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**REPORT ON THE VISIT TO THE FACULTY
OF VETERINARY MEDICINE OF SASSARI, ITALY**

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INTRODUCTION

The Veterinary Faculty (now called Department. DVMSS) of the University of Sassari (UNISS) was established in 1928. The city of Sassari is situated in the north-west of Sardinia. From 1982 the Faculty has been located on a new, purpose built campus on the edge of the city. Some buildings, however, were built and became functional only about a year ago (Veterinary Teaching Hospital – VTH). The new location, which shares a beautiful green campus with the Departments of Agriculture and of Pharmacy provides easy access for students, and animal owners (large and small animals); on one hand the campus lies still within city limits, on the other it is in close proximity of the main motorway and the horse race track.

The DVMSS is the only veterinary teaching establishment in the island of Sardinia; the mainland is quite far away and can only be reached by air or by a 5 hour ferry ride. Thus, the DVMSS has an important role politically, economically and socially for this “Region with special status”; that is, an island with a relatively modest and overall agricultural economy, which receives additional support from the central government ~~but~~ and also from the European Community.

The DVMSS was visited once before by EAEVE in 1998, and was evaluated as non-approved. Since then major changes have taken place (see below); in short, a new VTH and isolation units, new animal housing facilities, stables, paddocks, necropsy facilities, laboratories and other improvements have been added. The DVMSS owns also land in the vicinity of Sassari where a faculty farm is being built. The organisation and structure has changed as well now that the new national study law (240/2010).is in force. The DVMSS today is vastly different from the faculty visited 15 years ago.

1 OBJECTIVES & STRATEGY

1.1 Findings

The objectives are well defined and focus largely on the following 3 goals:

1. To provide an advanced system of teaching for undergraduate students in Veterinary Medicine;
2. To ensure a post graduate continuing education for all the professional figures in the field of Veterinary Medicine in the territory of Sardinia and worldwide;
3. To reach the highest levels of free research for the development and dissemination of scientific progress.

Objectives are published and reviewed regularly by the faculty council. The curriculum is fully compatible with EU Directive 36/2005 and the Italian and regional study laws in their latest version.

The teaching hospital has been functional for a relatively short period and expertise in how to run such institution and how to use it to the benefit of the entire faculty has still to be improved.

1.2 Comment

There is still a relative lack of specialisation in the clinical areas. no residency programs and a definite shortage of technical support staff, especially animal nursing staff.

1.3 Suggestions

Create clinical centres of excellence within the new VTH, specialisation, residency programs and increased revenues through services. Contribute to the formation of veterinary nursing staff.

2 ORGANISATION

2.1 Findings

In 2010 a national law (240/2010) provided for a substantial transformation in organization and structure of the Italian universities; faculties were eliminated and replaced by departments. The current department structure is headed by a department director (former dean) and several governing bodies have been instituted, allowing a large degree of autonomy: among them are the Department Board, the Teaching Committee, the Research Committee and the department administrative offices.

This new structure has decreased in most universities the number of faculties and thus fulfilled the goal of economizing. Nevertheless, and as seen from the external reviewers' standpoint, no major changes in the organization of teaching, research and of the personnel structure occurred. In Sassari, the faculty of veterinary medicine opted to form one single department (DVMMS) which is seen as advantage in terms of autonomy. The DVMMS is represented at the university level in the Academic Senate and the Board of Governors; a rector represents the university.

Student representation in governing bodies of the university and of the DVMMS is satisfactory and especially well established in the Teaching Committee (TC). The TC involves equal number of staff and student members. Both Biomedical and Veterinary degree students are involved. Post-graduate and post-doctoral student representatives have the opportunity to join senior staff meetings.

Technical support staff, on the other hand, seems underrepresented in Committees.

The DVMMS keeps optimal contacts with the state veterinary officers of the region (ASL and zooprofilactic institutes) and with local veterinarians who also act as referring practitioners.

2.2 Comments

The department has a family-like atmosphere, where senior staff and the faculty administration can easily be approached by students and other staff members.

Students, junior staff and support staff are essential members of the campus community and their representatives have an important role in the governing bodies of the department. Their views and advice provide for more informed University decision making. Participation should be encouraged and strengthened through the involvement of all levels of student representation. Students, junior staff and support staff are represented in the department board and the teaching committee.

2.3 Suggestions

The research committee would benefit from post-graduate degree student representative.

One or two representatives of the veterinary profession from outside the faculty should be included in the Department Board. The Department Board can benefit from closer interactions with the veterinary profession to enhance more informed decision making.

Create an alumni association.

Increase internationality on all levels; for instance create partnerships (“jumelage”) with other veterinary faculties abroad.

3 FINANCES

3.1 Findings

As in all public universities in Italy, UNISS is fully owned and financed by the government/ministry (MIUR). Nationwide legislation governs distribution of funds at the university level, determines tuition fees (approx. €1000 per year), dictates annual numbers of student admissions and pays directly salaries to all university staff; salaries are not negotiable and are not merit/performance associated; they depend solely on grade and seniority.

Funds (so called ordinary funds) paid to the university are distributed to the individual Departments through a complex distribution key which is correlated to teaching load, student numbers and services provided. Based on nationwide cuts in university budgets, ordinary funds are not increasing; on the contrary, strict economic measures are being applied such as in many cases non-replacement of retiring senior teaching staff (at least not on the same professorial level) and scarcity of funds for replacement and maintenance of equipment and premises. The scarcity of technical staff, especially in the clinics and in housekeeping has no chance of being augmented by financing through ordinary funds; the same is true for new positions, whose creation we do recommend, as especially veterinary nursing staff, interns and residents.

Since 2012, the UNISS has adopted a central accounting system (bilancio unico) controlling the Department offices which maintain a substantial degree of autonomy to decide how to allocate ordinary funds received within the Department. The teaching budget is managed by UNISS and research funds by DVMSS. The amount of ordinary funds transferred by the UNISS to DVMSS depends on the square meters occupied by DVMSS teaching and research facilities. Although this is a quite strange way of allocating funds, such a scheme is used in some other European countries as well.

Although funds are never sufficient, especially in this economically difficult situation, the faculty still does deliver proper teaching (under the limitations spelled out in other chapters); nevertheless, in many areas, enthusiasm and personnel sacrifice of teaching staff in terms of time and effort are evidently necessary to maintain teaching standards. Teaching standards are maintained under the present financial restraints, because of the relative low number (34 Italian and 5 non-EU citizens in 2012) of students admitted annually. (Originally, the faculty and its premises were certainly designed for larger numbers of students).

Almost all the income through research or through project funding by industry or region can be used by the grantee. Overhead payments to department or university are low (20%) for service income and absent for research grants.

Income from services (clinical, diagnostic labs etc.) is very low (in 2012 € around 90 000 €) – the total annual budget of DVMSS was 9.8 million in 2012 (Table 3.6), this figure includes salaries of nearly all staff (budgeted posts). DVMSS does not employ an appreciable number of non-budgeted personnel, with the exception of PhD students (those remunerated by external funds).

3.2 Comments

In allocating annually funds to the DVMSS, the university administration should recognise the fact that veterinary education is among the most expensive of studies; to train undergraduate veterinary students the total average costs are €20.000 per annum for students in Europe. This is substantially more than training in most other disciplines; however, the distribution of public funds does not fully recognise these differences.

The recent structural and functional changes (study law and law substituting faculties by departments) make financial planning difficult: the new study law demands a substantial increase in practical teaching, on the other hand, appropriate financial support, necessitating a budget increase is not or is insufficiently provided; a solution is not apparent at the present time. The new Department structure entails a new use and distribution system of funds with the main goal of the legislator of being more economical than the previous faculty structure. As this restructuring is an on-going and evolving process, long-term financial planning seems difficult. A long-term financial plan has not been established.

The precarious budgetary condition will in all probability not change to for the better within the foreseeable future; therefore, the UNISS will have to search actively for alternative revenues; this will require a profound change of in the traditional attitude towards provision of services and funds within a publicly financed Department.

The income from clinical and laboratory services is too low and can be substantially increased by creating centres of excellence (clinics) and by using in a business orientated manner, the available know-how (expertise), equipment (diagnostic laboratories) and premises (clinics, laboratories). Revenue generated should be invested to improve working conditions by increasing the technical staff, recruiting specialists at the College level, by creating residency and internship positions thereby benefitting research and teaching. In the long run, such process is expected to be auto-sustaining and synergistic. In the beginning, substantial investments especially in the properly running recently established veterinary teaching hospital VTH (small and large animal) will be necessary; however, these developments should be governed by a long-term business plan and monitored by a dedicated committee.

Although tuition fees are determined by governmental decree, the fees should be substantially increased to better reflect the real costs of forming veterinary graduates and to adapt to such trend in several European member states.

3.3 Suggestions

Teaching funds allocated by UNISS to DVMSS should be as much as possible proportional to the real costs of veterinary training (€20.000/student/year). Teaching funds must increase especially in the context of the by law required increase in practical teaching (especially in the Tirocinio).

Given the budgetary restraints, student numbers should not increase substantially; the tuition fee should increase and any increase should directly benefit the respective teaching faculty.

A long-term (5 year) business plan should be established and be governed and progressively evaluated by a dedicated committee.

Non-budgeted income, that is income through services (especially clinical) and research (in some areas = mention those areas here) should be progressively and substantially increased with revenues invested mainly in personnel (internship and residency programs. technical support and nursing staff. clinical research).

Creating a larger volume of business (patients) in the large animal clinics as well as rendering this teaching hospital more functional in the larger sense (including. necropsy services. imagery. diversified case load etc.) should have absolute priority.

Investigate means of reducing bureaucracy. reducing administrative burden and thereby costs; evaluate possibilities of shifting administrative positions changing them into positions of technical support staff (especially clinical support and nursing staff).

Create and define new faculty and staff positions such as “Intern”, “Resident”, “Veterinary Nurse” and allocate to these positions salary frames in order to facilitate business planning and fund allocation.

Increase to reasonable levels overhead deductions (in favour of the Department) for research grants and other external funds; include in business planning.

Find ways to remunerate appropriately specialists (Diplomates of speciality Colleges); Specialist titles should be seen as equivalent to advanced academic degrees (dottorato di ricerca. abilitazione – without substituting for those degrees!) and should be remunerated accordingly.

4 CURRICULUM

4.1 GENERAL ASPECTS

4.1.1 Findings

The general aspects of the curriculum comply with the EU requirements as described in the directive 36/2005.

The studies last 5 years inside the faculty and cover all EU-listed subjects.

The Ministerial Decree (MD) n° 509 (study law) enacted in 1999 has been revised in 2004 by the MD 270. The 1st. 2nd and 3rd years of the curriculum follow the new Decree. The 4th and 5th years are still under the old Decree.

One University learning credit (ULC) corresponds to 25 hours of learning commitment (lectures. practical and individual work).

MD 270 says that the students must acquire 300 ULC during the 5 years in order to obtain the degree in Veterinary Medicine.

Students graduate as Doctor in Veterinary Medicine. The students have regular examinations in all topics, during their studies, and write a doctoral thesis at the end of the curriculum. The doctoral thesis is mandatory for graduation; therefore, the doctor degree is necessary for exercising the profession. In addition, graduates have to take the 'Esame di Stato' (the state examination) in order to exert veterinary profession.

Course integration has been re-scheduled via the new curriculum. In-class attendance (lecture) is not mandatory since 2012-2013. The hands-on practicals are mandatory 100%. These practicals are taught in small groups and on a very personal level for each student. There is no perquisite to pass examinations in order to be able to advance in the studies to the next years.

Compulsory pre-professional training (ORIENTAMENTO) as internship (7 ULC. 175 hours) is has been introduced in the new curriculum (Table 4.5). It has not been totally activated yet for the 4th and 5th year.

Clinical training is supervised in small groups, and the students have additional supervised practical training, called "TIROCINIO" which is a special hands-on experience period on clinical subjects, food hygiene, animal production and avian medicine. The mobile clinic work of 20 hours in the 5th year is now included in TIROCINIO (4 mornings of 5 hours). There are plans to increase this into 35 hours. Obligatory extramural training is 425 hours and 3 new contact professors have been hired (2 in bovine and 1 in small ruminant practitioner).

All practical activities can be monitored and are checked in a Logbook, where each practical skill is signed by the teacher. or contracted teacher present. This work is performed in part at the faculty, in part in extra mural activities. The logbook has been in use since 2010-2011 when the new curriculum was activated.

4.1.2 Comments

The curricular progression of the student is based on the principle of prerequisites (propaedeutics) to be respected. However, in-class attendance (lectures) has not been mandatory since 2012-2013. Also the examinations can be undertaken with an unlimited number of re-takes. So it is assumed that the student gains information and proceeds with her/his knowledge progressively step by step. The students' level of knowledge is not systematically checked when passing from one year to next and therefore it cannot be assured. Also there can be an accumulation of examinations from the second year onwards.

Based on the EAEVE visit 1998 - Hours of supervised practical teaching will be increased from 1469/3209 (45.8%) to 1814/3570 (51.8%). training is aimed for small groups (2-5 students) and attendance at supervised training is mandatory (100%). From 2012/2013 students are involved in hands-on training in Veterinary Teaching hospital (VTH) from 1st-5th year (except 2nd year). The building of VTH was finished in 2012 November.

There is a substantial increase of practical activities, 6%, which will give a good balance between the theoretical and practical learning in the new curriculum. There are 51 teachers and student numbers have been reduced from 80-> 40 -> 34 annually. This gives an excellent opportunity for even more personal supervised teaching.

The use of Logbook has been in force since the new curriculum (2010-2011) for the 3rd year and therefore does not yet fully reflect what students do in 4th and 5th year.

TIROCINIO (750 hours on 5th year) is done within VTH but also in obligatory extramural work (425 hours) mainly in animal production, food hygiene and avian medicine. Mobile clinic service was voluntary but has been made mandatory for every student since 2012-2013 and is included in TIROCINIO (5th year).

In regard to the Bologna process, we can consider that the five years courses correspond to the bachelor and master degree (2nd level master).

There are also PhD degree programs at the DVMSS in various fields (14 different fields are listed in SER in basic sciences. clinic. food hygiene. animal production. pathology. animal diseases); those programs correspond to a minimum of a 3 year course. Research is coordinated by Research Committee which has no student members.

4.1.3 Suggestions

Examination system needs refinement as all examinations are oral. Transparent objective examination systems use also multiple-choice questions as well as shorter or longer essays. Students' theoretical level of knowledge has to be tested before they are able to participate in clinical work. Having requirement of 180 ULC before starting the 5th year means that they are already 60 ULC i.e. 1 year behind in their studies. Consider increasing this requirement above 180 ULC. Additional check-points should be placed earlier in the curriculum to encourage efficacious progression of studies. These should be accompanied with individualized study plans and counselling for students who struggle to progress sufficiently in their studies.

Practical hands-on training has been introduced throughout the studies utilizing the resources of the recently opened VTH. The hands-on training is found adequate enough under current circumstances. There are enough teachers to teach students in small groups.

TIROCINIO should be developed together with the VTH – and an increased case load is needed. It could be enlarged to increase the mobile clinic activity as well.

TIROCINIO and practical skills should have a progressive evaluation and outcome assessments in due time, and not at the end of the period only, and everything needs to be checked by the faculty (Tirocinio board), especially also in case of extramural studies.

Also a practical test like Objective Student Clinical Examination (OSCE) could be introduced into assessment to monitor students' day-1-skills, hands-on and practical skills (re: University of Padova).

4.2 BASIC SUBJECTS & BASIC SCIENCES

4.2.1 Findings

In the establishment of the new curriculum of DVMSS according to the dictates of the DM 270/2004, the Department had to take into account that the whole curriculum includes 300 credits during 5 years (workload fixed at 60 credits per year). According to DM 270/2004 the number of credits for "Basic Disciplines" ranged between 60 and 88. Actually 65 credits are awarded by the DVMSS which is a 22% of the total curricular credits. For comparison, "Characterizing Disciplines" reaches a proportion of 55%.

Basic subjects (i.e. physics, chemistry, animal biology, plant biology, and biomathematics) as well as basic sciences (i.e. anatomy, physiology, biochemistry, pharmacology, toxicology, microbiology, immunology, epidemiology, and professional ethics) form part of the core curriculum within the Department.

Bones, viscera and cadavers of different domestic animals are used for training students in practical anatomy. All these materials are stored by freezing until their use. After the practical sessions, waste materials are treated and disposed following current Italian laws. Teaching of bio-safety and bio-security appears to be adequate, at least regarding overall 5-years study. In addition, each student has to visit 2 seminars to learn "safety at work". For training of students in practical pathology in the necropsy room an adequate number of food producing animals as well as companion animals is available. All teaching material entering the necropsy room is registered by students in a common open source online database. Organs and carcasses are discharged according to guidelines for applications for new alternative methods of disposal or use of animal by-products under regulation (EC) no 1774/2002.

Students with educational deficits in biology and chemistry are a problem.

There is an early (1st year 42 h clinical training) and continuous exposure of students to practical training activities. From this, a good linkage of basic and clinical sciences can be expected. However, this cannot be controlled from the SER.

In the 1st year the relation of theoretical/practical training is 69%/31% (2nd year 73%/27%, respectively).

Taken together physiology, endocrinology and physiology of nutrition include 22 h practical training and 122 h lectures (ratio 15%/85%). Pharmacology consists of 9 h practical training and 51 h theoretical training (ratio 15%/85%). the same for toxicology is 9 h practical training, 27 h lectures (ratio 25%/75%) and for general pathology it is 13 h laboratory based work and 31 h theoretical training (ratio 30%/70%).

Practical courses are organized in relatively small groups (10-12 for basic sciences and 4-5-for clinical sciences).

The majority of examinations are performed as oral examinations, however, there are also ongoing tests either oral or written which can be considered in the final mark

The high standard of technical equipment is appreciated, as in parasitology and especially in the basic laboratory. In most subjects the students have access to e-learning platforms which might help to deepen their knowledge in respective subjects.

4.2.2 Comments

It is obvious that the proportion of practical training in basic sciences such as anatomy, physiology, endocrinology and nutrition physiology is not very high. In addition, it is recognized that there are many attempts to present basic subjects such as botany, physics, chemistry and zoology by teaching staff from the department in order to make sure that the contents are relevant for veterinary education. The parasitology group has successfully contributed to the European diplomate system in small ruminant health management and parasitology.

4.2.3 Suggestions

With regard to the good ratio of students/teachers it is recommended that all basic subjects increase the proportion of practical classes to overall lectures. This is also true for the further integration of basic aspects into the clinical education which might contribute for a better understanding of aspects of internal medicine. Since Animal Welfare is of major concern for each Veterinary Faculty it should be introduced as a basic subject with regard to both. livestock species and accompanying animals.

4.3 ANIMAL PRODUCTION

4.3.1 Findings

The department has some smaller premises for clinical demonstrations but relies on contracts made with a number of farms. On these farms students are able to get hands on experience on all relevant species under close supervision of teachers.

Special zootechnics, 22 hours is studied during the 2nd year of which 15 hours are lectures and 7 hours are non-clinical animal work. In the 3rd year there are 66 hours of Special zootechnics of which 46 hours are lectures and 20 hours are non-clinical animal work. Further, for the 5th year there are elective courses in Animal production of which one is Animal Production 28 hour lectures and 36 hours non-clinical animal work and one is Animal Nutrition with 42 hours lectures, 4 hours seminars. 22 hours laboratory and desk based work and 12 hours non-clinical animal work. In addition, there are 23 hours lectures and 10 hours non-clinical work in Zoocultures during the second year.

Some aquatic species are addressed in Animal Nutrition and visits to aquacultures are made.

Of the 425 hours of extramural work demanded during the second semester in the fifth year 200 hours consists of practical training in Animal Production.

There are almost no seminars or self-directed learning.

Ethology is given in the first year with 23 hours lectures and 4 hours non-clinical animal work. In the old curriculum ethology and animal protection was in total 32 hours. Animal protection is not defined in the new curriculum although it is taught at various courses.

Teaching of forensic and state veterinary medicine is done in the subject of Internal Medicine (18 hours of Legal medicine).

Animal transport issues are taught in Food hygiene.

Theoretical teaching is performed solely as lectures. No seminars or self-directed training is used.

Animal welfare is taught integrated in several disciplines with an overview responsibility kept in the Food Hygiene discipline. Animal welfare aspects are integrated in the handling of stray animals at the clinics where such animals are sent to kennels or to adoption through student activities on Facebook. Euthanasia is only applied for medical reasons.

Bio-safety and bio-security issues are respected as part of the normal teaching procedures.

4.3.2 Comments

Although the department has not a farm of its own, the department has succeeded well in contracting a number of farms to allow for students as part of courses to get hands on training on relevant species and to meet with farmers to experience interactions with them. Enough pre-clinical and clinical exposure to farm animals is thus achieved.

There is a very active and positive interaction between the department and the farms and students throughout their five years education typically get to visit in total about twenty different farms with sheep- and goat, dairy farms, some pig farms and several other farms.

There are sufficient hours in Animal Production although students are given few possibilities to reflect and contemplate on their findings and experiences from lectures and farm visits.

Animal Welfare is not taught as a discipline of its own which is an omission as the topic is gaining increasing attention in the EU and in OIE actions.

4.3.3 Suggestions

Although Animal Welfare is taught as part of several courses it should be defined in the curriculum and a responsible teacher should be assigned to ensure that all aspects of Animal Welfare are covered throughout the curriculum. The core of animal welfare should be taught as a subject of its own. The responsibility for the subject Animal Welfare should preferably be given to teachers responsible for Zootechnics.

More time should be allocated for seminars allowing student reflection in small groups and follow-ups on farm visits.

Students should be exposed to animal transport situations and handling of animals at slaughter already during their course in Zootechnics.

4.4 CLINICAL SCIENCES

4.4.1 Findings

General findings: The students of the 4th and 5th year still follow the old curriculum which means that in clinical sciences, changes are still pending. The new curriculum is not presented in the SER for these years, yet – so it is to foresee, how teaching and activities will evolve and change.

Clinical Training and hands-on experience; changes compared with data of the EAEVE visit 1998 - Hours of supervised practical teaching has been increased from 1469/3209 (45.8%) to 1814/3570 (51.8%). training is aimed for small groups (2-5 students) and attendance to supervised training is mandatory (100%).

From 2012/2013 students are involved in hands-on training in Veterinary Teaching hospital (VTH) from 1st-5th year and a total of 491 hours are spent in hands-on practicals and clinical work in VTH. Building of VTH was finished in 2012 and clinical rotation established officially in June 2012. VTH handles both small and large animals (SA. LA). Large animal case load is only about 10% of all cases. The 5th year students work in VTH (265 hours) on weekday mornings Mon-Fri from 9am-2 pm.

OLD curriculum; TIROCINIO is 375 hours (78 days): 75 hours in clinical cases and lab (SA); 150 hours in surgery and obstetrics and diagnostic imaging (SA. LA); 100 hours in emergency and intensive care in VES (see below). A total of 40 hours could be electively used extramurally in public health, small ruminants and cattle, horses) or in other veterinary universities.

NEW curriculum: TIROCINIO is 305 hours (70 hours medical cases. 70 hours surgical. 75 obstetric. 25 hours emergency/intensive care; hospitalization 25 hours; night duties 40 hours). Obligatory extramural work is 425 hours of which 200 hours are devoted to practical training of Animal Production, (175 hours to food hygiene) and 50 hours to avian medicine.

Students are covered by insurance during all their student activities

Emergency duty service: Veterinary Emergency duty (VES) especially dedicated to stray dogs and cats, has been done in collaboration with Veterinary Public Service since Oct 15, 2010 (100 hours per student). It is a 24-hour service providing students full range of clinical cases of small animals.

Now VTH operates a 24-hour emergency service with students on duty with a staff member. 100 hrs per student is allocated (SER p 61) of which 40 hrs spread over 4 nights is compulsory (SER p59 and § 7.1.7 p).

Emergency service is allocated for the students on the 3rd to 5th year plus off-course students (Table 4.b. SER p. 58-59). On weekdays, the 3rd year students do 1 duty/month (72 hours in evenings from 2-9 pm).

On weekends, 4th year students are enrolled, once every 2 months, and on weekday nights the 5th year 40 hours divided into 4 nights or off-course students (66 total hours. of which 30 hours during the days and 36 hours in 3 nights. once every 2 months).

LA emergency was activated on late 2010 – see below.

Mobile clinic: Mobile clinic was activated on late 2010 and students attended there on a voluntary basis. From 2010-2012 altogether 49 students participated in this function. Since then, every student must spend a compulsory 20 hours in mobile clinic service and on-call for large animals.

The new VTH provides an excellent facility with state of the art equipment and an airy and roomy working environment. There are good facilities to allow staff to change and scrub before entering sterile areas. The infectious disease facility is exemplary. Organisation appears to be very good with staff working together to a common goal. The case loads are border line but the necropsy case-loads appear to be adequate. Staff numbers are good for the number of students. The support staff appears in many cases to be over qualified for their roles (PhD and DVM) Adequacy of facilities, environment, organization, caseload, necropsy case load, staff and support staff were all checked.

4.4.2 Comments

ORIENTAMENTO from 1st to 5th year is seen as a positive sign.

The allocated hours seem to be in balance with the curriculum. Students spend a total of 491 hours in VTH that is roughly 20 weeks (5 months).

The long-term follow-up of the cases seen in VTH happens in sections of 2-3 subsequent weeks that students spend in VTH during their Tirocinio. Patient record system makes it also possible to follow cases on a long-term basis.

Emergency service is allocated to students since the 3rd year. Lectures have been reduced and more time is allocated for self-studying. Attending to lectures is not mandatory. There are also no restrictions for advancing from one year to the next even though the examinations of the previous year/(s) and subjects have not been passed.

In total, the emergency service duties consist of only a few nights (4) and concern both small and large animals. Exposure to critical patients is thus quite minimal. Also exposure to hospitalized patients and their long-term follow-up is quite minimal (5 days)

The Bovine caseload annually would appear to be low, in VTH 19 (SER table 7.3), in mobile clinic/ambulatory service 25 (SER table 7.4a), out with the clinic 25 (SER 7.4b).

There are also 255 ovariohysterectomies performed. Students perform hysterectomies on animals from the municipal shelter. Each student performs at least one operation under supervision before graduation. Some will perform even more during their voluntary rotations in hospital.

Equine Medicine and Surgery is taught (SER p 63 § 5 and p 64) which quotes conditions associated with reproduction. There is an emergency service for horses at the DVMSS but the caseload would appear to be low with a total average of 34 equine cases per year seen (SER 7.3 p 117). Of these, 8 cases were emergency admissions SER p 119.

Altogether 45 equine cases were seen outside the department in outside teaching (SER 7.4b p122) . An agreement has been signed with 3 outside bodies to improve this situation (SER p 123) (SER p163) lists 15hrs per student on equine clinics in years 4 and 5 and quotes 62 cases followed by students out of a case load of 150. Financial situation and restrictions have diminished the amount of horses bred and also treated by veterinarians overall. Recession is affecting most the horse industry. With present student numbers amount of equine teaching and case load is just acceptable. However, if the number of students will increase, a critical mass of all clinical cases must be taken into consideration in order to be able to teach sufficient number of cases for each student and have adequate hands-on-training.

4.4.3 Suggestions

Good theoretical background is a prerequisite for developing clinical practical skills. Progression of knowledge of students after teaching the courses must be checked at regular intervals – latest when students move from one year to next. All theoretical examinations should have been passed before entering the 5th year in clinical service, but rather much earlier by annual sequence.

Also the 3rd year students should have their theoretical knowledge (after 2nd year) tested and examinations passed before they can enter the VTH service.

Students would benefit most from the emergency service when they have their theoretical clinical studies done mainly on the 4th and 5th year. Passing examinations should be prerequisite to be able to function in VTH.

Involving the ‘off-course’ students for emergency duty could be contradictory for their graduation. They also can ‘take off cases’ from younger students in their willingness to learn and do more. Their enrolment in VTH functions must be carefully considered in future years. Just a few days occasionally does not provide obtaining adequate knowledge and long term follow-up of the patients overall.

Students spend only about 5 months in VTH. By increasing the caseload of the animal hospital, students should spend more time in clinical activities and train their day-1-skills. Especially large animal services should be increased, both via mobile clinic and VTH functions (daily patient

management and emergency service). Financial recession is subsiding with time and horses will be treated more in future. Innovative ways of advertising and presenting the resources and also the skills and competence of the personnel of the VTH large animal, especially equine clinic, should be brought into the attention of the owners and referring veterinarians (owner educational days, tours in the VTH for selected groups of owners, for practitioners etc.). Also CPD courses, sponsored by medical companies, could be arranged and with the same, introduce VTH as a centre of excellence.

Mobile clinic has not been mandatory until recently and students attend 20 hours (4 mornings a 5 hours) in this service. This is quite minimal and hours should be increased – there are plans to increase mobile clinic service to 35 hours/student. Also equine field practise should be increased via mobile service as there is a substantial amount of horses in Sardinia.

Field practise should be at least 50 hours of active work, and even this (10 days) is quite minimal. Especially in bovine species this would bring adequate opportunities for each student to handle parturitions, dystocias, displaced abomasums, traumatic reticulitis, mastitis, ketosis, reproductive disorders etc. At present, the large animal case load is very low and LA VTH work has been minimal. Mobile clinic function would also increase the LA case load in VTH as referral work.

Contracts have been made with farms for health care visits/programs (bovine, small ruminants, swine, even equine) and routine visits done by the mobile clinic. Good cooperation with practitioners is demanded to make this work.

An active emergency service for horses should also be available in VTH. Only 8 cases were seen last year. Daytime service is also low (34) and all efforts should be used to increase this service (see above). Mobile clinic service is not the same as true emergency service.

4.5 FOOD HYGIENE & TECHNOLOGY AND VETERINARY PUBLIC HEALTH

4.5.1 Findings

The professional training “TIROCINIO” system (175 hours), includes a Food Industries and Quality Control, module of 109 hours with official veterinarians and quality managers as tutors and an Inspection, Control and Certification of Foods of Animal Origin module of 78 hours with official veterinarians as tutors.

Supervised practical training is related to current EU legislation. [e.g. Regulation (EC) 853/2004 and 2073/2005].

The course is linked to Parasitology (1st year), Ethology (2nd), Animal Nutrition (2nd), Zootechnics (3rd), Microbiology (2nd), Pharmacology/Residues (3rd), Legislation (3rd), Pathology (3rd), etc.

Horizontal and vertical integration is overseen by a committee which ensures that there is no duplication. Teaching from the animal disease perspective seems to be well linked to teaching from the food safety perspective.

Inspection experience in milk products, fish, meat and poultry is offered in laboratory, in various food plants, with official veterinarians and in slaughterhouses.) Practical activities are done in 6 EU-approved commercial slaughterhouses – sheep, goat, beef, pork, poultry and rabbit and in food processing companies. The visit was to a modern facility at Tula which slaughters cattle, sheep and pigs. Cattle slaughter was in progress at the time.

The conclusions of this visit were:

- Adequate time is given to student practicals. There were 2 official veterinarians working at ante-mortem and post-mortem inspection. There are no [Non-veterinary] technical meat inspectors in Italy.
- The company and the State Veterinary Service are co-operative.
- The facility and the Inspection Service are at least equal to EU standards.
- There is satisfactory training in animal welfare in lairage and at time of slaughter.

Welfare and movement of animals is covered under Animal Production and transport. Pre-stun welfare and evaluation of welfare post-stun is adequately covered in the training module.

Halal slaughter is carried out in some Sardinian plants and the students are trained in to understand the issues involved in ritual slaughter.

There was also a visit to a cheese –making plant at Thiesi which demonstrated the quality of extramural experience in inspection and control of foods of animal origin.

The percentage of the food hygiene course is 10.84% of the total. However some of the teachings in the integrated subjects contribute to the course.

4.5.2 Comments

It is the opinion of the team, that the requirements regarding Food Hygiene as they are laid down in Annex I of the SOP are met.

4.5.3 Suggestions

Students may benefit from a brief exposure to the abattoir during the second year when training in zootechnics etc.

4.6 ELECTIVES, OPTIONAL DISCIPLINES & OTHER SUBJECTS

4.6.1 Findings

A total of 952 hours, 9 different CIPs are offered (SER p 54 Table 4.3 and figure 4.3). Students can take these only just before TIROCINIO.

Electives (9 CIPs) have been reduced from 15 to 8 CFU in the new curriculum. In the old curriculum, these courses consisted of both theoretical lectures and practical supervised training.

There are 4 distinct areas that students choose (Table 4.3 and Figure 4.3); Small animal breeding and clinics; Ruminant farming and clinics. Horse farming and clinics (started only 2010-11) and Inspection of animal foodstuff. In the new curriculum, electives will be offered by individual course packages of 2-3 ULC each and will consist of only practical activity to be carried out in different locations like clinics, farms and governmental institutes, all approved by the Teaching Committee.

ERASMUS: Students can also choose study/courses (LLP Erasmus SMS) and practical training (SMP) in UNISS or other universities – even abroad in foreign universities- to fulfil the study time requirements and this has been increasing in recent years – and may be related to improved language

skills. Erasmus programs are running with several universities and altogether 82 months are available in the program. Erasmus commission is decisive about the option of studying abroad.

4.6.2 Comments

TC decides if a student can go abroad. This has been increasing and seen as a positive sign. Students should receive help and advice but in the end should decide for her/him what optional courses he/she wants to choose. UNISS also supports students generously to go abroad (€ 600 /month) which is unique.

Clinical competence gained in the electives is difficult to assess if a major part of training is done outside department; assessment of skills acquired extramurally is difficult and should be reconsidered. Practical tests are periodically done and student performance assessed in VTH.

4.6.3 Suggestions

Students should be encouraged even more to go abroad and take studies (clinical) at other universities. The bureaucratic hurdles when applying for studying abroad should be easy and students should receive all help possible do gain international experience (the same holds true for incoming exchange students. interns and residents). If studying abroad plans should be finalized about 6 months beforehand to arrange travel, stay and other logistics. Stays of a minimum of 3 months in a foreign hospital/clinic should be arranged. More students could go if time is limited to 3 months.

In future, many more optional, especially practical courses of companion animals could be offered, especially in areas of specialisation (e.g. ophthalmology. dermatology. neurology. oncology etc.). This will be easier if VTH had more clinical cases.

5 TEACHING QUALITY & EVALUATION

5.1 TEACHING METHODOLOGY

5.1.1 Findings

The areas covering teaching methodology are described in the Self Evaluation Report, page 72.

The objectives of teaching are orientated to give the scientific basis and the theoretical –practical education for practicing the veterinary profession. Curriculum is a mix of innovative concepts (Tirocinio, clinical rotation. extramural work at farm. slaughterhouses. veterinary clinics etc) and some traditional ways of teaching (lectures. seminars. practical demonstrations. individual and/or small group wet laboratories). DVM curriculum is based on the principles contained in the “Bologna Declaration” (e.g. stimulation of self-learning. problem solving. team working) as well as on the learning outcomes as indicated by the “European Qualification Descriptors” (i.e. applying knowledge and understanding. making judgements. communication skills and learning skills).

Learning objectives of each course, course programs, class schedules, exam dates, TIROCINIO schedules etc. are clearly stated on the web site of UNISS. Students may also meet teachers for consultations by booking via a schedule published in the website or contact teachers directly.

On the beginning of each course, most teachers indicate the recommended textbooks and/or refer students to a set of official class notes. Availability of books in library can be checked via web site.

Some teachers or departmental units also upload this (Power Point) and other course information on the learning management system.

Many professors recommend specific additional bibliography such as articles. Students are encouraged to use English language text books but students tend to rely on their hand-written notes, official course notes and Italian textbooks.

Since 2000/2001, the quality of teaching has been evaluated by University Evaluation Unit. University has a plan for the development of evaluation models and tools in order to improve teaching and learning at the University level. The project was aimed at assessing the degree of student's satisfaction from lectures attended, examinations as well as their entire degree course.

Plans for didactic or pedagogical training of staff have not been a part of this process and such courses are not described in the SER-report, nor reported during the team visit.

The assessment of student satisfaction is done at the University level and the survey is done with paper questionnaires, which are held at the end of the course duration. The anonymous questionnaires do not give students any possibility of personal qualitative remarks. The results are given to the Dean's secretariat and Evaluation unit of UNISS composed by reviewers external to DVMSS processes survey results. Report is edited and passed to Ministry of Education. Dean and the teachers so that she/he can take note and have perception of his/her teaching. The teachers who are doing poorly on their job as assessed by the students may be called by the Dean for a meeting in which the results of the evaluation of their courses is discussed. However, not much can be done, apparently to correct any deficiencies in teaching, as the law prohibits "punitive" actions. Students are therefore frustrated that criticisms are of no avail and this might be one of the reasons for a low return rate of evaluation sheets. Students can also anonymously deliver claims, suggestions etc in any issue regarding the course organization or teaching activity.

Evidence that students have achieved their learning objectives is collected through mainly oral course examinations and by ALMALAUREA.

At the clinic it is ensured that every student has hands-on experience or has seen needed demonstrations to perform certain tasks. This is done with the help of TIROCINIO logbook (Annex no 3). The logbooks list all day-1 skills which students are expected to learn. A supervisor has to sign the logbook next to each day-1 skill, when students have acquired it. Head of the DCC has to countersign the logbook once students have completed it.

SER 1 chapter 5: Teaching quality & evaluation does not mention the amount of hands-on work, the amount of clinical cases per each student, 24-hours duty, acute cases, case follow-up or the amount of interaction with the clients. There is however, detailed tabulated data concerning the division and the balance between theoretical and practical teaching in Chapter 4, Curriculum, Table 4.1 page 42-43 shows overall teaching hours divided between different areas of training in the old and new curriculum (in use since 2010). Theoretical work consists of lectures, seminars and self-directed learning (1740 hours) and practical work consists of non-clinical animal work, laboratory and desk based work and clinical work (1469 hours), which equals to 54:46 (1.184) ratio of theoretical versus practical training. In the Introduction it is stated that after implementation of the new curriculum the number of hours devoted to supervised practical training will increase from 45.8% to 50.8%.

The professional practical training provides 989 hours of clinical training in a total number of 3570 curriculum hours (Annex 4.1). This is an increase from 22.2% in the old curriculum to 27.7% in the new one.

5.1.2 Comments

Practical teaching hours have been substantially increased since 2010. However, less than 50 % of teaching is still practical exercises and hands-on teaching. To the benefit of students during basic science courses, the practical exercises are closely supervised by teachers and/or PhD students. This close relationship is very valuable and enables teachers to comprehend the competences of the individual students very well.

There is not much time during courses for seminars and other opportunities for students to critically reflect on what is presented at lectures.

According to the students, the university has been able to use the results of the student questionnaires as a helpful aid in improving teaching. However, other comments from both students and junior staff strongly indicate that negative course evaluations do not have any visible effect on course teaching. According to the Italian privacy law, course evaluations cannot be publicised. Furthermore, students cannot anonymously give qualitative comments, which could specify problem areas and qualify the actions to solve the problems.

At present, there are no didactic and pedagogical courses offered to junior faculty, including Ph.D. students. Both Ph.D. students and junior faculty expressed the need for this.

In the new curriculum, the amount of clinical training has been increased. The case load at the VTH has significantly increased over the past few years. This is very positive development that will be of benefit for the students. However, students do still at present get limited real-life clinical exposure opportunity i.e. hands-on work, 24-hour duty, acute cases, case responsibility, case follow-up, interaction with clients, as several VTH services and its emergency duty have just been established and not stabilized. Case load in small animals is also still quite limited (1700 cases last year) and in large animals it is very limited.

Large animals consist only of 10% of the caseload that the students are exposed to at the VHS. The equine caseload is very concerning: only 62 equine cases are presented per the semester students are at the equine fertility clinic. The department has made efforts to improve the case load students are exposed to. Agreement with the municipality of Sassari for the health management of sheltered companion animals is a very positive development. In the previous year 255 animals were spayed/neutered, which provides an excellent opportunity to develop the students' of surgical skills. Further steps must be taken to improve the insufficient number of production animal and equine patients the students are exposed to.

The achievement of the "Day-1 skills" is mainly assessed by student performance at the clinics, logbooks and the patient records database. However, assessment of day-1 clinical skills should include a practical examination (OSCE) at the end of the clinical training.

Student to teacher ratio at the veterinary department is excellent. During the regular clinical training students work in very small groups, which allow more hands-on exposure and close teacher-student interaction.

Substantial efforts have been made by the teaching staff to improve the standard of teaching in the past few years. The amount of hands-on practical training has been dramatically increased which is a very positive development.

Teaching methods should activate the students to use critical thinking and problem solving skills at all levels of teaching. Already some efforts have been made both in the clinical and basic subjects to

integrate problem solving skills in the teaching. The further development of such methods is encouraged.

Substantial amount of training takes place outside faculty and the VTH; except for signed logbooks, no formal feedback or assessment procedures of students' learning are carried out. Clinical performance and clinical skills are not monitored at present by any practical assessment. (e.g. monitoring and evaluation of student's clinical performance and clinical skills)

The on call duty (Emergency Service for large animals) started Nov 2012. Students receive the clients; perform the initial assessment of the patient as well as all the clinical procedures listed on the logbook.

During the regular clinical training students work in groups of 4-7 which seems small enough and during the visit groups really were small enough and the student to teacher ratio seemed favourable. The amount of hands-on work depends on the case load, which has been limited to about 1 case per night so far.

5.1.3 Suggestions

Scientific journals and e-learning material in English are regularly utilized in teaching. In addition, the latest editions of textbooks should be used in teaching as reference material providing students the available information. English textbooks should also be used and students be acquainted into English language and terminology as English is the language of research, science and international continuing education.

Establishment of a program on university didactic and pedagogic courses for teachers, for instance in collaboration with the Medical Faculty and with assistance from Educational Sciences. Experience from many veterinary schools in Europe and North America show that proper research based teaching of faculty staff in university didactics and pedagogic enhance teaching and course quality, thus student's learning outcome and study progress.

The expected workload progressively increases through the veterinary degree program. There is over 300 hour difference in the expected workload (including home studies) between the 1st and the 4th year. Alignment of student's course load and course credits should be ensured either by adjusting credits or course content.

The professional practical training provides 30 credits of clinical training. However, the pre-professional internship provides an additional 7 credits of practical work, out which 4 credits consist of clinical work. The elective courses may provide an additional 8 credits of clinical training. Therefore the curriculum consists of 34 - 42 credits of clinical training. During the new curriculum clinical training during 4th and 5th year, more practicals are still needed to exceed 50%.

The students should be given opportunities in each course to critically evaluate and reflect on what has been presented to them, preferably by the use of seminars or workshops.

Adjustment of the course- and teacher evaluation system to allow for personal qualitative suggestions and comments is required in order to qualify evaluations.

In case of profound problems related to a specific course or teacher, the respective unit or teacher should be obliged to produce a written action plan for correction of problems. The plan must be approved by TC / DCC / Head of department.

“Day-1 skills” are assessed only by logbooks. However, reflecting case-logs as well as assessment of practical skills (OSCE-examination) should be part of examination and making sure of achieving day-1 skills.

The logbook should also be revised. Some irrelevant tasks, like putting a blanket on a horse should not be part of a clinical logbook comprising Day 1 skills, and another specific and important clinical skill like clinical examination, rectal examination; naso-gastric tubing should be listed in details instead of the used broad terms “clinical approach to a horse with colic”. In order to be able to evaluate student’s hands-on training, the logbook should also allow quantification of the skills, i.e. how many times the student seen/done these, as well as allow qualification of the student’s skills. i.e. “has observed”, “has performed under supervision” and “has performed independently”.

5.2 EXAMINATIONS

5.2.1 Findings

In total there are 72 exams the student must go through at various times during the academic year. No external examiners are used. There is no limit to how many times a student can retake a specific exam. Interim tests are used to reduce the work load of those passing during exams. Interim tests are optional.

Mostly oral and practical exams are used. There are some mixed and only very few written exams. Students can attend exams as frequently as they wish given that they are certified for the exam in question. Restrictions exist regarding the order of the examinations.

In some subjects, a large portion of students do not pass the final exam as they are busy with re-exams from subjects earlier.

5.2.2 Comments

The use of a balanced variety of examination methods (written. oral. mixed) is innovative and encouraged. Also students strongly support this.

From the academic year 2012/2013, attendance is not compulsory to the theoretical lessons. Optional attendance to lessons increases the significance of the examinations to assess the students’ theoretical knowledge. As the interim examinations are optional, final examinations are important means to set standards on the expected progression of students. The fact that examinations can be retaken an infinite amount of times has lead to accumulation of non-passed examinations and the hindrance of studies in several instances.

5.2.3 Suggestions

A practical examination could be included at the end of the clinical training period to assess the students’ competence in practical skills for the clinical veterinary profession.

To address the problem of accumulating non-passed examinations, an additional “control point” should be set up to support the steady progression of studies. For example, students should be required to pass an acceptable amount of exams in order to proceed from the second to the subsequent academic years of the veterinary degree program.

Attending interim examinations can help students to spread exam preparation evenly throughout the course. Consider that passing the interim examinations should be compulsory for all students, and those students who have failed to pass an acceptable amount of exams in respect to the current standpoint in their studies should not be allowed to proceed with the course.

An increase use of written exams is strongly recommended.

6 PHYSICAL FACILITIES & EQUIPMENT

6.1 GENERAL ASPECTS

6.1.1 Findings

The DVMSS of UNISS is located in Via Vienna, in a large Campus where also the Departments of Pharmacy and Mathematics, Physics and Natural Sciences are situated, with wide indoor and outdoor areas for parking, teaching, research, animal husbandry and grazing. Overall, the buildings are divided into five interconnected modules, for a total of about 12.500 square meters. In 2008 the new Necropsy Building was completed to increase post-mortem examination of both large and small animals. Between 2005 and 2011 new teaching laboratories with individual workstations for basic, microbiology and food hygiene subjects have been organized. The construction of the Veterinary Teaching Hospital (VTH) and the isolation ward for animals with infectious diseases, and renovation of the stalls finished in 2012. In 2011 the RGS donated 57 hectares of land to the DVMSS for the construction of a Teaching Farm. The buildings are now adequate for undergraduate and postgraduate teaching. Premises for lecturing in the “old” building are well equipped and acceptable for the current number of students.

The Department is about 3 km from the town centre and can be easily reached both by foot and by town bus.

Health and safety issues as well as facilities for training in food hygiene appear to be adequate. DVMSS doesn't have an internal slaughterhouse, but the Department has signed formal partnership agreements with 6 external slaughterhouses, which are located at a distance between 43 km and 140 km from the Campus.

The waste management policy of DVMSS is based on respective current European legislation and appears to be adequate.

The faculty has at present no teaching farm of its own, but has managed to contract a number of farms for teaching purposes.

6.1.2 Comments

The outside facilities are used for extramural activities as well as for regular teaching. Transports are arranged by using the minibuses of the department. There is a lack of recreational / resting facilities which can be used by the students in between teaching activities. The technical equipment of lecture rooms seems to be adequate.

6.1.3 Suggestions

It is highly recommended to create facilities for students including a cafeteria. where students and staff have access to between teaching hours.

6.2 CLINICAL FACILITIES & ORGANISATION

6.2.1 Findings

Clinical facilities within the main campus “via Vienna” site are located in the Veterinary Teaching Hospital (sited close to the Main building which houses the administrative department offices). The VTH consists of 6 buildings including the infectious/contagious disease which is located remotely from the other buildings and has a separate entrance.

Pathology, Parasitology and Clinical Chemistry services are offered and they also carry out external work and such work is charged. However, SER table 3.9 shows an income of €33 000 in 2012 which, although increasing, do not yet suggest a great amount of external work.

The clinical facilities are listed (SER p97) are new and very modern with modern equipment, including MRI and appear to be adequate for the number of students and the case load at present. The services are located in different buildings which require animals to be moved for examinations and procedures from one building to another but this seems to work ok and very fluently.

Specialist services are offered (SER 6.1.5b) in internal medicine, cardiology and echocardiography, pet behaviour, surgery, diagnostic imaging neurology, obstetrics and reproduction. These are offered to private clients and produce a modest income of 56 000 € at present (SER table 3.9).

There is a 24 hour emergency service for Large and Small animals. The majority of first opinion (40%) and second opinion (60% in small animals) cases come from the municipality of Sassari. The number of hospitalisation places for the various species is listed in (Table 6.1 of the SER p99) and appears to be adequate for the studies of the number of cases seen at the University VTH. There is a critical care room and the equipment within it, with quick laboratory analysis possibilities as well during emergency hours.

Animals with suspected infectious diseases are routed already after admission to the special room in small animal clinic of VTH and transferred, if proven infectious, to the isolation unit. Soap with disinfectant is used for hand-hygiene.

Isolation facilities are also new and considered by the team to be at ‘a gold standard’ level. The building is totally fulfilling the requirements SP3 with more than fully appropriate procedures for isolation of all relevant animal species. They are located in a separate building and are adequate in number.

There is a mobile clinic for Large Animals but this appeared in SER to be underutilised but use is planned to be increasing. Additional animal caseload is provided by contracts with an equine unit, a regional wildlife centre and the Municipality of Sassari.

Teaching is orientated both to organ specific and also discipline specific training depending on the subject. Integration is done at limited level in some subjects (e.g. avian diseases).

The equipment level in the VTH is very modern and state of the art. There is an MRI scanning facility which is modern and in a dedicated area.

Extramural use of surrounding practises compensates the lack of the department teaching farm.

6.2.2 Comments

It would appear that a valuable source of funding in providing diagnostic and referral facilities for neighbouring veterinary practices should be developed as the VTH becomes established further. It has been functioning only for about 5-6 months but caseload is increasing positively in small animals and staff is very enthusiastic and dedicated both to teach and provide services to clients. Students are involved in every step of patient admission, handling, diagnostics and treatments.

Equine emergency stables are close by (2 for emergency cases) and there are few more in a neighbouring building.

Equine radiology has only the portable radiographic equipment and lacks high power equipment necessary for e.g. lung radiographs.

Equine clinic services should be made better known for the owners and referring veterinarians. Also the use of mobile clinic should be enforced more and use this service to bring more patients also to large animal clinic.

Specialist services available at present should be maintained and developed further to strengthen the VTH as a place of expertise in veterinary field.

Specialist services should be designed and developed also in equine clinic to increase the use of the VTH and its facilities.

Department has no established food animal teaching farm of its own. Use of surrounding farms in teaching the food animal practise is increasing.

Students are trained to admit patients onto the computer system and complete the clinical history. Clinical records can be retrieved and students can follow the patient history and treatments. The financial records are also kept in this system and staff is able to monitor the expenses which would occur in a normal veterinary practice. The computer system is also designed for monitoring students' practical activities and case knowledge on an on-going basis.

The facility has excellent recovery cages but it appeared that some post operative animals after removal of the endotracheal tube were still left to recover on a padded mat on the floor.

Stainless steel table tops are excellent to assist cleaning but present a slip hazard to some partially sedated or nervous animals.

Soap with disinfectant is used for hand-hygiene but this is not enough to prevent spread of hospital infections from hands (which are common in modern veterinary hospitals currently).

Windows in the VTH were open to assist ventilation and did not have a mesh / grill to prevent escapes.

6.2.3 Suggestions

The VTH income should be used to develop recruitment of hospital nurses to help in animal handling and procedures.

The Department should seek greater involvement with local veterinary practices, providing diagnostic and specialist referral services to local practitioners.

Equine radiographic equipment should be renewed to a modern level to take e.g. thoracic radiographs.

Emergency stables should be disinfected and cleaned after every patient or it poses a risk for infections in advanced surgical cases (for example colic cases, serious wounds etc).

Disinfection bottles should be available all around the VTH to disinfect hands after every patient (chlorhexidine solution with glycerol). All personnel and students working in VTH should be guided to correct hospital-level hand-hygiene and its maintenance to prevent spread of hospital infections.

There were no nets or grills over open windows in the PSV and hospitalisation facilities. This constitutes an escape risk for animals and risk of flies intruding in summertime and it should be corrected.

The procedure of moving sedated or possibly anaesthetised animals between buildings in the open air should be reconsidered. The provision of rubber mats on tables should be considered.

The provision of a dedicated receptionist would be beneficial to assist in accounting and admission of patients into the VTH. Accounting should be done in the hospital and students should be aware of the costs of the treatments and final bills.

The provision of a pharmacist dedicated to ensuring stock control and management of the pharmaceuticals stored on the premises would be beneficial.

It is good practice to ensure that post op patients recover in a dedicated cage area.

7 ANIMALS & TEACHING MATERIALS OF ANIMAL ORIGIN

7.1 Findings

SER (Chapter 7 p 111) states that only healthy animals in a non-stressed condition are used for teaching non clinical sciences. Clinical teaching is taught on animals which are being treated by the department whose aim is to return them to health. Anatomical specimens are listed in (SER table 7.1) and include material from the local town kennel (non-pathological cases) and local slaughterhouse. Necropsy material is derived from the local slaughterhouses, farm visits and strandings (cetaceans). There is a teaching farm with a small number of permanent stock (SER table 7.1.3) and relationships with 15 external farms allow more widespread and practical experience for the students. (SER table 7.1.3bis) Food hygiene / public health instruction is carried out at local slaughterhouses, the laboratories of The Inspection and control of Fish Products and The Laboratory of Food Analysis and Control. SER Table 7.1.4 lists the Food and Animal Products used in this training. The Veterinary Teaching Hospital provides clinical training in small animal, large animal medicine and an ambulatory clinic provides further limited exposure to large animal cases. The Department has an agreement with 3 Equine units, 15 farms and a Wildlife rescue centre.

There is a teaching facility, (a holding area with stables and paddocks for large animals). The animals listed are in the following table.

Table 7.1.3 Species and number of animals available at the teaching facility:

SPECIES AND CATEGORIES NUMBER

- Horses 5
- Dairy cows 3
- Sheep 20
- Goats 10
- Pigs 5
- Dogs 5
- Hens 20

The ratios of students graduating versus clinical caseload/pets/livestock/necropsies are listed in table 7.1.10 of the SER p126 and would appear to be adequate.

Fresh and chilled material for anatomy is listed in table 7.1 of the SER p 111. Small Animal fresh material is obtained from the Town Kennel and Department and Large animal material from the local slaughterhouses. Specimens are preserved by freezing until they are required.

Necropsy material is listed in Table 7.2 SER p112 and covers all the major species.

Clinical Training material is listed in table 7.3 p117. No pigs are listed as having been examined at the department but a small number were seen by the Ambulatory clinic Table 7.4a SER p121. Table SER 7.4b p 122 lists the animals seen.

Material used in the DVMSS laboratory is listed 7.1.4 SER p116 and students visit 6 slaughterhouses, food processing (4 meat, 6 milk and dairy product, 4 miscellaneous {honey eggs etc} and 3 fish production plants and distribution plants where further instruction is obtained. SER 6.1.6 pp 104-107.

7.2 Comments

The mobile clinic facility is underutilised at present with only an average of 45 visits over the last 3 years. It is not an emergency clinic and functions for 160-190 days a year.

One live animal of each species would appear to be small for 30 students but case numbers are increasing.

The number of cases received at the VTH would appear to be low for cattle and horses (62 seen by students at an external equine clinic). No pigs were seen at the VTH. (18 were seen in the last 2 years by the ambulatory clinic) but it is hoped this will increase as the excellence of the facility become more widely known. Students do see a large number of all the relevant species during farm visits and visits relating to animal production.

The amount of clinical material would be too low currently to support a special interest of a clinical staff member but “specialists” are being employed for short periods while the case load increases.

Students are given sufficient exposure to slaughtering the various food species.

7.3 Suggestions

The planned increase in the utilisation of the mobile clinic should be implemented immediately and all students should take part in its activities in years 4 and 5.

The department should continue foster links with the veterinarians of the local chamber to increase the case load in all clinical species specialities.

8 LIBRARY & EDUCATIONAL RESOURCES

8.1 Findings

The library provides facilities for both external and internal use. The library has 14 PCs (11 for external use and 3 for internal use), 5 printers (2 for external use and 3 for internal use), 2 photocopy machines and 1 scanner. There are roughly 5000 books and 110 printed journals mostly in topics related to veterinary medicine and biomedical topics. Most books of the library are text books for the veterinary degree.

The library opening hours are 8:30 – 20:00 on Monday to Friday and 9:00 – 13:00 on Saturday and Sunday.

Wi-fi is provided campus wide. The Moodle information system is widely used and liked by students and staff.

The veterinary degree students have 24/7 access to a study hall with microscopes, animal models and other useful apparatus.

The library provides assistance for individual students on how to site references and write bibliographies.

8.2 Comments

No courses or group lectures are given in the areas of scientific writing and referencing.

Many students prefer to print lecture notes and hand-outs at the library. Often students must spend time queuing for their turn on the photocopier/printer between lectures.

8.3 Suggestions

It should be ensured that enough textbook copies exist for all students to have access to the list of reading material provided by the veterinary degree subject teachers. Textbook copies should be available for both short- and long-term loans, as well as stationary copies not available for home loan.

Purchasing an additional printer for student use would facilitate efficient printing of the lecture hand-outs.

It should be considered if a short course on scientific writing and retrieval and use of references could be fitted in the curriculum. This would be greatly beneficial for the students writing their thesis work.

9 ADMISSION & ENROLMENT

9.1 Findings

In Italy a 5-year upper secondary school diploma is a pre-requisite for admission of students and to be enrolled in Veterinary Medicine (Maturità, baccalaureate). In addition, they must pass a national admission exam prepared by the Ministry (MIUR), which is common to all faculties of Veterinary Medicine. This exam is composed of 80 multiple-choice questions covering the following subjects: general knowledge (20 questions), biology (29 questions), chemistry (21 questions) and physics and mathematics (10 questions). The passing score of this exam is the decisive factor for admission. Non-Italians must pass the proof of knowledge of Italian language. There are no individual admission interviews. The MIUR determines the total number of students for the Veterinary Medicine Degree Course and then assigns a specific number to each Degree Course (to each of the 13 Italian veterinary schools). The number of students admitted is proposed by the Department Council to the Academic Senate, which depends on the teaching potential available in the department. We have no reason to believe that there are any inequalities regarding gender, disabilities or financial background regarding admission to the course.

Students who pass with low scores in Biology or Chemistry, i.e. with 'educational debt', are a problem.

Average time of studies is excessively long – about 8.5 years. Only about 34 students have graduated annually. 135 students (38%) are off-course. and over 58% of students extend their studies past 5 years.

The dropout rate for the veterinary degree program is high (14%). The main concern is that a significant amount of students move to medicine after the first year.

Students may participate in exchange programs (SER p. 53) but this is seldom done.

9.2 Comments

Admitted student numbers have been lowered by MIUR from 80 to 34. This has happened in many Italian Veterinary Faculties due to central policy to reduce the veterinary training. Therefore, also the number of graduates will decrease in future.

DVMSS wishes to have 40 students admitted annually in future. The actual process of recruitment tends to select students on their learning abilities rather than on true motivation to become a veterinarian, so students who may have the potential of become very good veterinary professionals might be eliminated. Furthermore, the admission test focuses on basic science knowledge, while international linguistic skills (e.g. English language skills) are not prioritized even if these are important for future global development of the veterinary field. Transfer of students to other faculties happens also after / during the first year and some students stop because of financial problems. Long studying times are a real waste of resources.

As a positive development, ERASMUS student exchanges have become increasingly common in the faculty.

9.3 Suggestions

English language skills are essential for the development of scientific or academic veterinary careers. Knowledge of basic English should be a requirement for enrolment in the veterinary degree program.

The examination procedure for admission should be better adapted to the needs of veterinary sciences. It is not acceptable to often have badly formulated or unclear scientific questions in the entry examinations. Such questions lead to conflict situations in student admission and are not fair for

students. Students with insufficient basic knowledge, e.g. low scores in chemistry and biology, should not be admitted and the entrance examination should delete these students.

Department should evaluate whether an additional personal interview should be performed before the final decision on admission. Also, early and full information on the prospects, outlooks and economics of all facets of the veterinary profession should be delivered to applicants for admission, prior to being admitted or prior to sitting the admission test. This should be done nationwide and in collaboration with MUIR.

Admitted number of students could be gradually increased to a maximum of 50, as buildings, space and teacher numbers allow this. However, clinical hands-on training must be ensured and numbers of animals treated in VTH as well as outside must be increased commensurate with the increase of student numbers.

The possibility to transfer to other universities or faculties should be removed. The Department would get more motivated students to start with. Financial difficulties should also be solved (e.g. giving grants for successful students) so that the studies would not be compromised due to these difficulties.

Long studying times should be shortened by addressing actively the facts causing the phenomena. This is already assessed by the Dean with cooperation of the Teaching commission. The unlimited number of repeated examinations – once in 8 years - as well as registration as a student for unlimited years should be removed (national problem). Off-study students should not be allowed to work extra duties in the VTH. It is questionable if the off-study students can acquire and maintain sufficient skills and knowledge needed for the current veterinary profession, as their graduation is delayed for several years – and subsequently their competence is affected negatively.

Students should be monitored closely for progression in their studies. Each student should have a study plan. Student counselling should be given to students who fail to adhere to the study plan, in order to determine and (attempt to) resolve the reason for the delay in their studies.

Currently, to move from the fourth to fifth year, students must have completed at least 180 credits. Consideration should be given to setting additional control points to enhance the progression of studies for example at the end of each academic year.

Establishing clinical internships (1 year rotating in small animals and in equine) and residency programs directed to recent graduates motivates students to graduate on time and helps developing the function of VTH further.

The removal of obligatory attendance to theoretical lectures can be accepted – if the students study and pass annually their examinations until they are moving to the next level in their studies. This is especially important in applying the theoretical knowledge in practise during TIROCINIO and other hands-on activities in the clinical services.

Arranging ‘remedial courses’ to fulfil the gaps in the knowledge of the basic subjects like chemistry and biology, is not the duty of the Veterinary Faculty. On the other hand, efforts should be made to organize courses for English language in order to achieve necessary competence important especially for scientific research as well as continuing education abroad, and even working abroad in Europe.

Students should be further encouraged to participate in courses and clinical training in other universities and Erasmus-exchange programs. Grants for these are available in European universities. Study plans for student exchange studies should be made in closed collaboration with the head teachers of the subjects in question to avoid delays in study progression.

10 ACADEMIC TEACHING & SUPPORT STAFF

10.1 Findings

Ratio of teaching staff versus students $R1 = 7.678$; Ratio of teaching staff versus support staff $R5 = 1.194$.

All staff appointments and staffing levels are decided centrally in UNISS, Academic Senate and Administrative council. Amount of full time academic staff is decided by their teaching activity. Any position must be applied for and justified for in an application process. Academic staff is composed of full professors and associate professors as well as researchers (“ricercatori” assistant professor equivalent). Researchers have been increased by 24 since 2001 and they do also teach. Academic posts are assigned through public national search processes. Total number of teachers is 51 (SER 10.1.3 states 54 teachers and 12 fixed term teachers). Support staff is 34 positions.

Salary increases are automatic based on time elapsed and seniority and in general not linked to performance. Academic Senate and Administrative council decide on recruitments. Annual allocation of ordinary funds is also dependent on how many professors retired the year before, because replacement is usually not authorised; thus, only 50% of this salary money comes back to faculty. 20% is kept in Academic senate for recruitment plans and 30% is assigned to faculties with a recruitment policy based on specific ministerial indexes. The criteria for these allocations are usually based on ULC credits of various disciplines plus research achievements. The new professor may choose which department he works in.

Percentage of staff who are veterinarians: Academic budgeted staff is a total of 51: 11 full professors, 17 associate and 23 assistant professors (Table 10.2). Academic teaching staff (Table 10.3) is: 6 professors. 12 associate professors. 18 assistant professors and 12 contract professors. Of these 48; 36.5 are veterinarians and 12.5 are non-veterinarians e.g. 76% are veterinarians.

Teaching staff to student ratios are quite favourable and will improve when student numbers diminish. As there are 135 off-course students currently, the regular plus repeaters are in total 234.

The students are getting really good individual practical teaching. As student numbers will continue to decrease, as decided by Italian government, and the annual intake of new students is 34 students max., total number of students in few years will be around 200 instead of the current 389, which will further improve this ratio. Ratios will also improve substantially if drop-outs and off-course student numbers can be reduced efficiently. This is an important challenge to DVMSS faculty.

Ratios (SER table 10.6) are adequate.

Although full professor positions have diminished, there has, however, been an active recruitment of young academicians as assistant professors and also associate professor numbers have increased. When professors retire, replacement in general is not permissible (economic reasons) and potential dangerous lacunae in teaching, research and in continuity may arise.

Support staff has decreased due to retirements and the numbers have been fluctuating (fig 10.2). Apparently, an increase of technical support staff is out of the question. However, opening of the VTH has increased the need of support staff and finishing the large animal hospital recently will increase this need. Also special functions like isolation and large animal necropsy, will need specialized support staff who also are aware of and trained for bio-security and bio-safety measures.

Contract professor agreements: Teaching staff can be contracted even on an annual basis (contract professors) by agreement with Faculty Council for 1-3 years.

Revenue from the VTH is still low, but this should be used to employ specialists and support staff to work in clinical setting. Internship and resident programs could be also evolved by this.

Support staff is hired centrally through university. Department has little control over this. Only 5 positions are currently animal carers. More nursing staff is needed to develop VTH functions. Substantial and centrally piloted efforts need to be taken to increase case load and service load in VTH and specimen in diagnostic laboratories.

Staff can move and be reallocated within the establishment. This will become relevant as student intake may decrease during the next 4-5 years and reallocations must be made. When hospital functions are developed further, it will be very necessary to hire or relocated support staff as nurses in the VTH. Future hospital nursing staff should have undergone training and formation at the veterinary nursing school in Cremona. The posts which become vacant are not automatically filled. Certain staff can be flexibly deployed i.e. for clinical services as there are currently no nurses working in the VTH.

The establishment can suggest staffing levels but cannot decide these on its own. Academicians and PhD students are allowed to travel abroad for training and continuing education or research. This is supported.

Open public search and criteria are being used for employment of senior level teaching staff. The need is based on ULC of discipline as well as research allocations that are relevant. Searches for professor positions are not internationally advertised.

There has been a rapid decrease in the number of full professors over the last few years.

There is no full professor in Animal production in the budget teaching staff (table 10.2).

There is no European/American College Diplomate on staff and consequently residency programs are absent; there is no internship program running either.

There is no formal or organised training in didactics available, especially for junior faculty.

10.2 Comments

There is a definite need for more support staff in VTH, especially as functionality will improve and case load increase. Currently there are only 5 animal carers/nurses at all working in the clinic environment. Animal carers are different from veterinary nurses who are trained for hospital nursing care and functions; trained nursing staff will also be involved in undergraduate teaching. Reallocation of staff must be done as student numbers will decrease and functional emphasis will shift to the clinical sector. Salaries are fixed by law for teaching personnel. The salary based only on seniority is old-fashioned and has been given up in many countries. This should be changed as this is not motivating for the young and productive academic staff. Exceptional teaching based on evaluations should be rewarded.

Support staff should be hired from revenues on VTH. A clear charging system of services of VTH must be created and followed. At present balance is negative. Animals treated free for teaching purposes must be transparently recognizable.

Clinical specialisation is essential and the European/American College system is the backbone and sets the standards for specialisation. College specialists must be among the teaching staff of any European veterinary school striving to offer services and teaching better than below average.

10.3 Suggestions

Salaries of academicians should be increasingly based on teaching merits as well as research merits and productivity (clinical services). Likewise, clinical specialists and Diplomats (in the future) should be paid salaries commensurate within their high expertise.

There should be a plan for the future recruitment of full professors to maintain an acceptable level of such positions.

Service revenues and VTH budget must be transparent. It is very difficult to make VTH as money making unit without a transparent income statistics of each service and a long-and short term business plan. Staffing for the VTH especially the new large animal clinic must therefore come in part and initially from an internal reallocation of the posts. The technical staff, at least is aware of this kind of possibility and necessity. Trained nurses are mandatory for the appropriate functioning of the hospital to help veterinarians with patient care and students with teaching and advising.

Contract professors (local practitioners with high expertise in some fields) should be allowed to come to, examine at and treat their patients in VTH. However, they should not be able or allowed to take or refer patients from VTH to their own private clinics.

A rotating clinical internship program first in small animals and then in large should be instituted as soon as possible. Interns will also be able to replace the veterinarians in the 24hr Emergency Service. Some of the salaries economised can be returned to the benefit of the interns.

Residency training programs according to European College standard should be planned and instituted as soon as possible; the condition sine qua non, however, is the regular employment of Diplomates in different specialities. This has to have top priority in academic planning.

A compulsory training programme on university didactics and pedagogic should be introduced for young scientific staff, including PhD-students.

11 CONTINUING EDUCATION

11.1 Findings

CPE is listed as an objective in the SER P10 to ensure a post graduate continuing education for all the professional figures in the field of Veterinary Medicine in the territory of Sardinia and worldwide;” There is a post graduate veterinary specialisation school and courses are organised for veterinary surgeons, technicians and breeders.

In 2011 (the last complete year listed) 47 courses were listed in SER Annex 11.3. The total number of listed courses dated from 2003 to 2012 Small animal courses included ASVAC (did these take place at Sassari) and 4 courses for students with 1 for veterinarians. Reproduction and Nutrition appeared to be disproportionally represented in the large animal side.

The courses listed in 2011 covered a wide variety of topics with little evidence of direction for practitioners who may have attended. Topics covered included Fish Medicine, Feeding and Nutrition of all species, research topics small animal subjects and reproduction.

The CPE appears to be random and based on availability of visiting lecturers. There is no direct evidence of involvement of veterinary surgeons based on the island – some lectures are listed for students. The local ASVAC chamber organises meetings for practitioners at the University.

There is no income generation listed.

CPE is mandatory for State Veterinary Surgeons SER p 158. There is no compulsory CPD for other veterinarians in practice.

11.2 Comments

The courses listed do not show development from year to year or a structured plan for the further education of graduate veterinary surgeons. There is no indication of the numbers of veterinary surgeons from outside the Department who attend the courses and some courses are indicated as being for students.

There is no indication of whether the provision of CPE could be seen as an income generating centre.

11.3 Suggestions

Consideration should be given to charging non-department veterinary surgeons who attend the CPE courses.

CPE delivery should be structured for SA, LA and state veterinary surgeons with topics and themes being developed in a logical manner on a year by year basis. The local Sardinian veterinary chambers should be involved and encouraged to suggest topics and attend.

Department members should have to undertake compulsory CPD as part of their ongoing education.

Consideration should be given to internet-based CPD.

12 POSTGRADUATE EDUCATION

12.1 Findings

Postgraduate education is offered by the PhD School “Veterinary Science” with three different curricula which are mainly oriented in applied subjects. The regular PhD study will take three years and mainly consists of research activities and 60 CFU per year. The students are admitted on a competitive procedure according to their final marks, their English knowledge and an oral interview of the applicant. Normally they will have only one supervisor and they will be evaluated at the end of the first and second year and have to pass the final exam at the end of the third year. Most PhD students are paid by the university, however, other funding is also possible.

In addition to the PhD program the university also offers two postgraduate specializations in Food inspection and Animal Health which are based on the Italian National Health Care System covering both human and veterinary medicine. These programs consist of both practical and theoretical education. For these programs only veterinarians are admitted.

12.2 Comments

From the SER it is not clear to what extent the PhD program is oriented on an international standard, i.e., is it open for students from abroad and for those coming from basic sciences. Nothing is said about the standards regarding the publication of the thesis. Is it normally submitted as a conventional thesis or in a cumulative form including original publication in peer-reviewed international journals. In comparison with international standards, a regular three years course is rather short, however, the possibility to extend it for one more year is appreciated. What will happen in case the students do not manage to finish it within this time period? Are the courses and lectures accompanying the research work given in foreign languages? It is not clear from the SER how the variety of veterinary subjects is represented in the PhD School.

12.3 Suggestions

The Department should consider establishing a Graduate School as the basis for a PhD education which is oriented on an international standard. This would make it necessary to also introduce a PhD commission where also the PhD students are represented. For supervision of each individual PhD student it is advised to abandon the present system of using only one supervisor and to introduce a system with a co-supervisor or a supervisory group of three university teachers. The introduction of teaching program should be achieved. In addition, the PhD students should be encouraged to submit their thesis in a cumulative way, i. e., it could be based on at least two original publications in international peer-reviewed journals. It is advised that in principal all publication should be given in English which would demand continuing education in foreign languages which has also been emphasized by the students.

13 RESEARCH

13.1 Findings

Students take actively part into research and experimental projects via their Thesis work. Undergraduate students are expected to be involved in research in their final Thesis project of 225 hours i.e. 9 ULC. Also 80 hours lectures are allocated for English language and 44 hours of lectures for information technology. They prepare written dissertation presented as a final discussion in front of the Commission of DVMSS. Students usually start their projects in 3-4th year. They spend in research for 1-2 year time (internship) guided by a supervisor/teacher/tutor.

DVMSS is committed to research and has extensive postgraduate research programmes on several areas of veterinary sciences listed on SER pp. 154-160; 13 different areas with 80 research lines/projects listed. It also has many outstanding research groups working in department. Substantial amount of research money is obtained directly from DVMSS. Funding is also obtained from EC, MIUR, and Local Sardinian Government Departments as well as from pharmaceutical and chemical companies. However, public funds or research have diminished radically within the last 3 years (table 3.9).

PhD programmes are funded by MIUR. Local Sardinian Governments or research grants. Non-permanent Postdoctoral and staff positions are budgeted in a similar way. There has been a constant increase of research staff in the last 3 years.

Research staff personnel costs were 1.3 million€ in 2012 and expenditure related to research was almost 1 mi€ (SER tables 3.4 and 3.5). There are 10 PhD students enrolled in year 2012 by SER. PhD program lasts for 3 years. Students are selected through public examination process. They are evaluated annually by TC as well as after 3 years completing their degree (180 ULC). PhD students can stay minimum of 3 months up to 18 months in European university/research institutions to perform his/her studies (Doctor Europeus) receiving an increase in their salary which correspond to the 50% of their salary during this time.

Language different from Italian is used in discussion of the thesis in the Examining Commission. Annual grant is 13 700 Euros per student paid by UNISS and also by MIUR. Students may be admitted also with external grants or without grants. Students must do 60 ECTS credits per annum. There are also PhD courses in collaboration with several foreign universities.

All students do their projects in different laboratories in Faculty or various outside places; for that it has to be applied one year ahead of time. Final paper can also consist of comprehensive literature review instead of research but majority of students elect a research based dissertation. Students are free to choose the topic from the ones the supervisor has suggested.

There is more than a sufficient number of research programmes to choose from and introduce undergraduates to the various research topics. Many students do the research project as their final thesis and they function as a model to other students that follow. This is seen as a very positive sign and it also develops these areas further. Also, the future of the faculty lies partly on these successful PhD-students as they may find permanent employment as assistant professors (“ricercatori”).

Research is, however, fragmented as there are many various units of the department with specific topics, interests and tasks as well as collaborations with outside partners. Research activity is wide and papers are encouraged to be published in international refereed journals. Substantial amount of research activities were introduced to the team during the visit. Due to the economic situation, research funding has diminished substantially (-37%) from 2010-2012.

13.2 Comments

Several laureate and PhD-theses were introduced in different units to the team during the visits. The amount of research performed was impressive. Also several PhD students who work in different projects in different units were met. There is a very positive and fruitful atmosphere within the department to support research activities. PhD-students also go actively abroad for shorter and longer periods and this is supported by the department. Active research atmosphere is greatly appreciated by the team.

The knowledge of English language was surprisingly low both among the senior and junior staff, and the students. This made communication sometimes problematic and interpretation was often needed. Continuing education and attending foreign meetings and congresses may be influenced also negatively by this language issue.

There are two postgraduate specialization programmes also available.

There are no internship or residency programmes running currently and no funding for them. Such programs would enhance clinical research as residents have to perform and to publish research (in English) as integral part of their programs.

13.3 Suggestions

The department should really encourage its personnel in studying and learning English language as it is a prerequisite for publishing research results and distributing this information as published in English. English language is also used widely in continuing education and in congresses. It is seen very essential for deeper scientific collaboration and recognition.

Theses do not have an English summary at present. However, this should be a must as all of the theses can be published in internet of department, at least the Summary or Abstract should be in English. The department should also make the guidelines for final laureate thesis on publishing and printing it in order to harmonize it. Exact guidelines like those found for publishing in scientific journals (Title, introduction etc. as well as spacing, text type, tabulations etc.) should be created and they should be available in internet. The laureate theses and their workload would thus be more comparable and more uniform.

Also Laureate theses should have a Summary in English for spreading the information to the research community and this should also be available on the Internet in UNISS Faculty of Veterinary Medicine pages. This would increase the visibility of UNISS Veterinary Faculty also internationally.

English teaching and English language competence should be raised among students and teachers accordingly and TOEFL test should be instituted (Test of English as Foreign Language) to all in research programmes as well as for students during the 1st and 2nd year. Those not passing should take lessons in English language. Proficiency of English (fluent) also opens ways to working in other European countries.

The team also suggests that theses should be written and published on the Internet in English language whenever possible. The results are also encouraged to be published in refereed international journals.

Internships in clinical sciences should be established and young veterinarians hired to work in VTH for 1-2 years. This opens ways to apply to different residency programmes widely in Europe and in USA. Residency positions should be established by recruiting external funding e.g. from pharmaceutical or dog/cat/horse food companies etc.

Foreign Diplomates should be recruited as supervisors of the residents when establishing a residency in an initial phase. This would also raise the level of clinical medicine and surgery (and other disciplines) in the VHT hospital setting and stimulate clinical research as well.

Residents produce at least 2 papers/publications in refereed international journals and this improves especially clinical research and leads further also to a PhD-degree of those interested in research.

EXECUTIVE SUMMARY

The Veterinary Faculty of the University of Sassari, now called Department (DVMSS) plays an important political, economic and social role in this island with special administrative status. The DVMSS was visited by the EAEVE in 1998, and was evaluated as non-approved. Since then major changes have taken place; in short. a new Veterinary Teaching Hospital and isolation units, new necropsy facilities, new animal housing facilities, stables, paddocks, laboratories and other improvements have been added. The organisation and structure changed as well as the new national study law (240/2010). Thus, the DVMSS today is vastly different from the faculty visited 15 years ago.

The purpose built facilities offer space for at least 50 students per class, yet only about 30 are being admitted annually; this creates a favourable ratio of teaching staff/student ratio and compensates for still relatively low case numbers in the new hospital. Where in-house cases are missing, ample provision on a formal basis has been arranged for extramural practical teaching, especially in food animal species and in horses. Fully functioning ambulatory clinics contribute substantially. There is a shortage of technical support staff, especially nursing staff. Specialisation in clinical areas is still insufficient and internship- and residency programs under the guidance of Diplomates should be developed. The Teaching hospital should evolve into a clinical centre of excellence and together with other services should contribute to an increase in revenues. Overall, hands-on teaching is satisfactory in all areas, but in-house case numbers must continuously increase.

Basic science teaching is satisfactory as well but suggestions are being made to further increase practicals in some areas.

Food hygiene and public health teaching, bios-safety/security, infectious disease teaching, are all delivered according to standards; animal welfare teaching should be better coordinated, although it is taught throughout.

The financial situation is sustainable although modalities to obtain additional resources through services and research should be actively pursued. A long-term business plan and strategic plan will need to address these and related issues.

There are of course many areas which warrant attention and improvement: for instance, the faculty farm should be developed as soon as possible, internationality on all levels should be increased. English language skills improved and controlled; the objectivity of the examination system improved. the teacher evaluation system's effectiveness improved, outsourcing of teaching progressively decreased in favour of in-house practical teaching, the e-learning improved, problem-oriented teaching increased including group discussions enhanced; none of these areas, however, are of major concern or constitute a major deficiency.

The class size (presently approximately 30 students) should not become smaller as the Department risks approaching the "critical mass" where teaching, research and resources management begin to affect each other negatively. In fact, a steady increase in admissions to 50 students per year seems warranted under the condition that resources increase commensurably. That means patient numbers, teaching and especially support staff (veterinary nurses).

All in all the DVMSS has made giant steps of improvement in many and especially in the previously critical areas; the faculty and administration should be congratulated on this achievement and should be encouraged to continue in this direction, especially in the clinical areas. Any relapse of attention

and any decrease in budget might render the Department again vulnerable and might jeopardise the obtained results.

Complying with all EAEVE standards and with those specified in the EU Directive 36/2005 and with no major deficiency identified, we recommend the DVMMS to be fully approved.

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

Ratio	Numerator/Denominator raw	1/Denominator	Established range of denominators	Notes
R1	48/369	1/7.687	8.832 (UL)	
R2	66/529	1/8.000	9.619 (UL)	
R3	37/369	1/9.973	11.389 (UL)	
R4	37/30.04	1/0.822	2.203 (UL)	
R5	48/48.09	1/1.194	0.474 – 1.944 (Range)	
R6	1740/1769	1/0.84	0.576 (LL)	
R7	713/756	1/1.06	1.952 (UL)	
R8	0/3209	not applicable	2.576-103.746 (Range)	
R9	362/3209	1/8.86	0.725-98.437 (Range)	
R10	362/175	1/0.48	0.061-0.881 (Range)	
R11	30/132	1/4.4	0.956 (LL)	
R12	30/238	1/7.93	7.345 (LL)	
R13	30/10	1/0.33	0.307 (LL)	
R14	30/91	1/3.03	2.590 (LL)	
R15	30/27	1/1.09	0.505 (LL)	
R16	30/1796	1/58.97	43.462 (LL)	
R17	30/2	1/0.066	0.040 (LL)	
R18	30/40	1/1.4	0.998 (LL)	
R19	30/24	1/0.8	0.547 (LL)	
R20	30/81	1/2.7	1.498 (UL)	

Annex 2 Listing of Deficiencies

NONE

Annex 3 Students Report

The Student Report has been incorporated into the main body of text.

ECOVE DECISION: FULL APPROVAL