

PATIENT TRANSPORT  
INTER-HOSPITAL TRANSFER

Principles

The primary aim is to provide a safe transfer for the patient either from the referring hospital to KKH, or from KKH to another center for specialized investigations and/or treatment.

During the transfer, the level of care, monitoring and therapy provided to the patient should always be maintained or increased.

The personnel, drugs, equipment available for the transfer should cover the worst-case scenario(s). The gas cylinders and power supply should be sufficient for double the estimated total transfer time.

*Consent must be obtained prior to every inter-hospital transfer.*

The decision for transfer must be made by a consultant. All patients must be stabilized as far as possible before transfer/transport.

All transfers involve increased risk to the patient, which must be balanced by the benefit as a result of being transferred to the receiving centre.

Once the patient is in the care of the transfer team:

- Monitoring must not be interrupted; this requires 'double' monitoring at points of physical transfer between sets of equipment.
- The patient, the transfer team and equipment travel as one unit and should not separate.

- Any unexpected clinical finding, logistic problem or change from the planned transfer arrangements should be discussed with the consultant in charge of the transfer.
- The minimum level of care and intervention by the transfer team should be what the patient would have received at KKH.

In summary: *make it safe, take no short-cuts, communicate thoroughly and repeatedly.*

Some situations which may require inter-hospital transfer of children to / from KKH

- To KKH
  - o Any child requiring intensive care
  - o Neonates requiring further care
  - o (Potentially) unstable airway
  - o (Potential) haemodynamic or respiratory compromise, or collapse
  - o Any child with depressed consciousness
  - o Any child requiring emergency surgery with unstable physiology, or a need for resuscitation pre-procedure.
  - o Any child who is already a patient in an intensive care unit, but needs transfer.
- From KKH to another center for treatment.
  - o To NNI for interventional radiological procedures
  - o To SGH or TTSH for neurosurgical procedures

For interhospital transfer of paediatric patients, the KKH CHETS Team may be activated (tel: 6394 1778 if required).

For more information, please refer to CHETS protocol from the Children's ICU. At this point in time, the Paediatric Anaesthesia Service is not part of the CHETS retrieval team. If in doubt, the case should be discussed with the CHETS consultant on call.

The Paediatric Anaesthesia department may be occasionally be involved in the transfer of anaesthetized patients to another hospital for specialized surgical procedures. In these cases, a CHETS consent is required

The preparation for the above scenario should include:

1. Personnel to inform:
  - Anaesthetic Nurse Managers of KKH and the receiving hospital
    - regarding the transfer of the anaesthetized child for surgery.
    - The nursing staff will need to know the patient's name, age, weight, diagnosis and date/ time of planned surgery.
  - Head of both Anaesthesia Departments
    - If the procedure is to be carried out in another hospital, anaesthetic support for the patient should be determined in advance. This should be coordinated with the Anaesthetic Department of the receiving hospital. Appropriate medicolegal cover, accreditation and credentialing should be secured in advance.
  - Advance notification of the KKH CHETS team (tel: 6394 1778) and ICU team, as well as confirmation of the day of procedure.

2. Equipment and Drugs:
  - All equipment and drugs needed for the case must be communicated with the relevant Anaesthetic Nurses, bearing in mind that the receiving hospital may not have the paediatric equipment needed.
3. Considerations for transfer
  - Determine if a patient stretcher or incubator (for neonates) is needed.
  - Consider the need for spinal protection.
  - Estimate the number of syringe pumps needed.
  - Determine the transport ventilator needed. At present, KKH CHETS uses the Oxylog.
  - Oxygen/ air cylinders should be sufficient for double the estimated transfer time.
4. Consider the need for a postoperative ICU bed in KKH and at the receiving hospital, in the event that the patient is unfit for transfer back to KKH.

### Pre-transfer Tasks

- Do a pre-transfer / pre-operative visit to patient & parents.
- Obtain consent for anaesthesia and transfer.
- Call the ward to arrange for the ambulance.
- In addition to the routine preoperative work-up, explain to parents (and child, if of suitable age) the steps to be taken on the day of transfer/transport.
- Inform the parents know where the child is going, especially if they are following in a separate vehicle.
- Double check the drugs and equipment with the Anaesthesia Consultant and Anaesthetic Nurse.
- Familiarize yourself with the route from ambulance bay to operating room / interventional suite / etc at the receiving hospital.
- Be familiar with the setup and layout of the Operating room / interventional suite at the receiving hospital. Ensure adequate electrical outlets, gas supply etc.

### Anaesthetic Team:

- Usually comprises of a Paediatric Anaesthetist and resident.
- KKH paediatric AU nurse may be needed.

### Prior to Departure:

- Ensure consent for anaesthesia, procedure & transfer is obtained.
- Double check the equipment, drugs, gas and power supply.
- Ensure that the receiving site is prepared for the patient's arrival.
- Load ambulance – check that it is the correct vehicle. All equipment should be properly stowed and secured.

### **In Transit:**

- Review the expected drug doses and infusions.
- Discuss the plan of management and intervention with the other members of the team.

### **On Arrival:**

- Transfer the patient to the OR / Interventional suite.
- Re-examine the patient, go through the ABCs and check all tubes, lines and catheters for position, patency and security. Re-site, or secure any loosened dressings/ lines.
- Check OR / Interventional suite anaesthetic machine and ventilator.
- If the anaesthesia team at the receiving hospital is involved in the care of your patient, do a proper handover with them.
- Depending on the clinical situation, begin physical transfer from transport trolley to OR table.
  - Connect to new monitors before disconnecting existing monitoring.
  - Transfer infusions to new syringe pumps.
  - Transfer the patient from the stretcher/incubator
  - Transfer to the OR ventilator (if needed).
  - Begin OR monitoring at distant site.
- Stabilize patient before treatment commences. Do GXM if blood is needed for the surgical procedure.

### **Post-procedure:**

- Ensure patient is stable before performing all the above 4 steps in reverse order.
- Ensure that there is an ICU or HD bed available for patient on return to KKH.
- Call ahead to inform the relevant ward of time of departure and book the return ambulance.

Before departure:

- Prepare the drugs/ infusions required during transit.
- Ensure that patient is stable and fit for transfer to KKH.
- Let parents know where the patient will be going (especially if not returning to the original location).
- Load the ambulance, securing all equipment and patient.

In transit:

- Administer any drugs or simple treatments as needed.
- If procedures (e.g. IV, ETT, chest tube) are necessary, ask the ambulance driver to stop, do the needful and only continue when the patient is stabilized.
- Parameters should be taken and recorded every 15 minutes
- If the patient is unstable upon arrival to KKH, divert to the Childrens' Emergency. Otherwise the child may be transferred to the ICU or HD.

On arrival at KKH CICU/ HD:

- Hand-over to the ICU registrar and ensure that the primary physician has been contacted.
- Obtain a last set of parameters. If indicated, perform an ABG.

**PATIENT TRANSPORT**  
**INTRA-HOSPITAL TRANSFER**

Patients being transferred from Emergency Room/ICUs to OT, or from Interventional Suites to OT/ICU within the hospital require the same degree of care as Out of Hospital Transfers.

**INTRAHOSPITAL TRANSFER**

Communicate

- Surgeon / care team
- Determine procedure to be done / timing
- Availability of facilities and appropriate staff
- Consider special environments e.g. MRI

Check

**Patient**

- Vital Signs and stability
- Investigations / blood gas
- Airway / ventilation: type secure and verify placement if necessary, ventilator settings
- Circulation: vascular access and circulatory support requirements
- Drugs the patient is on: doses and timing
- Resuscitation drugs
- Consider sedation / paralysis before transfer.

**Equipment**

- Self-inflating bag, T-piece system, air pressure gauge, face mask oral airways of appropriate size
- Monitors and pumps: ensure batteries are fully charged

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