

Australian and New Zealand College of Anaesthetists (ANZCA)

Recommendations on Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations

1. PRINCIPLES OF ANAESTHESIA CARE

- 1.1 The provision of safe anaesthesia in hospitals requires appropriate staff, facilities and equipment. These are specified in this document.
- 1.2 Anaesthesia should be administered only by medical practitioners with appropriate training in anaesthesia or by trainees supervised according to College professional documents *TE03 Policy on Supervision of Clinical Experience for Vocational Trainees in Anaesthesia*, *PS01 Recommendations on Essential Training for Rural General Practitioners in Australia Proposing to Administer Anaesthesia* and *PS02 Statement on Credentialling and Defining the Scope of Clinical Practice in Anaesthesia*.
- 1.3 Every patient presenting for anaesthesia should have a pre-anaesthetic consultation by a medical practitioner who has appropriate training in anaesthesia. See College professional document *PS07 Recommendations for the Pre-Anaesthesia Consultation*.
- 1.4 Appropriate monitoring of physiological and other variables must occur during anaesthesia. See College professional document *PS18 Recommendations on Monitoring During Anaesthesia*.

2. STAFFING

- 2.1 In addition to the nursing or other professional staff required by those carrying out the operative procedure, there must be:
 - 2.1.1 An assistant for the anaesthetist. See College professional document *PS08 Recommendations on the Assistant for the Anaesthetist*.
 - 2.1.2 Adequate assistance for positioning the patient.
 - 2.1.3 Adequate technical assistance to ensure proper functioning and servicing of all equipment used.



3. AREAS IN WHICH ANAESTHESIA IS ADMINISTERED

3.1 Anaesthesia equipment

- 3.1.1 Essential requirements are listed below. Where a range of equipment is recommended, the facility is expected to provide the type most suitable for its needs.
- 3.1.2 Each facility must designate:
 - 3.1.2.1 One or more specialist anaesthetists to advise on the choice and maintenance of anaesthesia equipment.
 - 3.1.2.2 One or more of its nursing or technical staff to be responsible for the organisation of cleaning, maintenance and servicing of anaesthesia equipment.
- 3.1.3 In each anaesthetising location where inhalational general anaesthesia is to be performed, there must be an anaesthesia delivery system which is capable of delivering an accurately measured flow of oxygen (and medical air where this is clinically indicated). Essential equipment includes:
 - 3.1.3.1 Calibrated vaporisers or other systems designed for the accurate delivery of inhalational anaesthetic agents when required.
 - 3.1.3.2 Infusion devices designed for controlled delivery of intravenous anaesthetic agents when required.
 - 3.1.3.3 A range of suitable breathing systems with appropriate measures to ensure the sterility of breathing gases supplied to each patient. See College professional document *PS28 Guidelines on Infection Control in Anaesthesia*.
 - 3.1.3.4 Breathing systems suitable for paediatric use when necessary.
- 3.1.4 Each anaesthesia machine must comply with minimum safety requirements as specified in College professional document *PS54 Minimum Safety Requirements for Anaesthetic Machines for Clinical Practice*.
- 3.1.5 A separate means of inflating the lungs with oxygen must be provided in each anaesthetising location. This apparatus should comply with the current relevant national standards. The size of the device and its attachments must be appropriate for patients being anaesthetised at that location. Its oxygen supply must be independent of the anaesthesia delivery system.
- 3.1.6 Suction apparatus must be available for the exclusive use of the anaesthetist at all times together with appropriate hand pieces and endotracheal suction catheters. This apparatus should comply with the current relevant national standards. Provision must be made for an alternative suction system in the event of primary suction failure.

- 3.1.7 In every anaesthetising location there must be:
- 3.1.7.1 Appropriate protection for the anaesthesia team against biological contaminants. This must include gowns, disposable gloves, masks and eye shields.
 - 3.1.7.2 A stethoscope
 - 3.1.7.3 A sphygmomanometer
 - 3.1.7.4 Monitoring equipment complying with College professional document PS18 Recommendations on Monitoring During Anaesthesia. Where volatile agents are not available, agent monitoring is not required. The particular requirements of magnetic resonance imaging facilities can be met with appropriate equipment designed for the environment.
 - 3.1.7.5 An appropriate range of face masks.
 - 3.1.7.6 An appropriate range of oropharyngeal, nasopharyngeal, laryngeal mask and other artificial airways.
 - 3.1.7.7 Two laryngoscopes with a range of suitable blades.
 - 3.1.7.8 An appropriate range of endotracheal tubes and connectors.
 - 3.1.7.9 A range of endotracheal tube introducers and bougies.
 - 3.1.7.10 Endotracheal cuff inflating syringe.
 - 3.1.7.11 Magill's forceps and throat packs.
 - 3.1.7.12 A suitable range of adhesive and other tapes.
 - 3.1.7.13 Scissors.
 - 3.1.7.14 Sterile lubricant suitable for use with airway devices.
 - 3.1.7.15 Tourniquets for use during IV insertion.
 - 3.1.7.16 Intravenous infusion equipment with an appropriate range of cannulae and solutions.
 - 3.1.7.17 Means for the safe disposal of items contaminated with biological fluids, "sharps" and waste glass.
 - 3.1.7.18 Equipment for scavenging of anaesthetic gases and vapours where these are in use with interface equipment which prevents over-pressurisation of the anaesthesia breathing circuit.

- 3.1.8 In every anaesthetising location there must be readily available:
- 3.1.8.1 Equipment for managing difficult intubations in all locations where endotracheal intubation is electively performed.
 - 3.1.8.2 Equipment for automatic ventilation of the lungs incorporating alarms as specified in College professional document *PS18 Recommendations on Monitoring During Anaesthesia*, when appropriate.
 - 3.1.8.3 Equipment as required for the direct measurement of arterial and venous pressures when appropriate having regard to the procedures being undertaken.
 - 3.1.8.4 Equipment for the rapid infusion of fluids.
 - 3.1.8.5 A cardiac defibrillator with capacity for synchronised cardioversion.
 - 3.1.8.6 Interpleural drainage sets including appropriate underwater seal drainage equipment or one way valves.
 - 3.1.8.7 When appropriate, equipment to warm and/or humidify respiratory gases during anaesthesia. A decision as to the use of active or passive devices will require consideration of the procedures being undertaken.
 - 3.1.8.8 Equipment to cool patients in the event of inappropriate increases in body temperature.
 - 3.1.8.9 Equipment required for sub-arachnoid, epidural or regional nerve blocks, when appropriate.
 - 3.1.8.10 When appropriate, having regard to the procedures being undertaken, equipment to minimise patient heat loss including insulating sheets, forced air warming devices, mattress warmers and intravenous fluid warmers.
 - 3.1.8.11 Equipment to ensure safe positioning for patients during procedures.
- 3.1.9 Other requirements for safe anaesthesia include:
- 3.1.9.1 Appropriate lighting for the clinical observation of patients which complies with the current relevant national standards.
 - 3.1.9.2 Emergency lighting and electric power complying with the current relevant national standards.
 - 3.1.9.3 Telephone/Intercom to communicate with persons outside the anaesthetising location including an "anaesthesia emergency" call system.
 - 3.1.9.4 Refrigeration facilities for the storage of fluids, drugs and biological products.

- 3.1.9.5 The means to maintain room temperature in the anaesthetising location within the range of 18-28°C.
- 3.1.9.6 Patient transfer trolleys/beds as specified in College professional document *PS04 Recommendations for the Post-Anaesthesia Recovery Room*.
- 3.1.9.7 Devices such as rollers or patient slides to assist with transfer of patients in a manner safe for patients and staff.
- 3.1.9.8 A minimum of three people to assist with transfer of the patient when required, with the anaesthetist having prime responsibility for the patient's airway, head and neck.

3.2 Drugs

- 3.2.1 In addition to the drugs and agents commonly used in anaesthesia, drugs must also be available for the management of the following conditions (which may complicate or co-exist with anaesthesia):
 - 3.2.1.1 Adrenal dysfunction
 - 3.2.1.2 Anaphylaxis
 - 3.2.1.3 Bronchospasm
 - 3.2.1.4 Cardiac arrest
 - 3.2.1.5 Cardiac arrhythmias
 - 3.2.1.6 Coagulopathies
 - 3.2.1.7 Hypoglycaemia
 - 3.2.1.8 Hypotension
 - 3.2.1.9 Hyperglycaemia
 - 3.2.1.10 Hypertension
 - 3.2.1.11 Pulmonary oedema
 - 3.2.1.12 Raised intracranial pressure
 - 3.2.1.13 Respiratory depression
 - 3.2.1.14 Uterine atony (where relevant).
- 3.2.2 In making an appropriate selection of drugs and administration equipment for the management of these conditions, advice should be sought as in item 3.1.2.1.

- 3.2.3 Appropriate mechanisms must exist for the regular replacement of all drugs and drug administration equipment after use or when their expiry date has been reached.
- 3.2.4 An initial supply of dantrolene sufficient for commencing the treatment of a suspected case of malignant hyperpyrexia should be readily accessible to all anaesthetising locations within the institution. The minimum supply is twenty-four 20 mg ampoules of dantrolene. Additional doses must be readily available on request. Large hospitals and isolated hospitals should have thirty-six 20 mg ampoules of dantrolene readily available; this is sufficient to treat a 70 kg adult with up to 10 mg/kg.

3.3 Routines for checking, cleaning and servicing equipment

- 3.3.1 Regular sterilising, cleaning and housekeeping routines for the care of equipment should be established.
- 3.3.2 Documented servicing of the anaesthesia delivery system and medical gas equipment by an appropriate organisation must be carried out at intervals recommended by the manufacturer. In the absence of a manufacturer's recommendation on servicing intervals, servicing must be carried out twice a year. After any maintenance or modification to the gas distribution system, tests of gas flow, pressure and identification must be carried out and documented according to current national standards prior to use.
- 3.3.3 A copy of the College professional document *PS31 Guidelines on Checking Anaesthesia Delivery Systems* or a similar document should be available on each anaesthesia delivery system.

3.4 Recovery area

- 3.4.1 Recovery from anaesthesia should take place under appropriate supervision in a designated area which conforms with College professional document *PS04 Recommendations for the Post-Anaesthesia Recovery Room*.
- 3.4.2 Contingency plans should exist for the safe emergency evacuation of patients from the operating suite and/or recovery areas under adequate medical supervision.

4. SPECIFIC ISSUES WITH PARTICULAR ANAESTHETISING LOCATIONS

This is a general document which is intended to be interpreted in the context of the particular service for which anaesthesia is administered. Additional specific issues occur with some particular anaesthetising locations:

4.1 Delivery suites and operating rooms used for obstetrics

- 4.1.1 Staffing: For the establishment and management of epidural blockade in labour, the presence of a midwife trained and competent in obstetric epidural management is required.
- 4.1.2 Analgesia equipment: Any apparatus used for administration of inhalation analgesia must deliver at least 30 per cent oxygen.

- 4.1.3 There must be suction apparatus for the exclusive use of the anaesthetist which is separate from that required for resuscitation of the neonate.
- 4.1.4 There must be separate oxygen outlets and suitable attachments for administering oxygen to the mother and to the neonate.
- 4.1.5 Neonatal resuscitation equipment must include a suitable range of items for:
 - 4.1.5.1 Administration of oxygen to the neonate.
 - 4.1.5.2 Clearing of the airway.
 - 4.1.5.3 Intubation and ventilation of the lungs.
 - 4.1.5.4 Administration of intravenous fluids and drugs.
 - 4.1.5.5 Maintenance of the neonate's temperature.
- 4.1.6 An appropriate range of drugs must be available.

4.2 Electroconvulsive therapy locations

Where provision of an anaesthesia delivery system is not essential, as in an electroconvulsive therapy area, there must be:

- 4.2.1 A breathing system capable of delivering 100 per cent oxygen for both spontaneous and controlled ventilation. An alternative breathing system should be immediately available. Where more than one patient is to be treated, this equipment must be duplicated or there must be an inline viral filter. See College professional document *PS28 Guidelines on Infection Control in Anaesthesia*.
- 4.2.2 Adequate reserves of oxygen must be available. If a reticulated or indexed gas connection system is in use, an oxygen failure warning device is necessary. An emergency cylinder supply of oxygen is necessary in the event of a central supply failure.

4.3 Dental surgeries

- 4.3.1 There must be a dental operating chair which will allow the patient to be placed rapidly in the horizontal or head-down position.

4.4 Organ imaging locations

- 4.4.1 Monitoring equipment complying with College professional document *PS18 Recommendations on Monitoring During Anaesthesia*. Although special problems are encountered in magnetic resonance imaging facilities, appropriate equipment to meet the recommendations is available.
- 4.4.2 The specific problems associated with the location of the anaesthesia delivery system, monitoring equipment and other necessary equipment (for example, drug trolley and suction apparatus) in an environment where space is often limited due to the presence of imaging equipment must be prospectively considered.

RELATED ANZCA DOCUMENTS

PS01 Recommendations on Essential Training for Rural General Practitioners in Australia Proposing to Administer Anaesthesia

PS02 Statement on Credentialling and Defining the Scope of Clinical Practice in Anaesthesia

PS04 Recommendations for the Post-Anaesthesia Recovery Room

PS07 Recommendations for the Pre-Anaesthesia Consultation

PS08 Recommendations on the Assistant for the Anaesthetist

PS18 Recommendations on Monitoring During Anaesthesia

PS28 Guidelines on Infection Control in Anaesthesia

PS31 Guidelines on Checking Anaesthesia Delivery Systems

PS54 Minimum Safety Requirements for Anaesthetic Machines for Clinical Practice

TE03 Policy on Supervision of Clinical Experience for Vocational Trainees in Anaesthesia

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