

C-ECC.2 Emergency Care (A)

Credits: 10 (100 hours)

Provider: Veterinary Postgraduate Unit – Institute of Veterinary Science

RCVS Content Covered

At the end of the module, candidates should be able to:

1. Discuss and explain the aetiologies, typical history, physical examination findings, diagnostic algorithm and treatment options for the patient which has acute dysfunction in the cardiovascular, respiratory, haemo-lymphatic, musculoskeletal, or nervous systems. Examples of acute dysfunction include, but are not limited to, the following conditions:
 - **Cardiovascular:** mitral valve insufficiency, congestive heart failure, ruptured chordae tendinae, pericardial effusion, hypertrophic cardiomyopathy, dilated cardiomyopathy, bacterial endocarditis, heart base tumours, toxins that cause arrhythmias, ventricular tachycardia, atrial fibrillation, ventricular fibrillation, premature ventricular contractions, sick sinus syndrome, causes of sinus bradycardia, causes of sinus tachycardia, aortic or other thromboembolic disease, common congenital cardiac and vascular malformations, cardiopulmonary arrest.
 - **Respiratory:** pulmonary oedema, bacterial pneumonia, aspiration pneumonia, common canine and feline mediastinal and pulmonary neoplasias, pleural effusion, pyothorax in the cat, pneumothorax, haemothorax, tracheal collapse, pharyngeal and tracheal injuries, diaphragmatic hernia, broken ribs/ flail chest, bite wounds to the chest, smoke inhalation, paraquat toxicity, pulmonary thromboembolism.
 - **Haemo-Lymphatic:** anaemia of any cause, leukaemia, paracetamol toxicity, methaemoglobinaemia, haemangiosarcoma, lymphosarcoma, haemorrhage, transfusion therapy, coagulation, systemic inflammatory response syndrome, sepsis, Vitamin K-antagonist toxicity, anaphylactic reactions, vaccine-associated reactions.
 - **Musculoskeletal:** lameness of any cause, repair of abdominal / inguinal/ umbilical hernia, cellulitis, tendon and pad injuries, acute myositis, recognition and prognosis of fractures
 - **Neurologic:** degenerative myelopathy, intervertebral disc disease, fibrocartilagenous embolism, brachial plexus avulsion, epilepsy, intracranial neoplasia, meningitis, ataxia, tremors, seizures, vestibular disease, neurotoxins including but not limited to organophosphate, carbamate, metaldehyde, pyrethrin, chocolate, lead, mushroom, illicit drugs.
2. Describe the technique for performing common emergency procedures, such as those listed below. This list is not intended to be restrictive or proscriptive.
 - **Cardiovascular:**
 - Use dobutamine or dopamine in the management of severe congestive heart failure
 - Perform pericardiocentesis to relieve pericardial tamponade

- Measure blood pressure indirectly using a Doppler probe and sphygmomanometer with cuff
- Obtain Lead II ECG trace and assess it for life-threatening arrhythmias
- Use lidocaine in the management of ventricular tachycardia
- Manage a cardiopulmonary arrest and resuscitation
- Use ultrasound to assess a possible pericardial effusion
- Respiratory:
 - Place a nasal catheter for intranasal oxygen administration
 - Place an indwelling chest tube
 - Perform thoracocentesis
 - Interpret the pO₂ and SaO₂ from blood gas measurements
 - Interpret pH, HCO₃ and pCO₂ on blood gases
 - Perform the anaesthesia to repair a diaphragmatic hernia
 - Perform the surgical repair of a diaphragmatic hernia
- Haemo-Lymphatic:
 - Perform and interpret a platelet estimate from a blood smear
 - Evaluate red blood cell morphology on a blood smear for an anaemic patient
 - Interpret coagulation parameters on a coagulopathy suspect
 - Administer a blood or plasma transfusion
 - Administer a haemoglobin substitute (such as Oxyglobin)
- Musculo-Skeletal:
 - Replace a dislocated hip under anaesthesia
 - Place an Ehmer sling on the hind limb
- Neurologic
 - Localise an acute intervertebral disk lesion and assess the prognosis

Aim of the Module

To advance candidates knowledge, understanding and skills in their approach to the initial assessment and subsequent management of emergency cases commonly seen in practice;

To enable the candidate to critically evaluate their own standards of practice and develop strategies for continuous improvement in the future.

Learning Outcomes

By the end of the module, successful candidates should be able to:

1. demonstrate a systematic understanding of the underlying pathophysiologic alterations in order to undertake initial assessment of emergency patients and subsequent stabilisation and management;
2. develop a systematic understanding of the knowledge and techniques required to manage the common emergency presentations seen in general practice including surgical techniques for diagnosis and therapy;

3. develop the ability to critically appraise their current approach to emergency patients and plan suitable protocols for optimising their outcomes including utilising staff and equipment maximally;
4. critically evaluate the literature in order that evidence based medicine underpins their decision making processes.

Module Structure

The syllabus will be divided into four study units:

Study Unit 1 Cardiovascular emergencies

The approach to patients with critical illness affecting the cardiovascular system.

Medical management and emergency procedures required in the management of acute dysfunctions of the cardiovascular system.

Study Unit 2 Respiratory emergencies

Approach to patients with critical illness affecting the respiratory system.

Medical and surgical management of acute dysfunctions of the respiratory system.

Study Unit 3 Haematologic emergencies

Approach to patients with critical illness affecting the haemo-lymphatic system.

Medical management and emergency procedures required in the management of acute dysfunctions of the haemo-lymphatic system.

Study Unit 4 Neurologic and musculo-skeletal emergencies

Approach to patients with critical illness affecting the musculo-skeletal and neurologic systems.

Medical management and emergency procedures required in the management of acute dysfunctions of the musculo-skeletal and neurologic systems.

Assessment Strategy

Portfolio of cases (20 case log book), 3 x reflective case reports (1500 words), 1 x short answer question and/or MCQ test and 1 x journal critique/journal club presentation (pass/fail)

PLEASE NOTE: It is your responsibility to ensure that you have access to sufficient appropriate cases where you were the primary decision maker to produce adequate material for the module. This may not be possible with some internship positions. You must also be aware of any limitations of your facilities that may make the accumulation of appropriate cases difficult or impossible.