

NHS BLOOD AND TRANSPLANT

LIVER ADVISORY GROUP

LIVER TRANSPLANTATION - ACTIVITY, ORGAN UTILISATION AND OUTCOMES DASHBOARD

BACKGROUND

A proposal to introduce a centre-specific activity, organ utilisation and outcomes report was presented at the meeting of the Liver Advisory Group (LAG) in November 2013. The report captures the key metrics of transplant activity with respect to overall patterns and variation between centres on a single visualisation. The report is intended to enable centres to examine their practice and outcomes relative to other centres with the expectation that there is a convergence of centres over time. The LAG Core Group agreed that the dashboard report would be updated and sent to centre directors on a quarterly basis.

RESULTS

The first dashboard report was sent in March 2016, covering transplant activity for 1 October to 31 December 2015. The most recent dashboard report was sent in February 2017, covering transplant activity for 1 October to 31 December 2016. **Figure 1** and **Figure 2** show the latest dashboard reports for adult and paediatric patients, respectively, which include all UK liver transplant centres and Dublin. A description of the data and methods underpinning the dashboard reports is provided in the **Appendix**.

Table 1 lists the contacts in each transplant centre who are currently receiving the dashboard reports. Please advise any changes to these contacts.

Table 1 Contacts to receive dashboard reports for each transplant centre

Centre	Contacts
Birmingham	Dr Andrew Holt, Mr John Isaac
Cambridge	Mr Paul Gibbs
Dublin	Mr Emir Hoti
Edinburgh	Mr James Powell
King's College	Prof Nigel Heaton
Leeds	Mr Magdy Attia
Newcastle	Prof Derek Manas, Dr Mark Hudson
Royal Free	Mr Douglas Thorburn

FEEDBACK AND COMMENTS

Comments and feedback are welcome. Please write to statistical.enquiries@nhsbt.nhs.uk.

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Figure 1. Dashboard report for adult patients, covering a period from 1 October to 31 December 2016

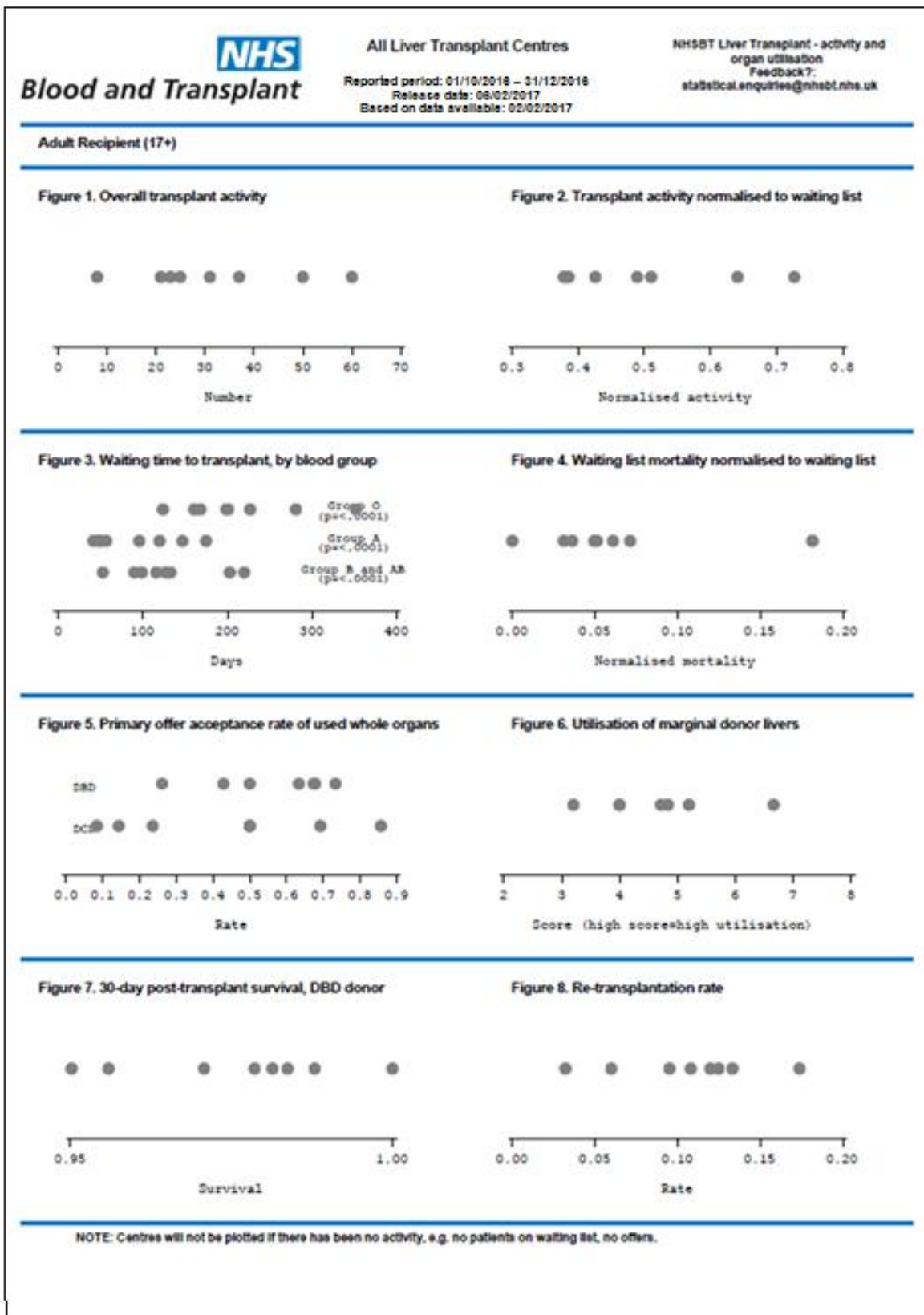
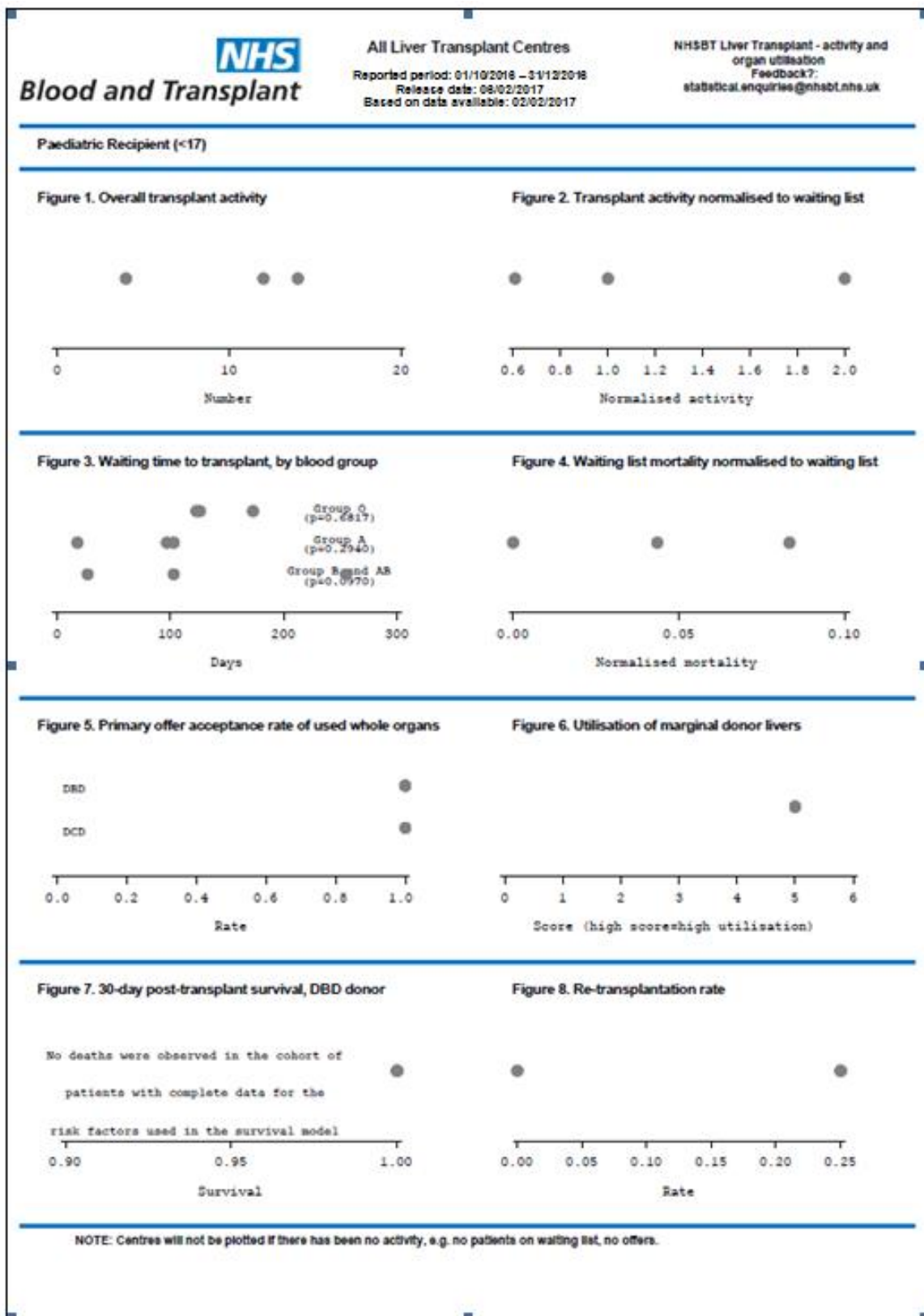


Figure 2. Dashboard report for paediatric patients, covering a period from 1 October to 31 December 2016



Appendix

Description of the *Liver Transplantation – activity, organ utilisation and outcomes dashboard*

The figures in the "Liver transplant - activity and organ utilisation dashboard" report give an overview of activity at all 7 adult transplant centres and 3 paediatric centres in the UK and Dublin. Below are the details for each figure on what is being plotted, the inclusion criteria for transplants/patients and the time period reported on.

Figure 1. Overall transplant activity

- Description: Total number of transplants.
- Inclusion criteria: Liver only, Group 1, elective and super urgent, deceased and living donors, re-transplants.
- Time period: Transplants in the reported period.

Figure 2. Transplant activity normalised to waiting list

- Description: Total number of transplants divided by number actively waiting for a liver on the first day of the reported period.
- Inclusion criteria: Liver only, Group 1, elective and super urgent, deceased and living donors, re-transplants.
- Time period: Transplants in the reported period.

Figure 3. Waiting time to transplant, by blood group

- Description: Median waiting time to transplant, by blood group, with log rank p-value comparing waiting time between centres.
- Inclusion criteria: Liver only, Group 1, elective only, deceased donors, re-transplants.
- Time period: Patients registered in the two years prior to the end of the reported period.

Figure 4. Waiting list mortality normalised to waiting list

- Description: Number of patients who died on the liver only transplant list divided by number actively waiting for a liver on the first day of the reported period.
- We distinguish between the following cases: a) patient suspended->dead (treat as death), b) patient suspended->not known dead (do not treat as death), and c) patient removed because of condition deteriorating (treat as death). Cases (a) and (c) are included in the plot as deaths.
- Inclusion criteria: Liver only, Group 1, elective and super urgent, re-transplants.
- Time period: Patient deaths in the reported period.

Figure 5. Primary offer acceptance rate of used whole organs

- Description: Number of liver offers accepted divided by number of offers received, where livers were ultimately transplanted.
- Inclusion criteria: Liver only, Group 1, UK patients, elective and super urgent, proceeding deceased donors only, re-transplants, whole liver transplants. Accepted and subsequently transplanted fast track offers are included.
- Exclusion criteria: Patients at the Dublin centre and split liver transplants. Any declined fast track offers are excluded.
- Time period: Transplants in the reported period.

Figure 6. Utilisation of marginal donor livers

- Description: Level of utilisation of marginal donor livers; a higher score indicates a higher level of utilisation. This score uses Garonzik-Wang et al. approach, where each centre is given decile-scores based on their relative use of organs of various risk factors. These decile scores were averaged over risk factors to produce the final centre-specific score. Risk factors: donor age > 65 y.o., donor evidence of hepatitis B, donor evidence of hepatitis C, donor AST level > 500, DCD donor, organ CIT > 12 hrs, donor BMI > 40 and donor history of tumour.
- Inclusion criteria: Liver only, first transplant, Group 1, UK patients, elective, deceased donors only.
- Exclusion criteria: Patients at the Dublin centre are not included, auxiliary transplants.
- Time period: Transplants in the six months prior to the end of the reported period

Figure 7. 30-day post-transplant survival, DBD donor

- Description: Risk adjusted 30 day post-transplant patient survival. The risk adjusted survival values have been standardised to give an estimate of what the survival rate at a centre would be if they had the same mix of patients as that seen nationally. This is calculated as

$$100 - (O/E) \times \text{unadjusted national mortality}$$
 where O= observed number of deaths, and E=expected number of deaths. The expected number of deaths is estimated using a Cox model adjusted for year of transplant, recipient age, recipient sex, recipient creatinine, recipient sodium, organ appearance, type of graft (whole, segment), previous abdominal surgery, liver disease (primary biliary cirrhosis, primary sclerosing cholangitis, alcoholic liver disease, autoimmune and cryptogenic disease, hep C, hep B, cancer, metabolic, other), cold ischaemia time, recipient albumin. Patients with any of their risk factors missing are excluded from analysis.
- Inclusion criteria: Liver only, Group 1, elective only, DBD only, first grafts only.
- Exclusion criteria: auxiliary transplants.
- Time period: Transplants in the two years prior to the end of the reported period

Figure 8. Re-transplantation rate

- Description: Number of re-transplants divided by total number of transplants in time period.
- Inclusion criteria: Liver only, Group 1, elective and super urgent, deceased and living donors, re-transplants.
- Time period: Re-transplants in the reported period.