

## NHS BLOOD AND TRANSPLANT

### National Organ Donation Committee

#### Investigating recent trends in numbers of DBD donors

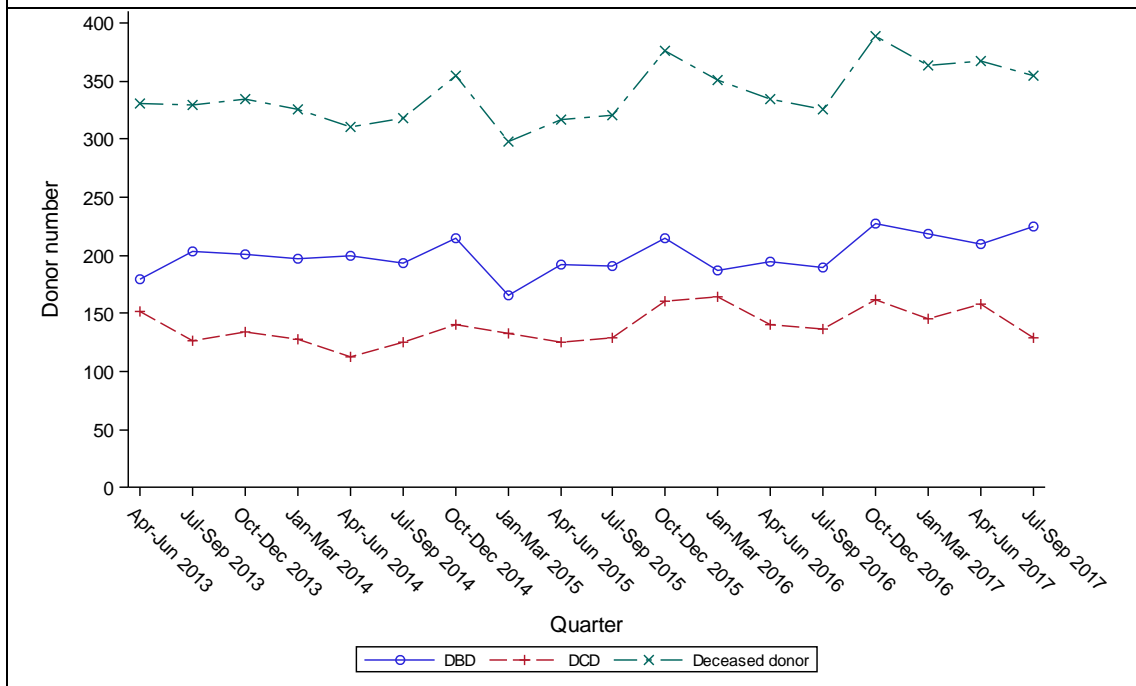
##### Background

1. The number of donors after brain death (DBD) in the UK has been steadily increasing recently. A number of possible theories have been suggested and this paper considers the influence of each of these.
2. The following theories have been considered:-
  - i. The introduction of the devastating brain injury (DBI) protocol may have led to an increase in the number of referrals for DBD donation
  - ii. The neurological death testing simulation program may have led to an increase in neurological death testing rate
  - iii. The recent opiate epidemic could have led to an increase in deaths from hypoxic brain damage and consequently an increase in the pool of patients for DBD referral and testing from this group
  - iv. An increase in consent/authorisation rates resulting in more DBD donors.
3. DBD donor numbers have been obtained from the UK Transplant Registry (UKTR) between 1 April 2013 and 30 September 2017. Data on referrals, neurological death testing, consent/authorisation and donor cause of death have been obtained from the national Potential Audit Data (PDA) for the same time period.

##### Recent trends in deceased donor numbers

4. In 2016/17 DBD donor numbers increased by 6% from 785 in 2015/16 to 829. Data presented in **Figure 1** shows quarterly DBD, DCD and deceased donor numbers since 1 April 2013. Quarterly DBD donor numbers in the last four years ranged between 165 and 227 with a mean of 200 donors per quarter. The last 12 months have included the three highest quarterly DBD donor numbers (227, 225 and 218) and the remaining quarter was above average with 209 donors.

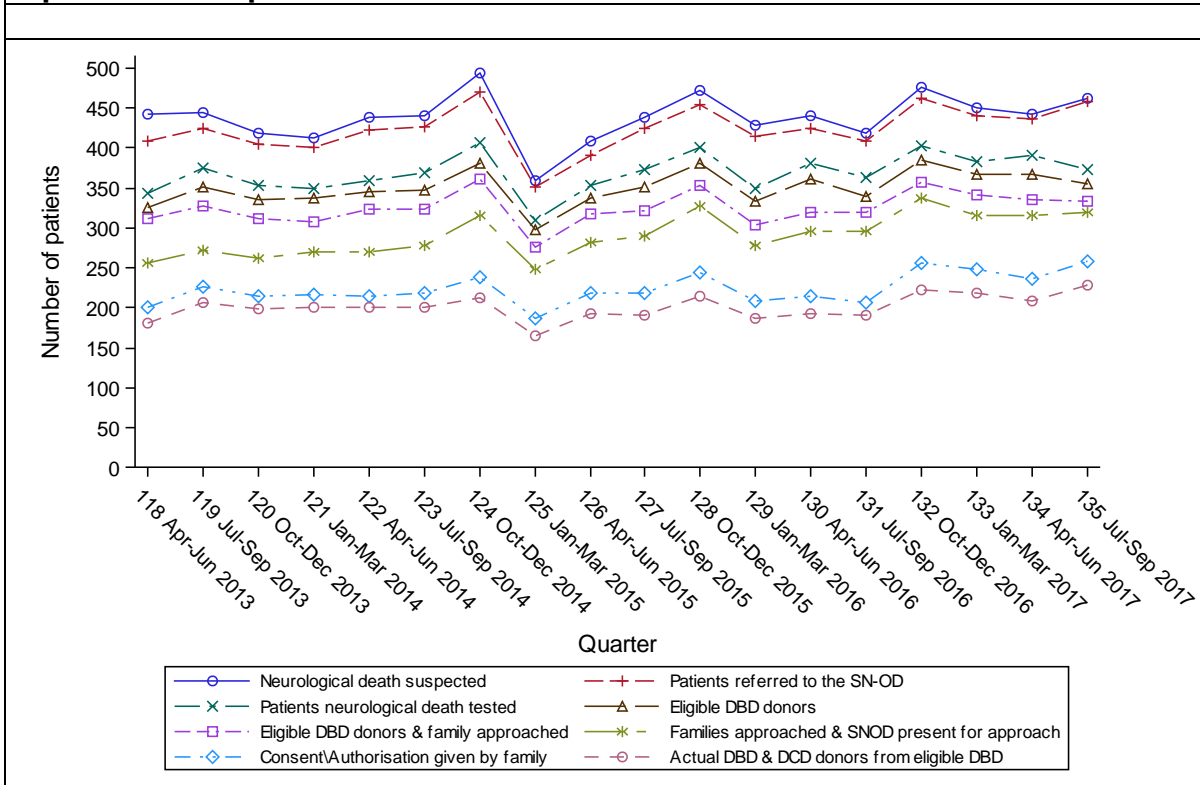
**Figure 1: Deceased donor numbers between April 2013 – March 2017**



**Key DBD numbers in organ donation (PDA data)**

5. In all key areas of DBD organ donation presented in **Figure 2**, quarterly numbers have increased at a similar rate since April 2013, with the exception of the number of approaches where a SNOD was present, which has increased at a more significant rate. In 2013/14 there was a quarterly average of 266 approaches where a SNOD was present, in 2016/17 this had increased to a quarterly average of 311, an increase of 17% in four years. In the last 12 months quarterly numbers have remained consistently good across all key areas.

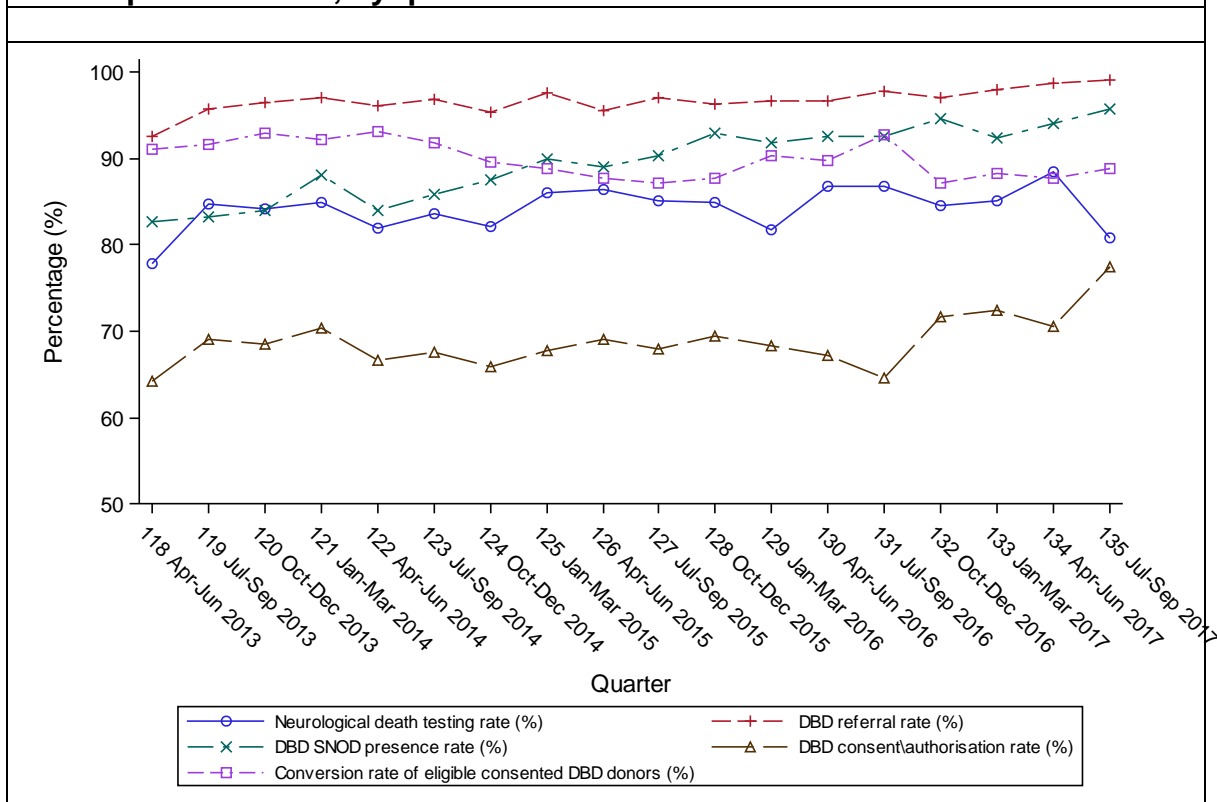
**Figure 2: Summary of DBD donor potential numbers between, by quarter April 2013 – September 2017**



**Key DBD rates in organ donation (PDA data)**

6. Quarterly testing rates, presented in **Figure 3**, have remained consistent since 1 April 2013, ranging from 78% to 89%. Whereas SNOD presence, referral, and consent/authorisation rates have all improved. SNOD presence and consent/authorisation rates have shown the most significant increase. SNOD presence has increased from 83% the first quarter of 2013/14 to 96% in the most recent quarter and DBD quarterly consent/authorisation rates have increased from 65% to 78% in just the last 12 months.

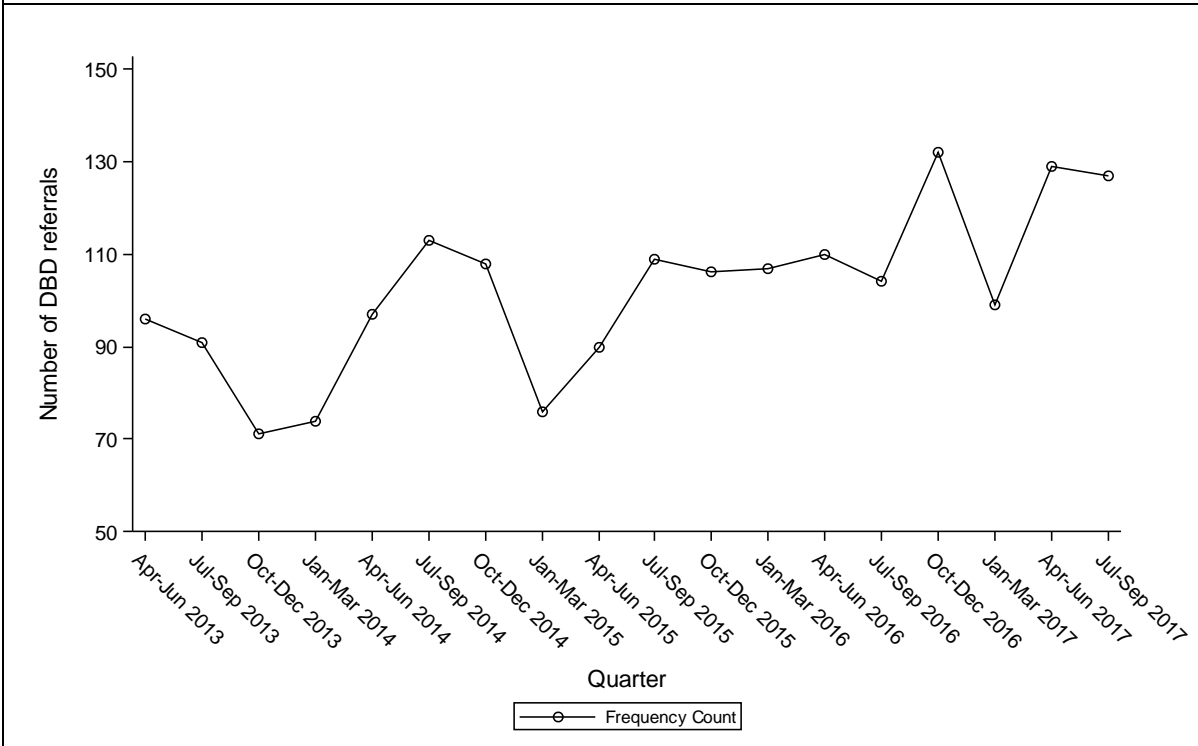
**Figure 3: Summary of DBD donor potential key rates between April 2013 and September 2017, by quarter**



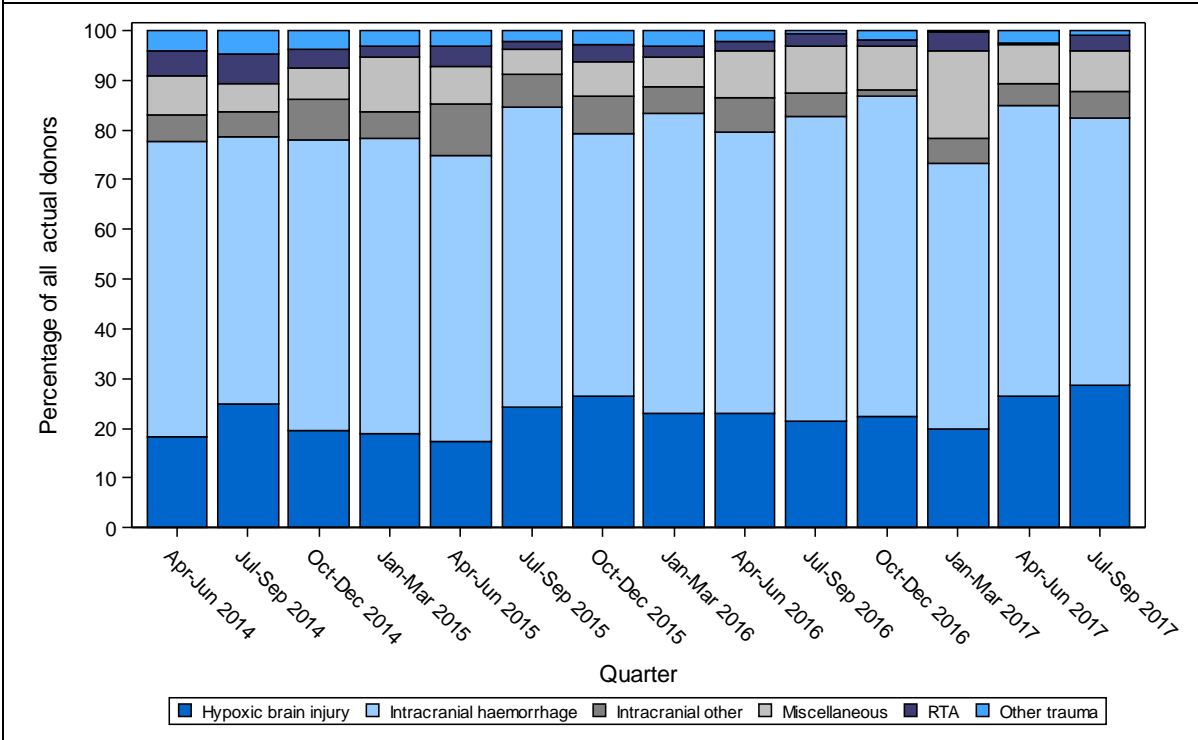
**DBD referrals and actual donors by cause of death (PDA data)**

- The quarterly number of DBD patients referred with hypoxic brain damage, since 1 April 2013, is shown in **Figure 4**. This ranges from 71 to 132 patients per quarter, with a quarterly mean of 102 patients. Three of the last four quarters have observed the highest number of referrals with hypoxic brain damage (132, 129 and 127 patients). **Figure 5** shows the proportion of actual donors with hypoxic brain damage per quarter. This proportion ranged from 17% to 29% and in the last two quarters 29% and 27% of actual donors died from hypoxic brain damage.

**Figure 4: Quarterly number of DBD referrals between April 2013 and September 2017 with hypoxic brain damage**



**Figure 5: Proportion of DBD actual donors by cause of death between April 2013 and September 2017, by quarter**



**Summary**

8. Since 1 April 2013, there have been steady increases in quarterly DBD referral and SNOD presence rates. More recently, in the last 12 months there has been a notable increase in DBD consent/authorisation rate up to 78% in the last quarter. DBD testing rates, however, have remained consistent.
9. The quarterly number of patients referred with hypoxic brain damage has increased since 1 April 2013, in particular in the last 12 months. The proportion of actual donors from this group was particularly high in first two quarters of 2017/18.
10. A combination of small increases in DBD potential and referral rates as well as hypoxic brain damage combined with a strong testing rate and good consent/authorisation rates all appear to have contributed to the the recent increase in DBD donation.

**Action**

11. Members are asked to consider the data presented and determine whether monitoring of DBD donor trends should continue?

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