

ANNEX I

GUIDELINES, REQUIREMENTS AND MAIN INDICATORS FOR STAGE ONE (Ia) AND STAGE TWO (Ib)

ANNEX Ia

1. GUIDELINES AND REQUIREMENTS FOR STAGE ONE

1.1 OBJECTIVES

The objectives of veterinary training institutions are to provide adequate, ethical, research-based veterinary training that enables the new graduate to perform as a veterinary surgeon capable of entering all commonly recognised branches of the veterinary profession immediately on graduation or of being capable of performing adequately after a generally accepted period of practical experience. The training must cover the broad requirements for veterinary graduates and comply with EU Directive 2005/36/EC. Veterinary education should be based on scientific grounds and proven experience and provide students with adequate learning opportunities thus laying the basis for life-long learning. Considering that more than 50% of active veterinarians in Europe are engaged in clinical practice, a clinical focus is expected to be maintained during the basic training in veterinary medicine.

In addition the institutions should conduct research, provide postgraduate and specialist training and play a role in continuing veterinary education (see also Stage two).

They should, furthermore, provide services to members of the veterinary profession and the community as a whole.

1.2 ORGANISATION

Veterinary training must take place within institutions of higher education (university, a higher institute providing training recognised as being of an equivalent level, or under the supervision of an university, Directive 2005/36/EC), formally recognised as such in the respective country, and should be undertaken preferably by a free-standing unit, specifically established for that purpose. If it is undertaken by one or more departments of a parent institution, some of which also have other teaching commitments, the veterinary curriculum must be properly integrated, with effective central veterinary control. The number of veterinarians provided as educators (usually a minimum of 80 individuals working full time in the Faculty) must be high enough to ensure co-ordinated delivery of the teaching programme. Such a programme must be afforded the same recognition, status and autonomy as other professional training programmes in the institution and/or the state.

The organisational structure should make possible an objective evaluation of the quality of the training provided and the skills of the graduates. The training of the graduates should be monitored for quality at the subject and institutional levels, laying the basis for a confident system of quality assurance (see Stage two).

In order to ensure that the veterinary training meets the objectives and requirements of EU Directive 2005/36/EU, the organisational structure should allow input not only from educators and students but also from stakeholders (e.g. members of the profession and from the public) (see also Stage two).

1.3 FINANCES

Finances must be adequate to sustain the educational programmes, to allow for adequate research and to meet societal objectives of the Faculty. Universities and national ministries must recognise that veterinary education is more expensive than training in other science-based disciplines, since it includes clinical instruction based on public services (e.g. patient care). It must also be considered that veterinary education has to take place in a research environment and that salaries should be sufficiently high so as to attract and retain highly qualified staff.

The budget must allow the Faculty to:

- Perform adequate research based teaching
- Attract and retain highly qualified academic and support staff to reach, or exceed satisfactory teaching staff/student and teaching staff/support staff ratios.
- Ensure provision and renewal of up to date teaching (including IT) facilities, laboratory and clinical equipment (including vehicles for the ambulatory clinics).
- Ensure teaching and clinical training in premises with adequate hygienic and safety standards,
- Ensure adequate intramural clinical training by securing an adequate caseload, including emergencies, across animal species and adequate provision of stationary and ambulatory (mobile) clinical services, according to the most recent advances in veterinary medicine.

Bearing in mind the increasing demand for specialist training, funds should be made available for places for both clinical and research postgraduate students in areas in which the Faculty has expertise.

1.4 CURRICULUM

1.4.1 GENERAL

- 1.4.1.1 Veterinary training must comprise at least five years' full-time theoretical and practical study in a University or equivalent higher education establishment. Longer veterinary basic training is a legal decision for the country.
- 1.4.1.2 It is imperative to acquire basic knowledge in all fields of veterinary science, particularly in clinical instruction, thus enabling veterinary surgeons to perform all their duties, as stated in Directive 2005/36/EC, Annex V. It is desirable that the students are allowed more advanced training (tracking) in one given field. This can be up to 20% if students meet the day1-competences.
- 1.4.1.3 Provided that the curriculum maintains an adequate level of training, faculties can follow the Bologna Declaration by offering a *Bachelor's* degree prior to finishing the 5-year full-time minimum undergraduate veterinary education, leading to the award of the professional title of Veterinary Surgeon (or equivalent professional title) as regulated by the Directive 2005/36/EC. Graduation after completing this veterinary education is equivalent to a *Master's* level and, depending on national regulations, this degree may be assigned to the Veterinary Surgeon (or equivalent professional denomination). The title of Veterinary Surgeon is the only professional title provided (Directive 2005/36/EC) after having completed these full-time studies lasting for at least 5 years.

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- 1.4.1.4 Acquisition of generic competences such as skills in written and oral communication, problem-solving and professional attitudes at all stages of the curriculum are an important adjunct to practical and clinical skills.
- 1.4.1.5 The curriculum (e.g. the distribution of the theoretical and practical training among the various groups of subjects listed in Directive 2005/36/EC) must be acquired in such a manner that the educational aims are met.
- 1.4.1.6 Curriculum development is the responsibility of the institution as a whole, and should not be left to individual departments (see also Stage two).
- 1.4.1.7 The aims of the curriculum and the learning objectives/outcomes must be clearly explained to both staff and students (see also Stage two).
- 1.4.1.8 These aims must reflect the needs of the profession and of society, and mechanisms must be introduced to ensure this (see also Stage two).
- 1.4.1.9 Methods must be established to monitor and, where necessary, amend the curriculum. Faculties should aim towards the quality assurance mechanisms prescribed for Stage two.
- 1.4.1.10 The instruction provided must include basic clinical training across all common domestic species, e.g., companion animals (dog, cat), equine and the food-producing animals (cattle, small ruminants, pigs, poultry and other species relevant to the region). In cases where the Faculty cannot give adequate hands-on teaching in a species, arrangements on a legal contractual basis should be made for students to learn this at another Faculty (freedom of learning, ECTS principle)
- 1.4.1.11 The breakdown of the theoretical and practical courses between the various groups of subjects must be balanced and co-ordinated so that the students may acquire the knowledge, skills and experience mentioned in these guidelines. Practical training (particularly clinical training) requires the active participation of students under appropriate staff supervision in adequate ratios.
- 1.4.1.12 Extra-mural practical training may form part of a full-time veterinary course as long as it is supervised by the institution concerned and does not exceed six months of the total academic five-year training period (Directive 2005/36/EC). Extra-mural training is complementary, and can not be used to replace training by the Faculty, but can be used to supplement the basic intramural training provided by the institution.
- 1.4.1.13 All students must have acquired “day-one” competences by the time they graduate (see **Annex IV**), including general academic and professional attributes and attitudes towards professional development as well as pertinent practical -generic and clinical- skills.
- 1.4.1.14 Provisions should be made for those undergraduate students who want to gain specific experience in research.

1.4.2 STUDY PROGRAMME

In meeting Directive 2005/36/EC, the core veterinary medicine curriculum eventually leading to the award of the title veterinary surgeon must include at least the subjects in the groups listed below.

BASIC SUBJECTS

Instruction in basic subjects, (physics, chemistry, animal biology, plant biology, biomathematics) may be given as part of, or in association with, other disciplines of the veterinary course. They could also advantageously be taken *prior to entry* to the veterinary course. These subjects should provide a solid background in chemical, physical and biological sciences, with the objective of preparing students for the subjects to be taught later in the veterinary curriculum.

BASIC SCIENCES

Instruction in basic sciences must provide students with an understanding of the fundamental biological principles and mechanisms underlying animal health, disease and therapy, from the molecular and cellular level to the level of the organ, the whole animal and animal populations. This includes an understanding of the biological basis of normal structure and function, the mechanisms governing homeostasis, the physiopathology of organ systems and the biological and pharmacological evidence-based mechanisms, by which disordered states may be returned to normal.

The teaching must also cover the biology of agents that cause and transmit diseases from animal to animal and from animal to man, the transmission mechanisms and the mechanisms by which animals defend themselves against infectious agents and how these mechanisms can be induced.

The basic sciences must include:

- Anatomy (including histology and embryology),
- Physiology,
- Biochemistry,
- Genetics,
- Pharmacology, and pharmacy,
- Toxicology (including environmental pollution),
- Microbiology (including virology, bacteriology and mycology),
- Immunology,
- Epidemiology (including scientific and technical information and documentation methods),
- Professional ethics.

1.4.2.3 CLINICAL SCIENCES

The course of instruction in the basic sciences (pre- and para-clinical subjects) should have laid the necessary groundwork on which to build clinical knowledge and skills.

Propaedeutic training, as listed in the Annex V.4 of Directive 2005/36/EC, must provide the skills required to examine the patient or analyse the case, collect the clinical and laboratory data as the fundamental basis for a diagnostic and therapeutic plan for the case.

Intramural clinical training must be provided so all students receive a common clinical grounding, encompassing all species and disciplines, in accordance with the Directive 2005/36/EC, Annex V, and adequately enable veterinary surgeons to perform basic clinical duties in all species, if required (see the list of essential competences required at graduation, the so-called “day-one skills” in **Annex IV**). The time allotted for training in clinical sciences should account for at least 40% of the entire curriculum. This does not preclude the acquisition of additional knowledge in selected areas for which there is less demand as considered in the Directive 2005/36/EC.

Extramural clinical training and exposure to patient-driven clinical services are, albeit encouraged, only to be considered supplementary to the intramural clinical instruction provided by the Faculty, with equal consideration to teaching hospital (stationary) clinics or ambulatory (mobile) clinical services, which should remain the core of the intramural clinical instruction.

The clinical sciences must include:

- Obstetrics,
- Pathology (including pathological anatomy),
- Parasitology,
- Clinical medicine and surgery (including anaesthetics);
- Clinical lectures on the various domestic animals, poultry and other animal species;
- Preventive medicine,
- Radiology, (diagnostic imaging)
- Reproduction and reproduction disorders,
- Veterinary state medicine and public health,
- Veterinary legislation and forensic medicine,
- Therapeutics,
- Propaedeutics.

The above subjects are general subjects. Faculties should ensure that students are exposed to all major areas of clinical specialisation.

1.4.2.4 ANIMAL PRODUCTION

1.4.2.4.1 Food producing animals

Animal Production is the broad term used to describe the entire discipline of breeding, rearing and disposal of food-producing animals and their products by sale, slaughter for food or as waste. Tuition must cover the major food-producing species (cattle, sheep and/or goat, pigs, poultry, rabbits, and equine) and one example of a farmed fish species. Knowledge of animal production in its broad sense is essential for the veterinarian in order that changes in normal behaviour and management can be detected, animals can be handled safely, treatment can be given in an appropriate manner and appropriate recommendations can be made for prophylactics and care.

The training must be oriented towards the application of prophylactics and clinical treatment on individual and herd basis, preventive veterinary medicine (e.g. herd health) and management of epidemic diseases, reproductive management, housing of animals and feeding regimes. The training provided should allow veterinarians to derive proper data for food chain information and possible risks to human health.

Training must familiarise students with the normal methods for the disposal or recycling of animal waste and the common requirements for ethical, environmentally-sound and hygienic disposal of the bodies of companion animals and the carcasses of food-producing animals.

Training must provide adequate knowledge on animal welfare issues, covering rearing and holding on-farm until slaughter.

Knowledge of the economics of animal rearing enterprises and their place in the rural economy is required to make informed decisions about disease control and euthanasia.

The importance of genetics in animal breeding and trade as well as for disease resistance should be understood.

Theoretical and practical training must cover the broad requirements of the individual member states.

Theoretical instruction should be accompanied by practicals which provide the confidence to handle major domestic animal species safely and the ability to carry out basic tasks in animal management, breeding and rearing.

The animal production subjects must include:

- Animal production (the domestic food-producing animal species in society and the economy)
- Animal nutrition (nutrition and feeding of food-producing species)
- Agronomy (cropping, grazing and land use in relation to food-producing animal species)
- Rural economics (animals as a business and their importance in the countryside)
- Animal husbandry (housing, management and reproductive management systems, including artificial reproduction techniques, e.g. artificial insemination, multiple ovulation and embryo transfer).
- Veterinary hygiene (farm layout, drainage, cleaning, disinfection and bio-security)
- Animal ethology and protection (behaviour, social organisation in animal populations and common welfare issues, including behavioural disorders and their remediation)

1.4.2.4.2 Non food producing animals

Relevant and appropriate considerations of the above (section 4.2.4.1) principles should also be applied to the major non food producing animals like the dog and cat.

1.4.2.5 VETERINARY FOOD HYGIENE / PUBLIC HEALTH

The training must ensure that each student understands the fundamentals of veterinary public health, food science and modern food technology, the scientific basis of the relationship between food and human health, and the factors underlying the quality of hygiene (of food and the environment).

Directive 2005/36/EC, Annex V.4, 5.4.1, requires therefore adequate knowledge of the hygiene and technology involved in the production, manufacture and putting into production of animal foodstuffs or foodstuffs of animal origin. It further requires adequate knowledge of the laws, regulations and administrative provisions relating to the production of such foodstuffs. Veterinary public health/Food hygiene education for veterinarians must therefore ensure that, on graduation, they can be trained by the Competent Authority (CA) to carry out the audits described in the appropriate food hygiene regulations.

Study programmes should therefore build on a sound knowledge in the field of veterinary public health/food hygiene so that students would:

- know how to carry out ante-mortem inspection on farm or in the abattoir and assess the welfare of the animals concerned.

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- be familiar with veterinary public health and the respective legal regulations.
- understand post-mortem inspection and possess basic practical skills within the food production business and inspection requirements.
- understand the importance of risk-based monitoring of the processes (HACCP concept). These tasks require a sound knowledge of the pathology, microbiology, parasitology, pharmacology and toxicology of food animals, of epidemiology and of the legal requirements, allowing them to ensure public health and report back along the food chain to the farmer and to the Competent Authority.
- interpret the information returned by the Food Business Operator to the farm so as to benefit production, animal welfare and public health.
- acquire an acceptable knowledge of the principles of Food Hygiene Legislation at EU-level and in the individual state.

The veterinary food hygiene/public health subjects must include:

- Inspection and control of animal foodstuffs or foodstuffs of animal origin and of the respective feed-stuff production units,
- Food hygiene and technology,
- Food science including legislation,
- Practical work (including practical work in places where slaughtering and processing of foodstuffs takes place).

The course of instruction must cover subjects necessary to prepare the graduate to perform effectively not only in the traditional veterinary practice, but also in other common professional roles.

Undergraduates must receive broad information on the different opportunities of post-graduate training and specialisation.

1.4.2.6 PROFESSIONAL KNOWLEDGE

Professional knowledge subjects must include:

- Practice management
- Veterinary certification and report writing
- Career planning and opportunities

1.5 TEACHING, QUALITY AND EVALUATION

1.5.1 BASIC SUBJECTS and SCIENCES

One of the major objectives is the acquisition of problem-solving skills. To this end, the instruction must cover the methods of acquiring, documenting and analysing scientific and technical data.

Practical training must serve to familiarise students with subjects studied in theoretical courses and to give them some insight into how scientific knowledge might be acquired. Practical training does not mean simply observing the teacher during demonstrations. Acquisition of generic problem-solving skills is required.

1.5.2 CLINICAL SCIENCES

Clinical instruction must take place in groups that are small enough to ensure hands-on experience for all.

Students' problem solving and clinical skills should be developed through their full involvement in case management under suitable supervision. The mere observation of others practising veterinary medicine and surgery is not acceptable. The instruction provided must include basic clinical training across the common domestic species. Effective monitoring systems are to be provided in cases where the Faculty cannot give hands-on teaching in a species and the student must learn this at another institution.

Time-tabled lectures should be excluded from a substantial proportion of the clinical course as they may clash with students' case management activities.

Those responsible for theoretical clinical training must also be involved in the practical side dealt with in the institution's clinics.

The advancement of knowledge is a task involving all members of the profession. Therefore, interaction between students and clinical researchers working in the clinical field should be arranged in order to stimulate students' interest in research.

1.5.3 ANIMAL PRODUCTION

Those teaching the theory of animal production subjects should also be involved in practical training with the major domestic animal species. Teaching should reflect the species balance and management systems of the country. For food producing animals, practical work should be farm- case-based as much as possible.

Practical extramural courses should be encouraged as long as adequate supervision is in force.

1.5.4 VETERINARY FOOD HYGIENE /PUBLIC HEALTH

Practical training must familiarise students with the concepts of Food Business audit especially with regard to food of animal origin at various stages in the food chain, particularly in slaughterhouses. Students should develop Day-1 competences in the interpretation of food chain information, ante-mortem inspection and post-mortem inspection and be capable of being trained as official veterinarians by the Competent Authority.

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The training must take place in groups that are small enough to ensure that all students are able to gain hands-on experience.

It should also give students the opportunity to monitor units involved in the production, processing, distribution and consumption of foodstuffs.

Extramural instruction in the training in veterinary public health and food hygiene may be used so long as it is properly supervised.

1.5.5 ESSENTIAL COMPETENCES AT GRADUATION (DAY ONE SKILLS)

Students must be provided with clear learning objectives for each of the essential competences at graduation (day one skills) listed in **Annex IV**.

1.5.6 THE TEACHING AND LEARNING ENVIRONMENT

The academic environment must be conducive to learning of the students and the didactic and pedagogic development of the teaching staff (see also Stage two).

1.5.7 MONITORING AND ASSESSMENT

1.5.7.1 OF STUDENTS (see also Stage two)

Student performance must be assessed regularly.

Written, project and practical work, generic competences such as professional attitudes, communication skills, problem-solving abilities must all be evaluated with equal emphasis to practical and clinical skills. Evidence must be produced that students meet day one competences.

Evaluation methods must be known and understood by the students.

Whenever possible, the use of external examiners/observers should be made.

Results of assessment must be documented properly.

1.5.7.2 OF TEACHERS AND INSTRUCTION

A system must be available to allow students to evaluate teacher performance and teaching.

Students must be able to participate in the development of the curriculum in general.

1.5.8 STUDENT WELFARE

Adequate measures should be taken to minimize the risk of zoonotic diseases as much as possible (e.g. vaccination against rabies)

The establishment must provide or have a right of access to a system of routine and special guidance for students, especially those with social problems or those having difficulties with their studies.

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The guidance programme should also cover future career development and/or job selection.

1.6 FACILITIES AND EQUIPMENT

The site, buildings and its equipment should be conducive to teaching and adequate for the number of students enrolled.

Buildings, for both basic and specialist facilities must be adequate and suited to the teaching programme.

Health and safety standards must be conscientiously observed, as should the requirements of acceptable laboratory practice.

The practical side of animal production must be taught on the institution's own farms or on farms to which it has access, to sufficiently small groups of students, thereby allowing hands-on experience for all.

Adequate and hygienic facilities for the humane treatment of animals must be available, including provisions for hospitalisation, for operative surgery and recovery from anaesthesia, for exercise and for the isolation of infectious cases. Isolation facilities should be available for all animal types commonly handled in the facilities.

The clinical and hospital buildings must be up-to-date, clean and well maintained, and should be at least as adequate as those available in the private sector in the individual states.

The diagnostic, medical and surgical equipment provided must promote state-of-the-art practice of veterinary medicine and surgery.

Institutions must have a mobile/ambulatory clinic for farm animals or equivalent facilities so that students can practise field veterinary medicine under expert supervision.

Where practical training involves the use by the institution of material obtained from slaughterhouses and unfit for human consumption, vehicles and facilities must be properly adapted, maintained and operated to ensure the safety of students and staff and to prevent the spread of infectious agents.

1.7 ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

The farm/s where veterinary field training is performed should contain the major animal species relevant to veterinary practice in the individual state. Farm facilities and equipment should be up-to-date, and at least as good as those available in the private sector of the countries concerned. The farm should be a model of animal welfare for the profession and the students.

Adequate clinical material including all of the major species relevant to veterinary practice in the state concerned must be made available to the students.

The clinical material should be varied, providing experience in routine and complex cases.

The clinical services must have access to appropriate diagnostic support.

Clinical and hospital facilities should operate day and night for most of the year, i.e. like a normal practice. They have to provide a 24 hours emergency service.

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The clinical department(s) must maintain close links with the pathology and other diagnostic services so that students can follow cases where animals die of natural causes or are euthanized, and conduct post-mortem examinations. If necessary, pathology material should also be obtained from outside the institution to enhance the learning experience.

An adequate data retrieval system must be available so that case studies can be undertaken.

The Faculty must ensure that the students are exposed to an adequate supply of teaching material in the veterinary public health (including food hygiene) areas.

1.8 LIBRARY AND LEARNING RESOURCES

The Library and related services must help to meet the institution's objectives and lend support to basic training, research and postgraduate studies.

To this end, the Library must offer a comprehensive and up-to-date range of books and journals. Its opening hours, regulations and loan arrangements must facilitate self-learning. The institution must provide an adequate number of places for private study in the library or elsewhere on site. The Library must be professionally managed, have good working relationships with other libraries in the area, and provide modern on-line communication facilities for use by staff, students and researchers. In institutions where departmental libraries are available, the main library should have documentation on the material held in the other libraries.

The Faculty must provide audio-visual and information technology facilities meeting the needs of establishment.

1.9 ADMISSION AND ENROLMENT

The veterinary course is a rigorous one, and students admitted must have proven capabilities.

Although admission and enrolment are the legal responsibility of the individual countries, the selection should be competitive, based upon academic achievements and on other criteria.

Admissions must also be compatible with facilities and staff numbers, bearing in mind the need for low student/staff ratios, particularly in the clinical side of the course, and the amount of clinical and pathological material available.

1.10 ACADEMIC AND SUPPORT STAFF

The competence of the full-time academic staff must enable coverage of all the subject areas of the curriculum, allowing research based teaching except where alternative arrangements are made for outside teachers. The number of full-time academic staff (FTE) must allow teaching of small groups, thus maximising the learning opportunities for the students. A minimum percentage of 70% of the academic teaching staff should have veterinary training. Teachers of clinical veterinary subjects must be veterinarians, as should be those carrying out para-clinical services reporting to the public.

Part-time staff, residents and graduate students may lend support to full-time academic staff if they are appropriately integrated into the instructional programme. The Faculty should define which academic level is required.

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Overall, the workload of the academic staff should be organised in such a way that apart from teaching and clinical duties, they should be able to perform research and other non-teaching-related academic activities within working hours.

Appropriate teacher supervision requires satisfactory teaching staff/student and teaching staff/support staff ratios.

1.11 CONTINUING EDUCATION (see also Stage two)

The institution must co-operate with other professional organisations and competent authorities in the design, implementation and quality control of continuing education programmes.

It should strive to provide well-designed continuing education programmes in specific areas of practical veterinary medicine.

1.12 POSTGRADUATE EDUCATION (see also Stage two)

1.12.1 TOWARDS A QUALIFICATION IN A SPECIFIC AREA

The institution must co-operate with other professional organisations and competent authorities in the design, implementation and quality control of continuing education programmes leading to qualifications in the clinical and paraclinical fields, including the achievement of national specialist recognition.

Where appropriate, institutions should aim their programmes to meet the standards and regulations of the respective European specialist colleges and of the European Board of Veterinary Specialisation or equivalent bodies.

1.12.2 RESEARCH TRAINING

The institution must offer post-graduate training programmes by research (PhD or equivalent) based on an international-level programme in biomedical and veterinary research.

The programmes must be well designed and cover theoretical as well as practical training, leading to a certificate/degree within a period of three to four years.

The institution must provide an adequate number of places for research students

1.13 RESEARCH (see also Stage two)

It is desirable for undergraduate students to gain experience of research by undertaking a research project and writing a report on it.

The Faculty should provide an appropriate balance for these opportunities between basic, applied and clinical research.

The Faculty should assign an appropriate number of academic and technical posts specifically to research.

The Faculty should also allocate adequate facilities, equipment and operating funds to research.

2. MAIN INDICATORS FOR STAGE ONE

It is recommended that the data required to establish the main indicators be provided in strict compliance with the proposed definitions. These indicators must be valid for **one academic year**. Teaching hours must be the **number of teaching hours per student** disclosed as teacher-student intramural contact hours, extramural instruction and self studies.

2.1 TEACHING STAFF

Veterinary Faculties should have a number of budgeted teaching posts for undergraduate training:

- The posts may be filled on a full-time or part-time basis. The number of teaching staff is expressed in terms of full-time equivalents (FTEs) [e.g. 10 persons employed full-time (100%), two part-time (50%), and one at 80% time = 11.8 FTEs].
- Researchers working at the institution but involved only occasionally in undergraduate training (less than 10 hours annually) are not to be included in the above number. Researchers with greater involvement in basic training (≥ 10 hours annually) should be included in the calculation of FTEs such that the calculation is made on the basis of the proportion of time which they spend teaching compared with the time an average full-time teacher devotes to teaching, e.g., if the average workload¹ is 400 hours per year per lecturer and a researcher teaches undergraduates for 40 hours per year, this is counted as 0.1 FTE).
- Students working towards a postgraduate doctoral degree should not be included in this number, unless they perform regular, paid, teaching activities for a minimum of 20% of their work load. Similarly, interns and residents can be included in this number, as far as they participate actively to the hands-on clinical teaching (supervised, clinical or practical group work for 20% of their work load) and if/where they are paid for the teaching activity.
- Interns are veterinarians pursuing general clinical studies for 1 to 2 years. Residents are veterinarians who have completed their internship or its equivalent and are undergoing specialist clinical training (leading to a higher qualification) for 2 to 3 years. Postgraduate doctoral degree students are those pursuing a PhD or similar degree after completing their basic training.
- Outside lecturers and associated external teachers who teach at the institution on a regular short term or *ad hoc* basis are not included in this number but should be reported for information purposes.

2.2 STUDENTS

Number of students is defined as follows:

- a) Undergraduate veterinary students: this number includes all those students who are specifically enrolled for the course at the start of each academic year (Annex III, Tab. 9.3).
- b) Students graduating annually: this number comprises those students who received their diploma at the end of undergraduate veterinary training (student attrition) (Annex III, Tab. 9.4).

¹ Average workload: this includes the actual time of teaching, the preparation for teaching and the time spent on examination/evaluation of students. It is generally accepted that 1 teaching hour on average requires two hours of preparation.

2.3 SUPPORT STAFF

Included here is the number of budgeted support staff posts paid for by the institution:

- The posts may be filled on a full-time or part-time basis. As in the case of the academic staff, the given number should be expressed in terms of FTEs.
- The posts should be counted whether the work involves secretarial, administrative or technical staff, workmen, service personnel, animal caretakers. etc.)

2.4 THEORETICAL TRAINING

This covers the total number of hours of lectures, seminars and self directed learning provided to each student in a given academic year for the EU-listed subjects.

2.5 SUPERVISED PRACTICAL TRAINING

- Only intramural teaching under the guidance of lecturers should be taken into account (extramural placements should not be included).
- Only training taking place in small groups should be considered as supervised practical training.
- The figures provided should correspond to the total number of hours of practical and clinical training provided for the undergraduate training of one student.
- Practical training (e) is divided into three groups based on the work in which the students are involved:

2.5.1 LABORATORY AND DESK WORK

The total number of teaching hours to small groups in animal-free supervised work (including clinical supervised work). It includes teaching sessions where students themselves actively perform laboratory experiments, use microscopes for examination of histological or pathological specimens. It also includes work on documents and idea-formulation without the handling of animals, organs, objects or products (e.g. essay work, clinical case studies, handling of herd-health monitoring programmes, risk-assessment computer-aided exercises).

2.5.2 NON-CLINICAL ANIMAL WORK

The total number of hours of practical work (practical training). These are teaching sessions where students themselves work on normal animals, on objects, products, carcasses etc (e.g. animal husbandry, ante mortem and post mortem inspection, food hygiene, etc.) and perform dissection or necropsy

2.5.3 CLINICAL WORK

The total number of hours of intramural clinical practical work. These are strictly hands-on procedures by students which include work on normal animals in a clinical environment, on organs and clinical subjects, including individual patients and herds, making use of the relevant diagnostic data. Surgery or propaedeutical hands-on work on organ systems on cadavers to practice clinical techniques are also classified as clinical work. Simply observing the teacher doing these tasks is not clinical work.

2.6 SELF- DIRECTED LEARNING

The number of hours each student has for self-directed learning per week.

Self directed learning are faculty controlled, non supervised scheduled curricular sessions making use of defined teaching material provided by the Faculty (e.g. e-learning, radiographs, etc.).

2.7 ANIMAL CASE-LOAD FOR TRAINING

The total number of animal cases available for students' practical and clinical intramural training.

Livestock

The total number of individual or on-farm cases of livestock (cattle, sheep, goats, other ruminants, pigs, poultry and rabbits) recorded by the institution's clinics (stationary and/or ambulatory).

Herds or production units

The total number of herds or production units attended by the student/s.

Equine

The total number of horses, donkeys, mules recorded by the institution's clinics.

Companion animals and exotics

The total number of companion animals (excluding horses) and exotics recorded by the institution's clinics.

2.8 POST-MORTEM EXAMINATIONS

The number of post-mortem examinations carried out by the institution on whole carcasses of cattle, small ruminants, pigs, other farm animals, equines, poultry, rabbits, dogs, cats, other.

2.9 AMBULATORY (MOBILE) CLINIC

This refers to clinical services provided outside the Faculty, e.g. on farms, with the number of visits carried out by the ambulatory (mobile) clinic to perform field veterinary medicine.

2.10 SUMMARY TABLE FOR STAGE-ONE INDICATORS

The table below entitled "MAIN INDICATORS TO BE USED IN THE EVALUATION OF VETERINARY FACULTIES" covers:

Teaching capacity,

Types of training and

Animals/necropsies available for clinical and pathological training

As already mentioned at the beginning of this **Annex I**, the main indicators must not be interpreted in a strictly mathematical and isolated sense, but in the light of all other indicators and data.

Annex I, Stage one, Supplement A, gives the current denominators for information of the faculty to determine whether and to what extent they are met.

The list of indicators provided at the SER-1 and rechecked during the team visitation are to be placed in the preliminary executive summary.

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Main indicators to be used in the evaluation of Veterinary Faculties
(for detailed information see also Annex IIIa)

Parameter addressed	Indicator (Ratios)
Teaching capacity (see Annex III, Tab 10.3)	R1: $\frac{\text{no. total academic FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$
	R2: $\frac{\text{no. FTE total Faculty}^1)}{\text{no. undergraduate students at Faculty}}$
	R3: $\frac{\text{no. VS FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$
	R4: $\frac{\text{no. VS FTE in veterinary training}}{\text{no. students graduating annually}}$
	R5: $\frac{\text{no. FTE academic staff}}{\text{no. FTE support staff}}$
Types of training (see Annex III, chapter 4.1.3)	R6: $\frac{\text{Theoretical training}}{\text{Supervised Practical training}}$

¹⁾ facultative; applies only to a restricted number of faculties

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Main indicators; continued

Parameter addressed	Indicator (Ratios)
	<p style="text-align: center;">Clinical Work</p> <p>R7: $\frac{\text{Laboratory and desk based work} + \text{non clinical animal work}}{\text{Clinical Work}}$</p>
	<p style="text-align: center;">Self directed learning</p> <p>R8: $\frac{\text{Self directed learning}}{\text{Teaching load}}$</p>
Training Food Hygiene/Public Health	<p>R9: $\frac{\text{Total no. curriculum-hours Food Hygiene/Public Health}}{\text{Total no. hours vet. curriculum}}$</p>
	<p>R10: $\frac{\text{Total no. curriculum-hours Food Hygiene/Public Health}}{\text{Hours obligatory extramural work in veterinary inspection}}$</p>
Animals available for clinical education (see Annex III, table 7.5)	<p>R11: $\frac{\text{no. of students graduating annually}^2)}{\text{no. of food-producing animals seen at Faculty}}$</p>
	<p>R12: $\frac{\text{no. of students graduating annually}}{\text{no. of individual food-animals consultations outside the Faculty}}$</p>
	<p>R13: $\frac{\text{no. of students graduating annually}}{\text{no. of herd health visits}}$</p>
	<p>R14: $\frac{\text{no. of students graduating annually}}{\text{no. of equine cases}}$</p>

²⁾see Annex III, Tab. 9.4

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Main indicators; continued

Parameter addressed	Indicator (Ratios)
	$\text{R15: } \frac{\text{no. of students graduating annually}}{\text{no. of poultry/rabbit cases}}$
	$\text{R16: } \frac{\text{no. of students graduating annually}}{\text{no. of companion animals seen at Faculty}}$
	$\text{R17: } \frac{\text{no. of students graduating annually}}{\text{poultry (flocks)/rabbits (production units) seen}}$
Necropsies available for clinical education (see Annex III, table 7.6)	$\text{R18: } \frac{\text{no. of students graduating annually}}{\text{no. necropsies food producing animals + equines}}$
	$\text{R19: } \frac{\text{no. of students graduating annually}}{\text{no. poultry/rabbit necropsies}}$
	$\text{R20: } \frac{\text{no. of students graduating annually}}{\text{necropsies companion animals}}$

ANNEX Ib

GUIDELINES AND REQUIREMENTS FOR STAGE TWO (ACCREDITATION)

(Quality management of faculties)

The Faculty applying for evaluation at Stage two must have gained prior approval on the level of Stage-one evaluation. For Stage two evaluations the Faculty, in addition to Stage one requirements, is required to demonstrate how responsibility for quality is followed up with actual quality assurance. Faculties should have a policy and associated procedures for the assurance of the quality and standards of their programmes and awards. They should also commit themselves explicitly to the development of a culture which recognises the importance not only of quality, but also quality assurance. To achieve this, faculties must develop and implement a strategy for the continuous enhancement of quality. The strategy, policy and procedures should have a formal status and be publicly available. They should also include a role for students and other stakeholders. Hence a prerequisite for the status of an accredited institution will be the existence of a *system of internal quality assurance* that complies with the criteria set by the Standards and Guidelines for Quality Assurance in the European Higher Education Area established in 2005 by the European Association for Quality Assurance in Higher Education (ENQA, Helsinki, 2005) (<http://www.enqa.eu/documents.lasso>).

This system and its successful application must be documented in the Self Evaluation Report-Two (SER two), allowing the Faculty to be classified as holding the status of

- Accreditation
- Conditional accreditation
- No accreditation.

In particular it must become obvious how the Faculty collects, analyses and uses relevant information for the effective management of its study programme and other relevant activities, such as residency programmes, continuing education, research and research education and how the public (stakeholders) is informed.

Twelve (12) assessment procedures (**AP**) have been identified and are detailed in ten (10) chapters. The assessment procedure themselves may be classified as

- satisfactory
- less satisfactory
- non satisfactory.

System of Internal Quality Assurance.

1 POLICY STATEMENT (AP 1)

Bearing in mind, that postgraduate education and research are the basis for the advancement of veterinary science and hence have a great impact on undergraduate education, as laid down in the Principles and of the Evaluation of Veterinary Education in Europe, the Faculty must provide a clear policy and set of procedures for internal quality control and quality assurance of its teaching and research programme. The policy should have a formal status and be publicly available. It should also include a role for students and other stakeholders. The policy statement is expected to include the:

- relationship between teaching and research so that an established definition of research education and research quality is evident

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- Faculty's strategy for quality and standards
- organisation of the quality assurance system
- responsibilities of organisational units and individuals for the assurance of quality
- involvement of students in quality assurance
- ways in which the policy is implemented, monitored and revised

2 ASSESSMENT OF STUDENTS, POST GRADUATE EDUCATION AND STUDENT WELFARE

Undergraduate education (AP 2)

- admission of national and foreign students

Enrolled students must be assessed regularly using published criteria, regulations and procedures which are applied consistently. Student assessment procedures are expected to:

- be designed to measure the achievement of the intended learning outcomes and other programme objectives, e.g. day 1 competences
- have clear and published criteria;
- where appropriate, not rely on the judgements of single examiners;
- results of assessment must be documented properly;
- be subject to administrative verification checks to ensure the accuracy of the procedures.
- in addition, students should be clearly informed about the assessment strategy being used for their programme, what examinations or other assessment methods they will be subject to, what will be expected of them, and the criteria that will be applied to the assessment of their performance.

Post-graduate student education; academic track (AP 3)

Information on the following topics is required:

admission of national and foreign students

- underlying study programmes, requirements and programme-assessment
- student assessment procedures and results

Post-graduate student education; professional track (AP 3)

Information of the following topics is required:

- types of programmes offered and admission procedures for national and foreign student
- cooperation with other institutions
- student assessment procedures and results

Student welfare (AP 4)

Information of the following topics is required:

- measures taken to prevent zoonoses
- general and specific student counselling

3 ASSESSMENT OF TEACHING STAFF (AP 5)

Institutions should ensure that their teaching staff recruitment and appointment procedures include a means of ensuring that all new staff have at least the minimum necessary level of competence.

Teaching staff should be given opportunities to develop and extend their teaching capacity and should be encouraged to improve their skills. Opportunities for didactic and pedagogic training and specialisation should be available. The institution should describe any systems of reward for teaching excellence in operation.

A system for assessment of teaching staff must be in operation and should include student participation..

4. ASSESSMENT OF LEARNING OPPORTUNITIES (AP 6)

The Faculty must provide proof of a quality assurance system that promotes and monitors the presence of an academic environment highly conducive to learning including self-learning. Type, provision and updating of appropriate learning opportunities for the students should be clearly described as well as the involvement of students. The institution should also describe how it manages the promotion of up to date facilities for supervised and self-studies and the promotion of lifelong-learning.

5 ASSESSMENT OF TRAINING PROGRAMME AND THE AWARD OF THE TITLE OF VETERINARY SURGEON (AP 7)

Assessment is expected to include:

- development and publication of explicit intended learning outcomes, including a description of essential competences required at graduation (the so-called “day one-skills”) as listed in **Annex IV**.
- procedures for formal curriculum and teaching programme approval and regular reviews
- procedures monitoring delivery of the curriculum and teaching programme
- assurance concerning the participation of students in quality assessment activities
- parameters assessed and procedures to monitor regular feedback from stakeholders and graduates
- provision of a structure that promotes life-long learning

6 ASSESSMENT OF QUALITY ASSURANCE SYSTEMS FOR CLINICS, LABORATORIES AND FARM (AP 8)

The Faculty should describe the system(s) of quality assurance it possesses to monitor and assure clinical, laboratory and farm services

7 ASSESSMENT OF CONTINUING EDUCATION (AP 9)

The Faculty should describe the system of quality assurance it possesses to monitor and promote the design, implementation and quality control of its own, or joined Continuing Professional Development (CPD) programmes in specific areas of practical veterinary medicine.

8 ASSESSMENT OF RESEARCH (AP 10)

The institution should describe the system of quality assurance it possesses to develop and maintain and audit research programmes. Of particular interest is how research provides opportunities for student training, staff promotion, and how research methods and results are conveyed into basic veterinary training.

9 ASSESSMENT OF INTERNATIONALISATION OF EDUCATION AND RESEARCH (AP 11)

The institution should describe the system it possesses to promote and assess the development of international post-graduate education and of co-operating research projects with other countries, including developing countries.

Of particular importance is description of the measures of encouragement applied to engage veterinary students and newly graduates in international mobility of training (e.g. EU programmes such as Erasmus, Socrates, Tempus, Marie Curie etc) as well as the effectiveness of the activities.

10 ASSESSMENT OF COOPERATION WITH STAKEHOLDERS AND SOCIETY (AP 12)

The institution should provide proof that it regularly publishes up to date, objective and accurate information, both quantitative and qualitative, about the study programme. Published information might also include the views and employment destinations of past students and the profile of the current student population. This information should be readily accessible and should not be used simply as a marketing opportunity. The institution should describe to what extent it meets its own expectations.

ANNEX I

STAGE ONE, SUPPLEMENT A

- Annex I, Supplement A in form of the most recent updated version must be made available to the Faculty and the group of visiting experts at least 3 months prior to the visit.
- Up to date the denominators listed in Annex I, Supplement A are derived from 11 approved faculties visited between 2004 and 2007 and 8 approved faculties visited in 2008 and 2009 applying the SOPs, version 2008. The data pool will be amended by the EAEVE-office on a calendar yearly basis with data from other approved establishments; hence the denominators are subject to change. It must be expected that they will become more stable with the number of approved establishments increasing.
- As is indicated in Annex I and VI, the denominators obtained are indicators reflecting the given situation of an establishment, allowing the comparison between establishments and the recognition of trends. The denominators do not serve as upper or lower threshold levels but must be interpreted as a complex set of data in the light of all other observations made.
- The denominators established by ECOVE are based on the calculation of the upper and lower 80% quantile, requiring a minimum of 6 observations. In regard to the nature of a ratio, for ratios R1, 2, 3, 4, 6, 7, 8 and 11 – 20 either the lower (LL) or upper (UL) value of the 80% quantile is used as an indicator (cut off point); that is the denominator calculated by an establishment is satisfying if it remains below an Upper Level (UL) or above a Lower Level (LL). As the definition of a cut off point - at least until now – is not yet meaningful for ratios R5, 8, 9 and 10, the range (Ra) as defined by the upper and lower 80% quantile is listed. Presently these ranges are of informative nature only while the indicators (cut off points) allow conclusions on the teaching environment and the likelihood that day 1 competences may have been reached on graduation. There ratios R11 and R12 must be given special consideration as the number of individual food animal patient seen may suffice either when presented at the faculty or when seen outside the faculty or when combining faculty based and outside patient presentations. Presently the mean of ratios R11 and R12 is around 5.5.

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Main indicators to be used in the evaluation of Veterinary Faculties (June 2012)

Parameter addressed	Indicator (Ratios)	present denominators established by ECOVE	
Teaching capacity (see Annex III, Tab 10.3)	R1: UL	$\frac{\text{no. total academic FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$	8,832
	R2¹⁾: UL	$\frac{\text{no. FTE total Faculty}}{\text{no. undergraduate students at Faculty}}$	9,619
	R3: UL	$\frac{\text{no. VS FTE in veterinary training}}{\text{no. undergraduate veterinary students}}$	11,389
	R4: UL	$\frac{\text{no. VS FTE in veterinary training}}{\text{no. students graduating annually}}$	2,203
	*R5: Ra	$\frac{\text{no. total FTE academic staff in veterinary training}}{\text{no. total FTE support staff in veterinary training}}$	0,474 - 1,944
Types of training (see Annex III, chapter 4.1.3)	R6: LL	$\frac{\text{Theoretical training}}{\text{Supervised practical training}}$	0,576

¹⁾ facultative; applies only to a restricted number of faculties

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Main indicators; continued

Parameter addressed		Indicator (Ratios)	present denominators established by ECOVE
	R7: UL	$\frac{\text{Clinical Work}}{\text{Laboratory and desk based work} + \text{non clinical animal work}}$	1,952
	*R8: Ra	$\frac{\text{Self directed learning}}{\text{Teaching load}}$	2,576 - 103,746
Training Food Hygiene/Public Health	R9: Ra	$\frac{\text{Total no. curriculum-hours Food Hygiene/Public Health}}{\text{Total no. hours vet. curriculum}}$	0,725 – 98,437
	R10: Ra	$\frac{\text{Total no. curriculum-hours Food Hygiene/Public Health}}{\text{Hours obligatory extramural work in veterinary inspection}}$	0,061 - 0,881
Animals available for clinical education (see Annex III, Table 7.5)	R11: LL	$\frac{\text{no. of students graduating annually}}{\text{no. of food-producing animals seen at Faculty}}$	0,956
	R12: LL	$\frac{\text{no. of students graduating annually}}{\text{no. of individual food-animals consultations outside the Faculty}}$	7,345
	R13: LL	$\frac{\text{no. of students graduating annually}}{\text{number of herd health visits}}$	0,307
	R14: LL	$\frac{\text{no. of students graduating annually}}{\text{no. of equine cases}}$	2,590

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Main indicators; continued

Parameter addressed	Indicator (Ratios)	present denominators established by ECOVE
	R15: LL $\frac{\text{no. of students graduating annually}}{\text{no. of poultry/rabbit cases}}$	0,505
	R16: LL $\frac{\text{no. of students graduating annually}}{\text{no. of companion animals seen at faculty}}$	43,462
	R17: LL $\frac{\text{no. of students graduating annually}}{\text{Poultry (flocks)/rabbits (production units) seen}}$	0,040
Necropsies available for clinical education (Table 7.6)	R18: LL $\frac{\text{no. of students graduating annually}}{\text{no. necropsies food producing animals + equines}}$	0,998
	R19: LL $\frac{\text{no. of students graduating annually}}{\text{no. poultry/rabbit necropsies}}$	0,547
	R20: LL $\frac{\text{no. of students graduating annually}}{\text{Necropsies companion animals}}$	1,498

UL = upper level; LL = lower level; Ra = range

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