



**SOUTH AFRICAN SOCIETY
OF ANAESTHESIOLOGISTS (SASA)**

Day-case surgery guideline 2022

Contents

1. Introduction	1	5.4.5 Reversal agents	6
1.1 Definitions and synonyms.....	1	5.4.6 Analgesics	6
2. Patient selection	2	5.4.7 Anti-emetics	7
2.1 Social factors.....	2	5.4.8 Emergency medication (Essential)	7
2.2 Medical factors.....	2	5.4.9 Local anaesthetics	7
2.3 Surgical and anaesthetic factors.....	2	5.4.10 Other	7
3. Preoperative preparation	3	5.5 Recovery room set-up and equipment	7
4. Admission procedures	3	5.6 Cleaning and servicing of equipment	8
4.1 Fasting guidelines.....	3	6. Anaesthetic management	8
4.2 Admission times.....	4	6.1 Sedation	8
5. Monitoring and equipment	4	6.2 Regional anaesthesia	8
5.1 Essential anaesthetic items.....	4	6.2.1 Spinal anaesthesia.....	8
5.1.1 Anaesthesia workstation.....	4	6.2.2 Peripheral nerve block (PNB) and fascial plane block (FPB).....	8
5.1.2 Airway equipment.....	4	6.3 General anaesthesia	9
5.1.3 Respiratory equipment.....	5	7. Postoperative considerations	9
5.1.4 Monitors and devices.....	5	8. Specific patient populations	10
5.1.5 EEG-based depth of anaesthesia monitor.....	5	8.1 Obesity.....	10
5.1.6 Infusion devices.....	5	8.2 Paediatrics.....	10
5.1.7 Target control infusion devices.....	5	8.3 Elderly patients.....	11
5.1.8 A nerve stimulator.....	5	8.4 Urgent surgery.....	11
5.1.9 A monitor-defibrillator.....	5	9. Education and training	11
5.1.10 A point-of-care device to estimate blood glucose.....	5	10. Administrative aspects	11
5.1.11 A point-of-care device to measure haemoglobin and/or haematocrit.....	5	10.1 Documentation.....	11
5.1.12 Availability of full appropriate PPE.....	5	10.2 Management and staffing.....	11
5.2 Essential ancillary equipment list	5	10.3 Facilities.....	12
5.2.1 Recommended items (where appropriate and/or where resources allow).....	5	10.4 Quality improvement.....	12
5.3 Anaesthetic gases	6	10.4.1 Preoperative quality indicators.....	12
5.4 Recommended drugs list	6	10.4.2 Perioperative quality indicators.....	12
5.4.1 Premedication.....	6	10.4.3 Postoperative quality indicators.....	12
5.4.2 Induction agents.....	6	11. Medicolegal aspects	13
5.4.3 Volatiles.....	6	References	13
5.4.4 Muscle relaxants.....	6	Acknowledgements	14
		Appendix A: Patient information leaflet day-case surgery	15

Day-case surgery guideline

1. Introduction

Day-case surgery (DCS) is widely encouraged as it has many benefits (Table I), and importantly, it improves the level of patient-centred care.¹ However, there are some challenges in day-case procedures (Table II), and it may not be suitable for all patients. It is therefore imperative that the quality of care is clearly described and consistently applied.²

Table I: Advantages and disadvantages of day-case surgery

Advantages	Disadvantages
Reduces disruption to patients' lives	Can result in extra work for other health care professionals such as the general practitioner
Lessens patient anxiety	A responsible adult must be responsible for the patient
Helps direct hospital resources and hence reduces hospital waiting times	
Allows more patients to be treated	
Reduces risk of hospital-acquired infection	
Cost-effective	
Psychological benefits	

Table II: Minimum operational standards when providing day-case surgery

Appropriate patient selection and screening
Ability to provide care for medical emergencies
Working ambulances with appropriate levels of training, tested communications and written service level transfer agreements with the nearest acute hospital and its intensive care unit (ICU)
Ability to manage patients who cannot be transferred home
A plan for the management of postoperative complications and clear information for patients on where to go if complications occur
Appropriate health care worker cover until patients are discharged
Teaching, training, supervision and research opportunities

These guidelines are aimed at stand-alone day-case facilities. Should DCS be performed attached to a hospital equivalent to a regional, specialised, or provincial tertiary hospital,³ the scope of the practice may be expanded depending on the backup facilities and services available and at the discretion of the attending anaesthetist.

Stand-alone day-case facilities that are independent of large hospitals have the advantage of avoiding the conflicts caused by inpatient and day-case lists. The benefits of autonomy from a hospital should be balanced with the potential risk to patient

safety, particularly in remotely located DCS units. Affiliation with a larger acute hospital for unanticipated complications, admissions and readmissions is essential.²

These guidelines do not cover non-operating room anaesthesia (NORA) nor procedures performed in practitioners' rooms. For guidelines relating to sedation in a non-operating room setting, please refer to the South African Society of Anaesthesiologists (SASA) Sedation Guidelines.⁴

1.1 Definitions and synonyms

Table III: Synonyms and time frames⁵

Ambulatory	Synonyms: Day, same day, day only Time frame: working day (no overnight stay)
Ambulatory surgery centre (facility)	Synonyms: Day clinic, day surgery centre/unit, ambulatory surgery unit

Table IV: Definitions⁵

Surgery/office	A medical practitioner's professional premises
Outpatient department	Section(s) of a hospital or a free-standing ambulatory surgery centre, public or private, for the management of outpatients
Outpatient	A patient treated solely in the outpatient department, including services such as ambulatory procedure, interventional radiology, radiotherapy, oncology, renal dialysis, etc.
Inpatient	A patient admitted into a hospital for 24 hours or more
Surgery/office procedure	An operation or procedure carried out in a medical practitioner's professional premises which provides an appropriately designed, equipped and serviced room(s) for its safe performance
Outpatient procedure	An operation or procedure carried out in the outpatient department of a hospital
Ambulatory surgery/procedure	An operation/procedure, excluding an office/surgery or outpatient operation/procedure, where the patient is discharged on the same working day, carried out in an operating theatre
Ambulatory surgery/procedure patient	A patient having an operation/procedure, excluding an office/surgery or outpatient operation/procedure, where the patient is admitted and discharged on the same working day
Ambulatory surgery centre (facility)	A centre (facility) designed for the optimum management of an ambulatory surgery/procedure patient
Ambulatory surgery/procedure-extended recovery patient	A patient treated in an ambulatory surgery/procedure centre/unit, free-standing or hospital-based, who requires extended recovery, including an overnight stay, before discharge the following day

2. Patient selection

The advancements in minimally invasive surgery and anaesthetic medications and techniques in the last few decades, as well as published evidence of successful outcomes in patients with multiple comorbidities, have changed the emphasis on patient selection for DCS.

A wider range of patients is now suitable for day-case procedures. It is now accepted that most patients are appropriate for day surgery unless there is a valid reason why an overnight stay would be beneficial.

If inpatient surgery is being considered, it is important to question whether any strategies could be employed to enhance suitability for DCS.

It is recommended that a multidisciplinary approach involving the surgeons and anaesthetists with agreed context-specific protocols for patient assessment, and clear inclusion and exclusion criteria for day surgery should be adopted.

The 5 "A's" of day-case anaesthesia:

1. **Appropriateness** of facility
2. **Assessment** of patient
3. **Ability** of surgeon
4. **Anaesthetist's** capability for specific case
5. **Accountability** of the surgeon, anaesthetist, nursing staff and the facility

The assessment of patients for DCS falls into three main categories:

- Social factors
- Medical factors
- Surgical and anaesthetic factors

2.1 Social factors²

South Africa has a culturally diverse patient population from a broad range of socio-economic backgrounds, which poses some unique challenges to implementing DCS. Informed consent requires the patient and a responsible adult to understand the planned procedure and the postoperative care required in a home setting.

The responsible adult should accompany the patient home in a private vehicle and should care for the patient for at least 24 hours following discharge. Public transportation modes are not recommended, but the context and the patient's circumstances should be considered. A reliable means of transportation is essential and recommended travelling time of an hour or less to their home or back to the hospital should the need arise. Up to ninety minutes of travel time is considered within reasonable limits.

Monitoring and care by a responsible adult beyond the first 24 hours may be indicated in more complex surgeries.

The social criteria of access to a telephone at all times is mandatory for postoperative home care of DCS patients. The

use of **telemedicine** using virtual consultations to assess patients postoperatively should be practised where feasible.

There is a potential risk of anaesthesia interfering with cognitive and motor performance postoperatively. Patients should be counselled not to drive, cook, operate machinery, make life-altering decisions or participate in activities that require alertness for 24 hours after anaesthesia.

In summary:

- There must be a responsible adult to escort the patient home. (This includes local anaesthesia procedures with sedation.)
- Domestic circumstances must be appropriate, and a mentally and physically able caregiver must look after the patient postoperatively, including making decisions for the patient's welfare when necessary.
- A mentally incompetent patient must have a home caregiver that can manage the patient at home and ensure that the patient complies with postoperative instructions.

2.2 Medical factors²

The pre-anaesthetic assessment helps to determine the appropriateness of the patient for DCS. The young, the elderly and patients with some chronic conditions such as epilepsy and diabetes do better with minimal disruption to daily routine and being in a familiar environment postoperatively. The optimisation of the patient needs to be individualised.

It is the patient's functional status at the time of pre-anaesthetic assessment that determines the appropriateness of DCS, and not particularly the age, body mass index (BMI) or American Society of Anesthesiologists (ASA) status.

The following patients are not suitable for DCS:

- Patients with anticipated difficult intubation that require more than a video laryngoscope or have a known history of difficult intubation, if intubation is required
- Patients with a personal history or family history of malignant hyperthermia
- Patients who require invasive monitoring for their surgery
- Patients who are acutely unwell, e.g., upper respiratory infection (URTI), fever, diarrhoea, or conjunctivitis
- Head and neck, or ear, nose and throat surgery, with a high risk for postoperative airway compromise
- Major surgery on body cavities, e.g., laparotomy/thoracotomy

2.3 Surgical and anaesthetic factors²

The following criteria should be considered:

- The procedure should not carry a serious risk of haemorrhage, blood transfusion or cardiovascular instability.
- Postoperative nausea must be controllable by oral medication, and postoperative pain must be controllable by oral analgesics and local anaesthetic techniques.
- Procedures should not prohibit the patient from resuming oral intake within a few hours nor require prolonged bed rest or special postoperative care.
- Patients should be able to mobilise before discharge, e.g., walking with an arm in plaster, but if full mobilisation is not

possible, appropriate venous thromboembolism prophylaxis should be instituted and maintained.

- Major postoperative complications should be unlikely.
- Central neuraxial blocks (e.g., spinal anaesthesia) should be administered before 12 pm in order to allow for full recovery from neuraxial blockade and establishment of bridging analgesia prior to discharge. In the case of spinals/epidurals, passage of urine should be confirmed to eliminate risk of urinary retention.
- Peripheral nerve blocks must be matched to the patient's physical ability to cope with an insensate or weakened limb on discharge.

3. Preoperative preparation

Preoperative assessment and preparation of the patient may take place either:

- in the DCS unit,
- at a primary care facility, or
- during a secure online consultation.

The preoperative assessment should ideally follow a standardised protocol that can highlight potential issues requiring optimisation. The anaesthesia, surgical and nursing team members should agree on the protocol.²

Ideally, the preoperative assessment should be done on the same day that the decision for surgery is made. This should be more convenient for the patient and allows the most time for the management of potential problems. The assessment should be done by a health care practitioner familiar with DCS, and nurses or doctors may perform it.²

The following three aspects of preoperative preparation should be considered:²

- Patient and caregiver education
- Informed consent
- Preoperative optimisation

Patients and their caregivers should be educated regarding the benefits and risks of DCS. It is important to give the patient all the necessary information to make an informed decision about their care, and to set their expectations appropriately.⁶

Information should be given to the patient and their caregiver about the following:

- How to prepare for their procedure
- The procedure itself
- The postoperative care the patient will need
- Written information detailing fasting guidelines
- Written information on when the patient should present to the DCS unit
- What transport to arrange for after the procedure
- Whether they will need supervision by a responsible person overnight

The health care practitioner should ensure that the patient and their caregiver understand and can implement instructions for postoperative care.²

Generally, ASA I and II patients may be recommended for DCS, but ASA III patients should be considered case-by-case. Ultimately, fitness for a procedure should relate to the patient's functional status.

Preoperative investigations should be done judiciously according to patient profile, and in accordance with existing SASA guidelines.⁷ At a minimum, screening should be done for hypertension and anaemia, and risk assessment for venous thromboembolism should take place.² Any serious concerns should be highlighted to the anaesthetist doing the case. Particular attention should be paid to any potential difficulty with airway management. When the risks of complications outweigh the benefits of DCS, the health care practitioner doing the assessment should inform the patient that alternative arrangements should be made.

Preoperative preparation in the private sector should include clear consent and guidance on costs of escalation of care, readmission, and management of intra/postoperative complications. These usually fall outside of bundled care/global fee arrangements for DCS and may not be covered by the medical scheme itself. Who to contact, how to contact them, and where to present postoperatively in the event of a complication must be very clearly documented and communicated verbally and in writing. Assessment for obstructive sleep apnoea (OSA) preoperatively is important as many patients are not formally diagnosed. Herbal, homoeopathic, recreational, illicit, performance and appearance enhancing drugs are often not disclosed and must be specifically inquired about and ideally stopped appropriately in advance.

4. Admission procedures

4.1 Fasting guidelines

Modern practice aims to maximally reduce the risk of pulmonary aspiration of gastric contents while avoiding unnecessary prolonged fasting intervals. The instructions regarding preoperative fasting should be clear.

For healthy adults having an elective procedure:

- Fried foods, fatty foods or meat: a fasting time of eight (8) hours is required
- Light meal, e.g., toast: small portions may be taken up to six (6) hours before anaesthesia
- Clear fluids (no milk-containing beverages) may be taken up to two (2) hours before anaesthesia – the total quantity should not exceed 200 ml

For healthy children having an elective procedure:

- Clear fluids (no milk-containing beverages) may be taken up to one (1) hour before anaesthesia
 - Sweets and lollipops are considered to be solid food

- Ice lollies made with clear juice or water are considered fluids
- Breast milk: Four (4) hours before anaesthesia
- Infant formula and non-fatty meals: Six (6) hours before anaesthesia

Prolonged fasting in the paediatric population results in uncooperative irritable children, dehydration, hypoglycaemia, hypovolaemia, hypotension and other metabolic complications.

For adult patients at increased risk of gastric regurgitation, an H₂ receptor antagonist such as cimetidine 400 mg per os or other appropriate agents such as metoclopramide 10 mg per os should be considered on the night before surgery and again at 06:00 on the morning of surgery.

4.2 Admission times²

The admission scheduling is dependent on the availability of medical staff. It is recommended that the admission of the patients is not fully staggered to enhance efficiency in preoperative time management. It is therefore suggested that patients should be grouped into two morning and two afternoon admission times, such as 06:00/07:00, 10:00, 12:00 and 15:00. This enables theatre lists to run smoothly while minimising delays and disruption for patients.

Patients should be admitted to the day surgery unit as close as possible to the time of their surgery. They should be allowed to stay in their own clothes for as long as possible to maintain dignity, warmth and comfort. At a suitable time, they should change into theatre gowns and wait in a single-gender area. They should be allowed to walk into theatre and ideally transfer themselves to the operating table.

5. Monitoring and equipment

The safe practice of modern-day anaesthesia requires an established list of essential monitors and equipment.

In the ambulatory setting, emphasis is placed on the patient's rapid return to their preoperative physiological state with minimal procedural and anaesthesia-related side effects. This allows for discharge home on the same day with earlier mobilisation, where appropriate.

In this regard, many of the monitors and drugs mentioned below have been selected to assist with rapid reversal of anaesthesia, fast-tracking of recovery, reduction of postoperative nausea and vomiting (PONV) and adequate pain management whilst minimising opiate-related side effects.

Anaesthesia practitioners should be provided with equipment with which they are familiar and skilled in their use. By the same token, practitioners are also advised to be skilled and comfortable using as many alternative devices as possible, should their individual preference not be available.

There are numerous companies today through which anaesthesia equipment, devices and drugs can be sourced, and procurement will likely vary between different health facilities.

Practitioners are advised to be involved in the procurement process as far as possible to ensure that the essential requirements of delivering safe anaesthesia are met.

Equipment and devices should be chosen to be both clinically indicated and in the patient's best interests. Where these criteria are not met, we recommend that concerns are formally raised in writing to the facility manager.

Facilities providing DCS are expected to equip themselves to the level of a regional hospital, as gazetted under the National Health Act, No. 61 of 2003.⁹

This will include essential and recommended items per the **SASA Practice Guidelines 2022 Revision**.

5.1 Essential anaesthetic items

5.1.1 Anaesthesia workstation

These are highly accurate machines capable of delivering correctly proportioned fresh gas mixtures, even at ultra-low flow rates. Typically, they comprise of the following:

- Electronically controlled flow meters
- Variable bypass, heated-blender or electronically controlled cassette vaporisers
- Integrated multi-mode anaesthesia ventilator (rising bellows or piston-driven), with integrated patient monitor with electrocardiogram (ECG), ST-segment analysis, non-invasive blood pressure (NIBP) monitoring and pulse oximetry
- Multi-gas analyser that includes volatiles/oxygen/carbon dioxide
- Spirometry and circuit pressure monitoring
- CO₂ absorber and circle system

The workstation might include neuromuscular transmission monitoring and electroencephalogram (EEG) monitoring when **not** provided as stand-alone options.

5.1.2 Airway equipment

- Anaesthetic face masks in a suitable range of sizes appropriate for the patient population
- Range of oropharyngeal airways in various sizes, suited to the patient population
- Range of supraglottic airways per theatre complex
- An appropriate range of endotracheal tube sizes with standard connectors which are immediately available
- Laryngoscopes (preferably with fibre-optic light carrier and LED light source)
 - 2 x adult, preferably Macintosh blades sizes 3 and 4
 - Appropriate range of infant/paediatric laryngoscope blades where applicable
- Video or optical laryngoscope
 - E.g., C-MAC®/Glidescope®/Airtraq®/Mcgrath™ MAC
- Magill endotracheal tube-introducing forceps

- Adult
- Paediatric
- Non-metallic or plastic-coated, malleable endotracheal tube-introducing stylettes.
- A designated difficult airway management trolley with appropriate equipment should be in every theatre complex¹⁰
- Suction unit for exclusive use by the anaesthesiologist:
 - Generating a minimum negative pressure of 50 kPa at a minimum flow rate of 25 l/minute into a reservoir bottle of at least 1 l capacity – these suction bottles should be graduated for volume assessment.
 - Adequate length of suction tubing and an appropriate range of cannulae/catheters for oral, endotracheal, or nasal suction
- A cuff pressure manometer for inflating endotracheal tube cuffs, and to allow for measurement of optimal cuff pressure

5.1.3 Respiratory equipment

- A suitable breathing system for adult patients fitted at all junctions with International Organization for Standardization (ISO) standard tapered fittings
- Paediatric breathing systems must be available in institutions where infants/children are anaesthetised
- A self-inflating resuscitation bag with reservoir and adaptors and an oxygen cylinder for administering supplemental oxygen
- A ventilator suitable for the cases anaesthetised at that location

5.1.4 Monitors and devices

A multi-parameter vital signs monitor, if **not** incorporated into the anaesthesia workstation. This must include:

- An ECG channel with 3-lead ECG monitoring
- An automated electronic NIBP displaying systolic, mean, and diastolic blood pressure, with blood pressure cuffs for a range of adult sizes and paediatric patients where applicable
- Heart rate: derived from ECG or pulse oximetry
- Pulse oximetry
- Multi-gas analyser that includes volatiles/oxygen/carbon dioxide
- Alarms: adjustable alarm limits for all parameters
- The oxygen analyser must have an audible low-concentration warning tone – it is preferable that this lower limit is adjustable but not to below 18%
- Temperature measuring module

5.1.5 EEG-based depth of anaesthesia monitor

- Bispectral index (BIS)
- Entropy
- Relevant consumables
- Fresenius Kabi Conox®

5.1.6 Infusion devices

- Volumetric pumps
- Syringe drivers

5.1.7 Target control infusion devices

- Minimum of two per facility, to allow for total intravenous anaesthesia

5.1.8 A nerve stimulator

- To monitor neuromuscular function and assist in placing peripheral nerve blocks

5.1.9 A monitor-defibrillator

- Preferably with pacing capability

5.1.10 A point-of-care device to estimate blood glucose

5.1.11 A point-of-care device to measure haemoglobin and/or haematocrit

5.1.12 Availability of full appropriate PPE

5.2 Essential ancillary equipment list

- A wall clock with a second hand or digital equivalent should be present in each theatre
- Two kidney dishes as receivers for clean and dirty oral and endotracheal instruments
- Operating table:
 - With remote control at the head of the table, which allows for common surgical positioning of the patient, e.g., Trendelenburg position
 - Two lateral padded straight arm supports, per theatre
 - Appropriate padding and bolsters for the positioning of patients to prevent injury or movement/sliding during the surgery
- Drug trolley for exclusive use by the anaesthesiologist
- Preferably two drip stands per theatre
- Scissors
- Pressure infusion bag to allow for rapid infusion of fluids
- Single-use warming blankets, used in conjunction with forced-air convection warmers
 - Resistive-warming devices are a suitable alternative
- A thermometer that permanently displays the operating theatre temperature
- Anaesthesiologist's chair on wheels with backrest
- Intermittent pneumatic calf compressor device, with necessary consumables
- Uninterrupted power supply and generator backup for the theatre complex¹¹

5.2.1 Recommended items (where appropriate and/or where resources allow)

- Nasopharyngeal airway devices
- Portable ultrasound device, in facilities where ultrasound-assisted nerve blocks or vascular access is performed
- Non-invasive cardiac output monitor
- Elastomeric infusion pumps for patient-controlled analgesia or wound infusion with local anaesthetic agents
- Near-infrared spectroscopy (NIRS) monitor to measure cerebral oximetry
- Blood gas analyser
- Scale for weighing swabs

5.3 Anaesthetic gases

Gas sources **exclusively** from cylinders must have:

- Pin-index yokes with pressure-reducing valves for both oxygen and nitrous oxide
 - These should be marked with the name or the chemical symbol of the gas and colour-coded in accordance with international standards
- Pressure indicators for oxygen must be available
- One nitrous oxide cylinder and one full spare per machine, or one medical air cylinder and one full medical air cylinder spare, per machine
- Two oxygen cylinders and two full spares per machine
- A suitable spanner or key must be available for opening and closing gas cylinders, even when the cylinders have finger-control knobs – the spanner should be attached to the anaesthesia machine.

Gas sources from pipelines with backup cylinders must have:

- Non-interchangeable wall points and connectors for nitrous oxide, oxygen and any other gases, conforming to national standards
- Colour-coded pipeline hoses capable of withstanding pressures of up to 1 000 kPa affixed to anaesthetic machines by non-interchangeable fittings; colour-coding according to international standards: oxygen (white), nitrous oxide (**blue**) and medical air (**black**)
- Pressure indicators for each line, either outside the operating theatre, or in the gas pipeline before the anaesthetic machine (SANS 7396-1:2009 Medical gas pipeline system)
- Non-return valves fitted at the machine connection point of the pipeline
- One backup cylinder with a pin-index yoke for oxygen
- One spare oxygen cylinder
- A suitable spanner or key must be available for opening and closing gas cylinders, even when the cylinders have finger-control knobs – this should be attached to the anaesthesia machine
- Medical air pipelines should be fitted with a water trap

The following safety features should be incorporated:

- An oxygen-failure device with an audible alarm must be incorporated into the anaesthetic workstation.
- Oxygen must always be the final gas delivered to the common gas pathway.
- Machines with electronic flow controllers must have a manual device for oxygen delivery, independent of electrical supply.
- The oxygen flush system should be capable of delivering at least 35 litres per minute of oxygen at the machine outflow and controlled by a prominent, recessed, nonlockable button.
- Outflow point connector of 22 mm ISO standard male taper.
- Where a potentially hypoxic gas mixture could be delivered, a hypoxic guard must be fitted to ensure a minimum oxygen concentration of 25%.

- High-pressure gas supply master/slave switches, whereby low pipeline or cylinder pressure of oxygen cuts off hypoxic gas sources (fail-safe device).
- Pipeline supply for medical air in all major theatres is currently recommended.
- Appropriate delivery system for the supply of accurate flows of compressed air in major theatres.

5.4 Recommended drugs list

The criteria for the selection of essential medicines were based on the Standard Treatment Guidelines and Essential Medicines List for South Africa 2019,¹² together with the World Health Organization (WHO) Model List of Essential Medicines 2021.¹³ These essential medicines are selected with due regard to disease prevalence, evidence on efficacy and safety, and comparative cost.

The following list indicates agents that should be available to provide safe anaesthesia at day-case facilities, based on ambulatory surgery's unique requirements.

5.4.1 Premedication

- Lorazepam
- Midazolam

5.4.2 Induction agents

- Propofol
- Ketamine
- Etomidate

5.4.3 Volatiles

- Sevoflurane
- Desflurane

5.4.4 Muscle relaxants

- Suxamethonium
- Mivacurium
- Rocuronium
- Atracurium
- Cisatracurium

5.4.5 Reversal agents

- Neostigmine
- Glycopyrrolate
- Sugammadex

5.4.6 Analgesics

- Paracetamol
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
 - Coxibs, e.g., parecoxib
 - Oxicams, e.g., lornoxicam
 - Acetic acid derivatives, e.g., ketorolac, diclofenac
- Opioids: (note – refer to the relevant guidelines for the storage of scheduled medications)
 - Fentanyl
 - Sufentanil
 - Remifentanyl
 - Alfentanil
 - Morphine
 - Tramadol

5.4.7 Anti-emetics

- Ondansetron
- Granisetron
- Metoclopramide
- Dexamethasone

5.4.8 Emergency medication (Essential)

- Adrenaline
- Aspirin
- Atropine
- Ephedrine
- Phenylephrine
- Noradrenaline
- Amiodarone
- Adenosine
- Dobutamine
- Salbutamol or equivalent
- Aminophylline
- Hydrocortisone
- Labetalol
- Magnesium sulphate
- Promethazine
- Furosemide
- Esmolol
- Sodium bicarbonate
- Calcium chloride
- Lipid emulsion (20%)
- Dantrolene
 - Immediate access to nine (9) vials (1st adult dose)
 - Access to a further 20 vials through neighbouring facilities
- Flumazenil
- Naloxone

5.4.9 Local anaesthetics

- Bupivacaine (plain)
- Bupivacaine with adrenaline
- Bupivacaine with dextrose (hyperbaric)
- Lignocaine intravenous preparation (without preservatives)
- Lignocaine subcutaneous preparation (with preservatives)
- Lignocaine spray
- Ropivacaine or levobupivacaine

5.4.10 Other

- Dexmedetomidine
- Intravenous antibiotics:
 - Co-amoxiclav
 - Cefazolin
 - Metronidazole
 - Gentamicin
 - Azithromycin
 - Clindamycin
- Dextrose
- Oxytocin

5.5 Recovery room set-up and equipment

An area within the theatre suite, preferably with easy access from each theatre, must be provided for the recovery of patients from anaesthesia before discharge to the ward or home.

Each bed space should be provided with:

- An oxygen flow meter and nipple connector.
- Suction equipment, including a reservoir, tubing and a range of suction catheters.
- An automated NIBP monitor with appropriately sized cuffs.
- A stethoscope.
- A pulse oximeter.
- Means of measuring body temperature.

Within the recovery area there must be:

- A range of devices for the administration of oxygen to spontaneously breathing patients:
 - Nasal cannulae
 - Simple face masks
 - Non-rebreather oxygen face masks
- A self-inflating resuscitation bag, or similar anaesthetic breathing circuit, to allow for the delivery of 100% oxygen and manual ventilation if necessary.
 - A minimum of two per recovery room complex is required.
- Equipment and drugs for airway management and endotracheal intubation
- Emergency drugs
- A range of intravenous equipment and fluids
- Drugs and equipment for acute pain management
- A range of syringes and needles
- An ECG monitor
- Patient-warming device

There should be immediate access to:

- A monitor-defibrillator, preferably with pacing capability
- Blood warmer
- A thermostatically controlled warming cupboard for intravenous solutions
- A refrigerator for drugs and blood
- A procedure light
- A range of appropriate drugs
- A surgical tray for procedures, including tracheostomy and chest drains
- Point-of-care access to diagnostic services, e.g., blood glucose, blood gases and radiology
- A peripheral nerve stimulator
- Other equipment that is as appropriate to the patient's condition, e.g., wire cutters
- A ventilator

The recovery trolley or bed must:

- Have a firm base and mattress
- Tilt from either end, both head up and head down, to at least 15 degrees
- Be easy to manoeuvre
- Contain functional and accessible brakes

- Have provision for the patient to be able to sit up
- Have straps or side rails capable of being dropped below the base or easily removed
- Include provision for a pole from which intravenous solutions may be suspended
- Include provision for monitoring, mounting portable oxygen cylinders, underwater seal drains and suction apparatus for use during transport

5.6 Cleaning and servicing of equipment

Any institution where anaesthesia is administered must provide an efficient and reliable maintenance and repair service for all anaesthetic equipment. A suitable mechanism must exist whereby faulty essential equipment can be replaced immediately.

Servicing by an appropriately certified organisation or persons should be carried out on a regular and appropriate basis. A manufacturer-approved licence-holder company should service life-support equipment.

Regular sterilising, cleaning, and housekeeping routines for the care of anaesthetic equipment should be established (refer to the current SASA guidelines for infection control and prevention in anaesthesia in South Africa).¹³

To promote maximum safety in relation to service procedures, the following points are essential prerequisites:

- Individual anaesthetic machines should be clearly identified, either by the maker's serial number or preferably by a hospital marking.
 - This identification must extend to all the readily removable components, such as canisters and vaporisers so that the performance and checking of these can be followed without confusion.
- A record of service procedures that are performed on each machine, signed by the person responsible for the service, must be provided to the appropriate hospital personnel, e.g., anaesthetic technical staff or theatre nursing staff, depending on the local circumstances.
- In newly built operating theatres, where operating suites have undergone major structural alterations, before the commissioning of the area, all new and existing gas lines are pressure tested, followed by gas flow and purity testing. This must be carried out by a third party licensed to install and test medical gas lines.
- When any medical gas installation is tested, the persons that should be present are:
 - a mechanical engineer from public works/hospital group,
 - a mechanical engineer from health infrastructure,
 - hospital/facility engineer,
 - medical engineer,
 - medical gas engineer, and
 - the third party doing the testing.
- The installation of new or altered gases requires certification once the installation is completed and deemed operational.

- Adequate time must be made available for service personnel to perform regular and emergency servicing without compromising safety.

6. Anaesthetic management

Anaesthesia should be provided by experienced anaesthesia providers who are comfortable working in remote settings.

6.1 Sedation

Procedural sedation is an option for DCS, especially for procedures requiring only simple analgesia, and when neuromuscular blockade is unnecessary. Appropriate patient selection is key for safe sedation practice, and the anaesthesia provider should also consider procedural factors and treatment complexity when deciding whether sedation is appropriate. Please refer to the **current SASA sedation guidelines** for more details.^{4,14}

6.2 Regional anaesthesia

Regional anaesthesia should play a significant role in DCS because of its advantages with respect to analgesia and the reduction of opiate side-effects such as PONV, respiratory depression, urinary retention and pruritis.

6.2.1 Spinal anaesthesia

Spinal anaesthesia has become accepted for use in DCS.² Where possible, low-dose and short-acting local anaesthetic agents should be used. Spinal anaesthesia should also be targeted to specific surgical sites, for example, unilateral spinals or saddle blocks. This minimises hypotension and motor blockade. Fluid restriction to less than 500 ml should reduce the incidence of urinary retention, and patients should be encouraged to drink postoperatively to correct their fluid balance.

Spinal anaesthesia should be conducted with 25 G or smaller pencil point needles as this reduces the incidence of post-dural puncture headache. Discharge instructions should include information regarding post-dural puncture headache and what to do if this occurs.

Discharge criteria to enable safe mobilisation post spinal should include return of sensation to the peri-anal area (S4–5), plantar flexion of the foot at preoperative levels of strength and return of proprioception in the big toe.² An analgesic plan must be in place for when the spinal wears off. Confirm that the patient can pass urine to rule out urinary retention before discharge.

6.2.2 Peripheral nerve block (PNB) and fascial plane block (FPB)

Both PNBs and FPBs should be performed with ultrasound guidance. Ultrasound guidance improves block characteristics, particularly performance time and surrogate measures of success.¹⁵ Ultrasound also reduces the incidence of vascular puncture and local anaesthetic systemic toxicity,^{15,16} and enables the use of less local anaesthetic volume.¹⁵

Regional anaesthesia should aim for targeted blocks at distal sites to produce motor-sparing blocks. (For example, performing a saphenous nerve block instead of a femoral nerve block.)

As with spinal anaesthesia, an analgesic plan must be in place for when the block wears off. The patient should have information regarding complications of PNBs and what to do if they are concerned included in their discharge instructions.

For more information regarding regional anaesthesia, refer to the [SASRA guidelines](#).

6.3 General anaesthesia

The main aims of general anaesthesia in DCS are to ensure rapid offset of anaesthesia with clear-headed emergence, minimal PONV, dizziness and drowsiness, and rapid return to full cognitive function.²

Adequate analgesia is important, and multi-modal, opioid-sparing analgesic protocols are encouraged. Unless contraindicated, all patients should receive oral analgesia with paracetamol and long-acting NSAIDs. Long-acting opioids should be avoided. Low-dose ketamine may be a useful adjunct to reduce postoperative opioid requirements, nausea and vomiting. Dexamethasone dosed at more than 0.1 mg/kg also reduces opioid requirements without increased risk for complications like wound infections.^{2,17}

End-tidal anaesthetic gas (ETAG) guided anaesthesia, or depth of anaesthesia monitor-guided anaesthesia, is recommended

to prevent intraoperative awareness. In addition, depth of anaesthesia monitor-guided anaesthesia may reduce anaesthetic agent consumption, reduce anaesthetic recovery time, and improve postoperative recovery from relatively deep anaesthesia.¹⁸

The patient's risk for PONV should be assessed preoperatively, and adequate prophylaxis should be given, usually with a combination of two or more agents. Patients at high risk for PONV should be considered candidates for total intravenous anaesthesia.¹⁹ In addition to this, adequate intravenous fluids and maintenance of normothermia can also help reduce the incidence of PONV.^{2,19}

7. Postoperative considerations

Recovery from anaesthesia can be divided into three phases.

The **first** phase is usually undertaken in a recovery room and lasts until the patient is awake, able to protect their airway and pain is controlled. Basic monitors (saturation, blood pressure, ECG, temperature) are attached to the patient. The [modified Aldrete score](#) (Table V) can be used to assess readiness for discharge from the recovery room. A score of 9 and above indicates readiness to move to the postoperative ward.^{20,21}

The **second** phase is from when the patient starts to mobilise and ends when the patient is ready for discharge from the hospital. This phase can occur in a day-case ward adjacent to the

Table V: Recovery scoring systems: Modified Aldrete Scoring System and Post-Anaesthetic Discharge Scoring System

Aldrete Scoring System (Requires 9 or above to move to postop ward)		Post-Anaesthetic Discharge Scoring System (Requires 9 or above to be discharged home)	
Activity (A)		Vital signs	
Able to move four extremities voluntarily or on command	2	BP and pulse within 20% preop	2
Able to move two extremities voluntarily or on command	1	BP and pulse within 20–40% preop	1
Unable to move extremities voluntarily or on command	0	BP and pulse within > 50% preop	0
O₂ Saturation (A = Airway)		Activity	
Maintains saturation > 92% on room air	2	Steady gait, no dizziness, or meets preop level	2
Needs oxygen inhalation to maintain saturation > 90%	1	Requires assistance	1
Saturation < 90% even with supplemental oxygen	0	Unable to ambulate	0
Respiration (B = Breathing)		Nausea and vomiting	
Able to deep breathe and cough freely	2	Minimal, treated with oral medication	2
Dyspnoea or limited breathing	1	Moderate, treated with parenteral medication	1
Apnoeic	0	Severe, continues despite treatment	0
Circulation (B = Blood pressure)		Surgical bleeding	
BP 20% of preanaesthetic level	2	Minimal, no dressing changes	2
BP 20–50% of preanaesthetic level	1	Moderate, up to two dressing changes	1
BP 50% of preanaesthetic level	0	Severe, more than three dressing changes	0
Consciousness (C)		Pain	
Fully awake	2	Controlled with oral analgesics and acceptable to patient?	
Arousable on calling	1	Yes	2
Not responding	0	No	1

theatre, provided it is equipped and staffed to manage common postoperative problems like pain, nausea and vomiting, and bleeding. The anaesthetist and surgeon should have easy access to the ward in case their assistance is needed. The modified Post-Anaesthesia Discharge Scoring System (MPADSS) (Table V) may be used to assess readiness for hospital discharge, with a score of 9 and above indicating readiness for discharge home.^{21,22}

Late recovery ends when the patient has made a full physiological and physical recovery from surgery, which may take weeks to months.

On discharge, the following information should be given to the patient and their caregiver:

- Instructions for managing pain, nausea and vomiting
- Symptoms that are expected after the procedure
- Danger signs that should prompt contacting their health care provider
- Who to contact/where to go in case of emergency
- Advice not to drink alcohol, operate machinery or drive for 24 hours after a general anaesthetic
- Procedure-specific advice regarding when it is safe to drive a car

Ideally, a written discharge summary should be given to each patient detailing their procedure, postoperative treatment and any further advice given to the patient.

A protocol should be in place for whom the patient should contact should they experience any danger signs or unexpected complications. Telephonic follow-up the day after the procedure is advisable.²

8. Specific patient populations

Children, patients with a BMI above 35 kg/m², patients older than 80 years, ASA III physical status patients, and patients with suspected OSA, should be considered as the first case on the list, particularly if they are scheduled for general anaesthesia.

Early mobilisation, being in a familiar environment post-operatively, and minimal disruption to normal routine are advantageous to these specific patient population groups.

8.1 Obesity

Obesity itself should not be a contraindication to DCS, as long as appropriate expertise and resources are available for safe patient care. The anaesthetic plan should be individualised and may include general anaesthesia, regional or local anaesthesia or procedural sedation.

The incidence of intraoperative and early postoperative complications is greater, but these usually resolve by the time the patient is ready for discharge. Patients may require a longer time to recover in the postoperative ward. Early mobilisation and adequate deep vein thrombosis prophylaxis reduce the risk for late complications like venous thromboembolism.²

Obese patients with a history of OSA, or who are identified as being at risk for OSA using the STOP-Bang score, may still be considered for DCS. The prerequisite is that these patients are otherwise well, with optimised comorbid conditions, and that postoperative pain can be managed predominantly with non-opioid analgesia. Patients who are well-controlled with nasal continuous positive airway pressure (CPAP) at home may bring their devices to the hospital to use during the recovery phase.²³

8.2 Paediatrics

Children often undergo diagnostic or minor surgical procedures in a day-case setting, and there are few absolute contraindications to DCS.

Each day surgery facility should have an agreed lower age limit for paediatric patients. This should reflect the available expertise and equipment in the facility. For otherwise well neonates having minor procedures, a lower age limit of 44 weeks post-conceptual age (gestational age plus chronological age) should be appropriate. Below 44 weeks post-conceptual age, the risk of postoperative apnoea increases. However, for ex-premature infants (born at less than 37 weeks gestational age), the lower limit for DCS should be at least 60 weeks post-conceptual age.²

Care should be taken when assessing children with OSA for day-case tonsillectomy and/or adenoidectomy. Children with severe OSA or risk factors for respiratory complications should not be referred for DCS (Table VI).²⁴

Table VI: Children at risk from respiratory complications unsuitable for day-case adenotonsillectomy

General	Neurological	Airway	Other comorbidities
Age < 2 years	Severe cerebral palsy	Significant craniofacial anomalies	ECG or echocardiographic abnormalities
Weight < 15 kg	Hypotonia or neuromuscular disorders (moderately or severely affected)	Mucopolysaccharidosis and syndromes associated with difficult airway	Severe OSA (described by polysomnographic indices including obstructive index > 10, respiratory disturbance index > 40 and O ₂ saturation nadir < 80%)
Failure to thrive (weight < 5th centile for age)			Significant comorbidity (e.g., congenital heart disease, chronic lung disease, ASA III or above)
Obesity (BMI > 2.5 standard deviation scores, or > 99th centile for age and gender)			

Any family or personal history suggestive of malignant hyperthermia or scoline apnoea should preclude booking a child for DCS.

Whenever possible, children should be managed on dedicated paediatric day-case lists. If this is not possible, children should be prioritised at the start of the list.

Parents should be well-informed that their child may need admission postoperatively if there are any adverse events during the procedure. Parents should also be counselled adequately on postoperative care and be instructed on recognising complications that would require a return to the hospital (for example, a post-tonsillectomy bleed).²

8.3 Elderly patients

Patients with advanced age may be considered for DCS. The benefits of DCS for older patients include less disorientation and confusion postoperatively and faster return to their normal activities. There does not appear to be an increase in adverse outcomes compared to younger patients.

It should be borne in mind that older patients may not feel at liberty to complain when they feel unwell. Careful preoperative assessment is therefore essential. Attention should be paid to hydration status, as patients may be dehydrated even before the period of preoperative fasting. Elderly patients may also be at risk for hypoglycaemia. Adequate postoperative supervision should be ensured.²

8.4 Urgent surgery

Select patients requiring certain urgent surgical procedures may be considered for DCS. Examples of acute surgical conditions that may be managed as day-case procedures include abscesses for incision and drainage, evacuation of retained products, manipulation under anaesthesia of fractures and tendon repairs.^{2,25}

9. Education and training

It is essential that all anaesthesia trainees are exposed to and trained in all aspects of DCS. DCS should be delivered as part of core general duties for both diploma students and anaesthesia registrars. It should involve learning appropriate anaesthetic techniques and cover the entire day surgery process.

Refer to the current FCA curriculum on the CMSA website for further details.²⁶

10. Administrative aspects

10.1 Documentation²

The interaction on the day of the procedure at the DCS unit is usually brief, fast-paced and intense. Where possible, patients should receive written information about the following:

- General information on what to expect at the day surgery unit
- Fasting guidelines
- Advice for chronic medication
- Procedure-specific preoperative preparation
- Proposed surgical procedure
- Possible anaesthetic techniques best suited to the procedure

The written information should be given in the language the patient understands and ahead of admission to allow the patient time to digest the information before their DCS.

An individualised and integrated care plan that takes into account varying groups such as children, elderly patients, procedures done under regional anaesthesia only and complex cases is recommended.

Stakeholders and staff should have a consensus on the day-case protocol that will be implemented for preoperative assessment and the dedicated care pathway from patient selection, preparation, admission and through to discharge. All the staff should be fully aware of this process, and dedicated care pathways should be available to facilitate patient selection and preparation for DCS.

Electronic capturing of patient records that reflect a multi-disciplinary approach is recommended as the method of documentation. All aspects of treatment and care must be recorded accurately to ensure that each patient follows an effective and safe pathway. The documentation should be a continuous flow from preoperative preparation to discharge and the subsequent follow-up review. It is advised that this documentation should be stored in line with regulations set out in the POPI Act.

Effective information helps to relieve anxiety, improve patient satisfaction and the overall day surgery experience. This in itself is useful for quality assurance and evaluating outcomes.

10.2 Management and staffing²

The staff strength in terms of number, qualification and experience level is partly influenced by the workload, the type of case mix, the local setting, local preferences and the particular units' ability to conform to national guidelines.

The staff should receive special training tailored towards delivering care for DCS. There is a preference for a well-trained, flexible and multi-skilled workforce with the knowledge and ability to work within various areas of the day surgery unit. It allows for efficient use of resources, job satisfaction, and personal and professional development. The structure of staffing in each DCS unit should bear in mind local needs and employee wellbeing.

A day surgery unit should be led by:

- a Clinical Head with a special interest in day surgery and whose responsibilities would include the development of local policies, guidelines and clinical governance. Ideally, a

consultant anaesthetist with management experience is well suited to this role.

The Clinical Head should be supported by:

- a Unit Manager with a nursing background who would bear the responsibility of the day-to-day running of the service. The manager should have the knowledge and skills to make informed decisions and lead on all aspects of day surgery development, and
- a multidisciplinary operational team that would review operational issues, policy compliance, strategise on quality assurance expectations and oversee the day-to-day running of the unit.

DCS should ideally be represented at the level of the hospital board, and issues that arise should be tabled before senior management when indicated.

10.3 Facilities²

DCS works best when it is functionally and structurally autonomous from inpatient wards and operating theatres with its own reception, consulting rooms, ward, theatres, recovery area, and administrative facilities. It should be equipped and staffed to the same standards as an inpatient facility, except for the use of trolleys rather than beds.

There should be in-built side rooms to cater for sensitive patients and those with special needs. It is key that a patient's privacy and dignity are always maintained.

The DCS unit should not have the capacity to accept admissions overnight. There should be clearly stated agreements that ensure that it is not used for emergency inpatient care to avoid conflicts and disruption of the day-case schedule and the reduction in standards of care and staff morale.

DCS units that have introduced overnight beds have had the drive to encourage same-day discharge compromised because admitting a patient is easy. It may also regularly become pre-occupied with emergency patients or complex elective cases from the main hospital complex when there is pressure for beds.

An alternative model to a sole-purpose day-case unit to avoid the above-stated problems is the use of a day-case ward where patients are transferred to the main operating theatre. This model allows for a more straightforward change when transitioning from day-case to overnight stay for complex procedures because there would be little impact on theatre equipment or staffing. However, it is important to note that day-case beds scattered around many wards do not achieve the same efficiency nor do they provide the targeted service required to achieve good outcomes.

This model of DCS should not compromise the same high standards of patient selection, preparation, perioperative care, discharge and follow-up as seen in dedicated day surgery facilities.

For ease of convenience, the car park or short stay drop-off and pick-up areas should be provided adjacent to the unit.

Facilities **must** be appropriately licensed and regularly inspected by the Department of Health as a day facility or as a tertiary facility if the case is not performed remotely, but is still done as a day case.

10.4 Quality improvement²

Quality control is a vital and ongoing feature of health care practice and service delivery to assess and improve patient care constantly.

Guidelines on quality control for DCS could not be identified.

Quality indicators must be simple and easy to obtain and should be integrated into the normal activity of DCS units to implement an organised quality control system.

A robust database is useful since the most successful DCS units collect data at all stages of the care pathway. Audit of the data relates primarily to the quality of care and efficiency. The information gathered needs to be presented to stakeholders of interest and influence without ambiguity. This will allow for improvement of services rendered, the adaptation of protocols and the implementation or maintenance of quality patient care in DCS units.

Studies show that a major quality indicator for DCS is PONV. PONV is an important cause of morbidity and a major contributor to unplanned postoperative admissions.

Quality indicators can be sub-divided into preoperative, perioperative, and postoperative indicators:²⁷

10.4.1 Preoperative quality indicators

- Cancellation of the procedure after arrival or on the same day of surgery
- Failure of booked patients to attend hospital

10.4.2 Perioperative quality indicators

- Clinical information provided to patients and caregivers
- Incidence of patient burns
- Incidence of patient falls
- Incidence of wrong site, wrong side, wrong patient, wrong procedure, wrong implant or wrong surgery
- Influenza vaccination/SARS-CoV-2 vaccination compliance among the healthcare workforce
- Medication errors
- Timing of intravenous prophylactic antibiotics

10.4.3 Postoperative quality indicators

- General condition of the patient at 24-hours after the intervention, performed by telephonic follow up on the following day
- Quality of recovery:
 - Pain and fatigue
 - Patient's ability to resume normal activities after surgery and anaesthesia
 - Physical comfort and independence
 - Psychological support and emotional state
 - PONV

- Patient satisfaction
- Surgical site infection
- Unanticipated complications
- Unplanned delay in discharge greater than 6 hours
- Unplanned overnight admission
- Unplanned return to the operating room

Currently, there is no gold standard to assess postoperative recovery. Postoperative questionnaires assessing 24-hour, 30-day, 6-month and 1-year post-procedure quality of recovery, patient satisfaction and quality of life have been suggested to provide better insight into outcomes and areas that need improvement.

Establishing a quality control system is recommended because it reinforces patient satisfaction and a culture of excellence, reduces predicted risks, and prevents an exponential rise in perioperative morbidity as the number and complexity of day-case surgeries increase.²⁷

11. Medicolegal aspects⁶

Patient outcome is one of the most critical issues related to healthcare service delivery. Historically, litigation pertaining to DCS is less frequent, with fewer injuries and lower pay-outs compared to inpatient care.

DCS is rapidly evolving with an increase in the complexity of cases booked and patient comorbidities. Informed consent and understanding of the patient's postoperative arrangements, care, and level of supervision, remain key to ensuring safety before undertaking day-case procedures. This will limit litigation and liability.

The patient must have read, understood, and agreed to comply completely with the postoperative instructions.

Tonsillectomy is a common day-case procedure that leads to significant complications. Anaesthesiologists are implicated in medicolegal claims from airway complications and codeine prescribed to fast metabolisers postoperatively.

Regional anaesthesia is associated with relatively more litigation than general anaesthesia despite its clinical benefits. It is important to ensure adequate informed consent, detailing common adverse events and rare high-morbidity complications. A trained and skilled anaesthetist should perform the block. Clear information should be given regarding after-care at home.⁶

One should not exclude patients with diagnosed and treated OSA and stable comorbid conditions from day surgery as long as opioid-free analgesia is sufficient for postoperative pain control.

The anaesthetic component in the day-case surgical pathway is a crucial factor in ensuring that patients have a low incidence of unplanned or extended hospital stay, or unanticipated readmission due to complications.

References

1. Elsobky S, Ahmad N, Qureshi M, Izzath W, Sadiq H. Paediatric day case tonsillectomy: a safe, feasible and an economical way to treat patients--Yorkhill experience. *Scott Med J*. 2014;59(1):5-8. <https://doi.org/10.1177/0036933013518140>.
2. Bailey CR, Ahuja M, Bartholomew K, et al. Guidelines for day-case surgery 2019: Guidelines from the Association of Anaesthetists and the British Association of Day Surgery. *Anaesthesia*. 2019;74(6):778-92. <https://doi.org/10.1111/anae.14639>.
3. Definitions of Health Facilities [Internet]. c2001. KwaZulu-Natal Province Health. Available from: <http://www.kznhealth.gov.za/definitions.htm>. Accessed 22 Jan 2022.
4. Roelofse J, Jansen van Rensburg M. Guidelines for the safe use of procedural sedation and analgesia for diagnostic and therapeutic procedures in adults: 2020–2025. *South Afr J Anaesth Analg*. 2020;26(2 Suppl 1):S1-75.
5. International Association for Ambulatory Surgery. Ambulatory (Day) Surgery: Suggested international terminology and definitions. 2003.
6. Pearson A, Cook T. Litigation and complaints associated with day-case anaesthesia. *BJA Educ*. 2017;17(9):289-94. <https://doi.org/10.1093/bjaed/mkx011>.
7. South African Society of Anaesthesiologists. SASA Practice Guidelines 2018 revision. *South Afr J Anaesth Analg*. 2018;24(2 Suppl 2):S1-119.
8. National Department of Health. National Health Act, No. 61 of 2003 [Internet]. Government Gazette 2004. Available from: https://www.up.ac.za/media/shared/12/ZP_Files/health-act.zp122778.pdf. Accessed 5 Nov 2018.
9. South African Society of Anaesthesiologists. Airway management resources in operating theatres. *South Afr J Anaesth Analg*. 2014;20(4):S1-16.
10. South African Society of Anaesthetists. Position statement: Utilisation of operation theatres during planned and unplanned power outages [Internet]. 2019. p. 1-4. Available from: <https://www.sasaweb.com/wp-content/uploads/2022/07/SASA-Position-Statement-Utilisation-of-Operating-Theatres-During-Planned-and-Unplanned-Power-Outages.pdf>. Accessed 10 Aug 2022.
11. National Department of Health. Standard treatment guidelines and essential medicines list for South Africa: Hospital level, adults. 2019 ed. [Internet]. 2019. Available from: <https://www.knowledgehub.org.za/elibrary/hospital-level-adults-standard-treatment-guidelines-and-essential-medicines-list-2nd>. Accessed 10 Aug 2022.
12. World Health Organization. WHO model list of essential medicines [Internet]. 2021. Available from: <https://www.who.int/publications/item/WHO-MHP-HPS-EML-2021.02>. Accessed 10 Aug 2022.
13. South African Society of Anaesthesiologists. Guidelines for infection control and prevention in anaesthesia in South Africa. *South Afr J Anaesth Analg*. 2021;27(4 Suppl 1):S1-55. <https://doi.org/10.36303/SAJAA.2021.27.1.S1>.
14. Roelofse J, Jansen van Rensburg M, Gray R, Lapere C. SASA paediatric guidelines for the safe use of procedural sedation and analgesia for diagnostic and therapeutic procedures in children: 2021–2026. *South African J Anaesth Analg*. 2021;27(4 Suppl 2):S1-S83. <https://doi.org/10.36303/SAJAA.2021.27.4.S2.2635>.
15. Neal JM, Brull R, Chan VWS, et al. The ASRA evidence-based medicine assessment of ultrasound-guided regional anaesthesia and pain medicine: Executive summary. *Reg Anesth Pain Med*. 2010;35(2 Suppl):S1-9. <https://doi.org/10.1097/aap.0b013e3181d22fe0>.
16. Barrington MJ, Kluger R. Ultrasound guidance reduces the risk of local anesthetic systemic toxicity following peripheral nerve blockade. *Reg Anesth Pain Med*. 2013;38(4):289-99. <https://doi.org/10.1097/aap.0b013e318292669b>.
17. Tharakan L, Faber P. Pain management in day-case surgery. *BJA Educ*. 2015;15(4):180-3. <https://doi.org/10.1093/bjaceaccp/mku034>.
18. Punjasawadwong Y, Phongchiewboon A, Bunchungmongkol N. Bispectral index for improving anaesthetic delivery and postoperative recovery. *Cochrane Database Syst Rev*. 2014;2014(6):CD003843. <https://doi.org/10.1002/14651858.cd003843.pub3>.
19. Gan TJ, Diemunsch P, Habib AS, et al. Consensus guidelines for the management of postoperative nausea and vomiting. *Anesth Analg*. 2014;118(1):85-113. <https://doi.org/10.1213/ane.0000000000000002>.
20. Aldrete JA. The post-anaesthesia recovery score revisited. *J Clin Anesth*. 1995;7(1):89-91. [https://doi.org/10.1016/0952-8180\(94\)00001-k](https://doi.org/10.1016/0952-8180(94)00001-k).
21. Ead H. From Aldrete to PADSS: reviewing discharge criteria after ambulatory surgery. *J Perianesth Nurs*. 2006;21(4):259-67. <https://doi.org/10.1016/j.jopan.2006.05.006>.
22. Palumbo P, Tellan G, Perotti B, et al. Modified PADSS (Post Anaesthetic Discharge Scoring System) for monitoring outpatients discharge. *Ann Ital Chir*. 2013;84(6):661-5. PMID 23165318.
23. Joshi GP, Ankichetty SP, Gan TJ, Chung F. Society for Ambulatory Anaesthesia consensus statement on preoperative selection of adult patients with obstructive sleep apnea scheduled for ambulatory surgery. *Anesth Analg*. 2012;115(5):1060-8. <https://doi.org/10.1213/ane.0b013e318269cfd7>.
24. Robb PJ, Bew S, Kubba H, et al. Tonsillectomy and Adenoidectomy in children with sleep-related breathing disorders: consensus statement of a UK multidisciplinary working party. *Ann R Coll Surg Engl*. 2009;91(5):371-3. <https://doi.org/10.1308/003588409x432239>.
25. Davies GL. Day-case surgery made safe. Part II Anaesthesia Refresher Course. University of Cape Town; 2020.
26. The Colleges of Medicine of South Africa: Fellowship of the College of Anaesthetists of South Africa [Internet]. Available from: https://www.cmsa.co.za/view_exam.aspx?QualificationID=1. Accessed 6 Feb 2022.
27. Nunes S, Gomes R, Povo A, Alves EC. Quality indicators in ambulatory surgery: a literature review comparing Portuguese and international systems. *Acta Med Port*. 2018;31(7-8):425-30. <https://doi.org/10.20344/amp.10416>.

Acknowledgements

The authors and editors of the Day-case surgery guidelines on behalf of the South Africa Society of Anaesthesiologists (SASA) would like to thank the Association of Anaesthetists and Dr Tay Yoong Chuan alongside Dr Tham Cheng Shi of Singapore Health – Anaesthesia and Singapore General Hospital Day Surgery Unit for the unrestricted access to adapt and adopt their guidelines.

We want to acknowledge the work done by Dr Gareth L Davies on 'Day-case surgery made safe', Dr Caroline Corbett's work on day-case and remote anaesthesia, and Dr Dominique van Dyk for the comprehensive work on 'Day-case surgery patient selection guidelines' at the Groote Schuur Hospital, Cape Town.

These documents have guided our thoughts in drafting this guideline.

Appendix A: Patient information leaflet day-case surgery

Instructions for patients and carers: day-case surgery

Dear Patient,

You have been booked for a day case procedure at the following facility:

With day-case surgery, our aim is for you to be admitted and discharged on the day of your procedure. This has many benefits for you as the patient, including less disruption to your normal routine, and improved comfort after the procedure.

Your surgeon has evaluated your overall health condition and recommended day-case surgery. Your anaesthetist may be in touch before the procedure to confirm whether day-case surgery is the best option for you.

Your procedure may be done under sedation, regional anaesthesia, or general anaesthesia. Your anaesthetist will discuss the various options with you before the procedure.

Please read the instructions below carefully. If you are unable to comply with, or have any concerns regarding the instructions, please contact your surgeon or anaesthetist so that we can discuss how to best make adjustments for your particular requirements or circumstances.

Before the procedure

- If you feel sick or unwell, please liaise with your doctor about whether to postpone the procedure.
- Do not eat anything for at least 6 hours before the procedure/operation.
 - Clear fluids (black tea/black coffee/apple juice) may be taken up to 2 hours before the procedure.
- Smoking and alcohol intake should be avoided for 24 hours before your appointment.
- The use of recreational drugs is not permitted for 48 hours before treatment.
- Please wear comfortable clothes and shoes.
- Avoid wearing heavy make-up, nail varnish and jewellery.
- Take any chronic medication as recommended by your doctor on the day of the procedure/operation. If taken, it must be taken at the usual times, along with a small amount of water, regardless of the restrictions on fluid intake noted above.
- People with asthma should bring their inhalers.
- Diabetic patients should bring their blood glucose monitoring devices and take their blood glucose level the morning before the sedation.
- Patients with obstructive sleep apnoea who use CPAP should bring their CPAP devices.
- Depending on the nature and duration of the surgery, contact lens wearers may have to remove their lenses. Please bring a contact lens container along, or wear spectacles if possible.
- Please arrive in good time for your procedure.
- In some cases, your doctor/dentist may feel that you will benefit from premedication to reduce your anxiety and make you feel relaxed.
- Please empty your bladder before the procedure/operation.
- You must have an adult escort to accompany you home.
 - The escort may remain with you until the procedure/operation is about to start.
 - Guidelines do not allow us to send you home on your own. If there is nobody to accompany you home, we will unfortunately not be able to proceed with your surgery.
- There must be arrangements in place for you and the responsible escort to travel home by private car or taxi rather than public transport, wherever possible.

After the procedure

After your surgery, you will recover in the theatre recovery room. Once you are awake enough, you will be moved to the day-case ward. You will remain here for a few hours until you are fit to go home.

A responsible adult must take you home from the day-case ward, and you must remain in the company of a responsible adult for 24 hours. Your procedure **will not** proceed if you arrive at the day-case facility without an escort.

It can take up to 24 hours for the anaesthetic medications to be eliminated from your body and for you to recover from the effects of the anaesthesia (drowsiness, loss of memory, lack of awareness and coordination). Therefore, for at least 24 hours following the procedure/operation, you must not:

- drive a vehicle (insurance will be void)
- use electrical equipment, cook, or operate machinery
- climb heights (e.g., ladders, scaffolding)
- participate in any other activities that require alertness or coordination (e.g., swimming, cycling, etc.)
- be in charge of children or dependent adults
- make important decisions, or sign legal documents
- use alcohol, sleeping tablets, tobacco, or recreational drugs
- perform any complicated tasks
- go back to work on the day of your procedure

After the procedure, you may continue your acute and chronic medication as recommended by your doctor.

Discuss post-anaesthesia breastfeeding with your anaesthetist.

You may experience nausea or vomiting after your procedure. Your anaesthetist will discuss giving you a prescription for anti-nausea medication.

- Do not eat or drink if you are nauseous.
- Introduce any fluids or foods slowly after your procedure. If you tolerate clear fluids, you may then progress to solids.
- Do not consume any alcoholic drinks for the remainder of the day.

If you have not passed urine within 6–8 hours of being discharged, please contact your doctor at the telephone numbers provided.

Your anaesthetic may result in amnesia (loss of memory). This is temporary, sometimes lasting for a few hours.

