

## Standard operating procedure for the retrieval of critically ill and injured children by SORT

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Description	Standard Operating Procedure for the retrieval of critically ill and injured children by SORT		
Level and type of document	Level 2: PICU Standard operating procedure – controlled document		
Target audience	Southampton Oxford Retrieval Team Staff Thames Valley & Wessex Critical Care Operational Delivery Network (ODN)		
List related documents / policies <small>(do not include those listed as appendices)</small>			
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### 1 Version control

Date	Author(s)	Version created	Approval committee	Date of approval	Date next review due	Key changes made to document
July 2024	F A Zanetti A .Irwin M. Griksaitis	2	Policy Group Child Health	Aug 2024	Aug 2028	

## 2 Introduction

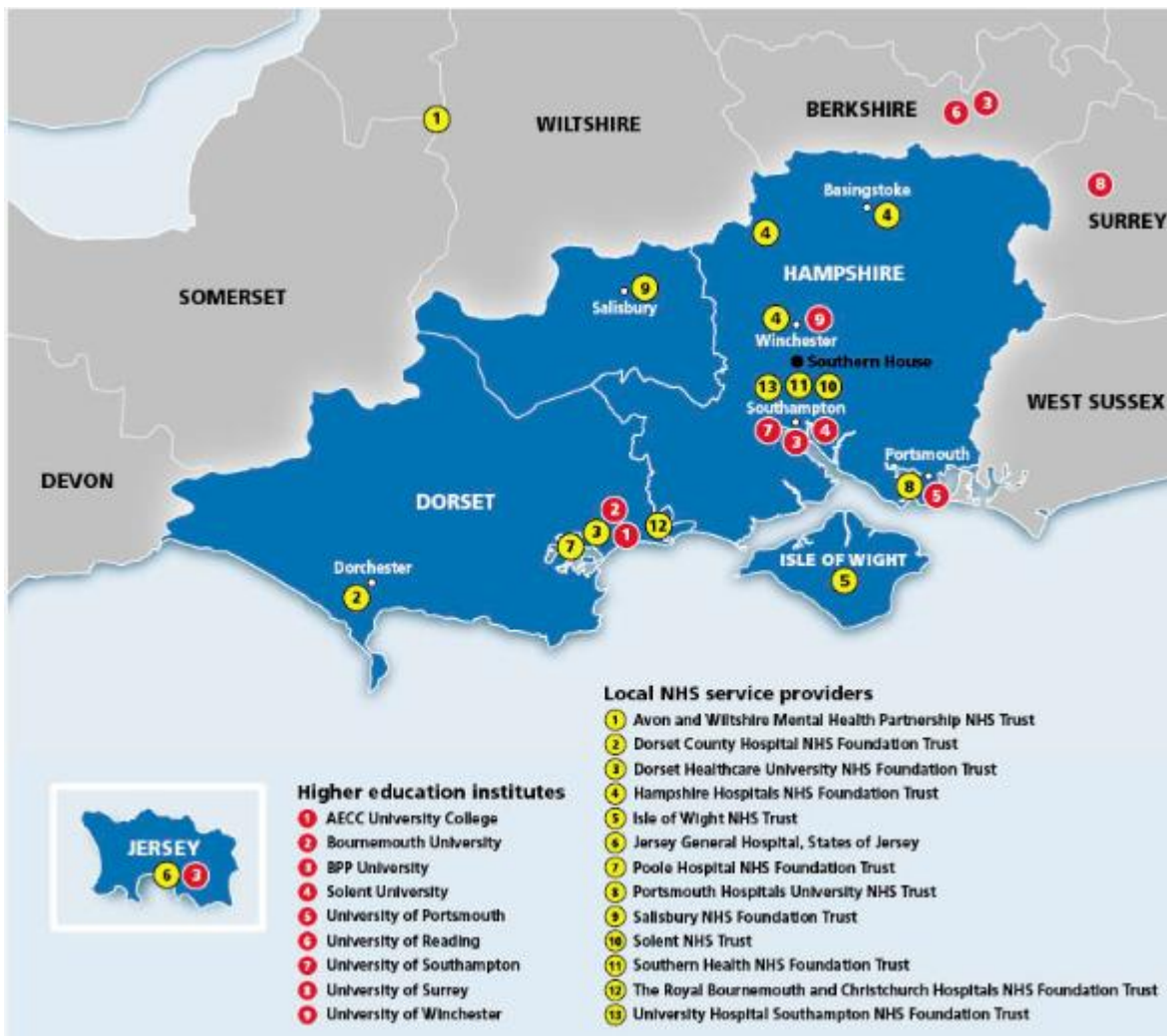
3.1 The Southampton and Oxford Retrieval Team (SORT) is a specialised service that is commissioned to provide (1) transport (2) advice service (3) regional education (4) ODN support for critically ill term neonates, infants, children, and adolescents (under 16 years of age) across the region.

3.2 SORT undertake around 500 level 3 paediatric critical care retrievals from around the region each year, with an additional 1000 advice phone calls. The SORT service is currently not commissioned for any transfers or retrieval of level 1 or 2 patients. This work is currently reviewed on a case-by-case discussion with the consultant.

3.3 SORT are equipped with dedicated ambulances and the essential equipment to undertake the retrieval of critically ill children.

3.4 SORT is divided into two hubs (Southampton & Oxford) covering both the Thames valley and Wessex Region. Whilst each hub is allocated to a specific region, there is extensive cross-coverage.

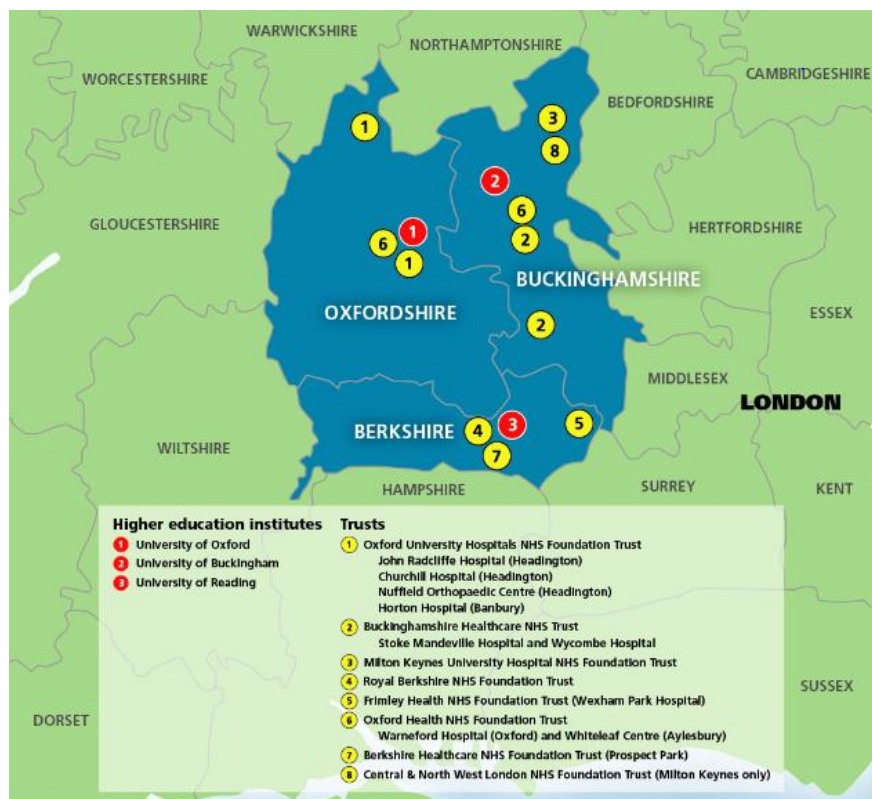
### Hub 1 Southampton: Wessex Region



3.4 Hub 1 is based in the Paediatric Intensive Care Unit (PICU) in Southampton Children's Hospital, as part of the University Hospital NHS Foundation Trust (UHSFT). This hub owns the governance of the SORT service and coordinates the phone line and SORT website.

- 3.5 The Wessex region has approximately 3 million people. This covers a broad area stretching across Hampshire, Isle of Wight, South Wiltshire, Dorset and the Channel Islands. The service covers 12 district general hospitals within this region.
- 3.6 The majority of Hub 1 transfers are via land using road ambulance. Some out of region hospitals, or more distant hospitals within the region, are occasionally accessed by rotary aircraft via The Children's Air Ambulance (TCAA).
- 3.7 The Isle of Wight is accessed by using the Red Funnel or Wight Link ferry (See Protocol for Retrieval by Ferry) or by using The Children's Air Ambulance (TCAA).
- 3.8 Hub 1 SORT provide care to the Channel Islands - Jersey and Guernsey. Gama aviation facilitate fixed wing aircraft for these retrievals. On occasions the coastguard helicopter has to be utilised to access the patients living on the Islands. This is for logistical reasons and challenging weather conditions.
- 3.9 The retrieval team at Hub 1 in Southampton consist of a doctor or Advanced Critical Care Practitioner (ACCP), specialised paediatric critical care retrieval nurse and a critical care technologist.
- 3.10 Southampton Children's Hospital has the provision of a transfer ambulance that facilitates repatriation of patients within the Wessex Region, in addition to SORT service.

### **Hub 2 (Oxford): The Thames Valley Region:**



Hub 2 is based in the Paediatric Critical Care (PCCU) in John Radcliffe Children's Hospital, as part of the Oxford University Hospitals Foundation Trust.

- 3.11 The Thames Valley Region has approximately 2.34 million people. This covers a broad area stretching across Oxfordshire, Berkshire, Buckinghamshire.

3.12 All of Hub 2 transports are via land.

3.13 The retrieval team based in Oxford consists of a doctor or ACCP, specialised paediatric critical care retrieval nurse and a driver.

### **3 Scope**

This standard operating procedure applies to the PICU and the team working within the SORT service in University Hospital Southampton NHS Foundation Trust.

### **4 Aim/purpose**

To define the retrieval process for the retrieval of an accepted paediatric critical care patient in the referring hospital to a level 3 paediatric critical care centre.

### **5 Definitions**

SORT: Southampton Oxford Retrieval service

UHS: University Hospital Southampton

OUH: Oxford University Hospital

ACCP: Advanced Critical Care Practitioner

CCT: Critical Care Technologist

TCAA: The Children's Air Ambulance

PCCS: Paediatric Critical Care Society

### **7 The Retrieval Team & Process**

#### **Staffing: Management Team**

The SORT leadership team at the Southampton Hub consists of:

- Clinical Lead for SORT: Dr Michael Griksaitis
- Clinical Lead for Regional Outreach: Dr Ahmed Osman
- Band 7 Lead Nurse for SORT: Francesca Zanetti and Amanda Irwin
- Band 6 Lead Critical Care Technologists: Matthew Watts and Jamie Brooks
- Data Information Officer: Lesley Molony

The SORT leadership team at Oxford Hub consists of:

- Clinical Lead for SORT: Dr Deirdre O'Shea
- Clinical Lead for Regional Outreach: Each DGH has its own allocated Consultant.
- Band 7 Lead Nurse for SORT: Victoria Gamble and Sarah Brice
- Data Information Officer: Lesley Molony

#### **Staffing: Clinical Team**

All transports are undertaken by a medical doctor or ACCP along with an experienced PICU transport trained nurse. In addition, the Southampton Hub uses a critical care technologist as part of the clinical team and they also provide the driving, whilst in the Oxford Hub there is a specific C1 qualified driver. These roles are explored in more detail below.

#### ***Medical Staff***

There is an allocated retrieval doctor or ACCP and dedicated SORT PICU consultant for each shift. The consultant will be present during all retrieval calls and will confirm whether the child requires a level 3 critical care bed and subsequent retrieval or provide clinical advice to referring teams. If retrieval is required, the consultant will select the appropriate team members based on the clinical case and the experience of the ACCP/registrars. The consultants will accompany the

Registrar/ACCP for training purposes or clinical need of the child or if no other team member is available.

### ***Nursing Staff***

The retrieval nurse is pre-allocated for that shift on the PICU off duty. All retrieval nurses are required to meet the standards provided by the Paediatric Critical Care Society (PCCS) and undertake the in-house training programme/supervision before being deemed competent to transfer critically ill children. Please see the 'Retrieval Nurse Standard Operating Procedure'.

### ***Critical Care Technologists (CCT)***

Within the Southampton hub the retrieval team will have a CCT to assist with the stabilisation of the critically ill child at the referring hospital. In addition, the CCT, drives the ambulance, after undertaking a Level 3 Certificate in Emergency Response Ambulance Driving course (Protocol for the activation of blue lights, when retrieving critically ill children). This is unique to the SORT team at the Southampton hub. The CCT background is a senior band 6 from either nursing (intensive care/emergency medicine) or operating department practitioner (ODP). The CCT's have to undertake annual in-house training.

### ***Ambulance Driver***

The SORT hub based in Oxford, use a team from British Emergency Ambulance Response Service (BEARS) to facilitate their driving. These are non-clinical team members, employed outside of the trust. Both teams require the driver of the ambulance to have the following criteria:

- IHCD Advanced Driving Certificate or BTEC Level 3 in Ambulance Emergency Driving.
- C1 on their UK driving licence.
- Submit a copy of their licence to the trust before operating the ambulance.

Under no circumstance must anyone drive the ambulance without the above criteria.

### **Duty of Care**

The referring hospital has the overall responsibility for the duty of care of the child they are managing during phone call discussions. SORT accepts a shared responsibility for the duty of care when the referral is made by the referring hospital and accepted for retrieval. Duty of care only falls solely on SORT when the child is loaded into the ambulance at the end of the transfer.

### **Consent for transfer of child**

When a retrieval is accepted, it should be assumed that the parents/guardian of the child has given implied consent for SORT to retrieve the child for transfer to a Level 3 centre. Discussions with the family will take place before moving the child to explain the reason for the transfer, the mode of transport and the risks and benefits associated with transferring the child. Language and age appropriate written and online documentation is available for families. Ideally one parent will be given the opportunity to travel with the child if this is possible.

### **Retrieval Outcomes**

#### ***Referral Call***

There is a dedicated phone number for SORT and the calls will be directed through to either Southampton or Oxford hubs depending on which option the referring hospital selects for their region. These calls are recorded for governance and training purposes. If a call comes through to any other phonenumber on PICU then the caller must be redirected to the designated SORT line.

ACCP, Registrar's, or Consultants take the referral calls from the referring hospitals.

If the Consultant is on a retrieval or not on the unit to answer the referral call the registrar or ACCP conferences the call by contacting them on their mobile phone. A second backup consultant (allocated to cover PICU) will also be available to answer these calls, if needed. All the Consultants phone numbers are available on the SORT Telephone directory.

The ACCP or registrar will enter the patient demographic information, referral information and hospital details prior to conferencing in the Consultant to the call. The patient's medical history, a systematic A-E assessment will be recorded. The referral outcome and diagnosis will be documented once the consultant is on the call and the information will be recorded on the MediCus database. An accurate account of the advice given to the referring team must be inputted onto the Medicus database. At the end of the call an outcome must be recorded and include:

- Accepted for retrieval.
- Retrieval not accepted (Time Critical)
- Retrieval not accepted (Advice Only)

### ***Accepted for Retrieval***

The consultant will take responsibility of accepting the patient for ongoing level 3 intensive care management. The referral must be discussed with the Nurse in charge.

The consultant and the Nurse in Charge will review PICU capacity to ascertain if the retrieval can be accepted to PICU at Southampton or if a bed needs to be located in another Level 3 centre.

The retrieval nurse and CCT must be informed of the retrieval at the time of acceptance, in order to ensure they can prepare for the transfer.

For fixed wing and helicopter retrievals the CCT must be informed at the earliest opportunity for the equipment to be prepared (Guidelines for Aeromedical Transports, Fixed Wing and TCAA)

There are two key performance indicators that must be met:

- Departing the SORT base within 30 minutes of accepting case
- Arrival at the patient bedside within 3 hours of accepting case.

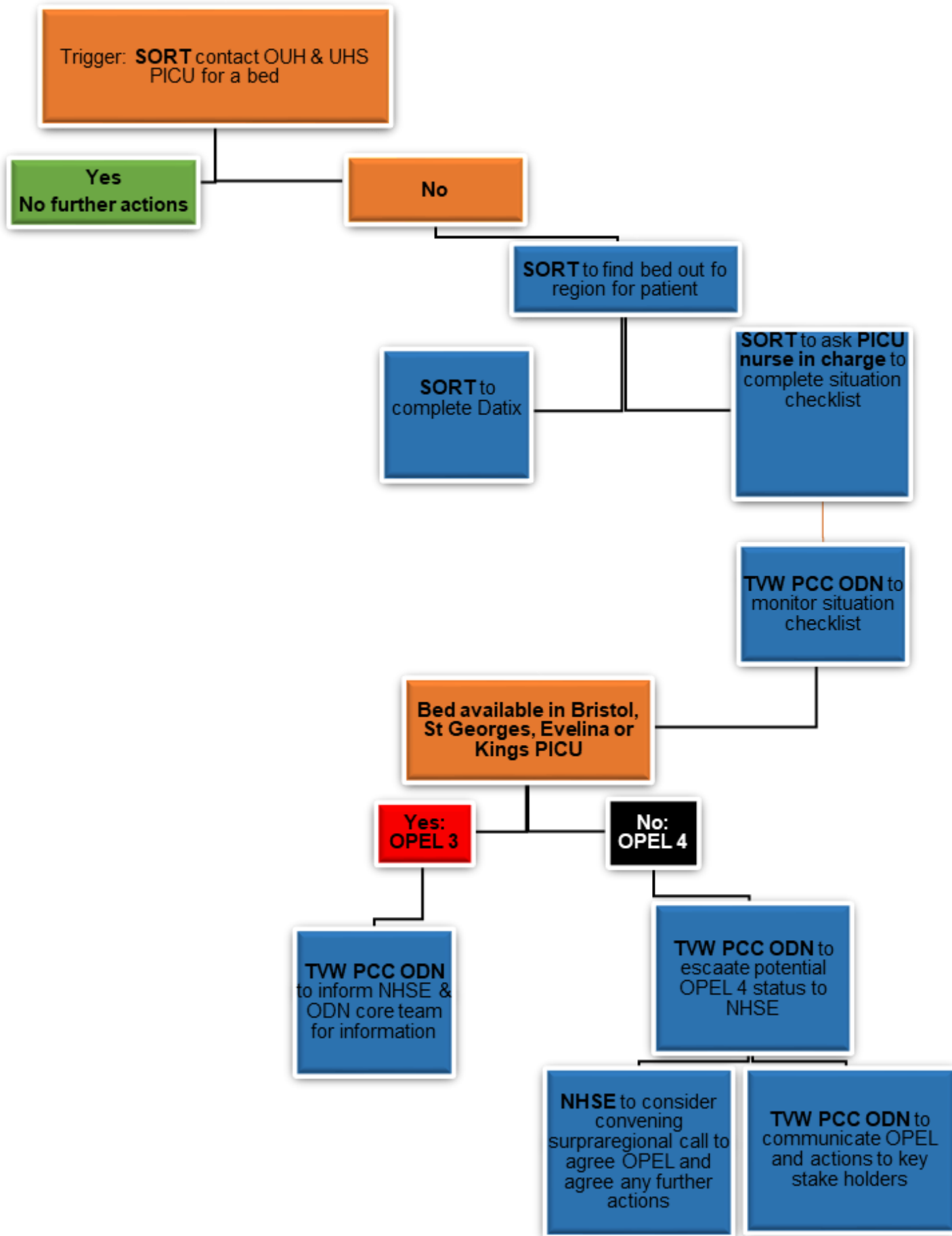
The team will then depart composed of appropriate personnel as described above.

### ***Bed Availability in Southampton and Oxford***

If there is no capacity for the patient to be retrieved to the nearest PICU to the referring hospital the consultant from will continue to give clinical advice on the SORT phone.

The consultant will consult the partner Southampton or Oxford PICU first to see if they have capacity to admit the patient.

If there are no beds in Southampton or Oxford, then a bed will need to be located out of region. The ODN OPEL pathway should then be followed.



It is the responsibility of the SORT locality specific team to retrieve and transfer the patient to an available Level 3 PICU bed located by the Consultant.

The responsibility for the treatment and care of the patient during this process falls to the SORT team until the patient is transferred to the available bed.

### ***Retrieval Not Accepted – Time Critical Transfer***

Time critical transfers maybe requested when it is deemed essential to promptly transport the child to a tertiary centre for urgent, life-saving interventions. Examples include time critical head injuries (most common reason), blocked VP shunts, spontaneous intracranial bleeds with raised intracranial pressure, hyperammonaemia (for urgent hemofiltration), compromise to limb perfusion or surgical abdomen with potential loss of bowel.

The referring hospital will be asked to transfer the patient to Southampton or Oxford depending which region the patient has come from and this will either be to the Emergency Department or PICU/PCCU. The referring team will be asked if they have a team with the necessary skills to safely transfer the patient to the level 3 centre. The referring team will be requested to complete the STOPP form (see Appendix) prior to transfer. If the referring hospital is unable to transfer the patient safely then SORT Southampton or Oxford must retrieve the patient.

### ***Retrieval Not Accepted – Advice Only***

A significant volume of work is advice only calls. All referral details must be documented as discussed above. Each case must have a documented follow up phone call before the case is closed.

### **ECMO Referrals**

Patients that may require either cardiac or respiratory ECMO in the Thames Valley and Wessex region will be retrieved by Southampton or Oxford hubs and transferred to PICU at Southampton. The patient will be assessed for ECMO and initiated if required.

### **Retrieval Process**

#### ***Pre-Departure from Hub Base***

The transport team must assemble for a team brief, prior to departure.

The required standard is to depart the PICU within 30 minutes from accepting the retrieval.

The pre-departure checklist (See Appendix) can be found as a QR code located on the retrieval bags, retrieval trolley and on the door of the retrieval cupboard.

The pre-departure checklist must be completed by scanning the QR code with the retrieval team: Consultant/ ACCP/ Registrar, CCT and Nurse present.

The retrieval nurse must sign out the fridge drug pack and the controlled drug pack with another qualified nurse ensuring that the nurse in charge is informed of this.

The driving category needs to be discussed with the Consultant, prior to departure (See SOP - Driving and Care of Trust Vehicles Policy).

#### ***At The Referring Hospital***

Multidisciplinary and the referring team on arrival to the hospital.

A handover is taken from the referring team on arrival to the unit.

If the patient is unstable or CPR is in progress the handover can be taken later when the patient is stabilised.

The care delivered to the patient at this time is a shared multidisciplinary approach and both the referring team and the SORT team should work together to provide the care to the patient that is required to stabilize for transfer to the Level 3 centre.

Ensure all equipment is plugged into the mains supply and the oxygen hose is plugged into the wall oxygen.

A full assessment of the patient must be carried out and documented on Medicus on the iPad.



Following the assessment of the patient initial management will be outlined by the Consultant/ACCP or Registrar. If the consultant is not present, then the consultant must be contacted to discuss the management of the patient.

Endotracheal and nasotracheal tubes must be secured using the Melbourne strapping technique for transfer.

A chest x-ray must be done to ensure the endotracheal tube is in the correct place prior to departure. Ensure the end-tidal carbon dioxide monitoring is attached to the endotracheal tube.

A naso-gastric tube or an orogastric tube must be inserted and put onto free drainage bag. Children require a minimum of 2 peripheral cannula/intraosseous lines or 1 central venous cannula which are flushed and working.

A rescue line attached to the cannula or CVC must be placed prior to departure which enables the team to administer any drugs or fluids on transfer back in the Ambulance.

Infusions should be made up according to the SORT infusion guidelines.

Ventilated children are required to be adequately sedated, and muscle relaxed for the transfer back to the level 3 centre for safety.

### ***Prior to Departure of Referring Hospital***

Ensure relevant paperwork is provided. This may include discharge summary, drug charts, fluid charts and observation charts. Relevant imaging should be transferred to the hospital that the child is being taken to via EXOPACS.

Update the PICU destination to handover the latest update on the child's condition. This should include infusions that are currently running, ventilator settings and other specialist requirements i.e., CFAM, CVVH, HFOV ECMO and give an estimated time of arrival to the PICU and what you need ready for your arrival.

Discuss with the family to gain consent for the journey, the potential diagnosis, outcome and any other transport issues.

All parents travelling in the ambulance must be briefed and agreed to abide by the rules of travelling in the ambulance (See SOP A Guideline for Safe Transfer of a Parent Accompanying their Child in the Ambulance during Paediatric Retrieval).

Prior to departure, a pre-departure checklist must be completed with all SORT members present. (See Appendix)

Before departing the referring hospital ensure that all personnel in the ambulance are seated and wearing a seatbelt.

### ***During Transport***

The SORT members primary responsibility is to provide clinical care to the child to ensure a safe transfer to the regional centre. However, their own safety is paramount.

The SORT members should have easy access to a drug rescue line and pre-prepared drugs, the infusion pumps and ventilators. Monitoring should be easily seen.

If there is a requirement for the retrieval staff to leave their seats in the ambulance, then the CCT or BEARS driver of the vehicle should be notified using the call system to either stop urgently or stop when safe

to do so. The team and parent are under no circumstance able to leave their seat while the vehicle is in motion.

The parents are required to stay seated until the CCT or BEARS driver advises otherwise.

If an accident occurs, the SOP for **accidents in transfer** needs to be followed.

### ***On Returning to PICU***

Please complete the 'Return from retrieval' checklist (QR Code). (See appendix)

Handover is completed to the PICU team taking over the care over of the patient, and all paperwork is handed over to the team.

Ensure CD pack is restocked and sealed if used and signed in and stored in the CD cupboard (refer to the Trust CD Drug Policy).

Ensure that any drugs or fluids, used throughout the retrieval have been prescribed on MediCus and that drugs are signed for, with your unique pin code.

Any CD drugs or recordable drugs from the CD pack must also have the amount discarded documented in The CD book.

Restock the fridge pack if used, seal and return to the fridge.

In conjunction with the other retrieval team members, restock and reseal the retrieval bag and trolley.

Ensure the MediCus form is complete and the iPad is synchronised.

The transport trolley must be cleaned thoroughly with the appropriate cleaning agents. Please refer to UHS infection control guideline. Please place a green 'I am Clean/Date'

Ensure the Transport Trolley is plugged in to the electricity supply and ensure all the charging lights on the equipment are lit.

If any critical incidents have been identified during this retrieval, details of the incident need to be recorded as an 'adverse event'.

CCT's will ensure the Ambulance is refuelled and restocked.

### **Retrieval Governance**

All SORT calls are recorded for training and governance purposes and the SORT leadership team can access these as needed.

Each SORT case is peer reviewed on a weekly basis and feedback provided (as relevant) to the referring team, SORT members on the transport and the accepting PICU. This can also be areas of excellence.

SORT feeds into the Thames Valley and Wessex ODN critical care morbidity and mortality group for cases that have raised concern in the region and need further investigation.

The SORT service also provides regional outreach education and governance for each DGH, offering one full day per year to each DGH.

## 6 Document review

All Trust policies will be subject to a specific minimum review period of one year; we do not expect policies to be reviewed more frequently than annually unless changes in legislation occur or new evidence becomes available. The maximum review period for policies is every three years. The author of the policy will decide an appropriate frequency of review between these boundaries.

Where a policy becomes subject to a partial review due to legislative or national guidance, but most of the content remains unchanged, the whole document will still need to be taken through the agreed process as described in this policy with highlighted changes.

This Standard Operating Procedure for the Retrieval of Critically Ill Children will be reviewed 2028 every 3 years.

## 7 Process for monitoring compliance

The purpose of monitoring is to provide assurance that the agreed approach is being followed. This ensures that we get things right for patients, use resources well and protect our reputation. Our monitoring will therefore be proportionate, achievable and deal with specifics that can be assessed or measured.

Key aspects of this policy will be monitored:

Element to be monitored	Referral pathways
Lead (name/job title)	Dr M Griksaitis, A Irwin, F Zanetti
Tool	
Frequency	Weekly governance meetings
Reporting arrangements	

Where monitoring identifies deficiencies, actions plan will be developed to address them.

## 8 Appendices

SORT Departure Check List –

<https://docs.google.com/forms/d/11ramtNQRvKIVFeGkLdOGLgTQAV8Htd7N9lxK2Evm1ds/edit>

Leaving Referring Hospital Check List -

[https://docs.google.com/forms/d/1t0E7r0XASX\\_SV0I9dpYDMsK9AzqoIA5T93yECRYhtSc/edit](https://docs.google.com/forms/d/1t0E7r0XASX_SV0I9dpYDMsK9AzqoIA5T93yECRYhtSc/edit)

Return from Retrieval Check List-

<https://docs.google.com/forms/d/1clXcblhc964Ob-GCmZlyuw7rtdcd29r5Afp11obtEtc/edit>

[STOPP safe transfer of paediatric patients tool \(interhospital transfer tool\) \(sort.nhs.uk\)](#)