Chapter

6

Paediatric Anaesthesia in Non-specialist Centres

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Introduction

There has been a trend to centralisation of paediatric services in the United Kingdom over the last 30 years. According to the Office for National Statistics (ONS), in 2019 there were 12.7 million children under the age of 16 in the United Kingdom. However, the specialist care for these children and young people is provided by only 27 specialist centres. Centralisation has reduced the volumes of paediatric surgery in the district hospitals, reducing confidence and experience, and has increased the waiting times for children to access elective surgery. Centralisation of children's services has in turn also led to a significant shift in the delivery of non-specialist, low-complexity elective surgery to tertiary centres, increasing pressures on specialist resources, beds and productivity. In many cases, these children could be treated locally as day cases. Children are often transferred to a tertiary centre when earlier care closer to home would be a better option, for example, for appendicectomy or treatment of testicular torsion. This chapter will describe the importance of multidisciplinary networks of care and outline how to provide high-quality services for children in a non-specialist centre.

Background: Paediatric Surgery in Non-specialist Centres

The overarching principle for children's surgery is that children are treated safely, as close to home as possible, in an environment that is suitable to their needs. Concerns about outcomes in paediatric surgery in the United Kingdom led to the 1989 National Confidential Enquiry into Perioperative Deaths (NCEPOD) and the recommendation that surgeons and anaesthetists should not undertake occasional paediatric practice. This in turn led to the centralisation of children's surgery, a trend that has continued in the United Kingdom over the last three decades. The recent Anaesthesia Practice in Children Observational Trial (APRICOT) study highlighted a lower incidence of severe critical events during anaesthesia in children from UK hospitals compared to a non-UK cohort of patients, partly attributed to more experienced dedicated paediatric anaesthetists managing higher-risk patients in the United Kingdom.

A recent review of paediatric surgical services by NHS England and NHS Improvement highlighted the need to release capacity in specialist centres, to increase the use of day surgery, make hospital environments safer and more child friendly, reduce the variation in the delivery of paediatric surgery at individual hospitals and improve the care of children requiring emergency surgery. The report identified whole system change was required to develop networks through a coordinated approach for children to access both specialist and non-specialist care. Strong leadership and good relationships between management and clinicians are key to this process.

Ideally, clinicians in non-specialist centres should be trained to provide care for less complex cases, whilst children with complex conditions or that require specialised surgery are treated in specialist centres with access to appropriate expertise and facilities. General paediatric surgery, ENT, orthopaedics and ophthalmology form the bulk of elective surgery that can be delivered in the district general hospital (DGH). There needs to be support and continual training for surgeons, anaesthetists, paediatricians and paediatric nurses to improve confidence to undertake the work locally, and networks should ensure the right workforce and resources are available. Care should be child and family centred and as close to home as possible. Some specialist hospitals can provide an outreach service to deliver non-specialised elective surgery locally.

Regional Networks

Networks bring together hospitals and commissioners within a region to work collaboratively to deliver services, ensuring children can be treated safely as close to home as possible, with referral pathways designed for surgery and critical care agreed between specialist and non-specialist hospitals in the network.

A network is led by a clinical director and manager with representation from hospitals across the region and patient groups. There should be a clear governance infrastructure. The working groups are accountable to the commissioning body, and there are key performance targets to work towards based on national recommendations.

Working groups and services include, for example, elective and emergency paediatric surgery pathways and models of care, critical care pathways and retrieval pathways. Most children's services should be provided locally, but at times transfer of children to specialist centres is needed, and within the network there should be robust arrangements and standards for this.

The aim of networks is to ensure a reduction in the variation of treatment, improve access to treatment no matter where you live in the region, standardise clinical management and upskill and train staff across the network.

Tertiary centres can support the DGHs in the network through development of clinical guidelines, educational competency frameworks and training opportunities and outreach training, ideally based on cases that have been transferred, particularly if there have been any untoward events.

Surgery and Procedures in a Non-specialist Centre

Day-case surgery is often preferred for children having elective surgery, especially in a DGH providing that the child is ASA 1 or 2 and the surgical procedure is straightforward with low risk of postoperative complications. When managing a paediatric service within a DGH, it is crucial that standards be maintained at the same level as in a specialist centre. The Royal College of Anaesthetists Guidelines for the Provision of Paediatric Anaesthetic Services 2020 made the following recommendations for day-case surgery:

- Day-case surgery should be delivered to the same standard as inpatient care. Additional measures to promote early discharge, for example scheduling younger patients early in the day allowing time for recovery and discharge and management and prevention of postoperative pain and nausea, are vital.
- The type of surgery provided in each hospital is linked to the skills and competency of the staff.
- Ideally patients should be managed in a dedicated paediatric unit, on a dedicated theatre list or have specific paediatric time allocated if using shared adult facilities.
- An experienced anaesthetist appropriately trained in paediatrics is present for the cases/theatre list (paediatric anaesthetic services should always be consultant led).
- The lower age limit for children will depend on the facilities, patient condition and staff experience. Ex-premature infants should not be considered until at least 60 weeks postmenstrual age.
- Good preoperative information should be provided.
- Clear discharge criteria should be available and documented, along with clear discharge advice for parents/carers and analgesic requirements for when at home.

The Royal College of Anaesthetists (RCOA) curriculum 2010 states that all certificate of completion of training (CCT) holders (and equivalent) should be competent in the perioperative care of children aged three years and over after successfully completing their higher-level training. With the upcoming changes in the anaesthetic curriculum in 2022, this will be reduced to children aged over 12 months. It is expected that all anaesthetists who may be exposed to paediatric emergencies (even those without regular elective paediatric lists) maintain their competence and confidence in paediatrics via continuing professional development (CPD), simulation and visits to specialist centres.

Surgery can either be performed by visiting specialist paediatric surgeons (usually from a specialist centre) or by adult surgeons who have expertise in paediatric surgery. Currently, the paediatric surgical training pathway is a six-year programme starting from ST3 recruitment, following core surgical training; these surgeons will undertake the Fellowship of Royal Colleges of Surgery (FRCS)

in paediatric surgery. There may also be clinicians who have previously undergone adult surgical training but are proficient in paediatric surgery given their personal experience and case exposure. Regardless, all individuals are expected to undergo regular CPD to ensure their skills are maintained. One of the challenges faced by DGHs is how to ensure that there is appropriate surgical on-call cover for emergency procedures.

Anaesthetic services are provided to a wide range of surgical specialties in the DGH, including ENT, dental, urology, general, ophthalmology and orthopaedics (see Table 6.1).

It is not only the surgical procedure that determines whether the case should be performed in a DGH. Factors that may influence the decision include:

- Very young age. Protocols must clearly define the minimum age of patients that can be treated; this may vary between different hospitals. Generally, all patients less than 12 months are referred to specialist centres, but there is varying practice for children aged one to two years. Younger children have an increased risk of perioperative respiratory complications, and so the accepted age thresholds depend on the skills, training and environment of each hospital. Infants and younger children will also tend to require more complex types of surgery, and therefore the numbers passing through a DGH will be fewer.
- Existing comorbidities
- Lack of professional experience and skills (surgical, anaesthetic or nursing), and health care infrastructure in place

Table 6.1 Common surgical procedures undertaken in the DGH

Specialty	Procedure
General	Herniotomy (umbilical/inguinal) Orchidopexy for undescended testes Circumcision Minor soft tissue abnormalities *Testicular torsion* *Appendicectomy*
ENT	Tonsillectomy Adenoidectomy Grommet insertion Examinations under anaesthetic
Oral and maxilla-facial surgery	Extractions Orthodontics *Dental trauma* *Closure of lacerations*
Ophthalmology	Strabismus surgery Tear duct obstruction surgery
Orthopaedics and trauma	*Open reduction internal fixation (ORIF)* *Manipulation under anaesthesia (MUA)*

Note: Italics indicate emergency procedures.

Ideally, there should be a clear referral pathway within the regional paediatric surgery network and clearly defined parameters as to which patients should be referred to the specialist centre for their surgery.

Anaesthesia services may also be needed in remote non-theatre environments, for instance for radiology (CT or MRI scan). Depending on the age or condition of the patient, this may require a general anaesthetic. Not all MRI scanners will be set up to provide care for patients under general anaesthetic, so it is important to be aware of the equipment available at these sites (e.g. MRI-compatible anaesthetic machine and equipment).

Vascular access can be difficult for paediatric patients, given their smaller size and challenges with cooperation. Anaesthetists may be asked to assist with difficult access. The provision of ultrasound training to other health care professionals, can reduce the burden of out of hours access requests. Long-term intravascular (IV) access is preferable for patients who require prolonged IV medication, therefore it can benefit patients to have a peripherally inserted central catheter (PICC) line service in a DGH utilising specialist nurses or anaesthetists, although these services are not yet well established in UK hospitals.

In some instances, the anaesthetic team may be requested to provide sedation for patients undergoing procedures in the emergency department (ED). If there is a safe environment with appropriate monitoring and trained staff available, then this can avoid the need for the patient to be booked onto the theatre emergency list and consequently reduce the length of hospital stay. A local protocol will determine the drugs, equipment,

team and monitoring that should be used to ensure a safe sedation.

Preassessment for Elective Paediatric Surgery

Most of the paediatric surgery in fit and healthy ASA 1 or 2 children is for minor procedures and can be carried out on a day-case basis. Preassessment can ensure paediatric surgery/anaesthesia is carried out at the most appropriate time, in the correct environment and by the best team.

All patients should be seen at a preassessment clinic to ensure health screening, optimisation of medical conditions, risk assessment and psychological preparation prior to the day of surgery and to assess suitability for local surgery or the potential for referral to a specialist centre. This will increase surgical list efficiency and reduce last-minute cancellations. It improves patient and parent satisfaction, reduces anxiety, helps both parent and child to know what to expect and provides an opportunity to ask questions or express any concerns they might have.

Some children might be under the care of a paediatrician locally for conditions such as diabetes or asthma and might need a referral for a review and medication plan for the day of surgery before undergoing the procedure and anaesthesia. Other children might be under the care of a specialist at a tertiary centre for conditions such as cardiac disease, ex-prematurity or genetic syndromes and may need assessment of the stability of the condition before embarking on surgery locally. An identification of increased risk in such children may indicate a need for the non-complex surgery to be undertaken at a specialist centre.

Preassessment is an opportunity to provide advice on lifestyle issues such as nutrition, smoking in the household and exercise, although currently there are no national standards or referral pathways, and much will depend on your services locally.

A nurse-led service is safe and cost effective. There should be locally agreed and developed preoperative policies and guidelines (for example, when to order preoperative investigations or when to refer to an anaesthetist – usually the paediatric anaesthetic lead and/or paediatric anaesthetists with an interest in preassessment). The preassessment nurses should have appropriate paediatric experience and training. Each hospital requires a written local definition of the type of procedures and age thresholds for elective surgery that they can conduct at their centre.

A preassessment service should be face to face, but telephone or virtual assessment can be part of the service for selected patients. The assessment should be guided by a standardised proforma and include at a minimum:

- Complete birth history including prematurity
- Congenital or acquired disease, with focus on the airway, cardiovascular system, respiratory systems (for example obstructive sleep apnoea), endocrine (diabetes), metabolic, neuromuscular, haematological (anaemia, coagulopathy) or any other relevant physiological system
- Family history of anaesthetic problems, for instance malignant hyperpyrexia or suxamethonium apnoea
- Drug history
- Special educational needs
- Social history, including any safeguarding concerns
- Sickle cell status in at-risk populations
- Observations: weight, height, temperature, saturations, heart rate, blood pressure
- Airway assessment (as per local protocol/proforma)
- The need for a perioperative anxiety management plan

Medical concerns picked up by the nurse may require further examination by a consultant paediatric anaesthetist, for example, examination of the cardiorespiratory system or further airway assessment.

Most children are ASA 1 or 2 and will not need investigations. Investigations undertaken need to be reviewed by a consultant paediatric anaesthetist.

The use of local anaesthesia, regional anaesthesia, sedation or general anaesthesia should be explained to the parent/carer and child as part of informed consent, and the perioperative benefits and risks should be discussed timeously before the procedure.

Creating a Child-Friendly Experience

Delivering care locally/close to home where possible improves the patient and parent experience.

Children have different emotional and physical needs than adults, and the perioperative process can be stressful for families. Medical encounters

can be significant events in a child's life, no matter how small we think the procedure is. Long-lasting effects can arise from the use of 'nocebo talk' and negative expressions, and it is important to guide colleagues and trainees who usually work with adults. For instance, the phrase 'sharp scratch coming' prior to cannulation may potentially induce anxiety and fear of pain.

Most children will be anxious when presenting for an anaesthetic. There may be fears about pain, unfamiliar surroundings, separation from parents, loss of control/autonomy and fear of the unknown. Such anxiety can lead to increased postoperative pain, nausea and vomiting, prolonged recovery time and behavioural disturbance.

Well-managed procedural care, optimising the psychological well-being of the child, can have significant long-term benefits for a child's health. Some methods are summarised in Table 6.2.

All locations where children are treated (preassessment, ward, theatres) should be child friendly and create a welcoming environment. These areas should be physically separate from those with adult patients. There should be play spaces and equipment available, and they should meet the needs of children with physical disabilities. Parents/carers should be able to be present with their child when they wake up in recovery areas.

The use age-appropriate materials such as leaflets and videos can help prepare children and their families for their procedure. More recently we have seen the development of apps and the use of virtual reality to deliver such information. The 'little journey' app (https://littlejourney.health) is utilised by NHS hospitals in the United Kingdom, providing age-appropriate information for patients and their families about their hospital visit and anaesthetic. The app is fully interactive, providing virtual reality tours with animated characters of the chosen hospital, along with games, meditative coping exercises and breathing techniques. It also includes details of fasting guidelines and perioperative information specific to each hospital and can be used in the upcoming weeks to prepare a child for their operation. Hospital tours can be offered to provide familiarity with the paediatric ward and theatres. These are usually conducted by the preassessment nurse as part of the child's preassessment journey. Play specialists and distraction aids should be available to complement this journey and help prepare the child for their admission.

Table 6.2 Methods to reduce preoperative anxiety in children

Preoperative preparation	Printed information, hospital tour, play therapy, clear management plan
Parental preparation	Coaching
Parental presence	At induction of anaesthesia and in the recovery room
Behavioural intervention	Play therapy, storytelling, distraction, guided imagery (a relaxation technique that draws on the ability to visualise), hypnosis
Pharmacological	Midazolam, topical anaesthesia

It is important to involve children as much as possible and respect their autonomy. Providing choices or allowing them to wear their own clothes to theatre can help to reduce anxiety.

Extremely anxious children should be scheduled to be first on the operating list, and particular attention should be paid to their fears/dislikes and likes to help improve their experience.

Prolonged fasting times and incorrect timing of topical local anaesthetic before cannulation can lead to an increase in anxiety and a poor experience. Some children may need to see an anaesthetist in advance of the day of surgery to create an individualised anaesthetic plan, including the potential use of premedication. Hypnotic and relaxation techniques are becoming more recognised as part of the treatment plan (see Chapter 3).

Paediatric Acute Pain Management in a DGH

Pain protocols should be in place for common elective surgical procedures performed in the DGH for managing and treating simple surgical emergencies in children (e.g. reduction of fractures, appendicectomy) and for medical emergencies such as sickle cell crisis. Paediatric validated age-appropriate pain scoring tools along with escalation plans should be available. Most procedures in a DGH are carried out as day-case procedures, so careful planning of discharge analgesia is vital and should follow a local standardised protocol. Pain can persist for many days after certain

procedures, for example tonsillectomy, and patients should be discharged with clear advice such as taking regular paracetamol and ibuprofen (if the patient has no allergies) for up to one week postoperatively. Children are at greater risk of drug and dosing errors, particularly in an 'adult' setting. Local systems should be in place to minimise such errors, with multidisciplinary learning from any events that may occur.

DGH's usually have a smaller paediatric caseload compared to specialist centres, and the acute pain service is likely to be provided by the adult pain team who liaise with paediatricians, emergency physicians and the paediatric anaesthetic team. Strict local protocols and guidance is therefore paramount.

Analgesic regimens will follow a multimodal approach based on the WHO analgesic ladder. It's important not to forget the importance of local anaesthetic use, especially in elective day cases. This can take the form of wound infiltration or regional blocks. It is important that adult-trained surgeons and nurses are aware of the toxic doses of local anaesthetics when using local infiltration. A common procedure performed as a day case is circumcision; this causes significant postoperative pain, and a caudal or penile block is ideal in these cases. Complex analgesia techniques such as epidural infusion or continuous wound infiltration catheters are not generally suitable for the non-specialist centre.

Analgesia such as ketamine may be used in the ED for management of fractures, for example, and adherence to local paediatric guidance regarding dosing and monitoring is vital. There should also be local guidance on techniques such as morphine patient-controlled analgesia or nurse-controlled analgesia, especially for children with sickle cell disease or in cases of orthopaedic trauma.

Medical and Surgical Transfers to a Specialist Centre

Decisions concerning which patients should be transferred for emergency surgery should not fall to the expertise and skills of individual team members on duty that day, as such variability could impact on patient outcomes. Ideally, these decisions should be made in advance within the network, with standardised protocols describing when and where patients should be referred to when they arrive at a non-specialist centre with an acute surgical problem that cannot be managed locally. A decision to transfer will be based on the complexity of the surgery required, the age and comorbidities and the clinical condition of the child.

In certain circumstances, a child may need to be stabilised or managed locally, for instance a time-critical surgical emergency or if the patient is critically unwell/injured. It is vital that staff are prepared and the environment equipped for this scenario with local protocols in place. A close working relationship with the tertiary centre is essential, with regular training opportunities utilising simulated paediatric resuscitation scenarios within multidisciplinary teams to improve confidence.

These events may be very infrequent for staff in a smaller DGH. Education and training within the paediatric network are a vital tool to make sure that skills and confidence of staff in the non-specialist centres are maintained. Anaesthetic trainees may be a useful resource in an acute situation due to their experience obtained rotating to specialist centres. Provision of easily accessible guidelines, checklists and a standardised kit can greatly aid staff during these stressful and time-pressured scenarios.

A child may sometimes require short-term admission to the local adult intensive care unit in cases where they are expected to recover quickly (e.g. perioperative anaphylaxis) or whilst awaiting the arrival of the paediatric retrieval team from the specialist centre. The intensive care team should work closely with the paediatricians and anaesthetists and must ensure the appropriate equipment and skills are available. Different teams' expertise may of use in difficult aspects of care in these scenarios. For example, if a medically unwell neonate presents in the emergency department with difficult intravenous access, the neonatal team, if available, may be best placed to assist in gaining access. Similarly, a neonatologist may be skilled at intubation of neonates, but a trained anaesthetist is likely to be the best person to manage the airway of an older child in an emergency, even if their practice is predominantly adult.

The paramedics usually provide a pre-alert when a critically unwell child is to arrive in the emergency department, allowing time for the on-call paediatric emergency team to gather and prepare. An effective use of time prior to the patient arriving is to allocate roles to individuals within the team (e.g. the anaesthetic team to maintain the

patient's airway, a paediatrician to establish IV access) and to calculate the appropriate doses of drugs and sizes of equipment that may be required. Using web applications can be immensely useful to reduce error when attempting to recall formulae or drug doses in extremely pressurised situations.

Commonly the senior ED doctor will become the 'leader' of the emergency and will use advanced paediatric life support principals to guide immediate resuscitation and treatment of the child. Clear and concise communication is required by all members of the team, and particular attention should be paid to ensuring that all tasks be allocated to named individuals, and the receiving person should confirm when the task has been performed (i.e. closed-loop communication).

Another key role within the multidisciplinary team is the liaison to the child's parents or guardians. An experienced paediatric or ED nurse may be best suited to this role.

The establishment of paediatric critical care networks has led to the evolution of specialist paediatric intensive care transport teams that are available to both retrieve patients from non-specialist centres as well as offer telephone advice on the immediate management of these patients. The retrieval teams will usually manage the transfer of these patients; however, it may be necessary for the local team (usually an anaesthetist) to transfer in time-critical scenarios, such as acute neurosurgical emergencies or major trauma. In this situation, a calm and methodical approach to the transfer and use of checklists optimises safety for the patient. Standardising equipment between transferring and receiving centres will also reduce errors. One way that this can be ensured is to provide 'transfer trolleys' in local emergency departments and paediatric wards so that when a patient is acutely unwell, this sealed trolley can be opened, and all the necessary equipment is available. This includes a range of airway equipment (including laryngoscopes, blades, tracheal tubes, oral/nasal airways, lubricating jelly, tube ties) in the top drawer (labelled 'A'). Subsequent drawers are labelled 'B' containing all the breathing equipment, 'C' for circulation and 'D' for disability. Transfer trolleys should ensure that items that are commonly difficult to find (e.g. capnography monitoring block) are easily to locate. This setup is standardised across all hospitals within a particular critical care network, so that familiarity with equipment by members of staff who may rotate around several hospitals within a region is increased.

Keeping Up to Date in a Non-specialist Hospital

Completion of specialist training in anaesthesia in the United Kingdom should enable consultants to provide anaesthesia to children without any major comorbidity from the age three. Many anaesthetists complete advanced training in paediatric anaesthesia and are thus equipped to deliver a regular paediatric elective list in a non-specialist hospital (e.g. paediatric general surgery or ENT surgery). Paediatric anaesthetists in the DGH face the challenge of maintaining an adequate caseload and of retaining their skills in managing sick children if they are on an on-call rota and they do not anaesthetise children regularly.

Getting it right first time (GIRFT) is a quality-improvement initiative funded by the Department of Health and jointly overseen by NHS England and NHS Improvement. The reports seek to create improvements in patient safety, patient experience and operational efficiency in hospitals. The aim of the GIRFT paediatric group is to ensure that clinicians in DGHs continue to be trained and maintain skills to provide the less complex paediatric care locally for families via a network approach and to support training/competencies and maintenance of skills, including paediatric resuscitation. The recommendation is for surgeons and anaesthetists to maintain competence through delivery of regular paediatric lists, joining their colleagues as supernumerary on lists and continuing professional development activities for appraisal and revalidation.

Many DGH anaesthetists arrange to attend regular paediatric lists at their regional specialist centre to further develop and update knowledge and skills. It is hoped that a certificate of honorary practice will be developed in due course to facilitate this process. All anaesthetists providing elective or emergency care in paediatric anaesthesia must undertake the minimum of level 2 training in safeguarding/child protection as part of their annual mandatory training at trust level, along with annual updates in paediatric life support. Multidisciplinary paediatric simulation training should also be used to maintain competencies and skills. APAGBI offers a 'linkman scheme' that

provides regular meetings and opportunities for collaboration for paediatric anaesthetists, especially in DGHs. Many regions also provide local networks to support education in paediatric anaesthesia in DGHs, often linked to their specialist centre.

At a local level, each department should identify a lead paediatric anaesthetist who is responsible for oversight of the paediatric anaesthetic service. This will include ensuring there are up-to-date guidelines and policies for both elective and emergency anaesthesia; teaching and training of anaesthetic trainees, nurses and operating department practitioners (ODPs); ensuring the local standards are maintained (e.g. equipment, pain management, sedation and resuscitation); and leading on paediatric anaesthetic audit, quality improvement, research and safety.

Research and National Audits

Undertaking research in paediatric anaesthesia in a DGH can be a daunting prospect as historically the focus has been on service delivery. However, many hospitals have research opportunities available, usually with teams looking for National Institute for Health Research portfolio trials and national audits to take part in. Organisations conducting and being part of research tend to improve their standards and provide better care for their patients and have better patient outcomes.

In the United Kingdom, the Paediatric Anaesthesia Trainee Research Network undertakes multi-centre research and audit projects, supported by the APAGBI (for instance, the recent PEACHY project looking into the effect of obesity on perioperative complications in paediatric patients undergoing anaesthesia). Other perioperative national research projects in paediatrics can be found through networks such as the perioperative medicine clinical trials network (POMCTN). The Health Service Research Centre's first paediatric initiative is under way (jointly delivered in collaboration with the APAGBI and the British Association of Paediatric Surgery). The Children's Acute Surgical Abdomen Programme (CASAP) is a prospective observational cohort study aiming to characterise the type and quality of care being delivered to children undergoing urgent/emergency abdominal surgery. Many of this study's recruits will be patients undergoing appendicectomy in DGHs.

Key Points

- Most paediatric surgery carried out is for minor procedures in fit and healthy children and can be performed as day-case procedures. A large quantity of this work is performed in non-specialist hospitals.
- Children and families need to be able to access high-quality services as close to home as possible.
- Delivering care locally or close to home where safe and possible can add to the patient and parent experience.
- A non-specialist centre should have provisions and local guidance for treating and managing simple surgical emergencies in the paediatric population, along with the ability to resuscitate and stabilise critically ill children of all ages before transfer to a tertiary specialist centre for either critical care or surgery.
- Continual education and training within regional networks are vital in maintaining skills and confidence of staff in non-specialist centres.
- Standardisation of care along with protocols are helpful for the anaesthetic management, analgesic management, pre assessment and critical transfer of children in a non-specialist centre.

Further Reading

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