Standard Operating Procedure for the Retrieval of Critically-ill Children
1. Introduction

The Southampton PICU retrieval service /Second Ambulance service performs approximately 220 retrievals and 370 take-backs per year within the Wessex region. It covers a population of approximately 3 million people, and services 10 district general hospitals within the region. This includes the Isle of Wight (see protocol for retrieval by ferry), and The Channel Islands Guernsey (see Protocol for air retrieval). The retrieval service has its own ambulance and dedicated equipment. The retrieval team normally consists of a doctor, a nurse and a critical care technician/ driver.

1.1 Medical Staff
Only consultants and registrars, who have completed their retrieval training, should undertake retrievals. This involves a study day, examination on the use of retrieval equipment and a minimum of 3 retrievals with a consultant (see doctor competencies). Consultants should attend update sessions every 3 years.

Exceptions to this rule are the “take-back” of stable self-ventilating children. The decision over who will go on the retrieval rests with the consultant and is dependant on severity of illness, complexity of underlying diagnosis, method of transport (land or air), and experience of junior doctors on call.

It is essential that an experienced, trained doctor remain with the patient during the entire length of the retrieval.

1.2 Nursing Staff
All nurses need to fulfil the PICS criteria (see nurse retrieval protocol) before being allowed to do any retrieval. The retrieval nurse has to have fulfilled a training programme and continue with yearly face to face update session and complete the competency log every 3 years. Each nurse must also attend at least 6 retrievals in each 12 month period.

A training programme is in place, as well as update sessions for nurses and doctors.

1.3 Ambulance Drivers/Critical Care Technician (CCT)
No one is allowed to drive the ambulance or the rapid response vehicle unless they have had the appropriate training (IHCD advance driving certificate). All drivers of these vehicles have to be registered on the insurance- NO-ONE can drive either vehicle if they do not comply with the above 2 criteria, no matter what the emergency. Critical care technicians fulfilling the above criteria now drive on all our retrievals. They provide a 24 hour service and are resident within the hospital during their driving shifts. This unique dual role provides the retrieval service with both a driver and CCT support during the stabilisation period at the referral hospital.

Very rarely, in the case of multiple retrievals, a technician or consultant may drive the rapid response vehicle to the referring hospital, and await the ambulance.

1.4 Duty of Care
PICU accepts shared responsibility for the duty of care as soon as a referral is made. It is, therefore, imperative that ALL referrals are made on the conference telephone system (so that they can be recorded), as well as all information being collected on the transfer sheet and ALL advice given documented and signed.
1.5 Consent
By accepting the retrieval, it is presumed that the family of the child have given implied consent.
All doctors on retrieval will discuss with the family the reasons for the transfer, the mechanism of transfer, and the risks associated with transfer (see guideline for family discussions on retrieval).

1.6 Ministry Of Defence Retrievals
The retrieval service is involved in moving all critically ill children worldwide who are dependants of the British Forces (see MOD protocol). There is a separate on-call rota for the nursing and medical staff. No MOD retrieval will interfere with the transport of a child within the Wessex region.

2. Retrieval Process

2.1 Referral Call
2.1.1 Only registrars or consultants should take the initial referral call.
2.1.2 The referral call should be taken ONLY on the dedicated referral phone number (023 80775502). If the referral is made on another telephone, the referring doctor should be asked to phone back on the correct number.
2.1.3 If the consultant and registrar are both on retrieval the consultant should be conferenced in immediately.
2.1.4 The person receiving the call should record initial demographic data and then conference call the consultant prior to collecting all other information. This will decrease duplication of information on the part of the referring hospital doctor.
2.1.5 EVERY piece of information requested on retrieval sheet MUST be recorded.
2.1.6 If at all possible a consultant should make the referring call.
2.1.7 The consultant on call should try at all times to talk to the local consultant about the child.
2.1.8 All information MUST be recorded, as well as ALL advice given. This is essential, as this document will form part of the child’s medical records.

2.2 Accepting a referral
2.2.1 Only a consultant can accept a referral.
2.2.2 This needs to be discussed with the senior nurse in charge.
2.2.3 The consultant and nurse in charge will decide on the team to perform the retrieval, depending on the case and the experience of the available staff.
2.2.4 If air retrieval is necessary, this needs to be thought of early and the correct procedure followed (see air transport protocol).
2.2.5 Inform the CCT/Driver immediately after accepting the referral. Ensure you give them a realistic time of departure to prevent them having to sit around waiting.

2.3 When PICU has no bed available
2.3.1 Clinical advice will be given to the referring team by the PICU consultant
2.3.2 The PICU consultant will source a bed for the patient in the nearest available PICU
2.3.3 If PICU has a team available they will conduct the retrieval and deliver the patient to the PICU accepting the patient
2.3.4 If the Southampton retrieval team transfer the patient they will work under the guidance of their consultant and care will be handed over to the receiving team PICU on arrival of the team with the patient, to their unit.

2.3.5 If there is no retrieval team available the accepting PICU will be asked to retrieve the patient.

2.4 ECMO referrals

2.4.1 If the patient fulfils ECMO referral criteria (See CATS website) the PICU consultant will refer the patient to the Children’s Acute Transport Service on 0800 085 0003.

2.4.2 In the event that the patient is accepted by CATS as an ECMO referral it becomes their responsibility to retrieve the patient.

2.5 Pre-departure

2.5.1 All information is on the pre-departure checklist.

2.5.2 The gold standard is to depart within 60 minutes of the time of the telephone call (20 minutes from the decision to retrieve).

2.5.3 Ensure all equipment has been checked. The REGISTRAR MUST do this even if the CCT or nurse has set it up.

2.5.4 Ensure pumps have enough battery supply and that ventilator is working especially the tubing and PEEP valve on the Oxylog.

2.5.5 The retrieval nurse must sign out the refrigerator and CD drugs and place them in the yellow drug bag.

2.5.6 Ensure pre-departure checklist is completed.

2.5.7 Ensure all tags removed from the bags are written down on the retrieval checklist.

2.5.8 Discuss with consultant on call about the need for blue lights and sirens (see protocol for driving and activation of blue lights).

2.6 At Referring Hospital

2.6.1 Obtain handover from referring hospital staff. This should be done for every retrieval BEFORE examining the patient, UNLESS a life-threatening event is occurring e.g. CPR.

2.6.2 Handover should initially include all members of the team so that a general overview of the patient is obtained.

2.6.3 It is important to remember that all referring hospitals have experienced staff that can and should be used. This is especially true for intubation and line insertion, and helping with ongoing care.

2.6.4 NO DOCTOR should use an anaesthetic machine unless they have been specifically trained in their use.

2.6.5 All endotracheal/ nasotracheal tubes should be secured with the Melbourne strapping technique.

2.6.6 All ventilated children should have an oro- or naso-gastric tube.

2.6.7 All ventilated children should have end-tidal pCO₂ monitoring.

2.6.8 All ventilated children should have a chest X-ray showing ET tube position prior to departing.

2.6.9 Ensure there is sufficient portable oxygen.

2.6.10 All children should have a minimum of 2 peripheral or 1 central venous line.

2.6.11 If the child is on epoprostenol this should be running through a dedicated venous line.

2.6.12 All infusions should be made up according to the PICU infusion chart, unless countersigned by a consultant.

2.6.13 All ventilated children should be well sedated and paralysed for the transport unless discussed with a consultant.
Following assessment of the patient and initial management, the PICU consultant should be rung to inform of progress, and discuss ongoing management.

All electrical equipment should be plugged in to the mains to conserve battery life.

The ventilator should be plugged into wall oxygen.

Every ventilated child should have a minimum of a chest X-ray, blood gas, and complete set of observations prior to departure.

Ensure all tags removed from the bags are written down on the retrieval checklist.

Prior to departing Referring Hospital

All information is on the pre-departure checklist.

Ensure you have paperwork, X-rays and all scans AND CD for head injury patients.

Telephone PICU to update condition and give an estimated time of arrival.

Ensure you have specified what infusions, ventilator and settings; medications will be required as well as any specialist equipment (such as CFAM), or specialist support (such as neurosurgery).

Ensure all management decisions have been discussed with the on-call consultant.

Ensure working intravenous access, oro-gastric tube on free drainage, bag and mask available, the necessary resuscitation equipment and drugs available dependant on the severity of illness. The minimum available is a bag and mask.

Ensure adequate oxygen and power for the journey.

Discussions with the family regarding consent, diagnosis, outcome, and all transport issues.

Ensure any parent accompanying the team in the ambulance has read and agreed to the terms of travelling (See guideline for Parents accompanying the retrieval team)

Ensure that all team members and parents are seated with seatbelt insitu before the ambulance departs.

In the event that the team need to leave their seats to treat the patient mid journey, the ambulance must be stopped as soon as it safe to do so and remain parked until the team are able to return to their seats.

On Returning to PICU

Ensure adequate handover to PICU staff.

Inform consultant of patient’s arrival on the intensive care unit.

It is the duty of the nurse, doctor and CCT on the retrieval to ensure ALL pumps, Propaq, and other electrical equipment are plugged in.

All fridge and CD drugs must be accounted for, signed back in or disposed of.

All retrieval equipment must be checked. This is the duty of the DOCTOR, NURSE and CCT performing the retrieval.

All pouches and bags must be resealed and seal numbers written down in the retrieval paperwork.

All paperwork must be completed and photocopied. The original goes in the patient’s notes. Please remember that this forms part of the patient’s journey and is therefore essential for medico-legal purposes.

Any critical incidents must be filled in on BOTH the retrieval paperwork and the unit critical incident forms.