MODULE 1
Introduction to Anaesthesia and Pain Management

Duration required: 12-18 months. This is a mandatory Module in Basic Training.

Trainee’s Aims

New Trainees should familiarise themselves with the goals of the FANZCA program, the attributes they must attain, and the Modules to be completed during Basic Training. The Modules outline the curriculum content and skills for Trainees to learn and accomplish.

In this Module, clinical experience is gained in anaesthesia for uncomplicated elective surgery, day (ambulatory) surgery, and procedural sedation. This commonly includes anaesthesia for elective (non-major) general, orthopaedic, gynaecological, urological, plastic, and endoscopic procedures, including procedures performed outside the operating theatre suite.

The overall aim of Module 1 is for Trainees to develop a foundation for the ongoing development of clinical skills and abilities in anaesthesia. This includes the following:

- Conducting safe general anaesthesia and perioperative care for patients where risk is considered low
- Understanding physiology, pharmacology, clinical measurement, and monitoring as applied to anaesthesia, in preparation for presentation at the primary examination
- Understanding the principles of acute pain management
- Conducting safe procedural sedation
- Establishing a professional team approach with patients, families, colleagues and staff
- Appraising evidence-based approaches to clinical problems
- Establishing a personal Learning Portfolio and self-education skills

# Represents core aims

Learning Objectives

These objectives are what the Trainee needs to learn. They are presented as:

- Knowledge
- Clinical management ("knows how") that applies knowledge and clinical skills to manage the patient
- Skills (clinical and technical)
- Attitudes and behaviours

Knowledge — Basic Sciences

Trainees are required to understand the subjects in the Basic Sciences to the abilities set out in the ANZCA document Syllabus for the Basic Sciences in Anaesthesia and Intensive Care (1st edition 1995) and as updated on the college website ("the syllabus"). Trainees are expected to apply Basic Science and other principles in clinical practice.
Knowledge — Clinical Measurement and Monitoring

Trainees are required to understand the principles involved in the measurement of relevant variables and the requirements of equipment and monitoring in anaesthesia. Knowledge is expected in the areas outlined below.

Physics and Clinical Measurement

Principles of Measurement as set out in the syllabus.

- SI units
- Behaviour of fluids (gases and liquids)
- Flow of fluids
- Measurement of volumes, flows, and pressures
- Measurement of temperature

Equipment and Apparatus

- Equipment design and standards
- Gas supply in bulk and cylinders
- Anaesthesia delivery system, including pressure valves and regulators
- Vaporisers
- Breathing systems
- Devices to maintain the airway (laryngoscopes, endotracheal tubes, tracheostomy tubes, face masks, laryngeal masks, airways)
- Information systems
- Data storage and retrieval

Monitoring

- Anaesthesia record
- Minimum monitoring standards
- Additional monitoring when appropriate (including central venous pressure, pulmonary artery pressure, cardiac output, cerebral function, temperature, coagulation, blood loss, blood sugar)

Knowledge — Education and Self-Development

Trainees are required to understand the principles, processes or nature of:

- effective learning
- self-directed learning and self-assessment
- reasoning and decision-making
- giving and receiving feedback
- lifelong learning
Clinical Management

Trainees are expected to understand relevant principles, apply knowledge in practice, and to demonstrate abilities in the anaesthesia management of uncomplicated patients (e.g. ASA 1 and 2). These include the following.

Operating Theatre Suite Environment

- Planning and physical layout of an operating theatre suite, especially the operating rooms and post-anaesthesia recovery room
- Lighting, safety, and infection and pollution control in operating rooms
- Services and equipment in operating rooms and post-anaesthesia recovery room
- Requirements of other anaesthesia environments outside operating rooms
- Principles of staffing the operating room, including assistants to anaesthetists
- Principles of management of an operating theatre suite
- Informed consent
- Regulations relating to restricted drugs as per national or state guidelines
- Principles of occupational health and safety such as lifting and positioning patients, infection control and sharps policies
- Dealing with an intra-operative death or mishap
- Relevant ANZCA professional documents (see Appendix)

Day Surgery Environment

- Types of day surgery e.g. ambulatory surgery, same-day surgery, office-based surgery
- Requirements of a day surgery facility
- Planning and physical layout of a day surgery suite
- Services and equipment in a day surgery suite
- Principles of management of a day surgery suite
- Relevant ANZCA professional documents (see Appendix)

Professional Practice

- Policies, recommendations and guidelines in professional practice as contained in ANZCA professional documents (see Appendix)
- Communication and consultation skills face-to-face, by phone and in writing
- Pulmonary function tests
- Measurement of cardiovascular function
- Interpretation of common radiology and imaging scans and investigations
- Other investigations as appropriate

Preoperative Assessment

- Pre-anaesthesia clinics
- Appropriate history taking
- Physical examination including airway assessment, respiratory, cardiovascular and neurological examinations
- Referral to other specialists when necessary
- Establishment of a rapport with the patient to provide reassurance, disclosure of risk, information, and discussions on complementary medicine and informed consent
Conducting Anaesthesia
- Applied cardiac and respiratory physiology
- Applied pharmacology and variability in drug response
- Selection and planning of the anaesthesia technique
- Decision-making relating to postponement or cancellation of surgery
- Routine inhalation and intravenous inductions
- Maintenance of anaesthesia
- Correct use of anaesthesia delivery systems
- Application and interpretation of monitored variables and neuromuscular blockade
- Use of muscle relaxants
- Application of mechanical ventilation
- Management of the airway and intraoperative complications outlined in “Drills” below
- Common regional anaesthesia techniques (e.g., epidural and spinal anaesthesia and upper limb blocks)
- Maintenance of accurate records

Postoperative Care
- Safe recovery transport and handover in the post-anaesthesia recovery room
- Post-operative consultations
- Management of postoperative pain, fluid requirements, and nausea and vomiting

Complementary Medicine
- Common complementary or alternative medicine drugs and therapy
- Interactions with drugs used in anaesthesia and analgesia
- Principles of acupuncture
- Views of patients from different cultures on complementary medicine

Skills — Clinical Skills
Trainees will provide safe anaesthesia care and pain management for uncomplicated patients undergoing non-major surgery.

In providing anaesthesia care, Trainees should be competent in certain technical skills, such as the following.
- Maintenance of an adequate airway
- Rapid sequence induction
- Advanced Life Support
- Aseptic techniques
- Venous access
- Arterial blood gas collection
- Arterial cannulation
- Central venous cannulation
- ECG recording and interpretation
- Lumbar puncture
- Blood culture collection
- Emergency management of a pneumothorax
Trainees should be familiar with clinical protocols (drills) in the delivery of safe anaesthesia care, and be able to respond accordingly for crisis management. These include the following.

- Checking of the anaesthesia delivery system
- Airway assessment
- Identification and management of the following problems, which are commonly acute and may be life-threatening:
  - Inadequate airway; failed intubation, obstructed airway, oesophageal intubation, endobronchial intubation, and unplanned extubation
  - Laryngospasm
  - Bronchospasm
  - Hypertension
  - Hypotension
  - Arrhythmias
  - Myocardial Ischaemia
  - Hypoxia
  - Hypocarbia
  - Hypercarbia
  - Hypoventilation
  - Hyperventilation
  - Hypothermia
  - Hyperthermia
  - Malignant hyperthermia
  - Anaphylaxis
  - Residual neuromuscular blockade
  - Inadequate neuraxial blockade
  - Seizures
  - Gas embolism
  - High ventilator peak inspiratory pressures
  - Pulmonary aspiration
  - Pneumothorax

Skills — Educational Skills

Trainees are expected to learn educational skills in Modules 1 to 3 that will enable them to develop the following:

- A review of their personal learning plan as specified in their Learning Portfolio
- Identification of the factors that lead to deviation from the original learning plan
- A learning plan in the Learning Portfolio in which basic science teaching is linked to clinical practice

The Trainee should acquire the core skills outlined below.

During Basic Training

- Maintaining a Learning Portfolio
- Developing a study plan for the rest of the training period
- Reviewing study plans and correcting for deviations (eg, catching up on deficient knowledge or experience)
- Reflecting on previous learning experiences with the aid of the Learning Portfolio
- Linking basic science teaching with clinical practice
- Studying effectively
- Participating in small-group learning and educational activities
- Being aware of decision-making processes
- Managing time effectively for study, work and home/leisure
- Giving and receiving feedback
- Developing insight into personal limitations
- Using the Internet including e-mail
- Conducting and appraising literature searches
- Appraising journal articles including the application of statistics
- Carrying out oral presentations and professional communication. Specific skills in communication are outlined in Modules 2, 11 and 12
Attitudes and Behaviours

Trainees are expected to develop the attitudes and behaviours which are obligatory in specialist medical practice.

Core attitudes and behaviours that Trainees must cultivate during the whole period of FANZCA training are outlined below.

Specialist Practice

- To attain the attributes of a specialist as a:
  - Medical expert
  - Communicator
  - Collaborator
  - Manager
  - Health advocate
  - Scholar and teacher
  - Professional
- To practice good communication with colleagues, patients and others
- To work as a member of a team, but to assume responsibilities and/or delegate duties as a team leader when necessary
- To commit to, and believe in, a culture of safety and ethical, high quality care
- To accept that medical knowledge and skills are not the only requirements of specialist practice
- To be aware of medicolegal obligations relating to medical practice
- To have insight into one’s own limitations, abilities and areas of expertise
- To commit to lifelong continuing professional development

Professionalism and Ethics

To commit to, and believe in the ethical and professional principles of:

- Altruism: the best care for the patient must be the principal driving force of practice
- Patient autonomy: patients’ ability to determine their treatment
- Beneficence: the principle of “doing good” to patients
- Non-maleficence: the principle of not doing harm to patients
- Fidelity: faithfulness to one’s duties and obligations. This principle underlies excellence in patient care, confidentiality, telling the truth, a commitment to continuing professional development and lifelong learning, and not neglecting patient care
- Social justice: the right of all patients to be fairly treated
- Utility: the principle of doing the most good for the greatest number of people
- Duty to oneself in terms of personal health care, and maintenance of competence to practise
- Accountability: the anaesthetist is responsible for his/her actions
- Honour and integrity in all conduct, including the generation and use of resources
- Respect for others, including a responsibility to work as a team and to practise conflict resolution
- Appropriate response to clinical error
Patient Considerations
To commit to, and believe in, the rights of patients with respect to:

- Autonomy
- Confidentiality of the doctor-patient relationship
- Appropriate, excellent clinical care, including pre-operative assessment
- Informed consent
- Comprehension of the risks of anaesthesia techniques
- Appropriate care irrespective of race, culture, gender and socio-economic status

Research Considerations

- To value rigorous educational and scientific processes
- To distinguish between practice with a sound scientific basis and that which requires further objective assessment
- To commit to the ethical principles of research

Assessment

The Module 1 Supervisor will validate the Trainee’s completion of the module in accordance with the process outlined in College Professional Document TE2. This will involve the Trainee assessing whether she/he has achieved the core aims (Trainee’s aims) of the module and completed a minimum of 12 months clinical experience. The Module 1 Supervisor will review the Trainee’s Learning Portfolio as part of this assessment. At least one oral presentation to the department and evidence of group learning activities (as recorded in the Learning Portfolio) will also be required to complete Module 1.

The Supervisor of Training and other Consultants will evaluate the Trainee’s overall performance in the In-Training Assessment (ITA) process. Aspects of clinical performance, education skills, and attitudes will be reviewed. The ITA will remain a formative assessment conducted every six months, independent of Module assessment.

The Supervisor will test the Trainee’s ability to check the anaesthesia delivery system one to three months into Module 1. The Module 1 Supervisor, in conjunction with the Supervisor of Training, will perform a structured assessment of the Trainee’s competence to assess whether the Trainee should be permitted to practise beyond level 1 supervision (TE3 [2003] Policy on Supervision of Clinical Experience for Vocational Trainees in Anaesthesia).

The Primary and Final Examinations will be summative assessments of the Trainee. Knowledge of basic sciences, clinical measurement, monitoring, and statistics will be assessed in the Primary Examination. Clinical management and clinical skills will be assessed in the Final Examination.

The Learning Portfolio is an integral tool for self-assessment (as well as for recording clinical experience and developing study plans). The Trainee is expected to self-evaluate his/her education skills and learning experience using the Learning Portfolio. For example, the Learning Portfolio should show the Trainee’s progress through the Module, as records of technical skills learned, topics reviewed, and oral presentations delivered (TE 8 [2003] Guidelines for the Learning Portfolio for Trainees in Anaesthesia).