

### **Phased training plan for a Cardiothoracic centre collecting the heart from the donor hospital.**

This document outlines the phases of training required for a Cardiothoracic centre accepting a DCD Heart attending a retrieval to collect the heart.

The following principles should apply for all phases of training:

- Attendance must not impact the contracted commissioned service.
- Maximum of 3-hour travel time from recipient centre to donor hospital.
- All travel must be taken by road, and no flights will be authorised.
- To ensure maximum training exposure and safety, only one surgeon and one OCS Practitioner to attend a retrieval for training.
- ODT HUB must be informed of the intention to attend the donation and will have final agreement of attendance considering the national retrieval activity required at the time of mobilising.
- The Lead DCD heart surgeon will be responsible for the overall accountability and management of the training including assessment and sign off.
- Involvement of DCD Lung retrieval and ANRP should not prohibit attendance by the cardiac accepting centre, however, should be assessed on a case-by-case basis.
- Proctor – defined as competent in all aspects of DCD heart retrievals and registered as proctor DCD heart at NHSBT. Proctors will be those with current involvement in DCD Heart retrieval.
- The proctor will fill a feedback-based assessment (<https://www.odt.nhs.uk/retrieval/policies-and-nors-reports/>) at the end of each run. On completion this will be automatically sent through to NHSBT.
- Once the surgeon and / or practitioner has reached phase 2 sign off (fully independent), the relevant proctor will notify the necessary Cardiothoracic centre NORS Lead.

Phase 1	
<p>Retrieval attended by the accepting centre surgeon who will put the heart on the OCS under the supervision of the lead DCD heart retrieval surgeon. The OCS Practitioner from the accepting centre can undertake setting up of the OCS and assessment of the heart under supervision of the lead DCD Heart OCS Practitioner from the retrieving centre.</p>	
<p><b>The following steps should be confirmed by the Lead DCD Heart Surgeon and OCS Practitioner before participating in phase 1 activity.</b></p>	
Accepting centre surgeon	Accepting centre OCS Practitioner
<ul style="list-style-type: none"> <li>- Attended the Transmedics course.</li> <li>- Attended virtual webinar.</li> </ul>	<ul style="list-style-type: none"> <li>- Attended the Transmedics course.</li> <li>- Attended virtual webinar.</li> </ul>
Training requirement – Phase 1	
Accepting centre surgeon	Accepting centre OCS Practitioner
<p><b>Candidate can collect blood from donor as per protocol.</b></p> <ul style="list-style-type: none"> <li>- The candidate is aware the donor is required to be cross matched for 4 units RBC.</li> <li>- There is awareness that the donor should be transfused to hemoglobin of &gt;100g/L.</li> <li>- The candidate is aware that the donor should ideally be in the anesthetic room for WLST.</li> <li>- There is awareness that the bed should be the same height as the theatre table.</li> <li>- Awareness of a minimum of 1.2L of blood to be collected with a raised table and head down position.</li> <li>- The candidate is aware of cannula selection, heparinisation dose and technique as well as the use of suction to effect blood drainage.</li> <li>- The candidate is aware of mixing blood with OCS priming solution and requirement for high dose heparin.</li> </ul> <p><b>Candidate can safely mount the heart on the OCS as per protocol and training.</b></p> <ul style="list-style-type: none"> <li>- Demonstrates and understands the need to prepare St Thomas cardioplegia plus additions to provide cold preservation prior to mounting the heart on the OCS.</li> </ul>	<ul style="list-style-type: none"> <li>- Be competent in completing safety checks of the OCS and documenting checks.</li> <li>- Understanding of drugs to be administered, drug preparation, why they are used and how they are administered.</li> <li>- Competent in the process of blood collection for the OCS as per Protocol.</li> <li>- Competent in priming the OCS circuit with priming solution and donor blood and connecting SDS cartridges.</li> <li>- Competent in assembling SDS cartridges.</li> <li>- Competent in all aspects of the OCS wireless monitor, including setting up parameters.</li> <li>- Competent with adjusting drug doses as required.</li> <li>- Competent in using the EPOC blood gas analysers, documenting and interpreting the results.</li> </ul>

<ul style="list-style-type: none"> <li>- Recognises the significance of functional warm ischemia and stand down criteria.</li> <li>- Acknowledges the importance of the need to place the heart in ice cold saline on the removal of the heart from the donor.</li> <li>- Understands the dissection required and the process for connection to the OCS perfusion connector.</li> <li>- The candidate is able to attach the heart to the OCS and carry out deairing and priming.</li> <li>- Proficient and able to insert and secure the LV vent.</li> <li>- Aware of the use of PA cannula depending on centre preference.</li> </ul>	
<b>Summary of phase 1 completion</b>	
<ul style="list-style-type: none"> <li>- On completion of Phase 1 the accepting centre surgeon will be able to place the heart on the OCS under supervision until signed off by a proctor.</li> <li>- The OCS practitioner will be competent in set up of the OCS and undertaking assessment of the heart.</li> <li>- The Heart is transported back to the transplant centre by the retrieval team and the accepting centre surgeon and accepting centre OCS practitioners.</li> </ul>	

Phase 2	
<p>The accepting centre surgeon will put the heart on the OCS. The OCS Practitioner can undertake setting up of the OCS and assessment of the heart.</p> <p>The accepting centre surgeon and OCS practitioner will escort the heart back to the transplant centre with remote support from the retrieval team.</p>	
The following steps should be confirmed by the Lead DCD Heart Surgeon and OCS Practitioner before participating in phase 2 activity.	
Accepting centre surgeon	Accepting centre OCS Practitioner
<ul style="list-style-type: none"> <li>- Trained, competent and signed off in the collection of blood from the donor as per protocol.</li> <li>- Trained, competent and signed off by a proctor in placing the heart on the OCS.</li> </ul>	<ul style="list-style-type: none"> <li>- Will undertake setting up of the OCS and assessment of the heart under supervision.</li> <li>- Will be trained, competent and signed off in understanding how to problem solve any potential problems with the OCS when transporting the heart back to the recipient centre, including any equipment required such as the road bag and consumables.</li> </ul>
Training requirement – Phase 2	
Accepting centre surgeon	Accepting centre OCS Practitioner
<p><b>Trained in taking the heart on the OCS to the recipient centre with remote support from the retrieval team.</b></p> <ul style="list-style-type: none"> <li>- The candidate shows knowledge and understanding of OCS parameters according to the national protocol.</li> <li>- Shows knowledge and understating of target perfusate blood results.</li> <li>- The candidate knows that a video clip is required to be sent to the recipient centre after 30 mins of OCS reperfusion.</li> <li>- Understands that direct communication between the lead retrieval surgeon and lead implanting surgeon is required enroute.</li> <li>- The candidate knows that the Lead retrieval and lead implanting surgeon must agree on good organ function before recipient preparation begins.</li> <li>- Awareness of sterile equipment that may be required enroute (“roadside bag”).</li> <li>- The candidate knows, understands and can discuss the parameters to be considered prior to a final decision according to the national protocol.</li> </ul>	<ul style="list-style-type: none"> <li>- Competent in travelling with the OCS to the recipient centre, including ongoing blood gases, drug administration as required and observing and monitoring the heart throughout.</li> <li>- Competent in administering Cardioplegia and assisting with taking the heart of the OCS.</li> <li>- Competent in cleaning down the OCS and disposing of all consumables.</li> <li>- Competent with DCD Heart Passport completion.</li> </ul>

<ul style="list-style-type: none"> <li>- The candidate demonstrates a clear ability to manage the OCS with remote support from the retrieval team.</li> </ul> <p>All the above must be fully met to be deemed independent.</p> <p><b>Trained in taking the heart off the OCS with remote support from the retrieval team.</b></p> <ul style="list-style-type: none"> <li>- The candidate is aware of the need to prepare St Thomas cardioplegia with additions according to the national protocol.</li> <li>- The candidate can administer cardioplegia and demount the heart from the OCS at the recipient centre, with remote support from the retrieval team.</li> </ul>	
<p align="center"><b>Summary of phase 2 completion</b></p>	
<ul style="list-style-type: none"> <li>- On completion of Phase 2 the accepting centre surgeon will be competent and signed off by a proctor to place the heart on the OCS independently.</li> <li>- The OCS practitioner will be competent and signed off by a proctor in the setup of the OCS and undertaking assessment of the heart.</li> <li>- The Heart is transported back to the transplant centre by the accepting centre team with remote support from the retrieval team.</li> <li>- The Heart is removed from the OCS by the attending centre surgeon with remote support from the retrieval centre where required.</li> </ul>	

Remote support is available on all occasions and colleagues who are new to independent OCS and DCD Heart transportation should contact colleagues from experienced centres for advice and support.

The following colleagues have been named as proctors for Glasgow, Harefield and Papworth:

Glasgow	
Surgeons	Perfusionists
Phil Curry	David Varghese
Simon Messer	Hazim Al Heideri
Karim Morocos	Karim Morcos

Harefield	
Surgeons	Perfusionists
Bart Zych	Olaf Maunz
Ashok Padukone	Sylwia Katarzyniak
Mubassher Husain	Joe Hughes
	Dan Juan

Papworth	
Surgeons	Perfusionists
Pradeep Kaul	Jennifer Baxter
Prashant Mohite	Wojtek Zapotoczny
Hassiba Smail	Eugenio Santillo
Steven Tsui	Maddi Gusa
Marius Berman	Michelle Bates
Sri Aurovind	JP Nunes

The following CT centres currently undertake NORS on call on the same weeks:

Papworth – Birmingham and Newcastle.

Harefield – Manchester and Glasgow.