

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 NAPLES, ITALY**

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INTRODUCTION

The Faculty of Veterinary Medicine (FMVNA) of the University of Naples (UNINA) has a long tradition being one of the very first veterinary schools, funded in 1797; it is today one of 13 faculties of the prestigious UNINA, itself one of the very first universities worldwide. Today UNINA has over 90.000 students enrolled; the FMVNA admits annually 64 students, graduates approximately 80 annually and has around 500 active students enrolled. The FMVNA is located in the centre of the city of Naples, a metropolitan area of more than a million inhabitants and the capital of the Campania Region. Thus, pet animals are abundant, horses and pigs are of lesser local importance, but bovines and especially buffalos are the economically most important regional species. The school features a unique setting, whereby the main part of the premises – called historical site - is located in a well restructured and adapted 13 century monastery; two other sites are located in modern buildings nearby, together forming one campus; in addition, several extramural farms, studs and stables are formally attached to the faculty and used for teaching.

The FMVNA was EAEVE-visited once before in 2002; since then, FMVNA has undergone important changes and has made major efforts to comply with the many suggestions made at the time. In addition, important expansion and building plans are currently under way, giving reasonable assurance that a new state-of-the-art large and small animal teaching hospital will emerge soon.

The Italian University law is constantly changing and adaptation to recent changes is difficult for the faculties as well as for visiting teams; about half of the enrolled students follow the old curriculum, whereas the other half, that is students enrolled during the last 3 years are taking advantage of the new study law; however, the entire teaching follows and is fully in compliance with the EU Directive 36/2005 and the Bologna declaration except that the Bachelor and masters degree system is not applied (as it is in none of the Italian veterinary schools). To graduate, students deliver a degree thesis to obtain the title “dottore veterinario”. This thesis is equivalent to a second degree master (Bologna). To be authorised to practice and to register with the licensing agency (veterinary chamber), graduates have to sit a state examination.

1 OBJECTIVES & STRATEGY

1.1 Findings

A mission statement is published and the objectives of the FMVNA are well described in SER pp. 37 – 43. In short, the FMVNA plays an important political and economical role in forming veterinary graduates for the south-centre of Italy in a rural but densely populated area. The faculty aspires to be leading in the fields of food animal production, especially in buffaloes, in food inspection and public health in general, but also in areas such as fishery products, aquaculture and even apiculture. Infectious disease and zoonoses prevention, parasitology and research in many fields also are strategic objectives and strong points of the FMVNA. Expansion plans and modernisation of the teaching hospitals are an important part of the strategic long-term planning. Full integration and straight collaboration with the governmental animal shelter and with other official veterinary centres (“polo integrato”) is a unique concept

in Italy; it is working well in Naples. This arrangement which is advantageous for hands-on teaching is based on an agreement between two Ministries and has now become law.

1.2 Comments

The “one health” approach to teaching and services is among the objectives and is mirrored in several areas of strength which among others are infectious diseases, parasitology, food inspection and related sectors including fish and bee diseases, and food animal production, with a strong focus on buffaloes and their main product mozzarella cheese.

1.3 Suggestions

As priority, the faculty should build the new teaching hospital and should make plans now to run it from any point of view, especially staffing. A long-term business plan should be developed. Outsourcing of hands-on teaching in pets and equines should be decreased in favour of increased intramural activities in these sectors. Specialisation (on the College level) and creation of clinical centres of excellence should become an important strategic goal.

2 ORGANISATION

2.1 Findings

The most recent university reform law abolished faculties and introduced “Departments” instead. Some veterinary schools in Italy choose to form more than one department; the FMV-NA elected to form one single department of veterinary medicine only; this seems to be the advantage of the School as there is only one head (the former dean) and public funding is distributed to only one single site with any decision making process being facilitated. However, this administrative centralisation has not diminished the democratic process of governing the department. Committees on every level and for nearly every purpose are duly instituted, with perhaps the exception of a coordinating “**business plan committee**”.

2.2 Comments

The School has now a new structure and staff and administrators still have to get used to it. Only the future will show whether this structure is advantageous and can be put to good use by administration and staff. Teaching seems not to be negatively affected by it, in the contrary; transversality might be enhanced by the new structure.

Administration and staff should develop a more business oriented organisation of services provided, as well as of the employment policy (of non-governmentally funded positions). That is, relying not solely or less so on public and university funding.

2.3 Suggestions

No specific suggestions here, please see suggestions in other chapters when referring to improvements in organisation (for instance in “3. Finances”).

3 FINANCES

3.1 Findings

The University of Napoli (UniNa) is funded by the Ministry of Education, University and Research (MIUR) by an institution fund called Ordinary Financing Fund (OFF). Salaries for teaching and support staff are paid directly through the University and operating costs are jointly shared between the University, the Faculty and Departments. Ten percent of the tuition fees of the students are allocated to the dean's office for operating costs and general expenses for teaching activities. An extra budget of 100,000 euro/year is given by UniNa to the faculty to improve teaching and practical hands-on-training and 150,000 by the Campania Region Government for contracts for assistants for the Frullone teaching hospital (FTH) due to an agreement by this local authority, the Local Health Service Agencies (ASL) and the Zooprofilactic Experimental Institute of Southern Italy. Other expenses in the FTH Frullone are paid by the Regional Government.

State funds do not (completely) cover the financing required for research. Research funds are derived from various public authorities and institutions, private enterprises, clinical and diagnostic services and analytical services. Research funds and services are managed by the departments (research groups).

3.2 Comments

The general reduction in government funding will decrease possibilities for recruitment of new staff. Some of the service earned money is invested by departments to improve teaching quantity and quality.

The overhead that must be returned to the UniNa on service earned money is only 10% of the income. Forty percent can be used as an incentive, extra salary, for the personnel. The rest can be invested in the laboratory or its research. There is no overhead on research money.

A budget of 3,000,000 euro of the UniNa is allocated for expansion of the veterinary teaching hospital next to the "Frullone teaching hospital". An extra budget of 15,000,000 Euros has been reserved by the university of his budget of 2011 for further expanding the hospital and renovating the main building in the Complesso Frullone for new departmental premises, class rooms, multimedia rooms, library so that the largest part of the faculty can move to this location.

3.3. Suggestions

There should a strategic plan be designed on how to increase the income from services allowing the department to invest in new equipment and extra personnel for teaching and research.

A Financial/Business Committee should be created making business plans similar to private enterprises; this also entails active help and advice of how to access research grants and contracts with the industry and other 3rd party stakeholders.

4 CURRICULUM

4.1 GENERAL ASPECTS

4.1.1 Findings

Studies at the Veterinary Faculty of Napoli last 5 years (10 semesters). Since 2010 a new curriculum (300 University Learning Credits (ULCs), with 1 UCL= 25 hours of learning commitment) has been implemented that is now active in the first and second year, whereas 3rd until 5th year students are still in the old curriculum, which also has 300 ULCs, but differs in the allocation of these 300 ULCs over the different categories. The new curriculum is implementing the law 240 implemented in 2010. This law defines the distribution of study credits among 5 different disciplines (Basic disciplines (≥ 58 ULCs), characterising disciplines (≥ 130 ULCs), similar and integrative disciplines, elective disciplines (≥ 8 ULCs), other activities such as foreign languages and informatics (≥ 30 ULCs), compulsory dissertation work). The curriculum fulfils the EU directives in terms of length and EU listed subjects. The students that succeed the studies have the degree in Veterinary Medicine (DVM). The curriculum

THE 270/2004 OLD CURRICULUM

It comprises a total of 300 ULCs divided into:

- 252 ULCs (3686 h) of EU listed CORE subjects (84.0 %),
 - a. Basic disciplines (68 ULCs);
 - b. Characterizing disciplines (148 ULCs);
 - c. Similar and integrative disciplines (11 ULCs);
 - d. the compulsory extramural fieldwork (25 ULCs);
- Elective disciplines (21 ULCs);
- Optional subjects (8 UCL)
- 10 ULCs (250 h) of Dissertation work (3.33 %)
- 9 ULCs of other activities such as English language and informatics

THE 240/2010 NEW CURRICULUM

It also comprises a total of 300 ULCs divided into:

- 270 ULCs (3877 h) of EU listed CORE subjects (90.0 %),
 - a. basic disciplines (~~minimum~~ 68 ULCs);
 - b. Characterizing disciplines (~~minimum~~ 167 ULCs);
 - c. Similar and integrative disciplines (10 ULCs);
 - e. The compulsory extramural fieldwork (25 ULCs);

- Elective disciplines (~~minimum~~ 4 ULCs);
- Optional subjects (8 UCL)
- 10 ULCs (250 h) of Dissertation work (3.33 %)
- 8 ULCs (80 h) of non EU listed CORE subject (3 ULC of English language and 5 ULC of Informatics) (2.67 %).

4.1.2 Comments

One UCL is 25 hours of learning commitment including lectures, practical work and individual work. The faculty has chosen not to split these hours in the curriculum Tables of the SER in lectures and self-directed learning. Self study can vary substantial between different courses which would complicate the interpretation.

The five years veterinary medicine are not divided in a bachelor and a master degree, but are considered a five year master degree course. The first year of the study students obtain 3 ULC English language and 5 ULC informatics. Nevertheless, a limited number of students speaks English sufficiently.

E-learning is mainly used for theory and only limited for practical training. There seems to be no gaps in the subjects covered by the different courses in comparison with the subjects which are required according to the SOP. No hours were filled in Table 4.2 for field veterinary medicine, since the faculty operates two mobile clinics only since November of last year. Before, field veterinary medicine was taught during the supervised practical and clinical training in different farms in the last semester of the studies.

The ratios for theory on practical work (practicals and clinical training) = 1/0.98 old curriculum (1/0.95 new curriculum) and for clinical training on non clinical practicals = 1/0.68 (1/0.72 new curriculum) are sufficient. The balance of practical work and theory during the curriculum reaches the ratios in the SOP. Already the first year, there is non-clinical animal work. The hours animal work (clinical and non-clinical) steadily increase during the curriculum. The last semester 750 h of practical activities (non-clinical and clinical) have to be attended by the students. An important amount of this supervised practical training (605 hours) is given extramural. Supervision occurs by veterinarians which obtained their degree of veterinary medicine at the Faculty Veterinary Medicine of Napoli. They are appointed as adjunct professor.

The end of the 6th curricular semester, students can choose one of eight Professional Integrated Tracks (PIT), which they can still change the next year. These elective tracks allow the students to improve their theoretical and practical skills in areas of specific interest. However not all these tracks are as frequently selected.

Near the end of the studies each student has to perform a dissertation work equivalent to 250 hours (10 ULCs). As mentioned further, this is mostly in Italian and often without an English summary.

4.1.3 Suggestions

The English course needs revision to improve the number of students which can speak English. Their level of English should be sufficient to participate in the Erasmus exchange program and to follow without difficulties English lectures.

Practical training via E-learning should increase. Many software are available for basic and clinical sciences. Such practical trainings can be made available via the internet. They can contain questions to be resolved by the students, allowing them to test their study progress.

The professional integrated tracks are interesting for students. However, the tracks which are rarely chosen need revision.

The hours of supervised practical training outside the university in collaborating practices and/or the ASL should be in balance with the clinical training by full professors at the faculty. This is actually not the case. Taking into account the local circumstances, extramural work is an interesting and essential way to increase the number of cases students come into contact with during the curriculum. However, this cannot replace clinical hands-on teaching within the curriculum and when the new facilities have been built the extramural teaching should be reduced in favour of training at the veterinary teaching hospital.

4.2 BASIC SUBJECTS & BASIC SCIENCES

4.2.1 Findings

In Italy students that possess a High School diploma have to pass a National admission test before being allowed to study Veterinary Medicine. This admission tests evaluates general knowledge and critical thinking, biology, chemistry, physics and mathematics.

Basic subjects are part of the core curriculum of the Faculty and are taught in the Don Bosco facilities of the faculty. Plant biology was part of the old curriculum. In the new curriculum this course is integrated in the new course agronomy, which is given during the 2nd year. All other basic subjects mentioned in the SOP are satisfactorily covered. Most teachers are very dedicated to their subjects and make great efforts in their teaching. Practicals seem to be well prepared. There is up-to-date equipment available in several laboratories. This makes it possible to bring the students into contact with newer developments in basic veterinary sciences.

Several courses give parts biotechnology and describe biotechnological techniques.

Biosafety and Biosecurity is not taught in theory given during Basic Sciences, but in Animal Husbandry and Avian Pathology and in relation to diseases on farms or in the field. In the labs during the practicals students learn to follow written safety procedures and to work with safety equipment. For instance the first hours of the practical training in microbiology address the Basic Safety Procedures for Microbiology Laboratories. Several laboratories have ISO9001 accreditation such as pathology, bacteriology and parasitology.

In anatomy carcasses are freshly brought to the faculty and mostly immediately removed after a practical. There is a small refrigerator for temporary storage but no big storage place. There are no preservations techniques used for the carcasses, limbs or other parts of carcasses. Students who enter the section rooms have to pass a small changing room, where they can put on lab coats and shoe protection

Necropsies for pathology occur at the faculty, at the VTH-Frullone or at CReMoPaR. Carcasses can be stored at all 3 sites at -30°C. Refrigerators are available at the Faculty and VTH-Frullone. The facilities for large animal necropsy are limited. Before entering the necropsy rooms there is a changing room where students have to put on protective clothing, and shoe protection. During necropsy disposable gloves are worn. In the new facilities that will be built at Frullone a necropsy room with more facilities for large animal necropsy will be constructed.

There are sufficient practicals in physiology, pharmacology, toxicology, microbiology. Most practicals are given in groups of 4 to 5 students except when using the microscope room at Den Bosco for histology and parasitology, then groups of 16 students are taught and when the computer room of the faculty is used which has 12 computers then 12 students are trained. Practical in anatomy are given to groups of 8 to 16 students.

4.2.2 Comments

Students that enter the Faculty have passed an entrance examination. This examination largely reduces the high number of applicants to the very number of students to be yearly admitted. This admission number presently stands at 68 for the Veterinary Faculty of Napoli.

Efforts are made to integrate basic subjects with later courses.

The number of hours allocated to basic sciences is adequate and relevant. Practical work is given in sufficient hours, but the use of computer to do exercises is low. Biotechnology is becoming more and more important in Basic Sciences and is taught very fractionated.

Practical training in anatomy should include more anatomy of large animals performed on whole cadavers. The facilities are presently not allowing this sufficiently.

The facilities for necropsies are sufficient for small cadavers, but it is difficult to do necropsy on larger cadavers. Facilities for necropsy on larger cadavers is foreseen in the future facilities in the newly building at Frullone.

4.2.3 Suggestions

Using E-learning for exercises in basic science courses will allow students to repeat exercises by themselves and test their skills.

Biotechnology should be integrated either in one course or in parts in different courses that are very well integrated. This will greatly facilitate the insights of the students in this fast growing speciality which is gaining more and more importance in Veterinary Medicine

For anatomy using donkeys or ponies instead of horses to study gross anatomy on equidae could overcome, at least temporary, the problem of facilities for large animals. Anatomy of pigs should be at least demonstrated.

For infectious diseases and immunology: integrating problem-based learning into the teaching using examples of clinical cases would prepare students for clinical work and increase their insights.

For pathology: the new necropsy room in the facilities of Complesso Frullone needs to have facilities for large animals. This should help to increase the number of necropsies on large animals.

4.3 ANIMAL PRODUCTION

4.3.1 Findings

Total numbers of hours and subjects taught are 505 (13.70%) and 599 (15.45%) for the old and new curriculum, respectively. In the new curriculum, 20 hours of the first year are dedicated to animal handling. Teaching is done within and/or outside the faculty depending on the species, always with faculty's teachers. All EU-listed topics are covered in the curriculum as illustrated by the table.

Subject	Semester	Theory (hours)	Practical training (h/student)
Animal Production	3 rd /10 th	28	30/25
Animal Nutrition	3 rd - 4 th /10 th	66	83/50
Agronomy	3 rd	34	10
Rural Economics	3 rd	44	0
Animal Husbandry	6 th /10 th	62	28/75
Veterinary Hygiene	6 th	8	4
Animal Ethology and Protection	3 rd	19	14

Neither the faculty nor the university own a teaching farm. However, the faculty has signed contracts with 11 farms of different sizes where supervised practical training takes place. For this purpose, veterinarians – practitioners were hired as “adjunct professors”. The farms and specialists contracted cover all relevant farm animal species. In addition, a donkey farm is included.

4.3.2 Comments

- The curriculum covers all areas required by the directive.
- The contents of all individual subjects are appropriate and veterinary-oriented.
- The numbers of hours are sufficient and the proportion between theory and practicals is reasonable.
- An integrated concept of animal production and herd health management is taught in theory as well as in practice, especially in the farms visited.
- The clinical context of animal production topics is presented to students in collaborations with large animal clinical disciplines
- Animal welfare, bio-safety and bio-security measures are taught directly as well as indirectly demonstrated to students.

- Interactions of students with farmers and practitioners in the farms are strong points of the faculty. Students are taught how to interact with farmers, they become familiar with the local environment and they meet their potential employers early during their studies.
- The Campania Region is the center of buffalo breeding and Prof. Zicarelli is one of the leading persons in this field. As local graduates are likely to work with buffalos in their future careers, much attention is paid to this species both in theory and in practice.
- An integrated teaching concept and day-one skills have been defined by this unit, which is also a strong point of the faculty.
- Corresponding research activities and outputs including PhD theses accompany teaching.

4.3.3 Suggestions

Teaching of Animal Production is a strong point of the faculty and the concept should be further developed. An ideal proportion between academic theoretical teaching and practical field teaching by “adjunct professors” should be further sought.

4.4 CLINICAL SCIENCES

4.4.1 Findings

The basics of clinical sciences are thought in the first 3 years through hands-on experience in the small animal (SA) clinics in both, the historic building and in the Frullone VTH, for equines in the mounted police station and the forest rangers station, and for ruminants in the farms that the University has contracts with.

The SA clinic in Frullone VTH is involved in a large number of cases of operations on homeless dogs and cats and in the 24 hour emergency service. This is a joint initiative of the local public health board, local veterinary public service and the faculty. While the financial burden lies with the local public health board, it provides students and staff with loads of clinical cases and operations. Students are required to participate in the emergency service and the operations and procedures on the patients in Frullone VTH. Beside that, there is a SA clinic and referral hospital in the VTH historical building where students participate in the initial triage of patients, clinical examinations, diagnostics and routine surgery. Some extra experience on mainly wild bird medicine and treatment is gained in the VTH Frullone at the centre for wild animals (CRAS), which is a sanctuary for injured wildlife in the region and a widely recognised centre of excellence.

In the final 2 years the experience is expanded by working with the adjunct professors in all different disciplines, the mobile clinic (since end 2012) and extramural work at different teaching hospitals and practical weeks on different farms often with 24 hour duties, to ensure that students see as many aspects of the profession as possible. There is a good cooperation between the extramural specialist adjunct professors and the specific clinical departments.

In the region there is a big presence of buffaloes for the production of milk used to make Mozzarella cheese. The Veterinary faculty has extensive knowledge and experience of this species and is a very prominent and internationally renowned place for expertise on all

knowledge on these animals.

The subjects of porcine and avian medicine are covered by pathology and infectious diseases, but hands-on experience is gained in the extramural training for each species during the STPI's in the last semesters.

Since 2012 there is an Equine and a Food Animal mobile clinic (one van, each) which are usually used by the faculty when exits are requested by private practitioners for a second opinion or when directly required by animal owners and/or farmers. This provides a 24 hr service as well and while still in its infancy it will grow and attract more clinical cases for the faculty and students. Students are covered by insurance during extramural work.

4.4.2 Comments

There are sufficient hours allocated for each subject and there is the possibility within the different clinics for students to do extra rotations outside the regular hours if they desire.

The clinical activities after the fourth year, also offers rotations on farms in various species according to the chosen Professional Integrated Track. The group size of 4 to 6 students, according to the handled species is suitable for good hands-on clinical training within the rotations, allowing all students access to the cases. The students benefit from an integrated training, being able to do diagnosis in various laboratories, treatment and follow up of a patient till healing or death.

Theoretical training seems to be covered by a larger number of hours than supervised practical training (denominator 0.95). There is a simultaneous implementation of the old and new curriculum. The facilities are restrictive in the sense that the majority of the practical training has to be outsourced. Organisation of the clinical activities provides the students with stages in all species and is well coordinated by the teachers. There is few support staff in the clinics.

The ratios for equine caseload and LA clinical practical experiences found in the SER are understating the numbers found by the team after visiting the different teaching hospitals, contracted farms and extramural work done with adjunct professors. The clinical and practical hands-on experiences of the students are insufficiently recorded, especially the work done extramurally and with the private practitioner (adjunct professor). The contracts the Faculty holds with adjunct professors allow a better clinical training and allow maintaining the 1/5 ratio which is appropriate for practical training.

4.4.3 Suggestions

We suggest a minimal list of clinical and surgical procedures that each student should participate, in both ruminant and equine medicine, to ensure that sufficient first-day skills are gained. We think herefor especially on ruminant caesarean sections, parturitions, equine castration and lameness diagnosis.

In general, there has been found adequate solutions for the lack of caseloads and it is well compensated by contracts with teaching farms, the public health board (polo integrato) and local veterinarians (adjunct professors). The cooperation between all parties seems well organised, but should be better documented.

For the number of necropsies we like to see more avian and porcine carcasses and organs

for teaching purposes. There is sufficient academic staff for all disciplines, but we would recommend the training and employment of veterinary nurses, to deliver and to teach adequate patient care in the veterinary teaching hospitals.

4.5 FOOD HYGIENE & TECHNOLOGY AND VETERINARY PUBLIC HEALTH

4.5.1 Findings

Food hygiene is taught from the 5th through the 10th semester. The total number of hours is 370 in the old curriculum and 369 in the new curriculum, making a total of 8.5% of all curricular hours.

The food hygiene related teaching is organised in two core courses ('Quality control of food' and 'Industries and control of foodstuffs of animal origin') and one professional integrated track (PIT; 'Food hygiene and control'). The core courses constitute of lectures (35%) and supervised practical training (SPT, 65%). Of all SPT, 150 hours are targeted to inspection and are given extramural through contracts with the local health authorities and private enterprises during the last semester in slaughterhouses and meat plants (at least 35 hours, 5 slaughterhouses covering cattle and pork; 3 meat plants), dairy plants

(16 hours, 5 plants), 16 hours in fish markets (6 plants), and 6 in border inspection (6 hours, 1 unit). In addition, the PIT provides access to activities related to the hygiene of poultry and rabbits, and to hygiene of mass catering. All extramural training is given by

13 contracted official veterinarians (adjunct professors) employed by the local health authorities.

4.5.2 Comments

Despite the relatively low number of curricular hours devoted to food hygiene, this part is mainly coordinated and planned in an excellent manner in forms of lectures, and intra- and extramural practical training, reflecting the needs of modern society and current legislation and allowing the students with contacts with food business operators and other stakeholders. Most of the core topics necessary for 'day 1 skills' have been dealt with; however, there are concerns that due to the very limited curriculum hours, certain key skills, such as planning and implementation of HACCP-based own control programmes and risk analysis in food enterprises, remain on a very theoretical and superficial level and do not provide the young veterinarians the tools and confidence required to govern such tasks.

In addition, the training targeted to quality and safety analysis of foods is limited and lacks time and attention to the modern molecular analysis techniques, such as DNA-based detection and typing systems, which are increasingly implemented in standard laboratory protocols.

It is also of great importance that teaching of chemical analysis of foods by a veterinarian is ensured in the future, emphasising the relevance of food hygiene for the veterinary public health field. Moreover, at least a basic introduction into leadership and risk-based decision-making is a necessity for veterinarians when training and supervising the staff of large food enterprises for hygienic practices.

4.5.3 Suggestions

Taking the aforementioned concerns into consideration, it is strongly recommended that the number of curricular hours (covering both lectures and practical training) devoted to food hygiene be increased to no less than 12% of total curricular hours.

Coverage of modern molecular analysis techniques as well as veterinary food chemistry need to be taken care of, and a thorough understanding of planning and implementation of HACCP-based own control programmes and risk analysis in food enterprises needs to be ensured. Finally, the number of staff needs to meet the number of curriculum hours.

4.6 ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS

4.6.1 Findings

The end of the 6th curricular semester, students can choose one of eight Professional Integrated Tracks (PIT), which they can still change the next year. These elective tracks allow the students to improve their theoretical and practical skills in areas of specific interest. In the old curriculum 29 ULCs are allocated to these tracks. In the new curriculum this will be 12 ULCs: 8 ULCs optional courses they can choose from the Degree course in Veterinary Medicine or any other degree course of the University of Naples and 4 ULCs of elective subjects, that allow for some degree of tracking. The topics of these electives will not vary in the new curriculum from those in the old curriculum. Current tracks are: 1/ Hygiene and control of food animal origin; 2/ Clinical and pathology of pets; 3/ Production and health of livestock; 4/ Disease and health of livestock; 5/ Biotechnology applied to production and animal health; 6/ Breeding and hygiene of edible fish; 7/ Zooanthropology: interaction between man and animal; 8/ Exotic animals and wildlife. Taking in account that PIT 3 and 4 are similar, each PIT accounts for 16 to 22% of the students, except for PITS “Biotechnology applied to production and animal health” as well as “Breeding and hygiene of edible fish”, being inactive due to the very small number of requests. For some of these tracks, which usually carry out activities outside the premises of the Faculty the University holds contracts with external staff with specific expertise for the students’ best interest.

4.6.2 Comments

The two tracks which are quite similar have a 75% overlap of subjects, the differences consisting of different disciplines, more production- or more disease-oriented in the second semester of the fifth year.

The tracks which are rarely chosen need revision. The elective tracks allow the students to improve their theoretical and practical skills in areas of specific interest and this is extremely stimulating and can help them to prepare for a professional carrier in specific domains.

Tracking does not affect the omni-competence of the veterinary student. The students take 80 hours of electives in the 4th year and 210 hours in the 5th year. The rest up to 858 and 1032h is being represented by compulsory subjects, mainly hospital activities in the 5th year. This proportion allows for omni-competence, since in the new curriculum, the elective subjects account for 1.33%, optional disciplines for 2.67%.

Furthermore, there is some overlap of subject titles in the tracks with those taught in the first four years. Nevertheless, the content of these subjects is more adapted to the general content of the track (ie, anatomy, physiology, preventive veterinary medicine, etc.)

4.6.3 Suggestions

Measures should be taken to further interest the students in biotechnologies applied to animal health and productions as a field of broad perspective in terms of future employment for veterinarians. For instance by implementing it in a new track “Diagnostic techniques for infectious diseases” with biotechnology as an important part of this PIT.

Similarly, cultured fish species and their breeding and pathology represent, especially for the region of Naples but not only, a possibility of broadening the expertise of the school. Specialisation of the internal staff of the Faculty should be needed to better motivate the students and efficiently cover the subjects enclosed in these two tracks.

Adding a track that is research-oriented could prepare students for a research carrier.

5 TEACHING QUALITY & EVALUATION

5.1 TEACHING METHODOLOGY

5.1.1 Findings

The Teaching Affairs Committee (TAC) plans the teaching activities for each Academic year, which have to be approved by the Degree Course Council. The president of this council plans the supervised practical trainings together with the TAC and the supervised practical training of the last semester together with the Supervised Practical Training of the last semester committee. These committees also evaluate the quality of these trainings.

In 2008/2009 and again in 2011/2012 ex cathedra teaching were reduced for an increase in hands-on training. Therefore 17 of the 21 ULCs for elective subjects were assigned to the core subjects. This allowed, among others, to start Animal Handling and Management in small groups from the first year on so that students gain hands on experience. The real-life clinical experience increases the subsequent curriculum years. An important part of these hands-on experiences is gained on poultry, swine, ruminant or horse farms, with which the faculty has agreements. An important part of the extramural clinical training is done by practitioners who obtain the title of adjunct professor.

For each course specific learning objectives are set. Students have reached these objectives if they succeed in the examinations. Besides the results of examinations, a Logbook of Practical Activities is the most important document to check if all acquired first-day skills have been seen. In this logbook knowledge/skills the student has acquired are dated and signed by the tutor.

The informatics system within the university has been improved bringing the different small libraries within the Faculty in one integrated library. Via this new system students have free access to the University Library website. Since 2007, the e-learning platform Federica has been introduced via which course notes and PowerPoint presentations can be made available to the students. In the faculty different wireless connection points allow students to ac-

cess the Internet with their laptops. All the material on Federica is free of charge available. Lectures presented on this system are accompanied by an audio explanation from the teachers. Federica is also a gateway to a selection of electronic resources.

Most lectures are given to the students using PowerPoint presentations which serve as a supplement to standard veterinary textbooks.

There seems to be a positive teaching environment. Lecturers are very motivated and dedicated to their teaching work and are, in general, very open and approachable for students.

There are no structured initiatives to improve the teaching skills of junior teachers.

The teaching is organised on different levels. The students start with basic sciences but meanwhile they could immediately start with an internship, choosing a discipline they would stay with all along their studies or change after one year or more. In the fourth year the students choose their track out of eight tracks available which they can still change till the fifth year. The students start from the second year to learn how to handle animals and then attend in shifts of increasing number of hours the critical care units in both VTH and Frullone clinic. In year 5 the students use the mobile clinic to complete their training. The aim of this type of training is to better integrate the preclinical and clinical training and provide the students with an integrated approach on single cases and an overall picture of the group of animals when it is the case (poultry, rabbits, small ruminants). In lectures, PowerPoints are used all along and non-clinical animal material is used in the preclinical training. The preclinical training is being done in order to allow the students to be able to cope with challenges of the clinical training. The objectives of the courses are set according to the acquirement of day one skills. The students use textbooks, the libraries the Faculty has and the Federica, an electronic platform from which several virtual libraries could be accessed. Teaching is problem-oriented in the terms of case follow up in the VTH and more problem-oriented during the on farm training. Some of the disciplines (parasitology, pathology, preventive medicine, radiology) use research-based training.

Teaching and learning are evaluated twice a year at the level of the university via a general satisfaction questionnaire for students and results are communicated to the teachers, dean and president of the degree course. A second internal evaluation occurs via a questionnaire proposed by the students and evaluating teaching skills and professional ethics. A third questionnaire focuses on the supervised practical training of the last semester (SPTIs) evaluating the practical activity and the adjunct professor. A negative evaluation of this last questionnaire can result in finishing the practical activity or the contract with the adjunct professor.

The students are learning critical care and post operation follow up in 24 shifts at VTH and Frullone as well as in private practices. The Faculty was asked to assist owned horses with foaling, so 24h shifts are also organized in the equine clinic. The interaction with clients occurs in all teaching premises for small animals and also on farms. The students learn how to manage a practice during their practicals with private veterinarians in their practices.

Teaching in food hygiene consists of lectures, supervised practical training including laboratory work on food microbiology, food chemistry, and food inspection, practical work in slaughterhouses and food enterprises, and excursions, which all support each other in an integrative and meaningful manner. However, the laboratory work is limited and completely lacks coverage of modern molecular analysis techniques. HACCP-based own control programmes and risk analysis in food enterprises are covered on theoretical level but implementation in

practical training is limited. Moreover, there are concerns that veterinary food chemistry teaching in the future will lack relevance to food hygiene and veterinary public health.

Day 1 skills in food hygiene have been defined. Student performance in supervised practical training is monitored.

After the end of their course and before the examinations, the professors are evaluated by the students. The responses of the students are well calculated in the improved approach of the professors.

5.1.2 Comments

All professors, five representatives of the students and two representatives of the administrative and technical staff participate in the Degree Course Council.

Evaluation of the courses is well performed and the results of these evaluations are used to improve the courses. However these improvements depend on the willingness of the tutor. Neither good teaching can be rewarded (via promotion or other positive stimuli) nor legal measures can be taken in case of a bad evaluation. Only in case of agreements with external bodies or adjunct teachers negative evaluations clear measures can be taken.

There is a positive interaction between teaching and research. Students are motivated to prepare a good quality thesis by enthusiastic teachers and good equipment that is available.

Especially in the new curriculum there seems to be a good balance between theoretical and practical work.

Problem-oriented teaching is not implemented systematically in the teaching, especially in the pre-clinical teaching. In the lecture room, students are taught primarily by using Power-Point presentations.

A structured monitoring of all first-day skills asked by the EAVEA is not present.

Despite the English language course in the first year, the students have in general a poor understanding of English. This limits the possibility of accessing information in books and journals and, the go abroad and thus limits the professional development of the students.

E-learning, especially, for practicals is insufficiently used.

Students are very satisfied with the accuracy and approachability of the teachers and professors

The theoretical training is about equal with the clinical one in the overall number of hours but represents about 1/3rd of the training for years 4 and 5, including the SPT and mobile clinic. There is some overlap in subjects taught during the preclinical training and those taught during the tracks (Anatomy of farmed animals, Physiology). E-learning is not being used at its full potential. All the subjects need improvement in teaching based on a problem-oriented approach. Although the adjunct professors teach strong practical courses, the lessons are not always completely in line with the academic approach of the university. This can cause some confusion for the students. Sometimes it can even lead to students discarding what was taught in the academic teaching courses. In the small animal clinics, the follow-up of the hospitalized patients needs to be improved. The critical care topic needs more attention.

Although clearly defined, there is concern that day 1 skills on e.g. planning and implementation of HACCP-based own control programmes and risk analysis in food enterprises, as well as on modern analysis of food-borne pathogens, are not met. Food chemistry in general, to meet requirements of the veterinary public health field, should not only focus on contaminants in foods, but should also cover on the effects of food processing and technological aspects, preservation techniques and contaminants on the characteristics of foods.

5.1.3 Suggestions

The English proficiency should be improved. A revision of the English teaching is advisable. Another measure could be to encourage students to write their thesis in English. All first degree theses should at least contain an English summary.

Problem-based learning should be introduced in preclinical teaching, and enhanced in clinical teaching

All disciplines should be stimulated to use Federica and E-learning facilities for practical training. Since such exercises can be repeated by students, this is interesting for them to evaluate their study progress and to enhance their problem-based learning.

A systematic registration of first-day skills asked by the EAEVE and other skills learned by students not only during clinical teaching in clinics, but also during extramural trainings on farms should be implemented.

A negative or positive evaluation of teaching should have a consequence for instance making positive evaluations a prerequisite for promotion or by obliging teachers with a negative evaluation to follow courses on techniques to improve their teaching skill. It is an important task of the university to organize pedagogic training of teaching staff on a regular base.

The electronic libraries the students use could be supplemented with specific software, to help students to prepare in more detail their potential cases by mimicking ie, the effects of certain drugs on the animals. The improvement and continuous expanding of problem based learning would be a better approach to most of clinical cases, especially in case of farmed animals.

Lectures and problem-oriented practical training on planning and implementation of HACCP, GHP, own control programmes and risk-based decision making, as well as on molecular food analysis techniques need to be increased. Food chemistry teaching should be given by a veterinarian to ensure relevance to veterinary public health.

The clinical and academic teaching should be well balanced and adjunct professors should stress the necessity and advantages of the academic approach.

A treatment and monitoring plan for both small and large animals should be set up to evaluate the patients properly. In small animal medicine the students could be given an ABC and resuscitation plan. This will help them to assess their future critical patients more efficiently.

5.2 EXAMINATIONS

5.2.1 Findings

The Faculty Council, on suggestion of the TAC, sets the calendar of exam sessions at the beginning of each academic year. Once the calendar has been approved, at least five and no more than eight dates are proposed by the relevant examining board (a different one per course) for the students in course (who are able to proceed in their career by getting 50 – 60 ULCs per year and to graduate in 5 years). On special occasions, alternative dates can be arranged or exam dates can be postponed. The students have the right to sit for an examination for any available date according to the calendar of exam sessions of each academic year. There is no time limit for passing examinations, nor is there any limitation to the number exam re-takes. The examination board of any course is free to decide on the examination form(s). No external examiners are used.

EVALUATION OF TEACHING AND LEARNING

There are three levels of evaluation performed: 1) The university collects general feedback from students on the curriculum on a yearly basis. 2) The veterinary students evaluate teaching quality (teachers' didactic skills, attitude and performance). 3) The faculty collects feedback from students on the performance of the adjunct professors outside of the faculty. All types of feedback appear to be used for development of the teaching. The evaluation reports are strictly confidential and each teacher can only have access to her/his own evaluation.

5.2.2 Comments

The examination system seems very bureaucratic, in order to enhance students' performance. A very good tracking system must be available to monitor each student and each discipline, in case of a high percentage of failure and repetitions of the exams. There are too many examination sessions, practically every month, which complicates even more the tracking of each individual student. In this system, students could take a leave for a certain period without any complications. This often prolongs their complete study period.

That there are several months a year the student can sit the examination again costs the teachers an enormous amount of time, which they could spend better on teaching, patient care or research.

It is positive for the first and second year that some examinations have to be passed before an examination of courses can be sit, which strongly build on the knowledge taught in the first course. Emphasis is put on oral examinations while in some cases a well-designed written test could be more efficient and provide more impartial evaluation than an oral test.

The system of "pre-requisites" introduced recently is an important step for limiting the disadvantages of the current examination system.

External examiners would represent a useful feed-back for academics.

There are three parallel systems of teachers' evaluation. The advantage of the systems organized by the faculty is its immediacy as compared to the university-organized system, which delivers results only after a year. Students can influence the evaluation procedure by using their own questionnaire, which is a useful approach. The results are reflected reasonably, within the legal limitations, similarly to other schools. The "adjunct professors" are also evaluated and in the negative case, their contracts are not necessarily renewed.

The three-fold system seems somewhat complicated in the light of the outputs obtained.

5.2.3 Suggestions

More extensive use of written tests could be envisaged for some topics to reduce teaching load and to increase the efficiency and impartiality of the system.

External examiners should be considered, especially in clinical disciplines.

A single system of evaluation would be more efficient. The faculty should negotiate this issue with the University and with students.

In order to simplify the examination system, establishing a certain number of exams/credits to be passed/accumulated after each year of studies to move on to the next might prove helpful. Students need to be encouraged to finish their studies as fast as possible.

The system of knowledge that should be proven before going to a next course is excellent. It should be seriously looked at if this could be extended to other courses: e.g. Genetics if succeeded in Biochemistry, Cellular and molecular biology.

The legislator should be made aware that the unlimited retake option for exams is non-productive, enhances negligence, is expensive, burdensome, and on the international level uniqueness, shared only with Greece.

6 PHYSICAL FACILITIES & EQUIPMENT

6.1 GENERAL ASPECTS

6.1.1 Findings

The Department of Veterinary Medicine and Animal productions is located within the city. It is divided into an historical site located in via F. Delpino, a teaching centre “Complesso Salesiani Don Bosco”, a Veterinary teaching hospital (VTH-Frullone) for small animals in Cupa del Principe street, and a research centre (CReMoPAR) located in Eboli (Salerno province). The faculty also owns an experimental centre for birds and rabbits located in Varcaturò (Napoli province). The VTH-Frullone is a recently constructed hospital of 1,100 square meters. The “Complesso Salesiani Don Bosco” is a building, less than 1 km from historical building, comprising classrooms for the educational needs of various departments of the University of Napoli, among them also the Faculty of Veterinary Medicine. The “Regional Centre for Monitoring Parasitic Infections” (Centro Regionale per il Monitoraggio delle Parassitosi)– CReMoPAR” established by a resolution of the Campania Region is based on an agreement between the Department of Pathology and Animal Health (Faculty of Veterinary Medicine, University of Napoli Federico II) and the Campania Region. CReMoPAR includes FLOTAC laboratories for coprology and laboratories of Helminthology, Protozoology and Entomology. At the Faculty, there is also a Museum of Anatomy.

6.1.2 Comments

In general, the lecture rooms and the laboratories correspond to the needs of the faculty in terms of number of seats as well as equipment. Laboratories vary according to the units.

However, they are mostly well equipped; many of them use modern equipment for teaching as well as for research and for training PhD students.

- There is an anatomy dissection room at the Faculty which is not well equipped for large animal carcasses. Furthermore, there is a small refrigerator as storage room. There is insufficient storage for organs, body parts and cadavers, so that students always have to work on nearly fresh material.
- The Museum of Anatomy is closed for public. Students are allowed to visit the museum containing skeletons, organ preparations, plastic models, embryos and malformations.
- Necropsy rooms for pathology are available at the Faculty, the VTH-Frullone and CReMo-PaR. Carcasses can be stored at all 3 sites at -30°C. Refrigerators are available at the Faculty and VTH-Frullone. The facilities for large animal necropsy are limited.
- Different rooms and halls are interspersed throughout the buildings due to the fact that the historical buildings were not originally designed for the purposes of teaching veterinary medicine. Moreover, due to their historical character, appropriate adaptations of the buildings are not always possible.
- Although it is relatively easy to move between different locations in the city, and despite the fact that similar activities are always clustered to the same place, the location of the faculty in the inner city and in several historical places is a clear limitation not only for current activities but also for the future development of the faculty. It is really difficult to enter the faculty, especially with trucks bringing large animals and the faculty does not operate as a geographically integrated functional unit.
- Due to the current financial crisis, a project of a completely new campus must be abandoned and a project of adaptation of an old building close to the current premises has been approved, money allocated and the construction are anticipated to start up by the end of 2013. This project represents an opportunity for the faculty to implement a modern concept of teaching veterinary medicine, especially of clinical teaching.
- As for extramural activities, transfer of students to Cremopar and to contracted farms is well organized. The distance is not a major inconvenient as compared to the great benefits of the system.
- Biohazard warnings, fire extinguishers and eye washes are available, along with detailed instructions of use. Biosafety and biosecurity issues are well respected and taught not only to students by also technical staff is well instructed. Exception: drug storage, to be added by EC.

The facilities for carcass handling and organoleptic quality assessment, and access to slaughterhouses are mainly adequate. However, microbiological and chemical analysis of foods is taught in research laboratories which are limited in space and not suited for teaching larger groups.

6.1.3 Suggestions

The faculty should take benefit of the new facility project and establish a modern concept of teaching veterinary medicine. External consultants should envisage, especially from other veterinary faculties who have recently implemented similar projects. In these new buildings there should be among others attention for a necropsy room allowing necropsy of large cadavers, a dissection room with adequate storage facilities for anatomy, a large animal hospital with appropriate surgery room and housing for large animals, and appropriate teaching laboratories for microbiology and chemical analysis.

6.2 CLINICAL FACILITIES & ORGANISATION

6.2.1 Findings

Teaching is done in a discipline specific orientation in the first 3 years of the curriculum. After that, the clinical last two years are taught in a species-oriented way (with the integration of all disciplines involved).

While the original Teaching Hospital in the historic building is old and insufficient, new solutions have been found in

1. The VTH Frullone for stray small animals and wild birds (a cooperation between the local health board, the local veterinary public service and the university),
2. CReMoPAR for parasitology and ruminants and
3. Centro Sperimentale Avicunicolo (CSA) for poultry and rabbits.
4. Contracts have been agreed in acquiring clinical experience with local veterinarians (adjunct Professors)

There are extensive contracts with equine, buffalo and cattle farms, where the students in the mobile clinic, following courses at CReMoPAR or working with adjunct professors, have the opportunity to gain experience in these species. Both hands-on experience in the earlier years and clinical experience in the final semesters are well covered within these cooperations and agreements.

CReMoPAR is a unique cooperation which offers necropsy and parasitology with a buiatric internship of 3 weeks (also 24hr service). It is also offering diagnostic services on parasitologic diagnostics and treatment for the local farmers. Students are following the whole track from taking samples, diagnosing parasites to suggesting treatment and follow-up.

CSA teaching facility is covering the needs for hands on experience, pathology and infectious diseases in the fields of avian and rabbit medicine.

Pathologic diagnostic services and referral clinical services are available at the VTH historic building, but are limited by the structural limitations. These services will improve with the construction of a new necropsy hall and expansion of the small animal hospital at VTH Frullone, both for small and large animals.

We found that there is expertise in many areas (pathology, parasitology, buffalo's, bees), but there is no structured plan to further develop specialisation.

Both the VTH historic building and the VTH Frullone offer a 24hr service in which students participate. Attached to VTH Frullone is a 24hr ambulance service. While there are adequate hospitalisation services at VTH Frullone, the hospitalisation facilities in the historic building are minimal. Intensive care is provided in both facilities but is fragmented due to the 2 locations. Modern equipment like CT scan, endoscopy, arthroscopy, radiology are present, but sometimes duplicated due to the multitude of locations.

6.2.2 Comments

The clinical specialist facilities for all animals are mainly located at the VTH historic building and limited by the old structure. They are organised in a small animal department and equine department. Other large animals are housed in different (teaching) farms in the Napoli region in agreement with the university. A unique collaboration at VTH Frullone with the local public health board has resulted in a hospital for emergency care and treatment of stray pets (including standard castration and micro-chipping).

The plans for extensions at the VTH Frullone to build a large animal and equine facilities, expand the small animal hospital, will improve the number of consultations, treatments, surgeries and necropsies for all species. Also concentrating all equipment, staff and resources in one place will improve effectiveness in teaching, improve 24hr intensive care facilities, and reduce cost for the university.

While modern equipment is available (CT scan, endoscopy, arthroscopy, radiology), additions like radiotherapy and MRI should be considered for the near future.

6.2.3 Suggestions

While facilities are to improve for both equines and large animals at VTH Frullone with the planned expansions and rebuild, we strongly believe that intensifying the collaborations with the large animal farms (buffalo, cattle and equine) and expanding on the agreements with large animal practitioners (adjunct professors), will give a much faster and realistic experience to the students. Nevertheless improving large animal numbers in VTH is desirable for hands-on teaching and specific training (e.g. purchasing small pregnant ruminants to show caesarean surgery).

Also by the concentration of services into VTH Frullone it should be better possible to acquire new equipment (MRI) and services (radiotherapy).

A general and continuing plan for developing more specialisation and to improve services and teaching should be implemented on the short term. It will also provide long term goals for the university and the teaching hospitals.

The facilities for wildlife should be expanded and better supported by the school.

7 ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN

7.1 Findings

Despite structural limitations of the old buildings, all efforts are made to provide students with adequate material for both anatomy and pathology education. Mainly smaller animals and

organs are used for teaching, while some field necropsies are preformed on larger animals to compensate for this. With the facilities in CReMOPar and CSA (poultry & rabbits), extra facilities are created for necropsies and pathology. Training in pathology is completed with examination, including histology and cytology of cadavers and organs from slaughterhouses.

Topographic anatomy courses are taught integrated with the clinics, by use of live horses and radiological, ultrasound, CT images of the described organs. Histological specimens of dogs, cats, cows, swine, sheep, goats and laboratory animals are available for the students. Embryos of chicken, cat and swine are used to complete the students' knowledge on embryology.

The avian wildlife rescue facilities in Frullone VTH are a unique opportunity to gain experience in these species.

The lack of teaching materials in the VTH old building are compensated in 3 ways

1. Contracts with different teaching farms in regards to ruminants (cattle, sheep and buffalo) and equines (horse & donkey). Animal handling as well as production and clinical cases are taught on these farms (see SER) within the SPT and mobile clinic.
2. Collaboration with the Public Health Authorities to have access to stray dogs and cats and emergencies in the region at the VTH Frullone.
3. Extramural education with clinical practitioners (adjunct professors) who have within their specialisation access to many clinical cases.

The farms contracted by the school are used not only for clinical teaching but also for teaching animal production and animal handling. All species covered, although not to the same extent; cattle/buffaloes are well covered as well as sheep; pigs are covered to the extent corresponding to the local pig population, but still sufficient. Each student has a basic experience with horses, their handling and breeding. Fish and bee culture is also demonstrated to students as locally important species.

Food material includes fresh, processed, refrigerated, packaged and frozen foods from retail shops, carcasses (mainly cattle, sheep, pig, buffalo), quarters, organs and meat cuts collected from slaughterhouses and meat cutting plants, fish, crustaceans and molluscs collected from fish markets. Assistance is obtained from veterinarians carrying out inspections and/or recruited by slaughterhouses or food business operators and from other adjunct professors. In slaughterhouses, the students are exposed to slaughter of mainly cattle, buffalo and pigs, but occasionally also to that of small ruminants and rabbits.

7.2 Comments

Adequate fresh and prepared material of animal origin seems to be available and allows basic training of standard quality. Nevertheless, the lack of bigger species and whole carcasses puts limitations on the whole animal anatomy and pathology. The numbers of cadavers and the proportion between species (livestock and companion animals) could be improved especially after building of new facilities at Frullone.

The amounts of small animals is more than adequate, especially since 10% of all died or found dead animals are by law regulated to have necropsy preformed. This gives also a good insight in local epidemiology. The cooperation with the parasitology at CReMoPAR re-

sults in extra necropsies in the catching area and links it in with local clinical work done during the SPT. Nevertheless, the number of swine, rabbit and chicken necropsies remains small.

Ruminant education, especially cattle and buffalo's, are more than adequate available in the different farms that have a contract with the University. Clinical staff of the faculty has plenty availability to clinical cases through the teaching farms and the recently started ambulatory service.

Equine education is limited, but the regional availability of equines is limited as well. Efforts are being made in contracts with some equine and donkey establishments, as well as the extramural education with equine practitioners. The exposure of the academic staff to equine patients is limited due to the number of equines referred to the University. Improvements are expected by expanding the ambulatory service for equines.

There is no indication of examination of fishes as farmed species but there are fishes examined within the studies concerning food hygiene.

Material for food hygiene teaching appears sufficient and supports the theoretical background in an appropriate way.

All ratios seem to be satisfactory for the numbers of animals and teaching materials of animal origin offered to students.

7.3 Suggestions

Efforts should be made to get more exposure to whole carcasses in anatomy and pathology. Improvements are expected with the building of new facilities at Frullone VTH. The number of equine cases remains just adequate and the efforts should continue to improve the situation. Also further cooperation between practitioners and clinical staff should be stimulated to increase clinical numbers for both students and staff. The new mobile clinic for both ruminants and equines can provide extra clinical cases, but should be further developed.

8 LIBRARY & EDUCATIONAL RESOURCES

8.1 Findings

The library includes: a head office on the first floor of the Faculty building; other spaces at the former departmental libraries; a "borrowing point service" at the Don Giovanni Bosco building where some classes take place. There are many books and 36 journals available. The departmental libraries are easily accessible to students. Several books and journals can also be accessed online. The journals, periodicals and standard texts are sufficient. Exchanges are made with other university libraries. All the bibliographic resources of the Library are catalogued and researchable in the University OPAC that runs with the cataloguing software Aleph 500. Students are finding their way around the library resources very well and are not hindered by the opening hours. They have satisfactory amount of study area. Training is offered in how to use the library facilities.

E-learning is also offered but has not been sufficiently explained to the students; access to the e-learning modules is too limited.

8.2 Comments

Although the library closes before the clinics do, students find their way to the educational material unhindered.

8.3 Suggestions

Courses could be given about e-learning and more resources could be directed to support the e-learning possibilities of the students. Student doctoral theses or at least the summaries in English as well as all PhD theses should be accessible to the international research community via the electronic services of the library.

9 ADMISSION & ENROLMENT

9.1 Findings

To be enrolled in any Faculty of Veterinary Medicine in the Country, candidates that possess the High School Diploma have to pass a national admission test. (General knowledge and critical thinking, Biology, Chemistry, Physics and Mathematics). The same test must also be passed by foreign non-EU students. Knowledge is tested to a certain limit. Since students of a variable background can participate in the national admission test there is a variable knowledge among the students. A numerous clausus is set: 57 students, 10 non-EU students plus 1 Chinese student. The grading of the admission test is performed by the Ministry, and for each faculty the scores with the student ranking are posted within one week. The admission procedure takes into account the limitations of the resources available.

There is no high drop-out rate at the University of Naples. Few students leave each year because they pass the test in human medicine, but are replaced by students who were admitted to the Faculty of Veterinary Medicine from other universities and wanted to move to Napoli.

The degree of internationality and participation on student exchange program is approx 10%. The language barrier is definitely present. English is mainly used in the practical courses.

9.2 Comments

Since the national exams for Veterinary Medicine changed their programme from 40 multiple choice questions (MCQs) about general knowledge and critical thinking (culture, news, history,...) to 23 MCQs, the students feel that the test reflects more the basic scientific knowledge, instead of just general knowledge. This gives them confidence that studying for the exams will improve their chances of acceptance.

Since there are no English academic lessons, international students cannot attend the lessons accordingly. To compensate for this inconveniency the practical courses are mostly given in English.

Because of the limited knowledge of English amongst the Napoli students, they usually go to exchange programmes in the South of Europe. Application to several Western European countries are hindered by administrative problems.

9.3 Suggestions

Since it cannot be expected that teaching staff numbers will be increased in the near future, the number of student admitted to the Veterinary Faculty of Napoli should not increase.

In order to select students with stronger basic science knowledge, the admission test could be further altered.

International students could be more supported by offering English lessons. The Napoli students could be more stimulated to go to Western European countries. English lessons should be provided more. University staff should administratively support the application of students for exchange via the Erasmus program. Flawless communication in English (written and spoken) should definitely be a criterion for employment in the International Office.

10 ACADEMIC TEACHING & SUPPORT STAFF

10.1 Findings

Full professors, associate professors and assistant professors (“researcher” according to the specific Italian nomenclature) represent three levels of academic teaching staff. All staff members are generally required to use their time for both teaching and research. Full and Associate Professors have a specific course permanently assigned, while researchers are appointed on a yearly basis. Not all researchers are necessarily assigned a course in any given academic year. Academic staff in clinical subjects is also required to participate in the clinics and diagnostic activities. Allocation of the permanent teaching staff to the Faculty follows the resolutions of the University Board (“Senato Accademico”), a so called “Permanent Staff Plan” used to allocate the teaching personnel among Faculties. The number of budgeted posts for each Faculty has been originally assigned by calculating the mean of the values for the corresponding Faculties among 8 Italian Universities of comparable size to that of UniNA. Differences from these theoretical values and the effective staff numbers are progressively corrected by a balancing mechanism appointed within the University. Within the Faculty, the budget is allocated each year by a decision of the Faculty Council.

Non budgeted posts called “Contract professors” are hired mainly for the supervision of SPT. Support staff is not included in the budget. Usually, they are paid with resources from projects, with funds from the department or faculty, by revenues from clinical or diagnostic activities. These positions are usually temporary. Over the last three years, in order to increase the number of teachers who supervise practical training, 59 veterinarians were hired as adjunct professors by FVMNA contract.

The number of teaching staff is calculated according to the number professors officially belonging to the Faculty. In 2012, it was 89 persons (27 Full Professors, 21 Associate Professors and 41 Assistant Professors). Part-time professor staff are calculated as 0,5 FTE (2 veterinary surgeons, 2 inspectors, 1 mathematician, 1 agronomist, 1 economist, 1 engineer, 1 chemist). All teaching staff is mainly involved in teaching activity (including support practical work, supervision of student final thesis, SPT) within the Course of Veterinary Medicine, but 2 Full Professors, 4 Associate Professors and 6 Assistant Professor are mainly involved

in teaching activities within another course taught by the Faculty. They are calculated as 0.3 FTE.

Allocation of support staff (budgeted posts) is directly to the Faculty only for secretaries and administrators on direct dependence from the Dean's office. Otherwise, secretaries, administrators and technicians are allocated directly to Departments. Allocation of support staff to the Faculties is made by the Administration Council of the University following specific requests of the Deans. Academic positions are assigned only through national public competition for Full, Associate and Assistant Professors. Within the context of single academic categories, promotion occurs through the evaluation of the teaching and scientific activities of the candidate by the National Public Committee and only in the case of vacancies through retirement. Salary increase is being provided exclusively on the basis of seniority. Teaching staff is hired primarily by the faculties. According to national regulations, each member of the teaching staff is associated to a specific field of competence. Given that, teaching staff also does research; faculty members upon starting of their service must choose a Department where the research will be carry out. Difficulties in recruiting for budgeted posts are mainly linked to limitations imposed by budgetary restrictions and/or specific measures adopted at the national government level, since the University budget for personnel comes directly from transfers by MIUR (Italian Ministry for University and Research).

The staff in food hygiene consists of 2 full professors, 2 associate professors and 2 assistant professors. This represents 6.7% of all academic staff and 8.3% of the veterinary academic staff of the faculty. One of the two full professors was foreseen to retire in a few years, thus plans and measures for replacement need to be ensured in a timely manner. There are concerns that veterinary food chemistry teaching in the future will lack relevance to food hygiene and veterinary public health.

10.2 Comments

The process of recruiting and hiring staff is limited by national and university regulations.

Due to the presence of contracted "Adjunct professors", the ratios teaching staff vs. students are generally favourable (4 to 10 students according to the topics), especially if supervised practical training is included. In general, the ration teaching vs. support staff is not favourable, especially in the clinics, therefore there is a chronic need for veterinary nurses.

The current situation observed during the on-site visit has been influenced by the recent re-organization of the Faculty, which became a Department of the University. The Faculty/Department is currently establishing its optimal structure. This process is also related to the project of new buildings, especially clinics where a different staff structure will be needed. The financial crisis is obviously a serious factor influencing the personnel situation, like in many other countries.

Teaching didactic skills is not performed on a regular basis and there are no or few possibilities for the young teachers to learn pedagogy.

Extramural teaching is well organized and it is without any doubt supervised by the Faculty with appropriate feed-back, including non-renewals of contracts with adjunct faculty having received negative evaluation results.

Support staff is not always flexible in terms of changing their qualification and/or positions, even within the Faculty.

In line with the need to increase the number of food hygiene-related curricular hours to 12% of total hours (for the reasons stated in 4.5), the number of permanent staff in food hygiene should be increased to 12% of the faculty staff to meet the relative amount of curricular hours and to ensure sufficient student-oriented training. Food chemistry should be taught by a veterinarian to meet the requirements of the veterinary public health field.

10.3 Suggestions

The Faculty should benefit from the current situation (recent reorganization and new building) to set-up a new and modern staff structure, especially for supporting staff and also plan, in long term on its personnel policy.

The faculty should install a long term business plan implementing the revenues of specialized clinics as well as non-clinical services offered to the public for further development of extra positions and extra possibilities for new specialisations.

Also extra efforts could be coordinated to attract research projects which can be used for increasing personnel numbers

Provide an additional vacancy (e.g. assistant professor) in food hygiene for a young academic teacher with a veterinary background to better facilitate the increased teaching load, problem-oriented learning and veterinary food chemistry, and equip this vacancy (as any other vacancy) with sufficient time for research work enabling eventual promotion as a full professor in a realistic time frame to replace the retirement foreseen after three years.

Promote the need for a veterinary nursing school that can be organised and led by the Faculty.

Review of the promotion process and procedures for both academic and support staff: the quality of services provided by staff should be evaluated and better valued, didactic performance should be increasingly included into the promotion process and clinical services and clinical research should be valued appropriately.

11 CONTINUING EDUCATION

11.1 Findings

The Veterinary Department of the University of Naples is organising and participating in a wide range of continuing education: seminars, specialization courses and participation in national and international conferences. Also the experience on buffalo diseases and management is widely recognised and staff is regularly invited to speak about these topics. CPD is promoted by the local Professional Veterinary Chamber.

The CPD program has many different aspects (see SER) and has subjects of interest of every kind of veterinarian. The CPD-courses are accredited by the Ministry of Health and a minimum of 30-50 credits have to be obtained by veterinarians each year.

11.2 Comments

The University has special expertise in a few specific fields (e.g.: avian raptor medicine, buffalo medicine & management, raw milk to mozzarella cheese production, bees and bee products) and could be using this experience to run CPD courses on these subjects. This could benefit income generated from CPD. Some topics in CPD are barely touched (horses), but considering the region is not a “horse-region”, it is hard to expect a complete program on all subjects.

11.3 Suggestions

The Faculty should try to develop other points of excellence and experience in order to offer CPD courses in more (specific) subjects. Also the education and qualification of registered Veterinary Nurses is desirable, which would include specific CPD training for these nurses as well. Students should be encouraged to follow CPD courses in other regions as well, to diversify the choices of subjects available to them.

12 POSTGRADUATE EDUCATION

12.1 Findings

The Faculty provides numerous types of postgraduate education: specialisation schools (7), postgraduate improvement courses (13) including master (3) studies, PhD programs (8), research training programs and national and European College (one Diploma of European College of Bovine Health - one resident) qualifications. Two European College diplomats are members of the staff and one resident is active (ECBHM).

The students are introduced research items during their undergraduate studies, through an arrangement they call “internship”, by self-assignment to a research group. The PhD program includes three years of training. Under the heading “Other doctoral level”, the incoming PhD students and cooperating laboratories are indicated. PhD students enrol mainly for a research project, but they must also attend courses, lectures, seminars, etc. valued as 180 credits per the entire stage (60/year). Numerous international publications in peer reviewed journals are present.

12.2 Comments

A more active resident and intern program could help in reviving the PhD programs which are functioning actually on person to person bases. The lack of funding from the government is a problem, since the Universities have many other budgetary categories to cover besides the PhD stipend. Many research groups are active in attracting external funding.

12.3 Suggestions

Postgraduate education needs to be more stimulated. Research grants could be a solution, in case the legislation allows the payment of scholars from this resource. Co-tutored doctorates could also provide some extra funding for these students. Funds coming from various

companies interested in one or another research subject could also be accessed. Presently the students receive the information on postgraduate possibilities on an individual level but not in general. Students should be provided with presentations on the activities of research groups, the content of PhD programs, rotating internships and residencies of the European Colleges, and related application procedures. International postgraduate education should be promoted in order to attract future specialist to the faculty.

13 RESEARCH

13.1 Findings

All academic teachers are expected to do research. The time they spent in research activity, is not actually registered and depends on their teaching activity and their interest. The labs are the reference structure supporting this research, however, the individual teachers are free to decide on their own the type of research projects and they are the administrators of the research funds they obtain. Since teaching and research activities are strictly interconnected, in virtually all instances Faculty members perform their research work in the Faculty Department.

Given the expertise of the school in animal productions (especially buffalo milk and mozzarella cheese, as well as donkeys and bees), numerous research topics focus on these species and on animal productions, food hygiene and food safety. Nevertheless, some of the disciplines such as Parasitology, Infectious diseases, Pathology seem to be more proficient in obtaining international grants and publications in ISI journals. Some of the high tech equipment obtained via or bought for research is used for training of students.

Close relations, both in research and teaching, are held with the Experimental Zoo Prophylactic Institute of Southern Italy (IZSM) Portici (Napoli), which is one of 10 Institutes of Italy and is part of the Didactic Integrated Pole. The establishment of "Polo Integrato" helps the various research groups to better integrate their research and acquire a cohesive, multi-perspective approach.

The numerous international contacts the school has raised the opportunity of exchanges with foreign institutions in terms of PhD students fellows, teachers and acquirement of expertise and collaboration in research grants (FP 6 and 7, etc.).

The income for research is both public (more) and private (less) and represents, on average, about 12% of the revenues. This income is meant to pay for research fellowships, PhD grants and all the other cost related to research activities. The Faculty generated about 25% of the expenditure with research in 2010, 45% in 2011 and 33% in 2012. There is no part of the income from research that has to be returned to other bodies (i.e. UniNa), so there is no overhead on research money. International funding is also present following competition within the framework (FP6 and 7) and other international (Cost, ISHAM) programs in Parasitology and Infectious diseases.

All students at the Veterinary Faculty in Naples, have to write a thesis in order to graduate. This can be a literature review, a case report and/or an experimental work. The subject can be chosen by the student after he/she has passed 21 examinations. Some of them even join

disciplines before they pass 21 examinations. These are called “boarders” and follow the scientific life of the discipline or laboratory they have joined.

The subject of the thesis is chosen in agreement with a teacher, this can already occur in the 4th year. For the dissertation work 10 ULCs (250 hours) are awarded to a student. Often it takes longer (350 - 600 hours), in particular when the thesis focuses on an experimental work. In some cases the student must attend workshops outside the department to acquire the methodology to do the research. Field trials are performed on farms affiliated with the faculty.

From the graphs in the SER (Chapter 13) it can be seen that the clinical subjects are by far most chosen and basic science subjects least. Within clinical sciences, surgery is most chosen and pets are the most popular animal species. The thesis is scored by the promoter and a commissar (a 2nd university teacher and is scored according to its nature (experimental vs. factual). Experimental theses are usually awarded higher marks. Furthermore the student has to orally present and defend his/her thesis in front of a jury of 11 teachers.

13.2 Comments

Research is important since teaching at a university should be research-driven and research could result in increased specialisation, more up-to-date equipment and supporting staff.

As mentioned in the SER, a limited number of students ($\leq 20\%$) do not or poorly come into contact with research during their studies since they choose to do a literature review for their theses rather than experimental work.

The research effort of the Faculty is fragmented although there is cooperation between laboratories especially on buffaloes. There are many small projects. Most of the students (83%) ask to do a thesis on professionalizing subjects and 61% of them on topics of clinical science. The presence of PhD students in most labs stimulates contact of students with research.

Enhancement and improvement of collaboration with local enterprises (Farmers' Associations, Veterinary Chamber or Associations, Slaughterhouses) seem to increase the amounts of money allocated by these for research within the Faculty with about 30%. In spite of the efforts to increase the funding from international research grants, a relatively small percentage is flowing in from this source. The Faculty is increasing its efforts towards improving the application process for both national and international grants.

13.3 Suggestions

Important steps to increase research at the Faculty are 1) bringing as much students as early as possible in contact with research and 2) clearly define its research strategy in short and long term and delineate major research areas and topics, benefiting at most of the existing expertise. A first step should be to install a research committee with members from each lab, with members who represent the Faculty in different research evaluation committees and funding organs. This research committee could try to promote strategies to increase the research within the Faculty and the cooperation between the different laboratories. The research committee could also be involved in controlling the hours that researchers are involved in teaching and in encouraging all students to do a thesis with a research component in it. Ways to stimulate the latter could be to find company sponsored projects for student

thesis research. The faculty should look if certain lectures organized by the doctoral schools could not be opened for last year students.

Organizing an elective tract that is research-directed could prepare students for PhD studies or other postgraduate research trainings.

Some of the research topics could better benefit from a multidisciplinary approach within the school as well as inclusion of the students in the research groups.

The externalised clinical activities could not only provide a financial source by services but could also improve the financing of the research by accessing collaborative grants including SMEs.

EXECUTIVE SUMMARY

The Faculty of Veterinary Medicine of the University of Naples (FVMNA) has successfully corrected most and in the end all major deficiencies which were identified in 2002. Although in some areas important continued improvements are definitely warranted, no major deficiencies were identified during the present evaluation visit.

The curriculum is still split in an old and a new part, whereby the older part is going to be phased out over the next 2 years; both curricula are fully compatible with Directive 36/2005, the main difference being is an increased emphasis on practical training (“new tirocinio”), incorporation of some of the Bologna principles and increased choices for electives; not addressed by the lawmaker, however, are the unfortunate principle of unlimited length of studies and the lack of limitation of re-takes in examinations; this all leading to a relatively high numbers of inactive students which become a burden to the faculty without generating an appreciable difference in tuition income. This problem is nation-wide but the FVMNA should make every effort to minimise negative collateral effects.

Teaching benefits from a favourable ratio between faculty and students, because student admission numbers are regulated by law and they should not be increased under the present economic situation. Especially clinical hands-on teaching favoured by small group sizes. This positive ratio is however negatively affected by several factors which need urgent improvement: low numbers of technical support staff, especially animal nursing staff; relatively low numbers of necropsy material in some species, low numbers of entire carcasses especially equidae (not of animal parts) for practical (topographic) anatomy teaching, low numbers of clinical in-house cases, especially of pets and horses; low intramural patient volume in emergency and hospitalisation services; absence of clinical specialisation (College) level in clinical key areas (except bovine medicine and parasitology), entailing a lack of residency and internship programs. Income from services provided are low and should be drastically increased by improving or developing centres of excellence. On the other hand, teaching and services provided are excellent in some areas which should continue to receive attention: a non-exhaustive listing includes: buffalos and all related areas, infectious and parasitic diseases with emphasis on the “one health principle”, quality assurance and research in all areas of food production, where, however, the overall teaching hours should be increased to a minimum of 12%; and not in the least, the exemplary collaboration between human and animal public health services in the Naples area deserve commenting and are seen as an avenue which should be pursued by other Italian veterinary faculties together with the public health services.

Outsourcing of clinical teaching is well organised. Two mobile clinics, one for food animals and one for horses are operative. The lack of a university farm is compensated not only by these mobile clinics but also through an elaborated system of contractual collaboration with practitioners, cattle, buffalo and swine farms, horse stables and studs as well as a number local small animal practices and equine clinics. These efforts have sufficiently positive effect on teaching to compensate for the relative lack of intramural activity in some areas. Building plans for a new small and large animal teaching hospital, including necropsy facilities are well underway with complete financing guaranteed; all possible efforts should be undertaken to complete this project as soon as possible and beyond that, to assure that sufficient resources (personnel and equipment) will be available to render the new structure fully functional. A business plan should be developed and followed to increase service income, 3rd party income, allowing strategic reinvestment of funds created. Increasingly less dependence

on public funding should be thought utilising and enhancing the principles of academic freedom and autonomy.

For a more exhaustive description of recommendations please see the “suggestion” sections of the 13 Chapters in the present report.

In summary, the visiting team did not identify any major deficiency and recommends full approval of the FVMNA.

Annex 1 Indicators (version date: Budapest GA, 2012)

Ratio	Numerator/Denominator raw	1/Denominator	Established range of denominators	Notes
R1	130.64/628	4,81	8.832 (UL)	
R2	130.64/1296	9,92	9.619 (UL)	
R3	115.64/628	5,43	11.389 (UL)	
R4	115.64/77	0,70	2.203 (UL)	
R5	130.64/54	0,41	0.474 – 1.944 (Range)	
R6	Old 1910/1866 new 2025/1942	old 0,98 new 1,95	0.576 (LL)	
R7	Old 1110/756 new 1125/817	old 0,68 new 0,72	1.952 (UL)	
R8	Not applicable	Not applicable	2.576-103.746 (Range)	
R9	Old 3776/370 new 3957/369	old 0,10 new 0,09	0.725-98.437 (Range)	
R10	Old 370/150 new 369/150	both 0,41	0.061-0.881 (Range)	
R11	81/3	0,04	0.956 (LL)	
R12	81/3236	39,95	7.345 (LL)	
R13	81/28.8	0,36	0.307 (LL)	
R14	81/26 and 81/467	0,32 and 5,77	2.590 (LL)	
R15	81/11 and 81/880	0,14 and 10,86	0.505 (LL)	
R16	81/5245	64,75	43.462 (LL)	
R17	81/1.4	0,02	0.040 (LL)	
R18	81/155	1,92	0.998 (LL)	
R19	81/362	4,47	0.547 (LL)	
R20	81/210	2,59	1.498 (UL)	

Annex 2 Listing of Category Major Deficiencies**NONE**

FINAL REPORT AS ACCEPTED BY ECOVE

DECISION BY ECOVE: FULL APPROVAL