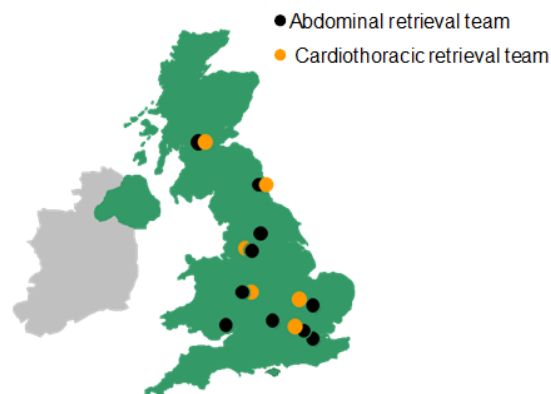


The role of the National Organ Retrieval Service (NORS) is to attend local hospitals to retrieve organs from deceased organ donors to facilitate organ transplantation. NORS teams consist of staff who specialise in the retrieval of abdominal or cardiothoracic organs. Where retrieval of abdominal and cardiothoracic organs is planned, both teams will attend. Each team consists of a Lead Surgeon, Surgical Assistant, Scrub Practitioner and Organ Preservation Practitioner. Other staff may be present for training or if there is a plan to utilise novel technologies.

NORS teams are employed by individual Trusts and Health Boards and are commissioned by NHS Blood and Transplant. There are 6 Cardiothoracic teams, (3 of whom are on call at any one time), and 10 Abdominal teams (with 8 on call at any one time) distributed throughout the United Kingdom (see map below). The allocation of NORS teams to local hospitals is the responsibility of NHSBT Hub Operations and is based on proximity and availability. If the closest team is already attending a donor, another team will be asked to attend, or the closest team will attend when they are available.

NORS teams often travel a significant distance and may not be familiar with your hospital layout and environment. All support you are able to offer them is always appreciated. Examples may include access to changing facilities, an area where they are able to take hand over from the Specialist Nurse (SN), access to relevant patient imaging and access to refreshments.

Locations of NORS Teams in the UK



The timing of retrieval surgery is co-ordinated by the specialist nurse in organ donation in association with the local intensive care team, local theatre team and NORS team. All efforts are made to limit the impact on elective and emergency operating capacity at local hospitals. The length of the retrieval surgery will depend on the type of donation and which organs are being retrieved. At least one member of a local theatre team is required to act as local liaison, to ensure that local protocols are followed and to act as count practitioner if required. NORS teams enter a shared care relationship with staff from the local hospital to ensure that the patient's best interests are met and the retrieved organs are in optimum condition for the purpose of transplantation.

Organ Donation Following the Verification of Death According to Neurological Criteria (DNC) (formerly known as Organ Donation after Brain Stem Death (DBD))

Organ donation following the verification of death according to neurological criteria (formerly known as organ donation following brain stem death (DBD)), takes place in a patient who remains mechanically ventilated. Once death is verified in the ICU the patient is accompanied to theatre by an anaesthetist at a time agreed between the SN, local theatre team and NORS team. All local theatre protocols will be followed as per local policy including a WHO 'sign in' procedure. Once the organs to be retrieved have been dissected, at a time agreed by recipient teams and the SN, the aorta will be cross clamped and the organs flushed with ice cold preservation solution. At this time the anaesthetist will be asked to cease ventilation. Each organ can then be retrieved and prepared for transport to the hospital where transplantation will take place.

Further information regarding organ donation following death according to neurological criteria (DNC)

<https://www.odt.nhs.uk/deceased-donation/best-practice-guidance/donation-after-brainstem-death/>

Organ Donation Following the Verification of Death According to Circulatory Criteria (DCD)

Organ donation following the verification of death according to circulatory criteria (formerly known as donation after cardiac death or non-heartbeating organ donation), takes place following the withdrawal of life-sustaining treatments deemed no longer to be in the patient's best interests.

The location of the withdrawal of life-sustaining treatment varies between hospitals in the UK and includes the intensive care unit or the anaesthetic room. Local hospital policy will dictate where this takes place. Whichever practice your hospital follows, the SN will discuss this with the theatre team to ensure all involved have a clear understanding of the pathway along with individual roles and responsibilities.

Further information regarding organ donation following death according to circulatory criteria (DCD), can be found here:

<https://www.odt.nhs.uk/deceased-donation/best-practice-guidance/donation-after-circulatory-death/>

Novel Technologies

Abdominal and Cardiothoracic NORS Teams throughout the UK are utilising novel technologies to increase the number and quality of organs available for transplantation. Examples include Abdominal Normothermic Regional Perfusion (ANRP) and the Organ Care System (OCS) machine. All equipment required where a novel technology is to be employed is brought to the local hospital by the NORS team.

ANRP is a technique where abdominal organs are perfused following the verification of death via an extra corporeal circuit for a minimum 2 hours prior to cold perfusion and retrieval. This technique has been shown to significantly improve the function of livers and kidneys in transplant recipients at 1 year. The Organ Care System (OCS) is a technique where a heart is retrieved from a DCD donor and placed in a specially designed box and restarted ex vivo. When novel technologies are employed, it is likely to increase the number of people in the attending NORS team. Any additional support that is required from the local hospital as a result of these or other novel technologies will be communicated to local staff members in a timely manner with a clear explanation of the process, individual roles and responsibilities given by the SN and NORS teams.

Further information regarding novel technologies can be found here:

<https://www.odt.nhs.uk/retrieval/policies-and-nors-reports/>

The Transfer of Organs Retrieved for Transplantation

Retrieved organs will usually be transported by road to hospitals where the transplant will take place. This will often mean several drivers need to be near the operating theatre so that organs can be handed over and leave as soon as they are packed. They will be in frequent contact with the SN and will require a place to wait (often the theatre coffee room).

Occasionally the NORS team will transport a retrieved organ back to their base hospital for transplantation. This may mean the cardiothoracic team packing up and leaving whilst the abdominal team are still operating.

Each NORS team is responsible to ensure that all local protocols are followed once the retrieval surgery is completed including completion of the surgical 'sign out' and that all instruments are packed in appropriate containers for transport back to their base hospital.

Staffing and Equipment required for DNC and DCD retrieval operations

All NORs teams are self-sufficient in terms of instrumentation, consumables and sterile supplementary equipment but do require a furnished operating theatre and the following equipment depending if a DNC or DCD donor:

DNC staffing and equipment

Scrub Team		Organ Preservation Practitioner	
Abdominal Only Retrieval		Abdominal Only Retrieval	
Operating table - Transfer PAT slide	<input type="checkbox"/>	1 x Medium surgical trolley (as working surface)	<input type="checkbox"/>
Surgical masks, gowns and gloves	<input type="checkbox"/>	Unsterile gloves	<input type="checkbox"/>
1 x Large surgical trolley	<input type="checkbox"/>	Syringes, needles and sharps container	<input type="checkbox"/>
1 x Small surgical trolley	<input type="checkbox"/>	1 x Drip stand	<input type="checkbox"/>
1 x Suction machines with extra inserts	<input type="checkbox"/>		
Diathermy Generators	<input type="checkbox"/>		
2 x Bowl stands	<input type="checkbox"/>		
1 x Mayo table	<input type="checkbox"/>		
1 x Weighing scales	<input type="checkbox"/>		
Swab/Curity bags for soiled raytec	<input type="checkbox"/>		
Additional Cardiothoracic Equipment		Additional Cardiothoracic Equipment	
1 x Large surgical trolley	<input type="checkbox"/>	1 x Medium surgical trolley (as working surface)	<input type="checkbox"/>
1 x Small surgical trolley	<input type="checkbox"/>	Unsterile gloves	<input type="checkbox"/>
1 x Basin Stand	<input type="checkbox"/>	Syringes, needles and sharps container	<input type="checkbox"/>
1 x Diathermy generator and plate	<input type="checkbox"/>	2 x Drip stand	<input type="checkbox"/>

Specialist Nurse		Staffing Required from Donor Hospital	
1 x Small trolley as working surface	<input type="checkbox"/>	1 x Circulating Practitioner to support both abdominal and cardiothoracic teams	<input type="checkbox"/>
Last offices sundries and copy of local policy	<input type="checkbox"/>	1 x Anaesthetic Assistant to support Anaesthetist in DNC donation	<input type="checkbox"/>

DCD staffing and equipment

Abdominal Only Retrieval		Abdominal Only Retrieval	
Operating table - Transfer PAT slide	<input type="checkbox"/>	1 x Medium surgical trolley (as working surface)	<input type="checkbox"/>
Surgical masks, gowns and gloves	<input type="checkbox"/>	Unsterile gloves	<input type="checkbox"/>
1 x Large surgical trolley	<input type="checkbox"/>	Syringes, needles and sharps container	<input type="checkbox"/>
1 x Small surgical trolley	<input type="checkbox"/>	1 x Drip stand	<input type="checkbox"/>
1 x Suction machines with extra inserts	<input type="checkbox"/>		
2 x Bowl stands	<input type="checkbox"/>		
1 x Mayo table	<input type="checkbox"/>		
1 x Weighing scales	<input type="checkbox"/>		
Swab/Curity bags for soiled raytec	<input type="checkbox"/>		
Additional if Normothermic Regional Perfusion (NRP) being used		Additional if Normothermic Regional Perfusion (NRP) being used	
1 x Diathermy generator and plate	<input type="checkbox"/>	1 x Large trolley for NRP sampling	<input type="checkbox"/>
Access to Air and Oxygen ports	<input type="checkbox"/>	1 x Drip stand with 4 hooks	<input type="checkbox"/>
1 x Basin Stand	<input type="checkbox"/>		
Additional Cardiothoracic Equipment		Additional Cardiothoracic Equipment	
1 x Large surgical trolley	<input type="checkbox"/>	1 x Medium surgical trolley (as working surface)	<input type="checkbox"/>
1 x Small surgical trolley	<input type="checkbox"/>	Unsterile gloves	<input type="checkbox"/>
1 x Basin Stand	<input type="checkbox"/>	Syringes, needles and sharps container	<input type="checkbox"/>
		2 x Drip stand	<input type="checkbox"/>

Specialist Nurse	Staffing Required from Donor Hospital
1 x Small trolley as working surface	<input type="checkbox"/> 1 x Circulating Practitioner to support both abdominal and cardiothoracic teams (ANRP is being used someone who has training to collect and sign for blood to give to the Preservationist)
Last offices sundries and copy of local policy	<input type="checkbox"/> 1 x Anaesthetic Assistant to support Anaesthetist in DCD where lungs are to be retrieved, to support the reintubation and reinflation of lungs.