



**College of Intensive Care Medicine**  
of Australia and New Zealand  
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## OBJECTIVES OF TRAINING FOR THE ANAESTHESIA TERM

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### 1. INTRODUCTION

#### *General Objectives*

Acquires knowledge and skills in those aspects of anaesthesia and peri-operative management that are relevant to the practice of an Intensive Care Specialist including:

- Developing an understanding of the role of the anaesthetist in supporting surgical patients
- Developing skills in the pre-operative assessment and preparation of a range of patients for surgery
- Experiencing the 1:1 management of a patient during surgery and managing physiological perturbations caused by surgery, anaesthetic agents, IPPV and disease states
- Observing and developing an understanding of the effects of different forms of surgery on physiological processes
- Further developing airway skills to provide routine support of the airway and to provide support of the difficult or emergency airway
- Further developing vascular access skills
- Developing anaesthetic crisis management skills
- Developing skills in the management of post-operative pain
- Developing an understanding of the pharmacology of common anaesthetic agents.

Further information regarding specific objectives can be obtained from the relevant ANZCA professional documents listed for each section.

### 2. ROLE OF THE ANAESTHETIST

#### *General Instructional Objective*

Understands the responsibilities of the anaesthetist in assessing and preparing the patient for surgery, supporting the patient during surgery and then into the recovery phase.

#### *Required Abilities and Qualities*

- Understands the importance of continuity of care.
- Is involved conscientiously in the total care of the patient from initial assessment to detailed hand-over of information and formal passing on of responsibility.

For further information, see ANZCA professional document TE6: Guidelines on The Duties of an Anaesthetist.

### 3. PATHOPHYSIOLOGY OF MAJOR SURGERY AND ANAESTHESIA

#### *General Instructional Objective*

Understands the anatomical and physiological implications of major surgical procedures for a broad range of patients particularly as they affect the post-operative course.

*Required Abilities and Qualities*

- Understands the many facets of the science of safe anaesthetic practice including physiology, clinical measurement, pharmacology and physics and how the anaesthetist uses this science for the care of the surgical patient.
- Understands the effects of surgery, which may include cardiac, thoracic, neurosurgical, major limb and open and laparoscopic abdominal surgery.
- Understands the implications of procedures, which may include pneumonectomy, CABG off and on bypass, AAA repair, ileostomy and urinary diversion.
- Understands and manages the interaction of anaesthesia (general and regional) and IPPV on the surgical patient.
- Understands the effects of different positions, which may include lithotomy, prone, sitting and prolonged Trendelenburg position on the patient.

**4. ASSESSMENT AND PREPARATION OF THE PREOPERATIVE PATIENT***General Instructional Objective*

- Understands the importance of a detailed pre-operative assessment and how that should be carried out.
- Understands the importance of informed consent. Understands the considerations in optimising patients with a broad range of underlying medical conditions for elective surgery.

*Required Abilities and Qualities*

- Understands the significance of pre-operative fasting and the implications of a “full stomach”
- Assesses medical co-morbidities comprehensively and efficiently elucidates the salient risks
- Assesses the airway using common scales and guides.
- Uses the ASA classification appropriately.
- Assists in optimising medical conditions, which may include cardiac, renal or liver dysfunction, as well as disturbances caused by conditions for which the surgery is being undertaken, such as thyroid disease, ischaemic bowel or perforated viscus.
- Sets a plan in diabetic patients which provides effective control of the blood glucose level in the peri-operative period

For further information, see ANZCA professional documents:

**PS7:** *Recommendations on the Pre-Anaesthesia Consultation*; and **PS26:** *Guidelines on Consent for Anaesthesia or Sedation*.

**5. INTRAOPERATIVE MANAGEMENT INCLUDING THE MANAGEMENT OF MEDICAL COMORBIDITIES AND SURGICAL COMPLICATIONS***General Instructional Objective*

Understands the requirements for the safe administration of anaesthesia.

Understands the anaesthetic management and pathophysiological implications of a broad range of major medical co-morbidities e.g. ischaemic heart disease, valvular heart disease, chronic lung disease, musculoskeletal disorders, rheumatoid arthritis, on the risks and conduct of safe anaesthesia (general and regional) and surgery.

*Required Abilities and Qualities*

Effectively assists in maintaining anaesthesia and homeostasis in a broad range of surgical patients, stable and unstable.

Maintains fluid homeostasis.

Helps to resuscitate the bleeding patient and corrects haemostatic disorders.

Manages emergence from anaesthesia, extubation and recovery safely.

For further information, see ANZCA professional document T1: Recommendations on Minimum facilities for Safe Anaesthesia Practice in Operative Suites and other Anaesthetising Locations

## **6. POST-OPERATIVE ANALGESIA**

### *General Instructional Objective*

Understands the physiology of pain, and the principles and practice of analgesia.

### *Required Abilities and Qualities*

Establishes effective analgesia in a broad range of patients with different modalities including balanced and multimodal analgesia.

Uses a broad range of analgesic agents and delivery routes with the full range of medications and techniques e.g. enteral and parenteral narcotics, NSAIDs and regional techniques.

For further information, see ANZCA professional document PS41: Guidelines on Acute Pain Management

## **7. ANAESTHETIC PHARMACOLOGY**

### *General Instructional Objective*

Understands the general principles of pharmacokinetics and pharmacodynamics, dosage and toxicity of a range of anaesthetic drugs when given by bolus doses or infusions.

### *Required Abilities and Qualities*

Effectively and safely assists in the use of examples of anaesthetic medications, which may include inhalational anaesthetics, intravenous sedatives, narcotics, non narcotic analgesics, anti-emetics, neuromuscular blocking agents, reversal agents for neuromuscular blockade, local anaesthetics

## **8. AIRWAY SKILLS**

### *General Instructional Objective*

Understands the principles of establishing and securing an airway using a range of techniques appropriate to the particular patient and situation.

### *Required Abilities and Qualities*

- a. Is adept in bag-and-mask ventilation and the use of nasopharyngeal airway, oral airway and laryngeal mask airways
- b. Is adept in endotracheal intubation, including knowledge of the complications and steps to minimise these
- c. Assesses the difficult airway and is familiar with a range of equipment and techniques to access and secure the difficult airway including bronchoscopic intubation.

## **9. VASCULAR ACCESS**

### *General Instructional Objective*

Gains further skills in the safe access of the vascular system for monitoring, sampling and delivery of medications and fluids

### *Required Abilities and Qualities*

Uses sterile and safe techniques in the skilful insertion of a range of catheters in a manner that minimises the risks of complications, via routes that may include peripheral venous, central venous (various sites), pulmonary arterial, arterial (various sites), intraosseous.

## 10. REGIONAL ANAESTHESIA

### *General Instructional Objective*

Understands the physiology, principles and practice of regional anaesthesia

### *Required Abilities and Qualities*

- a. Assists in the safe insert of epidural and spinal catheters
- b. Understands the pharmacology of epidural and spinal analgesia with local anaesthetic and opiate agents
- c. Assesses level of blockade
- d. Manages complications of regional anaesthesia

For further information, see ANZCA professional document PS3: Guidelines for the Management of Major Regional Analgesia

## 11. SAFE PROVISION AND USE OF UTILITIES (GAS, ELECTRICITY AND SUCTION)

### *General Instructional Objective*

Understands and safely uses electrical equipment, suction systems and equipment for the delivery and use of gases in anaesthesia and intensive care.

For further information, see ANZCA professional document PS31: Recommendations on Checking Anaesthesia Delivery Systems

## 12. ANAESTHETIC AND RESUSCITATION EQUIPMENT

### *General Instructional Objective*

Understands the principles and practices related to the use of equipment during anaesthesia.

### *Required Abilities and Qualities*

Assists in the checking, setting up and use of a range of common equipment in the Operating Room, which may include the anaesthetic machine, rapid transfusion devices and cell-saver devices.

For further information, see ANZCA professional documents T3: *Minimum Safety Requirements for Anaesthetic Machines for Clinical Practice*; and PS31: *Recommendations on Checking Anaesthesia Delivery Systems*.

## 13. MONITORING

### *General Instructional Objective*

Understands and utilises safely the principles of measurement of a range of clinical variables important for the support and monitoring of the surgical patient.

### *Required Abilities and Qualities*

- a. Understands the physical laws related to flow, pressure, resistance, concentration and temperature, governing the performance of monitoring equipment including transducers, amplifiers.
- b. Understands the generation and recording of biological potentials.
- c. Understands how random and systematic errors arise and the causes of erroneous readings
- d. Understands the principles of, the indications for, limitations of and relevance to clinical practice of pulse oximetry, non-invasive and invasive pressure monitoring, end tidal CO<sub>2</sub> monitoring, BIS monitoring and the nerve stimulator, temperature monitoring and homeostasis, including the use of cooling and heating devices, and the effects and use of temperature manipulation for organ protection. Uses monitoring modalities effectively. Recognises when a change in a variable is significant, acts appropriately and can identify errors when they occur.

For further information, see ANZCA professional document PS18: *Recommendations on Monitoring During Anaesthesia*.

#### **14. ANAESTHESIA IN DIFFICULT ENVIRONMENTS (MRI SCANNER, ED ETC)**

##### *General Instructional Objective*

Understands the equipment and safety considerations related to the delivery of anaesthetics in special environments such as in an MRI scanner, Radiology or Emergency Departments.

##### *Required Abilities and Qualities*

Assists in the delivery of anaesthesia in a range of difficult environments.

For further information, see ANZCA professional document T1: Recommendations on Minimum facilities for Safe Anaesthesia Practice in Operative Suites and other Anaesthetising Locations

#### **15. SPECIFIC GROUPS OF PATIENTS FOR ANAESTHESIA**

##### *General Instructional Objective*

Understands the principles and physiological considerations in the delivery of anaesthetics and management of the:

- Obstetric patient and child
- Paediatric patient.

##### *Required Abilities and Qualities*

Safely assists in the anaesthetic care of patients who may include obstetric, neonatal and paediatric patients.

For further information, see ANZCA professional document PS14: *Guidelines for the Conduct of Major Regional Analgesia in Obstetrics*.

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