SUBJECT REVIEW REPORT

DEPARTMENT OF VETERINARY CLINICAL SCIENCES



FACULTY OF VETERINARY MEDICINE AND ANIMAL SCIENCE

UNIVERSITY OF PERADENIYA

 $9^{\mbox{\tiny th}}$ to $11^{\mbox{\tiny th}}$ July 2008

Review Team :

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1. SUBJECT REVIEW PROCESS

This review was carried out on the 9th, 10th and 11th of July, 2008 by a team comprising the following persons.

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The terms of reference for the review team were according to those described in the Quality Assurance Handbook of the CVCD and UGC (page 13 to 16 and Annex E).

The team based its findings on the following documents and activities:

- 1. A desk study of the Self Evaluation Report prepared by the Head of Department and Staff
- 2. A Meeting with Department academic staff for an assessment of the curriculum and the teaching/learning methods used
- 3. Observation of teaching: Classroom/Clinics/Presentations/Examination
- 4. A tour of facilities available for teaching
- 5. Interactions with the following personnel:
 - a. The Vice-Chancellor and his staff including the D/Academic Affairs
 - b. The Dean of the Faculty
 - c. Temporary Academic staff of the Department
 - d. Academic staff from other Departments in the FVMAS
 - e. The non-academic staff of the Department
 - f. Veterinary Undergraduate students from the 3rd and final years
 - g. Post-graduate students
 - h. Selected group of clients
 - 6. Perusal of miscellaneous documents relating to teaching activities

2. BRIEF HISTORY OF THE UNIVERSITY, FACULTY AND THE DEPARTMENT

The Department under review is one of five Departments in the Faculty of Veterinary Medicine and Animal Science (FVMAS) which, in turn, is one of seven Faculties at the University of Peradeniya. The University of Peradeniya, established on 1st July, 1942, presently has a developed infrastructure, trained academic staff, well-equipped laboratories and all the specialized units and accessories of a complete, modern University. It is the largest in terms of student enrolment and the most complete with respect to the number and range of Faculties, in Sri Lanka. It is also the only residential University in the Island located in a pleasant setting with a mild climate.

The FVMAS is the only Faculty in the Sri Lankan University system that offers a degree program in Veterinary Science. This degree program commenced in the year 1947 with the establishment of a Department of Veterinary Science in the then University of Ceylon. In the beginning, students followed the medical curriculum in basic subjects such as Anatomy, Physiology, Biochemistry, general Pharmacology and Pathology with their counterparts at the Faculty of Medicine in the University of Ceylon in Colombo. Veterinary pathology and related subjects together with the clinical training were taught at Peradeniya. For this purpose, a Veterinary clinic has been functioning at Peradeniya from the earliest times and provided a valuable service to clients, primarily pet owners. Since 1966, with the

establishment of a separate Faculty of Medicine at Peradeniya, all veterinary undergraduate training has been carried out at Peradeniya

In the year 1973, the single Department of Veterinary Science was expanded to three Departments of study, namely, Veterinary Preclinical, Paraclinical and Clinical Studies, upgraded as the School of Veterinary Science and included with Medical and Dental Schools to form one Faculty. In the early 1980s, the undergraduate training in Veterinary Science was accorded full-faculty status with an additional Department, namely, Animal Science. As an interim measure, instead of forming the fourth department, the FVMAS continued to use the services of the Department of Animal Science of the Faculty of Agriculture to teach the courses in animal production.

At the same time, the newly formed Department of Veterinary pre-clinical studies undertook the teaching of all basic subjects part of which had hitherto had been taught at the Faculty of Medicine. In October 2000, the FVMAS was restructured and the Departments renamed as Basic Veterinary Sciences (BVS), Veterinary Pathobiology(VPB), Veterinary Clinical Studies (VCS) and Farm Animal Production and Health (FAPH). The clinical teaching hitherto carried out by one Department was at that time separated into two with the VCS dealing primarily with companion animals. Finally, in July, 2007 a separate Department of Veterinary Pharmacology and Public Health (VPHP) was formed to give the present structure.



The structure of the Faculty of Veterinary Medicine & Animal Science

The structure of the FVMAS and the position of the DFAPH are shown in the Figure above. Apart from the five Departments of study, the academic programme is also supported by a teaching hospital and a teaching farm.

The students in Veterinary Science pass in stages first through the Department of Basic Sciences, then the VPB and VPHP before passing on to the two Departments dealing with

clinical and animal production aspects in their final year. During the last few years, students have been introduced to clinical work from the first year but the actual clinical training is still in the final year.

All five Departments contribute to the undergraduate program in an integrated manner, the role of the first three Departments being essentially to prepare the students for the clinical and farm training. This structure is common to many professional courses, in particular, Medicine and Dental Science and different from those in the Science or Arts Faculties in which the individual Departments are usually based on disciplines. It is, therefore, somewhat difficult to isolate the role of one Department and it would have been more appropriate if the entire Faculty program is assessed.

3. AIMS AND LEARNING OUTCOMES

3.1. Aims

The Department of Veterinary Clinical Sciences (DVCS) is responsible for teaching Medicine, Surgery and Reproduction of companion, wild and captive animals to 3rd and final year students of the BVSC study program. Aims of the study program offered by the DVCS are:

- To impart sound knowledge and skills in diagnosis, treatment, control/prevention of diseases affecting companion, wild and captive animals
- To impart sound knowledge and skills to perform common surgical interventions in appropriately anaesthetized companion, wild and captive animals
- To impart communication skills with clients and fellow professionals
- To inculcate professional ethics and responsibilities
- To create awareness in future career development as companion, wild/zoo animal veterinarian

The courses taught to achieve these aims are shown in the Table whilst the intended learning outcomes for each of these courses are listed below.

Letter Code	Code	Subject title	Academic
	Number		semester
CAMS	214	Wildlife management & conservation	3
CAMS	311	CA Medicine (General Medicine)	5
CAMS	321	CA Medicine II (Canine & Feline)	6
CAMS	322 (I)	CA Surgery I (Anaesthesia and Radiology)	6
CAMS	322 (II)	CA Surgery II (General)	6
CAMS	412	CA Surgery III (Systems & Orthopaedic)	7
CAMS	413	CA Reproduction & Obstetrics I (Reproduction)	7
CAMS	421	CA Medicine III (Equine/Zoo/Wildlife)	8
CAMS	423	CA Reproduction & Obstetrics III (Equine & Wild/Zoo animal Reproduction)	8

Table: Courses conducted by the DVCS

3.2 Learning Outcomes

At the end of each course the students are expected to have gained the competencies described below. All teaching/learning activities are directed towards that goal.

a. CAMS 214 WILDLIFE MANAGEMENT AND CONSERVATION

- 1. Describe the methods of wildlife habitat management
- 2. Explain the basic principles involved with conservation of species
- 3. Formulate appropriate methods of conservation of wild life in Sri Lanka

b. CAMS 311 CA MEDICINE I (GENERAL MEDICINE)

- 1. Restrain companion and farm animals in order to perform diagnostic and therapeutic procedures
- 2. Record case histories and conduct clinical examinations of different organ systems
- 3. Perform basic laboratory techniques and interpret results for diagnosis
- 4. Collect and submit body tissues and fluids for laboratory examinations
- 5. Diagnose diseases by their clinical manifestations

c. CAMS 321 CA MEDICINE II (CANINE AND FELINE)

- 1. Explain the aetiology and pathophysiology of common diseases affecting dogs and cats
- 2. Diagnose common infectious and non infectious disease based on history, clinical signs and other diagnostic aids
- 3. Draw up a rational treatment plan, carry out treatment and mange dogs and cats affected with diseases
- 4. Advice the clients regarding prevention and control of common diseases affecting dogs and cats

d. CAMS 322 (I) CA SURGERY I (ANAESTHESIA AND RADIOLOGY)

- 1. Decide on appropriate anaesthetic protocols for different surgical procedures in animals
- 2. Administer pre anaesthetic medicants and anaesthetics *via* different routes using different equipment and, judge the safe level of anaesthesia/analgesia for different procedures
- 3. Make radiographic exposures on different regions of the body, process x ray films and interpret results.
- 4. Appreciate and practice radiation safety.

e. CAMS 322 (II) CA SURGERY II (GENERAL)

- 1. Practice the general principles of veterinary surgery including operating theatre conduct
- 2. Use, sterilize and maintain the general and special surgical instruments, equipment and surgical supplies used in operative procedures
- 3. Diagnose and treat general surgical conditions, wounds and postoperative complications

f. CAMS 412 CA SURGERY III (SYSTEMS AND ORTHOPAEDICS)

- 1. Diagnose and treat surgical conditions of the different body systems of companion animals
- 2. Diagnose common conditions of the eye and the ear in companion animals
- 3. Diagnose common fractures and dislocations in dogs and cats and decide on the method of correction using different devices
- 4. Explain the aetiology of common orthopaedic conditions affecting companion animals and decide on methods of prevention

g. CAMS 413 CA REPRODUCTION AND OBSTETRICS I (REPRODUCTION)

- 1. Explain the basic concepts of reproductive physiology and endocrinology in relation to reproductive manipulations
- 2. Perform pregnancy diagnosis in companion animals
- 3. Advise clients regarding management of pregnant companion animals

h. CAMS 421 CA MEDICINE III (EQUINE/ZOO/WILDLIFE)

- 1. Describe aetiology and pathogenesis of common diseases affecting horses,
- 2. Diagnose the common diseases based on history, clinical signs, and draw up a treatment and management plan.
- 3. Describe aetiology, pathogenesis, clinical signs, diagnosis, treatment and prevention of common diseases affecting zoo and wildlife species in Sri Lanka

i. CAMS 423 (I) CA REPRODUCTION AND OBSTETRICS II (OBSTETRICS AND INFERTILITY).

- 1. Diagnose abnormal parturition in companion animals
- 2. Perform obstetrical manipulations including caesarean section
- 3. Diagnose reproductive disorders and other conditions leading to infertility

j. CAMS 423(II) CA REPRODUCTION AND OBSTETRICS III (EQUINE AND WILD/ ZOO ANIMAL REPRODUCTION)

- 1. Explain the oestrus cycles, obstetrical conditions and infertility problems in equines
- 2. Diagnose and correct or treat obstetrical conditions of equines
- 3. Describe reproductive patterns and sexual cycles of important wild and zoo animal species
- 4. Design breeding protocols for selected species of animals in captivity and in the wild

The DVCS is therefore responsible for training students in clinical practice related to companion animals including dogs, cats, horses and elephants; wild and captive animals including primates, elephants and reptiles. Although the Clinical training commences in the 5th semester comparatively less time is spent in clinical teaching during the 3rd year.

The intensive clinical training is conducted in the 7th and 8th semesters during which the batch is divided into 5 groups; at a given time 3 groups are trained in the DVCS whilst the other 2 are in the Department of Farm Animal Health and Production (DFAPH). During the 7th semester, in the first round, each group of students is rotated through the 5 appointments (rosters) each lasting for 1 week and in the 2nd round for 2 weeks in each. Altogether one student spends 3 weeks in a given roster in the 7th semester. In the 8th semester students are once again rotated among the appointments in the same manner. During the clinical rotations the undergraduates not only learn their clinical skills, but through their interactions with animal owners and hospital staff they also have the opportunity to improve their skills in communication and public relations as well as maintenance of the hospital environment, record keeping and related matters. The students also participate in organized field activities such as treating wild/captive animals, surgical sterilization campaigns, wild animal rescue operations, translocation whenever such opportunities arise and thereby gain valuable practical experience.

Animals available in the hospital are also used to teach Applied Anatomy and Physiology for first year undergraduates and the members of the DVCS participate in the teaching. Some students from the junior batches are assigned for vacation training in clinical medicine and surgery.

4. FINDINGS OF THE REVIEW TEAM

General Observations

The main task of the Department of Veterinary Clinical Sciences is to teach clinical medicine and surgery on companion animals – primarily dogs and cats - to undergraduates who have completed prerequisite courses in pre and para-clinical veterinary sciences. For this purpose, they operate a (small) animal hospital and clinic that provides a service to pet owners. They are able to provide specialized diagnostic and treatment services that are generally not available elsewhere in the country. The kind and caring service they provide is much sought after and appreciated by pet owners throughout the country. In addition, the DVCS also provides several other services such as elephant tranquillization (ceremonial and wild) and health management of dogs engaged in specialized duties such as mine-detection and security.

The clinic is kept open every day including weekends using groups of final year students on rotation. These students work long hours and often feel that they were "working more than learning" and complained of the lack of time for study and follow-up.

At present, there are only three senior clinical teachers and therefore, most of the time; the clinic is run by young veterinarians recruited soon after registration as temporary staff. At the same time, there are several vacancies in the cadre including that of the Professor but we were made aware of an apparent reluctance of suitably qualified graduates to join this Department on a permanent basis. There has apparently not been an effort to attract small animal clinicians with experience from the public and private sectors for part time teaching assignments. Even more surprisingly, there has been no attempt to encourage veterinarians in the FVMAS to participate in clinical teaching although they appear quite willing to do so. In this connection, special mention must be made of the clinical pharmacologist available in the Faculty who has not been used at all in the clinic.

The courses in paraclinical subjects – pathology, parasitology and microbiology - are taught in the 2nd year with one full academic year intervening between them and the clinical studies. Moreover, due to a backlog within the FVMAS, students are given several unscheduled "vacations" and often this gap is closer to 2 years. This unsatisfactory situation is compounded by the fact that none of the pathologists, microbiologists or parasitologists in the FVMAS are involved in clinical teaching or even participate in the discussion of cases. It is not surprising, therefore, that there is very little clinical research being done and few opportunities for young veterinarians in the Department to get appropriate post-graduate qualifications. At present, the clinicians also need to attend to the administration of the small animal hospital and the clinic.

The feel that the FVMAS must develop a graduate profile which clearly shows how every Department plays a role in producing this "final product". Each staff member will then have a sense of ownership in this product – not just the clinical departments. Involvement in clinical teaching will serve to reinforce this ownership. The lack of a graduate profile also poses the danger of duplication and/or leaving out important and essential areas of study.

The lack of a proper academic calendar in the FVMAS is a matter for very serious concern. It is extremely important that students know when they will finally qualify with their BVSc. The lack of an academic calendar – where students are required to stay at home for indefinite periods of time - leads to a great deal of frustration, loss of confidence and feeling of

helplessness which can affect their entire life. It also gives Departments undue freedom to take their time in finishing their respective curricula.

4.1. Curriculum Design, Content and Review

The original curriculum of the B.V.Sc training programme begun in 1947 is said to be similar to that followed by the Royal Veterinary College in London and that with the passage of time, the curriculum was modified largely on *ad hoc* basis. No documentation is available either on the curriculum or its evolution over the years. The first major review and revision took place in 1991 which was followed by another in 2000, the latter being more or less the curriculum being followed at present. A summary of the courses taught by each Department is given in the Faculty Prospectus and those of the DVCS in the Table above.

The present curriculum as described in Chapter 2 has all the required components to satisfy the academic standards needed for such a degree program. We feel, however, that the FVMAS will need to develop a modular system as is now being practiced in medical and veterinary schools elsewhere. This would make a young veterinary student work at the clinic from the outset and ensure that all the basic and para-clinical subjects are taught in a clinical context. The comprehensive curriculum review now being undertaken is a window of opportunity to make such changes.

The review team also felt that far too much time of the students in the important 3rd and 4th years were being spent on the "non-core" subjects such as economics, business management and human resource management. These should be taught as foundation courses very early in the degree program and ideally taught by experienced and suitably qualified Veterinarians. Similarly, although the DVCS is said to bear responsibility for course no 214 – Wildlife Conservation – taught in year 2, it is not clear who teaches this course; it is also not included in Table 3 which describes assessment methods. There were doubts – expressed by a client - regarding the competencies of the graduates with regard to wild life management and medicine and we feel that this area may need re-visiting.

Considering all the above the Review Team judged this aspect as SATISFACTORY

4.2 Teaching, Learning and Assessment Methods

The teaching and learning methods used in the Department include lead lectures, case presentations and clinical work of which the latter is the most important. Clinical training is based on actual practice, under supervision. Since the small animal clinic is well patronized with over 40 cases per day, it is evident that students see all important dog and cat cases and have the opportunity to become thoroughly conversant with them. They also participate in sufficient surgical interventions to develop their basic skills. The clinic is somewhat crowded, however, and unable to handle the large number of cases due to lack of space. This constraint also affects the proper organization of the clinical laboratory facilities. It can be expected that these constraints will be overcome when the commissioning of the new animal hospital which is nearing completion.

The chief problem with the clinical teaching is that students are not exposed to a sufficient variety of clinicians. The DVCS appears to be working in isolation from the other four departments in the faculty. As outlined earlier in this report, all the academic staff members in the FVMAS are qualified Veterinarians and at least some of them can be used for clinical

teaching. Moreover, it is essential that the specialists in the basic disciplines – anatomy, physiology, pathology, parasitology and microbiology – participate in the daily discussion of cases. Suitable arrangements should be made to ensure that the appropriate academic is present for these clinical discussions. There should be a clinical pathologist who will liaise closely between the Clinical and para-clinical Departments and provide a "living link". Such arrangements will help to develop clinical research and to give a sense of ownership of the graduate to all academic staff in the FVMAS. An attempt must also be made to obtain the services of experienced clinicians from the private and public sectors in the country at least on a short-term basis.

Another matter for concern was that the quantity of important text books available for borrowing is not sufficient and students resort to photocopying books. In addition, staff members are not permitted to borrow permanent reference books needed for teaching purposes even on an overnight basis.

It also appears that course contents and learning outcomes are not given at the start of each course. The teachers need to develop ILO for each course, different sections of each course and even, where possible, for every lesson and convey them to the students beforehand. Assessments are usually made in formal examinations at the end of the teaching semester or year and there was no evidence of any formative assessments.

Considering all the above the Review Team judged this aspect as SATISFACTORY

4.3. Quality of Students, including Student Progress and Achievements

Although data was not available in the SER showing the academic performance of the student batches, we felt that most students progressed well during the final year in both Departments. In the final year, students are highly motivated and aware of the value of what they learn and the skills they acquire – particularly in relation to small animal practice. But, as mentioned under general comments, students become greatly frustrated in earlier years (2 to 3) due to the lack of a calendar. Since the "backlog" seems to be due to space considerations in the clinical Department, a special effort must be made to clear this backlog even though it may inconvenience the staff. This is further reason to obtain the services of Veterinarians from other Departments and other institutions for clinical training.

Assessments are made at the end of the year, and there is no formal method to assess student progress during the course. Since the teachers deal with small groups, they are usually aware of the performance of individual students. This awareness could be developed into a more formal system that uses indicators or milestones which can then be documented or even used as a formative assessment.

Considering all the above the Review Team judged this aspect as GOOD

4.4. Extent and Use of Student Feedback

There is no formal mechanism in place in the Department to obtain feed back from students. Working with the students in the clinic allows staff members to interact with individual students and small groups so that feedback is obtained in a casual manner. This can be developed into a more formal system that can be documented. Due to the lack of a suitable system, there is a failure to recognize the weak students. During our interactions with the clients, they pointed out that there is such a minority of students who do not develop

sufficient clinical skills. Such students are often detected by the clients who are at the receiving end of poor clinical attention but apparently not by the staff since there is no formal system in place to do so.

There is also no system to obtain feedback regarding lectures and other teaching/learning methods although the DVCS appears to recognize its importance. The review team found that the heavy workload in the clinic as well as other pressures on students created a sense of insecurity and apprehension among them. Such a working environment is not conducive to study and will need to be addressed.

The review team noted that the DVCS does not have a formal staff-student liaison committee as expected in the Quality Assurance Handbook which could help towards allaying any fears that the students may have.

Considering all the above the Review Team judged this aspect as SATISFACTORY

4.5. Postgraduate Studies

Although the DVCS Staff have individual research interests, some of which have students, there was no evidence of long-term clinical research programs related to small animal clinical work. The reviewers are aware that it is not easy to obtain funds for small animal clinical research – unlike in the case of farm animals. We believe, however, that the material available in the clinic on a daily basis provides a wealth of research material. Follow-up and in depth studies of such cases will need the close involvement of other Departments in the FVMAS, in particular, pathology.

In addition, in-depth studies of clinical problems can be accepted as dissertations for postgraduate purposes. In this respect, we are glad to note that the Department and Faculty have already taken steps in this regard. Introduction of clinical degrees in the Department will also enable them to retain staff who require compulsory post graduate qualifications for confirmation and promotions. PhD's in overseas Institutes – usually in one narrow discipline – may not be appropriate for clinicians. Veterinarians from the Public and private sectors who wish to obtain a clinical degree can also work in the clinic which will help to overcome the shortage of clinicians.

Considering all the above the Review Team judged this aspect as SATISFACTORY

4.6. Peer Observation

The DVCS does not practice peer observation either formally or informally although they seem to recognize its importance.

Considering all the above the Review Team judged this aspect as UNSATISFACTORY

4.7. Skills Development

The SER did not give any specific information with regard to the development of skills within the Department. It became clear during our visit, however, that the majority of students have developed the specific skills that they are expected to develop in the clinic. In addition, students are expected to make group presentations on selected topics and these were observed to be of a good standard. There is little doubt that the interactions with clients help

to develop generic skills such as team work, information retrieval, communication skills and presentation skills.

Although students appear to learn the basic skills in their final year, there is no formal list of skills or a designated strategy to develop the identified skills or a method to certify their acquisition.

Considering all the above the Review Team judged this aspect as SATISFACTORY

4.8. Academic Guidance and Counseling

The self evaluation report mentions that student counselors have been appointed by the faculty and are available to the students. Subsequent discussions with the students and members of the staff indicated, however, that student support is mostly provided by the Faculty at the initial stages. The structure of the curriculum, its nature and teaching and assessments methods are also made known to the students during this introductory stage. The faculty student counsellors attend to student needs and grievances when necessary.

Considering all the above the Review Team judged this aspect as Satisfactory

5. CONCLUSIONS

The main strengths and weaknesses identified in each of the sections during course of this review are summarized below:

1. Curriculum Design, Content and Review

Strengths/good practices:

In general, the curriculum has sufficient breadth and depth to cover the main clinical training in companion animals.

Weaknesses:

Some areas such as Therapeutics need better coverage. The evolution of the Curriculum from the inception has not been properly documented

2. Teaching, Learning and Assessment Methods

Strengths/good practices:

Students are exposed to and learn to handle a large variety of clinical cases and modern instruments are available.

Weaknesses:

Dearth of senior experienced clinicians so that students only learn from a few. Small-group learning strategies could be used more effectively. There is a large gap between the teaching of paraclinical subjects and clinicals. There is no integration between the pre and paraclinical subjects with the teaching of clinicals.

3. Quality of Students including Student Progress and Achievements

Strengths/good practices:

The students have the prerequisite knowledge to follow clinical work and appear to progress well.

Weaknesses:

There is no formal system for monitoring students' progress during the final year.

4. Extent and Use of Student Feedback, Qualitative and Quantitative *Strengths/good practices:*

The close student contact in clinics gives the opportunity for feedback and teachers are generally aware of the effectiveness of teaching/learning

Weaknesses:

Systems of obtaining student feedback need to be formalized and properly documented.

5. Postgraduate Studies

<u>Strengths/good practices:</u>

Research portfolios and publications observed by us provided evidence for ongoing research projects.

Weaknesses:

With the abundance of clinical material available, more clinical research could be carried out than at present and development of clinical post graduate programme in the department should be explored.

6. Peer Observation

<u>Strengths/good practices:</u>

The department realizes the importance of peer observation of all aspects of teaching, learning and assessment.

Weaknesses:

It is not currently practiced or formalized.

7. Skills development

Strengths/good practices:

We observed that students are confident in handling animal cases and displayed the necessary skills.

Weaknesses:

The Skills required have not been clearly identified or documented. A strategy to systematically develop identified skills and to certify them needs to be developed.

8. Academic guidance and counseling

Strengths/good practices:

Counseling system is in place for the University and Faculty. The close student contact with staff in small groups gives the opportunity to staff to identify weaker students and offer guidance.

Weaknesses:

Such activities are not documented and the reviewers were not able to assess their effectiveness.

The Review Team's judgment of the eight aspects studied during the review visit is summarized below.

Aspect Reviewed	Judgment Given
Curriculum Design, Content and Review	Satisfactory
Teaching, Learning and Assessment Methods	Satisfactory
Quality of Students including Student Progress and Achievements	Good
Extent and Use of Student Feedback, Qualitative and Quantitative	Satisfactory
Postgraduate Studies	Satisfactory
Peer Observation	Unsatisfactory
Skills Development	Satisfactory
Academic Guidance and Counseling	Satisfactory

The overall judgment is suspended

6. RECOMMENDATIONS

The recommendations listed below arise from our observations and the comments made in the report:

- 1. Graduate profile :The FVMAS needs to develop a graduate profile with which all Departments can concur which shows the role of each of the Departments in creating such a graduate.
- 2. Dearth of Clinical Teachers: This problem should be addressed as a matter of urgency particularly since it appears to compromise the quality of training; some suggestions are given below:
 - a. The current vacancies (Professor and Lecturers) to be advertised immediately.
 - b. As the clinic has a heavy load in the morning hours of the day, it is suggested that at least one academic (preferably a senior member) from another Department be included in the clinic roster at least till 1.00 pm.
 - c. The FVMAS could re-assign the clinical pharmacologist available in the Faculty to the DCVS on a full-time basis.
 - d. Formulate a scheme designed to attract experienced clinicians from the Public Service and general practice on a short-term basis to teach in the clinics.
 - e. Arrange for post-graduate clinical research students to work in the clinic. Steps should be taken to structure and recognize such degrees as described earlier; this will also attract working Veterinarians.
- 3. Improve working conditions for students in the clinic and hospital and take steps to remove their apprehensions and fears; establish a staff-student liaison committee to meet at intervals to discuss some of the issues that arise

- 4. Integration of teaching The Departments in the FVMAS are very compartmentalized with little horizontal communication. The integration of teaching will make learning more interesting as well as highlight the relevance of learning a particular condition. Academic staff from Pathology, Microbiology, Parasitology, Pharmacology and, when appropriate, Anatomy and Physiology, should participate in the clinical discussions and case presentations. These should be time-tabled and formalized to facilitate their participation.
- 5. Introduce clinicals to students in the first year so that they will learn the pre and para clinical subjects in their proper context and serve to motivate them. The junior students could assist the seniors in the clinic and relieve the latter of the long hours of work. The FVMAS should work towards a module-based curriculum as soon as possible.
- 6. The University should allocate adequate funds and resources for training in small animals and wildlife in comparison with farm animals. The Veterinary Council could be made aware so that they can play a part in obtaining such funds. \
- 7. The administration of the small animal hospital must be separated from the teaching activities. The construction of a new hospital will give the opportunity to appoint a Director who will attend to the daily administration. There should be accommodation and facilities for a pathologist and microbiologist/parasitologist in this hospital.
- 8. Promotion of two of the laboratory technicians to grade A4 has been delayed and should be addressed.
- 9. The FVMAS should put in place a proper academic calendar so that students are aware when they will complete their training. The current final year students have completed over 5 and a half years when they reach the final year, though on paper their course is only of 4 years duration. Since the backlog is mainly in the clinical departments, it may be necessary to take in double-batches even at great inconvenience in order to overcome this problem once and for all.
- 10. The enforced vacation before the final year as well as the gap between the teaching of paraclinical subjects and the clinical subjects both should be minimized. As a result, the final year students appear to have lost even the ability to use a microscope!: Taking four students at a time for Student clinical assessments may not be a good practice as students who are questioned later have a clear advantage.
- 11. The emphasis and duration allocated to ancillary subjects should be reduced and perhaps given as foundation courses much earlier; they could also be offered as electives. Some of the courses such as wildlife and aquatic science could also perhaps be offered as specialized optional courses.
- 12. Improvements to curriculum delivery:
 - a. All staff members including the seniors should undergo training in modern methods of curriculum development and delivery.
 - b. Case presentations and discussions could follow the methods recommended for Small group discussions and problem based learning.
 - c. More self learning activities such as student seminars, web based or library based self study packages could be made available; study guides and assignments could be introduced.

- 13. Increase use of MCQs and structured-essay type questions for both formative and final examinations
- 14. Feedback: Essential to monitor the effectiveness of teaching/learning process:
 - a. A formal mechanism to obtain quantitative feedback from students in the form of structured questionnaires should be introduced for all aspects of teaching as well as for individual teachers so that the deficiencies in the teaching/learning process if any can be identified.
 - b. Qualitative feedback can be obtained via a student staff liaison committee. This will serve as a formal mechanism to address student appeals, grievances and problems related to academic matters
 - c. Establish a formal mechanism for peer observation and documentation
- 15. Students should be guided regarding their future prospects in the field of Veterinary Medicine. This can be arranged by the professional associations through a mentoring program.