EUROPEAN COLLEGE OF EQUINE INTERNAL MEDICINE

ECEIM Training Brochure and Curriculum

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1. INTRODUCTION

The aim of this document is to describe the requirements for an equine internal medicine specialist training that complies with the European Board of Veterinary Specialisation (EBVS) Common Training Framework (CTF) for veterinary specialization in Europe, in accordance with the Directive 2013/55/EU. In this document a European College of Equine Internal Medicine (ECEIM) residency-training curriculum is described, in line with the European Qualifications Framework (EQF) level 8.

ECEIM is a veterinary speciality organisation fully recognised by EBVS in 2010. ECEIM was formed by a group of European veterinarians, recognised in their home countries as specialists in equine internal medicine, in response to a growing demand for better veterinary services for horses through specialisation and a need to harmonise certification in this area for better consumer information. A main objective of the College is to encourage equine veterinarians to seek continuing education opportunities and an associated improvement in equine welfare. Obtaining an ECEIM Diploma will command universal respect for its quality and integrity of advanced training, knowledge and skills.

1.1. Aims of ECEIM

ECEIM strives to improve and promote:

- The quality of equine health care by making available specialised knowledge and skills in equine internal medicine to the benefit of equine species in Europe (and elsewhere).
- The quality of general equine practice through supporting and encouraging contacts between general practitioners and registered specialists.
- The quality of the service to the public by, among other things, the protection of the public against non-qualified "specialists".
- The professional satisfaction of veterinarians.
- The structure of health care for horses, thereby improving its perception and understanding by owners, veterinarians and those interested in equine (health) insurance.
- The quality of personnel in equine clinics.
- The further development of knowledge of internal medicine in horses.

1.2. Objectives of ECEIM

The primary objectives of the ECEIM are to advance equine internal medicine in Europe and increase the competence of those who practice in this field by:

- Establishing guidelines for the post-graduate education and training requirements to becoming a specialist in equine internal medicine.

- Examining and authenticating veterinarians as specialists in equine internal medicine in order to serve the veterinary patient, its owner and the general public by providing expert care for horses, ponies, donkeys, mules and other Equidae with medical disease.
- Encouraging research and other contributions to knowledge relating to pathogenesis, diagnosis, therapy, prevention and control of internal medical diseases in Equidae, and promoting the communication and dissemination of this knowledge.

1.3. Residency-training curriculum

During an ECEIM residency-training programme, residents are expected to develope expertise in the general clinical skills and competencies initially developed during their internship. The curriculum for a residency-training programme relates to this specialty training which leads to the opportunity in becoming a certified Diplomate of the European College of Equine Internal Medicine (Dip ECEIM).

The curriculum is competency-based, with a minimum requirement of three years of full-time veterinary specialty training (adjusted to a maximum of six years for flexible training) which is equivalent to 180 ECTS per the EU directive 2005/36/EC. The curriculum relates to specialty training in equine internal medicine with defined and specific objectives and assessment criteria leading to becoming an ECEIM Diplomate. Courses in other disciplines undertaken before the start of the residency-training programme do not result in a reduction of the residency-training programme duration or specific requirements.

The curriculum applies to training in all nations of the EU, Switzerland, the UK, Israel and Norway. Excluding the North American countries, non-European residency-training programmes may be recognised by the Education and Credentials Committee. In all cases, this curriculum should be used with a direct supervisor who is an ECEIM Diplomate. The testing of the necessesary level of competence will be by an exam. An overview of the certification process is given in table 1.

The ECEIM website will provide information on:

- The ECEIM approved journal's List.
- The publications required **BEFORE** an application can be submitted to sit the examination.
- The examination format and examples of questions.
- The ECEIM fee schedule.
- How a candidate can become eligible to sit the ECEIM exam after completing an ACVIM-approved residency-training programme.
- Details of ECEIM committees and members, including email-contacts.

Table 1. OVERVIEW OF HOW TO BECOME AN ECEIM DIPLOMATE. *E&C: The Education and Credentials Committee

What to do	**Deadline**	**What to submit online** (PDF versions)	**Submit to**
Institution applies to establish a residency-training programme	One month prior to intended start	1. Institution registration form with all details of residency-training programme 2. Payment of the registration fee: see website	E&C
Institution applies for enrolment of a candidate	One month prior to intended start	1. Enrolment form with confirmed rotating internship (or equivalent) and all original signatures	E&C
Resident submits 1st resident's documentation pack (RDP)	Once one third to half of the residency completed	1. RDP with copies of case log sheets included	E&C
Exam application for general paper only (category 1c), optional	By the 1st July preceeding the exam	1. Exam application form 2. Payment of Exam application fee If accepted can proceed to exam entry form for general paper only	E&C
Resident submits 2nd RDP	Once two thirds of the residency completed	1. Updated RDP with copies of case log sheets included	E&C
Option: Resident submits 3rd (and 4th if wished) RDP	Whenever resident feels it is appropriate	1. Updated RDP with copies of case log sheets included	E&C
If all requirements to sit the exam are fulfilled (see exam application form and training brochure for details)			
Resident submits exam application for all parts of the exam (category 1a or 1b) or the rest of the exam if the general paper has already been passed (category 1c)	By the 1st July preceding the exam	1. Exam application form 2. Payment of Exam application fee 3. Letters of support from supervisors or mentors 4. Copy of candidate enrolment form with confirmation of internship/equivalent 5. Copy of at least two Education and Credentials Committee appraisal certificates 6. Updated RDP with original signatures 7. Copies of publications and summaries in English 8. All case log sheets with original signatures	E&C
If exam application accepted (candidate will be notified by the 1st of September)			
Resident submits exam entry form	By 1st November preceeding the exam	1. Exam entry form 2. Payment of the exam entry fee	Exam comm.

2. Requirements for residency-training institutions

2.1. Overview

Institutions offering residency-training programmes must be able to testify that they can provide:

1. At least one ECEIM Diplomate as a direct supervising Diplomate for the programme with no more than two residents directly supervised per Diplomate in a standard residency-training programme.
2. At least 600 cases per resident during a residency-training programme with a variety of diseases and abnormalities as specified in the institution application form.
3. An adequate range of clinical facilities. Members of the Education and Credentials Committee reserve the right to inspect the facilities before approving the programme. If this is deemed necessary, the institution must cover all expenses relating to such visits.
4. Provision for training in related disciplines.
5. Adequate access to facilities for study (library, computer access etc).
6. Provision for the resident to attain the conference attendance, presentation and publication requirements expected for successful exam application.

2.2. Institutional infrastructure

Full hospital facilities including access to high quality diagnostic equipment are required (minimum requirements are given in the institution registration form). The range of diagnostic and therapeutic facilities should be such that genuine specialist techniques can be performed. The following specific requirements need to be fulfilled for an ECEIM residency-training programme to be established:

1. Medical library: A library containing recent textbooks and current journals (paper and online) relating to equine internal medicine and its supporting disciplines must be readily accessible to a resident. Internet access to library facilities and reference material is expected.
2. Medical records: A complete medical record that would satisfy medico-legal scrutiny must be maintained for each individual case. The detailed case notes should be retrievable within seven days. The Education and Credentials Committee may check a random number of cases for quality and veracity. Electronically stored case records are acceptable but should be of a specialist standard.
4. Pathology services: Morbid pathology facilities (including a separate room for gross pathologic examination) must be available. Facilities for histopathologic examination of biopsy and necropsy tissues must be available (a commercial pathology service is acceptable). Anatomic pathology and clinicopathological reports must be retained and retrievable (electronic storage is acceptable).
5. Radiographic services: Separate rooms and appropriate equipment for comprehensive diagnostic imaging must be available. Convenient retrieval of radiographs should be possible. Digital (electronic) archiving systems are acceptable.

2.3. Registration of an institution

Institutions may apply to offer ECEIM standard residency-training programmes for a total of five years and for a total number of residents that is appropriate for the number of ECEIM Diplomates working in the institution and its case load. Each ECEIM Diplomate can supervise a maximum of two residents at one time in a standard residency-training programme. Each resident needs to see at least 600 different cases of adequate quality and distribution during their residency. No defined institutional type is required, with high-quality specialist private equine practices as well as academic institutions able to qualify. Candidates need to apply individually for an alternative residency-training programme.

An application form (and fee requirements) for an institution to apply to become become approved as a residency-training institution can be found on the ECEIM website. An application should be submitted online to the Chair of the Education and Credentials Committee. Applications can be submitted at any time of the year, but not less than one month before the planned start of a residency-training programme. Approval is not guaranteed, so a residency-training programme cannot begin until written confirmation is received from the Education and Credentials Committee.

2.4. Re-approval of a residency-training institution

Re-approval of a residency-training institution must be sought every five years; this may need to occur earlier if the number of ECEIM Diplomates at the institution changes or if the case load has dropped substantially. To apply for re-approval, the same process as for initial registration must be followed with documents submitted online to the Chair of the Education and Credentials Committee. If the appointed direct supervising Diplomate leaves the institution during a residency-training programme, the institution must immediately inform the Education and Credentials Committee of the change in a resident's direct supervisor. Where there is no suitably qualified supervisor to fill the position, it may be necessary to terminate a residency-training programme before its completion.

2.5. Responsibilities of approved institutions regarding candidate enrolment

After having gained approval to offer residency-training programmes, institutions are required to enroll individual candidates before their programmes start; this cannot be done retrospectively. The candidate enrolment form and associated costs can be found on the ECEIM website (https://www.eceim.info/). The form including all required original signatures should be submitted online to the Chair of the Education and Credentials Committee; a hard copy with the original signatures should be maintained by the institution. Candidate enrolment should be done at least one month prior to the planned start of the

programme.

Candidates for alternative residency-training programmes must complete a candidate enrolment form clearly stating that an alternative residency-training programme is planned along with submission of the institution approval form, which must provide detailed individual information about the planned programme. Both must be co-signed by the proposed direct supervisor. Specific details of how the training requirements are to be achieved within the required time period must be presented in these forms.

3. From Resident to EBVS recognised specialist in equine internal medicine

The requirements for becoming an ECEIM Diplomate as defined in the College Constitution & Bylaws (http://www.eceim.info) are summarised below:

- Completion of an initial training period in an equine internship or its equivalent, assessed by the Education and Credentials Committee.
- Completion of a standard or alternative approved residency-training programme.
- Documented evidence of sufficient experience and education by the resident supervisor.
- Obtaining a publication record appraised by the Educational and Credentials Committee to have met the established criteria according to the ECEIM Constitution and Bylaws.
- Passing a comprehensive set of exams administered by the College that tests the competence against a standard acceptable to the ECEIM Board.

In exceptional cases, the Education and Credentials Committee may accept an exam application from an individual who is internationally recognised in the field of equine internal medicine or who has completed a residency-training programme that is internationally recognised as comparable to an ECEIM approved residency-training programme (i.e., an American College of Veterinary Internal Medicine [ACVIM] residency-training programme). For more information on applying under this route, please see the document “How to apply for the exam”.

An ACVIM Diplomate who is considering becoming an ECEIM Diplomate is required to apply to the Chair of the Educational and Credentials Committee.

3.1. Internship or equivalent

Before enrolment into an ECEIM standard or alternative residency-training programme, the candidate must provide evidence that she/he has completed an internship or its equivalent. At the time of

enrolment, the internship supervisor (senior academic or practice principal) must sign the enrolment form to confirm that the internship or equivalent has fulfilled one of the following categories:

a) Twelve month rotating internship (junior clinical assistant) programme involving rotation through a variety of disciplines in a predominantly hospital-based programme in an equine or large animal hospital in any European or North American university.

b) Twelve month rotating internship (junior clinical assistant) programme involving rotation through a variety of disciplines in a predominantly hospital-based programme in a private, charitable or university equine or large animal hospital located world-wide that employs at least one active DipECEIM, DipECVS, DipACVIM or DipACVS veterinarian.

c) Twelve month rotating internship (junior clinical assistant) programme involving rotation through a variety of disciplines in a predominantly hospital-based programme in a private, charitable or university equine or large animal hospital in that employs none of the above listed Diplomates, but in which the hospital practice principal can provide:

- Confirmation that the hospital's annual caseload is at least 1000 horses/per year/intern.
- Confirmation that there are facilities for hospitalisation of medical cases and basic facilities for surgery under general anaesthesia.
- Names of all senior clinical staff with their areas of professional interest and qualifications.

d) 24 months in a predominantly ambulatory practice (equine or large animal practice).

3.2. The residency-training programme

An ECEIM residency is an advanced training programme in equine internal medicine which should lead to certification by the College after passing the exam. The programme and exam warrant that the proficiency of the candidate complies with the criteria within the EQF for lifelong learning at the generic Level 8 (Doctoral level). The ECEIM specialist has the highest level of clinical competency and communication skills and possesses a considerable in-depth knowledge of equine internal medicine.

Any approved ECEIM residency-training programme shall be designed around the curriculum as detailed below under the direct supervision of an ECEIM Diplomate. It is acceptable for parts of a residency-training programme to take place in institutions where an ACVIM Diplomate is in direct contact with the resident, but this needs to be described beforehand in the candidate enrolment form. Competence to practice at an EQF specialty level 8 is assessed by an exam. The aim of this exam is to test a candidate's knowledge and understanding of concepts relating to the medical and biological sciences that underpin clinical practice of equine internal medicine (i.e., pharmacology, microbiology, physiology, pathology,

epidemiology, diagnostic imaging). A candidate is also tested on clinical knowledge and the ability to evaluate specific clinical problems.

3.2.1. Objectives of a residency-training programme

a) For residents to develop clinical proficiency in the diagnosis, treatment and management of equine internal medical diseases.

b) To provide direct and indirect supervision of the resident in the science and practice of equine internal medicine and its supporting disciplines.

c) To provide the resident with the opportunity to pursue career goals in teaching, research and clinical service in a specialist practice and/or industry.

3.2.2. Aims of a residency-training programme

a) Increase the transfer of knowledge and problem-solving skills of the resident.

Specialists have the professional, technical and transferable skills necessary for successful employment in professional environments, able to exercise personal responsibility and autonomous initiative in complex and unpredictable situations. They should be able to:

1. Express thoughts clearly, in both oral and written form.
2. Approach problems in an analytical and scientific manner.
3. Organise work efficiently and effectively.
4. Find required information quickly.
5. Contribute to the ongoing advancement of knowledge of equine internal medicine.

b) Increase the personal and conceptual knowledge of the resident such that they are:

1. Acquainted with the current concepts, theories and hypotheses, principles and methods and problems of equine internal medicine.

2. Able to maintain current knowledge in equine internal medicine through attendance at conferences and/or other scientific meetings and the perusal of peer-reviewed literature.

3. Acquainted with the structures, objectives, approaches and problems of the veterinary profession, and specifically those related to the specialty of equine internal medicine.

4. Acquainted with the social role of the specialist and specifically the responsibilities to the equine population, the equine industry, horse owners/trainers/breeders, clients, colleagues, public health, animal welfare and the environment.

5. Able to conform to modern standards of skills and equipment.

c) Increase the knowledge and skills of the resident indirectly related to equine internal medicine, demonstrating:

1. A systematic acquisition and understanding of a substantial body of knowledge, which is at the forefront of their area of professional practice.
2. The ability to conceptualise, design and execute clinical research relevant to their own professional practice for the generation of new knowledge, applications or understanding at the forefront of their discipline.
3. The ability to create, interpret and apply new knowledge of a quality to satisfy peer review, and merit publication and presentation to professional audiences.
4. A detailed understanding of applicable techniques for research and advanced professional enquiry to support all the above.

d) Increase the knowledge and skills of the resident working as a professional specialist so that:

1. They develop self-confidence, self-criticism and a sense of responsibility essential for the practice of the specialty. This includes a high moral and ethical standard regarding his/her contribution to the protection of human and animal health and welfare and the environment.
2. They can use a full range of investigative procedures and techniques to define and refine problems in a way that renders them amenable to evidence-based approaches.
3. They can make informed judgements on complex issues in specialist fields, often in the absence of complete data.
4. They can communicate ideas and conclusions clearly and effectively to specialist and non- specialist clients and audiences.
5. They can cooperate effectively with specialists and colleagues in other related disciplines, to the benefit of equine health and welfare.
6. They act professionally, providing customised and optimal solutions to client problems that focus on the client's needs, including animal and public health and wellbeing, executed in elegant and technically expert ways.

e) Increase the knowledge and skills of the resident regarding new developments in equine internal medicine such that they:

1. Recognise new developments in the specialty.
2. Are aware of regulations in veterinary medicine, animal health/welfare, illegal medication.
3. Can judge the ethical issues related to horses used for sports and breeding.

3.2.3. The standard residency-training programme

The standard residency-training programme is considered the optimal route to Diplomate status. This programme must consist of a consecutive period of at least three years (156 weeks) of supervised training, postgraduate education and clinical experience in the science and practice of equine internal medicine and its supporting disciplines under the supervision of at least one ECEIM Diplomate who participates actively in the programme. In order to fulfil the ECEIM curriculum requirements, some approved institutions will have to extend their programmes over four or more years.

The resident must participate in a veterinary medical emergency service as well as clinical duties during normal working hours. In addition to the training rotations in equine internal medicine (minimum 93 weeks) and related disciplines (minimum 13 weeks), residents may spend the remainder of their programme in any or all of the following ways:

- Vacation periods (typically 4–5 weeks per year).
- Research (minimum 4 weeks per year)
- Preparation of scientific manuscripts for publication
- Private study

The standard residency-training programme will usually be conducted at one institution, although institutions are entitled to submit proposals for programmes conducted at more than one site provided that all the requirements (including Diplomate supervision) can be fulfilled. Institutions are encouraged to give residents opportunities to visit other institutions.

3.2.4. The alternative residency-training programme

Residents who are unable to work full-time are entitled to opt for less than full time training (LTFT) programmes (EC Directive 2005/36/EC). However, these programmes must incorporate all the training, conference attendance, professional presentation, publication and case log requirements for certification by ECEIM.

Alternative programmes are individualised so a resident is required to liaise closely with the Education and Credentials Committee throughout the programme. It should be recognised that the alternative route is not considered to be ideal but may be used by individuals who are combining residency training with graduate degree studies or by individuals who spend some of their time working in a clinic or practice in which there is no suitably qualified supervisor.

An alternative residency-training programme must be preceded by a rotating internship or equivalent and must be comparable to a standard residency-training programme in duration, supervision, quality and case type and number. The alternative residency-training programme (93 weeks of direct supervised training and 13 weeks in related disciplines as in a standard residency-training programme) must be completed within six years.

The resident must accumulate the required weeks of direct supervised training in blocks of no less than three weeks at a time and 13 weeks of training in related disciplines in blocks of two to four weeks at a time. All cases included in the case log must have been seen in direct conjunction with an ECEIM Diplomate with the case log containing signatures for verification. The direct supervisor of an alternative residency-training programme must be an active ECEIM Diplomate. Training in related disciplines can be supervised by other Board-certified individuals.

4. The curriculum for ECEIM specialist training

The curriculum is competency-based, with a minimum requirement of three years of full-time veterinary specialty training (adjusted to a maximum of six years for flexible training) equivalent to 180 ECTS per the EU directive 2005/36/EC. Table 2 summarises the structure, associated hours and assigned credits. The ECTS credits serve as guide for evaluation of the resident's progression during the residency.

Table 2. The structure of the curriculum for the residency-training programme

Parts of the Curriculum	Title	weeks	ECTS
Core part	Hands-on clinical training	93	158
Supportive disciplines	Clinical pathology	2	3
	Gross pathology	2	3
	Anaesthesiology	2	4
	Diagnostic imaging	4	7
	Emergency care/critical care/neonatal care medicine	3	5
	ECTS Total	106	180
Clinical Work in total		106	
Vacation		12-20	
Research or clinical investigation		Minimum 12	
Preparation of scientific manuscripts for publication and private study		12-26	
Total*		156	

*Residents are expected to actively participate in the College activities.

The curriculum relates to specialty training in equine internal medicine with defined and specific objectives and assessment criteria leading to becoming an ECEIM Diplomate. Courses in other disciplines undertaken before the start of the residency-training programme do not result in a reduction of the residency-training programme duration or specific requirements.

The curriculum applies to training in all nations of the EU, Switzerland, the UK, Israel and Norway. Excluding the North American countries, non-European residency-training programmes may be recognised by the Credential and Educational Committee. In all cases, this curriculum should be used with a direct supervisor who is an ECEIM Diplomate.

The degree of clinical responsibility assumed by the resident shall be appropriate to the nature of the case, procedure and training experience but must include:

- Receiving clinic appointments.
- Supervising daily management of hospitalised horses.
- Participation in clinical teaching. This can include in-house teaching or in external institutions.
- Providing optimal clinical service and prompt professional communications.

The residency-training programme must include a balanced distribution of exposure to common clinical cases evaluated by equine internal medicine clinicians. The practical skills acquired in the residency-training program are evaluated on a day-to-day basis by the direct supervisor and colleagues. The signing of the resident's documentation pack (described below) by the supervisor is considered evidence of the resident's proficiency in practical skills and clinical reasoning. Assessment of general learning outcomes during the residency-training programme will be evaluated by:

- Case-based discussion with colleagues and supervisors during the programme.
- Mini-Clinical Evaluation Exercise with colleagues and supervisors.
- First author publication of at least two peer-reviewed scientific papers.
- Local, national and international presentations.
- Formal ECEIM examination.

4.1. Curriculum content

The following is only a guide to help direct areas of focused study but is not an exclusive list.

4.1.1. General knowledge and skills in equine internal medicine

General learning outcomes for the residency-training programme:

1. Ability to explain disease mechanisms and selection of appropriate diagnostic and therapeutic modalities.
2. Ability to perform common diagnostic and therapeutic procedures used in equine internal medicine and interpret the results.
3. Ability to identify risk and implement preventative measures.
4. Ability to evaluate experimental design, statistical and epidemiological outcomes.

a) The resident should develop technical skills in the use of diagnostic and treatment modalities commonly used in equine internal medicine. The following is not an exclusive list:
1. Rectal palpation, rebreathing exam, neurological exam, basic lameness exam, ophthalmic exam, basic reproductive exam, nerve blocks
2. Catheter types and placement (intravenous, intra-arterial, sub-palpebral, urinary, tracheal), maintenance and monitoring
3. Ultrasonography (cardiac, thoracic, abdominal, peripheral vasculature)
4. Radiography (skull, cervical spine, thoracic, limb)
5. Endoscopy (upper and lower airway, stomach/proximal duodenum, urinary tract)
6. Transtracheal wash, Bronchoalveolar lavage, cytological interpretation
7. CSF/peritoneal/thoracic tap, tissue biopsy (liver, lung, spleen, kidney, muscle, skin, mass), bone marrow biopsy, interpretation
8. ECG (static and exercising) and interpretation
9. Arterial and venous blood gas, urinalysis, interpretation
10. Resuscitation, intubation, use of an ambu-bag
11. Whole blood and plasma collection, different fluid therapy options

b) In addition to self-study, it is expected that engagement in case presentations, journal and book reading clubs and course and/or conference attendance will assist the resident in acquiring necessary knowledge in equine anatomy, biochemistry, physiology and pathophysiology, equine exercise physiology, equine ethology, equine nutrition, clinical reasoning, experimental study design, statistics, epidemiology, preventive medicine, pharmacology, virology, bacteriology, parasitology, diagnostic and therapeutic measures.

4.1.2. General knowledge on equine industries (sport, breeding) and horsemanship

The resident must have a general knowledge of various equine breeds, equine industries in and equine management and husbandry. This will allow the resident to understand the context for evaluation of a clinical case based on the breed, use and management of the horse.

4.1.3. Clinical and Gross pathology

The resident must be familiar with the general principles of clinical and gross pathology including correct sample handling techniques, preparation and interpretation of cytological samples and smears, cytological evaluation and interpretation of clinical pathology and histology samples, how to perform a gross necropsy.

4.1.4. Mechanisms of Disease

4.1.4.1. The equine Immune system

The resident must understand basic immunologic processes including immunoglobulin structure and function, innate and adaptive immunity, acute inflammatory responses, complement activation, hypersensitivity responses, anaphylaxis, passive transfer, immunity to infectious agents, immunodeficiencies and tests of immune function.

4.1.4.2. Mechanisms of Infectious disease

a) The resident must be familiar with normal versus abnormal flora, disease development in response to infections (bacterial, viral, fungal, parasitic), common pathogens (bacterial, viral, fungal, parasitic) in horses, normal host response to pathogens, clinical presentation, diagnosis, treatment and prevention of infection with common pathogens.

b) The resident must be aware of drug resistance, understand how to implement basic husbandry management, individual and herd health care (vaccinations, parasitic monitoring and treatment) protocols to minimise development and spread of infectious disease. The resident must be familiar with general biosecurity as a preventative measure and how to respond to an active outbreak of a contagious disease.

c) The resident must be familiar with the World Organisation for Animal Health (e.g., Office International des Epizooties [OIE]) rules and regulations including reportable diseases for equids and regulations for national and international transport of horses, regulations for common sporting events (vaccinations, drug testing and withdrawal requirements).

4.1.5. Applied Nutrition

a) The resident needs to understand the basic nutritional requirements of healthy adult horses and foals and how this may change in response to disease and injury.

b) The resident needs to be familiar with the different management strategies for sick adult horses and neonates, how to evaluate food quality, how to implement a re-feeding nutritional plan for a starved horse, how to manipulate the diet to prevent and/or manage certain diseases in adult horses and foals.

4.1.6. Pharmacology and Therapeutics

a) The resident must have basic knowledge of pharmacokinetics, absorption, distribution, metabolism and excretion of drugs.

b) The resident must understand therapeutic drug monitoring, adjustment of dosage based on the clinical context of the case, commonly used antimicrobial, anti-inflammatory and analgesic drugs and their classifications in equine internal medicine, adverse drug reactions and/or toxicities, withdrawal times, antimicrobial resistance.

c) The resident must be comfortable with developing a fluid-therapy plan (oral and intravenous). The resident knows must understand acid-base balance.

4.1.7. Equine genetics

The resident must be comfortable with the basic principles of genetics and genetic testing and be familiar with common inherited disorders in the horse.

4.1.8. Equine welfare

The resident must be able to recognise normal behaviour of an adult horse and foal, be able to assess for signs of pain, suffering and stress and be able to perform a humane euthanasia. The resident needs to be familiar with European legislation concerning the welfare of horses.

4.1.9. Toxicology

The resident must be familiar with the general principals of toxicology. The resident must be aware of the broad categories of the general clinical signs of toxicity as related to an organ system, the general rules regarding treatment of suspected toxicosis, common ways that toxicity can occur (plant, environmental contamination, drugs), diagnosis and treatment.

4.1.10. Clinical approaches to common problems

The resident must be comfortable with evaluating and treating the following:

1. Changes in body temperature (hyperthermia, fever, hypothermia; fever of unknown origin, heat

stress and malignant hyperthermia).

2. Changes in body weight.

3. Poor performance.

4. Dysphagia.

5. Colic, diarrhoea.

6. Respiratory distress.

7. Cough.

8. Polyuria/polydipsia.

9. Oedema.

10. Ataxia.

4.1.11. Disorders of specific organ systems

4.1.11.1. The Alimentary system

a) The resident must understand and be able to explain the normal structure and function of the different parts of the equine alimentary tract.

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases of the different parts of the equine alimentary tract.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be able to recognise the risk of complications associated with gastrointestinal diseases (endotoxemia, sepsis, laminitis etc...) and can implement appropriate monitoring and preventative plans.

4.1.11.2. The Hepatobiliary system

a) The resident must understand and be able explain the normal structure and function of the equine hepatobiliary system.

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine liver and biliary system.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be familiar with the complications of liver failure (hepatic encephalopathy, bilateral laryngeal paralysis, gastric impaction etc…) and can implement appropriate monitoring and preventative plans.

4.1.11.3. The Respiratory system

a) The resident must understand and be able to explain the normal structure and function of the equine respiratory tract and pleural cavity, including the pathophysiology of coughing, stridor, tachypnoea and dyspnoea.

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine upper and lower respiratory tract.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be able to recognise the risk of contagious diseases (common and uncommon) and which are reportable.

e) The resident must be able to recognise risk factors for the development of respiratory tract disease and knows how to implement appropriate monitoring and preventative plans.

4.1.11.4. The Cardiovascular system

a) The resident must understand and be able to explain the normal structure and function of the equine cardiovascular system and understands the different types of arrhythmias and murmurs commonly identified in the horse.

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine cardiovascular system.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be familiar with the complications of heart arrhythmias and failure (peripheral or pulmonary oedema, syncope, collapse, sudden death etc...) and know how to implement appropriate monitoring and preventative plans.

4.1.11.5. The Urinary system

a) The resident must understand and be able to explain the normal structure and function of the equine urinary system. The resident must be comfortable with interpreting the causes of azotaemia and differentiating between acute and chronic renal failure.

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine urinary tract system.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

4.1.11.6. The Haematopoietic and Haemolymphatic systems

a) The resident must understand and be able to explain the normal anatomical, physiological and immunological processes of the normal equine haematopoietic and haemolymphatic system. The resident must have basic knowledge of oncology

b) The resident must know the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine haematopoietic/haemolymphatic system. The resident must be able to recognise reportable and contagious diseases.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be familiar with the complications of the haematopoietic and lymphatic systems (hypersensitivity, clotting abnormalities, purpura haemorrhagica etc..) and know how to implement appropriate monitoring and preventative plans.

4.1.11.7. The Nervous system

a) The resident must understand and be able to explain the normal structure and function of the equine nervous system. The resident must understand the different parts of the nervous system (central and peripheral nervous system, upper and lower motor neuron).

b) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine nervous system.

c) The resident must understand how to identify the neuroanatomical location of the lesion and can put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical and neurological exam findings and form an appropriate diagnostic and treatment plan.

4.1.11.8. Ophthalmology

a) The resident must understand and be able to explain the normal structure and function of the eye and periocular structures.

b) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine eye.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

4.1.11.9. The Musculoskeletal system

a) The resident must understand and be able to explain the normal structure, metabolism and function of the equine musculoskeletal system.

b) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine musculoskeletal system.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be familiar with the complications of the musculoskeletal system (rhabdomyolysis, myopathy) and know how to implement appropriate monitoring and preventative plans.

4.1.11.10. The Endocrine system

a) The resident must understand and be able to explain the normal structure and function of the equine endocrine system.

b) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine endocrine system.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

d) The resident must be familiar with the complications of the endocrine system (laminitis, recurrent infections, weight loss) and know how to implement appropriate monitoring and preventative plans.

4.1.11.11. The Skin

a) The resident must understand and be able to explain the normal structure and function of the equine skin. The resident must be able to recognise the reaction patterns of the equine epidermis, dermis and subcutis and differentiate between primary and secondary lesions. The resident must understand the clinical appearance of pruritus and alopecia.

b) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the equine skin.

c) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

4.1.11.12. The Reproductive system

a) The resident must know the normal structure and function of the male and female reproductive systems.

b) The resident must understand how to evaluate for pregnancy at the different stages of gestation and how to monitor the pregnant mare and foetus for indications of disease. The resident must know how to implement appropriate monitoring and preventative plans of injury and/or disease in a pregnant mare during gestation and parturition. The resident must know how to recognise and treat a dystocia during parturition. The resident must understand how to implement an appropriate plane of nutrition for a pregnant and lactating mare. The resident must know how to assess a post-foaling mare for injuries and/or disease and how to assess the colostrum and milk quality and quantity, and medically influence milk let-down and production.

c) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases involving the male and female equine reproductive system.

d) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

4.1.11.13. Equine neonatology

a) The resident must know how to assess an equine neonate immediately post-foaling and recognise how the normal vital parameters change as the foal matures. The resident must be comfortable handling and restraining an equine neonate and be familiar with the nutritional requirements of an equine neonate and the different ways of providing nutrition. The resident must have a basic knowledge of the pharmacokinetics, absorption, distribution, metabolism and excretion of drugs in the equine neonate.

b) The resident must understand passive and acquired immunity in the foal and how to identify a high-risk foal, implementing monitoring and preventative plans.

c) The resident must understand the aetiology, pathophysiology, diagnosis, treatment and prognosis of common diseases of the equine neonate.

d) The resident must be able to put together a list of appropriate differential diagnosis based on the signalment, history, presenting complaint and clinical exam findings and form an appropriate diagnostic and treatment plan.

e) The resident must be familiar with the complications of sick equine neonates and know how to implement appropriate monitoring and preventative plans.

4.2. Curriculum structure

4.2.1. Case log

In order to acquire specialist knowledge, the resident must be involved with the direct work-up of a balanced distribution of common equine internal medicine clinical cases. This is verified by maintaining a case log of all cases seen in consultation with an ECEIM Diplomate or a Diplomate from another speciality. It is the intention of the residency-training programme that the resident has enough time to work-up each case as thoroughly as possible.

The case log must consist of a minimum of 600 cases when submitted in totality as part of the credentials packet, all of which have been seen in direct consultation with an ECEIM Diplomate and/or a Diplomate from another speciality. The ECEIM Board recognises that it will be necessary for some institutions to extend the duration of the residency-training programme beyond the three years and/or to incorporate more than the required minimum of 93 weeks of clinical training in order to achieve the required number of cases. While there is no need to list more than the 600 cases required, the resident is expected to preferentially include cases of special interest or difficulty in her/his case log.

Within the case log the following information is required:

- Date of initial examination.
- Signalment (Breed/Gender/Age).
- Presenting complaint.
- Whether it was a referred case [RC] previously seen by another veterinarian and referred for specialist investigation and treatment, or a first opinion case [FC] not previously seen by another veterinarian.
- Diagnosis.
- Outcome (discharged, euthanised, died).

The quality and distribution of cases will be assessed regularly by the Educational and Credentials committee. It is expected that the resident will exceed the minimum required number in some of these

disciplines in order to achieve the required 600 cases. The resident is expected to divide cases seen between the various disciplines as listed in Table 3.

Table 3. Minimum number of required cases for each discipline.

DISCIPLINE	Minimum number of cases
Cardiovascular Disease	24
Dermatology	24
Endocrine/metabolic/hepatic disease	36
Exercise physiology/sports medicine	18
Gastroenterology	60
Haemolymphatic Disease	24
Musculoskeletal Disease	12
Neurology	24
Ophthalmology	18
Perinatalogy	24
Respiratory Disease	60
Urinary / urogenital Disease	24

The residents are responsible for completing their case log. The identity (initials) of the clinician who was responsible for the rotation during which the resident saw a case must be listed alongside each case. A list indicating the identity and qualifications of all individuals listed as clinical service supervisors must be provided at the beginning of the case log. On pages listing cases seen on rotations conducted outside the resident's home institution, the Diplomate who has supervised the rotation at another institution is also required to counter-sign each sheet on which they are identified.

The supervising Diplomate must sign each page of the log to testify that the log is an accurate representation of the resident's clinical experience. It is imperative that the supervisor checks the case log carefully. Case documentation should be readily available to verify the logged case. The Executive and the Education and Credentials Committees reserve the right to check that cases are in fact genuine by requiring access to copies of the original hospital case records.

The resident must have taken primary clinical responsibility for at least 60% of the 600 logged cases (CR1 category). The CR1 category is for cases that the resident can document that they played a significant role in the internal medicine aspects of the evaluation and treatment of a case. No more than 40% of the 600 logged cases (*n*=240) can be in the CR2 category. The CR2 category is for clinical cases in which the resident took a secondary role in the evaluation and management or there was a shared responsibility with a Diplomate or a colleague from another service (e.g. surgery, ophthalmology etc…).

The CR2 category can include cases in which the resident has been involved in the preliminary investigation resulting in referral to other services/colleagues, cases in which the resident has performed a specific procedure on a case being managed by another service (i.e., examining the cardiovascular system in a horse prior to general anaesthesia for an elective surgical procedure) or for cases in which the resident performed a follow-up examination for a horse previously investigated and treated by colleagues in the medicine service and cases in which the resident has participated in discussion of the management of cases in institutes other than their home institute (i.e. while visiting other centres of excellence). In the latter instance, the Diplomate taking primary responsibility for the case in question must counter-sign the relevant page of the case log.

It is expected that the resident will continue to take an active interest in cases that they refer to other clinicians (i.e., a colic that the resident admitted and evaluated as an emergency that is subsequently taken to surgery or a horse presenting as a neurological case that is given an orthopaedic diagnosis). In such cases, the resident should record the case under the CR2 category. In cases in which there has been extensive medical investigation by the resident prior to referral to another service (i.e., evaluation of a horse presenting with respiratory noise that is extensively evaluated and then referred for surgical treatment), it may be appropriate to list the case under the CR1 category. Residents should consult their direct supervising Diplomate for advice on assigning clinical responsibility categories to specific cases.

4.2.2. Required training rotations in related disciplines

a) The equivalent of at least two weeks in direct contact with an EBVS recognised specialist in veterinary anaesthesiology assisting with equine general anaesthesia and attending clinical conferences and/or seminars.

b) The equivalent of at least two weeks in direct contact with an EBVS recognised specialist in veterinary clinical pathology reviewing cytology slides and biopsies, evaluating clinical pathology results and attending clinical pathologic conferences and/or seminars.

c) The equivalent of at least two weeks in direct contact with an EBVS recognised specialist in veterinary pathology conducting gross and morbid pathology and attending clinical pathologic conferences and/or seminars.

d) The equivalent of at least four weeks in direct contact with an EBVS recognised specialist in veterinary radiology interpreting radiographs, learning and evaluating the results of special imaging techniques and

attending radiology rounds and/or seminars. This period must include exposure to ultrasonography, scintigraphy, magnetic resonance imaging (MRI) and computed tomography (CT). If an EBVS recognised specialist is not available at the home institution of the resident, a two week portion of the training may be given by an experienced ECEIM Diplomate after consultation with the Educational and Credentials Committee; the resident is still required to visit another institution to spend the remaining two week training requirement with an EBVS recognised specialist in veterinary radiology. The two-week supervision under the ECEIM Diplomate must be added to the minimally required 93 weeks of training in equine internal medicine. An equivalent of two of the four-week requirement might also be provided by submitting images/videos and the resident's written interpretation within the resident documentation pack. The details for this are as follows:

1. Six digital images/videos with a written interpretation of no more than 500 words per case.
2. Of the six images/videos, three should be radiographs, CT or MRI images and three should be ultrasounds, all of different cases.
3. Of the six images/videos, two should be images/videos of the abdomen, two of the thoracic cavity and two of the head/neck area.
4. Every image/video submitted must be obtained from a case listed in the case log.
5. The submitted images need to be from cases that have not been seen during the two weeks spent in direct contact with the EBVS recognised specialist in veterinary radiology.
6. Each written interpretation must include the case log details. It must be printed and signed personally by the resident and an EBVS recognised specialist in veterinary radiology or the supervising Diplomate, confirming that the case and the images were thoroughly discussed.

e) The equivalent of at least three weeks in direct contact with an EBVS recognised specialist in equine internal medicine, intensive care or anaesthesiology during which the resident participates in emergency care/critical care/neonatal care and attending clinical conferences and/or seminars. In institutions in which the general medicine service includes intensive care, it is acceptable that the resident spends this rotation in their home institution. In these cases, at least three weeks in critical care must be added to the minimally required 93 weeks of training in equine internal medicine.

4.2.3. Conference attendance

Residents are required to attend a minimum of three major conferences (national/international) with significant equine internal medicine content during the residency-training programme (see https://www.eceim.info/ for a list of accepted conferences). Additionally, during clinical rotations the resident is required to attend at least five hours per week of hospital rounds and "in house" resident seminars. Additional attendance at conferences and in-house activities are recommended including:

- Equine conferences on sub-specialties (dermatology, neurology, cardiology etc…).
- Equine anaesthesiology and intensive care conferences.
- Equine diagnostic imaging conferences.
- Equine pathology and clinical pathology conferences.
- Relevant scientific meetings on topics such as microbiology, pharmacology etc.
- Scientific journal clubs, clinical and pathology rounds.

4.2.4. Professional presentations

The resident must present a minimum of six seminars or professional presentations during the residency-training programme. This is defined as a scientific presentation made to an appropriate audience, which is followed by a discussion period. For this purpose, seminars given for teaching purposes to students are not included. A minimum of three presentations should be for a professional audience from outside the residents' own faculty/practice.

4.2.5. Publication requirements

All publications need to cover equine-related topics and be closely related to equine internal medicine. Candidates applying to sit the ECEIM examination must submit evidence to the Education and Credentials Committee that they have fulfilled the following publication requirements:

a) One first author original research paper, large case series (≥20 cases) or scientific short communication. A shared "first-author" publication between two authors will be allowed, provided written proof of this status is submitted to the Education and Credentials Committee from the journal.

b) One first author case report, small case series (<20 cases) or an additional research paper.

Papers will only be accepted as part of the credentials package if:

- The paper is published BEFORE the due date of the exam application. For the purposes of credentials assessment, the term "published" is defined as a published hard copy or electronically published manuscript. In exceptional cases, the Education and Credentials Committee might accept a written confirmation from the editor of an approved journal that the paper is "in press".
- The paper is published in a journal with an impact factor of ≥0.5 that is on the accepted journal list (see https://www.eceim.info/) or in an especially-approved journal. Journals may be both added and removed from the list. The journal list published at the time of the exam application will be used by the Education and Credentials Committee.

For the purposes of credentials assessment:

- The terms “original research paper” and “scientific short communication” are defined as a manuscript that describes a hypothesis-driven experimental study utilizing *in vivo*, *ex vivo* or *in vitro* techniques to address an objective relevant to equine medicine or its under-pinning sciences. A prospective or retrospective clinical study addressing a question relevant to equine internal medicine that includes at least 20 cases will also be acceptable as a publication.

- Reports including less than 20 cases will be regarded as a “small case series”. This applies also to short communications which lack experimental components.

Additional notes for guidance for exam candidates submitting credentials:

- All manuscripts must be accompanied by an English summary.
- Where a journal with an impact number of ≥0.5 is used, the candidate must submit an actual copy of its citation index page available from the editor of the journal.
- Where a manuscript is “in press”, the candidate must submit a copy of a letter from the editor confirming that it has been fully accepted. Manuscripts may not be used if they are still subject to revisions.
- Articles that consist of reviews of the literature with no original data, even if written for scientific or educational journals, are not acceptable.

4.2.6. Graduate degree programmes

Graduate degree studies (e.g. PhD) may be included in the residency-training programmes; however, requirements for training in equine internal medicine and related disciplines described above must still be fulfilled.

4.3. Curriculum assessment

4.3.1. Assessment methods of resident performance

It is the responsibility of the supervisor to judge whether the resident is fit for the exam by signing off on the case log and exam application and providing a letter of reference. The resident’s performance during the training period can be assessed using workplace-based assessments (WPBAs) and by testing her/his knowledge using case presentations, journal clubs and observation of her/his clinical skills across all disciplines of the curriculum. Assessments can be supplemented by structured feedback to the resident within the training program, an integral part of the assessment process. WPBAs can be included

in the final letter to the Education and Credentials Committee submitted with the case portfolio. The following WPBA methods can be used (examples found in the Appendices):

- Multi-source feedback
- Mini-clinical evaluation exercise
- Direct observation of procedural skills
- Case-based discussion
- Client/owner survey

4.3.2. Multi-source Feedback (MSF)

This is a method of assessing generic skills (e.g., communication, leadership, team working, reliability) across the domains of 'Good Veterinary Practice'. All individuals with whom the resident works including veterinarians, administration staff and other allied professionals will orally report their findings to the supervisor who will give feed back to the resident.

4.3.3. Mini-Clinical Evaluation Exercise (mini-CEX)

This method evaluates a clinical encounter with a patient to provide an indication of competence in skills essential for good clinical care such as history taking, examination and clinical reasoning. The resident receives immediate feedback by her/his supervisor or his staff to aid learning. The mini-CEX can be used at any time and in any setting when there is a resident and patient interaction and an assessor is available.

4.3.4. Direct Observation of Procedural Skills (DOPS)

DOPS is a tool designed to assess the performance of a resident in undertaking a practical procedure against a structured checklist. The majority of DOPS are relating to anaesthesia, infection control, hand-hygiene etc.… but DOPS have also been designed for other practical procedures such as obtaining blood or bacteriology samples. The resident receives immediate feedback to identify strengths and areas for development.

4.3.5. Case based Discussion (CbD)

The CbD assesses the performance of a resident in the management of a patient to provide an indication of competence in areas such as clinical reasoning, decision-making and application of medical knowledge in relation to patient care. It also serves as a method to document presentations of cases by residents. The CbD should include discussion about a presented case during clinical rounds or an equivalent session. Furthermore, the quality of writing an out-patient letter and discharge summary also contribute to this skill.

4.3.6. Client Survey (PS)

A CS addresses issues including behaviour of the resident and effectiveness of the consultation, which are important to horse owners. It is intended to assess the resident's performance in areas such as interpersonal skills, communication skills and professionalism by concentrating solely on their performance during a consultation.

4.4. Documentation of curriculum

4.4.1. Resident's Documentation Pack (RDP)

Every RDP must include a summary of the contents of the case log and copies of the case log itself. The case log must be submitted with an RDP at least twice during the residency. The RDP and case log must be completed using the forms available on the ECEIM website. Supervisors are advised to only sign the forms of the RDP after the case log sheets have been scrutinized. The Education and Credentials Committee reserves the right to request access to the case log sheets and original hospital records as part of the appraisal process.

4.4.2. Responsibilities of the resident

Residents must meet with their supervising ECEIM Diplomate at least twice yearly for evaluation of performance and progress. The resident is further responsible for:

- Maintenance of the case log.
- Maintenance of the resident activity log.
- Maintenance of the professional presentation log.
- Documentation of training rotations in relating disciplines.
- Documentation of attendance at Conferences.
- Maintenance of a publications record.
- Ensuring that the RDP is submitted for appraisal to the Education and Credentials Committee twice during the programme at the appropriate times.

4.4.3. Responsibilities of the supervising Diplomate

- Verification of pre-residency training requirements.
- Provision of suitable facilities, equipment, and supplies to enable practice of high quality equine internal medicine.
- Verification that training rotations in equine internal medicine have been completed.
- Verification of the case log.

- Verification of the resident activity log.
- Verification of the professional presentation log.
- Evaluation of the resident's progress and communication of deficiencies to the resident.
- Notifying the Education and Credentials Committee where there are structural changes or deficiencies in the residency-training programme.
- Notifying the Education and Credentials Committee where there are major deficiencies in the resident's progress.
- Keeping an annual report on the resident, signed by both the resident and the direct supervising Diplomate.

4.4.4. Responsibilities of contributing supervisors/clinicians

- Verification of specific cases within the case log.
- Verification that training rotations in related disciplines have been completed.
- Evaluation of the resident's progress and communication of deficiencies to the direct supervising Diplomate.

4.4.5. Overall responsibilities of the resident and supervising Diplomate

a) The Education and Credentials Committee and Examination Committees will NOT send reminders – it is the responsibility of the resident and supervising Diplomate to ensure that all documents are submitted using the correct forms and at the correct time. Late applications, those with information missing and those not supported by the appropriate fees will be rejected.

b) Residents are responsible for sending their RDPs. The RDP must be appraised by the Education and Credentials Committee on at least two occasions. In standard and alternative residency-training programmes, appraisal will be due approximately one third and two thirds through the programme. If these appraisals are not satisfactorily completed at the appropriate times, the programme will be terminated until adequate plans are made to reinstate them.

c) In a three-year standard residency-training programme, submission of the first RDP should occur 12-18 months after beginning the programme, with submission of the second RDP due 24-36 months after beginning the programme. Depending on the start of a programme, this timeframe may result in the first RDP being submitted at the same time as the exam application to sit the general paper only (1c candidate). However, if the RDP does not fulfil the criteria for appraisal, the exam application will be rejected. The first and second RDP must have been sent before application to sit the exam as a 1a or 1b

candidate or to sit the certifying exam after passing the general paper. In a four-year standard residency-training programme, the first RDP should be submitted 16-24 months after beginning the programme and the second RDP submitted 32-38 months after beginning the programme.

d) The RDP must be submitted online with the required forms completed (found on https://www.eceim.info/). Forms with the original signatures of supervisors should stay with the residents with scanned copies submitted as PDFs with RDPs. It is necessary to include all copies of the individual case log sheets for each submission and appraisal request. If the resident is also applying to sit the exam, scanned copies of all forms with original signatures of the respective supervisors should be submitted.

5. Specialist Exam

5.1. Qualifications to sit the exam

a) Only candidates who have received their veterinary qualification from an EAEVE-approved establishment shall be eligible for registration with the ECEIM, unless relieved of this obligation by the Education and Credentials Committee. Supervisors should contact the chair of the Education and Credentials Committee to discuss conditions leading to an exemption from this requirement before any appointment can be made with an applicant holding a degree from a non-EAEVE approved establishment.

b) A candidate may choose to take the General and Certifying examinations in separate years or may take the General and Certifying examinations in the same year provided the criteria for each of these examinations are met. A candidate can only sit the Certifying examination when sitting the General examination in the same year or when the General examination has been previously passed. All parts of the Certifying examination need to be taken in the same year.

c) A candidate who has her/his registered ECEIM residency-training programme approved by the Education and Credentials Committee may take the general examination if all the following are fulfilled:

- The candidate has completed at least eighteen months of an ECEIM approved residency-training programme, or its equivalent as judged by the Education and Credentials Committee.
- A letter from the Supervisor verifying satisfactory progress in the residency-training programme has been submitted at the appropriate time.
- The Education and Credentials Committee has accepted the first RDP.

- A non-refundable examination fee has been paid to ECEIM after approval of the candidate's credentials by the Education and Credentials Committee but prior to the exam.

5.2. Description of the exam

All parts of the exam (General and Certifying exam) are developed, administered and graded by the Examination Committee. All parts of the exam are only in English; use of non-medical dictionaries are permitted. For the oral examination, a translator can be requested to assist the candidate. However, the candidate is still required to sit the examination in English, with the translator only present to help with the occasional translation of a word.

5.2.1. The General exam

The entire General exam consists of 100 multiple choice questions (MCQ), each with one correct answer and three distractors. The first part of the exam (General Paper 1, 50 MCQs) is focused on the basic sciences and pathophysiology of disease. The aim of this exam is to test the knowledge and understanding of the basic sciences that underpin equine internal medicine (i.e., pharmacology, microbiology, physiology, pathology, epidemiology, diagnostic imaging). The second part of the exam (General Paper 2, 50 MCQs) focuses on more clinical-based questions. The aim of this exam is to test clinical knowledge and the ability to approach and investigate specific clinical problems.

5.2.2. The Certifying exam

This exam consists of three parts: Certifying MCQ, Objective Case Management and Clinical Judgement Test.

a) Certifying MCQ: This exam consists of **50 MCQs**, each with a single best answer. The aim is to test clinical knowledge and the ability to approach and investigate clinical problems in greater detail than what was examined for the General Paper 2 exam. Emphasis will be placed on testing clinical judgement when presented with a case scenario. Candidates must achieve the pass mark for the paper based on an independently determined cut-score.

b) OCM questions: This exam consists of **5 computer-based objective case management tests (OCMs) each comprising 10 questions**. The aim is to test clinical judgement and competency through demonstration of the ability to work up a case in a structured and logical way. A combination of advanced question formats (single best answer, script concordance tests, extended matching questions and single word/phrase answers) will be used to progress through the 5 cases in a uni-directional

manner. The OCMS test the ability to integrate and act on new information provided at each stage including: history; clinical and laboratory data; disease pathogenesis; diagnostic tests; differential diagnosis; treatment/ management; prognosis and prevention. Candidates must achieve the pass mark for the entire paper based on an independently determined cut-score. It is not compulsory that candidates pass each case.

c) Clinical judgement test: This is an oral exam designed to test the ability to justify clinical reasoning and decision-making at the level required for a newly qualified specialist. The test comprises **4 clinical cases or clinical topics** that a candidate is asked to evaluate using the currently available evidence. Typically, a case may be based around a controversial topic for which candidates are expected to logically and critically discuss the reasons for clinical decision-making using evidence from the current literature (last 5 years or by evaluation of data presented to the candidate as part of the examination). Candidates must achieve the pass mark across the entire CJT examination and it is not compulsory to pass each case/scenario. The pass-mark will be determined by meeting performance that meets descriptors of a new diplomate as determined by the examination committee.

5.3. Pass marks, grading system and feedback

Cut-off standards for the exam pass mark are determined each year by trained ECEIM Diplomates who rate all answers. The rating is not based on a predetermined proportion of the candidates passing or failing. The rating process is designed such that the minimum level of competence required for specialist status is achieved by those passing the exam. There is detailed information in the documents available online (https://www.eceim.info/) on the grading system used to mark the essay portion of the exam.

Exam results will be sent to the candidate within one month after the exam. The Examination Committee will provide feedback to candidates who fail portions/all the exam.

5.4. Certification

A candidate must pass each section of the entire examination in order to become certified. Candidates who fail the General examination will have to retake both G1 and G2. Candidates who fail individual components of the Certifying examination must only retake the failed components or where the exam format has changed, the corresponding section. **Under the new format the Clinical Judgement Test (CJT) will replace the Essay and the computer-based OCM will replace the oral OCM. The tests are replaced like for like so that 1 previous attempt at the Essay counts as one previous attempt at the CJT.** Any failed components of the certifying examination must be re-attempted at the same time along

with the general paper if this has not yet been passed. After the first attempt, candidates cannot retake the examination or part(s) of the exam more than three times. All parts of the examination must be passed within eight years of completion of the residency-training programme. Credentials of candidates who pass the entire examination will be forwarded to the President of the Executive Committee by the Chairperson of the Examination Committee.

5.5. Exam application procedure

The exam application needs to be submitted online and received by the Chair of the Education and Credentials Committee by the 1st of July prior to the year of the intended exam sitting. The exam application form can be downloaded from https://www.eceim.info/. The form with the original signatures should stay with the resident with one scanned copy submitted as a PDF.

Supporting documentation from the supervisor must include one or more letters of support with the application. The supporting documentation should attest to the following:

- The reliability of the information in the case logs, training in related disciplines and other documentation of clinical experience.
- The applicant's proficiency, judgement, and competence as a specialist and academic readiness to sit the examination.
- The commitment of the applicant to the constitutional objectives of the ECEIM.
- The moral and ethical standing of the applicant within the veterinary profession.

The supporting letters can either be included in the application pack or sent directly to the Chair of the Education and Credentials Committee. Applicants are responsible for ensuring the letters of support are delivered by the 1st of July deadline. Applications not accompanied by letters of support will be rejected.

Applicants will be informed if they have been approved to sit the exam by the 1st of September of the same year of submission. If approved, the exam entry form and the exam entry fee must be received by the 1st of November of the year of submission.

If the candidate was accepted for the exam but did not take or failed the exam, he/she does not need to re-apply to the Education and Credentials Committee but must inform the Examination Committee of the intention to take/re-take the exam by September 1st of the preceding year. Failure to pass all parts of the examinations within eight years of the completion of the residency-training programme will prevent the candidate from becoming certified.

5.6. Exam candidate categories

Table 4 summarises the documents required for the exam application.

Category 1a and 1b

Applicants who have obtained all the required credentials and are currently in or have completed an approved ECEIM standard residency-training programme (Category 1a) or an approved alternative residency-training programme (Category 1b) may attempt both the General and Certifying exam at the same time.

Category 1c

Applicants who are currently registered in and have completed at least eighteen months of an ECEIM approved standard or alternative residency-training programme by the 31st of December prior to the examination may attempt the General but not the Certifying exam. Individuals who chose to sit the General and Certifying exams in separate years will be required to submit separate exam application and entry forms with associated fees for each exam as listed on https://www.eceim.info/.

Category 2

Applicants who have completed at least twelve months of a rotating internship (or equivalent) and have completed an internationally recognised residency-training programme comparable to an ECEIM approved residency-training programme may attempt both the General and Certifying exam at the same time. This category is designed to allow individuals who have completed an ACVIM residency-training programme to sit the ECEIM exam.

Candidates applying under Category 2 must complete a Statement of Experience using an ECEIM RDP. All items as listed for Category 1 candidates need to be provided or explanations given as to why they cannot. The RDP requires signatures from supervisors of both the candidate's rotating internship (or equivalent) and the candidate's residency-training programme to document that both phases have been completed satisfactorily.

Table 4. Summary of documents required for the exam application.

Item *(provide only those documents required for the candidate category that you wish to be considered).* √ = required; -- = not required	Candidate Category 1a	Candidate Category 1b	Candidate Category 1c
1. Payment of exam application fee (see website for payment details)	√	√	√

2. Confidential letters of support from supervisor, submitted separately OR included in the application	√	√	√
3. Copies of Candidate Enrolment Form with confirmation of internship (or equivalent)	√	√	√
4. Copies of ECEIM Residents Appraisal Confirmation statement(s):	minimum two statements	minimum two statements	One statement*
5. Updated ECEIM Residents Documentation Pack (use website forms)	√	√	√
6. Case log with original signatures of verification (use approved forms available on our website)	√	√	--
7. Copies of all supporting publications with English summaries. Letters of final acceptance from the Journal's editor are required for papers "in press". Do not include copies of publications such as book chapters and review articles.	√	√	√
8. Copies of any correspondence with ECEIM board	√	√	√
9. Any relevant documents relating to the exam and any medical and supporting documents that might need to be considered in the application	√	√	√

*The 1st RDP can be submitted at the same time as the exam application.

5.7. Exam application fee

Details of the exam application and exam entry fees and methods of payment are found on https://www.eceim.info/. There are separate fees for exam application and exam entry forms.

5.8. Previous correspondence with ECEIM

All correspondence to and from the ECEIM by the candidate, their supervisors or from others on behalf of the candidate must be appended to the exam application (including copies of any email correspondence that has been received or sent).

5.9. Medical or other relevant documents

The ECEIM will provide special assistance (change in facility, extra examination time) for candidates provided that extenuating circumstances (disability, injury) can be documented and received with the exam entry forms.

5.10. Appeal of adverse decisions

In the event of an appeal by a candidate/Diplomate alleging that an adverse decision by the College has been made, the rules given in Article 9 of the ECEIM Bylaws will be adhered to.

Appendix I. Assesment scheme for history taking.

History Taking: To develop the ability to elicit a relevant, focused history from equid patients with increasingly complex issues and challenging circumstances. To record the history accurately and relate this information with relevant clinical examination findings, establish a problem list based on pattern recognition including differential diagnosis and formulate a reasonable management plan.	
Knowledge	**Assessment Methods**
Recognises importance of different elements of history	mini-CEX
Recognises that owners of the patient do not present history in structured fashion	mini-CEX
Knows likely causes and risk factors for conditions relevant to the presentation	mini-CEX
Recognises the importance of management (use, housing, feeding) on health	mini-CEX, MSF, CbD
Skills	
Identifies and overcomes possible barriers to effective owner communication	mini-CEX
Manages time of consultation appropriately	mini-CEX
Recognises that effective history taking in non-urgent cases may require several discussions with the owner of the patient over time	mini-CEX
Manages alternative/conflicting views from owners and other caretakers of the patient	mini-CEX
Assimilates history from the available information from owners and other sources	mini-CEX
Where values and perceptions of health and health promotion conflict, facilitates balanced and mutually respectful decision making	mini-CEX, PS, CbD
Recognises and interprets appropriately the use of non verbal communication from patients owners and carers	mini-CEX
Focuses on relevant aspects of history	mini-CEX
Maintains focus despite multiple and often conflicting agendas	mini-CEX
Behaviours	
Shows respect and behaves in accordance with Good Veterinary Practice	mini-CEX, MSF
Level Descriptor	
Obtains records and presents accurate clinical history relevant to the clinical presentation.	

Appendix II. Assesment scheme for clinical examination.

Clinical examination: To develop the ability to perform focused, relevant and accurate clinical examination in equids with complex issues and in challenging circumstances. To relate physical exam findings to the historical information in order to establish differential diagnosis(es) and formulate a diagnostic and management plan.	
Knowledge	**Assessment Methods**
Understands the need for a targeted and relevant clinical examination	Case based discussion (CbD), mini-clinical evaluation Exercise (mini-CEX)
Understands the basis for clinical signs and the relevance of positive and negative physical signs	CbD, mini-CEX
Recognises constraints to performing physical examination and strategies that may be used to overcome them	CbD, mini-CEX
Recognises the limitations of physical examination and the need for adjunctive forms of assessment to confirm diagnosis	CbD, mini-CEX
Recognises when the offer/use of a chaperone is appropriate or required	CbD, mini-CEX
Skills	
Performs an examination relevant that is time efficient, valid and targeted to the presentation and risk	CbD, mini-CEX
Recognises the possibility of deliberate harm (both self-harm and harm by others)	CbD, mini-CEX
Actively elicits important clinical findings	CbD, mini-CEX
Performs relevant adjunctive examinations	CbD, mini-CEX
Behaviours	
Shows respect and behaves in accordance with Good Veterinary Practice	CbD, mini-CEX,Multi-Source Feedback (MSF)
Ensures a clinically appropriate examination whilst considering social, cultural and religious boundaries, communicating appropriately and make alternative arrangements where necessary	CbD, mini-CEX, MSF
Level Descriptor	
CR1: Accurately performs, describes and records findings from basic physical examination. Identifies relevant clinical abnormalities. Uses and interprets diagnostic results in conjunction with the physical examination findings (e.g. clinical pathology, blood gas analyses, urinalysis, collection and culture of microbial samples and serology, cerebral and spinal fluid analysis, parasitology, ocular pressure, opthal,oscopy and hair and skin microscopy)	
CR2: Rapidly and accurately performs and interprets relevant, advanced and focused clinical examination in less common diseases. Rapidly and accurately performs and interprets focused clinical examination in challenging circumstances (e.g.endotoxaema, exciation, syncope and recumbency). Identifies subtle physical exam abnormalities. Uses and interprets advanced diagnostic results in conjunction with the physical examination findings (e.g. skin srapings, muscle biopsy, clinical chemistry and haematology).	

Appendix III. Assesment scheme for time management and decision making.

To demonstrate the ability to prioritise and organise clinical and clerical duties in order to optimise patient care. To demonstrate the ability to make appropriate clinical and clerical decisions in order to optimise the effectiveness of the clinical team resource.	
Knowledge	**Assessment Methods**
Understands that effective organisation is key to time management	CbD
Understands that some tasks are more urgent and/or more important than others	CbD
Understands the need to prioritise work according to urgency and importance	CbD
Maintains focus on individual patient needs whilst balancing competing pressures	CbD
Understands that some tasks may have to wait or be delegated to others	CbD
Understands the roles, competencies and capabilities of other professionals and support workers	CbD
Outlines techniques for improving time management	CbD
Understands the importance of prompt investigation, diagnosis and treatment of disease and illness	CbD, mini-CEX
Skills	
Estimates the time likely to be required for essential tasks and plans accordingly	CbD, mini-CEX
Groups together tasks when this will be the most effective way of working	CbD, mini-CEX
Recognises the most urgent tasks and ensures that they are managed expediently	CbD, mini-CEX
Regularly reviews and re-prioritises personal and team work load	CbD, mini-CEX
Organises and manages workload effectively and flexibly	CbD, mini-CEX
Makes appropriate use of other professionals and support workers	CbD, mini-CEX
Behaviours	
Recognises when oneself or others are falling behind and takes steps to rectify the situation	CbD, MSF
Remains calm in stressful or high pressure situations and adopts a timely, rational approach	MSF
Appropriately recognises and handles uncertainty within the consultation	MSF
Level Descriptor	
CR1: Recognises the need to identify work and compiles a list of tasks. Works systematically through tasks and attempts to prioritise. Discusses the relative importance of tasks with more senior colleagues. Understands importance of completing tasks and checks progress with more senior members of clinical team. Understands importance of communicating progress with other team members. Able to express when finds workload too much.	
CR2: Organises daily work efficiently and effectively and supervises work of others. Is reliable. Manages to balance competing tasks. Recognises the most important tasks and responds appropriately. Anticipates when priorities should be changed. Can effectivel lead and direct the clinical team. Supports others who are falling behind. Requires minimal organisational supervision. Communicates and delegates rapidly and clearly. Calm leadership in stressful situations.	

Appendix IV. Assesment scheme for decision making and clinical reasoning.

Decision making and clinical reasoning: To develop the ability to form a diagnostic and therapeutic plan for a patient according to the clinical information available. To develop the ability to prioritise and communicate a diagnostic and therapeutic plan appropriately.	
Knowledge	**Assessment Methods**
Defines the steps of diagnostic reasoning	CbD, mini-CEX
Interprets history and clinical signs	CbD, mini-CEX
Conceptualises clinical problem in a medical and social context	CbD, mini-CEX
Generates hypothesis within context of clinical likelihood	CbD, mini-CEX
Tests, refines and verifies hypotheses	CbD, mini-CEX
Develops problem list and action plan	CbD, mini-CEX
Recognises how to use expert advice, clinical guidelines and algorithms	CbD, mini-CEX
Recognises and appropriately responds to sources of information accessed by owners	CbD, mini-CEX
Recognises the need to determine the best value and most effective treatment, both for the individual patient and for a patient cohort	CbD, mini-CEX
Defines the concepts of disease natural history and assessment of risk	CbD, mini-CEX
Recalls methods and associated problems of quantifying risk	CbD
Outlines the concepts and drawbacks of quantitative assessment of risk or benefit	CbD
Describes commonly used statistical methodology	CbD, mini-CEX
Knows how relative and absolute risks are derived and the meaning of the terms predictive value, sensitivity and specificity in relation to diagnostic tests	CbD, mini-CEX
Skills	
Interprets clinical features, their reliability and relevance to clinical scenarios including recognition of the breadth of presentation of common disorders	CbD, mini-CEX
Recognises critical illness	CbD, mini-CEX
Generates plausible hypothesis(es) following patient assessment	CbD, mini-CEX
Constructs a concise and applicable problem list using available information	CbD, mini-CEX
Constructs an appropriate management plan in conjunction with the other members of the clinical team and communicates this effectively to the owners and carers where relevant	CbD, mini-CEX
Defines the relevance of an estimated risk of a future event to an individual patient	CbD, mini-CEX
Considers the risks and benefits of screening investigations	CbD, mini-CEX
Applies quantitative data of risks/benefits of therapeutic intervention to an individual patient	CbD, mini-CEX
Behaviours	
Recognises the difficulties in predicting occurrence of future events	CbD, mini-CEX
Willing to discuss intelligibly with an owner the notion and difficulties of prediction of future events, and benefit/risk balance of therapeutic intervention	CbD, mini-CEX, MSF
Willing to adapt and adjust approaches according to the beliefs and preferences of the owner	CbD, mini-CEX

Willing to facilitate owner choice	CbD, mini-CEX
Willing to search for evidence to support clinical decision making	CbD, mini-CEX
Demonstrates ability to identify one's own biases and inconsistencies in clinical reasoning	CbD, mini-CEX
Level Descriptor	
CR1: In a straightforward clinical case: Develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence. Institutes an appropriate investigative plan. Institutes an appropriate therapeutic plan. Seeks appropriate support from others.	
CR2: In a difficult clinical case: Develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence. Institutes an appropriate investigative plan. Institutes an appropriate therapeutic plan. Seeks appropriate support from others. In a complex, non-emergency case: Develops a provisional diagnosis and a differential diagnosis on the basis of the clinical evidence. Institutes an appropriate investigative plan. Institutes an appropriate therapeutic plan. Seeks appropriate support from others	

Appendix V. Assesment scheme for prioritising patient safety in clinical practice.

Prioritisation of patient safety in clinical practice: To understand that patient safety depends on the effective and efficient organisation of care, and health care staff working well together. To understand that patient safety depends on safe systems, not just individual competency and safe practice. To never compromise patient safety. To understand the risks of treatments and to discuss these honestly and openly with owners so that they are able to make decisions about risks and treatment options. To ensure that all staff are aware of risks and work together to minimise risk.			
Knowledge	**Assessment Methods**	**GMP**	**Year of Achievement**
Outlines the features of a safe working environment	CbD, mini-CEX	1	1
Outlines the hazards of medical equipment in common use	CbD	1	2
Recalls principles of risk assessment and management	CbD	1	1
Recalls the components of safe working practice in the personal, clinical and organisational settings	CbD	1	1
Outlines local procedures and protocols for optimal practice	CbD, mini-CEX	1	2
Understands the investigation of significant events, serious untoward incidents and near misses	CbD, mini-CEX, SCE	1	3
Skills			
Recognises and practices within limits of own professional competence	CbD, mini-CEX	1	1
Recognises when a patient is not responding to treatment, reassesses the situation, and encourages others to do so	CbD, mini-CEX	1	2
Ensures the correct and safe use of medical equipment,	CbD, mini-CEX	1	1

ensuring faulty equipment is reported appropriately			
Improves owners' and colleagues' understanding of the side effects and contraindications of therapeutic intervention	CbD, mini-CEX	1,3	1
Sensitively counsels a colleague following a significant or near untoward event, to encourage improvement in practice of individual and unit	CbD	3	3
Recognises and responds to the manifestations of a patient's deterioration or lack of improvement (symptoms, signs, observations, and laboratory results) and supports other members of the team to act similarly			
Behaviours			
to maintain a high level of safety awareness and consciousness at all times	CbD, mini-CEX	2	1
Encourages feedback from all members of the team on safety issues	CbD, mini-CEX, MSF	3	1
Reports serious untoward incidents and near misses and co-operates with the investigation of the same	CbD, mini-CEX, MSF	3	1
Willing to take action when concerns are raised about performance of members of the healthcare team, and acts appropriately when these concerns are voiced	CbD, mini-CEX, MSF	3	2
Continues to be aware of one's own limitations, and operates within them	CbD, mini-CEX, MSF	1	1
Level Descriptor			

1	Respects and follows ward protocols and guidelines; Takes direction from the nursing staff as well as medical team on matters related to patient safety; Discusses risks of treatments with owners and help them make decisions about treatment; Does not hurry owners into decisions; Always ensures the safe use of equipment; Follows guidelines unless there is a clear reason for doing otherwise; Acts promptly when a patient's condition deteriorates; Always escalates concerns promptly.
2	Demonstrates ability to lead team discussion on risk assessment and risk management and to work with the team to make organisational changes that will reduce risk and improve safety; Understands the relationship between good team working and patient safety; Is able to work with and, when appropriate, lead the whole clinical team; Promotes patient's safety to more junior colleagues; Recognises and always reports untoward significant events; Leads discussion of causes of clinical incidents with staff and enables them to reflect on the causes; Able to undertake a root cause analysis.
3	Able to assess the risks across the system of care and to work with colleagues from different department or sectors to ensure safety across the health care system; Involves the whole clinical team in discussions about patient safety.
4	Shows support for junior colleagues who are involved in untoward events; Is fastidious about following safety protocols and ensures that junior colleagues to do the same; Is able to explain the rationale for protocols; Demonstrates ability to lead an investigation of a serious untoward incident or near miss and synthesise an analysis of the issues and plan for resolution or adaptation.

Appendix VI. Assesment scheme for infection control.

Infection control: To develop the ability to manage and control infection in patients, including controlling the risk of cross-infection, appropriately managing infection in individual patients, and working appropriately within the wider community to manage the risk posed by communicable diseases.			
Knowledge	**Assessment Methods**	**GMP**	**Year of Achievement**
Understands the principles of infection control as defined by the GMC	CbD, SCE, mini-CEX	1	1
Understands the principles of preventing infection in high risk groups including understanding the regional antibiotic prescribing policy	CbD, mini-CEX	1	2
Aware of notifiable diseases and identifies the main regional and international notifiable diseases	CbD, mini-CEX	1	2
Understands the role of the Health Protection Agency and Consultants in Health Protection (previously Consultants in Communicable Disease Control – CCDC)	CbD	1	2
Understands the role of the local authority in relation to infection control	CbD, mini-CEX	1	3
Knows how to access and use local health data	SCE, mini-CEX, CbD	1	3
Skills			
Recognises the potential for infection within patients	CbD	1,2	1
Counsels owners on matters of infection risk, transmission and control	CbD, mini-CEX, PS	2,3	1
Engages in local infection control procedures	CbD	1	1

Actively engages in local infection control monitoring and reporting processes	CbD	1,2	1
Prescribes antibiotics according to local antibiotic guidelines and works with microbiological services where this is not possible	CbD, mini-CEX	1	1
Recognises risk for cross-infection in clinical settings	CbD, mini-CEX	1,2	1
Practices aseptic technique whenever relevant	DOPS	1	1
Behaviours			
Encourages all staff and owners to observe infection control principles	CbD, MSF	1,3	1
Recognises the risk of personal ill-health as a risk to patients and colleagues and effects on performance	CbD, MSF	1,3	1
Level Descriptor			
1		Always follows local infection control protocols, including washing hands before and after seeing all patients; Able to explain infection control protocols to students and to owners; Always defers to the nursing team for ward management; Aware of infections of concern – MRSA and C difficile; Aware of the risks of nosocomial infections; Understands the links between antibiotic prescription and the development of nosocomial infections; Always discusses antibiotic use with colleagues.	
2		Demonstrates ability to perform simple clinical procedures utilising effective aseptic technique; Manages simple common infections in patients using first-line treatments ; Communicates effectively to the owner the need for treatment and any prevention messages to prevent re-	

	infection or spread; Liaises with diagnostic departments in relation to appropriate investigations and tests; Knowledge of which diseases should be notified and undertake notification promptly.
3	Demonstrates an ability to perform more complex clinical procedures whilst maintaining aseptic technique; Identifies potential for infection in high risk patients, and considers second line therapies; Communicates effectively to owners regarding infection, the need for treatment and any associated risks of therapy; Works effectively with diagnostic departments to identify appropriate investigations and monitoring therapy;

Appendix VII. Assesment scheme for communication with colleagues and cooperation.

Communication with colleagues and cooperation: To recognise and accept the responsibilities and role of the doctor in relation to other healthcare professionals. To communicate succinctly and effectively with other professionals.			
Knowledge	**Assessment Methods**	**GMP**	**Year of Achievement**
Has a basic understanding of how to effectively working with colleagues	CbD, MSF	1	1
Understands the roles played by all members of a multi-disciplinary team	CbD, MSF	1	2
Understands the features of good team dynamics	CbD, MSF	1	2
Understands how effective inter-professional collaboration can optimise patient, or population, care	CbD, MSF	1	2
Understands the principles of confidentiality that provide boundaries to communicate	mini-CEX, MSF CbD	1,3	1
Skills			
Communicates accurately, clearly, promptly and comprehensively with relevant colleagues appropriate to the urgency of a situation (telephone, email, letter etc), especially where responsibility for a patient's care is transferred	CbD, mini-CEX	1,3	1
Uses the expertise of the whole multi-disciplinary team, ensuring appropriate supervision is maintained when delegating responsibility	CbD, mini-CEX, MSF	1,3	1
Participates in and co-ordinates emergency cover	MSF	1,3	2
Communicates effectively with administrative bodies and support organisations	CbD, mini-CEX, MSF	1,3	2
Employs behavioural management skills with colleagues to prevent and resolve conflict and enhance collaboration	CbD, mini-CEX, MSF	1,3	3
Behaviours			
Is aware of the importance of multi-disciplinary teamwork, including adoption of a leadership role when appropriate but also recognising where others are better equipped to lead	CbD, mini-CEX, MSF	3	3
Acts with appropriate professional and ethical conduct in challenging situations	mini-CEX, MSF	3	3
Fosters a supportive and respectful environment	CbD, mini-CEX, MSF	1,3	1

where there is open and transparent communication between all team members			
Ensures appropriate confidentiality is maintained during communication with any team member	CbD, mini-CEX, MSF	1,3	1
Recognises the need for a healthy work/life balance for the whole team, including oneself, but takes own leave only after giving appropriate notice to ensure that cover is in place	CbD, mini-CEX, MSF	1	1
Is prepared to accept additional duties in situations of unavoidable and unpredictable absence of colleagues ensuring that the best interests of the patient are paramount	CbD, MSF	1	1

Level Descriptor
1
Accepts his/her role in the healthcare team and communicates appropriately with all relevant members
Knows who the other members of the team are and ensures effective communication
2
Fully recognises the role of, and communicates appropriately with, all relevant potential team members (individual and corporate)
Supports other members of the team; ensures that all are aware of their roles
3
Able to predict and manage conflict between members of the healthcare team
4
Able to take a leadership role as appropriate, fully respecting the skills, responsibilities and viewpoints of all team members