

# Day-Case Anaesthesia in Children\*

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## Introduction

Most children undergoing elective surgery or diagnostic procedures are discharged home on the same day. The development of day surgery was primarily driven by the need to reduce cost and improve utilisation of resources, but there are benefits for children as day-case surgery limits the separation of an otherwise healthy child from their home and family environment. Children with chronic or complex health care needs also benefit as day-case surgery reduces the time spent in hospital and risk of hospital acquired infections. Successful day-case surgery works well both in a specialist paediatric setting and at the local district hospital. It requires the anaesthetist to work as part of a multidisciplinary team and to use techniques to minimise perioperative morbidity, particularly postoperative nausea and vomiting (PONV) and pain.

## Standards for Day-Case Surgery and Anaesthesia

A high-quality paediatric day-case service requires clear organisational leadership, staffing, facilities and information for parents based on the guidance and standards set by the Department of Health and professional bodies. Current standards and guidelines on the delivery of day-case surgery and anaesthesia from different organisations all highlight the following principles:

- Infants, children and young people should not be cared for in the same location as adults.
- Medical, nursing and all other staff must have received specific training and be skilled in working with children and their families. This includes training in child protection.
- A staff member with an advanced paediatric life support qualification or an anaesthetist with paediatric competencies should be immediately available in the day surgical unit.
- Parents, caregivers and patients should be given age-appropriate, timely information about what to expect in the pre-, peri- and postoperative period.

Many day units are freestanding or organised as separate units within a larger hospital. In a non-specialist hospital, it is important to foster child-centred care, and in the day unit this may be achieved by reserving dedicated sessions for children. Staff should have the appropriate skills and experience in paediatric day-case surgery and should not be required to look after children of higher acuity (or adult patients) at the same time.

It is important that anaesthetists who care for children are appropriately trained and work within their competency. In day surgery units (DSU) where paediatric surgery occurs, a paediatrician must be available to assist with the management of unwell children or any safeguarding concerns. The delivery of some of these standards is challenging, particularly with respect to training in child protection and paediatric resuscitation and access to paediatric acute pain management teams. The Royal College of Anaesthetists has recognised this in training; it supports local competency-based resuscitation training programs and has developed a specific paediatric anaesthesia e-learning module concerning the management of children in the perioperative period, common operations and safeguarding.

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## Organisation: Patient Selection and Preparation

### Patient Selection

Historically, the Department of Health (DOH) set a target to achieve more than 75% of elective surgery as day-case care, and whilst this target still exists, it is usually surpassed thanks to the uptake of minimally invasive techniques. The DOH publication 'Day Surgery: Operational Guide' suggests that the default question should be, 'Is there any justification for admitting this case as an inpatient?' rather than, 'Is this patient suitable for day surgery?' This change in emphasis has increased the proportion of children undergoing day-case procedures. Careful patient selection is fundamental to safe, efficient day-case services. Procedures regularly undertaken as day cases are listed in Table 9.1.

Clear exclusions for day surgery in children include:

- Major invasive operations
- Surgery associated with significant physiological derangement or prolonged postoperative pain
- Children needing specialist nursing or nutritional care that cannot be provided at home

Many patients are excluded because of their age, prematurity, coexisting medical conditions, previous anaesthetic problems or social circumstances. Children should be discharged home to an environment where they will receive at least the same level of care they would have by remaining in hospital. Typical exclusions are listed in Table 9.2; however, tertiary paediatric centres are now performing increasingly complex procedures as day cases. Some exclusions are relative, and decisions may have to be made on a case-by-case basis after discussion with an anaesthetist.

The lower age limit for day surgery depends on the individual unit. A tertiary paediatric centre may accept healthy term neonates >44 weeks post-menstrual age for minor day-case procedures. For children born <37 weeks gestational age (ex-premature), a lower limit of <60 weeks post-menstrual age is standard. Many district hospitals have a six- or 12-month minimum age limit because of their infrequent experience with younger infants.

**Table 9.1** Common day-case surgery and procedures

#### General

- Excision of minor lumps and bumps including lymph nodes
- Herniotomy
- Excision of hydrocoele
- Umbilical hernia repair

#### Urology

- Circumcision
- Orchidopexy
- Cystoscopy including removal of ureteric stents
- Minor hypospadias

#### ENT

- Adenotonsillectomy
- Myringotomy
- Diagnostic microlaryngoscopy
- Removal of foreign body
- Nose manipulation under anaesthetic (MUA)

#### Dental

- Extraction
- Conservation

#### Ophthalmic

- Strabismus/ptosis correction
- Examination under anaesthetic
- Tear duct probing

#### Orthopaedic

- Botox injections
- Change of plaster
- Arthroscopy
- Removal of metalwork

#### Plastic

- Dressing changes, removal of sutures
- Excision of skin lesions
- Laser therapy
- Pinnaplasty

#### Medical

- Diagnostic cardiac catheterisation
- Bone marrow sampling
- Lumbar puncture and intrathecal cytotoxics
- Radiotherapy
- MRI, CT scan

The inclusion of tonsillectomy as a day-case procedure was historically controversial in the United Kingdom owing to concerns about post-operative haemorrhage, pain control, obstructive sleep apnoea (OSA) and PONV. Most centres now routinely undertake this procedure using well-defined day-case tonsillectomy guidelines for anaesthesia, surgery and postoperative care

**Table 9.2** Common exclusions for day-case surgery**Surgical**

- Open cavity surgery involving cranium, thorax or abdomen
- Associated with significant or prolonged pain
- Requirement for specialist nursing, e.g. risk of compartment syndrome
- Prolonged procedure >90 min
- Airway surgery, e.g. laryngeal papillomas
- Risk of significant postoperative haemorrhage

**Patient**

- Prematurity with post-conceptual age <60 weeks
- Poorly controlled systemic disease, e.g. epilepsy, asthma, metabolic disease and diabetes
- Acute viral or bacterial respiratory infection
- Severe obstructive sleep apnoea
- Complex congenital cardiac disease
- Sickle cell disease
- Neuromuscular disease, e.g. Duchenne muscular dystrophy

**Social**

- Parents unable to cope with additional sick child
- Single parent with poor local support
- Lack of telephone
- Inadequate transport home
- Prolonged journey home, e.g. greater than 1 hour

delivered by an experienced consultant-led team. Surgery should be performed in the morning so that children can remain in hospital for at least six hours to ensure that they are pain-free, drinking and not bleeding before discharge home. Children with severe OSA undergoing tonsillectomy should not be managed as a day case. In 2019, in response to a significant increase in tertiary referrals for children with tonsillar hypertrophy requiring tonsillectomy, the British Association for Paediatric Otolaryngology (BAPO), ENT UK, the Royal College of Anaesthetists (RCoA) and the Association of Paediatric Anaesthetists of Great Britain and Ireland (APAGBI) released a consensus statement relating to tonsillectomy in children. They recommended that children >2 years (corresponding weight 12 kg) with no high-risk factors or extremes of BMI could be treated in a secondary centre. This recommendation is reduced to >1 year (corresponding weight 10 kg) if the centre had paediatric high-dependency unit (HDU)

facilities. Community follow-up and communication with the general practitioner is essential for all day cases, particularly for children undergoing day-case tonsillectomy.

## Preadmission Preparation

Good organisation and planning by the admission clerks, ward nurses, play therapists, theatre staff, surgeons and anaesthetists are essential to ensure the smooth running of a unit that is welcoming and friendly and minimises potential upset to the child and their family. Adequate preparation for the family is required, with clear written information about what to expect, what to bring and what to do on the day, especially in terms of fasting guidelines and routine medication. An example is shown in Figure 9.1. For the child, information may be presented in the form of a story or interactive book, DVD or internet material. The RCoA and APAGBI have published an excellent series of patient information leaflets and videos for children and young people of different ages and in different languages: [www.rcoa.ac.uk/patient-information/patient-information-resources/information-children-parents-carers](http://www.rcoa.ac.uk/patient-information/patient-information-resources/information-children-parents-carers).

Nurse-led assessment using a preadmission screening questionnaire should be used to identify any potential problems that need to be discussed or assessed by a senior anaesthetist preoperatively and to prevent unexpected cancellations on the day. Preadmission assessment may be carried out at initial booking, on the phone using standardised questionnaires or during a visit to the day unit to meet the nurses and play specialists, and to see the ward and possibly the recovery unit. Many families find this particularly beneficial, and such preoperative visits have been shown to reduce anxiety on admission. Some units offer families visits on a weekend in the form of a Saturday Club. Fit and healthy ASA 1 or 2 children do not need any pre-anaesthetic screening investigations except for a sickle cell test for those at risk.

All children must be seen on the day of admission by the surgeon (or paediatrician for medical procedures) and anaesthetist to confirm that the procedure is still required, that the child remains fit for anaesthesia and to finalise consent.

After admission to the day unit, children are encouraged to play, read, draw, watch TV/DVDs or play video games to pass the time prior to anaesthesia. In some units, children come to the induction room in their own clothes or nightwear. It is

## What to bring

A favourite toy or comforter

Gaming device, books etc for older children

A special bottle or beaker

Comfortable loose clothing or pyjamas—please bring a change of clothes and avoid metal fastenings (your child may wear a gown to theatre)

Any medication or inhalers your child needs/ uses.



## Preparation

It is important to prepare your child for their surgery—it is helpful to briefly explain why they are coming. Reassure them that you will be there all the time and will go home together.

Children are encouraged to make use of the play room where there are toys, puzzles and games. Our play specialists help to make your child's stay as relaxed as possible. If you feel your child would benefit from a session with our play specialist's prior to admission—please contact Janine on the number below.

## Contact us

If you have any queries please do not hesitate to contact us.



# Outwood Day Surgery

Please call at 6am on the morning of your child's surgery to confirm there is a bed available

**Figure 9.1** Written guidelines to prepare families for day surgery.

An appointment has been made for your child to have day case surgery on the children's ward.

Please bring your child to the ward at the time stated on your letter. It is important that you arrive on time so your child can be assessed by the team before surgery starts.

Please make arrangements to be here all day in case your child is later in the list or needs to stay for a longer period of time after their procedure.



### Where to find us



The day surgery unit is part of Outwood children's ward. This is situated on the first floor of the hospital near the east entrance.

There is a car park on site and we will provide you with a ticket to reduce the price of the car park if you are here for the day.

### About the day

When you arrive, you will meet the nurse that will be caring for your child whilst in hospital. If you have any questions the nurse will be able to answer them.

You will then be seen by a surgeon who will go through the procedure and ask you to sign the consent form to confirm you are happy to proceed. An anaesthetist will then see your child and give you information about the anaesthetic that will be used.

The day surgery unit is often quite busy therefore it would help us if your child was accompanied by a maximum of 2 adults, if you have other children please arrange for them to be looked after for the day.

### Fasting

Please make sure you follow the fasting instructions—it is very important before your child has an operation. If your child does not follow these directions it could result in their operation being delayed or cancelled.

#### For admission in the morning

The last time they can have food or formula milk is 6 hours before surgery. This is often the night before however could be up until 0230.

If your child is breast fed they may be fed until 0430

**Clear fluids are allowed until 0730.** Please encourage your child to drink clear fluids until the time allowed. If they are later in the surgery list they may be given a small drink of clear fluids once seen by the anaesthetist.

#### For admission in the afternoon

Your child can have breakfast in the morning—before 0730. (we suggest waking them to have this). They cannot have any food or formula milk after 0730.

If your child is breast fed they may be fed until 0930

**Clear fluids are allowed until 1230.** Please encourage your child to drink clear fluids until the time allowed. If they are later in the surgery list they

### Clear Fluids

Clear fluids are;

- Water
- Dilute squash
- Black tea/ coffee



**NO fizzy drinks, fruit juice or chewing gum**

**Figure 9.1** (cont.)

standard UK practice for one or two parents to accompany the child to the anaesthetic room and to remain with them until after induction of anaesthesia. This usually avoids the need for preoperative sedation. However, this may be stressful for the parents; they should understand their role and what to expect, and a member of staff must accompany them. Parents are also encouraged to collect the child from the recovery room as soon as the child is awake. In certain situations, for instance as occurred during the coronavirus pandemic, the number of parents that can accompany the child to theatre and recovery may be restricted.

## Day Surgery and the Child with a Cold

The decision to proceed or cancel the child with an upper respiratory tract infection (URTI) should be made by a senior anaesthetist. Runny nose and low-grade fever are common symptoms and are reported in 20–30% of children presenting for day surgery, especially ENT surgery.

URTI may produce airway hyperreactivity resulting in increased adverse perioperative respiratory events such as laryngospasm, bronchospasm, breath holding and oxygen desaturation.

Surgery should be postponed in the child who is fractious, clearly unwell or pyrexial (temperature  $>37.5^{\circ}\text{C}$ ) or has clinical signs on chest auscultation.

Most children with URTI are well and otherwise asymptomatic with a simple rhinitis, so delay may not be required. The decision to postpone must rest with the anaesthetist and will be guided by their experience and expertise. Parental smoking, presence of airway anomaly, history of snoring, prematurity and asthma in a child have all been identified as risk factors for perioperative airway complications. Airway surgery is an independent risk factor for adverse respiratory events in children with URTI. There is also an increased incidence of respiratory complications in children under one year and in those cared for by less experienced anaesthetists.

Children who have surgery cancelled because of an URTI should have surgery rebooked at least two weeks later to allow airway hyperreactivity to recover.

## Anaesthesia Techniques

Planning and attention to detail improve outcomes in the perioperative period, and the use of protocols and guidelines can assist in this aim.

**Table 9.3** An example of a perioperative analgesia regimen

### Premedication

Paracetamol 20 mg  $\text{kg}^{-1}$   
Ametop/EMLA both hands

### Perioperative analgesia

Fentanyl 1–3 mcg  $\text{kg}^{-1}$  IV  
Diclofenac 1 mg  $\text{kg}^{-1}$  PR

### Postoperative analgesia

Paracetamol 15 mg  $\text{kg}^{-1}$  6 hourly  
Ibuprofen 10 mg  $\text{kg}^{-1}$  8 hourly

These can include premedication guidelines or postoperative analgesic protocols as in Table 9.3.

## Premedication

Sedative premedication may be needed even if the child and family are well prepared, particularly for children with procedural anxiety, behavioural problems or poor past experiences.

Benzodiazepines (midazolam or temazepam) and  $\alpha_2$ -adrenoreceptor agonists (clonidine and dexmedetomidine) are the most used agents. Midazolam given as an oral dose of 0.5 mg  $\text{kg}^{-1}$  (max 20 mg) is suitable for ages 1 month to 18 years (onset 30–45 minutes, duration 45–60 minutes). Its bitter taste can be masked with fruit cordials/syrups. Buccal midazolam at a dose of 0.2–0.3 mg  $\text{kg}^{-1}$  (max 10 mg) can be given to children aged six months to 18 years (onset 10–20 minutes, duration 30–45 minutes). Midazolam may sometimes cause paradoxical excitation and poor emergence, particularly in pre-school children. This may be because midazolam blocks explicit memory but not implicit memory (the memory of being anxious). Midazolam premedication may also be responsible for anxiety and prolonged behavioural changes after discharge. For older children (aged 12–18 years) oral temazepam tablets (10–20 mg) are good options (onset 60 minutes, duration 120–240 minutes).

Clonidine can be given orally, buccal or intranasal at a dose of 2–4 mcg  $\text{kg}^{-1}$  (max dose of 150 mcg) with an onset of 45–60 minutes. Dexmedetomidine can be given via the oral, buccal or intranasal route at a dose of 1–4 mcg  $\text{kg}^{-1}$  (max dose of 200 mcg) with a faster onset of 25 minutes. They are both good options for children who have experienced paradoxical excitation with



midazolam and can also be combined with midazolam for children where premedication has previously failed. Alpha-2 adrenoreceptor agonists can cause hypotension and bradycardia, so caution must be used when administering them to children with cardiovascular instability.

Caution should be taken when premedicating patients with known difficult airway, metabolic, hepatic, renal or respiratory failure and those at risk of aspiration.

The pain of cannulation for induction of anaesthesia is greatly reduced by topical anaesthesia with local anaesthetic creams or ethyl chloride spray. There are several local anaesthetic creams available for use preoperatively:

- EMLA<sup>®</sup>. This was the first widely used local anaesthetic cream. It is a 5% eutectic mixture of lidocaine and prilocaine. It needs to be applied for an hour prior to cannulation and often causes vasoconstriction of the surrounding vessels.
- Ametop<sup>®</sup>. This is a 4% gel of tetracaine that produces topical anaesthesia for venepuncture in about 45 minutes that lasts up to four to six hours after removal. Some children develop associated erythema and skin oedema that may obscure the vein.
- LMX 4<sup>®</sup>. This is a new liposomal preparation of 4% lidocaine that is effective 30 minutes after application but may also cause erythema and skin oedema.

## Induction of Anaesthesia

Many older children prefer intravenous induction. Venepuncture is better tolerated in a young child if they are sitting on their parent's knee whilst distracted with a familiar comfort toy, blanket, video games or tablet. An inhalational induction with sevoflurane in oxygen or starting with nitrous oxide in oxygen may be preferred in small infants with difficult venous access or at the request of an older child. Inhalation induction may be combined with directed imagery and hypnotic relaxation techniques. Experienced anaesthetic teams are adaptable and use any or a combination of these induction techniques depending on the child and their preferences.

The ideal anaesthetic for painful procedures is achieved by combining general anaesthesia with a local anaesthetic block and/or non-opioid analgesia using paracetamol and a NSAID. Propofol

3–5 mg kg<sup>-1</sup> is the intravenous induction agent of choice, as it suppresses upper airway reflexes, thereby aiding insertion of a supraglottic airway device (SAD) or a tracheal tube if required. Pain on injection can be reduced with the newer preparations and a small dose of lidocaine 0.2 mg kg<sup>-1</sup>. The antiemetic and recovery properties of propofol are particularly useful in a day-case setting.

## Maintenance of Anaesthesia

Maintenance is achieved either with an inhalational agent or total intravenous anaesthesia using a target-controlled infusion of propofol, sometimes with remifentanyl, with meticulous flushing of any indwelling lines after use. The choice of volatile is governed by cost, environmental impact and airway irritability. Compared with isoflurane, the newer agents sevoflurane and desflurane allow rapid awakening but not necessarily earlier discharge from recovery. Both may be associated with agitation on emergence, although this is less common in children who have good analgesia. Emergence delirium in recovery can be treated with a judicious dose of fentanyl 0.5 mcg kg<sup>-1</sup>. Desflurane is an airway irritant, particularly in children with asthma, and is best avoided if the child has had a recent URTI. Recent evidence highlighting desflurane as a potent greenhouse gas with a warming potential 25–40 times more than that of carbon dioxide is leading to a reduction in its use. Total intravenous anaesthesia (TIVA) has a much lower environmental impact and is particularly useful in cases where there is a high risk of emesis, such as in pinnaplasty or strabismus surgery.

## Airway Management

Very short procedures, such as bone marrow sampling or lumbar puncture for chemotherapy, may be managed with simple mask anaesthesia. Anaesthesia for most body surface surgery may be administered with the child breathing spontaneously through a SAD. There are many different types of supraglottic airways in use, with second-generation devices incorporating bite blocks and gastric channels. A flexible reinforced SAD is useful for head and neck surgery, including tonsillectomy or strabismus surgery.

Tracheal intubation is not usually required for day surgery but is not contraindicated, provided

the correct size tube is selected and inserted and removed atraumatically. The intubation technique depends on the personal preference of the anaesthetist, some using deep sevoflurane or propofol anaesthesia for intubation, followed by either controlled or spontaneous ventilation. Non-depolarising neuromuscular blocking agents may also be used; 0.5 mg kg<sup>-1</sup> atracurium can be reversed after 20 minutes with 0.05 mg kg<sup>-1</sup> neostigmine and 0.01 mg kg<sup>-1</sup> glycopyrrolate. The use of aminosteroid-based agents such as vecuronium and rocuronium may increase with the greater availability of sugammadex, as this offers reversal of any depth of neuromuscular block with minimal side effects. The current high cost of sugammadex precludes the routine use of this drug. Suxamethonium has many minor and some rare life-threatening side effects, so routine use is avoided in current day-case anaesthesia practice.

## Analgesia

Good pain control and a low incidence of PONV are fundamental to high-quality day-case anaesthesia. Nursing staff must be trained and empowered to routinely monitor, record and treat pain. Long-acting opioids should be avoided, and even fentanyl can increase the risk of emesis, although low doses may avoid poor emergence in recovery.

Paracetamol is usually used in combination with an NSAID and provides good pain relief with minimal side effects. Oral preoperative administration is convenient as most children have good experience of these analgesics and anti-pyretics at home, and they are cheaper and less impactful on the environment when compared to intravenous drugs. NSAIDs, ibuprofen 5–10 mg kg<sup>-1</sup> PO or diclofenac 1–1.5 mg kg<sup>-1</sup> PO, PR or IV are well tolerated and frequently used. Recognised contraindications and side effects must be considered when prescribing, for example in leukaemia patients with thrombocytopenia or children with a family history of aspirin-induced asthma. NSAIDs can be used safely for most non-aspirin-sensitive asthmatic children.

Following reports of several deaths occurring outside of the hospital environment in North America, codeine is no longer used in any children under 12 or for children under 18 who undergo removal of tonsils or adenoids due to sleep apnoea. Alternative analgesics include tramadol (licensed

for children over 12) or oral morphine. To facilitate day surgery and discharge, some hospital pharmacies will dispense a limited number of doses of low-dose oral morphine for children >10 kg.

Local anaesthetic blocks are the mainstay of postoperative analgesic management, especially for infra-umbilical surgery. All children's anaesthetists should be practised at both caudal and simple nerve blocks, such as penile and ilioinguinal/iliohypogastric blocks. The addition of clonidine 2 mcg kg<sup>-1</sup> will increase the duration of caudal bupivacaine with minimal additional side effects. Caudal blocks alter both motor and proprioceptive function in the legs and are probably best reserved for non-ambulatory infants, as older children may find these side effects troublesome. Peripheral nerve and fascial blocks, such as rectus sheath or transversus abdominis plane (TAP) blocks, are associated with lower risk of major complications compared with neuroaxial blocks and act for much longer than simple wound infiltration.

Several studies have demonstrated high success rates of ultrasound-guided blocks using low volumes of local anaesthetic compared with the traditional surface landmark techniques, and ultrasound is routinely used in many centres (see Chapter 15). Low-volume blocks minimise dose requirements of local anaesthetic and improve safety. Specific nerve blocks for limb surgery, such as femoral or sciatic/popliteal blocks, may also be performed using ultrasound guidance or, less commonly, peripheral nerve stimulators. These blocks produce excellent analgesia but also an associated motor block, so if used for day-case procedures, parents must be given explicit advice about mobilisation and to avoid the risk of the child developing pressure sores. Parents should also be given clear advice about starting supplemental oral analgesia postoperatively to cope with the loss of pain relief at home when a local anaesthetic block wears off.

## Postoperative Nausea and Vomiting

In adult practice, PONV after day surgery may result in unplanned admissions, but this is less of a problem in paediatric practice. Routine antiemetic administration is not indicated for young children but should be targeted to high-risk



patients, namely those with one or more risk factors for PONV:

- History of PONV or motion sickness
- Older children, particularly adolescent girls
- Children undergoing strabismus surgery, pinnaplasty or adenotonsillectomy
- Children who have received perioperative opioids

Ondansetron 0.15 mg kg<sup>-1</sup> IV or PO appears to be the most efficacious drug for the prevention of PONV, either alone, or in high-risk children combined with dexamethasone up to 0.15 mg kg<sup>-1</sup> IV. Dexamethasone appears to be particularly effective for preventing late onset POV (>6 hours). Dexamethasone should be avoided in those at risk of tumour lysis or uncontrolled diabetes, in which case droperidol 20 mcg kg<sup>-1</sup> is a useful third line drug in the absence of contraindications (such as prolonged QT syndrome).

Dehydration and early fluid intake may provoke PONV. Children should be encouraged to drink clear fluids until one hour preoperatively. Intraoperative intravenous fluids, at least 10 ml kg<sup>-1</sup> Hartmann's solution, should be given if they have not had a drink or are undergoing anaesthesia for longer than 30 minutes. After surgery, making children drink before discharge will increase the risk of vomiting, but they should be encouraged to drink if they are thirsty. Avoiding inhalational agents by using TIVA should be considered for patients at high risk of PONV. Non-pharmacological techniques such as acupuncture have a role with compliant children.

## Discharge after Surgery

Before discharge, the child must have returned to their pre-anaesthetic state, be pain-free and have a clear plan for postoperative pain relief. They should be encouraged to drink and have a light snack before leaving. The time for discharge varies with the child and the procedure undertaken. Most children are ready to leave between 1.5 and 3 hours after returning to the ward.

A benchmark of fewer than 3% of patients should need overnight admission because of an unforeseen surgical complication (typically bleeding) or anaesthetic complication (typically prolonged PONV or poor pain control). The management of unexpected admission needs a clear plan to be in place, particularly if the day unit is separate from an inpatient paediatric unit.

## Care at Home

Parents should be given clear advice about pain relief at home. This is simplified if analgesic combinations are dispensed pre-packed from the day-case unit. The parents should be given both verbal and written post-operative advice concerning analgesic management and wound care, such as bathing, return to school, sporting activities and the possibility of time-limited behavioural and sleep changes. The surgeon and anaesthetist should review the patient postoperatively, or if discharge is nurse led, agreed protocols should be used. A discharge letter for the general practitioner and community nurse should be given to the parents to ensure good communication with the primary health care team. A contact telephone number for parents to seek further advice is essential, and many units routinely contact families within 24/48 hours for further support and feedback.

A successful day-case anaesthetic service is dependent on a multitude of often simple but inter-related issues, such as good local anaesthetic blocks, avoiding tight bandaging for pinnaplasty to reduce PONV or ensuring the child brings in (and takes home!) their favourite toy to reduce stress and anxiety in the anaesthetic room. Regular multidisciplinary audit and review of outcomes including patient, parent and staff satisfaction are therefore prerequisites for continued development.

### Key Points

- Paediatric day-case care is beneficial from both a cost and efficiency point of view and reduces disruption for the child and family.
- Child-centred care pathways are needed, with good organisation and clear information and instructions for families.
- Simple uncomplicated general anaesthesia with supplemental local analgesia is required to provide good pain control and low risk of emesis.
- Plans for unexpected admission, a written discharge summary and guidance for postprocedural symptom control with a telephone contact number are needed.
- Multiple guidelines and standards have been written. Regular patient satisfaction surveys and audit of quality and safety of care should be conducted using these standards.

## Further Reading

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