

Reference Number	C-VA.2
Module Title	Equine Anaesthesia and Analgesia
Category and Value	C – 10 credits
Study Hours	100

Introduction

This module has been designed to help veterinary surgeons dealing with equine anaesthesia. In particular, the aim of the module is to consolidate your clinical knowledge and skills and to develop an in-depth understanding of the physiology, pharmacology and equipment related to equine anaesthesia.

You should fulfil the following criteria to be enrolled:

- a) Having completed module B-EP.3
- b) It is your responsibility to ensure that you have access to sufficient cases to produce adequate material for the module
- c) Coverage of this module may be integrated with others, particularly other B and C modules. All candidates will normally have completed A-FAVP.1 Foundations of Advanced Veterinary Practice module, and at least one of the practice B modules, before undertaking a C module, although you can choose to work through modules in a different order if you wish

For a designated Certificate in Advanced Veterinary Practice (Veterinary Anaesthesia) you must complete this module, one further C-VA/C-LAS.1 module, two 'free choice' 10 credit modules and an RCVS synoptic assessment.

Aims

The aim of this module is to extend and consolidate clinical knowledge and skills gained at undergraduate level, and to develop an in-depth understanding of the application of that knowledge in a practice environment in relation to equine anaesthesia.

Learning Outcomes

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

1. demonstrate a critical awareness of the relevance of clinical, haematological, biochemical and other specific diagnostic findings on the conduct of anaesthesia and management of the peri-operative period and develop the ability to recognise the impact of pre-existing disease on the conduct of anaesthesia and management of the peri-operative period;
2. demonstrate the ability to understand the anatomy and physiology of the neurological, cardiovascular and pulmonary systems, the effects of anaesthesia on these body systems and how deleterious effects can be minimised with appropriate selection of drugs;

3. critically evaluate the pharmacology of the commonly used drugs and their application in sedation, premedication, standing surgery, induction and recovery in equine anaesthesia;
4. demonstrate the ability to recognise and deal with common anaesthetic emergencies and complications that develop in the perioperative period, which result in mortality or morbidity;
5. understand the pathophysiology of these conditions and methods to minimise their development;
6. critically appraise the literature relevant to clinical cases in the topics covered and discuss how the literature can be used to inform practice while demonstrating the ability for critical reflection on their clinical work, including identifying potential clinical audit points translating to new protocols or measurable outcomes.

Module Content

This module has been designed to acquire specific knowledge in the main scientific disciplines that are relevant for the safe management of equine anaesthesia. These are the following:

- **Physiology**, including knowledge of
 - the function of peripheral and autonomic nervous system,
 - cardiovascular and respiratory systems and the transport of gases,
 - the control of water, electrolytes, hydrogen ions and buffers in biological systems,
 - hepatic and renal physiology and endocrinology, with reference to the changes in physiology that occur during anaesthesia
- **Pharmacology**, including:
 - awareness of the clinically relevant actions of the drugs commonly used in equine sedation, analgesia and local and general anaesthesia, and their pharmacokinetics (distribution, metabolism, elimination).
 - Potential side effects of these drugs and strategies to prevent and/or manage side-effects.
- **Equine specific anatomy**:
 - CNS, spinal cord and the main nerve trunks blocked in regional analgesic techniques and a knowledge of the anatomy of the thorax, abdomen, head, and neck as they relate to anaesthesia
- **Equine anaesthesia** (including techniques and drugs)
 - Pre-operative clinical assessment.
 - Sedation, analgesia, premedication, intravenous anaesthesia, inhalational anaesthesia, induction and maintenance of general anaesthesia.
 - Monitoring during anaesthesia.
 - Use of IPPV.
 - Local and regional analgesic techniques.
- **Anaesthetic equipment**
 - An understanding of anaesthetic machines and breathing circuits
- **Patient monitoring** before, during and after the anaesthetic period, including pre-anaesthetic assessment, monitoring indicators of anaesthetic depth, selection and interpretation of patient monitoring devices, and blood gas analysis

- **Knowledge of the pathophysiology** of common equine diseases and disorders as they affect anaesthesia, as well as the way anaesthesia may affect pathological processes, particularly those diseases which affect cardiovascular, respiratory, and renal function and those which produce metabolic disturbances.

Assessment Strategy

Module providers are responsible for deciding on assessment strategies and methods, subject to accreditation by RCVS.