible for national offer to paediatric centres.
6. Implanting transplant centre will accept SLG for top band offer?	Yes  Go to 8	No  END	

Deceased Donor Liver Distribution and Allocation

7.- Implanting transplant centre accepts top band offer	<i>a) implanting NLA coordinator will update WL</i> <i>b) balance of exchange updated</i> <i>c) if offer refused, patient will remain top-band</i>		<i>Essential to inform central registry in Newcastle.</i> <i>Following morning an updated email will be circulated regarding WL and pay back situation</i>
8.- Will implanting NLA centre be able to split the graft ?	Yes  9	No  Go to 10	
9.-Implanting NLA centre splits and implants adult section	<i>a) Inform DO/SNOD</i> <i>b) implanting NLA co-ordinator will update WL</i> <i>c) balance of exchange updated</i>		<i>Nationally agreed rules for allocating LLS and/or full right-left lobes will be followed.</i>
10.-If implanting SLG, NLA centre is not able to split will then offer the graft via national split sequence	<i>The NLA centre that has accepted the split graft should receive back right or right extended lobe.</i>		
11.- DCD donor within NLA zone	<i>These grafts can be offered.</i> <i>This is optional.</i>		<i>It remains at the discretion of the consultant retrieving centre.</i>

APPENDIX B

Northern Liver Alliance (NLA) Top Band Payback Scheme (revised January 2014)

The NLA Top Band payback scheme applies to any graft accepted within the NLA as a consequence of top-band allocation. Although DCD are not included, should a centre be offered and accept a DCD for a top band patient, the same rules apply.

The Northern Liver Alliance includes donors from within Leeds, Newcastle and Edinburgh retrieval zones.

1. OFFERING

- 1.1 Livers within the NLA must be offered in accordance with the national allocation rules as follows:-
 - a) Registered super-urgent patients
 - b) Hepatoblastoma patients
 - c) Liver/small bowel (paediatric/adult)
 - d) NLA Top Band patients
- 1.2 There is a requirement for splitting a donor liver that meets the splitting criteria when the liver is offered to Hepatoblastoma, NLA Top Band patients, Zonal centre routine patients or patients through ODT sequence.
- 1.3 A liver can only be offered for payback if there are no super-urgent or liver/small bowel recipients or no other Top Band patients registered. A payback can be a split graft.
- 1.3 Offers for a Top Band patient take priority over payback.

2. PAYBACK RULES

- 2.1 A payback applies when a NLA centre (NLA retrieving centre) exports a transplantable liver to another NLA centre for a Top Band patient (NLA receiving centre). The accepting centre will owe a payback.
- 2.2 The payback is the first "eligible" adult DBD liver that becomes available in the NLA zone where the liver was accepted.
- 2.3 Payback and Top Band allocation can interact. If, for instance, Newcastle sends Leeds a liver for a Top Band patient, then Leeds will owe Newcastle the next 'eligible' liver from the zone. However, if the next liver from Leeds has to go to a Top Band patient in Edinburgh, then Edinburgh will owe Newcastle a liver.
- 2.4 If a centre declines a liver offered as a payback, the liver will be offered back to the next payback centre or used by the donor allocation NLA centre. If further declined, the liver will be offered on following the National allocation sequence. If a declined graft is transplanted elsewhere, the debt is also considered "Paid". *The only accepted reasons for not "losing" the payback are*
 - *No compatible blood group recipient*
 - *Centre already transplanting*
 - *No available bed in ITU*
- 2.5 If a liver fulfils the splitting criteria, the left lobe or left lateral segment should be offered to the paediatric liver centres. The extended right lobe will be offered as a payback.
- 2.6 A liver that was accepted as payback and subsequently deemed as unusable (damaged, too fatty etc) will not be considered as "Paid Back".
- 2.7 A liver accepted and transplanted into a Group 2 patient will not be considered as "Paid Back".

Deceased Donor Liver Distribution and Allocation

- 2.8 If any NLA centre is owed more than one liver the payback offers will be made in chronological order of the debt, i.e. the donor of the first Top Band liver will be offered the payback first.
- 2.9 During the week following any change in the NLA activity an email stating the balance of exchange will be circulated along with the Top Band WL. Disputes should ideally be dealt with by telephone during the on call involving the consultant surgeon and co-ordinator.
- 2.10 NLA meets twice a year to monitor and audit the activity. In addition, telecons can be arranged should any topic need to be discussed.

Definitions

Implanting NLA co-ordinator: NLA centre where top-band priority patient is located

Donor Allocation zone NLA co-ordinator: designated NLA retrieval centre where donor is located

NLA: Northern Liver Alliance


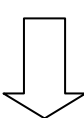

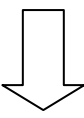
DO: Duty Office

SNOD: Specialist Nurse in Organ Donation


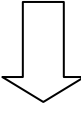

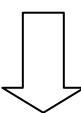
SLG: Split liver graft

WL: Waiting list

LLS: Left lateral segment

STEP	DETAILS		INFORMATION
1.- NLA liver offering	DBD		No SU, hepatoblastoma , Liver/SB and no Top Band registrations
2.-SNOD/DO contacts Donor Allocation zone centre			
3.- Donor allocation zone NLA co-ordinator centre confirms there are no top band registrations	a) Checks common WL including patients from all 3 NLA centres b) identifies pay-back centre		
4.- Donor allocation zone NLA co-ordinator centre reports back to DO/SNOD	DO/SNOD informs on call designated implanting NLA co-ordinator centre where the payback is due.		
5.- Is it a split liver graft (SLG)?	Yes  8	No  Go to 6	The implanting NLA centre is ultimately responsible for national offer to paediatric centres.
6.-Transplant NLA centre accepts pay back offer ?	Yes  Go to 7	No  Go to 12	a) If offer declined and graft used elsewhere, the debt is considered paid. b) Exceptions will be contemplated.

Deceased Donor Liver Distribution and Allocation

7.- Implanting NLA centre has accepted pay back offer	b)balance of exchange updated		Essential to inform central registry in Newcastle. Following morning an updated email will be circulated regarding WL and payback situation
8.-Will accepting transplant implant SLG as a payback?	Yes  9	No  Go to 12	a) Should more than one payback exist, will go to step 3 and recommence process.
9.- Will accepting NLA centre be able to split the graft ?	Yes  10	No  Go to 11	
10.- Accepting pay back NLA centre splits and implants adult section	Inform DO/SNOD		Nationally agreed rules for allocating LLS and/or full right-left lobes will be followed
11.-If accepting SLG, NLA centre is not able to split will then offer the graft via national split sequence	The NLA centre that has accepted the split graft should receive back the right or right extended lobe		
12.- Declined pay back offer	a) if graft used elsewhere, pay back is considered paid b) if the graft is not used or declined based on the existing exceptions, balance of exchange remains unchanged		

APPENDIX C

Combined liver and kidney patient offering

Changes in the logistics around donor characterisation and organ allocation has resulted in patients awaiting a liver and kidney transplant becoming disadvantaged with significantly longer waiting times. To provide more equitable access to deceased donor organs by all listed transplant candidates, a revised protocol has been agreed where the Duty Office will delay offering one kidney from a DBD donor for up to 60 minutes to allow the zonal liver centre to accept one kidney to accompany the liver. This process applies only to organs from donors after brain death.

If a kidney has been accepted for a recipient with intestinal failure then the remaining kidney will not be held for the liver offering but will be offered according to Duty Office procedure.

At the time of accepting the liver offer the zonal liver centre will indicate if they will accept the kidney for a combined liver and kidney transplant.

If the kidney is accepted with the liver, the Duty Office will offer the remaining kidney according to the agreed national allocation procedure.

If the kidney is not accepted with the liver by the liver centre or 60 minutes have elapsed since the offer was made, the Duty Office will offer both kidneys according to the agreed national allocation procedure.

If a non-zonal liver centre wishes to accept a kidney with the liver, the centre may request that the kidney is accepted with the liver at any point during offering process but the availability of the kidney will depend on whether it had been allocated for kidney or simultaneous pancreas and kidney recipients.

If a liver centre wishes to request that a renal centre relinquish a kidney offer then this can be agreed only if the renal centre agrees that this is clinically appropriate. The Duty Office will provide contact information to enable the relevant clinicians to discuss and agree the appropriate option.