Guiding notes on the European Association of Establishments for Veterinary Education

European System of Evaluation of Veterinary Training

REPORT ON THE VISIT TO THE FACULTY OF VETERINARY MEDICINE OF FREIE UNIERSITÄT BERLIN

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INTRODUCTION

After the German reunification in 1990 the Faculty of Veterinary Medicine at the Humboldt University, dating back until 1790, and the Faculty of Veterinary Medicine at the Freie Universität Berlin, founded in 1951, were merged by law in 1992 under the management of the Freie Universität Berlin. The “Fusionsgesetz” allowed for a transition period of five years during which the number of employees (teaching and non teaching staff) was reduced by about 50%. This was followed by the 1996 Act on the Structure of the Berlin State Budget which led to another reduction in the number of staff, resulting in the current situation. Due to the reduction in personnel and hence reduction of the teaching capacity, enrolment capacity of the faculty was decreased from 200 to 150 students.
The faculty was first evaluated in 1997 and put on the EAEVE list of positively evaluated establishments. The present evaluation is due to the EAEVE regulations as 10 years have elapsed since.

1 OBJECTIVES & STRATEGY

1.1 Findings

The establishment has formulated a clear mission statement to offer science based, high quality veterinary education, using modern teaching methods geared towards reaching day one skills when graduating to a veterinary surgeon and enabling life long learning as well as acquisition of communication and management skills.
The statement reads as follows:

- to qualify veterinarians for companion animals as well as for food animals, being able to meet all matters of veterinary medicine based on the principles of Good Veterinary Practice.
- to provide students with appropriate day one competences in order to make them capable to immediately meet the needs of the profession.
- to enable veterinary students for a life long learning.

In order to ensure to meet these objectives, the education program of the faculty

- is based on a scientific background combined with training of basic skills,
- integrates new teaching methods such as E – learning,
- makes efforts to concentrate on interdisciplinary education, which enables students to combine different disciplines.

1.2 Comments

The objectives cover all aspects of education and its supporting structures, with undergraduate training being the most central activity. Research and post graduate education are clearly considered to be highly important too.

1.3 Suggestions

None

2 ORGANISATION

2.1 Findings

The Faculty of Veterinary Medicine is one of 12 faculties of the Freie Universität Berlin. Highest decision making body of the faculty is the faculty council. It consists of 7 members of the group of professors, 2 members of the non professorial academic staff, 2 members of the technical staff and 2 students. The members are elected by their respective groups for a 2 year period. The dean and the vice deans for research and study affairs are elected by the faculty council out of the group of professors for a 2 year period. An obligatory committee to be formed by the faculty council is the study committee which is headed by the vice dean for study affairs. Other committees may be formed on demand, e.g. for the appointment of professors.

The dean reports to the president of the university, he is responsible for the daily business and introduces the necessary proposals on financial and personal matters as well as those of the structural development of faculty; he then executes the decisions of the faculty council.

Concerning the ongoing overall development of the faculty the Presidium
and the Dean's Office determine a list of target agreements in consultation with the professors of the scientific units, covering a 2 year period. Within the faculty similar target agreements are negotiated between the Dean's Office and the heads of the institutes. The negotiation of new target agreements is based on the evaluation on the achievements reached during the past 2 year period.

The faculty consists of 20 institutes, 5 of them being pure clinical institutes, nominated as clinics.

2.2 Comments and suggestions

Though there seems to be a good corporate identity of the faculty, it is not clear how the 20 institutes/clinics are interacting among themselves in terms of infrastructure, teaching, further developmental strategies etc.. It appears that the institutes/clinics have a high degree of autonomy, e.g. in respect to administration and equipment.
In respect to the total size of the faculty this must be considered as an outdated concept. It is suggested to develop a leaner structure leading to the formation of a smaller number of coherent, non clinical and clinical departments, sharing administration, infrastructure etc. This should improve efficiency of teaching and research as well as the opportunity to reallocate funds.
In view of the complexity of managing and developing a veterinary faculty, the 2 year term for a dean and the vice deans seems rather short. A prolongation of at least one more year is suggested and the respective legal background should be developed.

3 FINANCES

3.1 Findings

The city of Berlin is one of the 16 federal states of Germany. Funding of the universities in Berlin is through the senate of the city, represented by the Senator for Education, Science and Research. There is no tuition fee.

From the total budget available to the Senator for Education, Science and Research, about 30% are distributed between the 4 universities on a competitive basis.

There is only a little flexibility but the faculty may benefit from having achieved an academic performance exceeding those of other faculties. In spite of this situation favourable to the faculty, the budget has not increased but rather decreased since 2002 as a result of the financial situation of the city of Berlin.

The revenues from public funding in 2006 were 22,167,000 €. In addition the faculty earns revenues from research (grants), clinical and diagnostic services and continuing education amounting up to a total of 28,192,652 €.

When accounting for salaries, maintenance and smaller investments the total amount for teaching and research to be distributed between the institutes/clinics in 2006 amounted up to about 2,700,000 €. 15% of this amount is allocated according to performance of an institute/clinic, while distribution of the rest is due to historical reasons.

Capital expenditure for new constructions is not a matter of the faculty budget. Also, in case of appointing new professors, the university contributes substantially to likely reconstructions, renovations and investment for equipment going with it.

At the Berlin veterinary faculty the annual direct cost of a student was estimated to be 21,237 €,
The cost per diploma was 131,033 €.

3.2 Comments and suggestions

In general the funding of the faculty seems to meet its most urgent needs and also permits the commencement of research activities, allowing the faculty to acquire extramural funds. However, there is the danger that public funding might further decrease which would bring the faculty in a difficult situation as it will not be able to acquire more income by increasing their clinical and diagnostic services. In addition, the acquisition of grants will become more difficult as the sponsoring agencies, like the DFG, in general require that modern basic equipment and facilities are provided by the university.

The allocation of funds within the faculty is at the disposal of the faculty council and the dean and is based on a historical development rather than a rational and transparent concept. The

faculty knows about this problem and the development of such a new concept is urgently suggested. In particular, the allocation of the clinical income may be reconsidered keeping a higher share in the respective clinics where it was generated.

4. CURRICULUM

4.1 GENERAL ASPECTS

4.1.1 Findings

In Germany undergraduate veterinary education is governed by the "Ordinance concerning the Certification of Veterinary Surgeons and concerning the Amendment of other Regulations relating to Certification Law" on the training of veterinarians (Tierärztliche Approbationsverordnung, TAppV) which until recently was under the responsibility of the Federal Minister of Health and is now under the responsibility of the Federal Minister of Nutrition, Agriculture and Consumer Protection. The TAppV meets the basic requirements laid down in the EEC Directive 2005/36/EC. The TAppV was regularly amended in the past, with the latest amendment coming into effect in 2006. Annex 1 specifies exactly the number of hours assigned to each subject. However, it allows for the shifting of up to 20% of the hours within the total of 3850 hrs.
The TAppV further regulates that 308 hrs out of the 3850 hrs have to be taken as electives by each student, 84 hrs are assigned to preclinical part of the curriculum, the remaining 224 hrs to the clinical part (years 3 – 5).

With implementation of the amended TAppV in 2006 the faculty introduced a new curriculum which is largely based on organ centred teaching in years 3 and 4 and a clinical rotation in year 5. This was accompanied by passing an order of study (Studienordnung) by the faculty council which is already provided to the students

4.1.2 Comments and suggestions

The curriculum offered at the faculty of veterinary medicine meets the requirements of the TAppV and hence of Directive 2005/36/EC.
However, the team is of the opinion that the TAppV needs adjustment to modern teaching strategies and the real needs of veterinary training. Thus a general reduction of the total hours of intramural teaching should be considered, the strict division between a "preclinical" and "clinical" part of the curriculum should be abandoned as it would give the opportunity to better integrate the basic subjects and basic sciences with clinical sciences, animal production and veterinary public health in organ or other focus orientated teaching.
The team highly appreciates the restructuring of the curriculum. It is of the opinion that teaching quality will be improved. However, a final evidence based statement is not possible as no students have yet passed the newly established curriculum.
A re–evaluation in about 5 years might be advisable.
Although a high proportion of graduates is willing to enter the companion animal sector, the faculty makes an effort to keep the balance between the disciplines related to companion animal and food animal medicine, which is facing an increasing shortage of veterinarians.

4.2 BASIC SUBJECTS & SCIENCES

4.2.1 Findings

The students at the veterinary faculty receive an excellent basic science education. All basic science institutes have good facilities for lecturing in small groups and for practical studies, however, the lecture halls where there is face to face teaching for a whole class (year) are generally too small. Teaching is clearly research based since most institutes are engaged in research at an international level.

There is a good balance between theoretical and practical teaching in all courses.

Practical studies in anatomy and pathology are done in small groups allowing adequate individual hands-on experience. Practical experience on cadavers is complemented by plastinated specimens of excellent quality. There is ample space for storing and freezing carcasses as well as equipment for transporting them. Microscopic equipment is new.
Students receive comprehensive documentation for all subjects as printed material and/or electronic information on the web. Many disciplines use e-learning to support studying.

The basic science courses appear to cover all relevant issues at a state of the art level with the purpose to lay the foundation for the later courses. In some disciplines an active connection is made to clinical situations, e.g. in the histology course. Pathology and the infectious disease departments are also strongly involved in the integrated teaching in the organ modules and the interdisciplinary lectures (Querschnittfächer). There are some integrated lectures between zoology, physiology and anatomy.

Concerning basic subjects (physics, chemistry, zoology, botany) proficiency of incoming students is apparently quite variable because the orientation of the gymnasia differs widely, even though there is a single maturity diploma, the Abitur, allowing students free choice of their studies at a university. These subjects are taught by other faculties of the Freie Universität Berlin and are beyond direct control by the faculty.

4.2.2 Comments and suggestions

The basic sciences make extensive use of e-learning which is seen as a tool to complement conventional teaching methods and not as a replacement for face to face teaching. Thus the number of contact hours has not changed.
Some disciplines apply innovative teaching methods. The anatomy department introduced new teaching strategies such as “peer instruction” involving students in teaching their fellow students which is also meant to improve communication skills. Anatomy and pathology use a scan scope, with which histological slides are digitalized and put on the web, where students can examine them from any location.

The number of hours devoted to basic subjects and sciences, particularly physics, chemistry, anatomy, physiology and biochemistry, is relatively high, fully exhausting the number of hours listed in the TAppV. The faculty may consider to make use of the 20% flexibility rule to reduce

this load and reallocate these hours to other subjects.

The scope and quality of chemistry and physics classes seems not to be well geared towards veterinary training as the biochemistry department is forced to offer preparatory basic chemistry classes at the beginning of its course. This situation should be changed, either by improving consultations with the Faculties of Chemistry and Physics concerning the teaching program or - for example - by transferring the responsibility for chemistry teaching to the biochemistry department.

The basic sciences offer also a number of elective courses. These include research oriented courses giving students the opportunity to get exposure to the cutting edge of veterinary science.

Zoology and botany courses are meant to be the connection between Gymnasium and university. Yet it seems exaggerated to devote 140 hrs to these subjects. In view of the variable backgrounds of the freshmen some of this may be needed. However, selection of applicants could also account for this.

4.3 ANIMAL PRODUCTION

4.3.1 Findings

Generally the visibility of the Animal Production is rather low, it is not taught as a block, the various subjects are rather scattered within the curriculum (see Tab.1), making it difficult for the students to develop interest and skills in this particular field of veterinary medicine.
This particularly relates to the subject of animal breeding, which has to be imported from the Faculty of Agriculture and Horticulture at the Humboldt University of Berlin.
Also the practical teaching is relatively low when compared to the clinical and basic disciplines
Another important aspect is the observation that there seems to be no relation or cooperation between the animal production topics (welfare, husbandry, breeding, behaviour, environmental protection) and the Clinic of Farm Animals as during our visit we could see that the students only assisted to clinical cases during the cattle farm visit.
Also the Institute of Animal Nutrition, which has excellent facilities, seems to act rather by itself, rather than in co-operation with the farm animals clinic and the other animal production related subjects.

Germany is the biggest pig producer in Europe; it is hence somewhat astonishing that the bovine and reproduction clinic are provided with remarkably better facilities than the pig clinic. In addition, the fact that students can chose between visiting a cattle or pig farm does no meet the needs. A visit to both types of farms should be obligatory.

Tab. 1: Overview Teaching Animal Production

SUBJECT	LECTURES	PRACTICAL WORK	SUPERVISED WORK	CLINICAL WORK	ELECTIVES	TOTAL	PRACTICALS IN % OF TOTAL
Agronomy and rural economics	28					28	0%
Animal behaviour	28					28	0%
Animal husbandry	42					28	0%
Animal nutrition and feeding	42	56			59	157	36%
Animal breeding	56	28				84	33%
Animal protection and welfare	28		28			56	50%
Environmental protection	14	14	0	0	28	42	33%
TOTAL	210	98	28	0	87	423	**30%**
TOTAL CURRICULUM	1351	1090	98	1613	868	5020	**56%**

4.3.2 Comments and suggestions

There are plenty of resources to provide an excellent education in animal production and the faculty should make use of this opportunity.

To increase the visibility of the subject “Animal Production” communication between the various institutions providing teaching of this subject should be improved. This in particular accounts for animal breeding. There it has to be expected that it most likely would be extremely difficult to implement the necessary coherence as teaching is provided not only by a different faculty but even by a different university having diverging interests.
The animal production part of the curriculum could be strengthened considerably by a closer and more structured cooperation with the agricultural faculty of the Humboldt University, which harbors expertise in disciplines such as animal breeding and husbandry, population genetics, agronomy and agricultural economy. These disciplines would very well complement the expertise in areas such as population medicine and herd health monitoring available in the veterinary faculty. Close proximity of the two faculties would greatly facilitate structured cooperation in teaching, post graduate education and research not only in the area of animal production but also in food technology and food safety, which is commented later in the section on food hygiene in this report.

In order to implement the concept of “from the stable to the table”, i.e. the traceability of animal products, the faculty should try to combine zootechnical (e. g animal welfare,

environmental protection, animal husbandry, animal behaviour) and health aspects in the clinical training of the different farm animals (minimum cattle and pigs), if possible on a farm controlled by its own staff.

4.4 CLINICAL SCIENCES

4.4.1 Findings

The clinics seem to be adequately staffed and are properly maintained meeting modern hygienic standards, thus providing an adequate teaching environment

There is ample room for teaching in small groups and clinical hands on training, however, again the lecture halls in general are too small to accommodate a class comprising a whole year group.

The ratio students/production animals is 1:39, the ratio students/companion animals is 1:181; both figures distinctly exceed the requested minimum value. The number of hospitalised farm animals (cattle: 477, horse: 746, small ruminants: 120, pigs: 231 and other food animals: 800) is highly satisfactory as is the number of hospitalised dogs (1500) and cats (1050) and other pets (1000).

The new curriculum foresees a clinical rotation in the 5th year and according to the schedule developed, the available clinical premises and the patient load, all students should be exposed to an ample and diversified hands on training. The first clinical rotation will come in 2008. With the present curriculum, however, compulsory clinical hands on training is at a barely acceptable low level. Yet this is somewhat compensated by the fact that all clinics are open on a 24 hrs. basis for students to voluntarily get involved in patient treatment and care, beginning from year 1. There would appear to be a substantial number of students making use of this opportunity.

There is a 24-hour emergency service in the small animal, equine and food animal clinic, where the students are involved compulsorily for at least 4 shifts per clinic. Students in the clinical semesters (after year 3) may also volunteer.

The equine and food animal clinics are running a mobile clinic. Students participate in groups up to 4, at least twice per mobile clinic during undergraduate education. They are actively participating in the diagnostics and treatments. The mobile clinical services provided by the Clinic for Ruminants and Pigs is largely based on contracts with different farms around Berlin.

In addition to the mobile clinic, the “clinic” for poultry diseases, the clinic for ruminants and pigs and the animal reproduction clinic run a herd health system. Participation of students is obligatory and the services are provided in cooperation with the local practitioners

The ratio between theoretical to practical training is growing from 1:0.7 in the first year to 1:4.4 in the 3rd year and 1:3.8 in the 4th year which is adequate to the increasing number of practical hours and problem-based teaching in the higher semesters.

With the new curriculum a new form of teaching, also affecting clinical teaching, was

introduced. This particularly refers to the new organ-structured modules where different disciplines are integrated providing a coordinated teaching and learning material; redundancies and overlapping are virtually avoided. The balance between species maintained during undergraduate education seems acceptable. However, in respect to the patient load small animals and horses are prominent.
Intramural clinical training is supplemented by 4 weeks extramural training after the 2nd year and 16 weeks extramural training in the 5th year. The student may enter into any kind of veterinary practice and it is their responsibility to find a location according to their preference. The practice has to meet certain requirements as laid down in the TAppV. Two to eight weeks of the 16 week extramural training may also be completed at a non clinical university/government institute under control of a veterinarian. Attendance and contents of extra mural training are certified.

4.4.2 Comments and suggestions

The clinical facilities and the patient load provide a good basis for a solid undergraduate education in the field of clinical veterinary medicine. Care, however, must be taken that the patient load in the small animal clinic remains within limits in order to allow time for enough teaching by the academic staff, particularly during hands on training

The perspectives that the presently just acceptable hands on clinical training of all undergraduates is part of the past are good as the clinical rotations will be implemented in 2008. The faculty is advised to carefully monitor this development as more teaching capacity might become necessary.

Stronghold of the faculty are the mobile clinics and the herd health systems provided. However, for basic training it might be advisable to have access to a farm under the immediate control of the faculty or of the Freie Universität. This would be beneficial not only for the clinical education but also for the training in animal production and veterinary public health.

Though the clinics are well organized and equally well functioning, the team got the impression that there is room for better cooperation, also in order to stimulate common projects and research. Food animals and small animals are considered equally important and with Germany being the biggest pig producer within the EU this species might deserve some more attention (see also 4.3.2).

According to the weeks allotted, extramural training is an important part of veterinary undergraduate education. However, the faculty has only little control on the training and experience a student gets. Means should be found to improve this situation.

4.5 FOOD HYGIENE & TECHNOLOGY AND VETERINARY PUBLIC HEALTH (VPH)

4.5.1. Findings

For historical reasons, teaching of undergraduate students in the subject of VPH is distributed across the two sites of the faculty, the Campus Mitte (CM) and the Campus Düppel (CDp). In

addition, the laboratories of the Meat Hygiene Institute are located at the Campus Dahlem (CDa).

The meat processing hall for student practical experience in meat hygiene inspection is located at CM. It is finished and equipped to a level equivalent to that of an officially approved food processing establishment.

The VPH syllabus is distributed amongst five different Institutes within the faculty; Teaching of VPH is depicted in table 2.

The Institute of Meat Hygiene deals with the detail of meat production and hygiene controls for that part of the food chain from production on farm through to chilling for cattle, pigs, sheep/goats, horses, poultry, rabbits and farmed game

The Institute of Food Hygiene then takes over, dealing in detail with meat from initial chilling through processing and manufacture. Subjects addressed include food pathogens and intoxications, the physiology of human nutrition, food law, preservation, food analytical methods, packaging, the principles of epidemiology and the practice and applications of controls. Meat technology including the production of minced meat, meat products such as fermented and cooked sausage, eggs and egg products, seafood and seafood products, fats and oils are taught.

This Institute also covers the details of milk production, milk composition, quality, milk products, official controls and chemical and physical analysis.

Tab. 2: Teaching of Veterinary Public Health

SUBJECT	YEAR	LECTURES	PRACTICAL WORK	SUPERVISED WORK	TOTAL
Meat Science	3	14			**14**
	4	42	42		**70**
Food Science	3	14			**14**
	4	28	56		**70**
Milk Science	3	28			**28**
	4		14		**14**
Interdisciplinary Food Hygiene	4			42*	**42**
State control of Epizootics	4	42			**42**
Animal husbandry and Hygiene	3	56			**56**
Epidemiology	3	14			**14**
Institute of Animal Welfare and Behaviour	1	10 (28)			10
TOTAL		**234**	**98**	**42**	**374**

** Although listed as 'supervised work' this is taught to a full year group and in some cases involves several lecturers from across the faculty and external speakers.*

The Institute of Animal and Environmental Hygiene deals with core VPH issues in a series of 56 lectures covering, for example, hygiene of feed, water, treatment of waste, disposal of dead animals, animal transport, environmental production, disinfection and the impact of animal production on the environment.

The Institute for Microbiology and Epizootic disease teaches the microbiology syllabus and in addition delivers 42 lectures on the state control of epizootic disease. This institute also delivers 14 lectures on epidemiology during the third year.

The Institute of Animal Welfare and Behaviour teaches a series of 28 lectures to the first year students on animal welfare issues. Approximately 10 of these are directly relevant to Veterinary Public Health with some involvement of the Meat Hygiene Institute in the lectures on slaughter without stunning.

The interdisciplinary food hygiene lectures are a series of presentations with the objective of demonstrating how the principles of public health can be applied across the food chain. Lectures are delivered to the entire year group but an effort is made to engage with the students by utilising multiple lecturers and external speakers.

The only opportunity teaching of VPH in small groups comes in the practicals where group size may be reduced to, for example, 10-12 students in meat hygiene for teaching of classical inspection methodology. Good use is made of the processing hall at CM and these practicals are well organised and staffed. Practical sessions are also offered in food hygiene and milk science but not by the other Institutes involved, outside the elective programme.

These and other electives offered in VPH, which the students may choose to follow, are listed in the following table (table 3).

Tab. 3: Electives provided in Veterinary Public Health

COURSE	NO OF STUDENTS	NO. OF HOURS	SEMESTER
Institute of Meat Hygiene and Technology			
Case studies in meat hygiene	50	14	8
Composing a scientific paper (in the field of meat hygiene)	50	14	5, 7, 9
Institute of Food Hygiene			
Technology and quality management of food	30	14	6
Risk analysis	30	7	8
Institute of Animal and Environmental Hygiene			
Environmental impacts of animal production	60	14	5, 7
Animal and environmental hygiene – practical training and demonstrations	6	14	5, 7, 9
Institute of Microbiology and Epizootics			
Interactive control of epizootics	30	16	5, 7, 9
E.coli – the best researched bacterial pathogen	30	14	7
Vaccine strategies in veterinary medicine	30	14	6

Having received the practical training in meat hygiene control, described briefly above, and passed a test, the students consolidate their training with a period of practical experience in commercial slaughter establishments, laboratories and offices of the competent authority where veterinarians carry out VPH controls (see table 4).

Tab. 4: Obligatory extramural work that students must undertake as part of their course in Veterinary Public Health

NATURE OF WORK	MINIMUM PERIOD	YEAR OF THE COURSE IN WHICH WORK IS CARRIED OUT
Food hygiene (hygiene control, food monitoring, food examination)	75 hours (2 weeks)	After the 4th year
Abattoir, ante and post mortem meat inspection	100 hours (3 weeks)	After the 4th year
TOTAL	**175 hours (5 weeks)**	

An improved system for supervision and quality control of these periods of education is under development with improved communication between the faculty and the training providers and improved systems of written feedback from both the student and the veterinary official providing the service.

The Institute of Food Hygiene provides further consolidation of training by providing access to commercial establishments through the field trips listed in table 5.

Tab. 5:- Field Visits

Demonstration in meat technology – Fleischerinnung Berlin Practical Training in milk technology Practical training in food analysis

4.5.2 Comments

The location of VPH teaching over two locations, with the Institutes involved based at three, does not best serve the needs of the faculty or the students for integrated joined up teaching and research.

The distribution of VPH teaching across five Institutes does not achieve the current objective of teaching VPH as a holistic subject closely integrating into the husbandry and production of food animals. While the Institutes do co-operate and work together, especially in the provision of post-graduate courses, amalgamation of some of these Institutes into a single department is essential with closer integration at a practical level with others. Farm animal clinicians must

be encouraged to ensure that students consider farm animals as food animals and the farmer as a Food Business Operator as described in the EU legislation.

Efforts should be made to ensure that the principles of VPH and food hygiene in particular are promoted at all relevant points of the curriculum.

The Interdisciplinary lectures are a good attempt to demonstrate to the students the relationships between the discipline of VPH with the other institutes and with practitioners in the workplace.

The practical sessions in meat and food hygiene offer the only opportunity for small group teaching in VPH as far as all students are concerned.

The Institute of Food Hygiene has no facility or equipment with which to teach meat technology.

The staff are to be commended on their efforts to introduce a system to improve and monitor the quality of extra-mural experience in slaughterhouses, laboratories and veterinary offices. The experience of the students during this period away from the faculty can be pivitol in forming their opinion of VPH as a potential career.

4.5.3 Suggestions

Those Institutes involved in the teaching of VPH should all be located at the one site, namely at CDp. This is in line with current internal plans for the reorganisation of the faculty buildings. However, while recognising that moving the meat processing hall at CM, used for teaching practical meat hygiene control, to CDp may not be possible in the short term, it should remain a long term aim to consolidate all VPH teaching on the one site.

The amalgamation of the Institutes of Meat Hygiene, Food Hygiene, Animal and Environmental Hygiene and parts of the Institute of Microbiology and Epizootics is essential, preferably in one building. This will require not just a ‘relocation of chairs’ but a fundamental review and re-organisation of the syllabus to achieve the holistic integrated approach which the subject, the Tierärztliche Approbationsverordnung, (TAppV) and the employers of veterinary graduates require.

Closer working relationships need to be developed with other Institutes across the faculty, for example with the food animal clinicians, the Institute for Pharmacology and Toxicology and the Institute of Veterinary Pathology. The Interdisciplinary lectures may be one tool which could be used to help achieve this objective as may be greater involvement of VPH teachers in the new organ directed modular education process.

The concrete realization of the concept of “farm to fork” is vital for the future of veterinary medicine since public concern for food safety, animal welfare and the protection of the environment has increased considerably in recent years. This clearly requires an effective interdisciplinary approach between the sciences relating to animal production and those pertaining to food technology and safety. In this respect integration of the Faculty of Agriculture and Horticulture of the Humboldt University into the Freie University of Berlin could

greatly improve the cooperation between the two faculties. The team strongly supports such a plan, since this would offer the opportunity to create an internationally competitive cluster of scientific/training expertise in this area, fostered not only by common interests but also by close physical proximity.

In addition to practicals on meat hygiene and food hygiene, practical sessions on control of epizootics and animal and environmental hygiene should be mandatory rather than elective. Knowledge of the control of epizootic disease is a fundamental responsibility of every veterinarian and the role of the profession in the environment is rapidly gaining importance.

The practical sessions should be used to develop 'problem based learning' in VPH. An excellent example of this form of teaching is provided by the Institute of Animal Welfare and Behaviour in a series of tutorials on the 'Animal Protection Act'. Consideration should be given to extending the good practice of involving staff of the competent authority including official veterinarians, and perhaps food animal practitioners, in practicals and seminars.

The existing list of VPH electives, table 3, needs extension to cover further aspects of the syllabus. Possible suggestions could include meat technology, fish and seafood production and processing and wild game processing.

In the development of the new and centralised facility for Infections and Molecular Veterinary Medicine at CDp consideration should be given to the provision and equipping of a food technology hall which would allow students to gain practical experience in the processing of foods. It may be appropriate to concentrate on meat and dairy products.

The system under development to monitor and improve the quality of extra-mural experience must be continuously monitored and improved. Dedicated resource must be allocated to this important task so that a real relationship can be created between the faculty and the provider of this essential service. Consideration should be given to requiring the students to produce a brief report, perhaps of 1000 words, relating an aspect of their experience of the laboratory or official veterinary office.

Further use by the e-learning system developed by the faculty could be made by the Institutes involved in VPH teaching. This would be assisted by the provision of additional resource.

4.6 ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS

4.6.1 Findings

There is an impressive list of elective subjects starting in the first year. The elective courses are listed under the departments that are offering them. A number of electives focuses on a species (e.g. applied anatomy of birds), others on treatment or on scientific topics. Some electives are highly practical such as interpretation of Xrays, others offer the opportunity to get insight in the cutting edge of veterinary research.

All students have to take a total number of 308 hours (according to the TAppV) of electives. 84 hrs of specified electives have to be taken during years 1 and 2, the remaining 224 hrs

during years 3 to 5. Within these periods students can sign up for any elective of their choice.

4.6.2 Comments and suggestions

The team discussed the issue of focusing or tracking extensively with all intramural and extramural groups met. With few exceptions, all students, post graduate students and veterinarians are quite happy with the concept of a broad, omni competent veterinary curriculum, the strongest argument being the flexibility to change direction at any time point in the veterinary career. It is generally accepted that diversification requires additional post graduate training and continuous education. Thus, despite current trends in thinking about the future of veterinary medicine, the students in Berlin have no real interest in tracking.

It is difficult to see a clear strategy in the elective course system. Elective courses are the foundation for developing a focus of professional interest. The faculty may consider to create well defined packages of electives geared towards a clear goal. For example there could be 5 major branches: food animal; equine; small animal; VPH; veterinary research. Students would sign up for either one of these branches and take an appropriate package of electives.

5. TEACHING QUALITY & EVALUATION

5.1.1 Findings

In Germany the veterinary curriculum, identifying each subject to be taught with the hours allotted to it, is regulated by law (TAppV, see chapter 4) which is in accordance with EEC Directive 2005/36/EC. Within the framework provided by the TAppV, the Berlin Faculty of Veterinary Medicine offers a core curriculum, supplemented by a wide range of elective subjects. The form of teaching is by lectures, seminars, clinical demonstrations, clinical and laboratory practical exercises.

Students are expected to attend all core curriculum lectures, however, their attendance is only controlled in seminars, clinical demonstrations, practical group work and the chosen elective.

Students are informed via the electronic media or hand outs about the objectives of a given course or organ structured teaching block; they are advised how to cope with the material and information is given on how the reaching of the learning objectives is assessed (case reports, tests, examinations according to the TAppV).

The institutes/lecturers announce the list of recommended textbooks available commercially or from the library. In addition to that, power point slideshows of the presentations and other material can be downloaded from the IT communication system so that students can prepare themselves prior to the course and for the examinations

The IT – communication system at present consist of the home page of the various institutions and the learning management system “Blackboard”. A good example for interactive IT learning is the password-protected “Histopathology Online” from which students can study the microscopical images at home. Some institutions, such as the Institute for Food

Hygiene and the Clinic for Reproduction offer “Blended Learning” courses that are mixtures of slideshow and e-learning. The Institute of Meat Hygiene and Technology developed a self-learning programme about meat inspection of cattle and swine which is used during practical training and enables students to check their knowledge. The ongoing development of these novel teaching methods is funded by the faculty with strong support through the university.

Problem-oriented teaching is used in many subjects, especially in clinical studies and in VPH (“case studies”). Also the new approach called “Organ Modules” is a novel and problem-oriented teaching method in which diseases of a specific organ system are taught in one block by bringing together teachers from various disciplines thus avoiding the delivery of any information overlapping or contradicting with each other.

Though it is to welcome that students are informed about the philosophy of “Alternative medicine”, care must be taken that this type of medicine does not compete or replace evidence based medicine.

In the case of food animals, horses and also birds a good number of healthy animals are available for propaedeutical training. For intramural clinical instructions sick pigs are brought to the clinic and can be followed through until they are resolved or necropsy is carried out. Also cattle with typical clinical problems (e g mastitis, lameness) are bought for clinical instructions.

Apart from the professorial staff, lecturers, senior lecturers and assistants, also interns and residents are involved in clinical teaching.

At present the faculty has only little control on the extramural instructions of students.
Teaching is evaluated regularly either by anonymous questionnaire or by a faculty-level electronic voting system ACTIVote which is now available online via the Blackboard system.

5.1.2 Comments and suggestions

In agreement with the students the team is of the opinion that the new structure of the curriculum with organ modules, a final year of clinical rotation and the development of new teaching strategies is a great step forward. Accessibility to e-learning is not to replace present teacher based teaching (contact hours) but to supplement the ongoing activities.

The clinical rotations starting in 2008 should improve clinical teaching and allow students to develop a good basic level of clinical skills. However, care should be taken to also train students in the interactions with patient owners, an issue largely neglected so far.

Extramural practical training as required by the TAppV is largely organized by the students themselves and can be performed in any practice, also abroad. There is an increasing demand for setting up the “gold standard” for these training sites and it is strongly recommended to speed up the respective ongoing negotiations with the various professional veterinary organizations in Germany. During this period students should also get an additional exposure to practice management.

The team welcomes teaching evaluation. However, the consequences of evaluation are

unclear, particularly in respect to career development.

5.2 EXAMINATIONS

5.2.1 Findings

Examinations are regulated by the TAppV. Faculties have to install a state authorized examination commission and all faculty members and others authorized to examine must be appointed as a member to this commission.

Examinations are additive and lead to two diplomas, the first one being the diploma of the Tierärzliche Vorprüfung, which can be achieved after having passed the examinations after year 2, and the second one, the diploma of the Tierärztliche Prüfung, which can be achieved after having passed the final examinations after year five.
This is the basic requirement to get government approval as a veterinary surgeon (Approbation).
The TAppV requires examinations to be close to the teaching of a given subject. As the TAppV allows for some flexibility in organizing the curriculum and as a subject may require a stepwise exam, the examination of a given subject may vary between veterinary faculties in Germany. Regardless of this requirement, examinations are to be held during the period when no lectures are being given, primarily at the onset of this period.
Examinations may be oral, by multiple choice questions or in short assay forms.

Students enrolled in the veterinary curriculum at the Freie Universität Berlin are in due time notified in oral and written form about the details of the examination modalities (Ergänzende Prüfungsordnung des Fachbereichs Veterinärmedizin der Freien Universität Berlin für die Tierärztliche Vorprüfung und die Tierärztliche Prüfung; EPVO)
Examinations start after year 1 and end in year 6. The form of examination is indicated in the EPVO, as well as the additive weight of interim exams when examination of a subject is stepwise.
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5.2.2 Comments

The information provided and organization of the examinations are highly appreciated by the students

5.2.3 Suggestions

None

6. PHYSICAL FACILITIES & EQUIPMENT

6.1 GENERAL ASPECTS

6.1.1 Findings

The physical facilities of the Faculty of Veterinary Medicine are spread across three locations within the city of Berlin.

The *Campus Mitte* (CM) was the location of the former Faculty of veterinary medicine of the Humboldt University and at present encompasses the Institute of Animal and Environmental Hygiene, the Institute of Meat Hygiene and Technology, the Institute of Microbiology and Epizootics, the Institute of Immunology and Molecular Biology, a meat processing hall for student practical experience and various lecture halls.

Most of these buildings fall under the act of protection of historical monuments and hence have the advantages but also disadvantages of older buildings. As the team was informed by the dean, all institutes will be moved to the Campus Düppel within the next 3 years, construction of the new building to house these institutes is programmed to start in 2008.

In spite of being “historic”, the facilities have been brought up to a standard allowing up to date teaching and research. The meat processing hall is finished and equipped to a level equivalent to that of an officially approved food processing establishment. However, in spite of the fact that the institutes at CM are in general being excellently equipped, compromises had to be made in order to meet safety standards.

The *Campus Dahlem* (CDa) encompasses the Institute of Meat Hygiene and Technology, the Institute of Veterinary Anatomy, the Institute of Pharmacology and Toxicology and the Institute of Animal Nutrition. The institutes are well equipped and practical training in anatomy is in a section hall meeting modern hygienic and environmental protection standards. Other than at the Campus Düppel, the lecture hall at CDa is big enough to hold a whole class.
The Institute of Animal Nutrition is particularly well equipped with facilities for housing animals, including dogs, for nutritional studies.

The *Campus Düppel* (CDp) represents the main campus and holds all other institutes, all clinics, the library, a building for continuing education, the main administration (dean) offices and a cafeteria.
Development of the CDp started in the1950ies with establishing the clinics first. Other institutes have been added with the continuing education building being the latest addition.
All basic science buildings and pathology meet up to date standards, allowing for modern teaching and practical training. However, there seems to be no lecture hall which has enough seats for a whole class (year).

The cafeteria is essential for the students as the CDp is located in a primarily residential area with no close bye shops or food stores where the students could supply themselves. However, the campus cafeteria seems to close rather early in the afternoon.

The organization does not include a farm managed by the faculty.

6.1.2 Comments and suggestions

The distribution of the faculty across three campuses with quite a distance between each other must be considered a drawback. The strategy to develop Düppel as the main campus should be strongly pursued. This in particular relates to the moving of the institutes at the CM to Düppel. As indicated under 4.5.3, on the long run also the meat processing hall should be moved to CDp in order to consolidate VPH teaching on one site.

Moving the institutes from CM to CDp should also result in improved, up to date research and teaching facilities with a better access for students during the undergraduate training. This, hopefully, would stimulate their in interest in taking up postgraduate education in one of these fields. In addition the location of the majority of the basic science institutes at one campus should also stimulate cooperation and joined research projects.

For obvious reasons at present there are no perspectives to also move the institutes from the CDa to the CDp. However, the nature of the institutes located at CDa should allow for teaching in blocks, requiring only little commuting between the two sites. In addition there is good public transportation between the two sites.

In spite of some possibilities for improvement, facilities and equipment of the basic science and VPH institutes and of the institute of pathology must be considered as good to outstanding, also meeting all safety requirements. With the location of most of these institutes at the CDp a restructuring of the organisation should be considered, resulting – for example - in the formation of up to three departments.

6.2 CLINICAL FACILITIES & ORGANISATION

6.2.1 Findings

The clinical premises, including those for hospitalisation and the isolation facilities, meet the international requirements. All clinics are well equipped, meeting up to date standards, including diagnostic imaging. While the small animal clinic, equine clinic and the “clinic” for poultry diseases operate on a distinctly separate basis, the clinic for ruminants and pigs and the clinic for reproduction share facilities to the benefit of financial resources and particularly the student training.

Each clinic is headed by an acting director who is elected for a period of 2 years out of the group of professors by the “Institutsrat”, an election committee composed of members of the various professional groups of the clinic.

Though construction of the clinics was at the beginning of the development of the CDp, all buildings are maintained in an up to date status, meeting all requirements for safety and hygiene. Use of the buildings, however, is visible and the team was informed about some reconstruction and renovation going on in the Small Animal Clinic.

In all clinics there is ample room for consultations and hospitalisation of patients, adequate isolation facilities are available. The Clinic for Ruminants and Pigs in cooperation with the

Reproduction Clinic provides extra housing for animals bought for special student training and clinical demonstrations. All clinics are stocked with modern and, in most part, recently acquired equipment. Individual pharmacies are run by each clinic, similarly each clinic has its own laboratory diagnostic facility, with the small animal clinic having the lead. An electronic net storing and providing individual patient data within and between the clinics (VETERA) is partly available and is going to be fully operative soon.

Except for the poultry “clinic” all clinics operate a 24 hrs. emergency system year round.

6.2.2 Comments and suggestions

The concept of running 5 individual clinics is outdated and does not support the efforts of the faculty to introduce modern, organ orientated teaching and teaching techniques. The formation of larger organisational units, e.g. departments, is strongly suggested. However, further inquiries would be necessary to come up with a more specific suggestion whether it should be 2 or only 1 department.

A department solution would also solve the problem of having scattered pharmacies and diagnostic laboratory facilities. The faculty should aim to provide the clinics with a central diagnostic laboratory, operating on a high level; this would also include modern DNA and RNA technology. Diagnostic facilities in the various clinical units could then be reduced to a sort of bedside tests (e.g. dry chemistry).

With the clinical rotations the faculty and in particular the clinics have to meet a new task. Density of students in the clinics will be substantially higher which imposes an inherent hygienic risk. Adequate provisions have to be made that students can change properly and store their belongings when roaming within and between clinics. Within a clinic students must also be provided with facilities where they can retreat for self learning between cases and where they can prepare for reports. IT access is essential.

The new curriculum and particularly the clinical rotations will make students stay longer days at the CDp. This does not go along with the closing hours of the cafeteria and a solution must be found to ensure that students have at least a self-service facility during the afternoon and late afternoon.

7. ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN

7.1 Findings

Cadavers for practical anatomical training are either by donation or bought. Apart from the common domestic species (80 dogs, 45 cats, 9 horses, 5 cattle, 16 pigs, 24 small ruminants, 32 poultry) also cadavers from other small pets (laboratory animals, chinchillas, degus) are available for practical dissections. This is complemented by plastinated specimens of excellent quality for teaching purposes.

As already indicated in chapter 4.4.1 there is a sufficiently high case load in all clinics for

consultations and hospitalisation, all the ratios indicated in the SOPs are not only met but distinctly exceeded.

The number of necropsies performed on large animals in 2005 is approx. 120 but there is no breakdown between equine, porcine and ruminant animals. The figure for companion animals (dogs and cats) is 750, in addition to that there were 175 other species presented for necropsy (pets and wild birds and exotic animals) resulted in a students/post mortem examination ratio of 1:6.7 which again is highly satisfactory.

7.2 Comments

Anatomical training is based on a good and diversified supply of cadavers. For clinical teaching and training a good and again diversified patient load is available. In the food animal section any shortcoming would be met by the buying of healthy animals for propaedeutical training and of sick animals for clinical training

7.3 Suggestion

None

8. LIBRARY & EDUCATIONAL RESOURCES

8.1 Findings and suggestions

The main library of the faculty is a part of the library system of the Freie Universität Berlin but budgeted separately. Its funding has grown continuously over the past 3 years to 281,300 € in 2006. The central building of the library is located in the Campus Düppel and provides 130,000 volumes and a series of journals. By profession the head of the library is a veterinarian specialised for library sciences who supervises 6 full time plus 1.5 FTE part time employees and reports directly to the Dean. The library has 90 seats for readers and user oriented special rooms for e-learning, video or group study and a computer room. Relative to the number of visitors it meets the demands of the faculty.

About 750 journals are subscribed and available online (“digital library”). The digital library also provides more than 500 dissertations, 5000 online abstracts of scientific publications, e-learning material, access to a multimedia database (CABi) and special services like sending scanned documents via e-mail.

66,300 independent publications are catalogued in an online library catalogue (ALEPH) which allows electronic search by Google or via the VETSEEK program. Licensed databases (VET-CD, BEAST-CD, FSTA, PubMed and Agricola) are also available for the clients.

The library provides exchange service to and from partner libraries, the requested items are copied or scanned and delivered to the client within 1-2 days (in optimal cases within hours).

There are subsidiary institutional libraries that are integrated parts of the central library, all books and journals are indexed and catalogued by the central library. As the departments and institutes are located on three rather distant campuses, the existence of the departmental libraries is well justified. Students have access to departmental libraries while they work in the various institutes and clinics

The opening hours of the library seems to be too short with 9:00 a.m. to 4:30 p.m. on weekdays except Wednesday, when the opening is extended until 7:00 p.m. This seems to be particularly true as the new curriculum requires students to stay on the CDp until at least 6:00 pm, leaving the students without the requested access to the library learning facilities. Also during the semester break there is no extended opening, not meeting the needs of a certain percentage of the students.

8.2 Comments and suggestions

For the time being students apparently do not seem to miss the access the library after 4:30 pm for reading and learning. However, this might change with clinical rotations becoming effective. It is therefore suggested that the faculty reconsiders the opening hours of the library in view of the demands of the new curriculum.

In general, students are advised how to use the library and other sources of information, the study guide gives the necessary information for searching the literature. In case of doubt, the library staff is ready to help them.

Students complained that there is no place to sit in and store their belongings (rubber boots, white coats, books etc) in a locker. With the clinical rotations staring in 2008 this situation will become worse. As suggested under 6.2.2, the necessary steps to meet this demand must be made.

9. ADMISSION & ENROLMENT

9.1 Findings

As with all veterinary faculties in Germany, admission to the study of veterinary medicine is subject to a ”numerus clausus”. As a result of the total teaching capacity of the faculty and the type of hours and lectures underlying the curriculum, the number of students to be admitted is calculated

In Berlin this results in an annual admission of about 170 students while there are more than 900 applications.

In order to apply students must have obtained the Abitur, that is the general qualification to enter a university. 40% of the students admitted are selected by the Zentralstelle zur Vergabe von Studienplätzen (central agency for the assignment of study places) in Dortmund, the remaining 60% are selected by a test system applied by the faculty. Admitted to this test are students having reached an average degree between 1.0 and 2.7 for their Abitur (1.0 best

grade, 6.0 lowest grade). The test comprises assessment of study skills and vocational training and meets the requirements of skill testing systems in recruiting processes (DIN 33430).
The number of students is virtually constant throughout the 5 year period underlying the curriculum as drop outs are immediately replaced, usually by incomers from foreign veterinary schools. About 3% of the students originally admitted have dropped out following the examinations after the 2nd year.

The total number of undergraduates in 2006 was 912 with around 88% of the students being female. About 4% were foreign students.

The time officially allotted to successfully pass the veterinary curriculum is 11 semester. With an average of 11.7 this figure is met very closely.

The number of postgraduate students in 2006 was 352 with 84% being female and 11.4% being foreigners.

9.2 Comments

The present system does not allow the faculty to change the number of students admitted unless they change their teaching capacity. After year 2 the drop out rate is very low and student graduate to a veterinary surgeon in due time.

There is a good balance between undergraduate and graduate students as an indication for research based teaching.

9.2 Suggestions

None

10. ACADEMIC & SUPPORT STAFF

10.1 Findings

The academic staff/student and support staff/academic staff ratios are consistent with the EAEVE indicators.

Number of teaching staff/number undergraduate students = 1:7.42

Number of teaching staff/number support staff = 1:1.63

The faculty council decides whether vacant professorial positions should be filled or not and whether the denomination should be maintained or not. In the case of clinical professors membership in a European college of clinical specialization is usually required. The underlying procedure has been streamlined recently and may now only take 3 to 6 months.

Appointments of non professorial academic staff and of technical staff are primarily within the responsibility of the institutes and clinics and have to follow officially regulated procedures.

Staffing levels of the institutes and clinics are largely based on historical developments but this will change in the future.

Apart from the public funded staff, academic and non academic staff may be hired and paid from grant money or from other (e.g. clinical) income of the unit. Placement of these positions is the sole responsibility of the grant holder and these positions do not count when calculating the number of students the faculty has to accept at the beginning of each academic year.

The establishment has financial autonomy, however, there is very little room for promotion. Professorial staff paid according to the W – salary class may, within the given limits, profit from the possibility to give a raise in salary according to teaching and research performance. The salaries of all other staff are fixed; however, up to a certain level there is an inherent age-dependant increase. The other way to achieve a salary increase would be to apply for a better paid position.

Most non-professional academic positions are time limited. Unless a person would be moved to one of the few tenured positions it is not possible for the establishment to further employ these people when contract time has elapsed.

Public positions are generally less well paid than those in industry, but payment for newly graduated veterinarians may often be better than in veterinary practice. The academic staff is encouraged to achieve additional qualifications by spending some time outside the country. Full professors have the possibility to take a sabbatical leave every 7th semester.

10.2 Comments and suggestions

In spite of the financial autonomy the faculty has only limited flexibility to affect the number of academic staff due to its linking to the number of students to be admitted. To overcome shortages the faculty might consider increasing the number of academic staff paid from clinical and other income, though these positions are on a time limited basis only.

11. CONTINUING EDUCATION

11.1 Findings

The faculty is extremely active in continuing education. About 50 courses were implemented in 2006 representing a total of 590 hours of instruction, with about 2400 participants. Most of the courses covered clinical, microbiological or VPH topics.
Third parties are also organising courses at the Faculty mainly for small animal practice. These included courses on “natural” medicine. The latter do not appear to be consistent with the mission of the faculty to stand for evidence based medicine and in the opinion of the team may cause confusion to the public.

11.2 Comments

Continuing education appears to be the result of a good cooperation between the faculty and the Berlin professional organizations. Courses for private veterinarians are offered on weekends, facilitating participation. The fee (around300 €) is at an acceptable level.

The large variety of the courses shows that all veterinarians are served including practitioners for large or small animals, state veterinarians, and specialists. Relatively few courses however, cover herd health/animal production topics.

It may be desirable to create a continuing education committee to develop a strategy aiming at comprehensive coverage. The question was also raised in the team whether it would be possible to create a blend of continuing education and the elective course system of the regular curriculum to the benefit of both students and veterinarians.

The faculty talks about a “masters of small animal science” and “master of public health” in the chapter “continuing education” of the SER.
There the well structured programmes on clinical medicine focusing on small animals (and recently other species) is an excellent initiative because it leads to a well defined post graduate qualification. The team was pleased to learn that this education has been accepted by the Berlin Veterinary Chamber as part to qualify for a Fachtierarzt (veterinary specialist).

The two “master programs”, however, differ considerably in scope and size from the other continuing education courses, they also do not conform with the internationally accepted type of master programs, particularly when considering that graduation to a veterinary surgeon is equal to having achieved a MSc degree. This situation is conflicting and should be solved, for example by renaming the course program.

12. POSTGRADUATE EDUCATION

The faculty offers the following tracks of postgraduate education:

Professional track:
-German “Fachtierarzt” (certification for different specialities).
- Diplomate of European Colleges (8 programs)

Academic track:.
-German Doctorate of Veterinary Medicine (does not include formalized coursework)
-PhD (Dahem graduate school)
- Master (2 programs, generally for non German students, see above, 11. 2)

Professional track:

Fifty full time and sixteen part time candidates are enrolled into the residency programmes. In addition to that, 6 interns are listed in the SER but there is no clear specification of the

residency and internship programs. Those entering the residency programs and who want to enrol for the qualification for European board certification and the Diplomate title have to follow the requirements of their respective European colleges including the requirements for publication.

Academic track:

PhD program: As the veterinary diploma is considered equivalent to a MS degree, students having graduated to a veterinary surgeon may directly enter a PhD program.

With the Dahlem Graduate School only recently a PhD program had been installed with a possibility of the faculty to participate. It is going to start in 2008 and no veterinary students are jet enrolled and the program has still to be developed.

Dr. med. Vet. Program: This will continue to be run parallel to the PhD program. It consists of writing and defending a research based thesis, the whole process requiring about 2 to 3 years. About 120 students graduate annually.

MSc programs: Apparently this well structured program was established primarily for foreign students.

12. 2 Comments and suggestions

In general terms the offer of postgraduate training is good on the professional and academic track. Concerning the professional track it seems advisable to establish a specific mechanism to design and organize new courses more adapted to the demand of the labour market. For example a porcine medicine course should be added to improve and extend the clinical training offer.

The policy of the establishment to preferentially hire diplomates of European colleges for various specialties is commendable as it will increase the capacity of the resident programmes. It is, however, important that a clear distinction is made between the European college programs and the requirements for a German Fachtierarzt qualification.

13. RESEARCH

13.1 Findings

Research is an important objective of the faculty. All units are involved in research going from basic to applied research. There is a considerable amount of extramural funding available, excellent facilities, labs and state of the art equipment. As can be seen from the publication lists, particularly in the basic sciences, the veterinary faculty in Berlin is well embedded in the biomedical research scene with numerous publications in high impact international journals.
There is a wide range of topics covered, which is related to the complex organisation with 20 separate institutes/clinics. The research effort is therefore rather fragmented but there are a

number of clusters where several disciplines participate.
The installation of the graduate school and its veterinary PhD programmes is an important step towards research training at a high level and will undoubtedly foster more interdisciplinary cooperation. Thus, there is no doubt that the undergraduate curriculum is research based and that the students are exposed to the cutting edge of veterinary science.

There are a number of efforts to involve the students in research particularly in the elective part of the curriculum. In the latter there are a number of courses which are clearly research oriented. In addition, during the extramural part of the curriculum, students have the option to spend part of this time in a research institution. Furthermore, some disciplines, notably immunology, offer research rotations for several weeks. Students have also the option to start their doctoral thesis during their undergraduate studies, however, only very few students make use of this possibility and admission to the examination requires to have graduated to a veterinary surgeon.

13.2 Comments and suggestions

While the faculty is well aware of the fact that it is important to expose students as much as possible to research, it is recognized that the students are already heavily burdened by their studies and that there is little time left for intensive research training.

It appears, however, that most students have the opportunity to enrol in the Dr. med. vet. program, which consists mainly of a research project and writing a thesis or publication after finishing their veterinary degree. Thus most graduates are *de facto* involved in some type of hands on investigative work for at least one to two years. In the opinion of the team, the Dr. med. vet. program is an excellent institution complementing the scientific development of young veterinarians and should be maintained. It is also an important recruitment platform for young scientists, since many young veterinarians develop an interested in a research career thanks to the dissertation system.

It would be important to increase the research effort in the clinical sciences. This could be accomplished by creating more interdisciplinary research platforms encompassing a central laboratory and developing a coherent research strategy, focusing on specific themes. This will also require more investment, since many clinicians are heavily burdened by teaching and service, leaving insufficient time for investigative work.

It is equally important to ensure that also the clinical sciences are involved in the new PhD program. It is commendable that the faculty is filling its vacancies with European board certified diplomats but this should be combined with research training to obtain an academic staff who is also capable to contribute to the research effort of the establishment.

14. EXECUTIVE SUMMARY

Objectives: The objectives of the faculty cover all aspects of education with undergraduate training being the most central activity. Research and post graduate education are considered to be almost equally important.

Organisation: The Faculty of Veterinary Medicine (FVM) is one out of the 12 faculties of the Freie Universität Berlin. It consists of 20 institutes, 5 of them being clinical institutes. The faculty council is the main decision making body, decisions are executed by the dean and vice deans, who - as the directors of the institutes – are elected for a 2-year period.
This organisational structure must be considered somewhat outdated. It is suggested to develop a leaner structure leading to the formation of only few coherent non clinical and clinical departments.
In addition in view of the complexity of managing and developing a veterinary faculty, the 2 year term for the deans and acting directors seem rather short and a prolongation of at least one more year is suggested.

Finances: In general the faculty seems to be well equipped, the premises are adequately maintained and the personnel employed seems to be able to not only cope with the teaching obligations but also with the services to be provided in patient care and diagnostics. This allows the conclusion that the annual revenue provided meets the basic needs of the faculty. However, wear and tear are also clearly visible, implementation of the new teaching strategies and techniques request additional funding and in order to stay competitive in grant acquisition, adequate basic equipment and funding must be provided. Thus public funding of the faculty is already at a critical level, a further decrease would in the long run severely affect the potential of the faculty.

Curriculum: The faculty has introduced a new curriculum, based on organ centred interdisciplinary teaching and clinical rotations in the 5th year. Great emphasis is put on the provision of course- and learning material, also via IT technology, which in part was specially developed for the faculty (Blackboard). The new curriculum will be fully implemented in 2008.
This curriculum is a great step forward and the faculty is advised to overcome the still remaining weak points (see report). Some more important issues are as follows:

- The total number of teaching hours, particularly in the basic subjects and to some extent also in the basic sciences, should be decreased.
- Teaching of basic subjects (chemistry, physics, zoology, botany) should better account for the needs of veterinary training.
- Visibility of Animal production must be increased by an improved communication between the various institutes involved in teaching this subject. This particularly accounts for Animal Breeding, a subject imported from another university. The concept “From Farm to Fork” should become more evident, a farm under immediate control of the faculty would help to improve the situation. More structured cooperation/integration of the FVM with the agricultural faculty is desirable.
- The clinical rotations – which represent a demanding challenge to the clinical institutions but also the whole faculty - will clearly improve clinical training and education. The faculty must be aware of this challenge, which might also mean to strengthen the clinical personnel. Apart from evidence based clinical training to some extent also instructions in alternative (homoeopathic) medicine are provided. Though it is to welcome that students

are informed about the philosophy of alternative medicine, care must be taken that this type of medicine does not compete or replace evidence based medicine. Ways should be found to better control the extramural training of students which is supplementary to clinical- and VPH- teaching.

- The distribution of VPH teaching across five or six institutes and 2 campuses does not achieve the current objective VPH as a holistic subject. A relocation of the respective institutes on the Campus Düppel should be envisaged together with an amalgamation of the Inst. of Meat hygiene and Food Hygiene. Such an amalgamation should also account for the role of the Institutes of Animal and Environmental Hygiene and Microbiology and Epizootics in the training of VPH. Closer cooperation with the agricultural faculty creating a cluster of expertise to implement the concept of farm to fork is equally advisable.
- There is an impressive list of electives the students can choose from, depending on the academic year they are in. It is suggested to consider restructuring of these electives to such an extent that a sort of a tracking system becomes visible. This, however, should not interfere with the present educational goal of a “omnicompetent veterinarian” at the day of graduation, a goal highly favoured by the students and other veterinarians interviewed.
- Apart from a lack of sufficiently large lecture halls to hold a whole class (year), teaching is on a very high level, also making use of most recently developed IT teaching aids. The clinical activities provide a wide spectrum of cases and the present system to buy food animals (cattle, pigs) for clinical training in case there is a shortage of patients must be maintained. Teaching is regularly evaluated by students, however, the resulting consequences should be defined and made public.
- The examination system follows the TAppV and there are distinct limits to the faculty for deviations. Examinations are well structured, the students are properly informed and appreciate the situation.

Physical Facilities and Equipment: The faculty spreads across 3 campuses in the city of Berlin. The plans to move the institutes from the historical site Campus Mitte to the Campus Düpplel should be implemented as soon as possible. All institutes and clinics are well equipped, with up to date and in part most recently acquired equipment. The clinics meet the international standards for treatment and hospitalisation of patients. In order to maintain this standard continuous updating is necessary.
There is an apparent lack of facilities for students to change and to leave their belongings. Also in view of the upcoming clinical rotations in 2008, which will impose a higher student density with an inherent hygienic risk to the clinics, this situation should be taken care of as soon as possible.
Apparently the present opening hours of the cafeteria do not and will not meet the needs of students. Students will stay longer days with the clinical rotations and a solution should be found.

Animals and Teaching Material of Animal Origin: In all subjects affected there is plenty of teaching material available and all the ratios set by the EAEVE are clearly met. The ratio students/production animals = 1:39, the ratio students/companion animals = 1:181, the ratio students/post mortem examinations = 1:6.7. In addition to cadavers anatomy provides plastinated specimens of excellent quality for student training.

Library and Educational Resources: An excellently equipped library is located at the Campus Düppel. Students and staff have access to an ample supply of text books and journals, with

750 journals being provided via the digital library. The library offers access to all important data bases (e.g. PubMed) and is equipped with 90 seats for readers and user orientated special rooms for e-learning, video or group study and a computer room. These study facilities meet the present demands relative to the number of visitors. However, with more activities being concentrated on the Campus Düppel and the students working longer hours as a result of the new curriculum, these facilities as well as the opening hours of the library might no longer be adequate and the faculty should take the necessary initiative to meet this upcoming situation.
There are subsidiary institutional libraries open to staff and students when engaged in the respective institution. This is well justified in view of the fact that the faculty is located on 3 sites and that inhouse working of students will increase.

Admission and Enrolment: Admission is regulated by law and is governed by a "numerus clausus". From the roughly 900 students applying each year, 170 have to be admitted. 40% are selected by grade through the central agency for the assignment of study places, the remaining 60% are selected according to their grades and the passing of an aptitude test. There are virtually no drop outs (3%) and students pass the curriculum with an average time of 11.7 semesters and hence are very close to the official time of 11 semesters allotted to the veterinary curriculum

Academic and support Staff: In spite of its financial autonomy the faculty has only limited flexibility to affect the number of academic staff due to its linking to the number of students to be admitted. This ratio is not affected when extra staff are paid for through clinical/diagnostic income or grant money. The faculty is urged to pursue this possibility though the ratios teaching staff/number undergraduate students (1:7.42) and teaching staff/support staff (1:1.63) conform with EAEVE indicators.

Continuing Education: The faculty offers a wide and highly satisfactory program. An amalgamation with the elective courses of the regular curriculum might be considered. The faculty is urged to clarify the granting of a MSc degree in consideration the EAEVA regulations and the Bologna process.

Postgraduate Education: Postgraduate education is an important issue for the faculty. It offers the professional track [German Fachtierarzt (clinical specialist), Diplomate of a European college) and the academic track (German Doctorate of Veterinary Medicine (Dr.med.vet.), PhD (still to come), MS (generally for non German students)]. About 120 students graduate annually to a Dr.med vet., the program will continue to be run parallel to the PhD program and is an excellent institution completing the scientific development of young veterinarians.

Research: Research was not the main focus of the evaluation but only looked at in the context of undergraduate education. The team was highly satisfied with the facilities provided for research, particularly in the area of basic sciences, and impressed by the output and came to the conclusion, that research is on a high level, meeting international standards.

Summarizing conclusion: Undergraduate, postgraduate and continuing education at the Faculty of Veterinary Medicine of the Freie Universität Berlin are on a very high level and shows only a few weak areas. These areas should be tackled by the faculty, also in order to meet upcoming demands. Research also includes clinical research and is on a high international level. There are no category one deficiencies.