Donation after Circulatory Death – UK Experience

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Overcoming the obstacles

Donation after Circulatory Death

http://www.odt.nhs.uk/donation/deceased-donation/
Increase in Number of Deceased Donors

- Donors after brain death (DBD)
- Donors after circulatory death (DCD)

Years: 2003-04 to 2012-13

- 2003-04: DBD 697, DCD 73
- 2004-05: DBD 664, DCD 87
- 2005-06: DBD 637, DCD 127
- 2006-07: DBD 634, DCD 159
- 2007-08: DBD 609, DCD 200
- 2008-09: DBD 611, DCD 288
- 2009-10: DBD 624, DCD 335
- 2010-11: DBD 637, DCD 373
- 2011-12: DBD 652, DCD 436
- 2012-13: DBD 705, DCD 507

Percentage Increase:

- 2003-04: DBD 697, DCD 73
- 2012-13: DBD 705, DCD 507

Percentage increase:
- DBD: 1.4%
- DCD: 66.5%
Currently 8 DCD donors pmp in the UK

DCD most common organ donation pathway in the UK

Increasing number of consents

Slight increase in consent rate but below that of DBD

Potential for even more DCD donors

Increases over the last 3 years in:

– Referral of potential donors – from 62% to 83%
– Involvement of the Specialist Nurse – from 67% to 78%
– Consent rate – from 51% to 57%
– 587 actual donors in 2015/16.
Impact

• Resources
  – Financial
  – Operational
    – Length and time of process
• OPO Staff
  – OPO Staff
    – Morale
    – Wellbeing (anencephaly)
    – Working patterns
• Hospital Staff
  – Morale
  – Support
• Donor Families
  – Support and care
Organ Donation in the UK: DBD and DCD

1,961 Consentng organ donors in the UK

Brain death
- 804 Proceeding after brain death
- 51 Median Age
- 2,721 Organs transplanted

Circulatory death
- 505 Proceeding after cardiac death
- 56 Median Age
- 1,104 Organs transplanted
Increase in Mean Donor Age

Mean donor age (yrs)

DBD
DCD


43 44 53
48
Mean number of organs transplanted from deceased donors last year
Reasons why DCD Donation did not happen after Family Consent

- Coroner refusal: 12%
- Organs not suitable: 5%
- Family changed mind: 5%
- Time to asystole: 34%
- Other: 44%
# Efficiencies of the DBD and DCD Clinical Pathways

<table>
<thead>
<tr>
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<th>Referred to SNOD</th>
<th>SNOD attended</th>
<th>Family approached</th>
<th>Actual donors(^1,2)</th>
<th>Organs Transplanted</th>
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</thead>
<tbody>
<tr>
<td><strong>2014/15</strong></td>
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<tr>
<td>DBD</td>
<td>1679</td>
<td>1563</td>
<td>1291</td>
<td>783</td>
<td>2604</td>
</tr>
<tr>
<td>DCD</td>
<td>5718</td>
<td>3579</td>
<td>2131</td>
<td>496</td>
<td>1132</td>
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- **77%** of referrals to a SNOD are DCD
- **70%** of SNOD attendances are DCD
- **62%** of approaches are DCD
- **39%** of donors are DCD
- **30%** of transplants from a DCD

### 2007/08

For every 1 family approached for DCD, 1 patient benefited from transplantation.

### 2014/15

For every 2 families approached for DCD, 1 patient benefited from transplantation.
DCD Assessment

- 4 month prospective data collection exercise agreed with key Stakeholders supported by historical PDA data

- 1493 referrals analysed; representing 64% of referrals and 100% of proceeding donors (comparing to PDA)

- 151 proceeding donors (10% of referrals)

- 137 donors that resulted in a transplant (91% of proceeding donors)

- Results presented to key clinical stakeholders
Key Findings from the Review

- Despite very minimal exceptions:
  - Patients over 80 years of age rarely donate organs in the DCD scenario
  - Majority of DCDs are under 60 years of age
  - Majority of donors are dying from a neurological cause of death
  - Patients that donate organs in DCD between the ages of 60 and 80 die of a neurological cause of death
  - Patients dying of some specific causes of death do not donate/have organs transplanted

<table>
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<th>Multifactorial Failure</th>
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<tr>
<td>Septicaemia</td>
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<tr>
<td>Active cancer</td>
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<tr>
<td>Ischaemic bowel</td>
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<tr>
<td>Previous cancer in last 5 years</td>
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<tr>
<td>Age over 80 - if not neuro cause of death</td>
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DCD Potential
2014/15

6750 Potential DCDs

1600 Not identified/referred

Use positive Engagement to increase referral

5150 referred to a SNOD

3450 potential donors

1320 patients
2130 families approached

1050 consents

815 NORS attend

505 DCDs

1700 DCD Exclusions

Streamlined response at point of referral

• Significant number of patients declined as unsuitable
• Die before donation can be facilitated
• Not approached
  ➢ Assessed will not die within the timeframe
  ➢ Assessed will die too quickly to facilitate donation or actively in the dying process

Identified as requiring further investigation to potentially increase DCD numbers
Conclusion

• Review found significant opportunities to refine the DCD pathway and increase efficiency

• Significant stakeholder and staff engagement resulted in support for changes

• Expected to increase referral from donor hospitals

• Adaptable and flexible tool with potential for incorporation of further evidence/exclusions

• Allows current exclusion list to change if new technologies expand organ usage

• Supports the work of ODT Hub

• May enable further increase in actual DCD donors with additional investigation
Where next?
Increase the DCD Donor Pool

Analysis of the DCD Assessment data and PDA data has identified 3 additional areas where there could be potential for donation. These pools are not mutually exclusive:

- Pool 1: Patients that were not referred - 1600 of which 260 were Neurological related deaths
- Pool 2: Patients that were not expected to live long enough for donation to proceed – 432 p.a.
- Pool 3: Patients where imminent death was not anticipated but the patient did die within 4 hours – 371 (42%).
Where next?
DCD Hearts

• 23 DCD donors have donated hearts to date
• 22 have been transplanted
• 21 successful recipient outcomes

Evaluation taking place and due to report in the summer with a business case for national implementation in the autumn.
Thank you
Where are Opportunities Lost Pre Donation

1 Potential DBD donor - A patient who meets all four criteria for neurological death testing
Potential DCD donor - A patient who had treatment withdrawn and death was anticipated within four hours
DCD Assessment: Summary of Findings

• 1493 donor referrals reviewed
• 151 DCD donors of which 137 utilised (at least one transplant)
• 64% of DCD referrals aged >60
• 31% of DCD donors aged >60
• 80% of utilised DCD donors die from Intracranial Haemorrhage or Hypoxic Brain Damage
• 41 of 42 DCD donors aged >60 had neurological related cause of death
• DCD Assessment Tool has been developed on the basis of evidence
Ongoing Monitoring and Review

- Some extra potential exclusion criteria being kept under review as transplant surgeons think the organs may be usable

- Clinical reference group established to review organ utilisation and refine assessment process accordingly

- Close monitoring and review
  - Initial review at 3 months
    - Multi Organ failure <40 years
    - Donors > 80 years
  - Further review at 6 & 12 months
    - Additional clinical factors identified
    - Ongoing annually

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**Additional Potential clinical factors (under review):**

- Acute renal failure and age > 60
- Stage 3b and above chronic renal failure and age > 60
- Patient on RRT and age > 60
- Type 1 diabetes mellitus and age > 60
- Ruptured AAA and age > 60