4. THE PREANAESTHESIA PERIOD

4.1 Preoperative anaesthesia clinic

2022 review by P Bettings

Introduction

Value in health care has been described as quality divided by cost, where quality is the sum of patient outcomes and experience. A well-run preoperative anaesthesia clinic (PAC) offers many opportunities to improve the value of the care delivered to patients by reducing the associated costs and improving the quality of care, i.e., reduction in excessive preoperative testing, reduction in subspecialty consults, delay in surgery and others. Innovative ways of preoperative evaluation methods include questionnaires, telephonic interviews, automated interviews, and computerised interviews and interviews via virtual platforms such as Zoom or Skype.

The gold standard is still face-to-face evaluation.

1. Location of PAC
   - It should be easily accessible
   - Preferably in the same hospital complex as where surgery is done
   - It should have easy access to diagnostic and other support services
2. Physical design of PAC
   - Reception and registration area
   - Patient interview and examination area
3. Staffing requirements of PAC
   - Administrative staff
   - Registered sister
4. Appointments to PAC
   - Usually 2–30 days before surgery
   - Importantly, it should not be on the same day as surgery
5. Referring and feedback system to subspecialties
6. Data collection and recording of PAC
   - Computer database
7. Equipment
   - Basic vital signs:
     - BP, ECG, SpO_2
   - Other equipment depends on comorbidities and availability:
     - Respiratory function tests – flow loops
     - Heart – transthoracic echocardiography (TTE)
     - Chest X-ray (CXR), bloods
     - Other equipment as may be deemed necessary
       If this does not form part of the clinic equipment itself, it should be available as near as possible to the PAC.

4.2 Preoperative consultation

2022 review by A Burke

These standards apply to all patients who receive general or regional anaesthesia, sedation or monitored anaesthesia care.

Under unusual circumstances, e.g., extreme emergencies, these standards may be modified. When this is the case, the circumstances must be documented in the patient's record. At a minimum, a focused **preoperative evaluation** of the airway, lungs and heart must be carried out and vital signs documented.

The anaesthetist shall be responsible for determining the **patient's medical status**, developing a **plan of anaesthesia care** and acquainting the patient or the responsible adult with the proposed plan, including financial implications.

Appropriate **informed consent** for anaesthesia should be obtained.

Information is obtained by reviewing the medical record, interviewing the patient regarding the medical history, previous anaesthesia experience, drug therapy, current disease and aspects that may influence perioperative decisions, physical examination and results from special investigations, medical tests or consultations.

Further **consultation or investigations** may be ordered at this stage, and specific preparation may be implemented.

Results should also be **reviewed** before anaesthesia. Unnecessary testing may lead to patient harm.

The responsible anaesthetist shall verify that the above has been properly performed and documented in the patient's record.

Patients with high severity of disease and/or high invasiveness of surgery should be evaluated before the day of surgery. Patients with low severity of disease and medium or low invasiveness of surgery could be evaluated on or before the day of surgery.

Ideally, the anaesthetist who will conduct the anaesthesia should visit the patient before the operation.

At the time of the preoperative consultation, **drugs for premedication** should be prescribed in writing and signed for on the appropriate document by the anaesthetist or the staff member taking the anaesthetist's orders.

Premedication may be indicated for sedation, pain management or treatment of underlying disease. This prescription should be available for other persons in the perioperative team to prevent incompatible or duplicate treatment administration.

Clinical assessment

Medical history

The anaesthetist should obtain and record the information by taking a formal history, which may be supplemented with a questionnaire. Electronic/internet questionnaires to elicit patient information may be helpful in providing the anaesthetist with information but must be supplemented by a face-to-face encounter and examination. The patient's history should include previous or present illnesses, previous anaesthesia and/or surgical complications, current and recent drug therapy, unusual reactions to drugs, adverse effects in family members to anaesthesia and any further information deemed necessary for the assessment of the individual patient. The patient's ASA physical status category should be documented.

Physical examination

The above history should be supplemented by a complete physical examination during the preoperative consultation. This includes evaluation of the airway and appropriate systems.

Additional information that might be necessary should be included, e.g.:

- Accurate measurement of the patient's weight and height should be provided.
- Clinical assessment of cardiovascular and respiratory status should be carried out as considered appropriate by the anaesthetist.
- BP reading should be taken.
- A further systemic examination should be conducted, as is relevant.
- Side-room urine examination should be undertaken, if indicated.

Preoperative testing

Preoperative tests should not be carried out routinely. Taking blood can be a traumatic experience in children. Tests should only be done if they are crucial for optimising patients for surgery. Indications should be documented and based on medical records, history, and physical examination information. Unless the patient's condition changes acutely, results of tests carried out up to six months before the procedure should be acceptable.

Special investigations are expensive and should only be considered if they change your management of the patient. Duplication of information should be avoided, e.g., information gained from a cardiac echocardiogram in some clinical scenarios may make the need for an ECG and CXR unnecessary.

A 12-lead electrocardiograph

This is not routinely indicated, but in the case of a history that is suggestive of cardiac or pulmonary disease may be indicated in the following circumstances or when symptomatic:

- Recent myocardial infarction or angina
- Congenital heart disease
- Arrhythmia, particularly if symptomatic
- Any previous heart disease or condition predisposing to cardiovascular disease
- Longstanding hypertension
- History of dyspnoea, blackouts and palpitations
- Poorly controlled diabetes
- Older age
- Chronic respiratory disease
- Other risk factors

A chest X-ray

This should be available where:

- Clinical examination indicates lung pathology with remaining functional impairment
- There is a history of haemoptysis
- There is a recent history of thoracic injury
- Clinical grounds to suspect pulmonary hypertension
- Other indications

Preoperative haemoglobin

This should not be carried out routinely but may be indicated by:

- Type and invasiveness of surgery
- Liver disease or renal disease
- Clinical anaemia
- Extremes of age
- Bleeding
- Other haematological diseases

Other special investigations

Other special investigations, such as electrolytes, blood sugar, blood urea and creatinine, coagulation studies, pulmonary function tests, functional tests of cardiac function and echocardiography, should be considered in the light of the findings of the preoperative assessment.

Consent and explanation

1. Informed consent must be obtained.
2. SASA highly recommends that a facility or provincial policy guide the processes/procedures for obtaining informed consent (an example of such a policy can be found as Appendix H). SASA further recommends that anaesthesia-specific consent forms related to all aspects of the anaesthesia service are available (an example of such a form can be found as Appendix H).
3. The patient or guardian must be fully informed regarding all aspects of the planned anaesthesia, including the financial implications. A written fee estimate is required to facilitate this communication in the private sector.
4. The anaesthetist may need to confirm that proper arrangements have been made regarding the scheduling of the procedure.
5. The patient's fears must be allayed, and information and reassurance should be given. The technique of anaesthesia must be discussed with the patient or caregiver.
6. Only the more common and relevant risks of anaesthesia need to be explained to the patient and/or their family. Explanation of risks should not necessarily include rare and uncommon outcomes that could incur undue anxiety. However, catastrophic outcomes, e.g., death or paralysis, should be mentioned, even if extremely rare. The anaesthetist should, however, explain relatively rare or low-impact risks if this may impact a patient specifically.
7. Explanations and answers to questions posed by the patient should be frank but must be tailored according to:

- The ability of the patient to grasp the implications fully.
- The patient's existing medical knowledge and medical background.

8. It is preferable that a written information sheet with simple information on fasting, anaesthesia, and pain relief is provided to elective patients before hospital admission.

9. The patient is entitled to know the qualifications and experience of the anaesthetist. SASA recommends that the patient is informed about the qualifications and experience of the anaesthetist during the preoperative consultation.

Telephonic and electronic prescription of premedication drugs

Ideally, the patient should be seen in person to prescribe premedication. If the patient is admitted on the same day of surgery and the anaesthetist is busy in theatre, premedication can be prescribed telephonically. A detailed history of the patient, as well as the admission criteria, such as age, weight, and gender, must be available to the anaesthetist. The patient must be attended to by a registered nurse who will observe the patient after premedication. The overall responsibility will remain with the anaesthetist.

- SASA highly recommends that a facility or provincial policy guide the processes/procedures for obtaining informed consent.
- SASA further recommends that anaesthesia-specific consent forms related to all aspects of the anaesthesia service are available.
- SASA recommends that the patient is informed about the qualifications and experience of the anaesthetist during the preoperative consultation.

4.3 Preoperative fasting

2022 review by A Burke

In adults

The following fasting guidelines have been adopted from the Canadian Anesthesiologists' Society, with permission:

Fasting policies apply to all forms of anaesthesia, including sedation. Emergent or urgent procedures should be undertaken after considering the risk of delaying surgery vs the risk of aspiration of gastric contents. Pre-existing medical conditions like delayed gastric emptying in diabetes and gastrointestinal reflux disease should also be considered.

Unless contraindicated, adults should be encouraged to drink clear fluids (including water, pulp-free juice, and tea or coffee without milk) up to two hours before elective surgery.

Table IV: Preoperative fasting times before elective general anaesthesia and sedation in adults

Meat and fried foods	Light meal, toast and dairy	Clear fluids
8 hours	6 hours	2 hours

In children

The Association of Paediatric Anaesthetists of Great Britain and Ireland, the European Society for Paediatric Anaesthesiology, and L'Association des Anesthésistes-Réanimateurs Pédiatriques d'Expression Française agreed, in a joint consensus statement that it is safe and recommended for all children to take clear fluids up to 1 hour before elective general anaesthesia, unless there is a clear contraindication. This '1-hour clear fluid policy' is also endorsed by the Paediatric Anaesthesia Community of South Africa (PACSA).

The '1-hour clear fluid policy' does not increase the risk of pulmonary aspiration. Children are less thirsty, hungry, irritable and nauseous perioperatively. In children less than 36 months, this leads to positive physiological and metabolic effects. Prolonged fasting may be associated with lower systolic BP during anaesthesia.

Unless contraindicated, children should be encouraged to drink clear fluids (including water, pulp-free juice, and tea or coffee without milk) up to one hour before elective surgery.

Table V: Preoperative fasting times before elective general anaesthesia and sedation in children (0–16 years)

Solid food Cow's milk Formula milk Fortified milk	Breast milk	Clear fluids
6 hours	4 hours	1 hour

Other recommendations

1. Fortified breast milk does not prolong gastric emptying and can be encouraged in infants 4 hours before anaesthesia.
2. Fasting instruction in children with gastro-oesophageal disease does not differ from healthy children.
3. Obese children follow the same fasting guidelines as non-obese children.
4. Children with repaired oesophagal atresia or tracheal-oesophagal fistulas without documented gastric delay follow the same fasting guidelines as healthy children.
5. Children with isolated type I diabetes follow the same guidelines as healthy children.
6. Children with gastrostomies follow the same guidelines as healthy children.
7. Early and liberal postoperative fluid intake should be encouraged, if not contraindicated by the surgical procedure.
8. Gastric ultrasound to assess gastric volume is helpful in clinical decision-making. The cross-sectional area of the antrum is used as a surrogate for gastric content, in the right lateral decubitus position.
9. Jelly is not considered a clear fluid.
10. Sweets and chewing gum are considered solid food, although chewing gum does not increase gastric volume or change gastric pH.

Useful sites for further information

- South African Society of Anaesthesiologists: www.sasaweb.com
- The American Society of Anesthesiologists: https://www.asahq.org/
- Difficult Airway Society: https://das.uk.com/guidelines/downloads.html

- It is recommended for all children to take clear fluids up to 1 hour before elective general anaesthesia, unless there is a clear contraindication.

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