

STANDARD OPERATING PROCEDURE SOP3631/1.2

Diagnostic Tests - Imaging

*This SOP replaces
SOP3631/1.1*

Copy Number

Effective 01/12/15

Summary of Significant Changes
Phrase changes to reflect the new ODR and Human Transplantation (Wales) Act 2013

Purpose

The purpose of this document is to inform and guide the Specialist Nurse – Organ Donation (SN-OD) in requesting that relevant imaging diagnostic tests have been undertaken and reported, where possible, to ensure that a complete characterisation of the patient is performed.

Responsibilities

SN-OD – to request that appropriate radiological diagnostic tests are undertaken and reported on. The SN-OD must ensure that this information is communicated to the relevant Recipient Centre Points of Contact.

Recipient Centre Point of Contact – to receive the information given, via EOS/fax/verbally, and relay it to the Implanting surgeons.

Restrictions

This SOP is to be utilised by a qualified and trained SN-OD. In the event of a SN-OD who is in training, this SOP is to be utilised under supervision.

Definitions

SN-OD – for the purposes of this document the terminology "SN-OD" will apply to either Specialist Nurse or Specialist Practitioner with the relevant knowledge, skills and training in organ donation, working within NHSBT Organ Donation Services Teams (ODST)

DBD – Donation following Brain Death

DCD – Donation following Circulatory Death

CT – Computerised Tomography

MRI – Magnetic Resonance Imaging

ECG – Electrocardiogram

ECHO – Echocardiogram

Implanting surgeon – to determine, following review of the information provided, that an organ is suitable for transplant for one of their recipients.

Relevant Medical Practitioner – to undertake ECHO on patient and report findings

Imaging Diagnostic Tests includes, but is not limited to, the following:

- Plain film X Rays
- CT scans
- MRI scans
- CT Angiograms
- ECHO – trans thoracic/trans oesophageal
- ECG

PID – Person Identifiable Data

RCPoC – Recipient Centre Point of Contact

Medical Practitioner – to facilitate the radiological diagnostic test request and provisional reporting.

Specialist Radiographer – to review any appropriate CT/MRI scans following referral from Medical Practitioner

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Items Required

EOS access

[FRM4193](#) - Core Donor Data – SNOD (Used as EOS back-up)(Page 1-8)

[MPD867](#) – Information to be communicated to recipient centres

[POL162](#) – Donor characterisation

NHSBT Guidance on Handling Person Identifiable Information:

<http://nhsbtweb/userfiles/22474%20Guidance%20of%20Confidential%20Comms%206pp%20DL.pdf>

<http://nhsbtweb/userfiles/final%206%20IG%20proofs.pdf>


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STEP	DETAILS	INFORMATION
Electrocardiograms (ECGs)		
NOTE: This section refers to potential DBD heart donation process ONLY		
1. Following confirmation of death using neurological criteria request an ECG from the bedside nurse.	1.1 Request the ECG following ascertainment of consent/authorisation for heart donation. 1.2 Inform the family why the ECG is being performed, if asked.	Post confirmation of death using neurological criteria ECGs are required by the RCPoCs for review by the implanting surgeons to help determine if a heart is suitable for solid organ donation.
2. Ask the medical practitioner to review the ECG.	2.1 Request a review of the ECG from the medical practitioner. 2.2 Request that the medical practitioner document their review of the ECG in the patient's medical records	The main points that the medical practitioner should consider are: <ul style="list-style-type: none"> • Evidence of ischaemia • Presence of Q waves
3. Upon completion of the Donor Characterisation process (utilising the CDDF), upload the ECG report onto EOS.		The RCPoCs will be able to relay this information to the implanting surgeons so a decision can be made.
4. Where resources allow, fax a copy of the ECG to the RCPoC.	4.1 Ensure that the fax number is correct and secure. 4.2 Ensure that there is no PID on the ECG or fax cover letter.	When sending any information via fax, PID must not be displayed to ensure compliance with Policy on Handling PID. Utilisation of the ODT number can assist in maintaining security during transmission.
5. After the ECG has been faxed confirm receipt by the RCPoC.	5.1 Telephone the RCPoC to confirm receipt of the faxed ECG. 5.2 Document receipt of the fax, sign and date the entry for the donor file.	




















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STEP	DETAILS	INFORMATION		
Echocardiograms (ECHO)				
NOTE: This section refers to potential DBD heart donation process ONLY				
6. Following confirmation of death using neurological criteria enquire if an ECHO has been performed during the current hospital admission.	6.1 Ask the medical practitioner if an ECHO has been performed. 6.2 Ask when the ECHO was performed. 6.3 Ask if a report is available.	An ECHO performed days prior to confirmation of death using neurological criteria may not show a true picture of the function of the heart at the time of donation.		
7. Has an ECHO been performed within the last 24 hours?	<table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">No 8</td> <td style="width: 50%;">Yes 11</td> </tr> </table>	No 8	Yes 11	
No 8	Yes 11			
8. Ask the medical practitioner to request an ECHO.	8.1 Make this request following family consent/ authorisation for heart donation. 8.2 Inform the family why the ECHO is being performed, if required.			
9. Will an ECHO be carried out following your request?	<table style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">Yes 10</td> <td style="width: 50%;">No 12</td> </tr> </table>	Yes 10	No 12	
Yes 10	No 12			
10. Ask the relevant medical practitioner if certain minimum information can be recorded.	10.1 Use Appendix 1 as a guide when speaking with the relevant medical practitioner. 10.2 Document all conversations held with the medical practitioner performing the ECHO, sign and date.	Core information is required by the RCPoCs/Implanting surgeons from the ECHO, to determine if a heart is suitable for transplantation.		
NOTE: If all of the information cannot be obtained, core minimum details should include: any evidence of ventricular hypertrophy or any structural abnormalities				
11. Upload the information onto EOS.	11.1 Include all details reported by the relevant medical practitioner.			
12. Inform the relevant RCPoCs that an ECHO cannot be performed.	12.1 Telephone the relevant RCPoCs. 12.2 Document all conversations held, sign and date.	There may be certain hospitals which do not have the resources or staff to perform an ECHO. This should not preclude heart donation at this stage.		

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STEP	DETAILS	INFORMATION				
CT & MRI Scans (including CT Angiograms)						
NOTE: This section applies to ALL potential donors						
13. Ascertain from the patient's medical records if any CT and/or MRI scans have been performed during any recent hospital admissions.	13.1 Review the patient's medical records. 13.2 Determine if a CT/MRI scan has been performed. 13.3 Record the date of the CT/MRI scan.	CT and MRI scans may have been taken of various anatomical regions. These scans may provide detail about the quality and function of potential organs suitable for transplant – for example Thoracic and Abdominal CT scans.				
<p>Was a CT/MRI scan performed?</p> <p>Was the CT/MRI scan reported by a specialist radiographer?</p>	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;"> <p>Yes</p>  </td> <td style="width: 50%;"> <p>No</p>  <p>16</p> </td> </tr> <tr> <td> <p>No</p>  <p>14</p> </td> <td> <p>Yes</p>  <p>16</p> </td> </tr> </table>	<p>Yes</p> 	<p>No</p>  <p>16</p>	<p>No</p>  <p>14</p>	<p>Yes</p>  <p>16</p>	
<p>Yes</p> 	<p>No</p>  <p>16</p>					
<p>No</p>  <p>14</p>	<p>Yes</p>  <p>16</p>					
14. Speak with the medical practitioner to ask if a specialist radiographer is able to review the CT/MRI scan.		There may be cases in which specialist radiologists (neurological) have presented a second report on the initial scans which may provide more detail for the recipient points of contact.				
Can a specialist radiographer review the CT/MRI scan?	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;"> <p>No</p>  <p>15</p> </td> <td style="width: 50%; text-align: center;"> <p>Yes</p>  <p>16</p> </td> </tr> </table>	<p>No</p>  <p>15</p>	<p>Yes</p>  <p>16</p>			
<p>No</p>  <p>15</p>	<p>Yes</p>  <p>16</p>					
15. Document on EOS/donor documentation that a specialist review of the CT/MRI scan will not occur.	<p>16.1 Document conversations held with medical practitioner(s).</p> <div style="text-align: right; margin-top: 20px;">  </div>	<p>Reasons that a specialist review will not occur can include:</p> <ul style="list-style-type: none"> if medical practitioner does not agree to refer to a specialist radiographer to review. if specialist radiographer does not agree to review. logistical/process issues that arise preventing specialist review from occurring. 				
16. Upload the relevant information onto EOS.	<p>16.2 Include any details as reported by the:</p> <ul style="list-style-type: none"> medical practitioner. <p>AND/OR</p> <ul style="list-style-type: none"> specialist radiographer. 	<p>The RCPoC will be able to relay this information to the implanting surgeons to inform decision making.</p> <p>If a patient has not had a CT/MRI scan this does not preclude organ donation.</p>				

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STEP	DETAILS	INFORMATION		
Chest X-Ray (CXR)				
NOTE: This section applies to ALL potential donors where clinically indicated				
Any other plain film x-rays should be reviewed and entered onto EOS if appropriate				
17. Establish whether a CXR has been undertaken on the date of donation.	17.1 Ask the medical practitioner and/or nursing staff.	To ensure the safety and quality of organs for transplantation a CXR should be taken on the day of donation to identify any possible adverse findings (eg tumour) that would prevent organ donation occurring.		
18. Has a CXR been taken today?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50%;">No ↓ 19</td> <td style="text-align: center; width: 50%;">Yes ↓ 20</td> </tr> </table>	No ↓ 19	Yes ↓ 20	
No ↓ 19	Yes ↓ 20			
19. Following confirmation of death using neurological criteria (DBD). OR following consent to proceed with DCD process. Request a CXR to be taken.	19.1 Make this request following <u>ascertainment of consent</u> . 19.2 Inform the family why the CXR is being taken, if asked.	If a CXR has been taken within the past 48 hours, there may be no valid clinical reason to perform a further CXR. The medical practitioner has the final decision to authorise a CXR. Advice can be sought, if necessary, from relevant RCPoCs.		
Will a CXR be taken today?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50%;">Yes ↓ 20</td> <td style="text-align: center; width: 50%;">No ↓ 22</td> </tr> </table>	Yes ↓ 20	No ↓ 22	
Yes ↓ 20	No ↓ 22			
20. Ask the medical practitioner to review the CXR.	20.1 Request the medical practitioner to review the CXR. 20.2 Request that the medical practitioner document their review of the CXR in the patient's medical records.	These results will help the RCPoCs and implanting surgeons: <ul style="list-style-type: none"> Determine if the lungs are suitable for donation to proceed. Determine if organ donation is able to proceed. If there is any doubt, then expert advice should be sought from senior medical practitioners.		
21. Upload the relevant information onto EOS.	21.1 Include any detail as reported by the medical practitioner. <div style="text-align: right; font-size: 2em; font-weight: bold;">➔</div> END	The RCPoCs will be able to relay this information to the implanting surgeons to assist in the decision making process.		
22. Document on EOS/donor documentation reasons why CXR not performed.	22.1 Update EOS 22.2 Communicate to RCPoCs as required.	If a CXR is not performed on a patient, this does not preclude lung donation.		

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Appendix 1

Echocardiogram request for assessment of heart function in a potential heart donor

To: The on-call echocardiographer

Echocardiography is an increasingly important tool in the assessment of potential heart transplant donors and in conjunction with other measures allows the recipient centre to decide upon the suitability of a particular heart for a particular recipient. Brainstem death can adversely affect heart function and each piece of information can contribute to the decision making process.

We, therefore, would be grateful if you could perform a standard trans-thoracic echocardiogram on patient _____ who may be a potential heart donor and if possible provide us with the following information. We recognise that it is difficult on some occasions to achieve adequate echocardiographic windows in the supine ventilated patient but we do ask that you attempt to provide us with us as much information as possible. We appreciate the time and effort necessary to accrue this information.

Assessment

1. We would ask you to provide your standard report for a trans-thoracic echocardiography and to comment on any major structural, anatomical and valvular abnormalities detected including the presence or absence of a pericardial effusion.

Measurements:

1. If possible, please evaluate the left ventricular end systolic and diastolic dimensions – (either in M-mode or on 2D views) and estimate fractional shortening (FS) and ejection fraction (EF).
2. If possible, please report the interventricular septum (IVS) and left ventricular posterior wall (PW) thickness.
3. If possible, please assess the heart for any global LV wall motion abnormality on all the available views and their severity (Please note that the regional LV wall motion abnormalities (RWMA) are common following brain stem death (30-40%) and do not necessarily preclude the heart being used for transplantation. In particular, basal LV wall motion abnormalities can occur, sparing the apex. **Please comment if these are found but note that they are not necessarily a contra-indication to donation when formulating your report.** In trauma patients, RWMA may indicate myocardial contusion and detection of this may be important.
4. If possible, in your valvular assessment, please perform Doppler studies to assess any valvular regurgitation.
5. If possible, please subjectively assess the size and function of the right ventricle.

Thank you for performing this investigation

Specialist Nurse – Organ Donation

On behalf of NHS Blood and Transplant and all UK Heart Transplant Centres