

**Veterinary Council of Ireland (VCI) and European Association of
Establishments for Veterinary Education (EAEVE)
European System of Evaluation of Veterinary Training**

**REPORT ON THE VISIT TO THE FACULTY OF
VETERINARY MEDICINE OF
University College Dublin (UCD)**

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EXECUTIVE SUMMARY

INTRODUCTION

UCD's modern Veterinary School buildings were opened during the summer of 2002. Since then, two evaluations have taken place, by EAEVE in 2003 and by AVMA in 2007. Both of these evaluations were positive, with the school being placed on the EAEVE visited and approved list and granted full accreditation by AVMA for the maximum period of 7 years.

The last VCI visitation was carried out in 1996, when the school was still housed in old, cramped and desperately unsuitable conditions. This VCI report made some positive comments in relation to the commitment of the Faculty and the quality of the students and the teaching, however closure was recommended in the event that funding to move to a new facility was not obtained.

Today, UCD's veterinary school continues to enjoy the benefits of a modern, purpose-designed academic and clinical facility on the main campus of Ireland's largest University. Its programmes of study are in high demand from prospective students from Ireland and further afield, and many nations are represented among both staff and students. The curriculum has been informed by international best practice and by consideration of teaching and learning advances.

It has also experienced a period of organisational change. In 2005, in line with the restructuring of UCD, the old Faculties and Departments were assimilated into Colleges and Schools. UCD's former Veterinary School became part of the UCD School of Agriculture, Food Science and Veterinary Medicine, within the UCD College of Life Sciences. In early 2010, the university President announced a further refinement of UCD's Academic Structures, designed (*inter alia*) to achieve greater alignment between structures and major disciplinary areas and to enhance the interactions between certain disciplines and their external stakeholders, including relevant professional bodies. Under the new structures, due to be formally in operation by September 2011, there will be a UCD School of Veterinary Medicine within a College of Agriculture, Food Science and Veterinary Medicine. The proposal for the UCD School of Veterinary Medicine has met with universal approval among the relevant staff, and the strong feeling is that this will enable pro-active management of the education, research and clinical services aspects of the school's mission.

In 2010, UCD Veterinary Medicine can be considered to be a veterinary school with an international outlook while also recognising its importance in supporting the Irish agri-food sector. It is one of only five European schools, and nine outside North America, to have been accredited by AVMA. Its programmes of education aim to meet the needs of aspiring veterinary practitioners, veterinary nurses, veterinary scientists and veterinary specialists, right through the life-cycle from undergraduate to taught graduate, research graduate and life-long learning. In its research, it aims to advance collaborative biomedical research and comparative medicine under the "one health" agenda, to support innovation in the agri-food sector, and to advance animal welfare. Agricultural production remains very important to Irish society and the economy. The faculty is closely involved in veterinary issues related to animal health and welfare and productivity. Its clinical services serve as the engine of clinical education and

translational research, and an important link to colleagues in practice who refer cases to the hospital.

Evaluation visits represent a "snapshot" in time with their success related to the quality of the Self Evaluation Report. (SER). It is clear that much effort was put into the preparation of the visit by academic staff and support staff. The evaluation visits involve a big effort not only for the visitation team but also for the staff involved. The experts are particularly grateful to the Dean Professor Grace Mulcahy for the help given before and during the evaluation visit.

Chapter 1. Objectives

The overall mission of the school is to serve Ireland and the wider world by providing the highest standards in veterinary education from Bachelor's to Doctoral level and through continuing professional development, by the advancement and communication of knowledge, through research and scholarship and by providing the highest quality care for animal patients.

The accompanying vision matches the institutional vision of the University. In this context veterinary medicine at UCD aims to

- Rank as one of the top centres of veterinary medical education in Europe, for the entire life-cycle from undergraduate to doctoral level and beyond, where teaching is informed by the research and clinical activities of staff
- Shape agendas on issues in animal and public health, and on the role of animals in society, on the national and international stage
- Be recognised globally for the quality of staff, graduates, clinical training, and contribution to knowledge
- Increase the profile and desirability of UCD as a choice for undergraduate, professional and graduate students
- Value each student and staff member and maximise their opportunities for professional development
- Build on research success to advance animal and human health
- Provide cutting-edge clinical services to meet the needs of educational and research missions

Comments:

- The objectives cover the total education programme adequately and undergraduate education is the primary reason for the existence and funding of the establishment;
- The mission and vision of the School are in line with other international-standard Veterinary Schools. The Veterinary School is in a period of transition, and further strategy will need to evolve as it develops into a School in its own right.

- It is clear that the clinical resource needs to be expanded and refined. The School is developing a plan to deal with this and a Clinical Director is being appointed to facilitate this.
- Significant development of clinical services will be required over the next few of years, both to cater for increased student numbers and to provide for additional clinical staffing and re-investment in hospital infrastructure and facilities.
- With the planned increase in student numbers, space for practical classes and in the library will need to be kept under review.
- The University has responded to financial constraints in higher education by introducing short term contracts rather than open ended contracts. This will be unattractive for clinical specialists, and recruitment may be challenging. In addition there is currently no promotion track for clinician/teachers. The School is working with the University to develop a clinical track.

Suggestions:

- Increasing clinical resource and a clear career path for clinicians will be important in maintaining the quality of the programme.
- General University facilities will have to be used to cope with the larger class sizes.

Chapter 2. Organisation

UCD is organised into a number of Colleges and Schools. The schools are the fundamental academic units, responsible for delivery of taught modules, and in some cases entire degree programmes. Colleges are administrative units encompassing a number of cognate schools that share responsibility for high-level strategic planning and achievement of strategic educational, research and financial objectives. At time of writing, veterinary medicine activities are within the School of Agriculture, Food Science and Veterinary Medicine, itself a constituent school of the College of Life Sciences. Under the proposed refinement of UCD academic structures 2010/2011, the President has proposed that the UCD School of Veterinary Medicine will be one of two schools in the UCD College of Agriculture, Food Science and Veterinary Medicine (The other being the UCD School of Agriculture and Food Science). These structures are due to be in place from September 2011, with interim arrangements from September 2010.

A key body relevant to the governance and management of veterinary medicine programmes is the Veterinary Medicine and Veterinary Nursing Programme Board. This Board is one of a number of major programme boards within the University. It is chaired by the Dean of Veterinary Medicine and includes heads of subject, year co-coordinators and student representatives, among others. Each of the Programme Deans is a member of the University Undergraduate Programme Board (UUPB), chaired by the Registrar. This body formulates the general regulations for the structure of degree programmes, (for approval by

Academic Council) as well as discussion of derogations requested by particular programmes.

The Dean reports and is accountable, *via* the Registrar, to the President and Academic Council of the University. The Dean chairs the MVB/Veterinary Nursing Programme Board and is responsible for maintenance of the external profile of the programme, its quality and relevance. The Programme Board has a number of sub-committees, which the Dean of Veterinary Medicine or nominee chairs.

There is a sub-school section structure, with sections serving as the "home" for academic staff members. There are currently three academic sections:

Veterinary Sciences,

Veterinary Clinical Sciences and

Herd Health/Animal Husbandry.

The School Management Committee, School Executive, and Hospital Management Group are also significant internal administrative bodies. The School Executive is established by statute, includes both *ex officio* and elected members, and serves as a general advisory body to the Head of School. The Hospital Management Group (Hospital Board) includes representatives of all of the major clinical service areas, support staff, and hospital management and is responsible for strategic decisions affecting clinical services.

Comments:

- The Veterinary Programme lies within the School of Agriculture, Food Science and Veterinary Medicine in the College of Life Sciences. By 2011 the Faculty will represent one of two Schools in the College of Agriculture, Food Science and Veterinary Medicine. The Dean has access to key senior University administrators, such as the Finance Director.
- The existing School Executive, for the current School appears to be unwieldy and deals with much business that is irrelevant to the vet programme.
- The separation of the Veterinary School as a distinct unit is to be welcomed. Strategic planning for the School will be facilitated. It will resume its distinct veterinary identity and focus on issues directly relevant to the School.
- The Hospital Management Group is to be commended. It comprises a broad mix of stakeholders and should provide broad oversight in a non-hierarchical structure.
- The aspiration to form an External Advisory Committee is to be encouraged.

Suggestions:

- Complementarity between the Veterinary School and Agriculture and Food Sciences should not be lost in the separation of these entities. Possibilities for joint programmes and funding opportunities can be developed in areas of food safety and the existing strong farm animal programme within the School benefits tremendously from these links in delivering a holistic farm-to-fork approach in teaching and research.
- With regard to veterinary public health, it is important that the links with the UCD School of Public Health are maintained and strengthened.

Chapter 3. Finances

The School Budget is determined according to a Resource Allocation Model (RAM) developed by the University. This takes into account state income for undergraduate and graduate students, external (non-exchequer) income, with strategic incentives for graduate student numbers and certain research metrics. In the academic year 2009/2010, based on income received from state and other sources, and the University's internal Resource Allocation Model (RAM), the income of €14.6m fell €5.4m short of the expenditure needed to run the School, with the difference covered by an additional allocation from the University. In the strategic plan for the school there is a stated objective of reducing this deficit and indeed, eliminating it, by 2014. This will be accomplished by a number of means including:

- Negotiating increased funding from the HEA for veterinary education at Ireland's only establishment providing veterinary practitioners (Review of funding provision is on-going)
- Developing additional non-exchequer income from international students, taught graduate programmes (including CVE) and clinical services
- Enhancing development and fundraising strategies

These developments have been discussed with UCD SMT (senior management team) and will require additional staffing and other investment in order to deliver their required outcomes. They are desirable for academic, as well as financial reasons.

Clinical income serves as the basis for allocation of non-pay budget for UCD Veterinary Hospital in the following year. As clinical income increases in line with forecasts in the hospital business plan it is envisaged that some income will be used to support clinical salaries as well as non-pay hospital expenditure.

Required capital expenditure is provided by the HEA through a fund separate from that for recurrent expenditure. There is an annual budget for minor works and planned investment in large-scale buildings and infrastructure is made periodically.

Comments:

- The devolved new School structure will allow the Dean to have autonomy over budgetary allocation. The School is currently in deficit by around €5

million. Robust and astute financial planning will be of the highest importance for the veterinary faculty for future years, and a plan is in place to balance the budget over the next 5 years.

- Business planning incorporating increased numbers of international students has allowed the School to show an increased revenue stream in the face of cutbacks in government funding. However increased student numbers will require increased staffing and recruitment of additional staff.
- Clinic income is very low. Currently it covers only non-salary expenses. The School is recruiting a Commercial Manager to address this issue and it is also the intention to appoint a Clinical Director, however a culture change will be needed in the attitude of staff to income generation which will take some time to achieve.
- Although the School currently has good facilities, business planning will have to incorporate possible future capital expenditure and equipment replacement – although the University does allocate some funds for this.

Suggestions:

- Clinical income is an important source of additional revenue to support the salaries budget. It was apparent that many of the staff did not appreciate this. A better shared financial awareness of revenue streams into the School might help to increase clinic income.
- A review of where the deficiencies lie, and in particular of the methods of charging clients, is key in increasing this income.
- The significant shortfall in funding of students versus the actual cost of educating a vet will need to be addressed with the HEA. In parallel, there will need to be constant review and implementation of the most cost-effective way of delivering teaching.
- The School will have to ensure that the University allows it to implement its projected requirement for increased staffing, particularly in the clinical areas. A key point in this negotiation will be potential loss of AVMA accreditation if staffing ratios decrease, with subsequent loss of revenue from international students.

4. CURRICULUM

A. General

4.1 Curriculum in the Context of National and International Standards

The curriculum objective is to enable students to acquire the essential core skills and knowledge required for **entry** into any branch of the veterinary profession. The curriculum therefore takes into account the requirements of the National Competent Authority, the Veterinary Council of Ireland, as well as EAEVE/ECOVE. Previous visitations (VCI 1996, ACVT 1998, EAEVE 2003) have validated these requirements. Mutual recognition agreements are also in place with the Australasian Veterinary Boards Council (AVBC). AVMA accreditation

was pursued following the move to new purpose-built premises on the main university campus in 2002. A consultative site visit (in conjunction with EAEVE) was held in 2003 and a comprehensive site visit in 2007, following which full accreditation was granted.

Some of the most significant changes that have taken place over the past 10 years include:

- Introduction of a lecture-free final year
- Introduction of Problem-Based Learning
- Adoption of modularisation, semesterisation and ECTS (2005)
- Introduction of Electives (2005)

Overall, the curricular changes that have been adopted have aimed to promote deep learning, refine assessment methods, increase vertical integration and achieve an appropriate balance between the acquisition of the required skills and competencies and intellectual/life-long learning capacity.

4.1.2 The Degree of Freedom that the School has to Change the Curriculum

Decisions on ongoing curriculum development and reform are made following recommendations of the curriculum review committee, by subject heads or by module co-coordinators. All changes must be approved by the Programme Board. As required, curriculum reforms and refinement take place on an on-going basis. For example, a new Stage 1 Curriculum for the 4-year Graduate Entry programme was agreed prior to the Academic Year 2009-2010. Decisions on balance between subjects, and between theoretical and practical training, are agreed at Programme Board level. Decisions on the form of learning activities (didactic, practical, clinical) are made taking into account availability of resources, students' learning styles, nature of material to be covered, and personal preferences of academic staff.

Table A Breakdown Didactic vs Practical teaching

General table of curriculum hours taken by all students						
	Hours of training					
	Lectures	Practical work	Supervised work	Clinical work	Other specified learning activities	Total
First year	203	209	32	10	85	539
Second year	239	170	46	10	70	535
“Graduate Year”	116	227	115	10	190	658
Third year	340	186	50	0	27	603
Fourth year	365	124	30	12	64	595
Fifth year	0	40	156	999	160	1355
Total 5 year Degree	1147	729	314	1031	406	3627
Total 4 year Degree	821	577	351	1021	441	3211

** Project work, discussion groups, or other work with a measurable outcome*

Tables B-F Core modules by Year

Table B: Year 1 Core Modules Year 1, 5 Year MVB Degree							
Code	Title	Hours of training					Total
		Lectures	Practical work	Supervised work	Clinical work	Other	
Semester 1							
VET10090	Cell and Molecular Biology	24	10	2			36
VET10100	Intro to the Practical Apps of Veterinary Anatomy & Comparative Topographical Anatomy of the Thorax		36				36
VET10070	Introduction to Basic Mammalian Structure	12	36				48
VET10110	Veterinary Cardiovascular and Respiratory Function	23	3	4		15	45
VET10120	Homeostasis and Introduction to Physiological Communication	24	6				30
Semester 2							
VET10030	Applications & Integration	48				70	118
VET10040	Practical Animal Husbandry	11	62		10		83
VET10050	Comparative Topographical Anatomy of the Abdomen and Pelvis	7	36	24			67
VET10080	Cell and Whole Body Metabolism	30	8	2			40
VET10140	Physiology and Biochemistry of Digestion of Domestic Animals	24	12				36

Table C Year 2 Core Modules Year 2, 5 Year MVB Degree, 70 core credits							
Code	Title	Hours of training					Total
		Lectures	Practical work	Supervised work	Clinical work	Other	
Semester 1, Year 2							
VET20030	Head & Nervous System of Domestic Animals	24	46				70
VET20040	Introduction to fluids: blood plasma, urine and milk with an emphasis on basic pharmacokinetics	24	12	4			40
VET20050	Genetics & Animal Breeding	24	6			15	45
VET20080	Integrated Physiological Communication	18	4	2		2	26
VET20060	Animal Behaviour, Welfare & Companion Animal Care	25	6	12		24	67
Semester 2, Year 2							
VET30010	Farm and Companion Animal Nutrition	24	16	16		12	68
VET20020	Reproduction	24	10	4	10	10	58
VET20070	Veterinary Food Animal Systems	24	8	8		3	43
VET20090	Locomotion in Domestic Animals	18	50			4	72
VET20170	Introduction to Veterinary Immunology and Microbiology	34	12				46
VET20120	Farm and Companion Animal Experience (EMS) (20 credits)	See Appendix, Table J and also Chapter 14					

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Table D Core Modules Year 1, "Graduate Entry Year", 4 Year MVB Degree, 60 core credits							
Code	Title	Hours of training					Total
		Lectures	Practical work	Supervised work	Clinical work	Other	
Semester 1, Graduate Year							
VET30330	Cells, Tissues, Organs and Development	12	24			24	60
VET30360	Neurobiology and structures of the head	12	32			20	64
VET30380	Homeostasis, Physiological Communication & Fluid Balance		4	36		25	65
VET30410	Cell metabolism & replication	16	4	9		25	54
VET30420	Cardiovascular & Respiratory Systems		38	11		20	69
VET30430	Animal Behaviour & Welfare		3	7		30	40
Semester 2, Graduate Year							
VET30340	Food animal systems and applied animal breeding	28	8	8			44
VET30350	Practical and applied animal nutrition		12	20		20	52
VET30370	Locomotion and exercise	12	50			20	82
VET30390	Reproductive biology	24	10		10		44
VET30400	Digestive physiology and integrated metabolism	12	12	12		6	42
VET30440	Abdomen & Pelvis- Topographical Anatomy		30	12			42

Table E Core Modules Year 3, 5 Year MVB Degree, 60 core credits (Year 2, 4 Year Graduate MVB Degree, 80 core credits)							
Code	Title	Hours of training					Total
		Lectures	Practical work	Supervised work	Clinical work	Other	
Semester 1							
VET30020	Introduction to Veterinary Parasitology and Immunology (10 credits)	60	24			15	99
VET30030	Introduction to Veterinary Microbiology (10 credits)	60	48			12	120
VET30040	Introduction to Veterinary Pathology	34	29	28			91
VET30050	Introduction to Veterinary Clinical Pharmacology and Therapeutics	36					36
VET20120	Farm and Companion Animal Experience (EMS) (20 credits, Graduate entrants)	See section 4.4					
Semester 2							
VET30160	Introduction to Clinical Medicine and Surgery	21	10	4			35
VET30120	Veterinary Clinical Cardiovascular and Respiratory System (15 credits)	85	36				121
VET30130	Veterinary Clinical Gastrointestinal System (10 credits)	44	39				83

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Table F Core Modules							
Year 4, 5 Year MVB Degree, 60 core credits (Year 3, 4 Year Graduate MVB Degree, 60 core credits)							
Code	Title	Lectures	Practical work	Hours of training			Total
				Supervised work	Clinical work	Other	
Semester 1							
VET30060	Veterinary Public Health I	27	15	12		14	68
VET30070	Veterinary Clinical Reproduction I	26	9	2	6	10	53
VET30080	Veterinary Clinical Neurology	30	30				60
VET30090	Veterinary Clinical Urology	27	13			4	44
VET30100	Veterinary Anaesthesia	24	6	2			32
Semester 2							
VET30140	Veterinary Public Health II	27	18	6		11	62
VET30150	Veterinary Clinical Musculoskeletal (10 credits)	58	17				75
VET30170	Veterinary Herd Health and Population Medicine	40				15	55
VET30190	Veterinary Clinical Reproduction II	26			6	10	42
Full Year							
VET30300	Special Topics in Clinical Veterinary Medicine (10 credits)	80	16	8			104

Table G Core Modules							
Final Year MVB Degree, 100 core credits							
Code	Title	Lectures	Practical work	Hours of training			Total
				Supervised work	Clinical work	Other	
Full Year, commencing May/June							
VET30290	Veterinary Medicine (60 credits)	0	40	156	999	160	1355
VET30260	Clinical Extra-mural Experience (40 credits)	See section 4.4					

Table H Curriculum Hours allocated to EU-listed subjects taken by every student

Table H(i) Basic Subjects						
A. Basic subjects	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Anatomy (incl. histology & embryology)	41	216	32	0	39	328
Biochemistry and molecular biology	85	25	18		27	155
Biology (incl. cell biology)	7					7
Biophysics	3					3
Biostatistics						
Chemistry	2					2
Epidemiology						
Genetics	24	5				29
Immunology	15	6				21
Microbiology	76	73			12	161
Parasitology	47	30			15	92
Pathological anatomy (macroscopic & microscopic) and physiopathology	81	75	28			184
Pharmacy	3					3
Pharmacology	22	2			2	26
Physiology	87	25	18		80	210
Scientific and technical information and documentation methods	2	4	24		35	
Toxicology (incl. environmental pollution)	3					3

Table H (ii) Animal Production Subjects						
B. Animal Production	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Agronomy*	1					1
Animal behaviour (incl. behavioural disorders)	11		6		12	29
Animal husbandry (incl. livestock production systems)	34	70	8	10	3	125
Animal nutrition and feeding	29	16	16		12	68
Animal protection and welfare	16		6		12	34
Environmental protection	2					3
Preventive veterinary medicine (incl. health monitoring programmes)	26			40	15	81
Reproduction (incl. artificial breeding methods)	24	10	4	10	10	58
Agricultural economics	3					3

*Agronomic principals are also inherent in the subjects “Animal Husbandry” and “Animal Nutrition / feeding”

Table H (iii) Clinical Subjects						
C. Clinical subjects	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Anaesthesia	24	6	10	64	10	114
Laboratory diagnostic methods	11	40				51
Clinical medicine	139	23	153	260	94	669
Diagnostic imaging	24			80	10	114
Obstetrics	8	6				14
Reproductive disorders	33			8		41
State veterinary medicine, zoonoses, public health and forensic medicine	30	2.5	17.5		24	74
Surgery	44	16	4	210	40	314
Clinical Pharmacology and Therapeutics	50					50

Table H (iv) Food Hygiene						
D. Food Hygiene	Lectures	Practical work	Supervised work	Clinical work	Other	Total
Certification of food production units	1		2		8	12
Food certification	1	2				13
Food hygiene and food quality (incl. legislation)	7		2			24.5
Food inspection, particularly food of animal origin	8	2.5	2.5			13
Food science and technology	3.5	2.5	2.5		2	10.5

Table H (v) Professional Knowledge						
	Lectures	Practical work	Supervised work	Clinical work	Other	Total
E. Professional knowledge						
Practice management			4		16	20
Professional ethics	1		2		8	11
Veterinary certification and report writing	1	2				3
Veterinary legislation	7		2			9

Table I Elective modules

Veterinary Elective (5 credit) Modules							
Code	Title	Hours in course					Total
		Lectures	Practical work	Supervised work	Clinical work	Other*	
VET10020	Animals in Society- Ethical Perspectives	9	2	9		48	68
VET10060	Veterinary Career Orientation and Professional Development			24		40	64
VET20160	Exotic Species in Health and Disease	12	32				44
VET20150	Large Animal Hospital Elective	1	1		72	20	94
VET20100	Communication in Veterinary Practice (5 credits)			20			20

Table J – CEMS periods

Table JObligatory extramural work that students must undertake as part of their course			
Nature of work	Minimum period	Year of the course in which work is carried out	
		5 Year MVB Degree	4 Year MVB Degree
Preclinical EMS			
Dairy cattle	2 weeks	1-2	1-2
Beef cattle	2 weeks	1-2	1-2
Sheep	2 weeks	1-2	1-2
Pig	2 weeks	1-2	1-2
Companion animal	2 weeks	1-2	1-2
Equine experience	2 weeks	1-2	1-2
Total Preclinical EMS	12 weeks	1-2	1-2
Clinical EMS			
Equine experience	2 weeks	3-5	2-4
Companion animal practice	4 weeks	3-5	2-4
Farm or Mixed Practice	4 weeks	3-5	2-4
Meat plant	5 days	4-5	3-4
Total CEMS required	24 weeks	3-5	2-4
Total EMS required	36 weeks	1-5	1-4

Comments

- The curriculum has a strong scientific base which ensures that graduates are well trained in the critical thinking and scientific principles which are fundamental to their careers in all branches of veterinary medicine and other allied careers. Furthermore, the students are educated in an environment where both basic and translational research is highly valued.
- The addition of learning support specialist, to the team in 2009 has underpinned the development of several new programme offerings module

design and evaluation. The availability of this expertise within the school will be of great value in planning future developments and ensuring curriculum refinement proceeds in a timely manner.

Suggestions

- A reinforcement of the role of Heads of Subject, and other senior academics, in curriculum development is desirable and should be prioritised in the new academic structure

B. BASIC SUBJECTS

4.2 BASIC SUBJECTS & SCIENCES

4.2.1 Findings

All basic subjects are covered and taught in modules. The modular system integrates several basic science disciplines horizontally within a certain topic. When broken down in EU subjects most relevant disciplines are represented. There is a lot of practical work associated with the lectures. Anatomy and pathology offer extensive hands on training in small groups of acceptable size. The visitation team found that the faculty supports students in their learning effort to an extent which in the experience of the team is exceptional.

Clinical relevance is highlighted in most courses. There also exists an interdisciplinary module: "integration and applications" which is specially designed for that purpose of confronting students with clinical problem solving. The contents and learning objectives of all modules are very well described in the "blackboard" virtual learning environment system. Teaching aids are comprehensive and are being increasingly complemented with e-learning of excellent quality.

The basic science departments are technically well equipped and research oriented. All are involved in research projects and publish in peer reviewed international journals. Teaching is clearly research based.

The teaching facilities for lecturing and practical work are excellent with ample space and equipment.

4.2.2 Comments

- There is a relatively low number of teaching hours in chemistry, physics and biology. Incoming students are expected to have obtained an adequate level in basic science in secondary school. This includes chemistry in all cases plus either biology (in most cases) or physics. Some students are therefore advised to take an elective biology or physics course or may be supported by specific tutorials. In the experience of the basic science teachers, by the end of the first stage of the curriculum all students are considered to be at the required level in these subjects. An advantage of this approach is that the first stage of the curriculum is not overloaded.

- The balance between the different subjects is difficult to assess in view of the modular structure. In the table showing the breakdown according to EU subjects, anatomy physiology and biochemistry traditionally cover a lot of hours. The number of hours of microbiology, parasitology and pathology is comparable to that of most European veterinary schools. The number of hours in pharmacology, toxicology and immunology seems to be on the low averages of European schools. Clinical immunology is not taught as an individual entity.
- There is no stand alone statistics course. It is expected that students have learned statistics in secondary school. Statistics are however used in practical exercises in the epidemiology/herd health course. Epidemiology is incorporated into the teaching of the module-Herd Health and Population Medicine and practical epidemiological approaches taught as part of the herd health investigation project in Semester 1 final year FACS and formal epidemiological case studies are delivered in semester 2 of final year FACS.
- The horizontal integration of the teaching within the basic sciences into modules is commendable but may sometimes lead to underrating or loss of the identity of certain subjects when these are not represented by own organisational units. This is the case for virology, immunology and pharmacology. For example virology is taught by microbiologists. However there is external support in virology and there is a virologist in training.

4.2.3 Suggestions

- The integration of the basic sciences and the module:“ integration and applications” is an important development and well appreciated by the students. Based on this positive experience an examination should be made to ascertain whether further vertical integration of preclinical and paraclinical subjects with the clinical sciences is possible.
- The basic science aspect of education in immunology and virology and pharmacology should receive more attention.
- Teaching anatomy should involve more computer assisted learning. Replacement of formalin fixed specimens by plastinated ones would also increase teaching effectiveness. There should also be more involvement of diagnostic imaging in the anatomy teaching.

C. ANIMAL

4.3 ANIMAL PRODUCTION

Lyon’s Estate Research Farm in Kildare is UCD’s working farm where students can do practical work on animal production. There is early exposure to handling of farm animals for all students, during the first two years.

There is in the view of the visitation team sufficient hours of teaching in animal production and there is in general a good balance between the practical and the theory. Agronomy is taught particularly well in relation to silage production, pasture management and use of particular feeds/plants etc. Ireland is a country

with grass-based livestock production, therefore teaching in this area is shaped bearing this in mind.

Animal production teaching is also very well integrated with related subjects i.e. herd-health and the management and diseases caused by poor or imbalanced nutrition. This is a strong point of the school.

The teaching of forensic and state veterinary medicine covers the principles of certification with regard to animal transportation in a broader context. This takes place during the final year.

4.3.1 Findings

The Animal Production subjects are taught in the first year in the module Practical Animal Husbandry (Semester 2), in the second year in Animal Breeding and Genetics, Animal Behaviour, Welfare & Companion Animal Care (Semester 1), Farm and Companion Animal Nutrition, Farm and Companion Animal Experience, Veterinary Food Animal Systems and partly also in Reproduction (Semester 2). In the 4th year, the Animal Production subjects have been included in the modules Veterinary Public Health I and II (Semester 1 and 2, respectively), Veterinary Herd Health and Population Medicine and in Veterinary Clinical Reproduction II (Semester 2). In the final year, animal production approaches are taught as a part of Veterinary Medicine as whole. For graduate students having completed specific requirements that enable them to complete their degrees in 4 years, appropriate modifications have been made in the curriculum.

Theoretical and practical classes are organised. Practical examinations are undertaken in the Animal Production subjects.

The teaching and research farm is available for students and used extensively for teaching the first year students handling of all animal species.

4.3.2 Comments

- The curriculum as a whole is organised in modules, where various EU-listed subjects may be presented in several ways. For a reader not familiar with the system, it can be difficult to decipher information available from the SER and the officially accessible UCD website in terms of the module contents, methods of teaching and examination, and of topic coverage.
- Based on detailed analysis of the module contents and discussions with the staff, it can be concluded that all EU-listed subjects are covered adequately, although formally, some of them have very few hours assigned (Agronomy, Rural Economy, and Environmental Protection, Table H ii, Appendix 4a).
- Teaching in handling and managing animals at the farm and in the school (for companion animal species) is very good; all students are exposed to various animal species from the beginning of their studies.
- There is a good horizontal and partly vertical integration of the animal production subjects within themselves as well as with other, especially

clinical disciplines. The concept of preventive veterinary medicine and herd health management is very well presented to students throughout the whole curriculum. This is a strong point of the school. This also results in various aspects of Agronomy, Environmental Protection and Agricultural Economics being taught in the appropriate context in the modules without having assigned explicitly specific numbers of hours in the formal curriculum. From the students' perspective, veterinary medicine is presented as an integrated complex problem together with a problem solving approach. This is also a strong point. On the other hand, it can lead to less focus on some "peripheral" but important areas of the curriculum, such as environmental issues. A strong emphasis is put on Irish aspects of animal production and veterinary care. This is useful for students who intend to practise in Ireland. However, from the EAEVE perspective, knowledge of a broader European perspective would be useful, especially for international students and for students planning to work outside the country (e.g. European breeds and breeding systems can be taught more extensively, poultry breeding etc.). This also is a criterion of an EAEVE fully approved school. There is also limited time devoted to species-specific knowledge in the area of animal production.

- Many animal production subjects are taught by veterinarians, the ratio of veterinary vs. non-veterinary academic staff is favourable. Teaching is veterinary oriented. The collaboration with other sections, especially with clinics is good; however there is always room for improvement.
- The farm is very important not only for clinical teaching but also for animal production. It provides an important opportunity for students to learn animal handling during the first year of their study. However, logistics of the farm use can be improved, especially in terms of the time spent on the farm during a single visit while also bearing in mind transportation costs. Other farm visits organised for the students (monitoring and problem solving) are also a useful experience showing to students the concept of preventive veterinary medicine in practice. The drawback is that often students lack the feed-back, i.e. they cannot follow-up on cases and may not learn about their outcomes. One possible solution to this logistical problem could be addressed through the provision of dormitories for students. This would allow them to stay overnight and to follow the cases, to take benefit of the lambing season and so on.
- Relatively little attention is paid to poultry breeding, poultry medicine is taught within the animal husbandry and public health modules, elements of it also appear in microbiology, parasitology and pathology.

4.3.3 Suggestions

- The contents of the modules offered should be addressed and some changes could be introduced, namely:
 - proportions between various topics should be re-considered; more focus could be paid to the European context. In relation to that, some so far underestimated topics, like environmental protection could be better developed, especially in terms of practical teaching;

- more attention should be paid to species-specific problems in animal production;
 - this process could also be used for further improving horizontal and especially vertical integration of the modules.
- Logistics and organisation of the farm visit should be improved. The team strongly recommends the school and UCD to consider building accommodation premises for students, which would significantly contribute to the teaching value of the farm. In that case, direct costs of transportation would be lower.

D. CLINICAL SUBJECTS

4.4 D. CLINICAL SUBJECTS

Findings

Clinical (problem-based) learning and training is divided between the campus at University College Dublin, Belfield, and at the University farm at Lyons Estate, Newcastle, Co. Dublin. Extra-mural studies, (EMS) both pre-clinical and clinical, form an integral part of the curriculum and are awarded ECTS credits.

Clinical training is provided throughout the bulk of the study period. Preclinical subjects begin to be taught from the second semester and mainly consist of theoretical training and practicals. The final 5th year is lecture-free (60 credits) and the objective of this year (Veterinary Medicine) is to build on the practical and theoretical knowledge acquired in the earlier stages of the study in a clinical setting, using patients at UCD Veterinary Hospital, Herd Health visits, and partner organisations. This final year course comprises of clinical rotations. Already from the first year there is a (limited) vertical integration of subject matters (basic sciences- clinical studies).

The curriculum provides students with the essential core skills and knowledge required to fulfil the day 1 competences and to start in any branch of the veterinary profession.

The curriculum does not offer species oriented tracks, however each student adds a limited number of electives to its personal profile during year 1 and 2 (10 credits each year) and during the clinical rotations (4 weeks).

During the third, fourth and fifth years of the course, students are required to complete a minimum period of 24 weeks of practical extra-mural study (VET30260 Veterinary Clinical Extra Mural Studies- 40 credits).

Clinical EMS provides students with the practical experience of the art and science of veterinary medicine, gained from a number of branches of the practising profession.

There are also a number of exchange arrangements with other institutions. Students are covered by liability insurance during extramural work.

A major proportion of the learning is hands-on, practical and interactive. Relevant ratios demonstrating this are:

Theoretical: supervised Practical Training 1:0.72

Clinical: Supervised Practical training 1:1.99

Directed Learning: Teaching Load 1:2.72

Clinical Training Prior to Commencement of Clinical Rotations

Students have opportunities for clinical training, appropriate to their stage of development, at multiple points during the curriculum prior to the intensive clinical experience of the final year of the programme.

Clinical Rotations

The entire final year of the programme consists of student participation in clinical rotations. The clinical programme involves an individualised timetable for each student, allowing them to benefit from each of the rotations offered within UCD Veterinary Hospital/School while also allowing them the freedom to plan their CEMS, internal or external electives, and rest periods.

All final year students are rostered through obligatory and elective (4 weeks) rotations in UCD Veterinary Hospital (page 8 of the SER).

While on clinical rotation students are expected to participate in the normal operation of the hospital. They are required to work irregular and long hours, depending on case load and emergencies. Participation in these activities is an important part of the learning experience. In most cases, group sizes of 4-5 students are the norm.

Students are expected, under supervision, to conduct clinical examinations, write up clinical records, administer treatments, communicate with clients, participate in rounds and give case presentations. Depending on the rotation in question, they will also be required, under supervision, to induce and monitor anaesthesia, assist with surgeries, perform common surgical procedures (neutering operations), and interpret diagnostic images. In the herd health rotation they interrogate farm and health records, and formulate herd health plans. In the paraclinical rotation, they conduct a necropsy, take tissue samples, and interpret the results of diagnostic tests and write and present necropsy reports.

Students' participation in the emergency clinic involves care of UCD Veterinary Hospital inpatients as required as well as involvement in the care of animals presented directly to the emergency clinic. Details of each clinical rotation are given in Appendix 4c of the SER.

A module introducing the principles of veterinary surgery takes place in Stage 3. Students develop practical competences through surgical skills teaching in the final year, during relevant Final Year rotations in the Hospital/DSPCA clinic (canine and feline ovario-hysterectomy), in the reproduction rotation (bovine caesarean operation) and as part of their EMS training.

Comments

- The basic and paraclinical sciences are of good quality and lay the necessary groundwork for the clinical skills and knowledge. A vertical integration of

subject matters has been attained to a certain level but there is room for further development.

- There is adequate provision of animals to students for learning basic practical clinical skills before the students enter the different animal hospitals in their final year rotation.
- The quantity and range of both large and small animal clinical cases available to students is sufficient. However, due to possible future biosecurity restrictions, there could be a drop in the number of large animal cases entering the hospital and the number of cases seen on farms. This should be kept in mind for future planning.
- The visitation team met with students during the visit who have experience of other schools and they are very satisfied with the quantity and range of cases.
- The fact that students spend 12 weeks of EMS at an early stage in their course is an excellent opportunity to gain practical knowledge/experience of working with different species under various conditions.
- The core subjects are adequately covered to give students the knowledge required to meet the day 1 competencies. However, virology, pig health care and poultry health care deserve more emphasis.
- UCD operates an emergency veterinary service in which students participate on a compulsory basis. The equine referral clinic is open around the clock and there is also a small animal 24 hr emergency service in which students similarly participate.
- The school does not run an ambulatory service, but students participate in Herd Health visits and a fertility programme on a year round basis on co-operating farms. This exposes students to a proportion of 1st opinion cases. Equine medicine is taught at the hospital at UCD and at Lyons research farm. Most patients are seen on a referral basis and as the clinic does not run an ambulatory service, there is a deficit in the number of 1st opinion (especially equine) cases. In this respect the students are dependent on the clinical EMS.
- The School is considering the option of running a 6 year programme. This could fit in with the Bologna Agreement for the qualification level of a Bachelor Masters degree.

Suggestions

- The EMS (both preclinical and clinical) is very useful. The evaluation of the quality of EMS provided is a matter of concern. Further reference to this is made in a later section of this report
- Although there is limited vertical integration of modules at present there is room for further integration

- The visiting team advises that students be further encouraged to participate in exchange (e.g. a 3 months Erasmus exchange in the clinical rotation phase) with other Veterinary Schools
- The provision of an equine mobile clinic/ambulatory service is strongly encouraged in order to offer more first opinion cases to students under direct supervision of UCD staff. The EMS should not be regarded as a sufficient substitute for this.

-

E FOOD HYGIENE

4 5 FOOD HYGIENE

Practical training in Food Hygiene familiarises students with food safety evaluation methods, especially with regard to foods of animal origin, at various stages in the food chain, particularly in slaughterhouses. Such training takes place in groups that are small enough to ensure that all students are able to gain hands-on experience. It also gives students the opportunity to monitor units involved in the production, processing, distribution and consumption of foodstuffs.

Extramural instruction is used to supplement some of the training in food hygiene. This is carried out in approved slaughterhouses under the supervision of the Department of Agriculture Fisheries and Food and is properly monitored and controlled.

The School does not own a slaughter house/meat plant. Students are required to complete practical training in Veterinary Public Health, in conjunction with veterinary officials of the Department of Agriculture, Fisheries and Food and veterinary inspectors, at registered meat plants and abattoirs. This system of "hands on" meat inspection experience gives students a broad understanding of food safety procedures as they relate to Irish industry and regulatory requirements.

Veterinary facilities at 26 export-approved meat and poultry meat plants in the Republic of Ireland and a further five such plants in Northern Ireland are used for the teaching of Veterinary Public Health and Food Hygiene. The use of these plants for teaching is authorised by the Chief Veterinary Officer in both jurisdictions and is supervised by official veterinarians.

Fresh beef, pork and mutton carcasses along with offal are purchased from a number of these plants for classes. These materials, along with fresh poultry carcasses taken from processing lines at three poultry meat plants, are available for practical classes conducted in an environment similar to that of a meat plant. Disposal of these materials is in accordance with legal requirements concerning specified risk material (SRM). Facilities for the further investigation of specimens from the above carcasses are available within this laboratory. Class sizes of up to 25 students are accommodated for hands-on tuition in the assessment of carcasses and offal, and dispositions on such materials. A further 25 students are accommodated in an adjacent laboratory.

The food processing facilities of UCD's Food Science building are used for classes in food processing. A range of processing equipment for foods of animal origin is

located in these laboratories. Meat curing processes, including brine injection equipment are used during practical classes along with hoppers, mixers and vacuum formers as used commercially in the manufacture of processed hams. In addition, access to pilot-scale equipment for the formulation and manufacture of sausages is available along with processing equipment, raw ingredients, including a wide range of seasonings and casings are demonstrated during practical classes. A low volume heat-exchange unit is also used to demonstrate the principles of commercial liquid milk pasteurisation.

Comments:

- There is a very high level of vertical and horizontal integration with regard to Veterinary Public Health (VPH) aspects of the Veterinary programme. Under the department of Herd Health and Animal Husbandry, Food Safety, the Centre of Veterinary Epidemiology and Risk Assessment and the Farm Animal Clinical Studies and Herd health collaborate with regard to the delivery of the VPH programme. There is also a collaborative approach in Research which enhances the teaching offering. The heads of subject in these areas have also engaged successfully with the external stakeholders in Ireland in the Agri- Food Sector and the Veterinary Profession. This has resulted in the establishment of the "Animal Health Ireland "initiative. This initiative is an industry wide commitment to develop programmes to reduce non regulatory disease in Ireland such as Johnes, BVD, IBR and Mastitis. An offering of a Graduate Certificate in Dairy Herd Health to food animal Veterinary Practitioners supports this initiative. This initiative gives tangible expression to the stable to table approach to VPH.

Suggestions

- A continuous improvement approach to vertical and horizontal integration should be adopted.

F. PROFESSIONAL KNOWLEDGE

4 6 PROFFESIONAL KNOWLEDGE

The course of instruction covers subjects necessary to prepare the graduate to perform effectively not only in the traditional veterinary practice, but also in other common professional roles.

Professional knowledge subjects include:

- Practice management
- Professional ethics
- Career planning and opportunities
- Veterinary certification and report writing
- Veterinary legislation

An elective module titled "Veterinary Career Orientation and Professional Development" has been developed for Stage 1 students. A workshop session during this module stresses the importance of continuing professional development, while interviews with veterinarians in a range of veterinary careers reinforce this message. This module also introduces concepts such as

professionalism at an early stage, and outlines the day one competences and attributes expected of the new graduate. During clinical extramural studies (EMS), which commence in Stage 3 of the degree, students are expected to acquire an insight into the professional aspects of practice, gaining knowledge of the ethical, legal and welfare issues that face ordinary practitioners during day-to-day activities. In the Final Year of the MVB degree, the assessment of the clinical rotations places emphasis on professional behaviour. Clinical rotations constitute 15% of the overall Final Year assessment.

Comments

- Professional Knowledge is obtained through formal lectures and through the interface with veterinary staff (staff with veterinary qualifications account for 74% of the academic staff.) throughout the programme. There is also opportunity for students to gain professional knowledge during the period of clinical EMS.

Suggestions

- The Clinical EMS provides a very important interface with the practicing Veterinary Profession by which professional knowledge can be obtained. However, the lack of evaluation of the quality of EMS provided is a matter of concern. Further reference to this is made in a later section of this report.

5 TEACHING QUALITY & EVALUATION

A 5.1 TEACHING METHODOLOGY THE TEACHING AND LEARNING ENVIRONMENT

The academic environment is conducive to learning and basic and specialist facilities are considered adequate. Modern facilities for supervised practical work are available. Buildings are suited to the teaching programme, and well maintained, clean and safe.

Courses are well organised and managed.

Staff development facilities are available, particularly in relation to teaching skills. A system of reward for teaching excellence (e.g. promotion on the basis of teaching excellence) is established.

The veterinary curriculum is intended to provide undergraduates with an education that will enable them to pursue a career in general practice, in research, in the food industry, in the State Veterinary Service or in the wide variety of other career pathways. It emphasizes skills in the acquisition and interpretation of data and seeks to foster an interest in long-term intellectual development through lifelong learning.

The main pedagogical methods used are:

- Large group teaching (didactic)
- Small group teaching
- Problem-based learning

- Tutorials
- Self-directed learning
- Clinical instruction and participation in clinical rounds
- Computer-assisted learning
- Discursive Learning
- Collaborative & peer learning
- Experiential learning
 - Extramural studies which assist students to gain field experience
 - Laboratory practicals.

Each module has a descriptor which can be viewed on the UCD website. Each descriptor provides information about the overall aims and learning objectives of the module as well as the teaching and assessment methods used

Student performance is regularly evaluated. External examiners of appropriate experience are used to provide impartial moderation of the process, and their confidential reports are available to the Dean, or his/her delegated senior colleagues.

Written, project and practical work and problem solving are evaluated.

5.1.2 Comments

- There is clear evidence of good teaching skills which has been enhanced using innovative technology. A system of reward for teaching excellence has been established.

5.1.3 Suggestions

- A system should be available to allow students to evaluate teachers and teaching. Students should be able to participate in the design and monitoring of courses and the curriculum in general.

B 5.2 Teaching Environment

UCD's Educational Strategy for 2009 – 2014, sets out as its core strategic objective to excel in teaching, learning innovation and academic development, and a number of staff development opportunities are in existence to support this objective.

The focus of UCD academic development is to provide staff with relevant expertise and support to develop their practice as educators in responding to the changing nature of higher education learners and developments in the teaching of their discipline.

Academic development opportunities are designed to support academic staff, at all stages of their careers as educators, to:

- Gain effective teaching and learning skills which promote students' learning
- Extend their professional teaching skills by deepening their knowledge base
- Develop their expertise as innovative curriculum designers
- Engage in practice-based inquiry to facilitate high quality student learning

- Develop as scholarly practitioners
- Enhance their talents for academic leadership and contribution to the wider teaching and learning community at UCD.

Courses available to support the development of academic practice include: Becoming a Better University Teacher Accredited programmes such as the Graduate Diploma in University and the Teaching and Learning MA in University Teaching and Learning .Specialist courses in focused areas including Lecturing to Large Groups Small Group, Problem-based learning and Designing for enquiry-based learning online.

Comments

- Many supportive courses are available to enhance the teaching offering.
- The provision of an Educational Support Specialist in 2009 to support curriculum and resource development is commendable.

C 5.3 The Examination System

The UCD Registry Assessment Team is responsible for the management of assessment and logistics activities. It is also responsible for the development of assessment-related policy and the provision of advice and support to students and staff throughout the University. The team manages the process of grading rules and GPA calculations, providing all calculations for programme examination boards and the implementation of any approved changes ahead of publication of final grades to students.

The Veterinary Programme Board is formally responsible for the award of grades and the progression and graduation of students registered to the MVB.

D 5.4 Evaluation of Teaching

The Veterinary programme is subject to both internal and external reviews and audit relating to teaching and learning. Changes in the structure of programmes must be approved by the Veterinary Medicine Programme Board and are subject to approval by the University Undergraduate Programme Board (UUPB). The School employs a wide range of outcomes assessments in order to ensure that the data generated includes the views of the staff, students, graduates and employers. This ensures that so that the MVB programme can be effectively assessed and is responsive to changing needs.

Comments

- The team found that the evaluation of teaching to be satisfactory

E 5.5 Student Welfare

Student services provided at University level include the following:

- Student health service
- Student counselling service

- Access Office-including "New ERA"(entry route for students from socio-economically under represented strata of society) Mature-entry support and Disability Support Service
- Student desk (matters related to enrolment, registration, fees, etc.)
- Clubs and Societies. A very wide range of sporting and other clubs and societies
- Peer-assistance through the UCD Students' Union
- Electronic learning environment and other online services
- Eleven full-time Student Advisers support students across the university.

At Programme Level, a student Adviser is available for all Veterinary Medicine (including Veterinary Nursing) programmes .She provides pastoral care to students and deals with a wide variety of student queries ranging from extenuating circumstances affecting exams through to personal and financial difficulties. This office works in close collaboration with the MVB Programme Manager and the Dean.

Student support is also provided through the MVB Programme Office, this is the first point of contact for students with queries on academic matters (for example applications for leave of absence, admissions queries). Where possible, the Programme Office and support staff provide solutions from within the School and programme. Where this is not appropriate, students are referred to the University Support Services. Under certain circumstances of severe financial difficulties, the Student Welfare Fund may make crisis financial awards.

The Student Adviser currently sits on this committee. The Staff-Student Committee meets monthly to address particular issues that relate to students, and the Student Progress Committee serves as a valuable support for students who are in difficulty for academic reasons.

At Stage Level, a stage coordinator (year co-coordinator) makes themselves known to students at the start of the academic year. Students who do not perform well in class examinations or other forms of assessment are normally interviewed by the Stage Coordinator who will advise on steps to improve performance and identify what School or University support is available. These students will be flagged with the Student Adviser who will consult with the relevant academic staff member and provide individual solutions.

In the Veterinary Sciences Centre students have access to locker spaces, showers and changing areas, a computer room and a recreational area that includes a sandwich bar.

The campus at Belfield is well served by recreational and social facilities. Clubs and societies cater for all aspects of university life: cultural, educational, religious, sporting, volunteering, including the Veterinary Students Society, VetSoc. The University has extensive facilities including twenty-three natural grass areas on the campus, including stadia for soccer, rugby and Gaelic games, all-season tennis courts, an athletics track, and two synthetic grass floodlit pitches including the National Hockey Stadium. The sports centre at Belfield includes two sports halls, five squash courts, a weights room attached to the Fitness Centre, one handball/racquetball alley, saunas and a state-of-the-art climbing wall. Other amenities in the Sports Centre are a sports injuries clinic,

the Belfield barber, the UCD Sports Club (the Sports Bar) and a sandwich shop.

Comments

- Adequate provision is made for student accommodation and recreation facilities. The school provides a system of routine and special guidance for students, especially those with social problems or those having difficulties with their studies.

Suggestions

- The increase in International students particularly from North America brings new challenges particularly with regards to cultural differences. A feedback mechanism with a view to a continuous review of student welfare programmes should be instigated.

6. FACILITIES AND EQUIPMENT

6.1 GENERAL ASPECTS

6.1.1 Findings

The Campus and School Buildings

The Veterinary School moved to new, purpose-built academic and clinical facilities on the main UCD campus at Belfield in 2002. This move provided the potential for much of the academic and strategic development that has occurred since.

The Campus is easily accessible for students, staff and clients, having excellent links to major road and public transport networks. It is within easy reach of both Dublin City Centre and to major farming and sport horse regions. Staff and students on the campus can avail of an excellent range of University facilities including student accommodation, student social facilities, sports facilities, bank, post-office and shops.

The School has excellent research opportunities afforded by proximity on campus to the Conway Institute (several staff members are Principal Investigators of the Institute), and to other schools such as Medicine and Medical Science, Bimolecular and Biomedical Science, Public Health and Population Science and Biology and Environmental Sciences.

The core facility occupied by the School is a building of area 3,800m², which is divided into two sections of similar size: the Veterinary Sciences Centre and UCD Veterinary Hospital. The UCD Veterinary Sciences Centre comprises 3 floors (lower ground floor, ground floor, and 1st floor), which are built around a sizable central courtyard. The Hospital is a single-storey building, which is connected to the Veterinary Sciences Centre.

An important additional facility for the School's teaching and research programmes is the UCD Lyons' Estate Research farm, which is intensively used

for teaching as well, situated of the Kildare/Dublin border, 30km from the Belfield campus.

Premises for Theoretical, Practical and Supervised Teaching

Lower Ground Floor (UCD Veterinary Sciences Centre) (Appendix 6, Map D)

Offices of academic staff occupy corners of the UCD Veterinary Sciences Centre on the lower ground floor. This floor also houses the diagnostic laboratories, some research laboratories, some shared office accommodation for graduate students and researchers, the staff common room and one floor of the veterinary library. The diagnostic laboratories are situated so as to facilitate easy access for sample delivery from the adjoining Hospital.

Ground Floor (UCD Veterinary Sciences Centre) (SER, Appendix 6, Map E)

Most of the ground floor is taken up by teaching and student facilities. These include,

- The reception area
- The veterinary library - an area that is both pleasant and easy to use, housing an excellent range of journals, books and IT support. In addition to conventional reading space, the library also contains group study rooms and office accommodation for library staff
- 2 seminar/small group study rooms
- 3 large teaching laboratories, 2 of which can be combined to accommodate larger numbers
- 1 computer teaching laboratory/open access student computing area. There are 36 computers with printers linked to the campus-wide network. Other rooms have wireless access for laptops
- 3 lecture theatres, two of which are tiered and can accommodate 120/108 people, and one of which is flat, with moveable seating. The lecture theatres and other main teaching rooms are all equipped with modern audio-visual support, including ceiling-mounted data projection, adjustable lighting and radio microphones
- The student common room and cafeteria
- Locker rooms for male and female students

1st Floor (UCD Veterinary Sciences Centre) (SER, Appendix 6 Map F)

The 1st (top) floor houses the School Office and Boardroom. The Programme Office, which performs academic administration on behalf of the School, is situated here. The remainder of the floor includes research laboratories, academic staff offices and postgraduate/post-doctoral office accommodation. The Hospital building also contains small-group teaching rooms, as outlined above. The necropsy facility and anatomy teaching facility are located adjacent to one another in one part of the facility. The numbers of rooms under each heading are shown in the SER Appendix 6, Tables B, C and D.

Diagnostic Laboratories and Clinical Support Services

Fully-functioning clinical pathology laboratories are located in the part of the Veterinary Sciences Centre adjacent to the Hospital (Room 022).

The laboratories are comprehensively equipped with advanced, automated, and newly-acquired technology. Most laboratory data is captured by a recently-introduced, customized, laboratory-information-management system (LIMS). The data is then reviewed by staff and reported out to the hospital by the LIMS.

The main laboratory equipment a Siemen's Advia 2120 analyser for hematology, a Randox Imola bench top analyser for clinical chemistry, Immulite 1000 and Centaur automated immunoanalysers, and a Siemen's Rapidpoint 400 analyser for blood gases. Additionally, there are multiple Olympus microscopes for morphological examination of hematology and cytology preparations, a Trinity biotech KC4 analyser for homeostasis, and a Guava EasyCyte flow cytometer for immunophenotyping of lymphomas and leukemias. There are also excellent facilities for histopathology and cytology.

Diagnostic laboratories for bacteriology and parasitology are located in rooms 032 and 028 respectively.

The Clinical Reproduction and Herd Health laboratories (rooms H091 and H092, respectively) provide support for these areas of clinical activity. The Population Medicine Research Laboratory (Room H091A) provides diagnostic support in relation to bovine tuberculosis and the Centre for Veterinary Epidemiology and Risk Analysis (Room 008) provides specialised epidemiological and statistical support, through funding from the Department of Agriculture and Food. The Food Safety Research Laboratory provides diagnostic support for investigations of food-borne disease.

The necropsy, anaesthesia and diagnostic imaging facilities, are described under Section 6.1.3

Slaughterhouse Facilities

The School does not own a slaughter house/meat plant. Students are required to complete practical training in Veterinary Public Health, in conjunction with veterinary officials of the Department of Agriculture, Fisheries and Food and veterinary inspectors, at registered meat plants and abattoirs. This system of "hands on" meat inspection experience gives students a broad understanding of food safety procedures as they relate to Irish industry and regulatory requirements.

Fresh beef, pork and mutton carcasses along with offal are purchased from a number of these plants for classes. These materials, along with fresh poultry carcasses taken from processing lines at three poultry meat plants, are available for practical classes conducted in an environment similar to that of a meat plant. Disposal of these materials is in accordance with legal requirements concerning specified risk material (SRM). Facilities for the further investigation of specimens from the above carcasses are available within this laboratory. Class sizes of up to 25 students are accommodated for hands-on tuition in the assessment of carcasses and offal, and dispositions on such materials. A further 25 students are accommodated in an adjacent laboratory.

Food Processing Facilities

The food processing facilities of UCD's Food Science building are used for classes in food processing. A range of processing equipment for foods of animal origin is located in these laboratories. Meat curing processes, including brine injection equipment are used during practical classes along with hoppers, mixers and vacuum formers as used commercially in the manufacture of processed hams. In addition, access to pilot-scale equipment for the formulation and manufacture of sausages is available along with processing equipment, raw ingredients, including a wide range of seasonings and casings are demonstrated during practical classes. A low volume heat-exchange unit is also used to demonstrate the principles of commercial liquid milk pasteurisation.

Waste Management is adequately arranged

All material of animal origin from the post-mortem room, anatomy dissection and food hygiene laboratory is classified as Category 1 animal bi-product and is therefore transported and rendered by licensed contractors. This process is audited by the UCD Safety Office.

6.1.2 Comments

- The location of the school on the main University campus is a major advantage, both socially and academically, for students. The facilities are certainly user friendly. The Veterinary Sciences Centre and Veterinary Hospital are relatively new (2002), largely modern and well maintained.
- Modifications may be necessary to adapt to increased class sizes and changes in teaching methods and technology.
- The laboratories (both teaching and research labs) are very well and advanced equipped and in a good state. The laboratories provide an external service as well.
- The wetlabs for student groups are excellently equipped.
- The anatomy practical facilities are very good, however plastinated objects has not of yet been made available.
- The room for the Epidemiology groups is user friendly and well equipped.
- The pathology hall is in excellent conditions .There is compliance with Health & Safety regulations and air filtration system is functioning well.
- There is no stand- alone Virology Laboratory.
- The Health and Safety standards in general of the School are adequate and Good Laboratory Practice is performed.

Suggestions

- A stand alone virology lab is missing. The visiting team advises that proper facilities be provided for this.

6.2 CLINICAL FACILITIES & ORGANISATION

6.2.1 Findings

Premises used for Clinics and Hospitalisation - UCD Veterinary Hospital

The Hospital is broadly partitioned into zones for small animal medicine, small animal surgery, large animal medicine and large animal surgery. The reception area services both the small and large animal clinics. Clients have direct access from a separate client car park. The central pharmacy is adjacent to reception and has restricted access.

- The small animal section of the hospital comprises seven consulting and three treatment rooms, one nurses' station, 2 kennel rooms for cats and dogs respectively, and one room solely for exotic animals. There is an isolation room dedicated to animals with infectious diseases and a separate room for animals receiving radioisotope therapy. There is also a hydrotherapy unit for small animal patients.
- The Small Animal Surgery Suite is located nearby. It includes three operating rooms served from a large preparation room, as well as a minor procedures room and a nurses' station.
- In addition to these areas, the hospital has an animal food preparation area, a grooming room and storage facilities. An outdoor exercise area is provided for dogs. The Intensive Care Unit with space for up to 10 animals is also located here.
- The Large Animal Surgery Suite connects with the small animal surgery area, and shares support functions (e.g. cleaning, sterilisation). The large animal surgery facilities include two operation halls, two padded induction/recovery boxes, and ancillary preparation and storage areas close to the large animal accommodation. There is also a teaching room, which is used for standing surgeries, and a 'base' for the mobile clinic.
- Surgery, diagnostic imaging, recovery and accommodation areas are linked by an overhead rail hoist. The equipment and techniques available for large animal surgery include videoendoscopy, arthroscopy, laparoscopy and AO/ASIF fracture repair equipment in addition to standard soft tissue and orthopaedic surgical instrumentation.
- There are also four isolation boxes for large animals within an enclosed area with restricted access. The UVH has a walled lunging ring as well as a high-speed equine treadmill. There are three trailers suitable for transporting horses, cattle and small ruminants. Vehicles include a 4x4 jeep and two cars capable of towing trailers.
- The diagnostic imaging facility is located between the small and large animal surgical suites. The facility includes a fully-automated Siemens Aristos Digital Radiography small animal X-ray machine with a 120kv 1200 ma X-ray tube with moving suspended gantry and the capability of cross table positioning and removable table top. Serving large animal requirements there is a Siemens large animal X-ray machine (120Kv 1200ma tube) system with suspended x-ray tube with a 2 meter floor to ceiling travel. This interlinks with a cassette holder with a similar vertical travel and also moves up and down and across the x-ray room. A mobile MRI clinic visits monthly. A portable 100kv 50mas machine is available for ambulatory work. Two Siemens C-Arm fluoroscopes are available for dynamic x-ray screening in the

LA and SA operating theatres. The latest addition is a Siemens Sensation 4-slice CT machine for small animals with a capability of taking anaesthetised large animals once an appropriate CT table has been sourced and installed. There is a Ge400 gamma camera on ceiling suspension for nuclear medicine imaging of small and large animals equipped with Hermes nuclear diagnostics software. The suite is completed by a Kodak pacs digital archiving system with a capability of image review in theatres, consulting rooms and offices.

- Excellent and well equipped necropsy facilities, together with staff changing and showering areas also form part of the hospital complex.
- Within the hospital there is also an apartment for interns on duty, and office space for academic and clinical staff.

The numbers of places available for hospitalised animals is shown in the SER, Appendix 6, Table A.

Premises for Rearing Normal Animals for Teaching Purposes - Lyons Estate Research Farm

Lyons Estate Research Farm is a core resource for teaching and research activities. The 220-hectare farm is located 30km from the Belfield campus. Travel time is approximately 45 min by bus/car at times when traffic is busy. Practical classes are conducted at the farm for Stage 1 and 2 students. The farm is also used for research projects by academic staff. Teaching in large animal clinical studies also takes place on the farm for second, third, fourth and final Stage veterinary students.

- Dairy cows are housed in cubicles and milked in a 10-unit herring-bone parlour with computer-identification of the cow's feeding requirements and individual milk recording.
- There is individual housing for 60 beef cattle, slatted pens for 300 beef animals and loose pens for 150 beef cattle. There is individual housing for 50 sheep and loose pens for 750 ewes. The pig unit consists of individual and loose housing for 20 and 400 animals respectively. There is individual loose box housing for 12 mares and 2 foals.
- Lyons Estate also has office space for staff and students associated with the MVB programme.
- There are laboratories available for veterinary research and teaching.
- In addition, there is one teaching laboratory and one operating theatre used for elective bovine caesareans and other surgical exercises.

6.2.2 Comments

- The small animal clinic facilities are essentially state of the art. However, old furniture (e.g. old wooden tables, not easy to clean) in the student small animal surgery practical room contrasts with all the other new facilities and

should be updated. The tables in the individual consultation rooms are not all adaptable to the size of the animal and the height of the veterinarian. The cytotoxic area of the pharmacy whilst clearly delineated is not in a separate room. These latter 2 points could have health and safety implications.

- The farm animal and equine clinics are properly equipped and all necessary state of the art infrastructure is present (including modern hydraulic operation tables, endoscopy and arthroscopy facilities).
- The radiology department is excellently equipped with up to date infrastructure, including a modern CT-scan. At the time of the visit it was in use for small animals but plans are also in place to adapt it for equine. Funding for a MRI-facility would be very welcome with the objective to remain at the forefront of diagnostic service provision. The diagnostic department is providing an external service also.
- Apart from the mobile clinic for Herd Health visits there is no mobile clinic at the hospital. An ambulatory clinic would present students with more first opinion patients under the direct supervision of clinical university staff. This is especially relevant for the equine part of the hospital.
- Clinical services in general seem to be appropriate even with the doubling amount of student numbers in 2012, but there are few facilities available for pigs (just a small section at the Lyons farm) and no poultry facilities are available.
- A well functioning WIFI service is present in the buildings.
- Lyons Research Farm is of utmost importance for hands-on training, farm-related training and research in the large animal species. The farm is used throughout the entire curriculum. This will become more relevant with the increase in student numbers occurring at present .There has been relatively little investment in the infrastructure and facilities at Lyons Research Farm in recent years. There are no overnight accommodation facilities on the farm.
- Lyons Research farm is of utmost value for hands-on teaching in ruminants and horses. The name is slightly confusing as the farm is also used for teaching.

6.2.3 Suggestions

- The provision or acquisition of an ambulatory service should be considered to increase the number of 1st opinion equine cases.
- The older tables in the SAS teaching laboratory should be replaced. It is important to ensure that there are adequate height adjustable examination tables in the consulting rooms. The provision of a separate room for the storage and preparation of cytotoxic drugs in the pharmacy should be considered as/if required by health and safety regulations.
- The provision of overnight accommodation at Lyons Research Farm should be seriously considered. This would expose students to further practical husbandry experience and clinical cases (parturition/obstetrics in particular). The accommodation may also be of use to researchers.

7. ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN

Chapter 7 Animals and Teaching Material of Animal Origin

A variety of animals and carcasses are available for anatomy teaching. Surface anatomy is taught using staff-owned animals. For dissection practicals, greyhounds destined for euthanasia are purchased from a licensed dealer. They are euthanased at UCD and the cadaver preserved using formalin. Horses and ruminants for dissection are also obtained; again, animals destined for euthanasia are used. A variety of fresh organs are obtained from local abattoirs as required for further dissection practicals. The anatomy museum contains a large number of specimens used in teaching including skeletons, models and fixed organs.

Cadavers for necropsy are obtained from external and internal sources.

A large number of animals from the dairy and beef herds and the sheep flock at Lyons estate are used for teaching not only in animal husbandry and handling but also aspects in physiology. A number of horses (12-15) are also maintained at Lyons estate for teaching in these subjects. Staff-owned small animals are frequently also used for animal handling practicals. Through the co-operation of the UCD Bioresearch Unit, laboratory animals are available for handling practicals. Reproductive tracts from abattoirs are used in reproduction practical teaching. Students also visit a variety of animal establishments.

A wide range of specimens for teaching food hygiene are collected and transported from abattoirs or other sources in refrigerated vehicles to UCD.

UCD Veterinary Hospital sees small animal, equine and farm animal cases throughout the year. An equine emergency service is provided by the hospital, and a small animal emergency service is run from the hospital premises in association with a consortium of South Dublin Practitioners, the Dublin Animal Emergency Clinic (DAEC). Most small animal cases seen are referred. However, a first opinion service is provided for the Dublin Society for Prevention of Cruelty to Animals (DSPCA) and the Guide Dogs for the Blind.

The Hospital accepts referrals for 50 weeks of the year, and provides an emergency service for its patients at all times. Interns reside on the premises with residents and senior clinicians on-call. Consultations are held on 5 days each week, on an appointment basis from 9AM to 5PM.

A 24-hour emergency service for small animals is operated from UCD Veterinary Hospital by the Dublin Animal Emergency Clinic (DAEC).

Students on herd health rotation visit farms in rural areas in neighboring counties where they participate in the provision of Herd Health advice, planning and preventive medicine. Ambulatory visits involve investigation of herd and flock disease problems with emphasis placed on the herd health management cycle.

Students are also directly involved with the treating of animal patients at a number of charities including Dogs Trust and the DSPCA. At these locations they gain experience of shelter medicine and neutering operations. Staff of UCD Veterinary Hospital provides referral services to Dublin zoo, with students accompanying staff on visits. Within the Clinical Reproduction rotation, in addition to carrying out herd-health fertility work on farms, Stage 5 students

perform elective caesarian operations on heifers from Lyons Estate Research Farm. This is done under appropriate supervision.

The Small Animal caseload therefore consists principally of referrals, with first-opinion exposure coming through Dogs Trust and other animal charities as well as CEMS. The equine caseload is a mixture of referral and first-opinion cases. The farm animal caseload is a mixture of first-opinion and referrals involving individual animals and a sophisticated herd-health service with advanced data recording and data management capability.

UCD Veterinary Hospital provides specialist services in Cardiology, Ophthalmology, Anaesthesia and Analgesia, Animal Reproduction, Bovine Health Management, Clinical Pathology, Diagnostic Imaging, Equine Internal Medicine, Internal Medicine-Companion Animals, Pathology, Parasitology and Surgery (Small Animal and Equine). In the case of ophthalmology, only a part-time service (1 day per week, by appointment) is available from a retired staff member. For cardiology, a visiting specialist contributes to the service.

Comments:

- There is no farm animal or equine ambulatory service. This raises issues over the ratio of first opinion: to referral exposure that the students receive.
- The performance of C-Sections on healthy heifers for the purpose of student teaching raises ethical questions and it should be kept under review.
- The choice of referral specialties has not been strategic. In the clinical review, a strategic overview is recommended.
- Clinic income is very low (1.6 million Euros). There needs to be further critical analysis regarding the low income generated. However it is planned to fill two new positions in order to try to increase the clinic's financial contribution.
- The Dogs Trust facility is excellent, giving students experience of shelter medicine and ready access to neutering material. This also provides an excellent opportunity for students to gain experience of, and confidence in, soft tissue surgery.

Suggestions:

- Expanding the use of first opinion material should be considered, especially in regards to equine. Reliance on extramural studies to provide this experience is not adequate due to the lack of University control over the quality of experience.
- The performance of C-Section on heifers as a teaching aid should be kept under review, especially in view of evolving public opinion on animal welfare issues, and the importance of animal welfare in the education of veterinary students.

- It would be useful to perform a strategic review of specialties offered with regard to their importance in student education, and incorporate such a review into future recruitment plans.

8. LIBRARY AND LEARNING RESOURCES

Chapter 8. Library and Learning Resources

University College Dublin Library supports the teaching, learning and research activities of 24,000 students and 3,200 staff in UCD. The library comprises 5 branch libraries with 3203 student reading places. With their UCD Identity card, all students and staff have access to every branch library.

To support the UCD community, the library has a print collection in the region of 1.4 million volumes. Last year the library purchased books. The library subscribes to 1550 journals in print and 62197 electronically. In addition the Library subscribes to over 440 databases to allow students and staff discover articles and other publications. The library issued 875693 books in the 2008/2009 academic year.

The Veterinary Medicine Library currently has 42,000 books in its collection. Most of these are on open access in two main collections – the General Collection, which contains the majority of the books and the Short Loan Collection, which contains multiple copies of recommended course textbooks. The library also has a collection of around 500 videos and DVDs and a collection of CD-ROMs. Last year the Veterinary library added 244 books to its collection and issued 27975 books in the 2008/2009 academic year.

The Veterinary Library currently holds 142 print titles and as the library's policy is to move to electronic subscriptions where possible, many more are available electronically.

The library provides access to all major bibliographic databases in animal health,

The Veterinary Library opens for 50.5 hours per week during term time. Opening hours are extended in the run up to exams.

The Veterinary Medicine Library has 94 reader spaces (including two group-study rooms. The Veterinary Library has 4.75 full time equivalent part-time staff.

The Library provides 92 public access PCs throughout all the 5 library branches and in the Veterinary Library there are 10.

When students commence their studies in UCD, the library provides training on how to search the library catalogue and how to access electronic resources.

Comments:

- As budgets come under pressure there may be potential impact on collection development.

- Budgetary concerns have forced a rationalisation of opening hours across the five UCD Libraries. However UCD library has managed to increase the opening hours in the Veterinary Medicine Library this year. This will need to be reviewed annually.
- The development of the Graduate Entry stream and the Veterinary Nursing degree has meant extra pressure on the reading spaces in the Veterinary Medicine Library and therefore space needs to be kept under review.

9. ADMISSION AND ENROLMENT

Chapter 9. Admission and Enrolment

Student admission to the UCD Veterinary Medicine Programme is facilitated by the UCD Admissions Office. Applications for admission to the Bachelor of Veterinary Medicine (MVB) programme are made to the CAO (Central Applications Office). This body processes applications to undergraduate programmes for most Higher Education Institutions (HEIs) in Ireland.

The examination results of applicants who matriculate and meet UCD Veterinary Medicine Programme entry requirements are assessed on the basis of allocated points for grades obtained in this examination. The UCD Admissions office uses a pre-defined formula to equate other examinations to Irish Leaving Certificate grades.

A small number of places on the programme (typically 5) are reserved for students with social or other disadvantage. Students allocated these places receive additional supports before entry and throughout their programme. A separate entry pathway is provided (graduate entry) for those students who have already completed a degree in a HEI. Ten places are available in this stream annually for EU students and 30 for non-EU students. EU applicants are evaluated on the basis of:

- Basic eligibility
- *Curriculum vitae* and personal statement
- Graduate Australian Medical School Admissions test (GAMSAT) score

Overseas (non-EU applicants) at present consist mainly of applicants from North America. These applicants can use the Veterinary Medicine Colleges Application Service (VMCAS) of the American Association of Veterinary Medical Colleges (AAVMC), of which UCD Veterinary Medicine is a member.

Small numbers of applicants other than those from North America are accepted where specific contractual arrangements are in place.

In recent years the number of students admitted has increased from 80 to 120. This increase includes 10 graduate entry places for EU students, 30 for non-EU students and a small number of additional undergraduate places.

The increases in student numbers have paved the way for an increase in staffing as agreed with UCD Senior Management Team. Some minor adaptation of teaching facilities (Lecture Theatre 115) has taken place. Given the location of

the school on the main University Campus, with its abundance of teaching facilities, the increase in numbers is not expected to pose logistical problems. However, the need for further modifications will be kept under review. Some adjustment to practical teaching, in order to keep class sizes to appropriate levels, has also taken place. Significant adaptation of clinical rotations to keep the group size to present levels will also take place for 2012/2013.

Most students who enter the veterinary programme complete their training in 5 years.

Progression requirements are in accordance with those in the General Regulations of UCD. In summary, students are allowed to progress if they have acquired 75% of the credits for a particular stage, provided their GPA is above 2.0. Students may, therefore progress while carrying a number of credits for which they will have to complete the requirements in the next stage. A derogation for the veterinary medicine programme exists whereby students are required to have satisfactorily completed all modules from Stage 1-4 before progressing to clinical rotations in Stage 5.

Specific resit examination sessions are not routinely held in the modular system. Students may resit module examinations at the end of the next semester. Module co-coordinators may offer remediation opportunities to individual students outside the normal examination time. This option is sometimes invoked for students who would otherwise, because of requirements of one or two modules, be prevented from progressing to Stage 5 until the next academic year. Such arrangements are overseen by the Programme Board.

Students who are in danger of not progressing with the rest of their cohort are requested to attend an interview with the Student Progress Committee.

The circumstances under which students would be required to withdraw from the University because of failure to progress have not yet been tested under the modular system.

Student progression is satisfactory and attrition rates are very low. A priority is given to pastoral care and to early identification of students having academic or other difficulties. The peer-mentoring programme has been particularly successful in this regard.

Comments:

- The present admissions system for school leavers, although legal, does not test attributes of applicants other than ability at achieving high marks in exams. No aptitude tests or other means of assessing the suitability of the student is in place. In addition only 5 places are set aside each year for students from disadvantaged backgrounds that may not have the same opportunities in school due to financial and social circumstances.
- It is not clear that increases in staff will reflect increased student numbers, and that clinical resources will be adequate in years to come.

Suggestions:

- Introduction of other methods to assess suitability of applicants as veterinary practitioners is desirable, as is widening the opportunity for participation of able, but socially disadvantaged, applicants.
- Staffing ratios and case numbers will have to be kept under review as class sizes increase.

10. ACADEMIC AND SUPPORT STAFF

10 ACADEMIC & SUPPORT STAFF

The Ratio of teaching staff to students is 1:7.

The Ratio of teaching staff to support staff is 1:1.19.

The number of staff within the School is related to the annual financial allocation to UCD from the Higher Education Authority and the non-exchequer income achieved. Due to recent financial constraints, restrictions of new appointments in the Public Service generally, including higher education institutions, were introduced.

Staff with veterinary qualifications account for 74% of the academic staff. Veterinary graduates working in the clinical sections are essential for the supervision of clinical professional training and all academics in these areas have veterinary qualifications. The number of veterinary graduates working in the preclinical section of veterinary sciences is 65% and in herd health and animal husbandry the percentage of veterinary qualified staff is 50%.

Comments

- All ratios are within the range, the proportion of staff with veterinary qualification is even better.
- While the ratios seem to be very good, they do not necessarily reflect changes in qualification needed.
- While staff can move within the establishment the flexibility should be much greater, especially from the UCD side. Posts which fall vacant are not automatically filled. This is a result of the current financial constraints.
- The increasing need for specialised qualifications creates a difficulty in relation to staff being able to be flexibly deployed i.e. for clinical services etc.
- The establishment does encourage staff to acquire additional skills and training. There is a career promotion system, linked to academic achievements.
- A doctoral degree or equivalent is required for tenure and hence promotion.

- European/American boards are considered equivalent to a doctoral degree for clinical staff.
- Some minor problems were observed with regard to the lack of qualified and experienced staff at both technical support and academic levels, relates to increasing numbers of students entering the graduate year veterinary programme, and to the organisation of the final clinical year. Interns and residents are sometimes required to carry out technical support tasks which seem to be related to staff rota and grade rigidity issues.
- Notwithstanding issues related to the financial constraints, the freedom to decide on staffing is hampered by a complicated organisational structure.

Suggestions

- More flexibility in staffing affairs would be beneficial for the School not only from the short-term perspective, but it also in the context of enabling the School to be more proactive in shaping its future. The new UCD organisational structure envisaged should take this issue into consideration.
- With regard to technical support staff including nursing staff, the School could benefit from increased flexibility in relation to qualification and grade structures. This is important in order to make them compatible with new developments and challenges in the field of veterinary medicine and veterinary education.
- As regards academic staff, a need for an increase in numbers should be anticipated, as new programmes have been recently introduced (graduate programme, nurse programme). Furthermore the development of clinics will be necessary, because of the increased numbers of students and the extensive hands-on experience required in that area. With this in mind the School should be encouraged not only to further develop a proactive comprehensive staffing strategy, but also to further develop alternative sources of finance.
- More autonomy for units generating income within the veterinary school could provide a stimulus for further increase of income. A clear definition of these units should be established at the level of the veterinary school in collaboration with the UCD financial management team.
- More professors in certain clinical areas (small animal medicine) would further strengthen their academic reputation.

11 CONTINUING EDUCATION

11.1 Findings

In the past CPE events have been organised by and within the faculty, with or without participation of external organisations. In addition, faculty members have provided CPE at national and international conferences outside of the institution. These CPE events addressed several sectors (small animal, farm

animal etc) and were generally short, ad hoc and without recognisable strategic direction.

This has been dramatically changed in recent years. In line with developments in many other countries, the faculty has adopted a new approach to CPE. Continuing education is now clearly recognised as a key plank of its mission and core activity of the establishment.

A new e-learning portal specifically for CPE has been installed. The aims are to offer comprehensive blended learning programmes of various size/intensity in a range of veterinary subjects. Certification/diplomas/degrees associated with these programmes remain to be defined. Alumni who were interviewed during the visitation were very satisfied with the CPE products of the school.

The Veterinary Council of Ireland (Regulatory Body) has recently prescribed a minimum number of hours of CPE required to be taken each year by every licensed veterinary practitioner. Non compliance with this requirement results in loss of the licence to practice.

The Irish veterinary representative body ("Veterinary Ireland") organises CPE for its members on an ongoing basis using international speakers and is the main competitor for CPE with the school. This competition is perceived as positive for both organisations.

11.2 Comments

- The recent organisation of blended learning CPE programmes with concrete learning objectives is a major step forward. The project is still in its development phase, however the school can rely on highly competent and enthusiastic educational and e-learning experts who will guarantee the quality and attractiveness of the new programmes.
- The e-learning portal is a powerful tool to support the CPE programme but its sustainability in financial terms remains to be ensured. As is often the case with CPE provided by universities, the true cost of CPE products may not be reflected in the fees for the participants.
- A coherent and comprehensive CPE strategy remains to be developed.

11.3 Suggestions

- In commercial terms, it seems important to make sure that CPE generates sufficient income not only to cover the full costs but also to generate a surplus for the school.
- UCD should join forces with the national veterinary representative body to define the needs of the market and to develop a common strategy. For example, as in other countries, it would be desirable to have CPE programmes leading to certification in a variety of veterinary activities which are not covered by the EBVS system, e.g. small animal practitioner, state veterinary officer etc.

12. POSTGRADUATE EDUCATION

Chapter 12 Graduate Education

The School is a recognised training centre for graduates who wish to acquire specialised clinical training, and currently runs European Veterinary College approved residency programmes in: Anaesthesia and Analgesia, Animal Reproduction, Bovine Health Management, Clinical Pathology, Diagnostic Imaging, Equine Internal Medicine, Internal Medicine-Companion Animals, Pathology, Parasitology, Surgery (Small Animal and Equine). These programmes are provided by members of staff who are members of the relevant European/American Colleges. There are other staff within the School who are members of European Colleges but where a residency programme is not yet offered (Pharmacology and Toxicology, Ophthalmology).

The School is also an approved training centre for the Royal College of Veterinary practitioners (RCVS) in Cattle Health and Production, Sheep Health and Production, Small Animal Medicine, Small Animal Surgery, Diagnostic Imaging and Anaesthesia.

Each year, six Interns (3 large and 3 small animal) are employed. Intern programmes are devised to satisfy the needs of the respective residency programmes for which an internship is a prerequisite.

In addition to their training programme, Residents are expected to provide after hours on-call services and are heavily involved with clinical teaching of undergraduate veterinary students.

Taught Graduate Programmes

Several formal taught graduate courses have been or are being developed within the School.

Graduate Research Programmes

There are graduate students currently registered for both Master and PhD programmes within the University. A proportion (27%) holds a primary veterinary degree.

Over the past five years, 20 students have successfully graduated with a Masters degree and 42 with a PhD degree.

Comments:

- Only a low percentage of PhD students hold a vet degree. Plans to increase the number of undergraduate veterinary students include ensuring that there are vacation studentship opportunities, and provision of a research ethos throughout their training. The School is also considering introducing a 6 year programme which includes a Masters degree. It is recommended that further effort be placed on introducing more students to research opportunities.

- The introduction of the professional doctorate pathway is innovative although it should be recognised that this degree will not provide a robust research training for these graduates, and should not be seen as a substitute for a PhD.

Suggestions:

- The School is introducing a suite of new Grad Certificates growing into Masters. It is recommended that the School exploits further opportunities for combined programmes with other Schools in UCD.
- Residencies could be offered in Pharmacology and Toxicology and in Ophthalmology.
- There tends to be a shortage of approved Centres and EBVS actively encourages Schools to participate in these programmes.

13. RESEARCH

13 RESEARCH

13.1 Findings

The university is strongly research oriented. In line with UCD policy, the veterinary school is also strongly committed to research. Research spending from extramural funding during the past year amounted to €4 Million. This is an impressive number in view of the small size of the establishment and its heavy teaching and service load. At the time of the visit (October 2010) nearly 100 papers had already been published in that year. A considerable number of these were published in high impact journals. It is fair to say that education in this establishment is strongly research based.

Grants are obtained from the Irish national science foundation (Science Foundation Ireland), NIH, EU and agricultural funding agencies. Intramural research funding is modest and declining. The research environment at UCD is excellent. The Conway institute, a highly reputable research organisation is an important partner for the Veterinary School, supporting a variety of cutting edge biomedical research projects. In Dublin there is a very strong drive for collaboration and integration of research at all levels.

A recent bibliometric analysis of the publications of all disciplines at the UCD showed that the veterinary college scored well within its major field (veterinary sciences) ranking high among the other UCD disciplines in terms of percentage of papers with high impact (within the field of veterinary sciences) UCD has 4 major research themes. The veterinary college is participating in two of them. The strongest projects are in the areas of reproductive biology, glyco-biology, and infection biology and epidemiology/herd health.

The School has a strong commitment to the exposure of students to research throughout the curriculum in various ways. This includes attendance at research seminars or through the introduction of relevant ongoing research projects in the content of particular modules. It also offers the opportunity for hands on

student research during the summer break; however this is only available to about 10 % of the student population. As in most other veterinary schools the heavy teaching load leaves little time for research.

The graduate entry scheme will lead to the production of graduates who already hold a PhD degree. This development has the potential to increase the number of veterinary researchers. An intercalated master degree within the veterinary curriculum is also possible but is only rarely used.

13.2 Comments

- Research evaluations such as the bibliometric assessment are an important tool with which to measure research performance. It would be interesting to see how the different disciplines score outside of the veterinary science field.
- Although there are strong thematic research programs, a coherent strategic research concept for the school remains to be developed. There is a research committee which oversees and coordinates the research effort but its effectiveness is hampered by the lack of funding.
- The very strong commitment of the Veterinary School to actively expose students to research is commendable. It is encouraging that ca. 10 percent of each student cohort eventually enter a PhD programme at UCD or other institutions.
- As in most other universities, research for clinicians is difficult. Since EBVS specialisation programmes leave virtually no room for scientific development junior clinicians are encouraged to pursue a PhD degree after their specialisation. The team was pleased to see that most residents who were present at the interview would indeed like to enter a PhD programme following completion of their specialisation.
- It remains to be seen if the professional doctorate, consisting of one year of research following specialisation is going to produce effective clinical researchers.

13.3 Suggestions

- The adoption of the Bologna system may be beneficial with regard to increasing student research exposure in the frame of the master thesis.
- While it is understandable and just that clinicians should receive credit for their specialisation effort, the faculty should perhaps reflect on the wisdom of equalising EBVS diplomas with a PhD degree and to use the professional doctorate to establish a research qualification for clinicians. This approach may be suitable for the envisaged clinical educator track but the team believes that the faculty, while suitably rewarding specialisation, should undertake every effort to facilitate research training for clinicians within the existing PhD system. This is important in order to ensure that they are deemed full partners in the global research effort of the school.

- The development of a coherent research strategy perhaps building on the existing strong thematic research programmes should be taken forward. This may also improve access of clinicians to interdisciplinary research projects.

14. EXTRA MURAL STUDIES

The school has clearly demonstrated that EMS is an integral part of the education and training of veterinary students. There is a structured system to enable students to undertake 12 weeks of pre-clinical animal husbandry-related EMS in the early years of the course, and 24 weeks of clinically-related EMS in the later years of the course. There is a member of the academic or academically-related staff, responsible for the overall supervision of both categories of EMS, including liaison with EMS providers. Students organise their own EMS placements. They have access to advice and guidance on the suitability of EMS placements.

Comments

- VPH-EMS is now accounted for separately under VPH 1 and VPH 2 modules. The old, 2-week requirement has been replaced with a new, more structured 5-day programme developed in conjunction with Meat Plants accepting students on placement.
- There is a system in place to enable EMS providers to report back to the school on their assessment of the performance of students during EMS. Students should also be required to record their EMS and there should be a mechanism to enable students to formally report on the quality of the instruction and experience of EMS placements.
- The placement of students in clinical EMS is dependant on the goodwill of veterinary practices. There is a risk of variability in relation to the student exposure to clinical cases and to the teaching of day one skills.

Suggestions

- An Approved List of Veterinary practices should be established to assure consistent EMS training. An enhanced administrative and verification system should also be put in place.

EXECUTIVE SUMMARY

Infrastructure – The UCD Veterinary School has excellent modern, purpose-built facilities. It is located on the campus of a major research-intensive University. It has access to funding particularly through Science Foundation Ireland. This has created excellent opportunities for collaborative research programmes.

The campus has easy access to both a major urban centre and agricultural/equine enterprises. This presents the School with a real growth opportunity for increasing income from first opinion and referral cases. It is evident that there are strong research programmes in areas such as food safety/public health, reproductive biology and infectious disease.

The team was very impressed with the high level of maintenance and hygiene in all areas of the Veterinary School. However the facilities are already being challenged in terms of space as student numbers increase with the graduate intake programme.

International Profile – Being one of only nine schools outside North America, and five in Europe, to have achieved AVMA accreditation provides it with an additional quality benchmark, a high international profile and the ability to attract significant numbers of international students. This however creates a challenge particularly with regard to assuring that entrants have the necessary background and ability to cope with the tough Veterinary programme.

Institutional Structure – The clear vision and focus of the University President and Senior Management Team has provided a template for the development of veterinary medicine within UCD.

The position of the Veterinary School in the School of Agriculture, Food Science and Veterinary Medicine has resulted in a degree of confusion and loss of visibility. It has also made strategic planning with an appropriate and complementary focus on education, research and clinical services more difficult.

The proposed move to a School of Veterinary Medicine is therefore welcome from the point of view of ensuring a clear identity. It will also result in an organisation with a flatter, more effective and less cumbersome management structure which should be more responsive to the particular needs of the Veterinary and Nursing Programme. This move can also act as a catalyst to enhance internal communications and to innovation particularly with regard to the development of new business areas, recruitment and the establishment of new staffing grades.

Students – Strong competition for places on the MVB programme and multiple entry streams, national and international, lead to a highly-able, intellectually curious and diverse student body. However, there are also challenges that arise from this diversity particularly from cultural differences. This needs to be managed by means of an effective feedback mechanism. While the CAO selection system assures that those with the best grades receive places in the school, the introduction of other methods to assess suitability of applicants as

veterinary practitioners is desirable, as is widening the opportunity for participation of able, but socially disadvantaged, applicants.

The team has judged the Student Experience as excellent, being driven by a student-centred curriculum. It is also clear that the primary objective of the clinical and surgical activities in the hospital is to provide student training. Students have access to adequate pastoral care and it is clear that there is a true collegiality between staff and students.

Staff - The team has been very impressed by and acknowledges the highly motivated, well-qualified and dedicated staff. There are clearly challenges in relation to the recent economic downturn, particularly regarding the recruitment ban and the lack of promotional prospects. This is particularly challenging in the area of Clinical Staffing. The number of specialist clinicians and support staff serving some areas is less than ideal. We understand that strategic and business plans for UCD Veterinary Hospital aim to address this. We also recognise that further recognition for staff making major contributions to clinical services, through the UCD promotion process, is urgently required. In the meantime, we believe that in order to maintain staff morale these issues need to be managed and the new school can look at developing its communication strategies.

Curriculum - The team is satisfied that curricular changes that have been adopted over recent years are meeting the stated objectives .i.e. to promote deep learning, refine assessment methods, increase vertical integration and achieve an appropriate balance between the acquisition of the required skills and competencies and intellectual/life-long learning capacity.

The curriculum has a strong scientific base which ensures that graduates are well trained in the critical thinking and scientific principles which are fundamental to their careers in all branches of veterinary medicine and other allied careers. Furthermore, the students are educated in an environment where both basic and translational research is highly valued.

The addition of learning support specialist, to the team in 2009 has underpinned the development of several new programme offerings module design and evaluation. The availability of this expertise within the school will be of great value in planning future developments and ensuring curriculum refinement proceeds in a timely manner. The team however advises that steps must be put in place to ensure the certain subjects do not lose their visibility in the curriculum as the process of vertical integration continues. It is also important not to lose sight of the international profile of students thereby ensuring that they get sufficient exposure in areas that may be relatively minor in the Irish context such as pigs, poultry and fish.

Professional Links –It is clear that there is an excellent relationship with government and with external professional bodies. This is very evident in the VPH area where staff from the DAFF (Department of Agriculture, Fisheries and Food) is directly involved in teaching and facilitating formal EMS in the VPH area. Links with the Agri -Food industry and professional bodies has allowed UCD to influence National Policy in the animal health and food safety areas. This is

particularly the case with the formation of Animal Health Ireland the stakeholder organisation with the objective of managing the non-regulatory diseases.

Funding– The team believe that declining and variable levels of funding for higher education are having a significant impact on veterinary education at UCD. The costs of clinical education, in particular, are not fully recognised in funding allocation mechanisms. We agree with the approach set out in the SER on funding i.e.

- Agreement of a business plan with UCD senior management for a phased increase in staffing on foot of international student recruitment (2009-2013)
- Agreement with UCD senior management for an increase in clinical staffing based on a business plan for UCD Veterinary Hospital (2010-2014)
- Development of a taught graduate blended learning portfolio (graduate certificates)
- Development of an e-learning continuing veterinary education portal (Launch 20th August 2010)
- Development of a Professional Doctorate degree pathway for residents in training (in progress)
- Refinement of UCD academic structures, involving the constitution of a School of Veterinary Medicine from 2010/2011
- Development of an appropriate promotion pathway for staff with significant clinical responsibilities (in train).

In addition, the School will continue to refine and augment its outcomes assessment processes and ensure it meets its obligations for quality assurance and quality improvement at all levels. It will continue to pay close attention to developments in teaching and learning generally, and in veterinary medicine, and will refine its assessment methods to ensure they give the best possible indication that students are achieving the learning outcomes specified at module and programme level.

In conclusion, the visitation team was very impressed with the Veterinary School. It continues to innovate and improve and has the capacity to meet present and future challenges.

DECISION BY ECOVE: FULL APPROVAL