

Faculty of Veterinary Medicine  
University of Pisa  
Report January 01<sup>st</sup> 2010 – June 30<sup>th</sup> 2011

In December 2009 the EAEVE Team visited the Faculty of Veterinary Medicine of the University of Pisa, and in June 2010 our Faculty was conditionally approved by ECOVE Board.

Starting from the report prepared by the EAEVE Team, the Faculty Staff has acted to tackle the critical points and in particular the Category 1 Deficiency detected.

In this report we recapitulate all the changes put into action to tackle the negative aspects emerged during the visit.

We also recalculated the new ratios to better analyze the impact that these changes are having on teaching activities. Note that, as suggested by EAEVE, the fixed number of first year intakes has been further reduced, which, along with an increase of staff members, will further improve our ratios. To calculate the ratios for the year 2011, we considered the Academic Year 2010-2011 (from the 1<sup>st</sup> of November 2010 to the 30<sup>th</sup> of June 2011): although this means that for the year 2011 the data are not homogeneous with the data of the previous years, it allows us to show the impact that these changes are having and will have on future years.

- 1) *"In the Large Animal scene, there is no Bovine Clinic, no Bovine Hospitalization, no true Mobile Clinic and Bovine Medicine is inadequately covered. In the opinion of the Team, this is a potential Category 1 Deficiency."*

To overcome the Mobile Clinic deficits (Bovine, Small ruminants and Pigs) the Large Animal Clinic has been strongly enforced by increasing the teaching activities in these disciplines and by the introduction of an intensive extramural activity for Large Animals via contracts with National specialists expert in Bovine, Swine and Small ruminants Clinics. In addition, clinical activities have been integrated introducing teaching of Unconventional pets and Zoo animal Clinic.

To enhance the educational activities for Bovine Clinic, two practitioners expert in this field (Dr. Alberto Sbrana and Dr. Martina Brombim) were hired by the Faculty both to enhance the practical training of the students carried out within the University farm as well as on farms with which the University has signed agreements, and to develop the Mobile Clinic for bovines and small ruminants. These two specialized practitioners were also involved in the seminar activities in this field.

We added some activity to the fourth year curriculum: all 4<sup>th</sup> year students are now involved in a 3 days practical training session at the University Farm. In Academic Year 2010-2011 the activity was arranged as follows: the 1<sup>st</sup> day was dedicated to bovine reproduction: each student palpated at least 10 cows for reproductive status including pregnancy and reproductive pathologies and tried the technique of artificial insemination (AI) in 4 cows. The 2<sup>nd</sup> day was dedicated to bovine medicine; each student collected the history and performed the clinical exam of ten subjects of different age groups (calves, beef or cows). For each animal a general physical examination was

made followed by clinical examination to detect disorders of the respiratory, gastrointestinal, cardiovascular and musculoskeletal systems. Skin, mammary gland and foot disease presence was also considered together with the main metabolic disorders of the species. All students performed the clinical exam under the expert supervision, measuring the rectal temperature and if necessary blood samples for biochemical tests. The 3<sup>rd</sup> day was dedicated again to reproduction: each student palpated at least 10 cows for reproductive status including pregnancy and reproductive pathologies and discussed with teachers at least 5 clinical cases of cows submitted to transrectal ultrasonography. In the 3 days, students give assistance to calving animals (if present).

A system of calving alarm is under development based on the following protocol: The technician responsible for calving assistance phones to a student who is in charge of coordinating the other students who, in turn, are alerted and go to the farm to give assistance to cow and calf. The system, at the moment, is not fully operational due to intermittent collaboration by the technicians at the farm, but we hope to have it in place at the end of next Academic Year, after a rearrangement of the University staff technicians (see also further down when we provide details about the University Farm).

In conclusion, as from Academic Year 2010-2011, each student of the 4<sup>th</sup> year is now expected to perform at least 20 palpations per rectum, 4 AI (attempts) and general clinical examination in bovine at the University Farm, before starting the Mobile Clinic program scheduled for the 5<sup>th</sup> year.

Within this Mobile Clinic activity students (two in each group) spend one week participating in the management of clinical cases at the farm (10-15 cases and one delivery for each student, sometimes with treatment of dystocia). Sheep and goat farms are also visited to integrate the Small ruminant Clinic. A Mobile Clinic daily logbook has been adopted so the activity of each student can be monitored. The logbook records for each case: the aim of the visit; the observed clinical signs, the diagnosis, and therapy when performed. Furthermore, the students carry out all the bureaucracy requirements for the correct sanitary management of the farm. Each student has to take blood samples (from the jugular and coccigea veins) and to measure body temperature; when possible, students will also perform vaccine prophylaxis for the more common infectious diseases, administer parenteral treatments and, occasionally perform minor surgeries. Clinical protocols followed during these activities are being supervised by the teaching staff of the Faculty, who play an active role in planning and monitoring the various activities through periodic meetings with the participation of the practitioners who are also involved in the research activities. In details, the activities of the Bovine Clinic are organized as reported in the attached program (see Annex A).

In addition, in order to improve the Swine Clinic, a Mobile Clinic activity for this species was also developed. For this purpose, agreements with both intensive and extensive swine farms were activated: students in small groups (6-8 students/group) participate in the control of the health status of lactating sows (40/50) pregnant sows (100), piglets (300) and adult swine (around 1000/2000). Each student practices collection of blood, faeces and feed samples at the farm. Once back at the Faculty, students perform parasitological, microbiological, serological and pathological tests. Fecal samples collected by the students are analyzed under the supervision of a parasitology teacher in order to suggest therapeutic and management interventions in the visited farms. Blood samples are submitted for serological tests for the most important porcine infectious diseases, Porcine Reproductive and Respiratory Syndrome Virus (PRRSV), Parvovirus, Pseudorabies virus (gE and total antigen), Lawsonia intracellularis and Mycoplasma hyopneumoniae, to check the

health status of the animals in these farms. Similarly, feed samples taken at the farms are examined at the Faculty for proximate and oligoelements analysis control and presence of mycotoxins: Zearalenone, Deoxynivalenon, Ochratoxin, Aflatoxin (optional), and Fumonisin (optional). Pigs found dead during the check undergo post-mortem examination by the student on the farm under the practitioner supervision or at the Faculty under the pathology staff supervision, to detect the presence of specific diseases and to address therapeutic protocols, depending on the animal size.

All these activities are carried out under direct supervision of two practitioners expert in these field who have been hired by the Faculty. These are Dr. Giuseppe Baricco, a nationwide expert and responsible in the Faculty of Veterinary Medicine of the University of Turin for the same activity and a local practitioner expert in Swine Clinic the Dr. Roberto Botta. In details, the activities of the Swine Clinic are organized as reported in the attached program (see Annex B).

In addition, the Mobile Clinic activities have been integrated through the teaching of Unconventional pets and Zoo animal Clinic. For this purpose Dr. Paolo Cavicchio, Sanitary director of the Pistoia's Zoo and Past-president of the European Association of Zoo and Wildlife Veterinarians (E.A.Z.W.V.), have been involved as expert to hold specific seminars about the diseases of these species and particularly for anesthesia procedures. From next (2011-2012) Academic Year, all students will carry out a one week period within the above Zoo to learn the management of these animals, the method of collecting fecal and blood samples, the procedures to perform a clinical examination, simple anesthesia protocol and basic surgical problems.

- 2) *"The Team noticed, that the Faculty is on the borderline of adequacy in terms of academic teaching staff and that the teaching burden of individual teachers sometimes precludes any concentration on matters of research."*

Although the number of academic teaching staff currently involved in the Degree Course in Veterinary Medicine is adequate as demonstrated by several Ratios (R1, R3, R4 and R5), we considered the Team's concern on "borderline of adequacy" very seriously. Therefore, at the Faculty Council of the 5<sup>th</sup> of November 2010 (Resolution number 9 Academic Year 2010-2011; see Annex C) the Faculty deliberated to hire four Assistant Professors (AP), with a permanent position. The recruitment process has started and the new teachers will start their jobs as of December 2011 in the following disciplines: two APs have been assigned to the Clinic Department to mostly improve the teaching activity in Large Animal Internal Medicine and Large Animal Surgery; the other two APs have been assigned to the Department of Animal Pathology, Prophylaxis and Food Hygiene to improve the teaching activity in Food Hygiene and to enhance the practical part of the course of Anatomy. Although two professors will have retired by the time the new APs will take service, still our teaching staff will be strengthened (See attached Table 1). Furthermore, it is important to underline that in the Academic Year 2010-2011 the number of students enrolled in the first year of the degree course in Veterinary Medicine was reduced from 77 to 70. From 2012-2013 Academic Year, the number of students will be further reduced to 64. This 20% reduction of the veterinary student, performed over the last three years, will further drastically improve all the ratios involved in the evaluation of academic FTE in veterinary training.

- 3) *Where the General Curriculum is concerned, the Team welcomed the increase of "hands-on" activity in the final year of the undergraduate course and recommends that*

*specific teaching objectives should be formulated so that the course is structured in relation to the current needs of the profession by the introduction of “tracking” into the clinical years.*

As suggested by the Team the “hands-on” activities have been increased reducing the theoretical ones. Practical activities are now > 30% in the first three years of the Degree Course in Veterinary Medicine and ≥ 50% for the last two years. This change is clearly shown by the change of the ratio R6, which increased from 0.43 in 2009 to the current value 0.74 and of the ratio R7 which decreased from 2.7 in 2009 to the current value of 1.7 (See attached Table 1).

- 4) *“There is an imbalance between Theoretical and Practical lessons. Particularly in Anatomy, more time should be spent in practical “hands-on” sessions. A shift from Theoretical to Practical work is necessary and this could well be assisted by greater use of E-learning.”*

The practical activities in Anatomy have been strengthened, increasing the percentage of “hands-on” Practical lessons to 34% of the total teaching load (previously was only 24.5%). Furthermore, a new AP has been assigned to the Department of Animal Pathology, Prophylaxis and Hygiene to enhance this activity. To enhance E-learning, teaching material on Clara (our E-learning platform) has been added. One of the Anatomy technicians (Marco Salvadori) has also been given some web tools training and appointed to help in up-loading material on Clara.

- 5) *“Animal Production is well taught and the dedicated staff is very cooperative and approachable for the students. The balance between theory and practice appears to be rational, but there is a gap in Agricultural Economics, which must be corrected.”*

In January 2010, the Course in Agricultural Economics was reintroduced in the curriculum. As suggested the new program presents more details on European Policies (mainly CAP) connected to the field of veterinary Science as well as covering the main socio economic data related to animal husbandry at EU level. Material regarding farm management is also covered in the lectures.

- 6) *“The Faculty Farm is an essential element in veterinary teaching and the Team believes that with greater investment and more attention to farm maintenance, the usability for teaching purposes and productivity can be significantly increased. It is essential that an integrated herd-health concept be developed.”*

The University farm has started a process of renovation which will however require some additional time to complete. Meanwhile, we recall some actions which have already been taken and which we believe are along the lines suggested by the EAEVE. The calves’ space has been totally reorganised to comply with the welfare rules about animals. The milking system has been changed and the number of milking stations has been increased. Part of the farm buildings has been renovated: in particular a new roof replaced the old one (we regards this as a major step to improve safety standards). The data management system has been partially reorganised introducing the AFIMILK system, a dairy herd management system. The University has funded a new installation for cows (102 places with up to date technology): this is a 300,000.00 Euro grant, which is part of a project to boost the farm facilities and make up for the relatively smaller funding

the farm received in the past years. The idea is to better link the information system, the farm management and the welfare/health condition of the animals with the results offered by the farm, from the point of view of the animal welfare, the food safety and the economic performance in the perspective of an overall sustainability. To improve the productivity and the usability for teaching purpose of the Faculty Farm, a contract with a practitioner expert in buiatrics has been signed with the aim to look after all the animals and to involve in this activity the students who must carry out the practical activities within the Bovine Clinic and Animal Husbandry program. We believe that, although more steps are planned, what we already managed to activate meets most the EAEVE suggestions and certainly fulfills EAEVE requirements.

- 7) “ It was noted that there is inadequate contact to the Clinics, a situation, which can easily be rectified. Where the Clinical Sciences are concerned, there is the need to formulate objectives clearly and to introduce “tracking”.”

The relationships between teachers of Basic Sciences, Animal Husbandry and Clinical Sciences have been strongly improved, trying to increase the interdisciplinary aspects of the teaching activities. For example Physiology practical activities are performed by student groups (6 students for group) on horses at the stables of the Veterinary Teaching Hospital in San Piero a Grado, on cattle at the University farm, on sheep at a nearby breeding centre and on dogs at the Municipal Kennel of Pisa. Under the teacher’s supervision, students learn the basis of animal handling and each student measures heart rate, respiratory rate and rectal temperature, takes blood samples and then perform the clinical exam (haemocytometry analyses, haematocrit and erythrocyte sedimentation rate) in the laboratories of the Faculty. In addition, some of the parasitology, infectious diseases and pathology teachers have offered to provide service at the Veterinary Teaching Hospital to complement activities carried out by the clinicians. Tracking has been introduced through the adoption of a Mobile Clinic logbook to control students activities: the logbook has indeed helped to improve the fulfillment of the objectives that each student must reach.

- 8) *“There is a clear insufficiency of Teaching, Support Staff and Equipment (MRI /CT Scanner for example).“*

The Teaching and Support Staff Ratios have been further improved as can be seen from the denominators listed in the attached table (See attached Table 1). Regarding the Equipment, the Clinic Department has acquired a new CT Scanner which will start operating within the end of this year.

- 9) *“The Team compliments the University on the development of the IT systems such as the Clara and Unimap in the University Website, but feels that there is a need for training programmes on the use thereof, so that E-learning becomes a more significant factor. Problem-based learning does not appear to be really applied.”*

The introduction of problem-based learning has been strongly recommended and partially introduced for Clinical Sciences. As far as the problem-based learning is concerned, during training classrooms students have to face clinical cases and apply the problem-oriented approach without being assisted by the teacher. The theoretical teachings (concerning clinical matters) are oriented by

the same approach. A technician received some training with E-learning tools to help teaching staff with posting E-learning material.

10) *"The Safety Systems are existent, but the maintenance thereof is rather neglected. The whole aspect of "Safety" should be coordinated and revised to cover the whole new Campus at San Piero a Grado."*

The control of the Safety Systems has been enhanced. Periodically, all the stations are upgraded and controlled, particularly those in the new campus at San Piero a Grado. The staff responsible for looking after the efficiency of the Safety Systems is gathered periodically to check the status of service of the different structures.

11) *"In the Post-Graduate field, Internships and European Diploma Residencies should be increased."*

Internships and European Diploma Residencies have been enhanced. In addition to the existing European Diploma Residencies (ECAR, sub-field Equine, & ECVP), some faculty members host a small number of visiting fellows for a short period as part of their training programmes to complete an ECVIM, ECVCP, or ECVN approved residency. Another Residency Program for the European College in Veterinary Parasitology (EVPC) is currently being activated. In the Academic Year 2010/11 seven students got an Erasmus placement grant in order to organize their internship at European level.

12) *"Although out of place, the Team noticed that there is little student mobility via the ERASMUS system. The Team suggests that the ECTS should be fully implemented."*

The faculty studied the question and introduced a team in order to improve internationalisation and student mobility. The team defined an activity program in order to empower international relationships and student mobility. The program was organised along different steps - at short and medium-long run- and it was approved by the faculty.

In the short run the following goals were established:

- to better organise the decision making process: the commission was established and the connection with the all scientific areas of the faculty were reinforced in order to facilitate mobility and ECTS recognition;
- to improve internal communication with students: specific seminars for the promotion of student mobility has been organised in order to facilitate peer exchanges with students that already experienced international mobility; in each year/class a short information seminar was organised in order to pass information to students, to explain the mobility organisation and plans, to advice about technical supports and front-office; a devoted web area has been organised in both Italian and English, for outgoing and incoming students, to organise a repository for all documents (to be finished after the change of the university system);
- to increase the number of the bilateral agreements signed (2 for each year). Relationships with new European Faculties have been enhanced. Furthermore new bilateral agreements are in force with South Korea (Chungnam National University), Kazakhstan (Kostanay State University) and United states (Cornell University) in order to enhance student's mobility and increase links with international universities. Additionally, the agreement with Chungman National University has

been extended to the veterinary PhD school to issue international joint PhD degrees in Veterinary Medicine. The agreement is attached (see Annex D). In short, PhD students are requested to spend a 12-month research period in the sister University to obtain the international PhD degree.

- to increase the local offer of course offered in English language or with English facilities: A process of internationalisation of the faculty courses has been launched by registering voluntary willingness of teacher in order to offer courses taught in English.

In addition, from spring 2011 the University of Pisa fully implemented the ECTS system for all students of the University. Our students now receive also a Diploma Supplement, which follows the Bologna process guidelines and which will facilitate mobility, at least within the EU. Furthermore, the international relations with other foreign Faculties have been greatly enforced, to enhance the student and teacher mobility within the Lifelong Learning Program (LLP) mobility schemes. The existing contacts have been strengthened, a new bilateral agreement has been activated with the Faculty of Veterinary Medicine of Lubljana and contacts were made with the faculty of Veterinary Medicine of Liverpool and Dublin to develop a new partnership. In this respect in the academic year 2010-2011, a part (50 %) of the teaching courses within the Degree Course in Veterinary Medicine were held with teaching material (slides, notes, etc.) in English language. For these courses it is also possible to sit the final exam in English, which will also facilitate and stimulate students in their exchanges with the Northern Europe Veterinary Faculties.

13) *“The Team indicated that it could not emphasize enough how urgent the recommencement and realization of the Stage 3 Project at San Piero a Grado is for maintaining the critical mass and development of the Veterinary Faculty at the University of Pisa.”*

The original 32 million euro project has been thoroughly revised, in order to reduce the amount needed for the construction of the Stage 3 Project at San Piero a Grado, therefore curbing expenses but still providing all the necessary facilities for the teaching and research activities. On the 27<sup>th</sup> of July 2011, this new project has been approved by the Faculty Council (Resolution number 139 Academic Year 2010-2011; Annex E) and now we are awaiting the definitive answer by the Rector of the University of Pisa who formally expressed willingness to speed up the procedures necessary for a rapid transfer, despite the economic difficulties of the present political moment.