



# CMSA

The Colleges of Medicine of South Africa NPC

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**JOHANNESBURG OFFICE**  
**EXAMINATIONS & CREDENTIALS**

**August 2022**

**THE COLLEGE OF CARDIOTHORACIC SURGEONS OF SOUTH AFRICA**

**R E G U L A T I O N S**

**FOR ADMISSION TO THE EXAMINATION FOR THE POST-SPECIALISATION**

**SUB-SPECIALTY CERTIFICATE**

**IN**

**CRITICAL CARE**

**Cert Critical Care(SA)**

**1.0 ELIGIBILITY TO TAKE THE EXAMINATION**

In order to be eligible to enter for this examination, the candidate:-

- 1.1 must comply with the requirements for registration as a medical practitioner, as prescribed by the Medical, Dental and Supplementary Health Services Act.
- 1.2 must be registered as a specialist Cardiothoracic Surgeon

**2.0 ADMISSION TO THE EXAMINATION**

(to be read in conjunction with the Instructions)

The following are the requirements for admission to the examination:

- 2.1 registration as a specialist Cardiothoracic Surgeon
- 2.2 certification of having completed at least eighteen months as a subspecialty trainee in accredited ICU in a teaching hospital, registered and approved by the Health Professions Council of South Africa.
- 2.3 a written report/written reports from the head/s of the institution/s in which he or she trained.
- 2.4 submission of a satisfactorily completed portfolio of learning
- 2.5 Training is valid for a period of three years from the date of completion in a numbered subspecialty training post. Candidates who do not successfully complete the subspecialty examination within the period must motivate with support from their HOD to the College of Cardiothoracic Surgeons for a once off extension.

**3.0 SYLLABUS AND TRAINING**

See Appendix A

**4.0 FORMAT AND CONDUCT OF THE EXAMINATION**

See Appendix B

**JOHANNESBURG**  
**August 2022**

## APPENDIX A

### 1.0 SYLLABUS FOR TRAINING PROGRAMME IN CRITICAL CARE MEDICINE IN SOUTH AFRICA

*(As recommended by the Critical Care Society of Southern Africa — 1998)*

This document details the curricula set by the ad hoc committee of the Critical Care Society of Southern Africa — 1998 (CCSSA) as the standard of training required for persons wishing to register as critical care specialists.

#### 1.1 What is Critical Care ?

1.1.1 An institution/hospital offering a training programme in Critical Care Medicine (CCM) must be registered with The Medical and Dental Professional Board of the Health Professions Council of South Africa.

Critical Facilities can be for patients with acute medical (including cardiac), surgical (including polytrauma), thoracic/cardiac surgical, neurological, neurosurgical and neonatal/paediatric conditions. These facilities may be organised either in separate units working in collaboration or general intensive care units (ICU's). All units should have designated medical and nursing directors. The medical director should be either a registered intensivist or pulmonologist with postgraduate training.

There must be full medical coverage of patient care 24 hours a day. Also there must be other medical specialists available at all times: these to include the relevant internal medicine and surgical subspecialists, and in the case of paediatric units, a neonatologist as well. A 24-hour laboratory and radiology service must also be available.

The training programme must have a programme director, who need not be the ICU director. Trainees must have a primary speciality (viz Anaesthesiology, Surgery, Internal Medicine, Paediatrics or their subspecialities). The programme extends over a 24-month period and which may be divided into sections of not less than 6 months in length. It is possible to complete the programme at different institutions, provided the various institutions comply with the above conditions. 6 months of this time may be spent in traumatology, cardiology, pulmonology or neonatology.

#### 1.1.2 The CCM programme includes:

- a) Theoretical knowledge
- b) Technical and procedural skills
- c) Application of knowledge and skills in daily practice
- d) Organisational and financial aspects of intensive care
- e) Quality assurance
- f) Ethical implications
- g) Exposure to clinical research
- h) A written and oral examination set by a recognised examining authority (eg the CMSA)

#### 1.1.3 The methods for achieving the goals of the programme are:

- a) Exposure to fulltime experience in the ICU with significant responsibility for patient management under close supervision by the training staff
- b) Systemic rounds at least once a day
- c) Systematic assessment of priorities of diagnostic and therapeutic procedures with co-ordination into an integrated patient management strategy
- d) Active participation in clinico-pathologic conferences, patient presentations (grand rounds), journal clubs, etc
- e) Theoretical courses provided by the institution
- f) Active participation in local, national and international seminars, postgraduate courses, symposia and congresses
- g) Participation in clinical research
- h) Teaching work (courses for paramedics, nurses, physiotherapists, etc)

- 1.1.4 **At the end of the training period, trainees should have achieved the following objectives:**
- a) Comprehensive theoretical knowledge of the field of intensive care
  - b) Adequate clinical experience of a wide variety of clinical problems and diseases commonly encountered in the ICU
  - c) Ability to apply the most appropriate diagnostic procedures and treatment modalities in critical care patients
  - d) Mastery of the medical-technical procedures commonly applied in the ICU
  - e) Ability to implement ethical standards
  - f) Ability to bear full responsibility for critically ill patients
  - g) Have passed an examination approved by the HSC specialists committee

## 1.2 Programme content

### 1.2.1 Procedural skills:

The programme provides training in practical, attitudinal and procedural skills. These include application of indications and contraindications, recognition of pitfalls, and management of complications of diagnostic and therapeutic procedures as well as interpretation of data obtained from clinical examination, monitoring and laboratory investigations and determination of the actions to be considered or taken on the basis of this interpretation. The programme provides expert supervision to ensure that adequate experience is obtained in the procedure skills listed below:

#### General/attitudinal

- a) Identification and management of life-threatening or other emergency situations
- b) Identification of essential elements and assignment of priorities in diagnostic procedures and treatment in complex clinical situations
- c) Application of pathophysiological concepts in individual patient problems
- d) Assessment of the pros and cons of diagnostic and therapeutic options
- e) Responsibility for comprehensive patient care
- f) Search for ways of improving daily patient care
- g) Awareness of and ability to cope with the psychological and social effects of life-threatening illness on patients and their relatives
- h) Compassion for and humane approach to the critically ill and their relatives
- i) Ability to work in a multidisciplinary team
- j) Awareness of costs (and cost benefit ratios) of ICU procedures

### 1.2.2 Respiratory problems; their recognition, assessment and management:

#### a) Airway management

##### Mandatory

- Maintenance of open airway
- Intubation (oral, nasotracheal) and maintenance of this airway

##### Advisable

- Cricothyrotomy/transtracheal catheterisation

##### Optional

- Tracheostomy

#### b) Ventilation

##### Mandatory

- Oxygen therapy
- Ventilation by bag and mask
- Use of mask ventilation (with PEEP) eg CPAP, NIPPV
- Mechanical ventilation: all aspects including weaning and complications

c) Pulmonary aspects

- Management of pneumothorax (needle, chest tube insertion, drainage systems)
- Interpretation of arterial (and mixed venous) blood gases and assessment of pulmonary gas exchange (A-a gradients, shunt fraction, VD/VT, etc)
- Basic interpretation of a bedside chest x-ray
- Performance of bedside pulmonary function tests and assessment of pulmonary mechanics
- Chest physiotherapy, incentive spirometry
- Extracorporeal respiratory assist devices
- Hyperbaric Oxygen therapy

For neonatal paediatric intensive care the following items are added:

- Choice of adequate endotracheal tubes
- Prevention of subglottic tracheal stenosis
- High frequency ventilation

1.2.3 **Cardiovascular:**a) Recognition, assessment and management of acute circulatory problems and advanced cardiopulmonary resuscitation

Mandatory

- Assessment and treatment of ECG abnormalities and rhythm disturbances
- Arterial puncture and blood sampling
- Insertion of monitoring lines, both arterial and venous, including pulmonary arterial catheters. Also the measurement of indices made possible by these devices eg CVP, cardiac output, wedge pressure etc
- Cardioversion (electrical and medical)
- Transcutaneous pacing

Advisable

- Pericardiocentesis
- Echo-Doppler cardiovascular techniques including knowledge of transoesophageal echocardiography (interpretation of results)
- Application and regulation of intra-aortic assist devices
- Transvenous pacing
- Application of cardiovascular echo-Doppler techniques
- Use of ventricular assist devices

1.2.4 **Neurological/Psychiatric:**

Mandatory

- Assessment of coma depth
- Assessment of brain death
- Lumbar puncture
- Intracranial pressure monitoring
- Head injuries
- Basic interpretation of brain CT scan
- Monitoring of neuromuscular blockade

Optional

- EEG monitoring
- Interpretation of brain and brain stem evoked potentials
- Measurement of jugular venous oxygen saturation
- Measurement of cerebral Doppler velocities and cerebral blood flow
- Implementation of epidural anaesthesia
- Local or regional anaesthesia

For paediatric intensive care the following is added:

- Ventricular drainage

- 1.2.5 **Metabolic:**
- a) *Recognition, assessment and treatment of (common) acute metabolic and endocrine crises (diabetic keto-acidosis, metabolic coma, overdose etc)*
- Mandatory
- Monitoring and assessment of nutritional support
  - Implementation of fluid therapy
  - Interpretation of acid-base abnormalities
  - Implementation of enteral and parenteral nutrition
  - Management of hypothermia and hyperthermia
- For neonatal paediatric care the following items are added:
- Management of acute decompensations of congenital metabolic abnormalities
  - Phototherapy
  - Exchange transfusion
- 1.2.6 **Gastrointestinal:**
- a) *Recognition, assessment, treatment of gastrointestinal crises (gastrointestinal bleeding acute pancreatitis, acute abdomen etc)*
- Mandatory
- Insertion of nasogastric tube
  - Insertion of an oesophageal balloon (bleeding varices)
  - Implementation of stress ulcer prophylaxis
  - Gastric lavage in overdose
- Optional
- Placement of duodenal jejunal feeding tube
- For neonatal paediatric intensive care the following items are added:
- Induced emesis
  - Use of activated charcoal
  - Duodenal drainage
- 1.2.7 **Haematological:**
- Mandatory
- Interpretation of a coagulation profile
  - Implementation and control of anticoagulant and fibrinolytic treatment
  - Utilisation of blood component therapy and artificial colloids
  - Management of massive transfusion
- Optional
- Autotransfusion
  - Plasma exchange
  - Management of haemodilution
- 1.2.8 **Infection:**
- a) *Recognition, assessment and treatment of (suspected) infection*
- Mandatory
- Sampling for cultures (blood and other sites) and interpretation of lab reports
  - Use of aseptic techniques and prevention of nosocomial infection
  - Management of wounds and drains
- 1.2.9 **Renal:**
- a) *Recognition, assessment and basic management of acute renal failure*
- Mandatory
- Establishment of a fluid and electrolyte balance
  - Insertion of haemo- and peritoneal dialysis catheters
  - Management of continuous renal replacement techniques (CAVH, CAVHD, CVVH, CVVHDF)
  - Haemoperfusion

1.2.10 **Trauma:****a) (Initial) assessment and (initial) treatment of the (poly) trauma patient**

## Mandatory

- Recognition and management of spinal cord injury
- ATLS
- (Initial) management of the burn patient

## Optional

- Temporary immobilisation of fractures

1.2.11 **Monitoring and Life Support Devices:**

## Mandatory

- Utilisation, zeroing, calibration of transducers
- Use of amplifiers and recorders
- Assessment of reliability of measured data
- Operation of ventilators
- Trouble-shooting equipment

1.2.12 **Pharmacology:**

## Mandatory

- Implementation and control of adequate sedation and analgesia
- Knowledge of most used drugs (also in renal, hepatic failure)
- The use of muscle relaxants

1.2.13 **Ethical:**

## Mandatory

- Exposure to ethical aspects of intensive care
- Ability to appreciate and implement patients expressed wishes/will
- Implementation of ethical guidelines of the hospital
- Ability to consider and discuss (dis)continuation or restriction of treatment (also with relatives)
- Implementation of DNR and treatment limitation

For neonatal paediatric intensive care the following item is added:

- Integration of the family's wishes into the treatment plan

1.2.14 **Organisational:**

## Mandatory

- Structure of daily patient care
- Structured patient file with strategies for diagnostic procedures and management of individual patients
- Quality management (use of scoring systems, outcome measures etc)
- Adequate and timely reports to the primary care/referring physician
- Allocation of human, spatial and technical resources
- Implementation of cost containment
- Management and risk estimation of transport of critically ill patients (radiology department transfer, etc)
- Co-ordination of activities of the intensive care team (nurses, residents, physiotherapists etc)
- Use of data management systems

For neonatal paediatric intensive care the following item is added:

- Use of neonatal paediatric transport systems

### 1.3 Theoretical knowledge

The programme provides ample opportunities to increase or acquire theoretical knowledge in the field of critical care medicine. Clearly structured theoretical courses are part of the training programme. These include (when applicable) physiology, pathophysiology, pathology, symptomatology, complications, diagnosis and differential diagnosis, prophylaxis and, in addition to theoretical knowledge of the practise of intensive care medicine, therapy of the following kinds and for the following disorders.

#### 1.3.1 **General:**

Mandatory

- Multi-organ system failure
- Systemic inflammatory response syndrome (SIRS)
- Multisystem disorders
- Transport of the critically ill

#### 1.3.2 **Respiratory:**

Mandatory

- Pulmonary function tests
- Pulmonary oedema, ARDS
- Pulmonary embolus
- Smoke inhalation, airway burns
- Near drowning
- Status asthmatics
- Aspiration/chemical pneumonitis
- Acute broncho-pulmonary infection
- Chest trauma (blunt and penetrating)
- Oxygen therapy (including delivery systems)
- Mechanical ventilation (invasive and non-invasive)
- Respiratory pharmacotherapy

Optional

- Extracorporeal respiratory assist devices
- Hyperbaric oxygen therapy

For neonatal paediatric intensive care the following items are added:

- Physiology of growth and development

Surfactant system

- Croup and epiglottitis
- Congenital anomalies of upper and lower airways
- Pulmonary hypoplasia congenital diaphragmatic hernia
- Hyaline membrane disease
- Meconium aspiration syndrome
- Persistent pulmonary hypertension of the newborn
- Bronchopulmonary dysplasia
- Bronchiolitis
- Cystic Fibrosis

#### 1.3.3 **Cardiovascular:**

Mandatory

- Haemodynamic instability and shock
- Circulatory (patho-) physiology (determinants of myocardial performance, perfusion oxygen transport, microcirculation, endothelial cell function etc)
- Acute myocardial infarction (and complications) and unstable angina
- Cardiac arrhythmia (diagnosis and treatment)
- Acute left heart failure and cardiogenic pulmonary oedema
- Hypertensive crises
- Acute pericardial disease and cardiac tamponade
- Acute valvular disorders, myocarditis, cardiomyopathy, endocarditis

- Peripheral vascular disorders.../

- Peripheral vascular disorders
- Infusion therapy (crystalloids, colloids), fluid challenge
- Vasoactive and inotropic drug therapy
- Thrombolytic therapy
- Haemodynamic effects of mechanical ventilation
- Complications of angioplasty
- Intra-aortic balloon pump, right and left heart assist devices, extracorporeal circulation
- Postoperative care after cardiovascular and thoracic surgery
- Haemodynamic monitoring

For neonatal paediatric intensive care the following items are added:

- Physiology of growth and development
- Management of congenital heart disease, including postoperative care
- Manipulation of Ductus arteriosus
- Management of pulmonary hypertension

**1.3.4 Neurological/psychiatric:**

Mandatory

- Cerebral perfusion, metabolism and monitoring
- Coma: metabolic, traumatic, vascular, anoxic, ischaemic, infectious, drug overdose, mass lesion
- Postanoxic brain damage
- Head injury epilepticus
- Acute cerebral oedema, intracranial hypertension including monitoring
- Meningitis, encephalitis
- Cerebrovascular accident
- Cardiovascular effects of acute intracranial processes, cerebral vasospasm
- Acute neuromuscular disorders (eg Guillain-Barr syndrome, myasthenia gravis, tetanus)
- Spinal cord injury
- Brain death evaluation and certification
- Persistent vegetative states
- Postoperative neurosurgical care
- Malignant hyperthermia, malignant neuroleptica syndrome
- Psychiatric emergencies, including suicide attempts, delirium, depression, acute confusional states
- Psychiatry of intensive care medicine

For neonatal paediatric intensive care the following items are added:

- Physiology of growth and development
- Congenital anomalies of CNS
- Intracranial haemorrhage
- Hydrocephalus
- Acute decompensations of neuromuscular diseases
- Raye's syndrome
- Principles of rehabilitation

**1.3.5 Renal (including electrolytes, acid-base balance):**

Mandatory

- Renal regulation of fluid, acid-base and electrolyte balance
- Electrolyte disturbances (eg Hypernatraemia, hyponatraemia, Osmolar gap, hyperkalaemia)
- Derangements in fluid balance and osmolality
- Acid-base disorders, anion gap
- Oliguria, polyuria and acute renal failure
- Principles of renal replacement therapy: haemodialysis, peritoneal dialysis, ultrafiltration, CAVH, CVVH, CAVHD, CVVHDF
- Pharmacokinetics in renal failure

For neonatal paediatric intensive care the following items are added:

- Physiology of growth and development
- Haemolytic-uraemic syndrome



1.3.6 **Infection:**

## Mandatory

- Infection control, prevention of infection, aseptic techniques
- Severe infections (aerobic, mycoplasma, virus, parasitic, fungi)
- Sepsis, mediator systems, granulocyte endothelial interaction
- Hospital-acquired and opportunistic infections in the critically ill
- Infections in the immunocompromised patient (including AIDS)
- Toxic shock syndrome
- Antimicrobial therapy
- Immunotherapy, immunomodulation
- Infections risks for ICU health care workers

1.3.7 **Haematological:**

## Mandatory

- Acute defects in haemostasis: thrombocytopaenia, DIC (role of mediators, endothelium)
- Acute coagulation disorders
- Acute haemolytic disorders
- Acute and chronic anaemia
- Anticoagulation, fibrinolytic therapy
- Principles of blood component therapy: platelet transfusions, packed red cells, fresh frozen plasma, specific coagulation factor concentrates, albumin, stroma-free haemoglobin, cryoprecipitate, artificial colloids
- Acute syndromes associated with neoplastic disease and acute neoplastic therapy
- Acute disorders of immunosuppressed patients
- Sickle cell crises
- Plasmapheresis

For neonatal paediatric intensive care the following items are added:

- Congenital abnormalities of coagulation
- Acute haemolysis in the neonate, hyperbilirubinaemia
- Dyshaemoglobinaemias
- Acute disorders in immunocompromised patients, including congenital immunodeficiency syndromes

1.3.8 **Gastrointestinal:**

## Mandatory

- Upper and lower gastrointestinal bleeding
- Stress ulcer prophylaxis
- Acute pancreatitis
- Acute peritonitis, perforated viscus, abdominal sepsis
- Bowel obstruction, acute vascular of the intestines (including mesenteric infarction)
- Toxic megacolon, pseudomembranous colitis
- Perforated oesophagus
- Acute inflammatory bowel disease
- Preservation of intestinal blood flow
- Abdominal trauma
- Post-abdominal surgery care
- Acute, fulminant and chronic hepatic failure
- Pharmacokinetics in hepatic failure

For neonatal paediatric intensive care the following items are added:

- Congenital anomalies of GI tract (oesophageal and intestinal atresias, Hirschsprung's disease etc)
- Biliary atresia
- Necrotising enterocolitis
- Acute gastroenteritis, severe dehydration
- Chronic intractable diarrhoea
- Ingestion of corrosives

**1.3.9 Obstetric/Urogenital:**

Mandatory

- Toxaemia of pregnancy, eclampsia
- HELLP syndrome
- Amniotic fluid embolism
- Obstetric haemorrhage
- Ovarian hyperstimulation syndrome
- Obstructive uropathy, acute urine retention
- Urinary tract bleeding
- Uterine sepsis

**1.3.10 Metabolic and endocrinology:**

Mandatory

- Enteral/parental feeding, nutritional requirements
- Thyroid hyper and hypo secretion adrenal function
- Diabetes mellitus (keto-acidotic and nonketotic hyperosmolar coma, hypoglycaemia)
- Disorders of antidiuretic hormone metabolism
- Pheochromocytoma
- Disorders of calcium, phosphorus and magnesium balance

For neonatal paediatric intensive care the following item is added:

- Inborn errors of metabolism (aminoacids, urea-cycle anomalies, organic acidaemias etc)

**1.3.11 Drug overdose and intoxication:**

Mandatory

- Acute intoxication (general specific)
- Antidotes (general specific)
- Addiction and withdrawal

**1.3.12 Immunology and transplantation:**

Mandatory

- Principles of transplantation (organ donation, procurement, organ preservation, transportation, allocation, implantation, national organisation of transplantation activities)
- Donor management
- Immunosuppression rejection
- Pathophysiology of the transplant patient
- Different organ transplantation: postoperative care

**1.3.13 Trauma, burns and environmental insults:**

Mandatory

- Initial approach to the management of multisystem trauma
- CNS injury (brain, spinal cord)
- Skeletal trauma, including spine
- Chest trauma (blunt, penetrating, cardiac)
- Abdominal trauma (blunt, penetrating)
- Crash injury
- Burns
- Hypo- and hyperthermia, heat stroke
- Near drowning, asphyxia
- Electrocutation, radiation, chemical injuries
- Animal bites, insect stings
- Anaphylaxis
- Decompression syndromes

For neonatal paediatric intensive care the following item is added:

- Child abuse

**1.3.14 Sedation, analgesia, pharmacology:**

Mandatory

- Sedation
- Monitoring of sedation
- Analgesia (general, loco-regional)
- Pharmacology, pharmacokinetics and interactions of drugs commonly used in ICU

**1.3.15 Monitoring:**

Mandatory

- Principles of electrocardiographic monitoring, transcutaneous measurements
- Invasive haemodynamic monitoring
- Noninvasive haemodynamic monitoring
- Respiratory monitor: airway pressure, intrathoracic pressure, tidal volume, dead space-to-tidal volumeratio, compliance, resistance, pulse oximetry capnography
- Pneumotachography
- Brain monitoring: intracranial pressure, cerebral blood flow, cerebral metabolic rate, transjugular venous saturation, EEG, evoked potentials
- Metabolic monitoring: Oxygen consumption, carbon dioxide production, respiratory quotient
- Evaluation and integration of obtained data and subsequent medical decisions
- Basic understanding of chest and plain abdominal x-ray, echography, echocardiography, CT Scan, MR Imaging, Radionuclide techniques
- Application of computers in intensive care medicine

**1.3.16 Organisational/Administrative:**

Mandatory

- Organisation of intensive care: design of units, organisational structure, personnel, staffing, supply, isolation, stat-laboratory, on call systems
- Selection and evaluation of equipment
- Prognostic indices, severity and therapeutic intervention scores
- Admission and discharge procedures
- Training of physicians and nurses in intensive care
- Medical record keeping in intensive care (problem-orientated, system-oriented)
- Priorities in the care of the critically ill or injured patient
- Budgeting, cost benefit and cost containment principles
- Quality management
- Principles of triage and resource allocation
- Medico-legal aspects

**1.3.17 Ethical:**

Mandatory

- Hospital ethical guidelines related to intensive care
- Initiation and discontinuation of intensive care life-sustaining treatment
- Care of the dying patient
- DNR (do not resuscitate) concept
- Role of relatives in decision making
- Rights of patients; the right to refuse treatment
- Living wills, advance directions
- Ethical problems related to clinical research
- Psychosocial aspects

**1.3.18 Patient care experience:**

The trainee must gain adequate personal experience in the management of ICU patients with:

- Life-threatening medical and surgical illness
- Polytrauma
- Coronary artery disease
- Neurological disease
- Postoperative care
- Paediatric emergencies

For neonatal paediatric intensive care the following items are added:

- Life-threatening medical and surgical illness in neonates, infants and children

In these patient categories the trainee must be exposed to the following problems:

- Respiratory insufficiency and failure
- Haemodynamic instability
- Acute neurological insults including elevated intracranial pressure
- Acute renal failure
- acute life-threatening metabolic and endocrine derangements
- Coagulation disorders
- Life-threatening infection, sepsis
- Nutritional inadequacy
- Drug overdose and poisoning

Optional

- Paediatric intensive care
- Operating theatre (anaesthesiology procedures)
- Emergency room
- Cardiac catheterisation laboratory
- Pulmonary function laboratory
- Respiratory therapy
- Haemodialysis unit
- Burn unit
- Neonatal intensive care unit
- Ambulance systems
- Transplant intensive care
- Obstetric intensive care
- Nutritional support team
- Infectious disease unit
- Medical emergency services
- Research activity related to intensive care in animal laboratory

For neonatal paediatric intensive care the following items are added:

- Adult intensive care (surgical and/or medical)

## APPENDIX B

### 1.0 FORMAT AND CONDUCT OF THE EXAMINATION

#### 1.1 Evaluation of Competence

Evaluation of overall competence of the trainee will be based on:

- 1.1.1 a written appraisal submitted by the Educational Supervisor
- 1.1.2 an examination under the auspices of the Colleges of Medicine of South Africa, which will be held twice a year.

#### 1.2 Format of the examination:

The examination comprises FOUR components:

- 1.2.1 ONE online written paper of THREE and a HALF hours duration.  
This will comprise a minimum of 120 very short answer questions assessing the candidate on the theory and practice of critical care.
- 1.2.2 ONE online written paper of THREE and a HALF hours duration.  
This will comprise a minimum of 20 short answer questions with an emphasis on data interpretation.
- 1.2.3 ONE oral examination consisting of FOUR parts.  
Each part will be of 12.5 minutes duration assessing the candidate on the theory of critical care.
- 1.2.4 ONE clinical examination consisting of TWO clinical patient scenarios ('paper patients')  
Candidates will have a maximum of 30 minutes to evaluate each paper patient's data.  
This will be followed by 25 minutes of discussion with examiners with an emphasis on clinical practice.

#### 1.3 Weighting of the examination:

Paper 1	25%
Paper 2	25%
Oral	25%
Clinical (Oral)	25%

#### 1.4 Criteria for entry to the oral examination:

- 1.4.1 Candidates must obtain an overall mark of at least 50% for each of Paper 1 and Paper 2.

#### 1.5 Criteria for PASSING the examination:

- 1.5.1 Candidates must obtain an overall mark of at least 50% for each of the FOUR components of the examination.

### 2.0 REGISTRATION OF SUBSPECIALITY WITH HPCSA

A candidate may register the subspeciality against their name with the HPCSA on:

- 2.1 Certification of having completed twenty four months in an accredited training ICU after registration as a specialist AND
- 2.2 Successful completion of the examination for the Certificate in Critical Care

### 3.0 ACCREDITATION AND REGISTRATION OF TRAINING CENTRE

Approval and registration of critical care training units/centres/divisions will be considered jointly by the Health Professions Council of South Africa and the Critical Care Society of Southern Africa

The following aspects will be considered in the evaluation of a training centre:

- 3.1 qualifications of the Educational Supervisor, who should be a recognised critical care practitioner
- 3.2 the case load and spectrum of critical care cases managed and
- 3.3 the spectrum of critical care practise and investigations offered