

European Association of Establishments for Veterinary Education
and the **Federation of Veterinarians of Europe**
European System of Evaluation of Veterinary Training

**REPORT ON THE VISIT TO THE FACULTY OF
VETERINARY MEDICINE OF STARA ZAGORA
October 26 – 30, 2009**

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INTRODUCTION

The Faculty of Veterinary Medicine in Stara Zagora (FVM) is the successor of the faculty founded in 1923 as the 7th faculty of the Sofia University. It remained integrated into this university until 1948, when it became part of the Georgi Dimitrov Agricultural Academy. From 1953 until 1972 the FVM acted as an independent Institute of Veterinary Medicine "Prof. Georgi Pavlov", it became part of the Research and Education Livestock Production Association from 1972 until 1974 and was part of the Higher Institute of Zootechnics and Veterinary Medicine from 1974 until 1995, when the FVM was integrated into the newly formed Trakia University.

The many changes from 1948 until 1995 undoubtedly made it difficult for the faculty to maintain and develop a specific profile. However, many problems have been overcome, also by adhering to the suggestions made in the report following a first EAEVE visitation in 2001. The FVM has received national accreditation and seeks for an international standing due to the accomplishments made.

1. OBJECTIVES and STRATEGY

1.1 Findings:

Main object of the FVM is to produce qualified Veterinary Surgeons meeting day one competences, to provide postgraduate and continuing education to allow for further specialization and to serve as a National Center for the development of sciences in the field of Veterinary Medicine.

The strategy to reach these goals is to provide a motivated and high level teaching and research, excellent clinical and other services and to cooperate with stakeholders (the national veterinary organizations), other national and foreign veterinary establishments and the responsible ministries.

1.2 Comments and Suggestions:

The FVM has a clear commitment and the strategy to reach the goals set looks good. However, clearly and as everywhere, it is not always easy to acquire in practice what has been set up in theory.

2. ORGANIZATION

2.1 Findings:

The FVM is one of the 5 faculties of the Trakia University, which was founded in 1995 and which further encompasses 2 colleges. The Trakia University is mainly under the control of the Ministry of Education and Science. However, due to the type of facul-

ties to some extent also the Ministry of Public Health and the Ministry of Agriculture and Food act as supervising bodies.

The university is headed by a Rector, who is elected by the General Assembly for a 4 year term, reelection for another period is possible. The Rector appoints 3 Vice-Rectors, as a rule one of them is from the professorial staff of the FVM.

The Rector chairs the Academic Council (AC) which is the main decision making body of the university.

The FVM is headed by the Dean, who is elected for a 4 year term by the General Assembly (GA) of the FVM (reelection for another period is possible). The GA of the FVM further elects the Faculty Council (FC) which consists of 26 habilitated and 5 non-habilitated academic staff, 4 undergraduate and PhD-students; the term is 4 years. On proposal of the Dean, the FC elects 3 Associate Deans who are either responsible for “academic affairs”, “research and international cooperation” or “practical training”. Each Associate Dean chairs a respective committee.

Upon proposal of the Dean the FC further elects a person responsible for postgraduate studies/activities. In agreement with the Dean, the Rector appoints a Chief Manager on Teaching Quality and Evaluation of Academic Staff Performance.

Among the various responsibilities of the FC are:

- to approve changes in the curriculum
- to propose to the AC structural changes of the FVM
- to elect and approve advancement to the rank of an assistant professor
- to approve the annual financial report of the chief accountant of the FVM

The FVM is structured in 9 Departments and – according to the SER - 5 separate Clinical Diagnostic Units.

Each department is managed by a Department Head (Chair), who is elected for a 4 year term by the Department Council (DC), which consists of all academic staff.

The DC meets at least once monthly, among its duties are:

- to make proposals to the FC for updating the syllabus,
- to distribute teaching responsibilities and to assess teaching and student quality,
- to deal with textbook publications and approve research projects.

During the visit the team encountered that “de facto” only 3 clinical units exist which deal with non-infectious patients only, the unit “Small Animal Clinic with Radiology”, the unit “Farm Animal Clinic” and the unit “Equine Clinic”. Each unit is headed by a clinical director, who - at the same time - is a member of the professorial staff of either the Dept. of Obstetrics, Reproduction and Reproductive Disorders (Farm Animal Clinic), Dept. of Internal Non-infectious Diseases (Equine Clinic) or the Dept. of Vete-

rinary Surgery (Small Animal Clinic). Apart from the clinical director another veterinarian is constantly assigned to the clinical units, otherwise – except for the radiology unit - the staff is provided by the above mentioned departments on a rotational basis.

During the visit it became obvious, that all small and large animal patients considered to be an “infectious patient” are referred to and taken care of by the Dept. of Veterinary Microbiology, Infectious and Parasitic Diseases; similarly small animal patients suffering from parasitic diseases are referred to this department, large animal patients are treated at their home location (i.e. on the farm), the department also accepts first opinion cases.

Visits to farms are organized separately by the Farm Animal and Equine Clinic, the 3 “non-infectious” clinical units organize one common 24-hrs emergency service around the year.

2.2 Comments and suggestions:

As with any faculty encompassed in a university, flexibility in respect to financial, personnel and academic matters is restricted.

The FVM substantially reduced the number of departments since the first visit in 2001 and restructured the clinical services by providing a species orientated, hands on clinical training in small animal, food animal and equine medicine.

Though looking good on paper the team encountered during the visit that the structure needs further optimization. It is difficult to properly educate students towards the need to develop strategies for treatment for one patient of a given species when responsibilities change due to assigned departmental competences, only putting the student halfway or less through. Further on, the veterinarian on duty at night and weekend shifts must be able to handle all incoming cases, regardless whether they are infectious or not infectious. These suggestion and recommendations of course in no way preclude that advice and diagnostic support is provided by other departments, on the contrary, but the patient should stay within the responsibility of the respective clinical unit.

3. FINANCES

3.1 Findings:

As was understood by the team, funding of the University by the government accounts for the number and types of students

The decision about the percentage of the state subsidy forwarded from the university to the faculty is made by the rector following a discussion with the Academic Council and apparently no longer coherent with the “student-based” financing of the University as the share should be considerably higher.

In 2008 out of the state subsidy 2,728,348 BGN were forwarded to the FVM; with an extra income of 642,094 BGN the total income of the faculty was 3,370 442 BGN (approx. 1,685 221 €).

To be covered from this “total income” are all salaries and social security payments (2,540.000 BGN), leaving only little room to support teaching and related clinical activities, to support research and to provide money for investments, i.e. new and absolutely essential equipment (see chapter 6).

3.2 Comments and suggestions:

In order to meet European requirement the veterinary curriculum must comply with Directive 36/2005/EU. Only those students who meet the day 1 competences may compete on a European level.

Veterinary education is strictly regulated and of a high teaching intensity, also requiring adequate clinical and paraclinical equipment for an up to date instruction of students and patient care.

These requirements are the reasons why the training in veterinary medicine is one of the most cost-intensive ones, amounting up to human medicine.

As is obvious from chapter 6 the FVM lacks essential instruments for an up to date veterinary training and to provide the necessary services; there are further on many old (antique) instruments needing replacement.

Thus, irrespectively of the fact that the salaries of the staff, in particular of the assistant professors, must be considered inadequately low, additional funds must be provided to allow for the necessary equipment and material to put the FVM in the position to provide a modern, up to date training in veterinary medicine.

Thus to put the FVM in a better position it is strongly suggested that the responsible Ministry should set the “accounting factor” of a student in veterinary medicine equal to that in human medicine which, as the team was informed by the dean, at present is 9.4. Further the funds the university is receiving due to embracing the FVM should basically be made available to the FVM.

The same requirements result from the fact that the funds available to initiate proper research projects meeting international levels are way below what is generally considered necessary as “seeding money” to acquire extramural funds.

4. CURRICULUM

4.1 General aspects:

4.1.1 Findings:

In Bulgaria the veterinary curriculum is governed by the Decree of the Council of Ministers No 136/2004, amended by Decree No 223/2005.

This decree regulates the admission of students, it lists the obligatory courses (subjects) and the minimum of hours required for each course.

The decree is in line with Directive 2005/36/EU. Art. 4 (3) allows for the inclusion of other obligatory subjects and regulates that not more than 10% of the total hours of courses specified in Decree No 136/2004 are offered as electives.

The curriculum underlying the veterinary course at the FVM is in line with the above regulations, it meets all subjects, offers electives and accounts up to 4724 hrs. incl. extramural training (this figure accounts for the corrections made during the visit and the information that extramural training after year 3 is 120 hrs.; SER page 21).

Students, who have successfully graduated are given the academic title of a Master and the professional title of a veterinary surgeon.

4.1.2 Comments and suggestions:

The curriculum of the FVM clearly complies with Directive 2005/36/EU in respect to the subjects to be taught. However, the way teaching is implemented is not totally convincing that the final goal of veterinary education as laid out in Directive 2005/36/EU is reached to the level of full satisfaction.

This in particular relates to the development of a basic scientific comprehensiveness allowing the graduates to deduct logical conclusions in a given situation.

It is therefore suggested to put more emphasis on a science orientated education, making the students better familiar with literature survey, evaluation of results, report writing etc.

Self learning as a method of teaching is listed in table 4.2. However, the interviewed students were not aware of this requirement. It is therefore suggested to better inform incoming students about the curriculum and the associated requirements.

4.2 Basic subjects and sciences:

4.2.1 Findings:

4.2.1.1 General observations:

Most basic subjects and sciences mentioned in the EU Directive and the Standard Operation Procedures (SOP) are taught as either independent subjects or part of other subjects.

The proportion of theoretical and practical classes is appropriate with the content of the basic subjects taught in general being the same as in other veterinary establishments.

However, the number of lectures and practicals of basic subjects (Physics, Chemistry, Animal biology, Plant biology, Biomathematics) may not suffice for those. Students with an inappropriate knowledge on basic subjects from the secondary school. These students have to cope with this situation by going into enforced self learning.

The items taught in basic sciences are brought into relation to later courses. The majority of the teachers of the basic sciences are veterinary surgeons, a situation which should allow to teach basic sciences according to the future need of the veterinary training. The visiting team was informed that regular coordination is made between teachers of the related subjects.

During its visit the team did not become aware that molecular biology would be taught somewhere in basic subjects or sciences. Interestingly, as a response to Draft Report A, it was stated in some detail by the FVM that Molecular Biology is an integral part of “Genetics and Animal Breeding” and “Biochemistry”. Unfortunately this was not noted during the visit and certainly the list provided in response to Draft Report A is not complete.

The FVM makes use of modern teaching equipments and methods during the lectures (projectors, powerpoint presentations), however, there is still room for some improvement. The laboratories used for practicals are not very well equipped; apparently in some facilities wardrobes are missing as the students placed their coats etc. in the class room.

With 9 to 10 students per group at the practicals, the group size is small enough to allow for adequate supervision and instruction by one instructor. However, practicals are devoid of making use of new methods like PCR, as they are not yet established at the FVM. Practical do also not benefit from diagnostic services provided by the basic science departments, as there are only limited activities.

4.2.1.2 Special observations:

In anatomy students have ample access to bones and training in osteology. However, for dissections only a limited number of carcasses, in particular of companion animals, is available.

4.2.2 Comments and suggestions:

Teaching basic sciences from the viewpoint of veterinary training by veterinarians is a strong point of the faculty and the regular coordination of related subjects is acknowledged by the visiting team.

However, training in molecular biology from a theoretical and particular practical point of view seems not meet present day standards.

Sooner or later the faculty will have to recognize that this lack will severely hamper the education of students to modern, up to date veterinarians, putting the FVM in isolation. It will also hamper the development of further research and the recruitment of postgraduate (PhD) students.

It is therefore strongly suggested to improve this situation and to give molecular biology a higher visibility.

In addition, the FVM should further improve the availability of modern teaching equipments and methods to help students to better understanding and learn veterinary sciences.

This also accounts for the laboratories and rooms where practicals are taught, which in some cases urgently need better equipment.

Anatomy, which applies an up to date preservation of organs, tissues and cadavers, should make better use of carcasses from companion animals for dissection practicals.

Until this situation has been changed (introduction of more companion animal carcasses for anatomical dissections) this is a potential **Category 2 deficiency**

4.3 Animal production:

4.3.1 Findings:

While the 2001 curriculum listed a total of 525 hrs. for Animal production, the respective number in the present curriculum is 285 hrs..The reduction was expected and necessary, but perhaps should not have been so extensive and in a more balanced way.

The Faculty has access to a farm belonging to the university, where the students can practice and learn some of the main management aspects of the different production systems. The contact with cattle seems good as the farm has animals from different breeds, production levels etc. Regarding other species the situation is not so good especially with pigs, horses and poultry. Although there is a stud-horse farm belonging to the university and the police forces, it seems that the students do not have close contact with these animals, in particular as patient care is generally not by the FVM.

There seems to be no special herd-health program and teaching, which is also part of animal production (see also 4.3.3) and the team did not become aware of the fact that the relevant and appropriate considerations had been applied to the major non food producing animals as requested in Annex I, chpt. 1.4.2.4.2, SOP.

4.3.2 Comments:

The subject of animal production in the veterinary curriculum should be a bridge between basic sciences, like biochemistry and physiology and the applied sciences like clinics (disease prevention), food safety and food quality.

Today it is generally accepted that a qualified and responsible dealing with the “food chain” is based on an integrated approach of multidisciplinary subjects spanning from “farm to the fork”. It has further to be recognized that “health” is no more divided in Animal and Human Health but that the present approach is characterized by the slogan “One Medicine, one Health”. Consequently subjects like animal production

should play a special role between basic and applied sciences, being the continuation of the first ones and providing an introduction to the other ones.

4.3.3 Suggestions:

The different disciplines of Animal Production should be re-structured in order to be harmonised and organised in an integrated way; the profile must be sharpened.

Their contents should be discussed with the colleagues of the basic sciences in order to avoid overlapping or missing subjects. The same applies for the colleagues of the clinics and of food hygiene in order to provide them with a good introduction to their subjects.

Perhaps more time should be allocated in the curriculum to animal production but only after the harmonization has been accomplished and after it has been shown that important subjects were missing.

Non food producing animals must be considered.

4.4 Clinical sciences:

4.4.1 Findings:

4.4.1.1 Hands-on clinical training:

Clinical sciences are taught in both lectures and practical sessions.

First exposure to live animals in practical sessions is in the third year on faculty animals to teach basic examinations and handling of animals (propedeutics). Apart from patients brought to the clinics some training is also at the faculty farm with approx. 80 milking cows and dry stock, calves, sheep and goats. Also used is a state (police) horse-stud with up to 60 horses.

Hands on clinical training starts in the 9th semester when students are assigned to 16 groups with a maximum of 10 students per group. In the Small Animal Clinic two groups of 10 students rotate for a period of 2 weeks, resulting in an exposure of 60 hrs. hands on clinical training per student. At the same time other student groups are taken on farm visits. As mentioned in the SER the resulting figure is 120 hrs. of clinical training. However, verification of this figure by the team during the visit and when talking to clinical staff was not possible. Similarly the 60 hrs of clinical training in equine diseases by visiting the horse-stud-farm could not be verified by the team.

In the Small Animal Clinic both groups of students are exposed to about 5 to 6 patients per day, a figure not allowing to lower the number of students dealing with one patient to 2 to 4, as would be desirable. Due to the rotation system applied it is probably the exception that students follow the history of a patient for a longer period, for example during the duration of hospitalization. No intensive care unit is present and also a neonatal unit seems to be missing.

As the number of farm animal patients presented at the Farm Animal Clinic is only around 40 to 50 per year (information given during the visit), this clinic operates a

farm based hands on clinical training. The two groups of students are carried to farms by faculty owned busses where they treat and examine animals under the supervision of an instructor.

The FVM has contracts with 8 dairy and 2 sheep farms and the number of patients arising during one year is around 1000. Gynecological cases including inseminations are apparently the majority as there were no reports on, for example, a displaced abomasus, milk fever or assisted parturition, i.e. cesarean sections.

There are no pigs presented in the clinic as patients for hands on training. Training on pigs only seems available through the experimental farm, where some pig are being held. There is no pig-herd-health service.

Due to the low number of patients seen at the Equine Clinic (so far 20 in 2009) and the few real cases encountered during "horse" farm visits (so far 13 in 2009), this clinic can not cope with the requirements for hands on clinical training. Consequently virtually no students were observed on clinical training during the visit, when asked no precise answer could be given where the students had disappeared to.

As indicated in chapter 2, the clinics are separated in non-infectious and infectious diseases, which includes parasitic diseases. After initial assessments of the patient and information of the Dept. of Veterinary Microbiology, Infectious and Parasitic Diseases, all (suspect) infectious animals are transported to the infectious disease facilities (across the road) where further examinations and treatments takes place. No hospitalized patients were present at the time of the visit, in October 2009 so far about 10 cases (incl. dermatological cases) had been presented.

In the case of a (suspect) parasitic disease, companion animals are transported to the examination/treatment room next to the infectious disease examination room, where basic examinations and treatments are possible but no hospitalization as there are no facilities. There is no space to examine or treat large patients with (suspect) parasitic problems, which subsequently have to be sent home, to be treated there by either an ambulatory service or the local veterinarian.

A 24 hour emergency service exists for all species, but the caseload is limited, especially for equine patients. For students it is compulsory to participate in this out-of-hour service.

A mobile 24-hour clinic is non-existing.

4.4.1.2 Training on herd health management:

There seems to be no special program. The visits to the farms supplements hands on clinical teaching but do not cope with the requirements for herd health management.

4.4.2 Comments:

A big shortcoming in respect to a comprehensive clinical teaching of evidence based medicine results from the structure of the clinics with the separate responsibilities for

non-infectious and infectious patients. This creates an artificial boundary for students to follow a case.

Hospitalization of patients with parasitic diseases is not possible and places a serious question mark over the possibility to adequately treat a parasitic small animal patient; large animal patients are not treated at all at the FVM. From this situation one must assume that clinical teaching on parasitic diseases lacks important elements.

Due to the relatively small number of patients hands on clinical training in the Small Animal Clinic barely meets the level "acceptable". The unit must try to become more attractive for patients.

The amount of patients presented at the Farm Animal Clinic in recent years has also declined. However, there seems to be sufficient compensation through the farm based teaching. Yet a question-mark has to be put over the fact if sufficient patients with parturitions, milk-fever, displaced abomasums etc. are or will be available for students to get hands-on experience.

When viewed in an isolated manner, the low number of equine patients must be considered as not acceptable.

There are question marks put by the visiting team over the level of care provided to patients. Some of the equipment (e.g. ultrasound machine) is very outdated. Also some of the procedures (e.g. caesarian sections on cows in lateral recumbency) discussed seem to be very old-fashioned, again raising the question to what extent a "state of the art" hands on clinical training/teaching is achieved.

Clearly the team did not become aware of the fact that the requirements on the teaching of herd health management are met in a comprehensive and up to date way.

4.4.3 Suggestions:

Outdated equipment should be replaced as soon as possible to ensure proper diagnostics and treatment and consequently education of students. This also accounts for the acquisition of not yet available other diagnostic tools (see chapter 6).

Review of all procedures should be done as soon as possible and exchange with other European veterinary faculties promoted, in order to improve optimum patient care with modern techniques.

The teaching of herd health management must become more visible and comprehensive, for example by assigning the full responsibility for the teaching of this subject to the Director of the Farm Animal Clinic.

Increase the amount of different animals owned by the university. Extra horses and pigs would ensure more and better hands-on experience for the students. Also more agreements with local farms and veterinary practitioners might increase the caseload of the Farm Animal Clinic.

A group of students should be assigned to each patient and be able to follow up this patient through all diagnostic examinations all treatments. To allow for this and a fur-

ther optimization of patient management and general clinical hands on training, a restructuring of the clinical organization is strongly suggested.

As long as the total patient load, in particular in respect to pig and horse patient (material), is not increased, a **Category 1 deficiency exists**

Minimum requirements in respect to modern diagnostic and hence teaching approaches (e.g. ultrasound, equipment for ophthalmology) must be met; until this has been achieved a **Category 1 deficiency exists**.

Teaching on herd health management must be improved; until this has been achieved there is the suggestion of a **Category 2 deficiency**.

4.5 Food hygiene and technology and veterinary public health:

4.5.1 Findings:

Teaching, including fish diseases, is by the staff of the Department of Food Hygiene and Control, Veterinary Legislation and Management.

A total of 225 hrs. is assigned to Food Hygiene/Public Health with 90 hours of theoretical training, 43 hrs. of laboratory and desk based work and 92 hrs. of non-clinical animal work. These 92 hrs. comprise 33 hrs. of “practical” work where slaughtering and processing of foodstuffs is observed and taught. Supervision of students, who work in groups, is by a teacher of the department. The department offers sufficient and appropriate learning resources.

For practical training the FVM has signed a contract with 2 slaughterhouses and 2 milk-processing enterprises.

9th semester: The first slaughterhouse visited is for pigs and small ruminants, there is also meat processing and the production freshly cooked or dry sausages. There are 3 training sessions of 3 hours each, allowing each group of students to observe the structure of the slaughterhouse, slaughter technology and all phases of meat processing.

The second slaughterhouse, apart from producing meat from pigs, small ruminants, also slaughters large ruminants, allowing the students to get familiar with hazard measures regarding bovine spongiform encephalopathy.

In addition there is a visit to a most modern poultry slaughterhouse located in Stara Zagora.

The two milk-producing units are specialized on producing of pasteurized milk, yoghurt, butter and two types of traditional Bulgarian cheese with the first dairy unit providing information on transportation, delivery, inspection, technology of producing fresh pasteurized milk and yoghurt.

At the other unit students observe the techniques required during the production of white brined cheese and kashkaval (two types of specific Bulgarian cheese).

Both visits take place from 8.30 to 12.00.

10th semester: students visit the first slaughterhouse again and the group stays there for an entire working day so that each student will be able to perform a meat inspection on at least two carcasses (pigs or small animals) and their organs.

Until the end of the 10th semester the students will visit at least another two meat producing/processing units during the travel seminar.

There is a travel seminar during which students visit another two dairy units. Following the visit there is usually the tasting of different products and a discussion regarding product quality.

There are also laboratory based practicals with individual work on different animal products. Students learn about the sampling protocol, sample preparation, the principal methods of analysis related to food safety. The various test methods taught comprise:

- Meat and meat products: trichinosis, determination of the type of meat, chemical analysis of meat products, bacteriological examination of meat products;
- Milk and milk products: analysis of crude milk, crude milk quality, microbiological indices, chemical composition, residual amounts of inhibitors, analysis of dairy products, cheeses, butter etc.;
- Honey bee;
- Fish and fish products.

4.5.2 Comments:

A more general comment relates to the fact that there was little or no linkage between the safety and quality of food of animal origin and the production or health issue of food animals (see also 4.3.2).

The curriculum regarding food hygiene has an appropriate balance between the time spent on the theoretical and practical part. There is a good proportion of “practical” work with students being able to visit a sufficient number of units that are specialized on meat- or milk- processing. However, the “practical part” is mostly by observation with only little practical involvement of students.

During the courses and visits to different units training on the HACCP, GFP and GMP is limited and not very well understood by students.

There is also a lack of subjects that can be offered to be taken as electives regarding food safety. The specific training for food safety is only offered as postgraduate education. Thus the FVM offers a number of short-time courses where students or former students can get further information regarding food safety.

4.5.3 Suggestions:

- The training of the students should put more emphasis on the international concepts regarding Hazard Analysis Critical Control Points (HACCP), Good Farming Practice (GFP) and Good Manufacturing Practice (GMP) as required by international laws.
- The number of visits and hours per visit to different units should be higher so that every student would be able to do more individual work. Alternatively a faculty controlled extramural training in Food hygiene, including the slaughtering of animals, could be offered.
- Data collected from clinics, the Stara Zagora veterinary authority and other national and international organizations regarding the incidence and prevalence of the diseases should be included in food safety curriculum.
- The teaching of food hygiene, technology and public health should be reviewed in a collective effort also considering aspects of animal production, pathology, pharmacology, toxicology and parasitology.

4.6 Electives, optional disciplines and other subjects:

4.6.1 Findings:

The FVM offers electives in the areas of Basic subjects, Basic sciences, Clinical sciences, Animal production and Professional knowledge. There is no elective offered in Food hygiene/Public health.

Apart from professional knowledge and Forage production where only lectures are offered there is a good balance between theoretical and practical teaching.

Depending on the subject area the number of electives offered varies between two and 13 with a total of 28 courses the students can choose from.

Each student must select one elective per semester to obtain a total of 150hrs.

There seem to be no further optional courses offered and the total load of non EU listed subjects taught (Latin, Foreign languages, Physical education, Ecology and radioecology, Dietetics) amounts up to 210 hrs. (these hours were considered in the total teaching load).

4.6.2 Comments and suggestions:

The FVM offers a good selection of electives in five areas. However, unfortunately there are no electives in the area of Food hygiene/Public health.

There is the strong recommendation to change this situation by also offering electives in the subject of Food hygiene/Public health.

Concerning the “other subjects” the teaching of foreign languages, Latin and Dietetics must be considered an excellent approach. It is up to the FVM to decide on the other two subjects.

4.7 Ratios chapter 4:

The following ratios as calculated for the parameters covered by chapter 4 were in part recalculated by the FVM during the visit and may be different from the figures given in the SER or they may not have been included at all.

No	Direction	Type	Fraction	Denominator	
				FVM	ECOVE
R 6 ² :	LL	<u>Theoretical training</u>	<u>2273</u>	0.72	0.551
		Supervised practical training	1641		
R 7 ² :	UL	<u>Clinical Work</u>	<u>480</u>	2.41	2.200
		Laboratory and desk based work + non-clinical animal work	1161		
R 8 ² :	Ra	<u>Self directed learning</u>	<u>238</u>	16.59	0.559-6.092
		Teaching load	3948		
R 9:	Ra	<u>Total no. curriculum-hours Food Hygiene / Public Health</u>	<u>225</u>	17.55	to be established
		Total no. hours vet. Curriculum	3948		
R 10:	Ra	<u>Total no. curriculum hours Food Hygiene / Public Health</u>	<u>225</u>	0.71	to be established
		Hours obligatory extramural work in Veterinary inspection	160 ¹		

UL = upper level, LL lower level, Ra = Ratio

¹) SER, page 22,III; 2 x 10 working days

²) values recalculated from corrected Tab. 4.2, 4.3 and 4.4; electives counted as 75 hrs. theoretical and 74 hrs. supervised practical training

As is stated in the SOPs, these ratios must not be seen dogmatic but rather as an indicator. However, there is the indication that clinical work as part of laboratory and desk based work might be increased.

5. TEACHING QUALITY AND EVALUATION

5.1 Teaching methodology:

5.1.1 Findings:

5.1.1.1 Teaching material:

- a) The ways of teaching are by providing frontal lectures, seminars, self-directed learning, laboratory and desk-based work, non-clinical animal work and clinical

hands on training; the curriculum shows a good balance between the various methods of instruction.

- b) The specific learning objectives are presented to the students for each course.
- c) The students work from their own notes, scripts and hand outs provided by the respective instructor, Bulgarian and English textbooks and occasionally from lectures and picture material provided in an electronic version. Bones “to take home” are available in anatomy and there are microscopic slides and preparations for self study.

5.1.1.2 Pedagogical training and evaluation:

All newly employed young teachers, in general assistant professors, have to pass a one-month training on pedagogic methods.

The university pays for a 6-month English language course for the young teaching staff. Yet participation is not always encouraged by the department/unit heads and sometimes a few years might go by before participation becomes possible.

The courses and teaching are evaluated by a common procedure, executed at the university level. Evaluation of teaching by students is performed through an anonymous questionnaire and a score evaluation system.

Associate and full professors are evaluated once in 5 years and assistant professors once in 3 years. Corrective actions are undertaken by the Faculty Council

In case of two consecutive negative evaluations an assistant professor may be dismissed.

5.1.2 Comments and suggestions:

The evaluation of teaching and teachers is well done and correct. It must be highly appreciated that consequences due to not meeting the standards are possible.

The high number of text books written by the faculty staff is similarly highly appreciated. However, some of them were published quite some time ago and a new, updated version might become necessary.

The teaching staff should be encouraged to increase the efforts to provide students with material for E-learning and to establish an intranet with access for the students.

The pedagogic and the language courses provided by the university are a unique chance for the younger staff to further qualify. Participation should be encouraged and – as occasionally seems to be the case – not hindered.

5.2 Examinations:

5.2.1 Findings:

A distinction has to be made between semestral exams and the two state exams.

Semestral exams: There are several forms like written tests, oral exams on a certain part of the subject (colloquia) and practical exams. Some major subjects are highly fragmented and the students are examined only on certain chapters at a given point of time. The grades obtained are part of composed grades.

There are three examination periods per year also allowing for repeats. If a student fails in all exams of a certain subject he/she has to repeat the whole year.

State exams: The two state exams covering clinical and paraclinical sciences are comprehensive exams, covering the whole subject area. Where applicable, students also have to pass a practical examination. External examiners may be involved.

5.2.2 Comments and suggestions:

Students complained about too many examinations in the 5th year; a better structured system could help those students who fail with some exams.

The fragmented way some semestral examinations are taken decreases the load students' have to prepare for an exam. However, at the same time this system prevents them to see the subject as a whole in a coherent way.

The comprehensive nature of the state exam is in contradiction with the fragmented semestral examination system but may be viewed at as a compensatory mechanism, at least in clinical and paraclinical sciences.

Yet there was no feedback to the team on that issue.

6 PHYSICAL FACILITIES and EQUIPMENT

6.1 General:

Except for the facilities where animals are hospitalized, all facilities of the FVM are interconnected, spreading across 6 building complexes and 5 floors. Interconnection in general is by spacious hallways, allowing students easy and "dry" access to all lecture halls, laboratories etc..

There is ample space at each department and there is a sufficient number of lecture halls seating a whole class for frontal teaching (max, 160 students), seminar rooms and laboratories for group teaching (10 – 20 students).

There are plenty of offices for senior and junior academic staff and sufficient laboratory space for research. Each department has its own library with access for students.

The facilities are in use since 1974 and generally show wear and tear with the inherent danger that functionality might be lost on the long run; already now elevators seem to work by chance only.

6.2 Basic subjects and sciences, Clinical science departments

6.2.1 Findings:

Apart from the teaching laboratories each department comprises several “research-laboratories” with access to students on an individual basis.

All rooms are well furnished and kept properly. However, apart from the teaching microscopes many instruments and apparatus used for teaching and research must be considered outdated, sometimes even presenting a safety hazard. Thus students were observed pipetteing without the necessary protective measures.

There is no molecular biology laboratory.

Though laboratory animals are used in classes, the team was not shown any facility where these animals could be held in a proper way.

In some places safety and hygienic standards were not what they should be. Thus disposable towels, fire protection equipment and for example “eye-washers” were missing.

6.2.2 Comments and suggestions:

In order to prevent further deterioration of the facilities the university respectively the government should make funds available for the necessary renovations; this statement accounts for the whole FVM-facilities.

In order to cope with the problem of modern laboratory equipment the faculty should establish a **central molecular biology platform**, open to all the units that need it for research or for diagnostics, e.g. in microbiology, immunology, parasitology, food hygiene, pathology etc. (see also 4.2.2).

Similarly the faculty should establish a **central animal experimentation platform** open to all units that need it.

This could be done consecutively according to the need of arising research projects (see chapter 12). Independently of this and where necessary, all equipment used for teaching purposes should be updated as soon as possible.

It is strongly suggested to immediately improve the safety (e.g. pipetting) and hygienic standards.

Until the issue of student safety has been resolved a **Category 1 deficiency** exists.

6.3 Clinical facilities:

6.3.1 General:

The Animal Teaching Hospital on one side of the road and the interconnected clinical facilities for treating large and small animals form one functional union which is divided by a public road. The level of the road is distinctly lower than the entrance level to part of the teaching hospital and the clinical “treatment” facilities, requesting the construction of narrow ramps and ways to move animals between the teaching hospital and the treatment facilities.

It must be considered as extremely dangerous, for both man and animals, when leading untrained (i.e. non propedeutical) large animals or large animals not experienced to human handling (i.e. suckler cows) these ways.

It is strongly recommended to restructure this setting.

6.3.2 Teaching animal hospital, facilities non infectious diseases:

6.3.2.1 Findings:

6.3.2.1.1 Food producing animal facilities:

The facilities available are separated by a staircase with the upper level also having access from the rear. The facilities are used for storage (i.e. straw) and offer space to house a limited but in respect to the caseload adequate number of large and small ruminants. There are two examination rooms for cattle. The fact, that poultry and pheasants were kept in some calf facilities under inappropriate conditions further shows that there seems to be no lack in space to house patients.

The state of the facilities rather resembled that of a run down farm than a university animal hospital. The maintenance of adequate hygienic conditions and a proper disinfection in case of the outbreak of a zoonotic disease, e.g. salmonellosis, seems impossible, particularly due to the erosion of the floor in some parts of the building.

No proper equipment for disinfection could be shown.

6.3.2.1.2 Equine facilities:

There are enough (6) boxes for horses with some reserve places, easily allowing the clinic to increase the patient load. The boxes were according to recent requirements and well maintained. The two examination rooms were simple but clean, no obstacles to maintain proper hygienic conditions were observed.

Again, no proper equipment for disinfection could be detected.

6.3.2.1.3 Companion animal facilities:

The facilities are located on the upper level. They have been recently established and meet most modern standard. They comprise an examination room and boxes for

dogs, in a separate room cats could be kept. The exit to the rear is still under construction.

6.3.2.2 Comments:

See 6.3.4.2.

6.3.3 Teaching animal hospital; facilities infectious diseases:

6.3.3.1 Findings:

The unit is run by the department of Veterinary Microbiology, Infectious and Parasitic Diseases. It is located on the upper level and in respect to “infectious disease cases” comprises an examination room and isolation facilities. The isolation facilities, however, are nothing else but abandoned stalls for pigs and cattle. Any dog to be isolated would have to be kept in a box for pigs which must be considered as absolutely inadequate. The facilities for cattle and horses are represented by an open hall with old installations for cattle and no separation, a situation also to be considered absolutely inadequate. Sufficient disinfection seems impossible, a situation imposing a serious risk to animals, staff and students.

In a separate room some chicken for teaching purposes were held. It is hard to understand why teaching facilities are placed in an isolation unit unless the unit is not in use.

Though there was a high-pressure liquid disinfection apparatus, the conditions of the animal facilities would not allow adequate disinfection.

The facilities for parasitic diseases comprise an office and examination room. There are no facilities to house diseased small animals but there are two rooms with old cages for experimental animals.

6.3.3.2 Comment:

See 6.3.4.2.

6.3.4 Facilities of unknown belonging:

6.3.4.1 Findings:

The facilities visited on the upper level between the food animal and the parasitology facility consisted of a room housing dogs (2 of them chained) in old pigs-boxes under unacceptable conditions. In another room pigs were found housed under almost similarly unacceptable conditions.

6.3.4.2 Comments:

Apart from the equine section and the new, non infectious diseases, dog facilities, with the rear exit still to be finished, the animal facilities of the Animal Teaching Hospital are in a barely or non acceptable condition, not meeting animal health and welfare standards.

6.3.4.3 Suggestions:

Facilities used for housing experimental and propedeutical animals and patients must immediately be updated to meet European level requirements; if this is not possible they must be closed.

In this relation all precautions must be taken to establish adequate hygienic and safety standards.

Until adequate facilities for hospitalization of all patients and propedeutical and experimental animals have been provided there is the suggestion of a **Category 1 deficiency**.

6.3.5 Clinical examination/treatment facilities:

6.3.5.1 Farm Animal Clinic:

Patients presented to the Farm Animal Clinic are small and large ruminants, there are virtually no pigs. All animal records and data are documented in properly managed "patient-recording-books".

There is ample space to examine and treat animals in the presence of students (group size up to around 10) and the facilities and equipment available meet basic standards. In addition there are several lecture rooms for up to around 20 students where animals (patients) can be presented.

The drugs used by the unit are spread for "immediate use" in various cabinets across the facility. There is a central stock room for drugs giving the impression that record-keeping is not a main issue, particularly as some of the drugs looked at were out-dated.

6.3.5.2 Small animal clinic:

The labelling of the rooms is very good for an easy orientation of the students and patient owners.

Patients are received and registered (patient specific number) on paper and computer by a veterinarian at the registration desk; there is an intra-clinic net, allowing access to the patient's record at any place where a computer is available. Medical records are kept carefully, manually and electronically. Unfortunately these records are not made available to the students.

As the present system of hands-on clinical training barely allows a student to follow a patient through from the anamnestic evaluation, decision and strategy of treatment, treatment and - in case of hospitalization – until release, it might be of great value to allow students access to the patient records to prepare a medical report, taking into account general and specific medical literature. Drawing up such a medical report would also effectively contribute to professional training, a fact very important for a referral practice.

Following registration the patient is channelled according to the veterinarian's first opinion within the clinic to either internal medicine, surgery or obstetrics and gynaecology. Students are not involved in this first decision. The following examination involves students; it is general and specific, also taking into account the opinion of a colleague of the Department of Veterinary Microbiology, Infectious and Parasitic Diseases in case there is the suspicion of an infectious/parasitic disease.

This separation of responsibilities between the clinic and the department leads to certain difficulties and is disadvantageous for the handling of the patients; thus the departmental colleagues are not instantly available and in case inpatient treatment is considered necessary, patients with parasitic and infectious diseases can not be hospitalized (see 6.2.3) and students might lose track of the patient.

The examination rooms and operation theatres are of sufficient size, allowing for students to take part at primary examinations and surgical procedures.

There is an adequate admission procedure prior to entering the aseptic surgery room with a separation for staff and students but not for men and women. The necessary equipment seems to be available, however, there is no evacuate or drain off appliance for narcotic gases.

At the time of the visit students engaged in the septic surgical room were not provided with proper protection clothes.

Entrance to the surgery room assigned for reproductive surgery was directly from the hall, there were no possibilities to wash and change, it was also not clear where preparation of the patient for surgery would take place.

There were 2 stations for sterilization; paper wrapped packages placed anywhere in the clinic were classified as containing sterilized instruments. However, as there was an open autoclave with wrapped packages and nobody of the people asked knowing whether or not they had already been sterilized, the system in use bears some risks.

Concerning the examination rooms it was striking to note the extremely well equipped dental clinic with, however, only few patients treated in ortho- and endodontics. Perhaps it might have been more useful – as we found out during the very short time of the visit – to better equip the clinic with examination equipment for patients in need for careful eye treatment. The only instruments available were a direct ophthalmoscope and a Schiötz tonometer. A slit lamp as well as an indirect ophthalmoscope with a separate viewer reflector, linked with video equipment, today must be considered as state of the art for student training in ophthalmology.

Also the equipment seen in the ultrasound (US) – examination room must be considered as “below basics”. Student training and applied diagnostics should be on instruments allowing for various setting and probes, having Doppler function, among

others for cardiological examinations, and being linked to a proper data recording system.

Drugs for immediate use are available in cabinets across the clinic and generally very well marked. There is a central and well maintained stock room with narcotics/opiates kept locked separately under the immediate control of the director of the clinic.

The X-ray station located in the Small Animal Clinic also serves horses. X-ray pictures are taken the conventional way (no digital imaging) and instruments like CT or MRI are not available. The station provides all necessary protection equipment for staff and students.

6.3.5.3 Equine clinic:

Precise data recording is on paper, allowing retrieval of patient histories. The clinic has its own stock of drugs.

The equine clinic has a separate septic and a-septic room, both room equipped with a surgery table, winch and padded recovery box.

One entrance, the "Equine Clinic", is leading into the septic room where a horse can be examined and treated in septic conditions. A well-padded box is available in this room for induction and recovery of anesthesia. There are also ample desks for students to attend procedures and demonstrations in this room. Adjacent to this room there is a well-equipped farriery room showing no traces of being used. Next to this room there is a practical room for students with special tables to practice hoof care and hoof diseases.

A separate entrance, the "Equine Surgery", leads into the equine aseptic surgery area. Horses are led into a padded box for induction of anesthesia and preparation of surgery. A winch will transport the horse into the aseptic surgery room. There is a well padded surgery table, an anesthetic machine and surgery lights available to perform aseptic surgery. The changing area for surgeons and students into this room is shared with the small animal aseptic surgery rooms. After recovery the horse is walked to the other side of the road where the stables are located.

6.3.5.4 Comments and suggestions:

The loading bay has to be reconstructed to assure safe access to the equine and farm animal clinic, even with very sick and uncooperative patients. The lack of stables in close proximity to the surgery rooms put serious stress on operated animals and should be addressed.

Though in immediate proximity, the clinical units do not run a common pharmacy. Each unit controls its own stock with the opiates/narcotics being handled by the Small Animal Clinic with personal responsibility of the clinical director. FVM might consider to establish a common clinical pharmacy, also as the running of a pharmacy should be part of veterinary education.

No comments on the adequacy of the farriery room can be made, as the facility has not been in use yet; hopefully, a qualified blacksmith is available.

The working processes established in all clinical units look reliable and sufficient with, however, some improvements being possible, e.g. the sterilization process and access to and managing in the reproduction surgery room. Also safety (anesthetic gases) and hygiene (septic surgery small animals) should be improved.

There was not enough time to check in detail on all instruments available in the 3 clinical units. Yet without any doubt additional and better instruments allowing state of the art diagnostics are necessary. This in particular applies for ophthalmology and ultrasound examinations. While teaching diagnostic imaging by not having access to practical training on CT and MRI instruments seems acceptable, it is not acceptable to not introduce students to state of the art routine diagnostics in ultrasound (US) and ophthalmology,

Until this situation has changed there is the suggestion of a **Category 1 deficiency** (see also 4.3.3).

6.4 Food hygiene/Public health:

6.4.1 Findings:

The premises for teaching food hygiene/public health are generally in a good state except for one teaching laboratory where the floor is in a very bad condition, not allowing the maintenance of the required and necessary hygiene.

The FVM does not have an own slaughterhouse but there is access to excellent commercial slaughterhouse/meat production and dairy units.

Similarly the FVM has not an own “production unit” for processing meat and all training is carried out in external processing enterprises

6.4.2 Comments and suggestions

As there is good access to excellent extramural training, for the time being no FVM owned facilities seem to be necessary. However, on the long run FVM should consider to establish its own processing unit for both, meat and milk products.

The floor in one teaching laboratory must be replaced by a new jointless covering to meet laboratory safety standards.

Until the laboratory floor has been fixed there is the suggestion of a **Category 2 deficiency**.

7. ANIMALS and TEACHING MATERIALS of ANIMAL ORIGIN

Many aspects on animals and teaching material of animal origin have already been dealt with in chapter 4 and reference is made to the conclusions and suggestions presented there. Purpose of this chapter is to summarize the findings made.

7.1 Findings

For hands on clinical training and pathology (necropsies) the availability of the respective material is characterized by the ratios R11 to R20.

The following ratios could be deduced from the information provided:

No	Direction	Type	Fraction	Denominator	
				FVM	ECOVE
R 11:	LL	no. of students <u>graduating annually</u> no. of food-producing animals seen at the Faculty	$\frac{140}{95.3}$	0,68	3.084
R 12:	LL	no. of students <u>graduating annually</u> no. of individual food-animal consultations outside the Faculty	$\frac{140}{1166}$	8.33	13.416
R 13:	LL	no. of students <u>graduating annually</u> number of herd health visits	$\frac{140}{0}$	0	0.344
R 14:	LL	no. of students <u>graduating annually</u> no. of equine cases	$\frac{140}{39}$	0.28	2.529
R 15:	LL	no. of students <u>graduating annually</u> no. of poultry/rabbit cases	$\frac{140}{46}$	0.328	0.640
R 16:	LL	no. of students <u>graduating annually</u> no. of companion animals seen at Faculty	$\frac{140}{1244}$	8.886	56.619
R 17:	LL	no. of students <u>graduating annually</u> Poultry (flocks)/rabbits (production units); seen	$\frac{140}{2}$	0.014	0.110
R 18:	LL	no. of students <u>graduating annually</u> no. necropsies food producing animals + equines	$\frac{140}{78}$	0.56	0.823

No	Direction	Type	Fraction	Denominator	
				FVM	ECOVE
R 19:	LL	no. of students graduating annually	$\frac{140}{232}$	1.66	0.370
		no. necropsies poultry/rabbits			
R 20:	LL	no. of students graduating annually	$\frac{140}{84.3}$	0.60	1.588
		no. necropsies companion animals			

LL= lower level

It also must be repeated that the number of companion animals used for anatomical dissections should be increased (see chapter 4.2.2).

In Food hygiene/Public health all training on animal carcasses is done extramurally in two slaughterhouses;

7.2 Comments and Suggestions:

For Anatomy see chapter 4.2.2. In respect to food hygiene there is no lack of material but of time to give students a better opportunity to get familiar with meat inspection.

From the above given ratios it is obvious that - except for R19 - none of the ratios established so far by the ECOVE are met by the FVM.

Clearly the patient load must be increased in all aspects and the respective comments and suggestions have been made in chapter 4. Hopefully this would also help to increase the load of necropsies, particularly in companion animals. There the denominator established is distinctly below the lower limit established by ECOVE.

As long as this denominator (necropsies companion animals) is not improved there is the suggestion of a **Category 2 deficiency**.

8 LIBRARY and EDUCATIONAL RESOURCES

8.1 Findings:

The central library is located in the premises of the Trakia University close to the students' accommodations. It is a small and congested unit shared by undergraduate and post-graduate students of the Faculties of Veterinary Medicine, Agriculture and Economics. The safety standards of the whole building seem to be in a bad state.

The 40 working places are believed to be insufficient to accommodate a satisfactory number of students and do not provide an adequate atmosphere for studying. Unfortunately construction works for a new library has stopped for long.

There is a lack of reference textbooks on the main fields of veterinary education. Students are allowed to borrow the instructors' textbooks and some other resources for an indefinite period of time. Students studying at the library were seen using out-of-date textbooks, some of them in very poor conditions. Print versions of several of the most relevant veterinary journals (including Am J Vet Res, Eq Vet J, Vet Rec, JAVMA, Vet J, J An Sc, J Small Anim Pract and Vet Path) are available.

The index system used by the staff poses some concerns to the efficient tracking of the existing volumes. Paper files are used extensively and students do not have autonomous access to the majority of the resources.

The open hours of the library are considered to be satisfactory.

There is an exchange program with other libraries, including the Medical Faculty Library, that enables students to have unlimited access to those resources.

The library offers a comprehensive scientific electronic database that is freely available *via* wireless within the perimeter of the campus. The internet connection, however, proved to be slow and unreliable. The same holds true for the four available PC stations within the library. We have also reasons to believe that the average student has very little acquaintance to the methods of electronic scientific search.

Each department possesses an independent library, where the most relevant literature on the respective discipline can be found. Students are allowed to make use of these resources for *in loco* consultation, but the location of some of these libraries in the office of a professors might constitute an obstacle to the access of students. Books were seen to have no identifying labels.

8.2 Comments and Suggestions

The library conditions must definitely be improved in respect to safety and to safeguard adequate working conditions for students; this includes the provision of enough and adequate working places, e.g. for self learning, and good and reliable computer access.

Along this line access of students to books and other literature must be improved; thus the cataloging system should allow students to search for the existing volumes independently of the library staff. Certainly an electronic, computer based system would help.

The number of up-to-date textbooks available for borrowing, especially in English, should be dramatically increased.

Library staff should be allowed to enroll in continuous education to get familiar with modern library management systems.

The availability of the department libraries to the students should be clarified

9 ADMISSION and ENROLMENT

9.1 Findings:

There is a strict *numerus clausus* and the present number of 160 students to be admitted each year is set by the FVM and the Ministry of Education and Science. There seems to be the basic possibility that the ministry sets the number of students to be admitted according to the estimated need of veterinarians in Bulgaria.

Admission is by selection, criteria are the grades of the high school (Gymnasium) diploma in certain subjects and the score obtained in a university based test.

There are no tuition fees.

Students, in particular when there are problems with examinations, may or must take a leave of absence, This is reflected in the number of students, which was given with 153 in year1, 126 in year 4 and again 143 in year 6. As it is very difficult to finally dismiss students from the veterinary curriculum, the number of students not graduating after all is less than 15%.

9.2 Comments and suggestions:

Admission is by an established system of selection and the number of students not graduating is less than 15%. As the system seems to work well and as there were no complaints by the students, there are no further comments.

10. ACADEMIC and SUPPORT STAFF

10.1 Findings

The academic staff consist of full (n=17), associate (n=36) and assistant (n=55) professors.

The respective ratios are as follows:

No	Direction	Type	Fraction	Denominator	
				FVM	ECOVE
R 1:	UL	no. total academic FTE in <u>veterinary training</u> no. undergraduate veterinary students	$\frac{116,25}{879^1}$	7.56	8.713
R 3:	UL	no. total VS FTE in <u>veterinary training</u> no. undergraduate veterinary students	$\frac{103}{879}$	8.53	10.400

No	Direction	Type	Fraction	Denominator	
				FVM	ECOVE
R 4:	UL	no. total VS FTE in veterinary training ³⁾ no. students graduating annually	$\frac{103}{140^2}$	1.36	2.597 ¹
R 5:	Ra	no. total FTE academic staff in veterinary training no. total FTE support staff in veterinary training ³⁾	$\frac{116.25}{223.25}$	1.92	0.631- 2.268

UL = lower level, Ra = range

¹⁾ see SER Tab 9.3

²⁾ see SER Tab 9.4

All three ratios are well below the denominators delineated by ECOVE; also R4 is well within the range established so far.

The progression from an assistant professor to an associate/full professor is usually within the faculty as there is virtually no hiring from other places. This career requires the “Habilitation” which can only be obtained after a 10 year teaching experience and after having obtained the degree of a PhD; another criterion is the impact factor resulting from the papers published.

Even for the Bulgarian situation the entrance salaries of an assistant professor must be considered very low.

When asked why the academic career has been pursued one answer was interest in science and academia, another one related to the fact that there are only few “real” job opportunities for newly graduates as each graduate has to do supervised work for three years in a veterinary practice. In the SER it is pointed out that social security and the regular payments would be motivating.

Assistant professors complained about their high teaching load and the in general little support they are getting to perform research.

10.2 Comments and suggestions:

From a strictly mathematical point of view there are no queries concerning the teaching capacity and the availability of non academic staff.

However, as the team sees a strong correlation between the further development of the FVM and the quality of the newly hired academic staff, more attention should be given to the recruitment and promotion of the junior staff. Thus the faculty should consider to recruit academic staff from other places, the teaching load of the assistant professors might be reduced to give them more time for research. There the interdisciplinarity and the cooperation with outside research groups should be supported; this also accounts for the acquaintance of additional clinical and diagnostic skills.

11 CONTINUING EDUCATION

11.1 Findings:

The FVM provides continuing education in close cooperation with the National Veterinary Service and the professional organizations of veterinary surgeons in Bulgaria. There is also a link to the Postgraduate Study Service of the university.

The types of continuing education offered are short-time group specialization courses organized and performed by the FVM with so far 197 participants in 2009.

Other courses are run in cooperation with the organization of veterinary surgeons of Bulgaria with 838 participants since 2006.

11.2 Comments and suggestions:

none

12 POSTGRADUATE EDUCATION

12.1 Findings:

12.1.1 Professional track:

Up to now in Bulgaria the veterinary profession has not developed a program to specialize in a certain field of veterinary services (e.g. ophthalmology, small animal medicine etc.) following graduation to a veterinary surgeon and to become an accredited specialist as is the case in most other European countries.

Consequently the FVM is not engaged in such a program; the postgraduate education offered for veterinary surgeons relates to continuing education (see chapter 11)

Among the staff of the FVM there are no diplomats of a European College of Veterinary Specialization. Consequently the FVM can not offer a faculty-controlled training with interns and residents participating. The team noticed that no attempts have been made by the FVM to change this situation, e.g. by hiring diplomats or to send qualified postgraduates to respective training programs in other European establishments.

12.1.2 Academic track:

As the team was informed, the role assigned to the young academic staff (assistant professors) is mainly to get trained in teaching and familiar with the subjects taught under the supervision of the respective associate or full professor. Assistant professors must participate in a pedagogical training, they are offered special English courses. For administrative reasons they are not entitled to submit a research project on their own and consequently their involvement in research is on a low profile until they might have reached the position of an associate professor.

There is the basic possibility to enrol students immediately after graduation as “doctorate students”. However, as there are only few stipends available the number is low. At the time of the visit 2 students were enrolled.

Other than described by the FVM, these doctorate students can not be considered PhD students as there is no underlying course program, allowing the accumulation of credit points.

12.2 Comments and suggestions:

It is not the fault of the FVM that there is no national specialization program. However, by having a strong voice within the veterinary profession the FVM should support the development of such a program.

Again the team acknowledges the great difficulties associated with the establishment of a European Diplomate training program. However, sooner or later the FVM will need the support of diplomats in its training program. It is therefore encouraged to enter one or both of the suggested routes to solve this problem (see above).

The FVM should change its policy and allow and support young assistant professors to initiate/participate in high quality research projects, leading to the academic title of a Doctor or PhD. In addition, the number of stipends should be increased allowing graduates immediate access to research.

Main emphasis should be to get young people involved in research, by whatever way, to make use of their creativity and to develop a good international standing by publishing in high quality international journals.

According to international rules, the title of a PhD can only be granted if it is based on a specific program to be accomplished during the course of 3 years. The FVM has not yet developed such a program and is encouraged to do so.

13 RESEARCH

13.1 Findings:

The faculty has a lot of laboratories the equipment of it can not be considered state of the art. Since this is certainly a cost intensive matter, the question arises whether centralization would make sense.

13.2 Comments:

Despite a few single publications, all publications took place in national journals. We were provided with publication lists of all departments from 2004 to 2009.

13.3 Suggestions:

The scientific staff has to show the students the importance of research so that more graduates start an academic career. Not only the FVM but the whole veterinary profession in Bulgaria need more academic offspring. It is one of the most important tasks of each professor to encourage young scientists. Students would have to be motivated to dive into research by getting the opportunity to contribute to research projects.

The co-ordination of research between the various departments should be improved towards getting greater efficiency. The research strategy within the FVM should be optimized. A co-operation with research departments/faculties abroad together with a corresponding exchange of qualified domestic scientists would certainly bring the faculty ahead.

Publications of research results in international peer reviewed journals would have to be enforced, which might be a criterion for choosing the appropriate scientist suitable for international exchange.

EXECUTIVE SUMMARY

1 Objectives

The objectives are clearly defined (education of highly qualified veterinarians, to become a national centre for the development of science in the field of veterinary medicine)

2 Organization

The FVM is embedded into the structure of a university. Decision making organs are the Academic Council and the rector on the university level and the Faculty Council and the dean on the faculty level.

The FVM is structured in 9 departments and 5 (*de facto* 3) separate clinical units which only deal with non infectious patients. Patients with suspected infectious or parasitic diseases are dealt with by the Dept. of Veterinary Microbiology, Infectious and Parasitic Diseases.

As this separation of responsibilities was found to be a disadvantage for student education and patient care, a restructuring is suggested.

3 Finances

Financial support of the FVM is through the university and clearly not sufficient. In order to get some improvement it is suggested to set the “accounting factor” of a student in veterinary medicine equal to that in human medicine and to provide the FVM with a much larger percentage of the funds given to the University for Veterinary Training by the respective ministry.

4 Curriculum

4.1 General aspects:

The curriculum is governed by a national legislation meeting the basic requirements of Directive 2005/36/EU. Yet implementation of the curriculum raises questions, in particular how the development of basic scientific comprehensiveness is achieved.

It is therefore suggested to put more emphasis on science orientated education.

4.2 Basic subjects and sciences:

The proportion of theoretical and practical teaching is appropriate and it is a strong point of the FVM that teaching by at large is by veterinarians.

However, there seems to be no adequate training in molecular biology and the FVM is strongly urged to change this situation.

As the teaching success also depends on the equipment/material available, better equipment for some laboratory classes seems urgently necessary, for anatomical dissections more companion animal carcasses should be available.

Until this (more companion animal carcasses for anatomical dissections) has been achieved there is the suggestion of a **Category 2 deficiency**.

4.3 Animal production:

Subjects like animal production bridge basic and applied sciences. Therefore the different disciplines encompassing "Animal Production" should be re-structured in an integrated way in order to sharpen the profile of the subject; non food producing animals must be considered where relevant. FVM might consider to return some of the hours removed in 2001.

4.4 Clinical sciences:

Following propedeutical instructions in year 3, hands on clinical teaching is in year 5. There a shortcoming in respect to a comprehensive, evidence based clinical teaching resulting from the very strictly separated responsibilities for infectious and non infectious patients. Some reorganization is strongly suggested, particularly to secure teaching on infectious/parasitic patients (see also 2).

Teaching on non infected patients/animals is based on a group rotation system.

Teaching on companion animals is on patients presented at the Small Animal Clinic. However, due the relative small number of patients received per year (with 8.886 the denominator is well below 56.62 as established by ECOVE), the training just meets the level "acceptable". The unit must try to become more attractive, also by providing modern equipment for diagnostics and treatment.

Teaching on food animals is predominantly farm based, leaving some doubts concerning the "spectrum" encountered. Thus ruminants and gynecological disorders seem to form the majority of cases, pigs are virtually not seen. The number of equine patients must be considered unacceptably low. To improve this situation FVM should increase the number of faculty owned animals and intensify the cooperation with farmers.

Teaching on herd health management is on a very low profile. It must become more comprehensive and visible, for example by assigning the full responsibility for teaching of this subject to the Director of the Farm Animal Clinic.

As long as the total patient load, in particular in respect to pig and horse patient material, is not increased, this is a **Category 1 deficiency**.

Minimum requirements in respect to modern diagnostics and hence teaching approaches (e.g. ultrasound, equipment for ophthalmology) must be met; until this has been achieved this is a **Category 1 deficiency**.

Teaching on herd health management must be improved; until this has been achieved this is a **Category 2 deficiency**.

4.5 Food hygiene and technology and veterinary public health:

There is a good balance between theoretical and practical teaching. The latter one is predominantly on extramural facilities (slaughterhouses, meat processing units, dairy plants) with the training being largely by observation only. It is therefore suggested to either assign more time to the visits to allow for more “hands-on work” or to introduce a faculty controlled extramural training in Food hygiene.

Teaching of Food hygiene and VPH should be reviewed in a collective effort, also considering aspects of animal production, pathology, pharmacology, toxicology and e.g. of parasitology.

Modern safety concepts are apparently not well understood by students. It is therefore strongly recommended to put more emphasis on the international concepts regarding HACCP, GFP and GMP.

4.6 Electives, optional disciplines and other subjects:

The FVM offers a good selection of electives in all areas but Food hygiene/VPH. Each student must select one elective per semester to obtain a total of 150 hrs.

It is strongly recommended to amend the list by also offering electives in the area of Food hygiene/VPH.

5 Teaching quality and evaluation

5.1 Teaching methodology:

Teaching is by common standards. There is little emphasis on the establishment of E-learning, a way the FVM is encouraged to go. The high number of text books written by staff members has to be appreciated, however, the necessary updates should not be forgotten.

It must be considered a great achievement that newly employed assistant professors have to pass a 1-month pedagogical training. Their participation in a 6 month English language course offered by the university should be encouraged and not hindered.

Evaluation of assistant and associate/full professors by students is in 3 resp. 5 year intervals according to a standardized procedure. Corrective actions are by the Faculty Council, assistant professors may be dismissed in case of 2 consecutive negative evaluations.

5.2 Examinations:

There are semestral exams on all subjects and 2 state exams on clinical and paraclinical sciences. There is the inherent danger, that the in part high fragmentation of the semestral exams prevents the students to see the subject in a coherent way. This is in part compensated by the comprehensive state exams, but not for all subjects taught.

6 Physical facilities and equipment

6.1 General:

All facilities are in close connection and, except for the animal hospital, under one roof. There is no lack of space but the buildings which are in use since 1974 show wear and tear. In order to prevent a further deterioration funds for renovation should be made available.

6.2 Basic subjects and sciences, Clinical science departments:

There is no molecular biology laboratory and in order to cope with the problem of modern laboratory equipment the FVM should establish a central molecular biology platform, open to all units that need it. Likewise a central animal experimentation platform should be established.

In many places student and research laboratories need a better basic equipment, also to secure student safety. Safety and hygienic standards should be improved in some places.

Until the problem of student safety has been achieved this is a **Category 1 deficiency**.

6.3 Clinical facilities:

6.3.1 General:

The underlying design is a problem as the Animal Hospital and the other Clinics are separated by a public road running on a lower level requesting the construction of narrow ramps and way for moving animals. This imposes a high risk to man and animals and the FVM should develop a feasible concept how this situation might be changed.

6.3.2 Teaching Animal Hospital, facilities non infectious diseases:

There is ample space, however, apart from the equine section and the new dog facilities, all facilities of the Teaching Animal Hospital are in a barely or non acceptable condition.

6.3.3 Teaching Animal Hospital, facilities infectious diseases:

There are no facilities to hospitalize parasitic patients, the facilities to hospitalize otherwise infected animals must be considered as absolutely inadequate.

6.3.4 Facilities of unknown belonging:

Some FVM owned dogs and pigs were found to be housed under unacceptable conditions. This also applies for some pheasants and other poultry. These facilities should immediately be closed.

Until adequate facilities for hospitalization of all patients, propedeutical and experimental animals have been provided this is a **Category 1 deficiency**.

6.3.5 Clinical examination/treatment facilities:

They consist of the Farm Animal, Small Animal and Equine Clinic. Each clinic is well organized, however, only the Small Animal Clinic has an electronic patient recording system.

While there is a central clinical laboratory there is no central pharmacy, a situation the FVM might try to change as information on the running of a pharmacy is part of veterinary education.

The working processes established in all clinical units look reliable and sufficient, with, however, some improvements being possible, e.g. the sterilization procedure and access to and managing in the reproductive surgery room. Also safety (anesthetic gases) and hygiene (septic surgery small animals) should be improved.

Clearly some additional and better instruments allowing state of the art diagnostics and teaching are necessary. Thus while teaching diagnostic imaging without access to CT and MRI still seems acceptable, it is not acceptable to not introduce students to up to date ultrasound or ophthalmologic examinations.

Until this situation has not changed this is a **Category 1 deficiency**.

6.4 Food hygiene/Public health:

As there are excellent extramural training facilities the FVM only on the long run might consider to establish an own processing unit for meat and milk.

The premises at the FVM are generally in good state with the exception of one teaching laboratory where the floor needs to be renewed.

Until this laboratory floor has been fixed this is a **Category 2 deficiency**.

7 Animals and teaching material of animal origin

As stated above the number of companion animals for anatomic dissections should be increased (see 4.2).

As already mentioned there is a distinct lack of equine and swine patients/ patient material with a questionmark to put on the type of ruminant patients and the small animal patients being at the lower level of acceptability (see 4.4).

Also the number of companion animals submitted to a necropsy is below the denominator established by ECOVE.

Thus, as long as this denominator (R20) is not improved this is a **Category 2 deficiency**.

8 Library

The library barely meets the demands of the FVM. There are not enough working places, computer access is very much limited and access to the internet is unreliable. Thus the facilities are not very attractive for students, in particular as there is also a lack of reference textbooks on the main field of veterinary education.

The present index system seems not to be very efficient, students do not have an autonomous access to the majority of resources and the change to a fully computerized system is suggested.

However, the comprehensive scientific electronic data base with free access for students and staff is fully sufficient and compensates for some of the other deficiencies.

Students should be encouraged to use the departmental libraries.

9 Admission and enrolment

There is a *numerus clausus* set by the university in consultation with the government, the selection is based on high school (Gymnasium) grades and the passing of a university exam.

10 Academic and support staff

There are no queries concerning the academic and support staff. However, the faculty is encouraged to hire academic staff coming from other – foreign – establishments

and to reduce the teaching load of the junior staff in order to give them more time for research.

11 Continuing education

Continuing education is offered in cooperation with the National Veterinary Service and the organization of veterinary surgeons in Bulgaria.

12 Postgraduate education

Professional track: In Bulgaria professional specialization on the national level is not yet established and hence the FVM is not engaged in such a program. As there are no diplomats of an international (European) college, internship and residency training can not be offered.

Academic track: The FVM can grant the title of a “Doctor” following submission of a thesis and after having fulfilled the other requirements. There are only few students engaged in such a work immediately after graduation. This *de facto* is not a PhD program as indicated in the SER as there is no specified underlying program.

It is strongly suggested to support early doctorate/PhD work

13 Research

The faculty is heavily engaged in research but more on a national than international level. In part the missing equipment, e.g. in molecular biology, hampers to develop a certain project.

More “seeding” money should be provided and international collaboration sought to become successful in grant acquisition and to increase the visibility.

ECOVE-Decision: NON-APPROVAL with the following confirmed cat. 1 deficiencies:

1. Insufficient case load in pig and horse patients (working together with practitioners will help to rectify this deficiency)
2. Hygienic conditions and student security
3. Animal welfare – inadequate housing of animals, also experimental animals (you are responsible for animal/public health in your country!)
4. Requirements with respect to basic equipment are not met, since for adequate training you need adequate equipment (ultrasound, equipment for ophthalmology)