NHS BLOOD AND TRANSPLANT

CARDIOTHORACIC ADVISORY GROUP

ZONAL BOUNDARY CHANGES
SUMMARY

INTRODUCTION

1 NHSBT is by statute responsible for the development and implementation of allocation of organs from deceased donors in the UK. Donated organs are a national resource and the allocation of organs must be equitable, transparent and follow an agreed, published protocol. Policies may be based on a regional or national allocation system.

2 The current zonal based allocation system for cardiothoracic organs means that each designated transplant unit has a defined geographical zone associated with it: organs from donors within that zone are allocated preferentially to the associated transplant unit to select the most appropriate candidate for transplant (with the exception of urgent hearts).

3 The current zonal arrangements to determine allocation of organs for the cardiothoracic transplant centres have been in place since 1 April 2003 and, despite annual review, have never been changed.

4 In order to achieve transparency, equity and fairness nationwide, zones need to reflect activity in centres and boundaries must be regularly reviewed and adjusted to reflect changes both in centre activity and changes in donation. The current zones for cardiothoracic organ transplantation are based on historical practice and have the potential to be causing inequity for patients. In particular, the introduction of a National Organ Retrieval Service in 2010 meant that heart and lung retrieval is effectively dissociated from the organ allocation zones.

5 This process of review and adjustment should be implemented annually using the methodology agreed by the Liver Advisory Group (LAG) in 2009 as a precedent.

ACTION

6 Members are asked to comment on these proposals.

Jenny Lannon
Statistics and Clinical Studies **April 2014**

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1 NHSBT is by statute responsible for the development and implementation of allocation of organs from deceased donors in the UK. Donated organs are a national resource and the allocation of organs must be equitable, transparent and follow an agreed, published protocol. Policies may be based on a regional or national allocation system.

2 The current zonal based allocation system for cardiothoracic organs means that each designated transplant unit has a defined geographical zone associated with it: organs from donors within that zone are allocated preferentially to the associated transplant unit to select the most appropriate candidate for transplant (with the exception of urgent hearts).

3 The current zonal arrangements to determine allocation of organs for the cardiothoracic transplant centres have been in place since 1 April 2003 and have never been revised. The zones are the same for heart and lung allocation, with the exception of Scottish lung donors who fall within the Newcastle lung allocation zone.

4 The zonal allocation principle may offer both benefits and risks to patients and has attracted some concerns from stakeholders. Where a zonal allocation process is in place, NHSBT must be able to demonstrate that this operates to the benefit of the patients rather than the centre.

5 In order to achieve transparency, equity and fairness nationwide, zonal boundaries need to be regularly reviewed and adjusted to reflect changes both in centre activity and changes in donation. The current zones for cardiothoracic organ transplantation are based on historical practice and have the potential to be causing inequity for patients. In particular, the introduction of a National Organ Retrieval Service in 2010 meant that heart and lung retrieval is effectively dissociated from organ allocation.

6 This paper outlines the existing methodology used for liver zones and describes how this can be translated for the heart and lung zones.

DATA AND METHODS

7 The heart and lung allocation zones should be reassessed using a methodology similar to that agreed by the Liver Advisory Group (LAG) in 2009; details of this method were previously circulated to CTAG members. Changes to the current liver allocation zones are based on a

statistically significant difference being observed between the percentage share of registrations and the percentage share of donors for any one liver allocation zone (at the 5% significance level adjusted to account for the largest difference in percentage share being tested for significance). The liver allocation zones are reviewed on an annual basis and presented for endorsement at each Autumn LAG meeting. Any subsequent changes to zonal boundaries are then implemented in the Autumn, around November.

From 2014 onwards the cardiothoracic allocation zones should be reviewed and adjusted, if necessary, in the Autumn at the same time as for liver, following the Autumn CTAG meeting.

8 Registrations should be defined as:

The total number of UK adult (≥16 years at time of registration) Group 1 heart, lung or heart/lung registrations in the **latest two year period** between 1 April and 31 March, but excluding a) any registrations made by Great Ormond Street Hospital and b) any patients with no active waiting time. Registrations that ended in a domino or live donor transplant, multi-organ registrations and urgent heart registrations will be included. Retrospective registrations made after an unlisted patient was transplanted will also be included.

For patients registered twice in the registration period, the following rules apply:

- If a patient was registered, removed then reregistered, only the first registration is included.
- If a patient was registered, transplanted then reregistered, both registrations are included.
- If a patient was active, suspended then reactivated, only the first activation is included.
- If a patient was non-urgent, then made urgent, only the first registration is included, and vice versa.

Note that registrations for heart/lung transplantation are included in the number of heart registrations as heart/lung blocks are allocated according to the cardiac centre rota.

9 Donors should be defined as:

The total number of UK adult (≥16 years at time of death) heart and/or lung donors after brain death over the **latest three year period** between 1 April to 31 March. Donors whose heart or lungs were not transplanted will be excluded. If only one lung from a donor was transplanted, this will be included as a lung donor. Paediatric donors who donated to adult patients will be included, along with adult donors whose organs are transplanted into paediatric patients.

10 The approach above has three key differences from the liver zone methodology:

- the liver analysis just considers registrations made over the most recent one-year period. Due to lower volume cardiothoracic activity, a two year period for registrations should be used here.
- super-urgent registrations are excluded from the liver analysis, along with donors whose livers were used for super-urgent transplants.
- patients registered with a UKELD score less than 49 and 'chronic liver disease' as their only indication are excluded from the liver analysis. These are patients with a high projected one-year survival without liver transplant (≥90%). Whether there is a need for comparable exclusions relating to heart or lung transplantation will need to be considered.

11 It will not be possible in the short term to separate heart and lung zones so a compromise by means of applying this methodology to the joint heart and lung zones will be required until NHSBT has sufficient resources to establish separate arrangements.

12 Since Glasgow do not register patients for lung transplantation, their share of the donor pool will be derived simply from their heart registrations. Since Newcastle's lung allocation zone would effectively include this percentage of donors, their total number of cardiothoracic registrations will be reduced by the equivalent percentage. The remainder of the donor pool is then split between the five English centres, before recalculating these proportions for the entire donor pool (100%) for the final proposal.

13 Changes to the heart and lung allocation zones will be made by Statistics and Clinical Studies each Autumn (if needed) at the same time as for liver zonal changes.

14 As required, any changes to zonal boundaries will be introduced so as not to destabilise any centre.

ACTION

15 Members are asked to comment on these proposals.

Jenny Lannon
Statistics and Clinical Studies **April 2014**