

Guidelines

Peri-operative management of patients having day surgery: a consensus statement from the Association of Anaesthetists, British Association for Day Surgery and the Association of Paediatric Anaesthetists, Great Britain and Ireland

Craig R. Bailey, David Bunting, Lindsay Hudman, Shivan Kanani, Kirstin May, Catalina Stendall, Rachel Tibble, Allan Xu and Matthew D. Wiles 

Summary

Introduction Day surgery is now recognised widely as being a vital component of modern healthcare delivery with overall day surgery rates in the UK now > 85%. Day surgery offers an enhanced experience for patients with reduced risk of postoperative complications (e.g. infections, cognitive impairment and venous thromboembolism); reduced utilisation of inpatient beds; decreased hospital expenditure; and reduced environmental impact. Day surgery shortens elective surgery waiting times and has a major role to play in overcoming the elective surgery backlog. Despite this, there is still wide variation in day surgery rates across the UK. There is a huge opportunity for continued improvement in the delivery of services through optimising the efficiency and effectiveness of day surgery.

Methods This consensus guideline included stakeholders with expertise in the peri-operative management of day surgery including representation from the Association of Anaesthetists, British Association of Day Surgery and Association of Paediatric Anaesthetists of Great Britain and Ireland. Following targeted literature review, a two-round modified Delphi process was conducted to produce and ratify recommendations.

Results Recommendations were made regarding the selection, pre-assessment and optimisation of patients having surgery; the impact of comorbidities (including frailty, obesity and obstructive sleep apnoea); surgical procedures (including urgent and emergency surgeries); logistical considerations; anaesthetic techniques; and discharge processes.

Discussion This pragmatic consensus statement aims to support healthcare providers and institutions with the organisational and clinical peri-operative management of anaesthesia for day surgery in both adults and children.

For full author affiliations, see end of article

Plain Language Summary can be found on the journal website.

Correspondence to: Matthew D. Wiles

Email: matthew.wiles1@nhs.net

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What other guidelines are available on this topic?

Previous guidance was published by the Association of Anaesthetists in 2019 [1]. Guidance on day surgery has also been published by the Royal College of Anaesthetists [2] and in handbooks available from the British Association of Day Surgery (BADs).

Why was this consensus statement developed?

Since the previous guideline was published, there have been several changes in day surgery, including an increase in the number and type of surgeries performed. The surgical population has changed markedly over the past 5 years [3], and consequently the patients considered appropriate for day surgery have also evolved.

How and why does this statement differ from existing guidelines?

The previous Association guidance has been updated and input received from the BADs (which included representation from surgeons and lay people) and the Association of Paediatric Anaesthetists of Great Britain and Ireland (APAGBI). This consensus statement should be used to guide peri-operative and anaesthetic processes aimed at optimising delivery of day surgery in conjunction with established guidelines and reference material.

Recommendations

- 1 All day surgery units should have a clinical lead whose responsibilities include the development of local policies, guidelines and clinical governance.
- 2 All members of the multidisciplinary team should be trained in day surgery practice.
- 3 Any procedure included in the BADs Directory of Procedures can be managed safely as day surgery. Following clinical assessment, patients with a significant risk of serious postoperative complications requiring immediate medical attention, such as haemorrhage or cardiovascular instability, may still be suitable for day surgery but may not be suitable for care in stand-alone units.
- 4 Thorough nurse-led pre-operative assessment and preparation, for children and adults, as well as criteria-led discharge are fundamental to safe and effective day surgery.
- 5 Pre-operative review by an experienced consultant or autonomously practising anaesthetist with day surgery expertise is required for complex patients.

- 6 Patients with comorbidities or frailty should be recognised and managed as early as possible so that patients can begin to be optimised while still on the waiting list, rather than waiting for the pre-operative assessment itself.
- 7 Obesity is not a contraindication to day surgery; however, it is important to detect, assess and treat associated comorbidities such as cardiac disease (including right ventricular disease); obstructive sleep apnoea; and diabetes.
- 8 Patients should be allowed to drink water up to the time of being sent for surgery (sip 'til send') as this results in an increase in patient satisfaction with no evidence of an increased risk of aspiration.
- 9 Wherever possible, children should be managed on dedicated lists separate from adults or have their procedures at the start of the list. They should be separated from adults on the ward and in the post-anaesthesia care unit. Children requiring anaesthesia for non-surgical procedures/imaging should receive the same standards of care as those having surgical procedures.
- 10 In stand-alone day surgery units, there should be an extra anaesthetist available on site and the operational policy should agree clear management of certain key issues, such as the management of medical emergencies and transfer agreements.
- 11 Training for resident anaesthetists should encompass the entire day surgery process and should include teaching on patient selection; appropriate anaesthetic techniques; effective analgesic regimens; management of postoperative nausea and vomiting; requirements for safe discharge; and the management of patients following discharge.
- 12 Quality assurance and improvement programmes are an essential component of good care in all aspects of day surgery.

Introduction

Day surgery, defined as when *“the patient is admitted and discharged on the same day, with day surgery as the intended management”*, is now recognised widely as being a vital component of modern healthcare delivery. It offers an enhanced experience for patients with reduced risk of postoperative complications (e.g. infections, cognitive impairment and venous thromboembolism); reduced utilisation of inpatient beds; decreased hospital expenditure; and reduced environmental impact [4]. Day surgery shortens elective surgery waiting times and has a major role to play in overcoming the elective surgery

backlog [4]. For quality improvement, benchmarking purposes and accurate data capture, planned admissions for surgery must be coded for intended management as day surgery. If the admission is coded as an inpatient and they are discharged on the same day, this will be recorded as an inadvertent zero-night stay rather than a true day case.

In 2024, NHS England set a new overall day surgery target rate of 85%. At the time of publication of the previous guideline in 2019 [1], the overall day surgery target rate was 75%. As of January 2026, data from the Model Health System (<https://www.england.nhs.uk/applications/model-hospital/>) show that overall day surgery rates in the UK have increased to > 85%. This has been achieved through a range of interventions including implementation of new day surgery pathways and principles, supported by several initiatives, workstreams and guidance documents. The day surgery rate also now includes some procedures now performed in an appropriate outpatient setting or procedure room. Despite this, there is still wide variation in day surgery rates across the UK between specialities and trusts. There is a huge opportunity for continued improvement in the delivery of services through optimising the efficiency and effectiveness of day surgery.

Methods

We developed this consensus statement in accordance with best practice recommendations [5, 6]. The process was delivered by a multidisciplinary working party including representation from the Association of Anaesthetists, BADS and APAGBI. Evidence to inform recommendations was sought by conducting a targeted literature review of areas of practice that working party members felt were key to the peri-operative aspect of a day surgery system. Recommendations were made using data from included studies and, in the absence of sufficient evidence, by seeking expert opinion from the working party. Recommendations underwent a two-round Delphi approach to assess the content, clarity and importance of each recommendation [7]. Using a standardised Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA), recommendations were rated anonymously by all members of the working party as 'accept', 'reject' or 'revise', as well as whether each recommendation should be a 'top' recommendation. Two rounds of remote rating were performed, and the final list presented at a virtual round table for discussion, final voting and ratification (where required). Agreement with a statement by > 75% of the working party was the threshold for consensus agreement.

Results

Following the literature review, 32 recommendations were proposed. After the first round of the Delphi process, three recommendations did not achieve consensus (< 50% agreement) and were removed, and two (50–75% agreement) were revised. The second Delphi process identified and ranked 12 key recommendations. The remaining recommendations all reached consensus and were included within the body of the document.

This consensus statement should be used to guide peri-operative and anaesthetic processes aimed at optimising delivery of day surgery in conjunction with established guidelines and reference material. There are several procedure-specific pathways and guidance documents available via the Getting It Right First Time (GIRFT) programme website (<https://gettingitrightfirsttime.co.uk/>). There is guidance on aspects of peri-operative and anaesthetic care available from the Association of Anaesthetists, Centre for Perioperative Care (CPOC) and BADS. Published guidelines relevant to day surgery are also available from the Royal College of Anaesthetists Guidelines for Provision of Anaesthetic Services [2]. The National Day Surgery Delivery Pack, produced in collaboration with GIRFT, BADS and CPOC, was updated in 2024 and provides a practical reference guide to help healthcare staff and trusts develop and deliver effective day surgery pathways [4]. This covers the general principles of high-quality day surgery pathways, provides best practice examples, includes procedure-specific pathways and offers examples of standardised protocols that can be used throughout the patient pathway. In addition, the BADS Directory of Procedures and National Dataset provides information on recommended day-case rates for > 300 surgical procedures [8]. This utilises English NHS National Dataset information to indicate current performance rates and the potential release of inpatient beds and cost savings if proposed day surgery target rates were to be achieved. The day surgery targets quoted are arrived at by a combination of reported practice from leaders in their field; liaison with specialist organisations; actual rates from Hospital Episode Statistics figures; and expert opinion.

Patient selection

Day surgery should be considered the default option for all procedures listed in the BADS Directory of Procedures and National Dataset [8]. Most procedures can be done as a day surgery and, if possible, it is important to initiate this pathway, regardless of whether the patient is given a decision for surgery at surgical outpatients, attends as an emergency or is referred by their GP. The earlier a patient is

put on a day surgery pathway and given appropriate information, the more successful it is likely to be, as the patient will have more confidence in the day surgery process and postoperative discharge planning can be implemented early.

Selection of patients should be an inclusive process and not be determined by age, BMI, ASA physical status or physiological parameters; instead, suitability for day surgery should be based on an individualised, thorough pre-operative assessment including appropriate investigations. Pre-operative review by an experienced consultant or autonomously practising anaesthetist with day surgery expertise is required for patients who are complex (either due to patient or surgical factors) [9]. It has been recognised that even very complex patients (including those who are frail) can undergo day surgery if managed carefully.

Social factors

Patients need to have appropriate facilities at home and a telephone to contact the hospital if they need support with any postoperative problems. Specific instructions and telephone numbers should be given before discharge; good written and verbal patient information can facilitate a smooth recovery at home. Distance from the hospital to home should not be a limiting factor. Day surgery units can be run in rural areas as distance to any hospital is more important than it is to the actual discharging hospital. This is true even for tonsillectomy procedures, where a prompt return may (rarely) be required postoperatively.

The updated Royal College of Anaesthetists Guidelines for Provision of Anaesthetic Services states that “a carer at home may not be essential if there has been good recovery after brief or non-invasive procedures and where any postoperative haemorrhage is likely to be obvious and controllable with simple pressure” [2]. Some UK trusts have implemented policies that allow patients to return home after day surgery without the presence of a responsible adult overnight. Suggested criteria to allow this include agreement of all members of the day surgery team (anaesthetist, surgeon, ward team and patient); standard discharge criteria should be met; and the patient has a responsible adult to escort them home. Transport home should be by private car or taxi; public transport is not normally acceptable following general or regional anaesthesia procedures.

Once at home the patient should have support appropriate to the level of surgery they have had. Evaluation of the patient's need for assistance with medication and

activities of daily living should be considered, as should the potential need for a rapid return to hospital, such as after airway or laparoscopic surgery (concealed bleeding risk). If no support is available at the home, then a professional or volunteer carer service can be implemented. This can be supported by postoperative phone calls from the day surgery unit. Protocols to support this should be produced locally. The use of a virtual ward, where patient postoperative monitoring occurs at home with observations monitored remotely by hospital staff, with community nurse support via telephone or videophone, allows patients having more major surgery to go home on the same day [10].

Patient factors

Assessment of fitness for a day surgery procedure needs to consider the functional status of the patient and the likely impact of any comorbidities. Patients with complex conditions often recover better in their own home and potentially have fewer postoperative complications, including infections or venous thromboembolism [11]. As the UK population ages and people survive longer with chronic health conditions, there will be increasing numbers of patients presenting for elective surgery, and thus, facilitation of safe day surgery will have even greater importance. Patients with uncontrolled medical comorbidities are not suitable for day surgery; however, once optimised, these patients are often then fit enough for same-day discharge.

Frailty and the older patient

Age alone may increase postoperative complications and peri-operative risk; however, frailty is recognised increasingly as a more important risk factor than age for postoperative complications and mortality [12, 13]. Although short-term recovery may be slower [14], there is no reason why this cannot occur at home; the incidence of adverse events was not increased in a large group of high-risk patients after uncomplicated ambulatory surgery [15]. Guidelines from GIRFT and the British Geriatrics Society for patients living with frailty advocate promoting day surgery wherever possible [16]. Patients living with frailty have been shown to have significant improvements in quality of life 1 year after surgery [17]. Those patients aged > 65 y who stay in hospital after surgery and do not walk lose 2–5% of their muscle mass each day [18]. This can severely hamper recovery, especially if pre-operative muscle strength was already poor. Prehabilitation in this patient cohort, including daily exercise regimens, nutritional support and medication optimisation, has been shown to

improve outcomes for patients [19]. If patients are fitter before surgery, it is more likely that they will be offered day surgery.

Early recognition in surgical outpatients of patients who are frail allows optimisation while still on the waiting list, so they are ready for surgery, psychologically and physically, when given a date. Initiation of prehabilitation at this point is useful. Older patients with a clinical frailty score ≥ 5 can be sent for a Comprehensive Geriatric Assessment (CGA) or cross-disciplinary review by a senior anaesthetist with expertise in day surgery to try and reduce peri-operative risks [20]. This may be delivered in 'Peri-operative care for Older people undergoing Surgery' (POPS) clinics where a geriatrician, in conjunction with a consultant or autonomously practising anaesthetist can review and optimise patients and, without waiting for multiple referrals to different specialities, work towards comprehensive shared decision-making [21].

Cognitive dysfunction

Many patients having surgery will have dementia or cognitive impairment or be at risk of postoperative delirium or cognitive decline [13]. Evidence shows that day surgery is associated with lower rates of postoperative delirium compared with inpatient surgery, possibly due to recovery in familiar surroundings with familiar people [22]. There is also reduced exposure to opioids and sedatives compared with a postoperative surgical ward. Good pre-operative assessment includes informing the patient's next-of-kin/carers of the likely peri-operative course and what to observe at home, as well as what is normal after surgery. A plan for the carer to accompany the patient into the anaesthetic room and to be there during recovery, if this will help calm the patient, can be made in discussion during pre-operative consultation so that a clear pathway is evident to everyone involved [23]. Assessment of the degree of cognitive dysfunction and ability to co-operate in hospital will help plan appropriate anaesthetic techniques and minimise the risks from anaesthesia and surgery [24].

Obesity

Obesity itself is not a contraindication to day surgery [25]; even patients living with morbid obesity have been discharged successfully on the same day as surgery. In general, for patients with a BMI $< 50 \text{ kg.m}^{-2}$, day surgery is often appropriate, provided comorbidities have been optimised [26]. Detection, assessment and treatment of associated comorbidities such as cardiac disease (including right ventricular disease), obstructive sleep apnoea (OSA) and diabetes are necessary to determine the overall risks

involved for the planned surgery [27]. This requires an individualised pre-operative assessment and appropriate investigations (including echocardiography, overnight oximetry or sleep studies where required), followed by review by an experienced senior anaesthetist.

Multidisciplinary team discussions may help with pre-operative optimisation. There should also be an understanding of the recovery profile and complication rates specific to the type of surgery planned and how they may be altered by patient obesity. It should be recognised that a patient with a high BMI requires extra time, equipment and experienced staff on a day surgery list – this should be communicated beforehand so that the day surgery team are prepared.

The incidence of postoperative complications is increased in this patient population, but these tend to occur early in the anaesthetic course or in the immediate postoperative recovery period, and do not preclude discharge on the same day, provided later recovery is likely to be uncomplicated. Patients who are living with obesity benefit from early mobilisation due to an increased risk of venous thromboembolism, and prolonged prophylaxis may be required [28].

Obstructive sleep apnoea

Obstructive sleep apnoea, when untreated, increases the risk of peri-operative cardiopulmonary complications [29]. However, it is not an absolute contra-indication to day surgery if appropriate risk assessment and optimisation are undertaken [28]. It has been suggested that assessment should include the severity of OSA (apnoea–hypopnoea index or equivalent oxygen desaturation index); whether OSA is treated with CPAP; type of surgery planned; and expected requirements for opioid analgesia postoperatively [28]. In combination, this information can help guide peri-operative decision-making with regard to suitability for day surgery. Regional anaesthetic techniques and opioid-free analgesia can help facilitate day surgery [29].

Many patients have undiagnosed OSA, when they present for elective surgery. Timely identification at pre-operative assessment of those at high risk of having OSA, using validated risk assessment tools such as the STOP-Bang or B-APNEIC questionnaire facilitates pre-operative testing and referral to sleep services [30, 31]. A STOP-BANG score > 5 suggests further investigation, with overnight oximetry or limited sleep studies. Local pathways for referral to sleep clinics for CPAP treatment should be developed as, once treatment is established, the patient can

still return for day surgery. Day surgery may be possible in patients with a presumed diagnosis of OSA who are undergoing minor/intermediate surgery. This requires other medical comorbidities to be well controlled and for postoperative analgesia to be able to be provided without the need for long-acting opioids (e.g. opioid-free techniques and/or regional anaesthesia) [29].

Initiation of CPAP therapy can help reduce the peri-operative and postoperative complication rates related to OSA [32, 33] and decrease long-term morbidity [34]. Compliance with CPAP treatment should be confirmed before offering day surgery. Patients should be reminded to bring their CPAP machines in with them on the day of surgery, and individual decisions about fitness for discharge home after day surgery should be made by the surgical and anaesthetic team. Some evidence shows that most postoperative complications occur in the first 24 h after surgery [32]. However, at postoperative day 3–4, when rapid eye movement sleep returns there may be additional risk, so patients should be advised of this and the importance of compliance with CPAP treatment postoperatively [31, 35].

Diabetes mellitus

Day surgery is advantageous for patients with diabetes, as it allows them to return to their normal environment soon after surgery, permitting resumption of their usual eating habits and medication regime, thereby optimising control of blood sugar. As such, diabetes is not a contra-indication to day surgery.

Guidelines relating to the peri-operative management of diabetes is available from the Association of Anaesthetists and Joint British Diabetes Societies for Inpatient Care [36]. In general, primary care providers should ensure adequate control of diabetes before referral for elective surgery and that suboptimal control ($\text{HbA1c} > 69 \text{ mmol.l}^{-1}$) is identified; treatment can then be initiated to improve control early in the pathway [36]. Before elective surgery, patients with suboptimal diabetic control, especially those with type 1 diabetes, should be referred as soon as possible to specialist diabetic teams [36]. It can take up to 3 months before improvements in HbA1c are seen and it may be necessary to proceed with surgery once values are reducing, even if the target is not yet reached. Patients using continuous subcutaneous insulin infusion pumps should also be referred for specialist advice, due to an increased risk of postoperative complications [37]. A clear peri-operative plan is required, and this should be discussed with the patient as part of shared decision-making. This should

include discussions regarding the management of diabetic medications in line with protocols.

Sodium-glucose co-transporter-2 (SGLT-2) inhibitors work by blocking the re-absorption of glucose in the kidneys, leading to more glucose being excreted in the urine. In addition to diabetes management, SGLT-2 inhibitors have also been shown to slow the progression of kidney disease and may help patients with heart failure [38]. Glucagon-like peptide-1 (GLP-1) receptor and glucose-dependent insulinotropic polypeptide receptor agonists cause a glucose-dependent increase in insulin secretion. These drugs may be associated with delayed gastric emptying and euglycaemic ketoacidosis [38, 39]. Current recommendations are to stop SGLT-2 inhibitors 24 h before surgery but to continue GLP-1 receptor and glucose-dependent insulinotropic polypeptide receptor agonists [39].

Fasting should be minimised by placing patients first on the operating list if possible. Details of what to expect at home after surgery and the likelihood of fluctuations in blood sugar levels should be discussed. Patients with diabetes have individualised blood glucose targets, usually between 4 and 6 mmol.l^{-1} , when not eating. Patients should be advised to temporarily aim for a slightly higher target during peri-operative fasting and surgery to avoid hypoglycaemia [40]. Regular capillary blood glucose and ketone monitoring devices should be available for all diabetic patients. In addition, post-anaesthesia care unit (PACU) and ward staff should be trained in the use of these devices, and there should be protocols in place for management of high or low blood sugar levels.

Many patients with type 1 diabetes now use continuous subcutaneous insulin infusion pumps. These pumps deliver a continuous supply of subcutaneous fast acting insulin (e.g. Apidra®, Novorapid®, Humalog®, Lyumjev®, Fiasp®, Trurapi®), with an insulin bolus delivered at mealtimes according to the carbohydrate load of the meal (calculated via the insulin pump or a smartphone application). These pumps may be used with continuous glucose monitors or flash glucose monitors. These monitors lag behind actual blood glucose levels and should not be used to replace capillary glucose and ketone monitoring, especially in patients who are sedated or anaesthetised.

Hospitals should develop pathways to allow patients with diabetes to continue to use their continuous subcutaneous insulin infusion pump when the anticipated fasting period is only one missed meal; this is the case for most day surgeries. Care should be taken regarding screening radiological procedures or diathermy during surgery (due to the potential for electromagnetic fields to

cause damage to the pump [41]), in which case alternative delivery methods for the insulin may be needed. Patients should also be advised on where to place their infusion sets before surgery in order to avoid the surgical field and/or interference with monitoring.

Staff need to be familiar with continuous subcutaneous insulin infusion pumps, their alarms and the risk of rapid ketosis if there is disconnection or pump failure. Regular glucose monitoring and use of alternative insulin infusion methods if pumps fail can help mitigate these risks [37]. Disconnection periods of up to 30 min are allowed during normal pump use to allow patients to bathe or swim.

Multiple comorbidities

Multiple comorbidities are defined as the presence of two or more chronic conditions that have lasted more than a year and interfere with normal activity. The presence of multiple comorbidities in patients having surgery is now more frequent [3]. Historically, comorbidities have been assessed using the ASA physical status. However, ASA physical status grading is subjective, with inter-rater agreement shown to be variable [42]. Functional status is a more accurate assessment of risk than ASA physical status alone. A study of patients who were ASA physical status 3 found that those who were partially or fully dependent had a greater risk of postoperative mortality than those who were functionally independent [43].

In isolation, ASA physical status should not be used to determine suitability for day surgery. Even patients who are ASA physical status 4 have undergone day surgery successfully [15]. Many of these patients present for urology or orthopaedic procedures. Consideration of regional blocks, short-acting spinal anaesthetic drugs or other awake local anaesthetic techniques can facilitate day surgery success.

Patients with learning difficulties

Day surgery pathways are often the best option for minor surgery for patients with learning difficulties. A multidisciplinary team consisting of staff with an interest in supporting bespoke day surgery pathways can help ensure that these patients have a successful day surgery experience. The input of a learning disability nurse may be helpful in these circumstances. A lead nurse on the ward overseeing the pathway can help streamline processes on the day. Planning should include flexibility in time of admission, having a quiet place on the ward, the need for any sedation and for the carer to accompany the patient to the anaesthetic room and be present when

the patient awakes. The patient's carer should know what is planned and what to expect postoperatively, including a plan for analgesia, and they should feel supported that the pathway will allow surgery with minimal disruption to daily routines.

Patients who are in prison

Adequate planning is necessary for patients who are in prison to undergo surgery. An agreed pathway should exist with local prisons so that patients can attend for pre-operative assessment [2]. Patient information should be given in the usual way to allow informed consent [2]. Risk assessments, including the degree of restraint required and knowledge of individual patient behaviour that may impact on other day surgery patients or staff, should be communicated in advance so that reasonable adjustments can be made. The whole day surgery team should be aware of the challenges and a plan made for the entire peri-operative pathway. Restraint should be in line with guidance to maintain privacy and dignity for the patient [44]. Standard postoperative analgesia usually prescribed for home use should be available, either for distribution by the medical officer at the prison or to be used within the patient's cell overnight. Usual practice is to prescribe the shortest effective course of analgesics; this may need to include simple analgesics normally obtained over the counter. There should be provision of adequate overnight observation at the prison in line with the specific procedure that has been undertaken.

Patients who are breastfeeding

Association guidelines on breastfeeding should be followed [45]. Any patient with a young child should be asked at pre-operative assessment about breastfeeding and this information relayed to the anaesthetist and day surgery team. Patient information about breastfeeding should be provided. Day surgery is a convenient choice for these patients, and breastfeeding should be continued in the peri-operative period if the patient wishes to do so. A private area on the day surgery unit can usually be found to continue daily breastfeeding routines. Patients can breastfeed after surgery and do not need to discard breast milk ('sleep and keep' rather than 'pump and dump'). Thought should be given as to how this can be supported with attendance of an additional carer for the child while the patient is undergoing surgery. If the patient has taken opioid analgesia, they should be warned regarding the potential for excessive sedation in their child. Codeine should be avoided due to reports of

excessive sedation in breastfed children [46, 47]. Multimodal analgesia and regional techniques are recommended.

Transgender and gender-diverse patients

Transgender and gender-diverse patients should be managed according to guidelines from the Association [48]. The preferred name and pronouns of the patient should be confirmed and always used. There should be a process in place whereby a patient can privately and safely disclose both their sex at birth and gender as part of pre-operative assessment. All forms of social, medical and surgical gender affirmation should be identified at pre-operative assessment and sensitive explanations given to the patient as to the purposes of enquiring.

Anaesthetists should be aware that many aspects of gender-affirming care may not be present on a patient's health record. A pre-operative pregnancy test should be offered to all patients who have a uterus and ovarian tissue between the ages of 12 y and 55 y, regardless of the use of contraception. All specific peri-operative considerations for transgender and gender-diverse patients, including name and pronouns, should be communicated with the team at the surgical brief.

Anaesthetists should understand that airway assessment may be difficult in a patient who has undergone gender-affirming cosmetic procedures of the face and neck. For example, patients who have undergone cricothyroid approximation may no longer have a cricothyroid membrane and emergency front-of-neck airway access may not be possible. This should be considered when formulating an airway plan. Hormone therapy should be continued throughout the peri-operative period unless there are specific contraindications. Patients should be counselled on the risks and benefits of this with the aim of making a shared decision.

Current total intravenous anaesthesia (TIVA) pharmacokinetic models are not validated for transgender and gender-diverse patients on established hormone therapy. Processed electroencephalogram monitoring should therefore be used. Transgender and gender-diverse patients should be cared for in an environment that respects their gender identity. Organisations should have clear guidance for the care of patients who are transgender and gender diverse. This should include specific educational materials to increase awareness of issues impacting their access to high-quality care.

Surgical factors

With more procedures possible as day surgery, moving from inpatient pathways to day surgery pathways should be

considered and implemented through planning and teamwork. Management input is vital to support this work which will increase day surgery rates and thus help reduce the elective backlog from the COVID-19 pandemic. There are several factors to consider in determining if a procedure could be carried out as day surgery. The surgery should not carry a significant risk of serious postoperative complications requiring immediate medical attention (e.g. haemorrhage or cardiovascular instability). Postoperative symptoms (such as pain and nausea) must be controllable using a combination of oral medication and local anaesthetic techniques. The procedure should not prohibit the patient from resuming oral intake within a few hours of the end of surgery. Patients should be able to mobilise before discharge, with mobility aids as necessary. Venous thromboembolism risk assessment and any appropriate prophylactic measures should be instigated and continued following discharge.

Pre-operative assessment and optimisation

Guidance has changed recently with the aim to recognise comorbidities or frailty as early as possible so that patients can begin to be optimised while still on the waiting list [9], rather than waiting for the pre-operative assessment itself, which may be too close to the surgery date and hence risk cancellation. This means that even at the stage of GP referral, if there is a patient with a known comorbidity, such as OSA, diabetes or atrial fibrillation, adequate management should be checked, and further treatment instigated if this is not optimal [49].

Hypertension [50] and anaemia [51] can be treated appropriately to decrease peri-operative surgical risks. Protocols should be developed locally and screening tools in outpatients are helpful in doing this, with digital platforms being used in some hospitals. Non-clinical co-ordinator roles can help with completing these screening forms and aid risk assessment and decision planning. Prehabilitation and increasing patient fitness through referral to support agencies can help increase the number of patients suitable for day surgery [52, 53].

One-stop pre-operative assessment clinics can be used to minimise patient visits and initiate early optimisation for those with comorbidities. Traditional nurse-led pre-operative assessment is suitable for less complex patients and recognition of higher risk patients who are not already identified. Ideally, this should occur in the day surgery unit led by experienced assessment staff who are well placed to educate patients regarding the day surgery pathway. In this way, anxieties can be reduced by exposure to the day surgery environment [4]. High-risk patients can

then be directed to high-risk clinics, which can be POPS clinics with both geriatrician and anaesthetist input [54], or clinics led by consultant or autonomously practising anaesthetist with expertise in day surgery. These can be virtual or face-to-face. A multidisciplinary consultation can help with optimisation and treatment of all comorbidities and a full discussion of risks for surgery for a better outcome. Guidelines on competencies for day surgery pre-operative assessment have been produced by BADS and the Association for Perioperative Practice [55].

Protocols for the pre-operative process should follow national or local guidelines and be agreed by the day surgery team. The aims of pre-operative assessment are shown in Box 1.

Investigations before surgery should follow NICE guidance [56]. Patients who are complex may need more investigations (e.g. sleep studies for suspected OSA or an echocardiogram for aortic stenosis) if these allow a better risk assessment and enhanced decision-making regarding suitability for day surgery.

Day surgery for urgent procedures

Patients presenting with acute conditions requiring urgent surgery can be efficiently and effectively treated as day cases via a semi-elective pathway [57–59]. After initial assessment, many patients can be discharged home and return for surgery at an appropriate time, either on an urgent planned day case list or as a scheduled patient on an emergency operating list. This reduces the likelihood of repeated postponement of surgery due to prioritisation of other cases. A robust day surgery process is key to the success of this service. Some of the procedures successfully managed in this manner are shown in Table 1 [4]. Essential components of an urgent day surgery pathway are shown in Box 2.

Documentation

Patient information is an important part of day surgery and should be supplied in multiple formats, including verbal, written and digital material. Each patient should have a day surgery booklet covering the entire patient pathway from pre-operative assessment to discharge, in order that the episode can be easily identified and audited. Full documentation of the entire process should be to the same standard as for inpatient surgery.

Management and staffing

The day surgery unit should have a clinical lead who has clinical expertise in day surgery and who can help produce local guidelines, manage teams to move inpatient procedures to day surgery and interact with non-clinical

Box 1 Aims of pre-operative assessment for day surgery

- To educate the patient and/or carer about the day surgery pathway and what to expect, including postoperative recovery at home, what is normal and what circumstances would need further medical input.
- To describe the likely surgical and anaesthetic procedures so the patient has enough information to make informed choices.
- To consider the patient's comorbidities, alternative management options (including conservative management) and preferences to reduce post-surgical regret (defined as distress or remorse specifically to the decision to have surgery, often linked to poor communication, feeling left out of the decision-making process or unexpected outcomes).
- To diagnose conditions that have a major impact on anaesthesia and surgery and may need treatment before proceeding to surgery (e.g. obstructive sleep apnoea, aortic stenosis).
- To identify disease severity and limitation to activities of daily living, and to explain the impact this has on surgery and recovery.
- To request appropriate investigations to allow accurate risk definition.
- To optimise health conditions as much as possible before surgery to reduce the risk of peri-operative complications.
- To recognise that patients who are complex or comorbid can still have day surgery, and to refer such patients to an appropriate anaesthetic clinic for review.

managers up to board level in order to implement changes that improve day surgery services [4]. A day surgery unit service manager is required to oversee the daily running of the unit and resolve any problems arising. The day surgery team, from ward nurses to theatre and recovery staff, anaesthetists and surgeons, should all be trained in day surgery techniques and current best practice. Standards should follow the BADS and Association for Perioperative Practice guidance [55]. Day surgery staff should be trained in day surgery admission processes and provide continuity for the whole patient visit. Nurses should be encouraged to multiskill in the day surgery unit, which can increase job satisfaction, list efficiency and allow them to work in several areas of the day surgery unit, including pre-operative

Table 1 Urgent procedures that may be performed as day surgery.

Speciality	Procedure
General surgery	Wound debridement/closure Incision and drainage of skin abscess Incision and drainage of perianal abscess Emergency laparoscopic/open appendectomy Emergency laparoscopic cholecystectomy Endoscopic retrograde cholangiopancreatography
Trauma and orthopaedics	Primary repair of tendon (wrist or hand) MUA fracture and application of plaster cast Removal of foreign body from skin Primary reduction and open fixation of ankle/wrist
Gynaecology	Evacuation of retained products of conception. Removal of products of conception from fallopian tube (ectopic pregnancy), including laparoscopically
Oral and maxillofacial surgery	Reduction of fracture of zygomatic complex of bones. Reduction of fractured mandible

MUA, manipulation under anaesthesia.

Box 2 Essential components of an urgent day surgery pathway

- Identification of appropriate procedures.
- Determining whether the condition is safe to be managed at home until surgery and that pain is controlled with oral analgesia.
- Identification of a theatre list that can reliably accommodate the procedure (e.g. a dedicated day surgery list or a flexibly run emergency theatre list).
- An appropriate pre-operative assessment process to identify whether the patients are suitable to go home on the same day.
- Provision of clear pre-operative patient information, ideally in writing.
- Ensuring clear pathways are in place and there are systems to track patients, e.g. virtual whiteboards.

assessment [60]. There should be a multidisciplinary day surgery group who meet regularly to decide policies, procedures and discuss any operational issues in order to improve day surgery efficiency through quality assurance exercises and audit.

High-intensity theatre lists

Long waiting lists and the elective surgery backlog has provided a huge challenge for the NHS. While investment in

infrastructure and initiatives, such as elective surgical hubs, have increased theatre capacity, trusts are constrained by limited finances. As a result, there is a drive to make better use of existing facilities. One way of doing this is with the use of high-intensity theatre lists. Many such initiatives have been used in the UK and, while there are a variety of models described, there are key principles that apply: utilisation of redundant facilities (e.g. operating theatres and day surgery areas that are not in use at weekends); employing increased staffing levels; and utilising parallel theatres. Such lists are typically associated with increased efficiency, low on-the-day cancellation rates and high day surgery rates [61, 62]. The use of anaesthetic rooms, the organisation of anaesthetic staff and the timing of induction of anaesthesia are critical to the success of these lists, with the aim being to have one patient anaesthetised and ready for surgery while surgery is being completed on the previous patient, minimising theatre downtime and increasing utilisation [62].

Facilities

Whenever possible day surgery services should be provided within a dedicated day surgery unit with its own pre-, intra- and postoperative facilities, administrative office and facilities for patients and staff [4, 63]. Admission and discharge areas for patients help with an efficient pathway for those undergoing day surgery. Opening times will reflect local listing of patients and may increase discharge rates if staff are available until 22:00 h.

Some hospitals without a dedicated day surgery unit are still able to run efficient day surgery services using inpatient

theatres for the surgical procedure. The day surgery team and mindset are the most important factors for success, with dedicated admission and discharge areas for the day surgery patients run by trained day surgery staff. Avoiding mixing of inpatient and day surgery patients will help increase list efficiency and prioritise same-day discharge. Ringfencing day surgery areas and using trolleys for patients undergoing day surgery so that the area cannot be used as extra bed spaces during times of high emergency admissions or winter pressures may avoid service disruption.

All standards and equipment should be equivalent to inpatient theatres with the same ability to provide care in the event of a critical incident or peri-operative complication. Local pathways should be in place to facilitate appropriate high-level care in such scenarios and timely intra- and interhospital transfer if required for ongoing care in an inpatient or critical care facility.

Stand-alone day surgery units

There are many stand-alone day surgery facilities in the UK and Ireland and there is no set absolute minimum distance between any stand-alone unit and the nearest emergency department, although large distances are uncommon. The commissioning of any new stand-alone unit requires analysis of its suitability for the provision of intended services. These facilities may, or may not, be purpose-built and the clinical lead must be aware of this in managing any risk. The relationship with any nearby acute units should be reviewed regularly. Remoteness is a factor to be considered in the delivery of a safe and efficient service. Ideally, there should be at least two anaesthetists on site at any one time. The operational policy for the unit should define the management of key issues (Box 3).

Admission process

On the day of surgery, admission should be at a time suitable for morning or afternoon lists, to minimise the time the patient waits in hospital. There must be enough time to allow staff to admit the patient and for the surgeon and anaesthetist to discuss relevant details. This should include finalising consent and laterality with the patient, and discussion of anaesthetic techniques. The patient should have the opportunity to ask any questions. Staggering admission times for all-day theatre lists can aid efficiency, provided that anaesthetic/surgical staffing levels allow patients to be reviewed without reducing theatre utilisation and disrupting flow. Dignity should be maintained and changing into a theatre gown should occur only when surgery is imminent. Single-sex bays and accommodation

Box 3 Key operational aspects for stand-alone day surgery units

- Appropriate patient screening and selection, with availability of medical records, either in paper form or the electronic patient record.
- Management of medical emergencies, e.g. cardiac arrest and major haemorrhage, and the availability of equipment, drugs and skilled personnel to deal with complications whilst the anaesthetist is in theatre.
- Robust communications and transfer agreements between the stand-alone unit, the nearest acute hospital and the ambulance service.
- Management of patients who cannot be discharged home.
- Management of patients with complications following discharge.
- Appropriate medical and nursing cover until patients are discharged.
- Teaching, training, supervision and opportunities for research.

for patients with specific requirements need to be provided, and carers allowed to accompany the patient where relevant.

Pre-operative fasting

National Institute for Health and Care Excellence guidelines recommend patients take only clear fluids orally from 6 h before surgery and are nil by mouth for 2 h before surgery [64]. It is now recognised that prolonged pre-operative fasting is associated with feelings of thirst, discomfort and increased postoperative nausea and vomiting [65, 66]. The consequences of recommended fasting times are compounded by not knowing when operations will be expected to start, often resulting in far greater fasting times than are necessary. There is evidence to show that gastric volume returns to normal within 30 min of ingesting 500 ml water [67]. As such, there has been a drive to reduce pre-operative fasting and allowing patients to drink water up to the time of being sent for surgery, known as a 'sip til send'. This has been successfully implemented in many UK hospital trusts with an increase in patient satisfaction and no reports of adverse consequences [65, 68]. If following this practice, water should be available to patients in the day surgery unit while they wait. The risk:benefit of 'sip til send' in patients taking glucagon-like peptide-1 receptor agonists

is unclear with recent UK work showing an increased risk of regurgitation and pulmonary aspiration [69]. Further work is needed in this patient cohort to determine safe practice.

Anaesthetic management

Anaesthesia should be carried out by appropriately trained anaesthetists with expertise in this area or residents/speciality doctors who are supervised by a consultant or autonomously practising anaesthetist with day surgery expertise. The aims of anaesthesia are to provide the most appropriate technique for the individual patient considering comorbidities, frailty and the type surgery; to minimise the risk of postoperative complications; to reduce adverse effects; and to provide adequate analgesia. The patient should return to street fitness, with normalised physiology, drinking, eating and mobilising (DREAMing) [70], as soon as possible. Attention must be paid to minimising the occurrence of symptoms which may delay discharge such as pain; postoperative nausea and vomiting (PONV); urinary retention; drowsiness; difficulty mobilising; and orthostatic hypotension.

When considering general anaesthesia, there is little evidence that maintaining anaesthesia with short-acting volatile anaesthetic agents vs. propofol-based TIVA is superior in terms of outcomes. However, evidence currently suggests that TIVA may be advantageous to reduce postoperative nausea and vomiting and cognitive dysfunction [71]. It may also provide an experience that is preferable to patients, with reduced postoperative pain in recovery and a shorter first stage recovery [72, 73].

Opioids have a significant adverse effect profile that results in delayed discharge including PONV; sedation; pruritus; and urinary retention. Multimodal analgesic techniques can lower the required opioid dose and therefore reduce the incidence of adverse effects [74]. These techniques include the use of paracetamol and non-steroidal anti-inflammatory drugs; use of local or regional anaesthesia; and consideration of adjuncts such as clonidine, ketamine, intravenous lidocaine and magnesium where appropriate. Longer acting opioids (e.g. morphine), while providing prolonged analgesia, have a higher risk of causing PONV compared with use of shorter acting opioids (e.g. fentanyl) which may facilitate earlier discharge [75].

Avoiding PONV is key in day surgery so local protocols should be in place describing the use of multiple combinations of antiemetics according to patient risk profile. This can be measured pre-operatively using the Apfel risk calculator [76]. If the risk of PONV is high, then total intravenous or regional anaesthesia may reduce the risk of PONV [71] and aid day surgery success.

Spinal anaesthesia is a useful tool in the day surgery unit. Local anaesthetics such as 2% hyperbaric prilocaine hydrochloride or 1% 2-chloroprocaine are short acting and have rapid onset; these drugs allow rapid recovery and have fewer adverse effects, such as hypotension or urine retention [77]. Spinal anaesthesia may allow patients who are ASA physical status 3 and 4 patients to have day surgery.

Sugammadex is a specific antagonist for aminosteroid neuromuscular blocking drugs that is useful in day surgery. The ability of sugammadex to antagonise rocuronium allows recovery even from deep levels of neuromuscular blockade, which is useful for short day surgery procedures where deep neuromuscular block is advantageous [78]; rapid antagonism of neuromuscular blockade may also help expedite list efficiency [78]. Compared with neostigmine, sugammadex reduces the incidence of PONV and may reduce duration of stay [79]. Sugammadex can make hormonal contraceptives less effective because its interaction with progesterone [80]. All female patients of a reproductive age who have received sugammadex should be given a patient information leaflet regarding the need for additional contraceptive precautions (template available at <https://rcoa.ac.uk/media/40626>).

Implantable devices

In patients presenting for day surgery, implantable devices are most commonly either cardiac (e.g. pacemakers, loop recorders and implantable cardiac defibrillators) or neurological (e.g. sacral or lumbar nerve stimulators, deep brain stimulators, vagus nerve stimulators). In isolation, no implantable device is an absolute contraindication to day surgery, but there are patient and device factors which require peri-operative consideration.

Cardiac devices

This is described in detail in guidelines from the British Heart Rhythm Society [81]. Pre-operative assessment should identify the presence of a cardiac implantable electronic device, ensure the device has been under regular follow-up and, if necessary, contact the patient's usual cardiology team for advice. For pacemakers, it is important to determine if the patient is pacing-dependent, the site of the planned surgery and what type of diathermy will be used. In patients with implantable defibrillators, it is important to determine if peri-operative deactivation is needed; the availability of a cardiac electrophysiologist is therefore crucial in determining suitability for day surgery. Implantable loop recorders and insertable cardiac monitors pose no risk with any type of surgery, and patients can have

day surgery without additional precautions. A summary of the British Heart Rhythm Society guidelines is shown in Table 2.

Neurological devices

Vagal nerve stimulators should be managed according to guidelines from the Association of Anaesthetists [82]. In general, these devices should be deactivated pre-operatively and then reactivated (or interrogated if not deactivated) postoperatively; this is the case for both general and spinal anaesthesia and is of particular importance if diathermy has been used. Patients should be aware of the importance of always carrying their personal device magnet with them to facilitate urgent device deactivation if necessary. Given that patients with vagal nerve stimulators often have complex medical conditions, day surgery is only likely to be possible in neuroscience centres.

Sacral nerve stimulators are inserted to help bowel or bladder function, while spinal cord stimulators are used in the management of chronic pain conditions. Both devices should be deactivated for the intra-operative period. The device should then be reactivated postoperatively and subsequently interrogated to check function; this can be done after discharge and thus does not preclude day surgery. Monopolar diathermy is contraindicated due to the risk of heating the epidural leads. Sacral nerve stimulators are not a contraindication to spinal anaesthesia; however, in patients with spinal cord stimulators, spinal anaesthesia is relatively contra-indicated due to the risk of direct damage to the stimulator leads. As some patients can deactivate their own devices using a remote control, day surgery may be possible but discussion with the responsible neuroscience or pain team is advised.

Deep brain stimulator systems consist of electrodes implanted into the deep thalamic nuclei, an implantable pulse generator inserted below the clavicle or in the abdomen, with extension wires which connect the two. They are used to treat movement disorders (e.g. Parkinson's disease), chronic pain and psychiatric disorders. Monopolar diathermy is not recommended in these patients and bipolar diathermy should be used where possible. If monopolar diathermy is necessary, it should be used at low voltage, the lowest possible power setting and with ground plate placement as far away from the system as possible. After diathermy, the deep brain stimulator system should be checked to ensure proper function [83].

Discharge

Once discharged from the post-anaesthesia care unit, patients should be encouraged to return to drinking, eating, mobilising and getting dressed. Of note, patients who would be suitable for discharge from the PACU before they leave theatre, may be able to go straight back to the day surgery unit (e.g. surgery performed under regional block). Nurse-led discharge from day surgery facilitates timely decision-making and improves patient flow through the day surgery unit. It is useful to relay postoperative information to the adult accompanying the patient at the point of discharge if there are any concerns about retention of information by the patient themselves. Discharge information should be provided in verbal, written and/or digital formats where possible. Discharge medications should be readily available in a pre-packaged format for easy dispensing by day surgery staff. In general, sufficient analgesia or other necessary postoperative medication should be provided for 5–7 days postoperatively. Local guidance or procedure-specific

Table 2 Summary of British Heart Rhythm Society guidelines for the peri-operative management of implantable cardiac devices.

	Pacemaker Pacing-dependent	Not pacing- dependent	Implantable defibrillator
Surgery above the umbilicus*	Consider reprogramming to fixed rate if prolonged diathermy	Monitor	Deactivate
Surgery below the umbilicus	Monitor	Monitor	Monitor
Lithotripsy	Monitor	Monitor	Deactivate
Endoscopy	Consider reprogramming to fixed rate if prolonged diathermy or argon beam	Monitor	Deactivate

Adapted from Ref. [80]. Green boxes show patients in whom day surgery is likely to be possible without cardiac electrophysiological support.

*Includes dental and ophthalmic surgery.

peri-operative pathways can assist in standardising discharge packs.

It is essential to inform the patient's general practitioner promptly of the type of anaesthetic given, surgical procedure performed, postoperative instructions given and discharge medications prescribed or advised. Patients should be given a copy of their discharge summary so it is available should they require medical assistance. Additional postoperative information can be provided in a procedure-specific patient information leaflet.

Day surgery units should agree with their local primary care teams how support is to be provided for patients in the event of postoperative complications. Best practice is a helpline for at least the first 24 h after discharge, and to arrange telephone follow-up the next day. This type of follow-up is highly valued by patients, provides support should any immediate complications arise and is useful for auditing postoperative symptoms, patient satisfaction and other quality assurance issues [4].

Day surgery for children

Day surgery is recommended for children who have few, or well-controlled, comorbidities and standards of care are described elsewhere [63]. Many children require anaesthesia for non-surgical procedures such as imaging; endoscopy; laser treatment to skin lesions; radiotherapy; and oncology investigations and treatments. These children should receive the same standards of care as those having surgical procedures.

Wherever possible, children should be managed on dedicated lists separate from adults or prioritised as a cohort to have their procedures at the start of the list. Children should be separated from adults on the ward and in the PACU. Patients who are neurodiverse have specific psychosocial and emotional needs that should be considered pre-operatively.

Patient selection

The BADS directory of procedures includes a list of paediatric procedures [8] and, as in adults, the range of procedures performed as day surgery is constantly evolving. There are few absolute contra-indications to day surgery in children. Most children, even those with complex comorbidities, can have safe day surgery, provided pre-operative assessment is robust and care is individualised and delivered by experienced staff in appropriate facilities. All hospitals should have guidelines on the lower age limit and medical comorbidities of children that are acceptable for day surgery. This should reflect the available facilities, equipment, training and experience of staff.

District general hospitals deliver day surgery for many children and can provide a high-quality service close to home for otherwise healthy children having simple procedures. Day surgery in a local hospital is also possible for children with chronic stable disease, provided the necessary expertise, infrastructure and support mechanisms are in place. Tertiary paediatric centres are performing increasingly complex procedures as day surgery. Many tertiary centres adopt a lower age limit of 44 weeks 'post-menstrual age' (defined as gestational age plus chronological age) for minor procedures in otherwise well, term, neonates. Ex-premature infants (those born < 36 weeks gestational age) are a complex heterogeneous group requiring careful individual assessment and are not usually accepted for day surgery if < 55 weeks post-menstrual age.

Obstructive sleep apnoea

Children with OSA presenting for tonsillectomy and/or adenoidectomy need careful assessment. Guidance has been created to encourage a 'default day case' approach to this type of surgery [84]. Those at high risk of postoperative respiratory complications and severe OSA should be managed in a tertiary centre and are not suitable for day surgery due to the high risk of postoperative complications [84].

Obesity

Childhood obesity is rising sharply within the paediatric surgical population in the UK [85]. While paediatric obesity alone (defined as a BMI above the 98th centile, BMI z-score + 2 [86]) is not an absolute contraindication to day surgery, it should be a consideration when deciding the list order, duration of time for postoperative observations, and whether admission, or even a high dependency unit bed, is required. Every child should have their height and weight measured pre-operatively and local guidelines should be in place to help children who require weight loss management. Information should be given to parents regarding the complications of obesity and there is guidance available for the peri-operative management of an obese paediatric surgical patient [87].

Diabetes mellitus

Diabetes mellitus is a common comorbidity seen within the paediatric population. Management should be established and controlled before day surgery. Being seen in the pre-assessment clinic will allow for further pre-optimisation (if required) as well as appropriate information regarding medication dosage, omission and feeding guidance.

Investigations before surgery include HbA1c, electrolytes and monitoring of glucose/ketones on the day of surgery. Where possible, children with diabetes should be listed first on an operating list to avoid prolonged fasting and hypoglycaemic episodes. The aim is to have capillary blood glucose levels between 5 and 10 mmol.l⁻¹ [88].

In general, long-term subcutaneous insulin should be continued while short- to medium-acting insulin will need to be altered (depending upon the type of insulin and timing of surgery). Local guidelines should be consulted, and a decision made as part of a multidisciplinary team approach between paediatric endocrinologists, surgeons, anaesthetists and nursing staff. Careful management is required when the patient has a subcutaneous insulin pump (continuous subcutaneous insulin infusions via an indwelling catheter and device). The rate is normally altered depending on the amount of carbohydrate consumed in previous meals and, in the fasted patient, this must be considered and perhaps even stopped. Constant vigilance is required due to the risks of kinking of the catheter, dislodgement and infection during surgery [89]. If the anaesthetist is unsure how to use or monitor this device, guidance should be sought from paediatric endocrinologists regarding possible removal of the device and initiation of a different insulin regimen.

Parents, guardians and carers

In general, for all paediatric surgery day cases, the home environment, distance from the hospital and the access to transport and a telephone of the parent, guardian or carer need to be considered. Parents must be able to understand instructions, recognise complications that require a return to hospital (e.g. post-tonsillectomy bleeding) and have a supply of suitable analgesics to manage the child's pain at home.

Pre-operative assessment

Most children are healthy and pre-operative assessment is less about medical screening and more about preparation of the child and family for the procedure on the day and their care at home after discharge. Most children who are ASA physical status 1 or 2 undergoing elective day surgery will not require investigations before the day of surgery. However, for some children, there are important medical issues which require careful consideration and pre-operative investigation.

Robust pre-operative assessment minimises cancellations on the day and delivers clear information for children and parents. Ideally, this should occur at least

2 weeks before the date of surgery, although this is dependent upon the available expertise and facilities in each hospital. There should be a separate paediatric pathway, nurse-led initially, by practitioners with appropriate training, with consultant or autonomously practising anaesthetists (with a paediatric interest) available to help for the more complicated patients. Pre-assessment clinics provide an excellent opportunity to identify the particularly anxious child and to develop a plan for the day of surgery. Play specialists and experienced nurses can help with psychological preparation and avoid distress in the anaesthetic room and patient refusal on the day.

Parents should be signposted to sources of information, including leaflets and, in many cases, hospital-specific web-based information. Up-to-date sources of information for parents and children can be found on the Royal College of Anaesthetist and APAGBI websites. These include 'Your Child's General Anaesthetic' for parents and a range of age-appropriate information for children and young people. Parents need to know who to contact if their child becomes unwell before the day of surgery. This can prevent late cancellations, avoiding waste of theatre resources and unnecessary visits to hospital with a child who is not fit for the procedure and who may be an infection risk.

Pre-operative assessment provides an opportunity to establish who has parental responsibility and to ensure that appropriate consent procedures are followed. Parents and older children should be provided in advance with written and/or electronic access to generic risk information in advance (e.g. https://rcoa.ac.uk/sites/default/files/documents/2022-05/Child-Infographics_2022.pdf).

Informed consent

Written consent for the procedure may already have been obtained in the outpatient setting, but a discussion regarding general and/or regional anaesthesia, the most common anaesthetic complications, risks and adverse effects should also be discussed with the parent and child at this stage [90]. Different issues need to be emphasised according to the age of the child. For babies and young children, there is likely to be a discussion regarding the options for gaseous or intravenous induction of anaesthesia. There should be an explanation of what to expect in the anaesthetic room, and how parents can best support their child.

Peri-operative care

Teenagers often have concerns related to loss of autonomy, fear of something going wrong and may not readily voice

these anxieties [91]. Adequate preparation and provision of information in advance are valued. Venous thromboembolism prophylaxis should be considered. For patients aged ≥ 12 y, pregnancy status should be ascertained on the day of surgery, and departments should have a policy for pregnancy testing and documentation [92].

Emergence delirium is more common in young children after short procedures, is distressing for parents and staff and impairs the quality of recovery. This is characterised by acute agitation, disorientation, inconsolability and altered awareness during early recovery from general anaesthesia. Although typically self-limiting, emergence delirium is clinically significant: it increases the risk of self-injury; risks disruption of surgical dressings or intravenous access; and prolongs duration of stay in the PACU. These behavioural changes are also distressing for parents and healthcare staff and may negatively influence the perceived quality of recovery.

Multiple risk factors have been identified including younger age; pre-operative anxiety; certain surgical categories (particularly otolaryngological procedures); and the use of sevoflurane [93]. Anaesthetic techniques should be modified to minimise the risk of emergence delirium in susceptible children in order to facilitate a smooth recovery and discharge. Evidence-based approaches include the use of TIVA; intra-operative administration of $\alpha 2$ -agonists such as dexmedetomidine or clonidine; and structured multimodal analgesia [94]. Non-pharmacological interventions, such as pre-operative anxiety reduction strategies, parental presence during induction and age-appropriate distraction techniques, may also contribute to smoother emergence.

Recovery and postoperative care

Although most children recover quickly from anaesthesia, delivery of a high-quality service requires careful planning and the employment of specific strategies. For example, some centres are introducing policies to reduce prolonged fasting and, following the publication of guidelines from the APAGBI [95], are adopting a 'sip til send' rule for clear fluids, encouraging children to drink until shortly before surgery.

Techniques to minimise the incidence of postoperative nausea and vomiting, particularly for high-risk surgery such as squint and tonsillectomy procedures, should be employed. This includes considering the necessity for, and dosing of, opioids, as well as the choice of specific anti-emetics which are suitable and effective in children [96].

With the increase in day surgery, much of the responsibility for postoperative pain management falls to

the parent; however, some may not feel well informed or confident enough to manage their child's pain. While pain after many day case procedures is usually easily managed, there are several common procedures, including tonsillectomy and orchidopexy, which can cause significant pain for up to 2 weeks postoperatively. Parents should be provided with clear verbal and written advice regarding pain assessment and management, as well as easy access to telephone support. The importance of appropriate dosage regimens (based on age and weight) and different analgesics such as paracetamol, non-steroidal anti-inflammatory drugs and, where appropriate, oral opioids, should be emphasised to parents, so that they are confident in managing their child's pain at home.

Day surgery in special environments

Procedures traditionally performed outside the typical theatre environment are now being performed as day surgery. These may be performed in the interventional radiology suite; endoscopy department; or in enhanced procedure rooms. Optimal care for these procedures should be developed by those with expertise in day surgery, working in collaboration with specialists in the management of the specific procedure. Many of these procedures are undertaken in challenging environments that may not be fully equipped with those available in traditional theatres. All the accepted standards for delivery of anaesthesia, assistance for the anaesthetist, monitoring and appropriate recovery facilities should be available.

Non-clinical aspects of day surgery

Quality improvement

Effective audit is an essential component of assessing, monitoring and maintaining the efficiency and quality of patient care in day surgery units. It can help to improve patient experience and to guide staffing and resource planning. There should be routine collection of data on overall day surgery rates; speciality-specific day surgery rates; and individual procedure day surgery rates. For individual procedures, it is useful to understand the proportion of patients not booked for day surgery and the proportion of patients having unplanned overnight stays [97].

Clinical data recording should include patient-reported outcomes such as pain; nausea; vomiting; and other complications. Units should also consider measuring organisational performance, including non-attendance rates and patients cancelled on the day of surgery [2]. The RCoA quality improvement compendium is a useful resource, with a dedicated section relevant to day surgery.

National day surgery target rates and performance indicators can be obtained from the BADS directory of procedures and National Dataset [8] which, alongside benchmarking information from CHKS (CHKS Ltd, London, UK), the Model Hospital in England and local data in the devolved nations, can highlight local procedures where there may be potential for improvement in overall day surgery rates.

Teaching and training

It is essential that training in anaesthesia for day surgery is provided. This should encompass the entire day surgery process and should include teaching on patient selection; effective analgesic regimens; management of PONV; requirements for safe discharge; and the management of patients following discharge. Resident anaesthetists should be regularly exposed to day surgery throughout their training; it is an ideal environment for novice anaesthetists to develop their skills. It is imperative that all work done by resident anaesthetists in a day surgery unit is appropriately supervised and the Cappuccini test (<https://www.rcoa.ac.uk/safety-standards-quality/patient-safety/cappuccini-test>) should be applied. Inappropriate supervision and an overreliance on resident anaesthetists to deliver a day surgery service may result in poorer patient outcomes and reduced efficiency. Departments should seek feedback from resident anaesthetists on the quality of training in day surgery units.

Sustainability

The Green Surgery Report is a landmark document detailing how to reduce the environmental impact of surgical care while maintaining high-quality care and minimising the use of healthcare resources [98]. It includes recommendations on the re-use/recycling of equipment and switching from single use to reusable where appropriate. Volatile anaesthetic agents are a significant source of greenhouse gas emissions [99]; desflurane is particularly harmful and will be phased out across the NHS. Alternatives to volatile anaesthetic agents can be used to reduce the environmental impact and include local, regional and intravenous anaesthetic techniques. Nitrous oxide emissions can be significantly reduced through removal of pipeline supply in favour of portable cylinder use where needed [98].

The Association and the Royal Surgical Colleges in England and Scotland have produced recommendations for reducing the environmental impact of anaesthesia; preparation for surgery; intra-operative equipment; and

postoperative care [98]. Anaesthesia-related recommendations include switching to local/regional anaesthesia where appropriate (with targeted oxygen delivery only when necessary), using TIVA, limiting nitrous oxide use, decommissioning pipeline nitrous oxide; removing desflurane from the formulary; using low-flow target-controlled anaesthetic machines; considering nitrous oxide and volatile capture technology [100, 101]; switching to reusable equipment (laryngoscopes, underbody heaters, slide sheets/trays); minimising drug and disposable equipment waste; and rationalising the use and provision of operating theatre infra-structure (e.g. suction, gas scavenging and 7-bar air) [102–104].

Introducing new procedures to day surgery

Complex and highly specialist procedures are starting to be performed as day surgery. These include major joint replacement; breast oncoplastic surgery; endocrine surgery (adrenalectomy, thyroidectomy); neurosurgery (brain tumour resection); urology (radical prostatectomy); and abdominal wall reconstruction surgery with component separation. The successful introduction of new procedures to day surgery depends on many factors, including the procedure itself, as well as anaesthetic, surgical and nursing personnel. Principles discussed previously within patient selection regarding surgical, medical and social suitability should be considered when identifying potential novel day surgery procedures.

As part of process mapping, it is important to evaluate the procedure while still performing it as an overnight stay in order to identify any steps in the pathway that require modification to enable it to be performed as a day case (e.g. timing of postoperative radiographs, modification of intravenous antibiotic regimens, physiotherapy input and analgesia protocols). A multidisciplinary visit to another unit where the procedure is performed successfully as a day case can be very helpful. Initially limiting the procedure to a few colleagues provides an opportunity to evaluate and optimise techniques, to implement step changes with lower training requirements and to enable 'proof of concept' before expanding to the wider department. Clear clinical protocols help to ensure that all the lessons learned during the evaluation phase are clearly passed on to colleagues.

Independent sector day surgery

Approximately 20% of NHS patients who require admission for an elective procedure are managed in the independent sector [105]. In 2025, around 25% of all NHS elective orthopaedic and ophthalmic activity was delivered within

the independent sector. Surgery within the independent sector, while typically involving patients with fewer comorbid conditions, is still associated with peri-operative risk; 2% of cardiac arrests reported in the 7th National Audit Project occurred in the independent sector (although the true figure is likely to be greater due to underreporting) [106]. Given this, we recommend that day surgery guidelines should apply to both the NHS and independent sector hospitals.

There are several additional considerations when undertaking day surgery within the independent sector, including the potential for a lack of support services (e.g. laboratory medicine, on-site blood bank); lack of specialist clinical services (e.g. cardiac electrophysiology); fewer additional staff (e.g. to help with positioning or provide assistance in the event of an emergency); and lack of critical care beds, including level 2 and 3 support (although some independent sector hospitals do have all of these facilities and intensive care units at least equivalent to those found within the NHS). This may impact on the ability of some independent sector hospitals to provide care for some patients who have specific peri-operative requirements (e.g. checking/reprogramming of implantable cardiac defibrillators). As a result, the criteria to determine which patients are suitable for day surgery within the independent sector will vary between institutions, as it does within the NHS.

Discussion

Day surgery is now recognised widely as being a vital component of modern healthcare with reductions in postoperative complications, healthcare costs and utilisation and elective surgical waiting times [4]. This results in direct benefits to patients, healthcare institutions and society in general. Despite this, there is still a wide variation in day surgery rates across the UK between specialties and trusts. There is a huge opportunity for continued improvement in the delivery of services through optimising the efficiency and effectiveness of day surgery. These recommendations have been made using the best available evidence and pragmatic expert consensus with the aim of facilitating the delivery of day surgery across the UK.

There are several areas of day surgery practice in which further research is needed. There has been an expansion in the type and magnitude of surgeries now performed as day surgeries including lower limb arthroplasty; major abdominal surgery (e.g. hysterectomy and colectomy); minimally invasive thoracic surgery; and craniotomy. More research is needed to determine the optimal anaesthetic

and surgical techniques to allow safe day surgery to be undertaken for major procedures in the face of a surgical population that is ageing and has more comorbidities. The longer term implications for day surgery also need consideration. Previous work has focussed primarily on early metrics that are often related to discharge criteria (e.g. pain and PONV in PACU). Given the increased awareness of the potential long-term complications after day surgery (e.g. chronic pain [97, 107–109]), future outcome measures in trials should extend beyond the immediate postoperative period.

This consensus statement has several limitations. We did not undertake a full systematic review or synthesise the identified evidence. We were also unable to grade our recommendations due to the heterogeneity in the delivery of day surgery. Much of the evidence underpinning our recommendations is of moderate quality with a paucity of randomised controlled trials. There was also no lay representation within the working party group, so the recommendations may not reflect the views and priorities of patients. In addition, the recommendations mainly relate to UK practice, but many of the principles can be generalised elsewhere.

This pragmatic consensus statement aims to support healthcare providers and institutions with the organisational and clinical peri-operative management of anaesthesia for day surgery in both adults and children. It is hoped that these recommendations help facilitate the continued improvement in the delivery of healthcare services through optimising the efficiency and effectiveness of day surgery.

Author affiliations

Craig R. Bailey,¹ David Bunting,² Lindsay Hudman,³ Shivan Kanani,⁴ Kirstin May,⁵ Catalina Stendall,⁶ Rachel Tibble,⁷ Allan Xu,⁸ and Matthew D. Wiles^{9,10,11}

1 Consultant, Department of Anaesthetics, Guy's and St. Thomas' NHS Foundation Trust, London, UK

2 Consultant, Department of Surgery, Royal Devon University Healthcare NHS Foundation Trust, Devon, UK; representing the British Association of Day Surgery

3 Consultant, Department of Anaesthesia, Glasgow Royal Infirmary, Glasgow, UK; representing the British Association of Day Surgery

4 Resident Anaesthetist; representing the Association of Paediatric Anaesthetists, Great Britain and Ireland

5 Associate Specialist, Department of Anaesthesia, Oxford University Hospitals NHS Foundation Trust, Oxford, UK; representing SAS Committee, Association of Anaesthetists

6 Consultant, Department of Anaesthetics, Birmingham Women and Children's Hospital, Birmingham, UK;

representing Association of Paediatric Anaesthetists, Great Britain and Ireland

7 Consultant, Department of Anaesthetics, University Hospitals of Derby and Burton NHS Foundation Trust, Derby, UK, representing British Association of Day Surgery

8 Resident Anaesthetist, representing the Association of Anaesthetists Resident Committee

9 Professor, Academic Department of Anaesthesia, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK; representing the Association of Anaesthetists and *Anaesthesia*

10 Honorary Fellow, Centre for Applied Health and Social Care Research (CARE), Sheffield Hallam University, Sheffield, UK

11 Honorary Senior Clinical Lecturer, University of Sheffield, Sheffield, UK

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