

NHS BLOOD AND TRANSPLANT

LIVER ADVISORY GROUP

LIVER ALLOCATION ZONES - ANNUAL REVIEW

SUMMARY

INTRODUCTION

- 1 At the Liver Advisory Group (LAG) meeting on 6 May 2009, it was agreed that future changes to the current liver allocation zones would be 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 and that the liver allocation zones would be reviewed on an annual basis.
- 2 This paper gives the results from an analysis that has been carried out on adult Group 1 elective registrations between 1 October 2013 and 30 September 2014, and donors after brain death between 1 October 2011 and 30 September 2014, to determine if any changes to the current liver allocation zones introduced on 8 January 2013 are required to be made.
- 3 For the purposes of this analysis, registrations and donors are specifically defined and the definitions are included in the main paper.

RESULTS

- 4 The difference between the percentage share of registrations in the 12 month period and donors in the three year period ranges from -2.8 at Edinburgh to +4.4 at Birmingham. A positive difference means the registration percentage share is greater than the donor percentage share hence an allocation zone may require more donors for their recipient pool whereas a negative difference means the converse. The larger the magnitude of the value the greater the difference.
- 5 There was no statistically significant difference observed between the proportion of patient registrations and the proportion of donors after brain death at any one of the liver allocation zones.

CONCLUSION

- 6 As there was no statistically significant difference between the donor and registration percentage share at any one of the liver allocation zones, no changes will be made to the current liver allocation zones.

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October 2014

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INTRODUCTION

- 1 At the Liver Advisory Group (LAG) meeting on 6 May 2009, it was agreed that future changes to the current liver allocation zones would be 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). It was also agreed that a) the liver allocation zones would be reviewed on an annual basis and b) any necessary changes to the allocation zones did not need to be ratified by the LAG before they could be introduced.
- 2 This paper gives the results from an analysis that has been carried out on adult Group 1 elective registrations between 1 October 2013 and 30 September 2014, and donors after brain death between 1 October 2011 and 30 September 2014, to determine if any changes to the current liver allocation zones introduced on 8 January 2013 are required to be made.

DATA AND METHODS

- 3 For the purposes of the analysis, registrations and donors are defined as follows:

Registrations: The total number of adult (≥ 17 years at time of registration) Group 1 elective liver registrations in the UK between 1 October 2013 and 30 September 2014 including non-UK resident EU patients, but excluding a) any registrations with a UKELD score of less than 49 and 'chronic liver disease' as their only indication and b) patient registrations for an intestinal transplant. Registrations that ended in a live donor transplant and multi-organ registrations will 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.

Donors: The total number of adult (≥ 16 years at time of death) donors after brain death in the UK over the three year period; from 1 October 2011 to 30 September 2014. Donors whose livers were not transplanted are excluded, so too are livers transplanted into super-urgent patients. If a donor liver is split and transplanted into two elective patients, this counts 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.

- 4 Donors during the three year period, 1 October 2011 to 30 September 2014, will be allocated to a zone based on the current zonal arrangements introduced on 8 January 2013.

RESULTS

- 5 **Table 1** details the number and percentage share of liver donors (over the three year period) and the number and percentage share of registrations (in the 12 month period), by liver allocation zone.
- 6 The difference between the percentage share of registrations and donors is also presented in this table. A positive difference means the registration percentage share is greater than the donor percentage share hence an allocation zone may require more donors for their recipient pool whereas a negative difference means the converse. This difference ranges from -2.8 at Edinburgh to +4.4 at Birmingham and equates to a required change in the number of liver donors per year of a decrease of 14 donors at Edinburgh to an increase of 22 donors at Birmingham. However, there was no statistically significant difference observed between the proportion of patient registrations and the proportion of donors after brain death at any one of the liver allocation.

CONCLUSION

- 7 Given that the information in Table 1 shows that there is no statistically significant difference between the donor and registration percentage at any one of the liver allocation zones, no changes will be made to the current liver allocation zones at this time.

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Table 1 **Adult Group 1 elective liver registrations in the UK between 1 October 2013 and 30 September 2014, and adult liver donors after brain death in the UK between 1 October 2011 and 30 September 2014, by liver allocation zone, based on allocation zones designated from 8 January 2013**

	No. of registrations over 12 months	Registration percentage share	No. and % of livers owned by centre that were subsequently transplanted over three years		Difference between registration and donor percentage share	p-value	Adjusted p-value*
	N	%	N	%	%		
Birmingham	260	26.8	341	22.4	4.4	0.01316	0.09210
Cambridge	100	10.3	148	9.7	0.6	0.64402	4.50811
Edinburgh	111	11.4	216	14.2	-2.8	0.04583	0.32079
King's College	204	21.0	321	21.1	-0.1	0.95465	6.68252
Leeds	132	13.6	231	15.2	-1.6	0.27159	1.90111
Newcastle	48	4.9	98	6.4	-1.5	0.12003	0.84020
Royal Free	116	11.9	166	10.9	1.0	0.42748	2.99239
Total	971	100.0	1521	100.0			

* Adjusted p-values take account of the fact that the centre with the largest difference between registration and donor percentage share will be of interest. The adjustment made is the Bonferroni correction, so that each p-value is multiplied by the total number of centres (7) to produce the adjusted values.