



Detailed Full Report
Actual and Potential Organ Donors
1 April 2016 - 31 March 2017

Scotland
Organ Donation Services Team



Table of Contents

1. Donor outcomes

1.1 Donors outcomes

2. Key rates on potential for organ donation

2.1 Key rates

2.2 Key numbers and rates

3. Stages where opportunities were lost

3.1 Overview of lost opportunities

3.2 Neurological death testing

3.3 Referral to SN-OD

3.4 Contraindications

3.5 Family approach

3.6 Proportion of approaches involving a SN-OD

3.7 Authorisation

3.8 Reasons why solid organ donation did not occur

4. PDA data by Board

4.1 Key numbers and rates by Board

5. Paediatric ICU data

5.1 Key rates for the Team's paediatric ICUs

Appendices

A.1 Bar charts of key rates

A.2 Definitions

A.3 Data description

A.4 Table and figure description

Further Information

- Appendix A.2 contains definitions of terms and abbreviations used throughout this report and summarises the main changes made to the PDA on 1 April 2013.
- The latest Organ Donation and Transplantation Activity Report is available at <https://www.organdonation.nhs.uk/supporting-my-decision/statistics-about-organ-donation/transplant-activity-report/>
- The latest PDA Annual Report is available at <http://www.odt.nhs.uk/odt/potential-donor-audit/>
- Please refer any queries or requests for further information to your local Specialist Nurse - Organ Donation (SN-OD)

Source

NHS Blood and Transplant: UK Transplant Registry (UKTR), Potential Donor Audit (PDA) and Referral Record.
Issued May 2017 based on data reported at 8 May 2017.

1. Donor Outcomes

A summary of the number of donors, patients transplanted, average number of organs donated per donor and organs donated, obtained from the UK Transplant Registry

1.1 Donor outcomes

Between 1 April 2016 and 31 March 2017, the Scotland team had 133 deceased solid organ donors, resulting in 325 patients receiving a transplant. 415 organs were donated but 62 were not transplanted. Additional information is shown in Tables 1.1.1 and 1.1.2, along with comparison data for 2015/16. An additional chart showing figures for the previous ten periods has also been included for comparison. If you would like further information, please contact your local Specialist Nurse - Organ Donation (SN-OD).

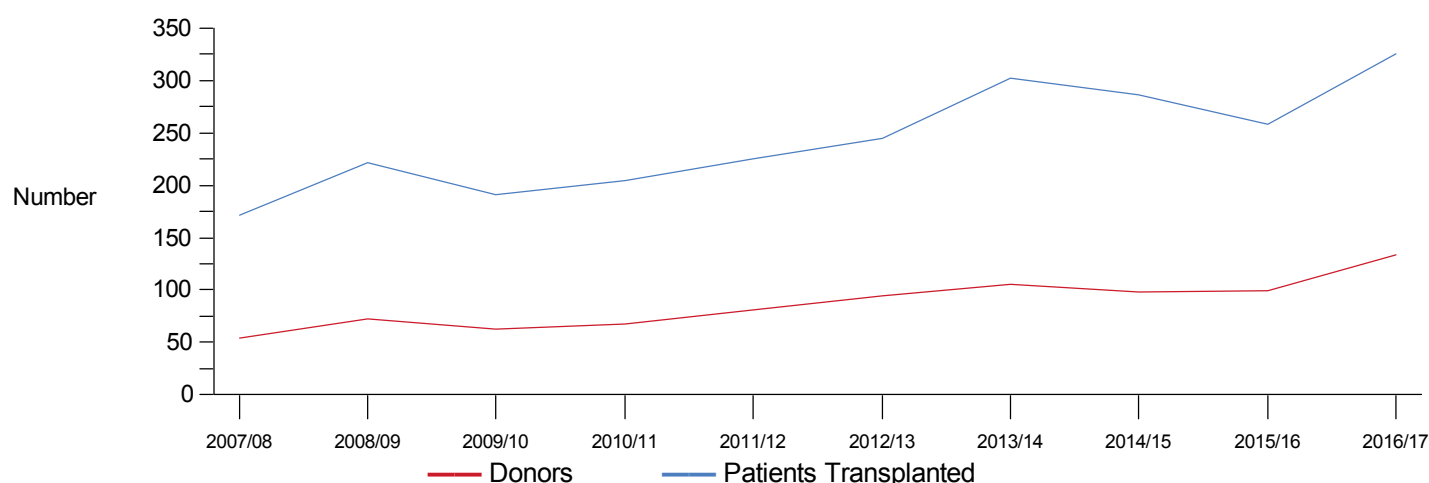
**Table 1.1.1 Donors, patients transplanted and organs per donor,
1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)**

Donor type	Number of donors	Number of patients transplanted	Average number of organs donated per donor			
			Scotland		UK	
DBD	77 (56)	223 (162)	3.6	(4.0)	3.8	(3.9)
DCD	56 (43)	102 (96)	2.4	(2.9)	2.8	(2.8)
DBD and DCD	133 (99)	325 (258)	3.1	(3.5)	3.4	(3.4)

**Table 1.1.2 Organs transplanted by type,
1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)**

Donor type	Number of organs transplanted by type									
	Kidney		Pancreas		Liver		Heart		Lung	
DBD	135	(93)	13	(11)	62	(43)	9	(10)	24	(24)
DCD	90	(72)	1	(7)	14	(20)	0	(0)	4	(4)
DBD and DCD	225	(165)	14	(18)	76	(63)	9	(10)	28	(28)

Figure 1.1.1 Number of donors and patients transplanted each year



Data in this section have been obtained from the UK Transplant Registry. Section 2 onwards reports on data obtained from the national Potential Donor Audit (PDA).

2. Key Rates on Potential for Organ Donation

A summary of the key rates on the potential for organ donation, obtained from the national Potential Donor Audit (PDA)

2.1 Key rates

Two radar charts are displayed in Figure 2.1.1 showing specific percentage measures of potential donation activity in 2016/17 for the Scotland Team compared with national data for the UK, and compared with 2015/16 activity. This information is displayed in an alternative format as bar charts in Appendix A.1. The colour of the rate label indicates the Team performance as shown in the appropriate funnel plot using the gold, silver, bronze, amber, and red (GoSBAR) scheme.

Figure 2.1.1 Key rates on the potential for organ donation, 1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)

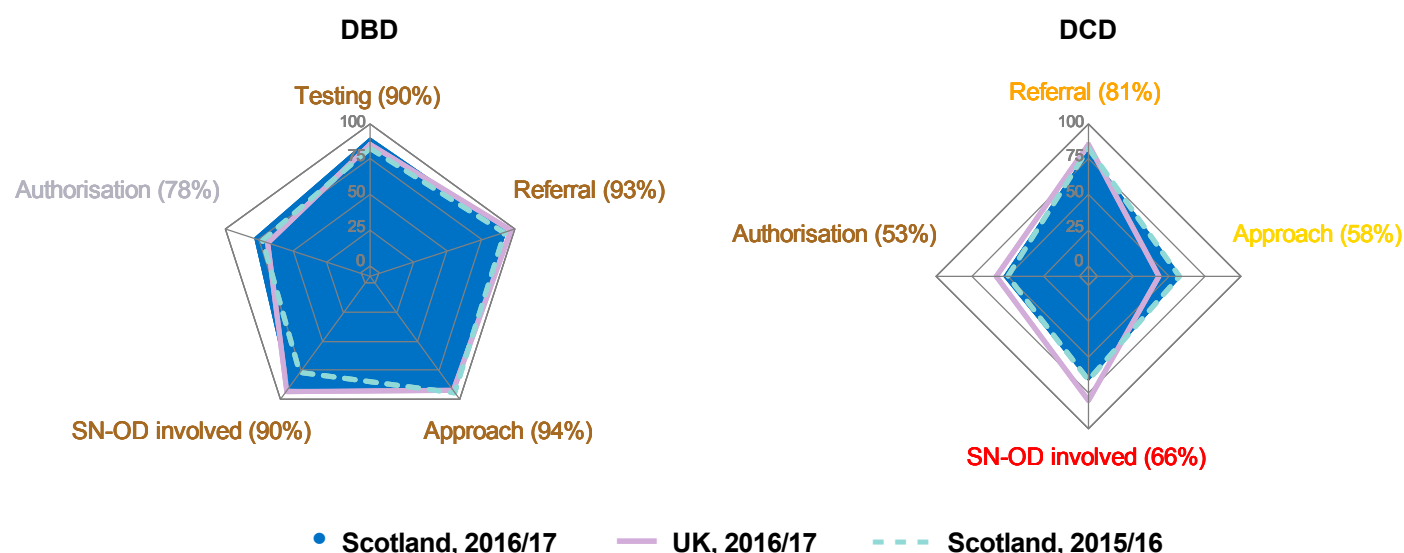
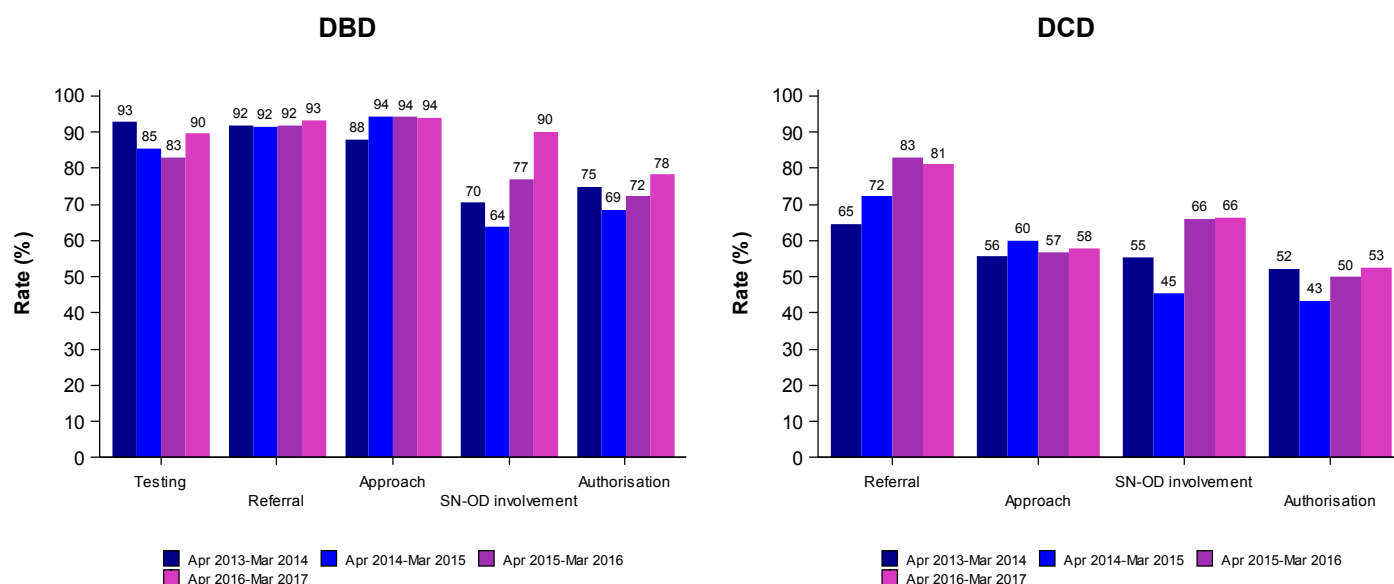


Figure 2.1.2 Key rates on the potential for organ donation, 1 April 2013 - 31 March 2017



2.2 Key numbers, rates and comparison with national targets

The percentages shown in Figure 2.1.1 are also shown in Table 2.2.1 along with the number of patients at each stage. A national comparison and a time period comparison are again provided. A comparison against national DBD and DCD targets has been applied by highlighting the key rates for your Team as gold, silver, bronze, amber, or red. See Appendix A.4 for ranges used. Note that caution should be applied when interpreting percentages based on small numbers.

Table 2.2.1 Key numbers, rates and comparison with national targets, 1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)										
		DBD					DCD			
	Target	2016/17 Scotland	UK	2015/16 Scotland	UK	Target	2016/17 Scotland	UK	2015/16 Scotland	UK
Patients meeting organ donation referral criteria ¹		136	1,775	112	1,747		313	6,204	349	6,500
Referral rate %		B 93%	97%	92%	96%		A 81%	86%	83%	83%
Referred to SN-OD		127	1,728	103	1,684		254	5,308	290	5,402
Neurological death tested		122	1,522	93	1,477					
Testing rate %		B 90%	86%	83%	85%					
Eligible donors ²		118	1,444	88	1,404		273	4,237	295	4,205
Family approached		111	1,329	83	1,296		158	1,815	168	1,942
Approach rate %		B 94%	92%	94%	92%		G 58%	43%	57%	46%
Family approached and SN-OD involved		100	1,236	64	1,180		105	1,460	111	1,511
% of approaches where SN-OD involved		B 90%	93%	77%	91%		R 66%	80%	66%	78%
Authorisation ascertained		87	917	60	891		83	1,055	84	1,113
Authorisation rate %	72%	S 78%	69%	72%	69%	68%	B 53%	58%	50%	57%
Expected authorisations based on ethnic mix		76		60			92		96	
Expected authorisation rate based on ethnic mix %		74%		73%			60%		60%	
Actual donors from each pathway		77	819	56	786		53	565	43	564
% of authorised donors that became actual donors		89%	89%	93%	88%		64%	54%	51%	51%
Colour key - comparison with funnel plot confidence limits		G Gold A Amber		S Silver R Red			B Bronze			
¹ DBD - A patient with suspected neurological death DCD - A patient in whom imminent death is anticipated, ie a patient receiving assisted ventilation, a clinical decision to withdraw treatment has been made and death is anticipated within 4 hours										
² DBD - Death confirmed by neurological tests and no absolute contraindications to solid organ donation DCD - Imminent death anticipated and treatment withdrawn with no absolute contraindications to solid organ donation										

Note that from 1 April 2016 to 31 March 2017 there was 1 eligible DBD donor and 3 eligible DCD donors for whom authorisation for donation was ascertained who are not included in this section because they were either over 80 years of age or did not die in a unit participating in the PDA.

From 1 April 2016 to 31 March 2017 there was one eligible DCD donor for whom authorisation for donation was ascertained who is not included in this section because they were facilitated in a neonatal ICU.

3. Stages Where Opportunities were Lost

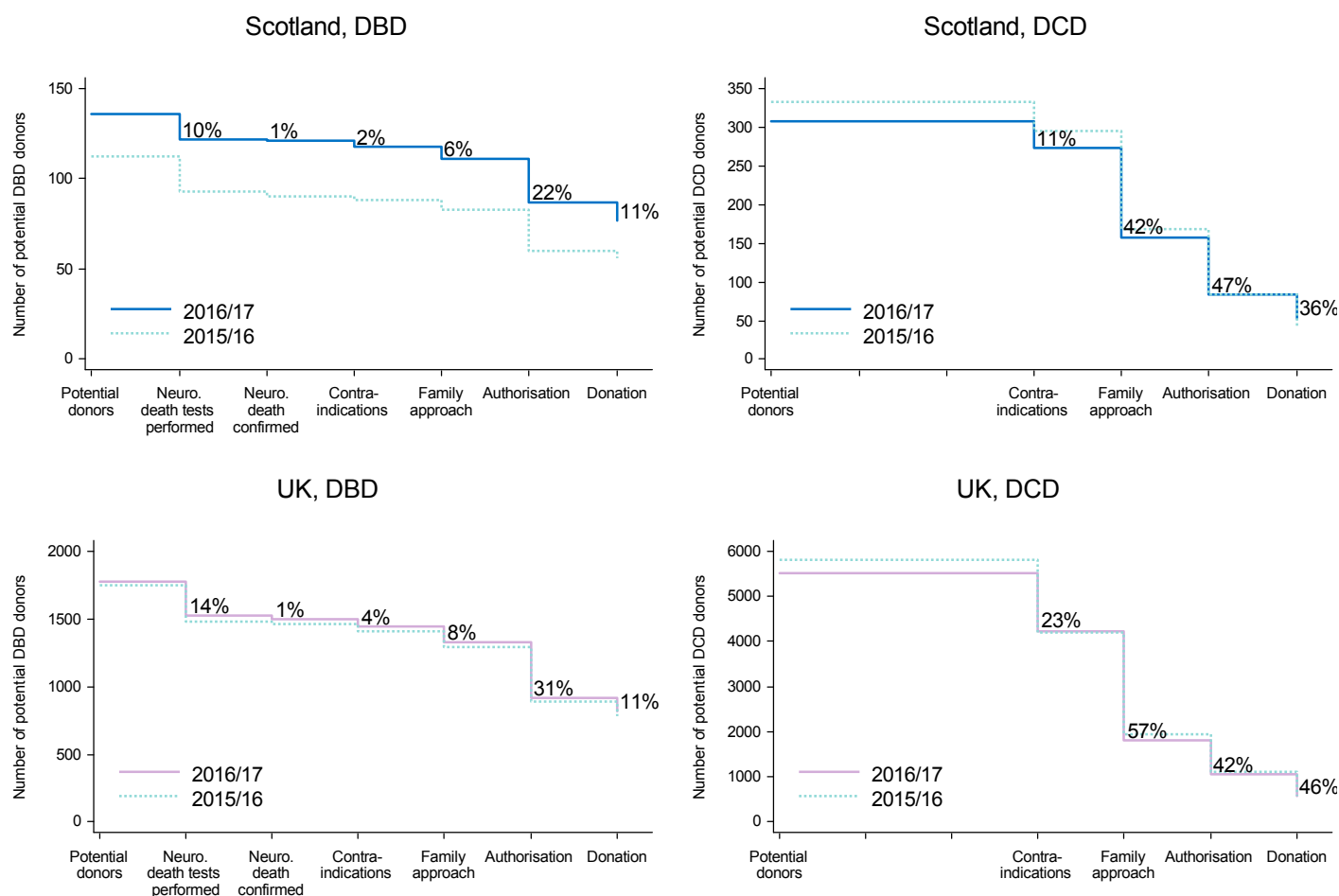
Stages at which potential donors lost the opportunity to become actual donors

3.1 Overview of lost opportunities

Of the 136 potential DBD donors with suspected neurological death, 77 proceeded to donation and 59 did not proceed. Of the 273 eligible DCD donors, 53 proceeded to donation and 220 did not proceed.

Figure 3.1.1 gives an overview of the various stages where opportunities were lost. There are four charts showing DBD and DCD stages separately for the Scotland team and the UK, all of which contain a comparison with 2015/16. The number of potential donors is shown on the vertical axis for each chart and at each 'step' the proportion of potential donors lost at that stage is displayed. Caution should be applied when interpreting percentages based on small numbers. Further information is available for individual Boards in Tables 4.1.1 and 4.1.2 in Section 4.

Figure 3.1.1 Stages at which potential donors lost the opportunity to become actual donors, 1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)



3.2 Neurological death testing

A funnel plot of neurological death testing rates is displayed in Figure 3.2.1. The goal is to ensure that neurological death tests are performed wherever possible. For information about how to interpret the funnel plots, please see Appendix A.4.

Figure 3.2.1 Funnel plot of neurological death testing rates, 1 April 2016 - 31 March 2017

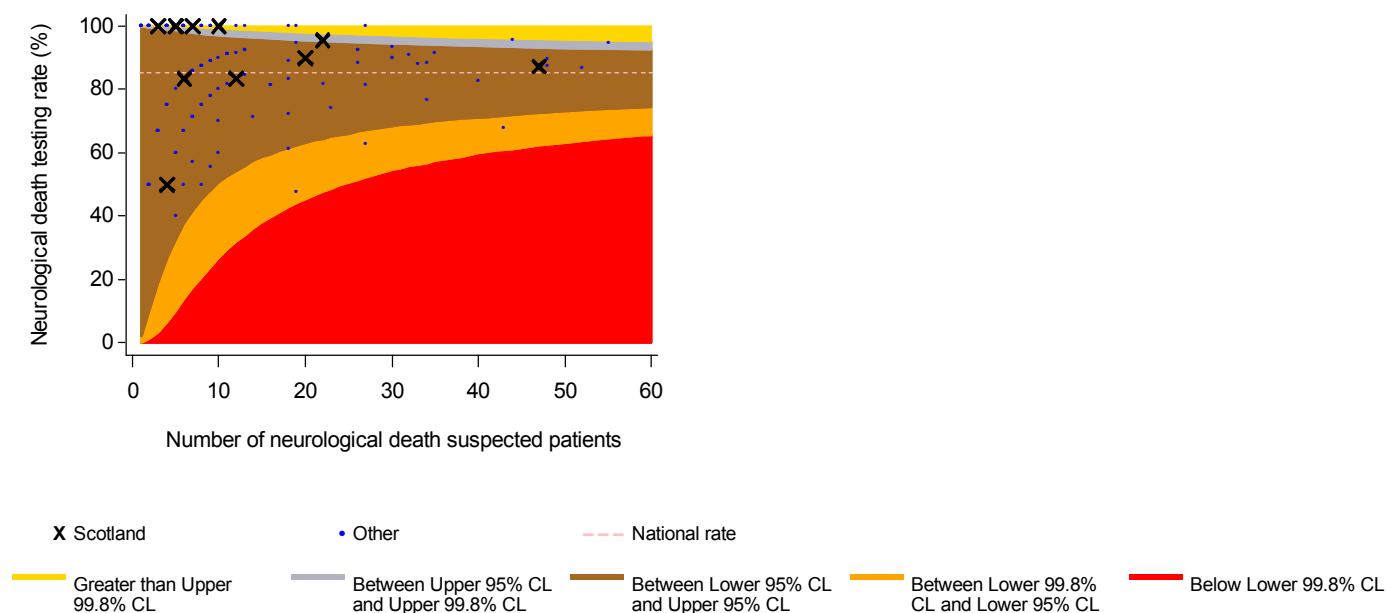


Table 3.2.1 shows the reasons why neurological death tests were not performed, if applicable, for your Team. Patients for whom the reason for not performing neurological tests is given as 'cardiac arrest despite resuscitation', 'brainstem reflexes returned', or 'neonates - less than 2 months post term' are now excluded from the calculation of the neurological death testing rate.

Table 3.2.1 Reasons given for neurological death tests not being performed, 1 April 2016 - 31 March 2017

	N	%
Family pressure not to test	3	21.4
Treatment withdrawn	2	14.3
Patient haemodynamically unstable	1	7.1
Continuing effects of sedatives	4	28.6
Biochemical/endocrine abnormality	1	7.1
SN-OD advised that donor not suitable	1	7.1
Other	1	7.1
Unknown	1	7.1
Total	14	100.0

If 'other', please contact your local SN-OD for more information, if required.

3.3 Referral to Specialist Nurse - Organ Donation (SN-OD)

Funnel plots of DBD and DCD referral rates are displayed in Figure 3.3.1. Every patient who meets the referral criteria should be identified and referred to the SN-OD, as per NHS Blood and Transplant (NHSBT) Best Practice Guidance on timely identification and referral of potential organ donors¹.

Figure 3.3.1 Funnel plots of referral rates, 1 April 2016 - 31 March 2017

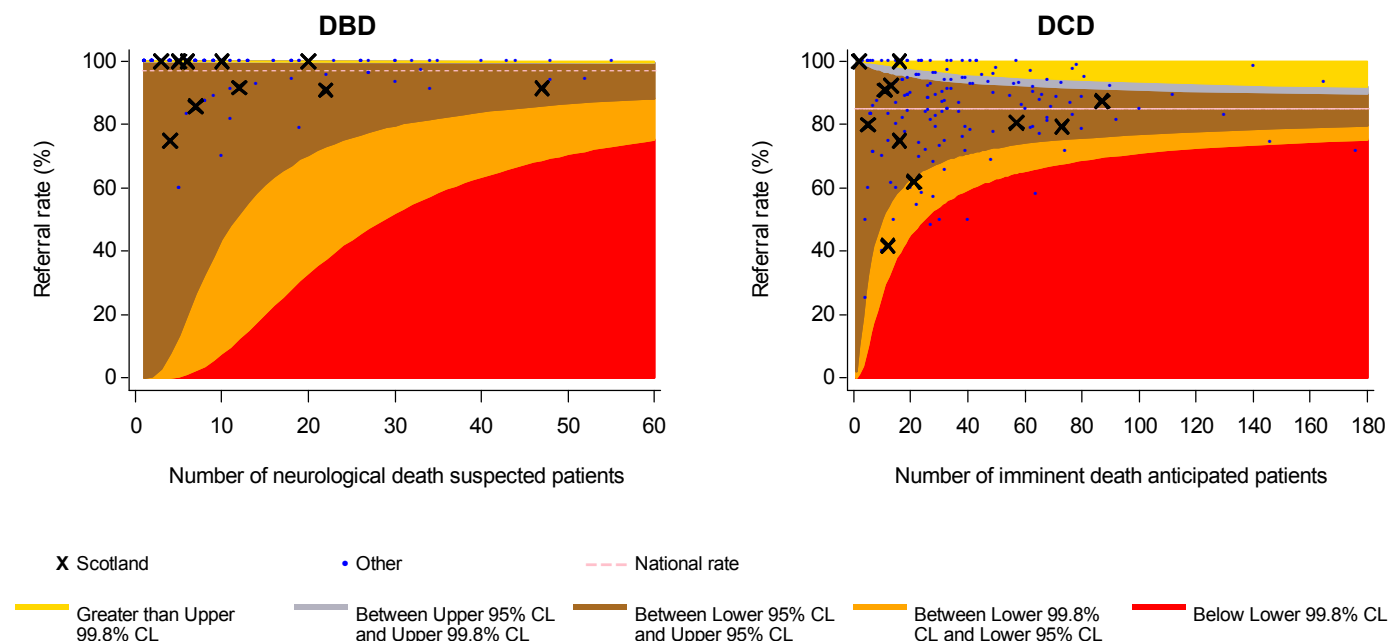


Table 3.3.1 shows the reasons why patients were not referred to a SN-OD, if applicable, for your Team.

Table 3.3.1 Reasons given why patient not referred, 1 April 2016 - 31 March 2017					
	DBD		DCD		
	N	%	N	%	
Not identified as a potential donor/organ donation not considered	2	22.2	26	44.1	
Coroner/Procurator Fiscal Reason	1	11.1	-	-	
Family declined donation prior to neurological testing	1	11.1	1	1.7	
Family declined donation after neurological testing	2	22.2	-	-	
Family declined donation following decision to withdraw treatment	1	11.1	12	20.3	
Reluctance to approach family	1	11.1	1	1.7	
Medical contraindications	-	-	11	18.6	
Thought to be medically unsuitable	-	-	2	3.4	
Pressure on ICU beds	-	-	1	1.7	
Patient had previously expressed a wish not to donate	-	-	1	1.7	
Other	1	11.1	4	6.8	
Total	9	100.0	59	100.0	

If 'other' or 'medical contraindications', please contact your local SN-OD for more information, if required. Please note that patients may appear in this table more than once if they met the referral criteria for both DBD and DCD donation.

Early referral to the SN-OD is important to enable the opportunity for donation to be maximised. Early referral triggers should be in place to ensure all donors are identified to the SN-OD to allow the family the option of organ donation. For patients who were referred, Table 3.3.2 shows the timing of the first contact with the SN-OD by the clinical staff. All patients meeting the referral criteria should be referred as early as possible to enable attendance of the SN-OD to assess suitability for donation and ensure that a planned approach for authorisation to the family is made in line with NHSBT Best Practice Guidance on approaching the families of potential organ donors².

Table 3.3.2 Timing of first contact with a SN-OD by clinical staff, for patients who were referred, 1 April 2016 - 31 March 2017

	DBD		DCD	
	N	%	N	%
Before sedation stopped	12	9.3	11	4.3
Absence of one or more cranial nerve reflexes and GCS of 4 or less not explained by sedation	47	36.4	14	5.5
No sedation or after sedation stopped, decision made to carry out BSD tests, before 1st set of tests	55	42.6	6	2.4
After 1st set and before 2nd set of BSD tests	2	1.6	-	0.0
After neurological death confirmation	4	3.1	-	0.0
Clinical decision to withdraw life-sustaining treatment has been made, before treatment withdrawn	9	7.0	219	86.2
After treatment withdrawn	-	0.0	4	1.6
Not reported	-	0.0	-	0.0
Total	129	100.0	254	100.0

NB, 8 patients with suspected neurological death also went on to meet the referral criteria for DCD donation, and are therefore included twice.

¹ NHS Blood and Transplant, 2012. *Timely Identification and Referral of Potential Organ Donors - A Strategy for Implementation of Best Practice* [online]. Available at: <<http://www.odt.nhs.uk/pdf/timely-identification-and-referral-potential-donors.pdf>> [accessed 13 May 2013]

² NHS Blood and Transplant, 2013. *Approaching the Families of Potential Organ Donors – Best Practice Guidance* [online]. Available at: <http://www.odt.nhs.uk/pdf/family_approach_best_practice_guide.pdf> [accessed 13 May 2013]

3.4 Contraindications

Table 3.4.1 shows the primary absolute medical contraindications to solid organ donation, if applicable, for potential DBD donors confirmed dead by neurological death tests and potential DCD donors in your Team.

**Table 3.4.1 Primary absolute medical contraindications to solid organ donation,
1 April 2016 - 31 March 2017**

	DBD	DCD
Any cancer with evidence of spread outside affected organ (including lymph nodes) within 3 years	3	26
Active haematological malignancy (myeloma, lymphoma, leukaemia)	-	3
Other neurodegenerative diseases associated with infectious agents	-	1
TB: active and untreated	-	1
No transplantable organ in accordance with organ specific contraindications	-	3
Total	3	34

3.5 Family approach

Funnel plots of DBD and DCD family approach rates are displayed in Figure 3.5.1. All families of eligible donors should be formally approached for a decision about organ donation.

Figure 3.5.1 Funnel plots of approach rates, 1 April 2016 - 31 March 2017

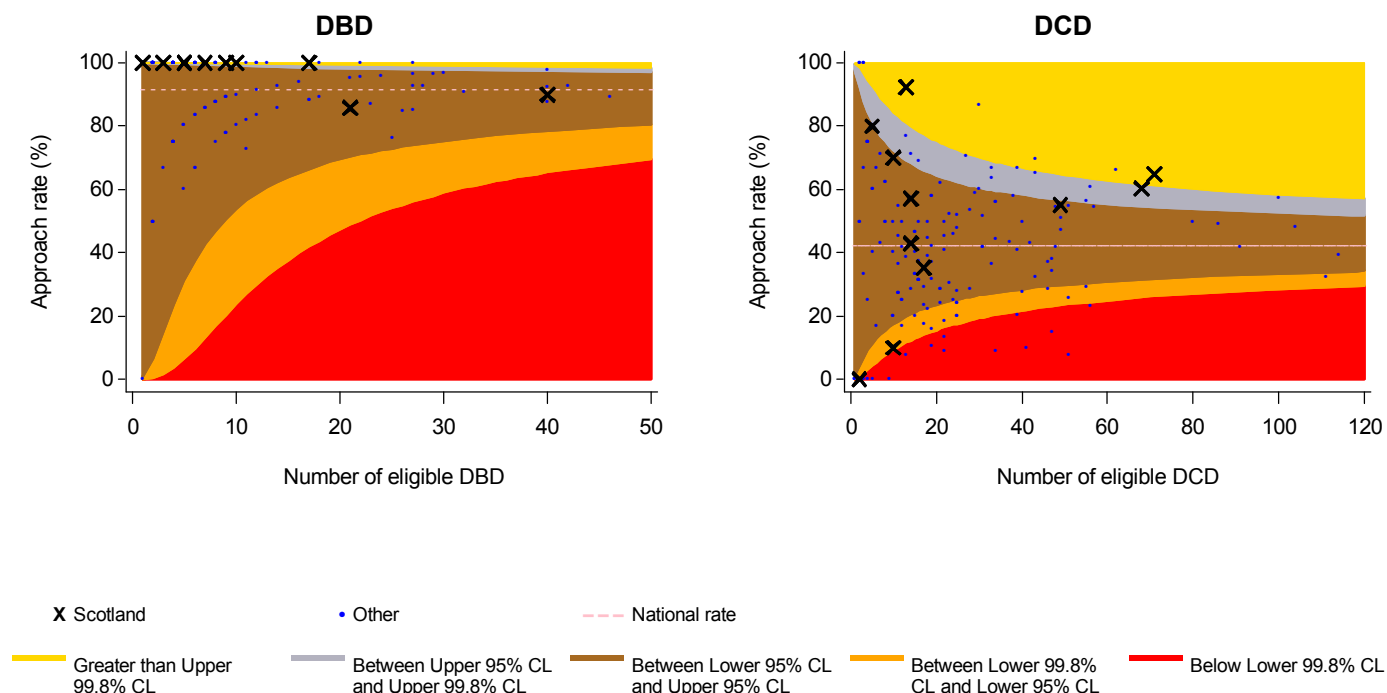


Table 3.5.1 shows the reasons why patients were not formally approached to discuss organ donation, if applicable, for your Team.

Table 3.5.1 Reasons given why family not formally approached, 1 April 2016 - 31 March 2017

	DBD		DCD	
	N	%	N	%
Family stated that they would not support donation before they were formally approached	2	28.6	13	11.3
Family untraceable	-	-	2	1.7
Family considered too upset to approach	-	-	2	1.7
Coroner / Procurator Fiscal refused permission	2	28.6	2	1.7
Patient's general medical condition	-	-	19	16.5
Other medical reason	2	28.6	16	13.9
Pressure on ICU beds	-	-	2	1.7
Other	1	14.3	31	27.0
Not identified as a potential donor / organ donation not considered	-	-	26	22.6
Patient had previously expressed a wish not to donate	-	-	2	1.7
Total	7	100.0	115	100.0

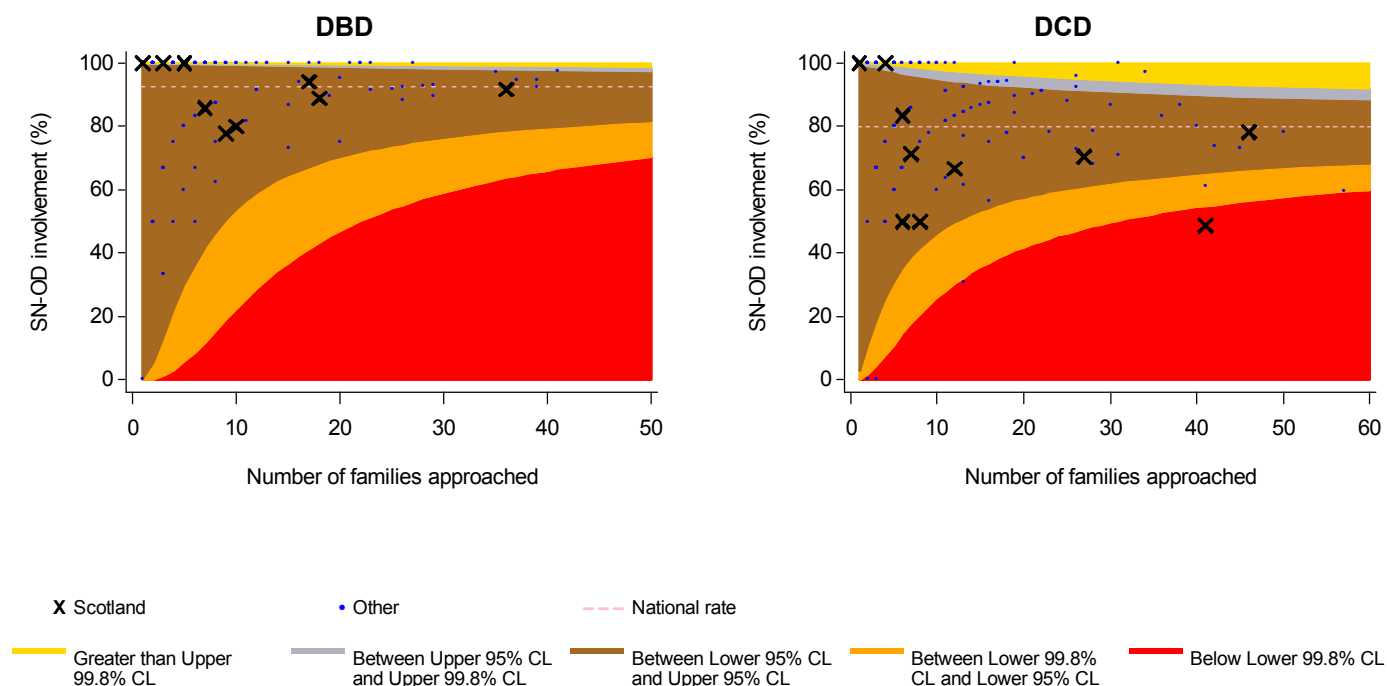
If 'other', please contact your local SN-OD for more information, if required.

3.6 Proportion of approaches involving a SN-OD

In the UK, in 2016/17, when a SN-OD was not involved in the approach to the family for a decision about organ donation, DBD and DCD authorisation rates were 39% and 25%, respectively, compared with DBD and DCD authorisation rates of 71% and 66%, respectively, when a SN-OD was involved. NHSBT Best Practice Guidance on approaching the families of potential organ donors² reinforces that every approach to those close to the patient should be planned with the multidisciplinary team (MDT), should involve the SN-OD and should be clearly planned taking into account the known wishes of the patient. The Organ Donor Register (ODR) should be checked in all cases of potential donation and this information must be discussed with the family as it represents the eligible donor's legal authorisation to donation.

Funnel plots of DBD and DCD SN-OD involvement rates are displayed in Figure 3.6.1. A SN-OD should be actively involved in the formal approach to the family and an approach plan made and followed.

Figure 3.6.1 Funnel plots of SN-OD involvement rates, 1 April 2016 - 31 March 2017



3.7 Authorisation

Funnel plots of DBD and DCD authorisation rates are displayed in Figure 3.7.1. The 2016/17 national targets of 72% and 68% for DBD and DCD, respectively, are also shown, for information.

Figure 3.7.1 Funnel plot of authorisation rates, 1 April 2016 - 31 March 2017

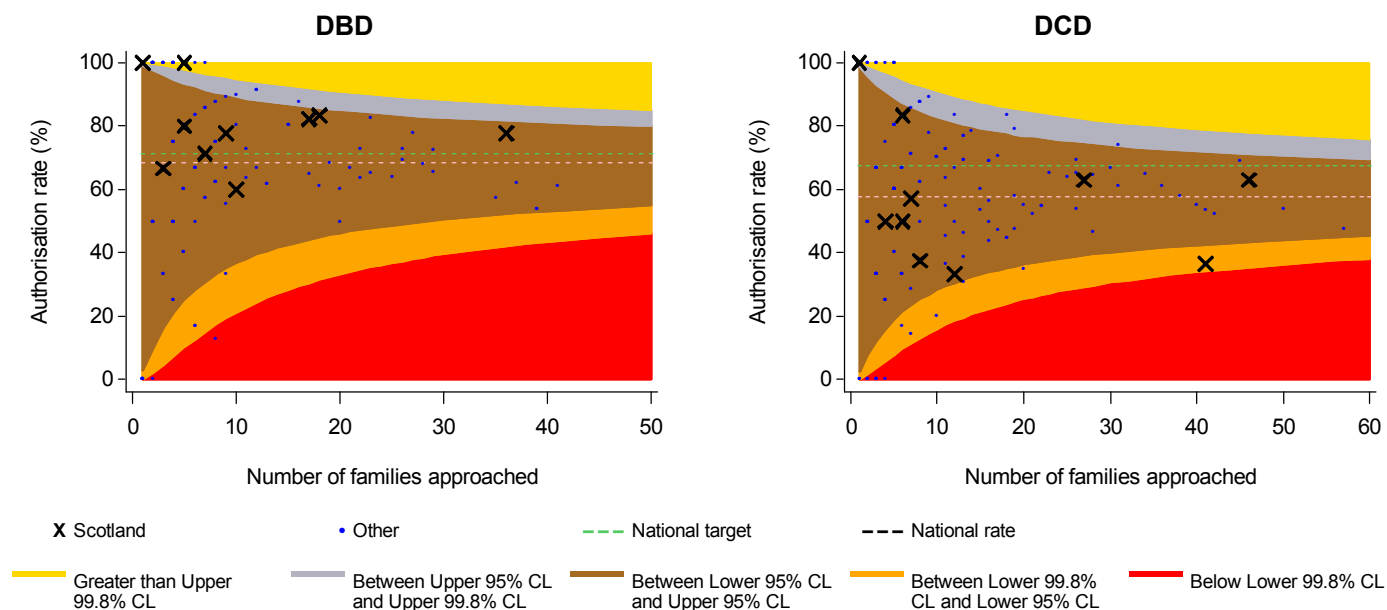


Table 3.7.1 shows the reasons why families did not support donation, if applicable, for your Team.

Table 3.7.1 Reasons given why family did not support donation, 1 April 2016 - 31 March 2017

	DBD		DCD	
	N	%	N	%
Patient previously expressed a wish not to donate	5	20.8	14	18.7
Family were not sure whether the patient would have agreed to donation	5	20.8	6	8.0
Family did not believe in donation	2	8.3	6	8.0
Family were divided over the decision	1	4.2	1	1.3
Family felt the patient had suffered enough	2	8.3	10	13.3
Family did not want surgery to the body	1	4.2	5	6.7
Family felt the length of time for donation process was too long	2	8.3	14	18.7
Family felt the body needs to be buried whole (unrelated to religious or cultural reasons)	2	8.3	1	1.3
Family concerned that organs may not be transplanted	1	4.2	3	4.0
Strong refusal - probing not appropriate	1	4.2	5	6.7
Other	2	8.3	10	13.3
Total	24	100.0	75	100.0

If 'other', please contact your local SN-OD for more information, if required.

3.8 Reasons why solid organ donation did not occur

Table 3.8.1 shows the reasons why solid organ donation did not occur, if applicable, for your Team.

Table 3.8.1 Reasons why solid organ donation did not occur, 1 April 2016 - 31 March 2017				
	DBD		DCD	
	N	%	N	%
Family changed mind	-	-	1	3.3
Coroner/ Procurator Fiscal refusal	2	20.0	1	3.3
Organs deemed medically unsuitable by recipient centres	3	30.0	8	26.7
Organs deemed medically unsuitable on surgical inspection	1	10.0	2	6.7
Prolonged time to asystole	-	-	11	36.7
Cardiac arrest	-	-	1	3.3
General instability	2	20.0	3	10.0
Positive virology	2	20.0	1	3.3
Other	-	-	2	6.7
Total	10	100.0	30	100.0
If 'other', please contact your local SN-OD for more information, if required.				

4. PDA data by Board

A summary of key numbers and rates from the PDA by Board

4.1 Key numbers and rates by Board

Tables 4.1.1 and 4.1.2 show the key numbers and rates for patients who met the DBD and/or DCD referral criteria, respectively. Caution should be applied when interpreting percentages based on small numbers.

Table 4.1.1 Patients who met the DBD referral criteria - key numbers and rates, 1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)													
Patients where neurological death was suspected	Patients that were tested	Neurological death testing rate (%)	Patients where neurological death was suspected that were referred to SN-OD	DBD referral rate (%)	Patients confirmed dead by neurological testing	Eligible DBD donors confirmed by neurological tests and no absolute contra-indications)	Eligible DBD donors whose family were approached	DBD approach rate (%)	Authorisation ascertained	DBD authorisation rate (%)	Actual DBD and DCD donors from eligible DBD donors	DBD SN-OD involvement rate (%)	
1 April 2016 to 31 March 2017													
Golden Jubilee National Hospital	0	0	-	0	-	0	0	-	0	-	0	-	
NHS Ayrshire and Arran	5	5	100	5	100	5	5	100	5	100	5	100	
NHS Borders	0	0	-	0	-	0	0	-	0	-	0	-	
NHS Dumfries and Galloway	3	3	100	3	100	3	3	100	2	67	2	100	
NHS Fife	7	7	100	6	86	7	7	100	5	71	4	86	
NHS Forth Valley	6	5	83	6	100	5	5	100	4	80	4	100	
NHS Grampian	12	10	83	11	92	10	10	100	6	60	4	80	
NHS Greater Glasgow & Clyde	47	41	87	43	91	41	40	90	28	78	25	92	
NHS Highland	4	2	50	3	75	1	1	100	1	100	1	100	
NHS Lanarkshire	20	18	90	20	100	18	17	100	14	82	11	94	
NHS Lothian	22	21	95	20	91	21	21	86	15	83	14	89	
NHS Tayside	10	10	100	10	100	10	9	100	7	78	7	78	
1 April 2015 to 31 March 2016 (for comparison purposes)													
Golden Jubilee National Hospital	2	1	50	2	100	1	1	100	1	100	1	100	
NHS Ayrshire and Arran	4	3	75	4	100	2	2	100	2	100	2	100	
NHS Borders	1	1	100	1	100	1	1	100	0	0	0	100	
NHS Dumfries and Galloway	7	7	100	7	100	7	6	86	5	83	3	100	

**Table 4.1.1 Patients who met the DBD referral criteria - key numbers and rates,
1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)**

Patients where neurological death was suspected	Patients that were tested	Neurological death testing rate (%)	Patients where neurological death was suspected that were referred to SN-OD	DBD referral rate (%)	Patients confirmed dead by neurological testing	Eligible DBD donors (Death confirmed by neurological tests and no absolute contra-indications)	Eligible DBD donors whose family were approached	DBD approach rate (%)	Authorisation ascertained	DBD authorisation rate (%)	Actual DBD and DCD donors from eligible DBD donors	DBD SN-OD involvement rate (%)
<i>NHS Fife</i> 3	3	100	3	100	3	3	2	67	2	100	2	100
<i>NHS Forth Valley</i> 7	7	100	7	100	7	6	6	100	4	67	4	50
<i>NHS Grampian</i> 9	7	78	9	100	7	7	6	86	4	67	4	67
<i>NHS Greater Glasgow & Clyde</i> 33	25	76	28	85	23	22	21	95	17	81	16	90
<i>NHS Highland</i> 5	4	80	4	80	4	4	4	100	3	75	3	50
<i>NHS Lanarkshire</i> 13	10	77	12	92	10	10	10	100	9	90	9	90
<i>NHS Lothian</i> 22	20	91	20	91	20	20	19	95	9	47	8	53
<i>NHS Tayside</i> 6	5	83	6	100	5	5	5	100	4	80	4	100

**Table 4.1.2 Patients who met the DCD referral criteria - key numbers and rates,
1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)**

Patients for whom imminent death was anticipated	Patients for whom imminent death was anticipated that were referred to SN-OD	DCD referral rate (%)	Patients for whom treatment was withdrawn	Eligible DCD donors (Imminent death anticipated and treatment withdrawn with no absolute contra-indications)	Eligible DCD donors whose family were approached	DCD approach rate (%)	Authorisation ascertained	DCD authorisation rate (%)	Actual DCD donors from eligible DCD donors	DCD SN-OD involvement rate (%)
1 April 2016 to 31 March 2017										
<i>Golden Jubilee National Hospital</i> 11	10	91	10	10	7	70	4	57	3	71
<i>NHS Ayrshire and Arran</i> 21	13	62	21	17	6	35	3	50	2	50
<i>NHS Borders</i> 0	0	-	0	0	0	-	0	-	0	-
<i>NHS Dumfries and Galloway</i> 2	2	100	2	2	0	0	0	-	0	-
<i>NHS Fife</i> 16	16	100	16	14	8	57	3	38	1	50
<i>NHS Forth Valley</i> 5	4	80	5	5	4	80	2	50	0	100
<i>NHS Grampian</i> 57	46	81	55	49	27	55	17	63	12	70
<i>NHS Greater Glasgow & Clyde</i> 73	58	79	71	68	41	60	15	37	9	49
<i>NHS Highland</i> 12	5	42	12	10	1	10	1	100	1	100
<i>NHS Lanarkshire</i> 16	12	75	16	14	6	43	5	83	5	83
<i>NHS Lothian</i> 87	76	87	86	71	46	65	29	63	17	78
<i>NHS Tayside</i> 13	12	92	13	13	12	92	4	33	3	67
1 April 2015 to 31 March 2016 (for comparison purposes)										
<i>Golden Jubilee National Hospital</i> 15	14	93	15	14	6	43	3	50	0	83
<i>NHS Ayrshire and Arran</i> 24	16	67	24	18	6	33	2	33	1	67
<i>NHS Borders</i> 4	4	100	4	3	3	100	2	67	1	67
<i>NHS Dumfries and Galloway</i> 1	1	100	1	1	0	0	0	-	0	-
<i>NHS Fife</i> 23	20	87	23	21	12	57	5	42	2	67
<i>NHS Forth Valley</i> 11	10	91	10	10	8	80	6	75	3	88
<i>NHS Grampian</i> 79	71	90	74	67	30	45	13	43	11	73
<i>NHS Greater Glasgow & Clyde</i> 61	47	77	55	50	31	62	11	35	5	45
<i>NHS Highland</i> 18	12	67	18	17	3	18	2	67	1	67
<i>NHS Lanarkshire</i>										

**Table 4.1.2 Patients who met the DCD referral criteria - key numbers and rates,
1 April 2016 - 31 March 2017 (1 April 2015 - 31 March 2016 for comparison)**

Patients for whom imminent death was anticipated	Patients for whom imminent death was anticipated that were referred to SN-OD	DCD referral rate (%)	Patients for whom treatment was withdrawn	Eligible DCD donors (Imminent death anticipated and treatment withdrawn with no absolute contra-indications)	Eligible DCD donors whose family were approached	DCD approach rate (%)	Authorisation ascertained	DCD authorisation rate (%)	Actual DCD donors from eligible DCD donors	DCD SN-OD involvement rate (%)
12	11	92	12	11	9	82	6	67	2	78
<i>NHS Lothian</i>										
89	74	83	86	73	54	74	30	56	14	65
<i>NHS Tayside</i>										
12	10	83	11	10	6	60	4	67	3	83

Tables 4.1.1 and 4.1.2 show the unit where the patient died. However, it is acknowledged that there are some occasions where a patient is referred in an Emergency Department but moves to a critical care unit. In total, for the Scotland team in 2016/17 there were 18 such patients.

It is acknowledged that the PDA does not capture all activity. In total there were 36 patients referred in 2016/17 who are not included in Section 2 onwards because they were either over 80 years of age or did not die in a unit participating in the PDA. None of these are included in Section 1 because they did not become a solid organ donor.

5. Paediatric ICU data

A summary of key rates from the PDA for Paediatric ICUs

5.1 PICU data

The UK average rates for paediatric ICUs are displayed on the radar charts along with the rates achieved by the paediatric ICUs covered by your Team. A comparison is also provided for the equivalent period last year. Caution should be applied when interpreting percentages based on small numbers. Note that neonatal ICUs have not been included.

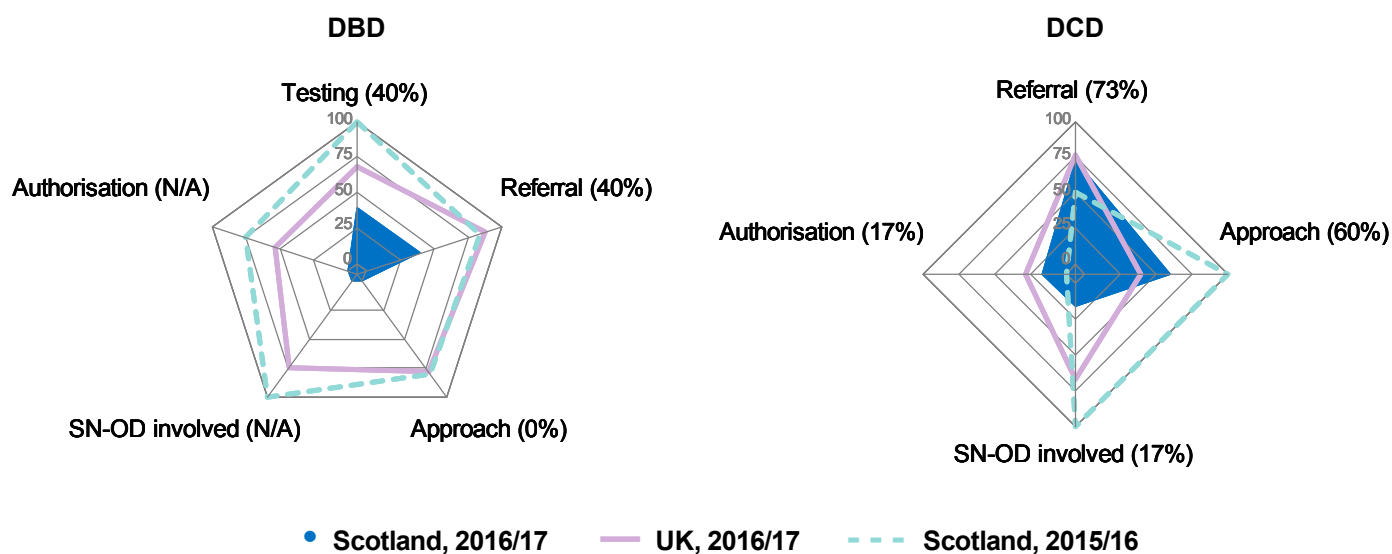
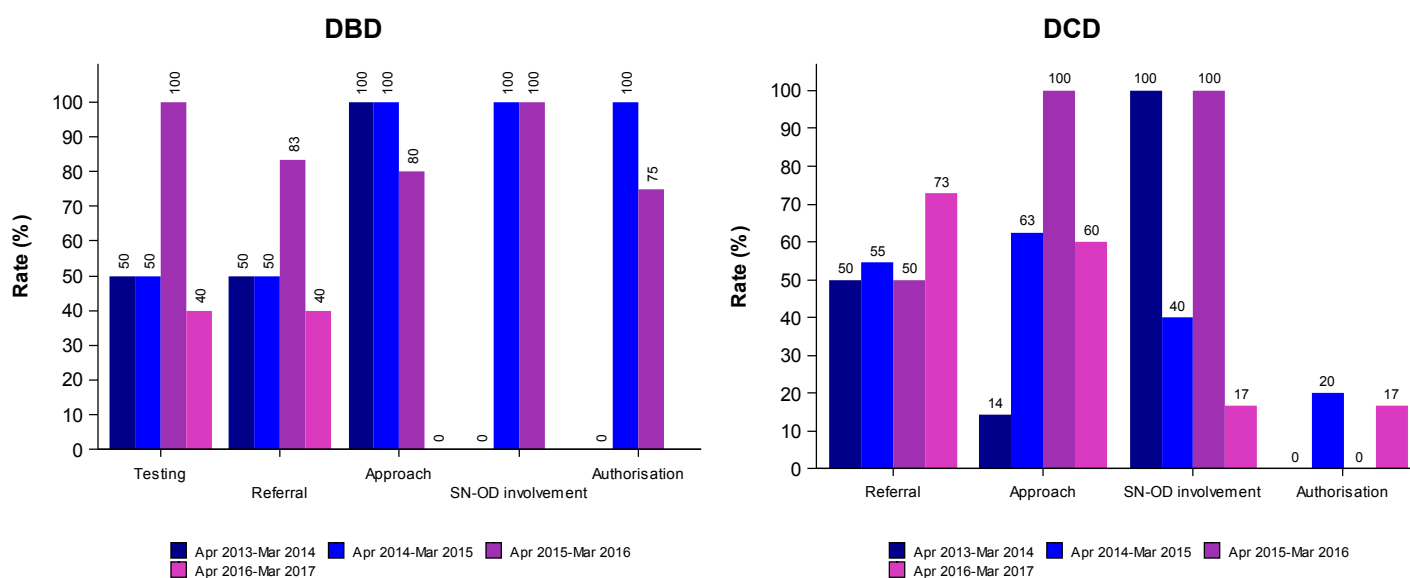


Figure 5.1.2 Key rates on the potential for organ donation, 1 April 2013 - 31 March 2017



Appendices

Appendix A.1 Bar charts of key rates

Figure A.1.1 shows the same information as the radar charts in Section 2 but in an alternative format. The bars show the latest rates for your Team. Purple lines have been superimposed to provide a comparison with the UK and turquoise dashed lines show the rates achieved by your Team in the equivalent period last year. The colour of the rate label indicates the Team performance as shown in the appropriate funnel plot using the gold, silver, bronze, amber, and red (GoSBAR) scheme.

Figure A.1.1 DBD and DCD key rates

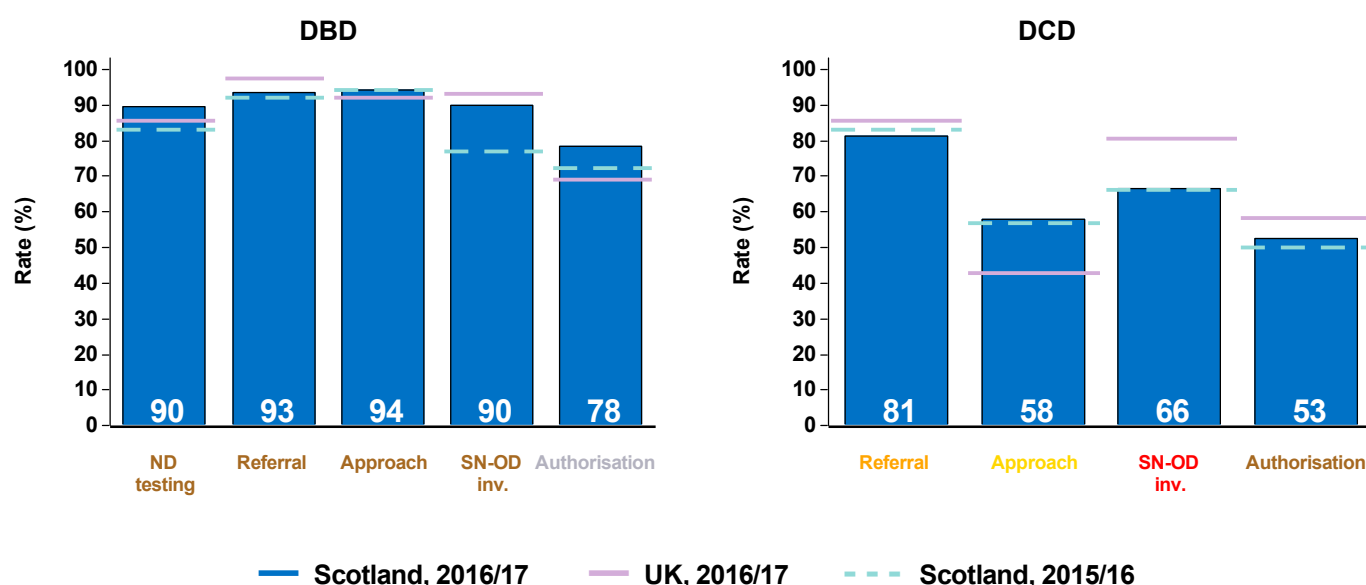
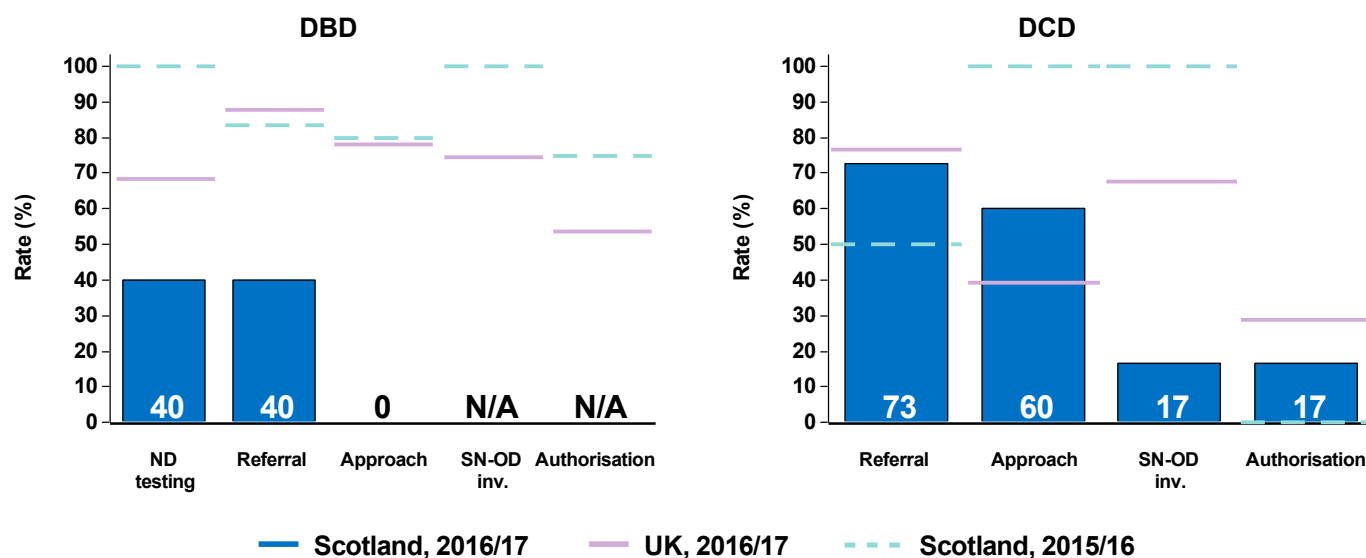


Figure A.1.2 DBD and DCD key rates for paediatric ICUs



Appendix A.2 Definitions

POTENTIAL DONOR AUDIT / REFERRAL RECORD

Data excluded	Patients who did not die on a critical care unit or an emergency department and patients aged over 80 years are excluded.
Donors after brain death (DBD)	
Suspected Neurological Death	A patient who meets all of the following criteria: Apnoea, coma from known aetiology and unresponsive, ventilated, fixed pupils. Excluding those not tested due to reasons 'cardiac arrest despite resuscitation', 'brainstem reflexes returned', 'neonates - less than 2 months post term'.
Potential DBD donor	A patient who meets all four criteria for neurological death testing excluding those not tested due to reasons 'cardiac arrest despite resuscitation', 'brainstem reflexes returned', 'neonates – less than 2 months post term' (ie suspected neurological death, as defined above).
DBD referral criteria	A patient with suspected neurological death
Discussed with Specialist Nurse – Organ Donation	A patient with suspected neurological death discussed with the Specialist Nurse – Organ Donation (SN-OD)
Neurological death tested	Neurological death tests were performed
Eligible DBD donor	A patient confirmed dead by neurological death tests, with no absolute medical contraindications to solid organ donation
Absolute contraindications	Absolute medical contraindications to organ donation are listed here: http://www.odt.nhs.uk/pdf/contraindications_to_organ_donation.pdf
Family approached for formal organ donation discussion	Family of eligible DBD asked to: support the patient's expressed or deemed consent/authorisation decision, informed of a nominated/appointed representative, make a decision themselves on donation, or informed of a patient's opt-out decision via the Organ Donor Register
Consent / authorisation ascertained	Family supported expressed or deemed consent/authorisation, nominated/appointed representative gave consent, or where applicable the family gave consent/authorisation
Actual donors: DBD	Neurological death confirmed patients who became actual DBD as reported through the PDA
Actual donors: DCD	Neurological death confirmed patients who became actual DCD as reported through the PDA
Neurological death testing rate	Percentage of patients for whom neurological death was suspected who were tested
Referral rate	Percentage of patients for whom neurological death was suspected who were discussed with the SN-OD
Approach rate	Percentage of eligible DBD families or nominated/appointed representatives approached for formal organ donation discussion
Consent / authorisation rate	Percentage of families or nominated/appointed representatives approached for formal organ donation discussion where consent/authorisation was ascertained
Expected consent / authorisation rate	Consent / authorisation rate adjusted for ethnicity case mix (white or BAME (black, asian and minority ethnic)), based on those patients whose family or nominated/appointed representative were approached to discuss organ donation where consent/authorisation was ascertained and patient ethnicity was known
SN-OD involvement rate	Percentage of family or nominated/appointed representative approaches where a SN-OD was involved
SN-OD consent / authorisation rate	Percentage of families or nominated/appointed representatives approached for formal organ donation discussion by a SN-OD where consent / authorisation for organ donation was ascertained

Donors after circulatory death (DCD)

Imminent death anticipated	A patient, not confirmed dead using neurological criteria, receiving assisted ventilation, a clinical decision to withdraw treatment has been made and death is anticipated within 4 hours
DCD referral criteria	A patient in whom imminent death is anticipated (as defined above)
Discussed with Specialist Nurse – Organ Donation	Patients for whom imminent death was anticipated who were discussed with the SN-OD
Potential DCD donor	A patient who had treatment withdrawn and death was anticipated within four hours
Eligible DCD donor	A patient who had treatment withdrawn and death was anticipated within four hours, with no absolute medical contraindications to solid organ donation
Absolute contraindications	Absolute medical contraindications to organ donation are listed here: http://www.odt.nhs.uk/pdf/contraindications_to_organ_donation.pdf
Family approached for formal organ donation discussion	Family of eligible DCD asked to: support the patient's expressed or deemed consent/authorisation decision, informed of a nominated/appointed representative, make a decision themselves on donation, or informed of a patient's opt-out decision via the Organ Donor Register
Consent / authorisation ascertained	Family supported expressed or deemed consent/authorisation, nominated/appointed representative gave consent, or where applicable the family gave consent/authorisation
Actual DCD	DCD patients who became actual DCD as reported through the PDA
Referral rate	Percentage of patients for whom imminent death was anticipated who were discussed with the SN-OD
Approach rate	Percentage of eligible DCD families or nominated/appointed representatives approached for formal organ donation discussion
Consent / authorisation rate	Percentage of families or nominated/appointed representatives approached for formal organ donation discussion where consent/authorisation was ascertained
Expected consent / authorisation rate	Consent / authorisation rate adjusted for ethnicity case mix (white or BAME (black, asian and minority ethnic)), based on those patients whose family or nominated/appointed representative were approached to discuss organ donation where consent/authorisation was ascertained and patient ethnicity was known
SN-OD involvement rate	Percentage of family or nominated/appointed representative approaches where a SN-OD was involved
SN-OD consent / authorisation rate	Percentage of families or nominated/appointed representatives approached for formal organ donation discussion by a SN-OD where consent / authorisation for organ donation was ascertained

UK Transplant Registry (UKTR)

Donor type	Type of donor: Donation after brain death (DBD) or donation after circulatory death (DCD)
Number of actual donors	Total number of donors reported to the UKTR
Number of patients transplanted	Total number of patients transplanted from these donors
Organs per donor	Number of organs donated divided by number of donors. The maximum number of solid organs that can be donated are 7 for a DBD and 6 for a DCD.
Number of organs transplanted	Total number of organs transplanted by organ type

On 1 April 2013 significant changes were made to the PDA. The main changes that should be borne in mind, especially when making comparisons across time periods, are as follows:

- Upper age limit increased from 75 to 80 years.
- Cardiothoracic ICUs included.
- Changes to imminent death definition to be clear that death was anticipated within four hours.
- Contraindications brought in line with current practice.
- Terminology changes, eg 'potential donor' changed to 'eligible donor', for consistency with World Health Organisation definitions.

Appendix A.3 Data description

This report provides a summary of data relating to potential and actual organ donors as recorded by NHS Blood and Transplant via the Potential Donor Audit (PDA), the accompanying Referral Record and the UK Transplant Registry for the Scotland Team. The report covers the time period 1 April 2016 to 31 March 2017 and data from 1 April 2015 to 31 March 2016 are also provided in certain sections for comparison purposes.

As part of the PDA, patients aged over 80 years of age and those who did not die on a critical care unit or an emergency department are not audited nationally and are therefore excluded from the majority of this report. Data from neonatal Intensive Care Units have also been excluded from this report. In addition, some information from this time period may be outstanding due to late reporting and difficulties obtaining patient notes. Donations not captured by the PDA will still be included in the data supplied from the accompanying Referral Record or from the UK Transplant Registry, as appropriate.

Some percentages in this report were calculated using small numbers and should therefore be interpreted with caution.

Please refer any queries or requests for further information to your local Specialist Nurse - Organ Donation (SN-OD)

Appendix A.4 Table and figure description

Each table and figure displayed throughout the report is described below to aid interpretation.

1.1 Donor outcomes

- Table 1.1.1 The number of actual donors, the resulting number of patients transplanted and the average number of organs donated per donor have been obtained from the UK Transplant Registry (UKTR) for your Team. Results have been displayed separately for donors after brain death (DBD) and donors after circulatory death (DCD).
- Table 1.1.2 The number of organs transplanted by type from donors within your Team has been obtained from the UKTR. Further information can be obtained from your local Specialist Nurse – Organ Donation (SN-OD), specifically regarding organs that were not transplanted. Results have been displayed separately for DBD and DCD.
- Figure 1.1.1 The number of actual donors and the resulting number of patients transplanted obtained from the UKTR for your Trust/Board for the past 10 equivalent time periods are presented on a line chart.

2.1 Key rates

- Figure 2.1.1 Radar charts are displayed showing specific percentage measures of potential donation activity for your Team compared with national data for the UK, and compared with an equivalent time period from the previous financial year, using data from the Potential Donor Audit (PDA). The DBD charts show the percentage of patients tested for neurological death, and all four charts also show the referral rates, approach rates, proportion of approaches involving a SN-OD and observed consent/authorisation rates. Appendix A.2 gives a fuller explanation of terms used. The blue shaded area represents your Team, and the national rates are superimposed as a solid purple line for comparison. The equivalent period from the previous year is superimposed as a dashed turquoise line. The fuller the blue shaded area the better. Note that 0% and 'not applicable (N/A)' rates appear the same. The rates have therefore been displayed on the spokes of the radar charts. The rates are coloured using the gold, silver, bronze, amber, and red (GoSBAR) colour scheme to show the performance of one Trust/Board as reflected in the plots (see description in figure 3.2.1 below). Note that caution should be applied when interpreting percentages based on small numbers and when comparing time periods.
- Figure 2.1.2 Specific percentage measures of DBD and DCD potential donation activity for your Trust/Board are presented for the last three years, using data from the PDA. Appendix A.4 gives a fuller explanation of the terms used.

2.2 Key numbers, rates and comparison with national targets

- Table 2.2.1 A summary of DBD and DCD data and key rates have been obtained from the PDA. A national comparison and a time period comparison are provided. Note that caution should be applied when interpreting percentages based on small numbers and comparing time periods. Appendix A.2 gives a fuller explanation of terms used. The key rates are highlighted using the gold, silver, bronze, amber, and red (GoSBAR) colour scheme to show the performance of the Trust/Board as reflected in the funnel plots (see description for figure 3.2.1 below). National consent rate targets specific to the financial year are displayed throughout Section 3.

3.1 Overview of lost opportunities

- Figure 3.1.1 The stages at which potential donors lose the opportunity to become actual donors have been obtained from the PDA. There are four charts showing the DBD and DCD stages separately for your Team and the UK, all of which contain a comparison against an equivalent period from the previous financial year. The number of potential donors is shown on the vertical axis for each chart and at each 'step' the proportion of potential donors lost at that stage is displayed. Caution should be applied when interpreting percentages based on small numbers and comparing time periods.

3.2 Neurological death testing

- Figure 3.2.1 A funnel plot of the neurological death testing rate is displayed using data obtained from the PDA. Each Trust/Board is represented on the plot as a blue dot, although one dot may represent more than one Trust/Board. Trusts/Boards within your Team are shown on the plot as large black crosses. The national rate is shown on the plot as a pink horizontal dashed line, together with 95% and 99.8% confidence limits for this rate. These limits form a 'funnel', shaded using a gold, silver, bronze, amber, and red (GoSBAR) colour scheme. Graphs obtained in this way are known as funnel plots. If a Trust/Board lies within the 95% limits, shaded bronze, then that Trust/Board has a rate that is statistically consistent with the national rate. If a Trust/Board lies outside the 95% confidence limits, shaded silver or amber, this serves as an alert that the Trust/Board may have a rate that is significantly different from the national rate. When a Trust/Board lies above the upper 99.8% limit, shaded gold, this indicates a rate that is significantly higher than the national rate, while a Trust/Board that lies below the lower limit, shaded red, has a rate that is significantly lower than the national rate. It is important to note that differences in patient mix have not been accounted for in these plots. The funnel plots can also be used to identify the maximum rates currently being achieved by Trusts/Boards with similar donor potential.
- Table 3.2.1 The reasons given for neurological death tests not being performed have been obtained from the PDA, if applicable.

3.3 Referral to Specialist Nurse - Organ Donation

- Figure 3.3.1 Funnel plots of DBD and DCD referral rates are displayed using data obtained from the PDA. See description for Figure 3.2.1 above.
- Table 3.3.1 The reasons for not referring the patient to the SN-OD have been obtained from the PDA, if applicable.
- Table 3.3.2 For patients who were referred, the timings of the first contact with the SN-OD by clinical staff have been obtained from the PDA.

3.4 Contraindications

- Table 3.4.1 The primary absolute medical contraindications to solid organ donation have been obtained from the PDA, if applicable.

3.5 Family approach

- Figure 3.5.1 Funnel plots of DBD and DCD approach rates are displayed using data obtained from the PDA. See description for Figure 3.2.1 above.
- Table 3.5.1 The reasons why families were not formally approached for a decision about solid organ donation have been obtained from the PDA, if applicable.

3.6 Proportion of approaches involving a SN-OD

- Figure 3.6.1 Funnel plots of DBD and DCD SN-OD involvement rates are displayed using data obtained from the PDA. See description for Figure 3.2.1 above.

3.7 Authorisation

- Figure 3.7.1 Funnel plots of DBD and DCD consent/authorisation rates are displayed using data obtained from the PDA. See description for Figure 3.2.1 above. In addition the national consent/authorisation target rate is shown in green.
- Table 3.7.1 The reasons why families did not give consent/authorisation for solid organ donation have been obtained from the PDA, if applicable.

3.8 Reasons why solid organ donation did not occur

- Table 3.8.1 The reasons why solid organ donation did not occur have been obtained from the PDA, if applicable.

4.1 Key numbers and rates by Trusts/Boards within your Team

- Table 4.1.1 DBD key numbers and rates by Trusts/Boards covered by your Team have been obtained from the PDA. Data for the current time period are included, along with an equivalent comparison period from the previous year. If the Trusts/Boards are not equivalent for the two time periods, this is due to Trust/Board changes, and/or there were no patients for whom neurological death was suspected or imminent death was anticipated in one of the time periods. Caution should be applied when interpreting percentages based on small numbers and comparing time periods.
- Table 4.1.2 DCD key numbers and rates by unit where the patient died have been obtained from the PDA. See description for Table 4.1.1 above.

5.1 PICU data

- Figure 5.1.1 Radar charts have been used to display the DBD and DCD key rates from the PDA for paediatric ICUs. The UK average rates for paediatric ICUs are displayed along with the rates achieved by paediatric ICUs covered by your Team. A comparison is also provided for the equivalent period from the previous year. See description for Figure 2.1.1 above. Caution should be applied when interpreting percentages based on small numbers and comparing time periods.
- Figure 5.1.2 Specific percentage measures of DBD and DCD potential paediatric donation activity for your Team are presented for the last three years, using data from the PDA. Appendix A.4 gives a fuller explanation of the terms used. Note that caution should be applied when interpreting percentages based on small numbers and comparing time periods.

Appendix A.1 Bar charts of key rates

- Figure A.1.1 Bar charts have been used to display the DBD and DCD key rates from the PDA. This is an alternative way of displaying the information in Figure 2.1.1. The percentages for your Team in the latest time period are displayed on each bar. Note that caution should be applied when interpreting percentages based on small numbers and comparing time periods.
- Figure A.1.2 Bar charts have been used to display DBD and DCD key rates for paediatric data. See description for Figure A.1.1 above. Note that caution should be applied when interpreting percentages based on small numbers.