Visitation to the University of Liverpool

7 – 11 March 2016

Report to the Council of the Royal College of Veterinary Surgeons (RCVS) in accordance with Section 5 of the Veterinary Surgeons Act 1966

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List of Visitors

Mr David Wadsworth BVMS MRCVS
Chairman of the Visitors

Professor Charles McLean Press BSc(Vet) BVSc PhD

Ms Amanda Boag MA VetMB DipACVIM DipACVECC DipECVECC FHEA MRCVS

Professor Gaspar Ros Berruezo BSc(Vet) BVSc PhD

Professor Giovanni Savoini DMV PhD

Dr Peter Ardington BVSc
SAVC

Professor Thomas James Anderson BVM&S MVM DSAO PhD DipECVN MRCVS
Observer

Mr Frederick McKeating BVMS FRCVS
Observer

Also present

Mr Jordan Nicholls
RCVS Staff

Summary of the Visitors' findings

- The report is presented to the RCVS and the SAVC which each have separate authority to determine accreditation or approval status within their own jurisdictions. The Visitors worked together as a single team to produce this report.

- The Visitors received a warm welcome from the staff and students and are grateful to all those who were responsible for preparing the self evaluation report, arranging the schedule and providing supplementary information when requested. The schedule was extremely busy but the enthusiasm and pride of staff in what they do, and the input from the students made it an interesting and enjoyable visit.

- The Visitors thanks Professor Dawson and her senior team for their leadership, and Sylvia Yang for her key co-ordinating roles both before and during the visit, which they very much appreciated.

The team has the following findings that:

- The University of Liverpool is to be **commended** for its ongoing and strong commitment to the continuation of Veterinary Education.

- The review of the structure of the Institute of Learning and Teaching resulting in the formation of a new standalone Institute of Veterinary Science is welcomed.

- The University is to be **commended** for its financial investment in the Veterinary Teaching Suite on the Liverpool Campus and the dedicated space afforded to Veterinary Students.

- At Leahurst the expansion of the lecture theatre has provided a greatly improved learning experience for the students and the Henry Edwards Learning Centre has enhanced Farm Animal tuition.

- The Continuing Education programme provided by the Veterinary Post Graduate Unit continues to be a highly successful education and financial enterprise.

- The students that the Visitors met were, without exception, enthusiastic and articulate both about the programme and the staff. Liaison between students and staff on a regular basis by varying methods and on all topics relating to the programme ensured that this situation would continue.

- The school is to be **commended** for its provision of animal resources throughout all stages of the curriculum.

Standard 1 – Organisation

Suggestions

a. It is pleasing to see that personal development reviews are a routine part of management and this should help support succession planning, however the number of direct reports should be monitored closely as there is the potential for staff shortages to result in pressure on senior members of staff.

Recommendations

b. A Strategic and operating plan was provided which did not cover the proposed changes to the status of the school. The new plan must be made available to RCVS when it is produced.

c. The School and the University must develop a plan to look urgently into methods of making clinical and paraclinical employment more attractive to prospective veterinary employees.

Standard 2 – Finances

Suggestions

a. The Head of School should have awareness of research income generated by veterinary research teams based in other institutes and should be able to supply that information.

b. Whilst it is evident that there is central funding for building maintenance and equipment replacement, the school is urged to ensure that it has a clear picture of the funds available to it in order to ensure that its facilities and equipment are suitably maintained, and replaced as required.

Standard 3 – Facilities and equipment

Suggestions

a. Attention should be given to ensuring that adequate study and service areas for students are provided in the SATH clinical facilities.

b. A purpose built and physically separated isolation facility would be more appropriate for an equine hospital with such a large case load.

Recommendations

c. Appropriate lecture theatre facilities, adequate for the number of students, must be provided on the Liverpool site by the time of the next RCVS visitation.

d. All vehicles transporting students must be equipped with netting or screening to provide safe physical separation from transported equipment.

Standard 5 – Information resources

Suggestions

a. A clearer, more structured and formal process should be implemented that drives decision making on the upgrading and innovation of information resources (group/committee, minutes, records of decisions).

Standard 6 – Students

Suggestions

a. There is an assumption that veterinary students will embark upon a clinical career. It would be useful if a structure to provide career planning and advice was embedded within the programme given formally to students during their fourth year, ensuring all students are aware of the avenues that may be open to them when they qualify as well as the factors they should consider when looking for a job in clinical practice.

Standard 8 – Academic and support staff

Suggestions

a. The committee strongly supports the proposal that School supplement the veterinarian salary in clinical/para clinical areas, and defines and implements a strategy supported by the University of Liverpool to allow veterinarian academic staff to engage more intensively in research and professional skill development.

Recommendations

b. The School must develop a strategy to diminish the impact of the reduction in clinical staff and actively aim to improve the areas which have a lack of sufficiently accredited and skilled academic professors.

Standard 9 – Curriculum

Suggestions

a. It is suggested that students should complete preclinical components of EMS for a species to ensure that they have the appropriate animal handling and husbandry skills before undertaking the respective clinical component of EMS.

b. It is suggested that students visit the "official inspection point" as this is an important new strategy to increase the awareness of the globalisation of the food trade and the meaning of the inspection services.

Recommendations

a. The School must assess the impact of the extended clinical rotation period and the integrated assessment policy for clinical skills on student workload and progression. Measures must be implemented to alleviate student workloads, if appropriate.

b. The use of electronic tools for the mapping of learning outcomes to Day One competences must be implemented.

Standard 10 – Assessment

Recommendations

a. Assessment procedures must be developed as a programme wide policy that reflects the strategy in an understandable way.

b. The current system for assessment during clinical rotations overloads students. The school must take into account the reduction of work overload and excessive pressure on students when it implements the new assessment system based on DOPs (Directly Observed Procedures).

Standard 11 – Research programmes, continuing and higher degree education

Recommendations

a. There must be a periodic, comparative review of and report on the quality and breadth of research.

b. The School must appoint a Head of Research employed within the new Institute of Veterinary Science, with the remit of leading clinical research and liaising with other Institutes within the University.

c. The School must initiate a more formal system of communication and decision making involving the School and Research Institute leadership with minutes, records of decisions and a reporting system.

Standard 12 – Outcomes assessment

Suggestions

a. The Outcomes assessment group should develop a strategy for improving feedback from employers; this could involve working with other veterinary schools and organisations.

Recommendations

b. The School must implement a broad and co-ordinated strategy of outcomes assessment with clear leadership at a senior academic level.

c. The School must be able to demonstrate use of a range of outcome measures at whole programme, individual unit and individual student level and the process by which these are used to drive improvements in teaching and learning over time.

Standard 1 – Organisation

The school must develop and follow its mission statement which must, as a minimum, embrace all the accreditation standards.

The school must have a strategic plan and an operating plan.

An accredited school of veterinary medicine must be part of an institution of higher learning accredited by an organisation recognised for that purpose by its country's government. A school may be accredited only when it is a major academic administrative division of the parent institution and is afforded the same recognition, status, and autonomy as other professional schools in that institution.

The head of school or dean must be a veterinarian and must have control of the budget for the veterinary programme. There must be a veterinary surgeon(s) responsible for the professional, ethical, and academic affairs of the veterinary medical teaching hospital(s)/clinic(s).

There must be sufficient administrative staff to adequately manage the affairs of the school as appropriate to the enrolment and operation.

Background

1.1. The School of Veterinary Science is split across two sites:

Liverpool Campus:
School of Veterinary Science
University of Liverpool
Thompson Yates Building
Liverpool L69 3GB
Tel: 0151 794 8238/5660; Fax: 0151 794 4279

Leahurst Campus:
School of Veterinary Science
University of Liverpool
Leahurst Campus
Chester High Road
Neston CH64 7TE
Tel: 0151 794 6002; Fax: 0151 794 6005

1.2. The School of Veterinary Science sits within the Faculty of Health and Life Science, one of three "superfaculties". The Faculty was created in September 2009, by reorganisation of the Faculties of Medicine and Veterinary Science and the Schools of Biological Sciences and Psychology. The Dean of the Faculty is Professor Bob Burgoyne, an Executive Pro-Vice Chancellor of the University.

1.3. At the time of the last visit, the Faculty was divided into five Research Institutes (Ageing and Chronic Disease, Infection and Global Health, Integrative Biology, Psychology, Health and Society and Translational Medicine) and one Institute of Learning and Teaching (ILT). The

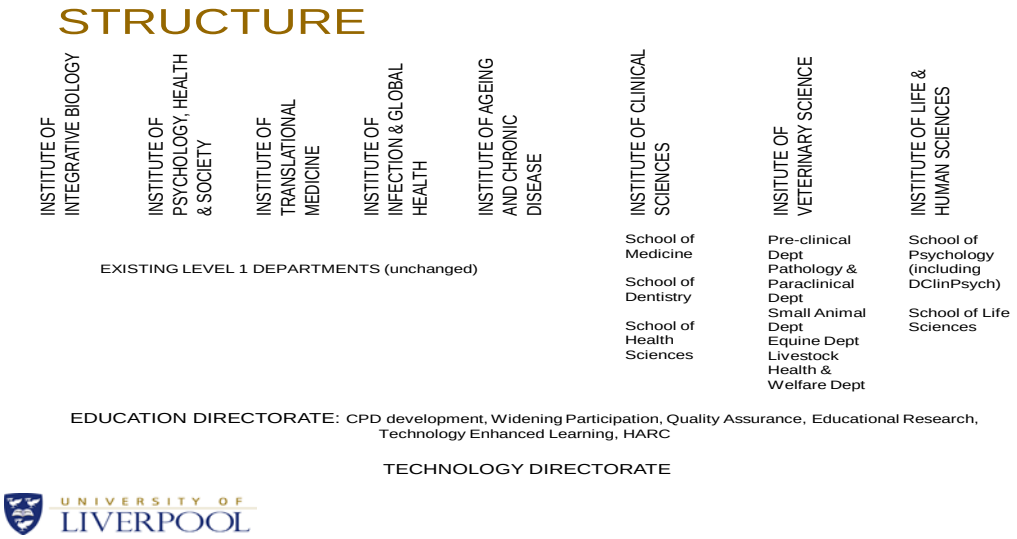
School of Veterinary Science sat within ILT, along with five other schools (Medicine, Dentistry, Life Sciences, Health Sciences and Psychology). Following the arrival of Professor Janet Beer as Vice Chancellor in 2015, a review was undertaken of the structure within the Faculty and changes were announced at the end of 2015 (see overleaf). These changes have still to be ratified by Senate: an implementation plan will be produced early in 2016. The changes are extremely constructive for the School of Veterinary Science. The School will now be a standalone Institute, with the Head of School/Institute sitting on the Faculty management team, the decision making body of the Faculty. The School will have greater autonomy over budget planning and resource allocation whilst still having the advantages of research support from across the Faculty.

1.4. Professor Dawson was appointed as Head of School in January 2011, through internal recruitment. Following the change from School to Institute, Professor Dawson will be appointed as Head of Institute on an interim basis (18 months) after which external recruitment will be carried out to appoint a permanent Head, in-line with all appointments at this level at the University. Professor Dawson and other internal candidates would be able to apply for the Head of Institute at this time. The Divisional leads within the Institute will be five year appointments with the opportunity to carry out a second term if mutually agreeable. Where a Head of Division post is vacant it will go to external recruitment, again in-line with University policy.

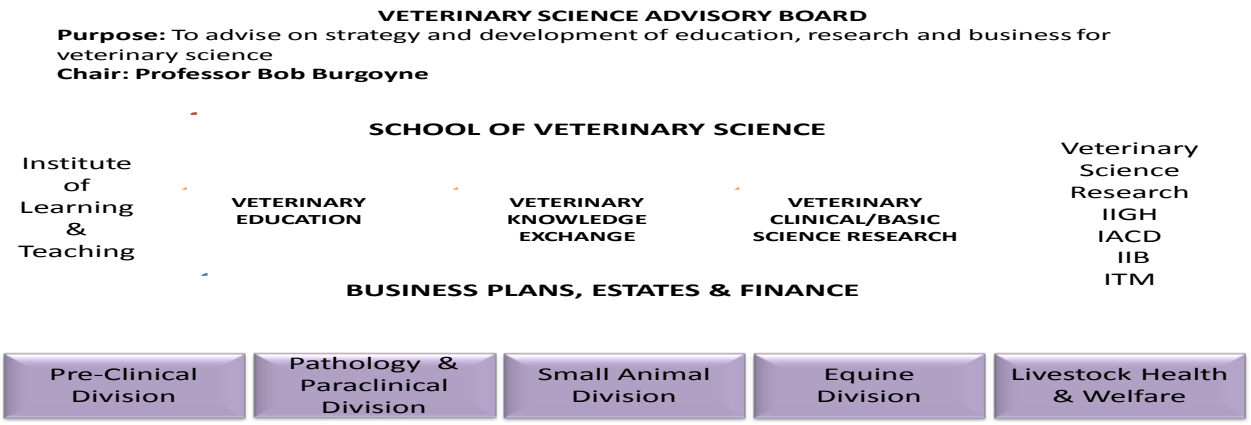
1.5. There are two external members of the Veterinary Advisory Board (Mr Harvey Locke and Mr Julian Samuelson). There is an active alumni association with members of staff, including the Head of School, sitting on the alumni committee. This gives the opportunity for the School to benefit from the experience and knowledge of alumni. In addition, many staff have collaborations with other members of the profession either through research links, committee involvement or teaching roles such as external examining. Clinical referral and diagnostic services at the School also bring daily contact with many members of the profession. Extensive CPD and PGT provision provide an opportunity to involve other members of the profession. Clinical services bring a large number of members of the public onto the campuses and undergraduates have interaction with these clients. Specifically for the curriculum review, focus groups with representation from different areas and disciplines within the profession were set up to gather data on requirements.

1.6. The School has several mechanisms for collecting evaluative comments from students about their experience, including staff-student liaison committee, various online mechanisms, surveys, and focus groups, all of which occur throughout the year. In addition, feedback is also gathered from the National Student Survey, the Postgraduate Taught Experience Survey and from graduate surveys conducted as part of the Schools new outcomes assessment project. Individual staff feedback is gathered formally through the personal development review (PDR) process, where staff are encouraged to discuss matters affecting performance in their role, and also information regarding the School. Staff feedback is also considered as part of the Annual Subject Review process. Information for staff is delivered through regular Veterinary Views Sessions, and these are recorded and available to staff via the University's intranet. These meetings always include a Q&A session, to enable staff to air their views about School of Veterinary Science matters. All staff and students have had the opportunity

to input to the recent review within the Faculty of Health and Life Sciences and the development of the University.



A full review of the internal structure of the Vet School will be carried out by the Vet School Senior Management Group (SMG) following the official announcement. However, SMG has confirmed that there will be no immediate major changes to the internal structure shown below (set up in 2013).



The decision making body of the School/Institute is the Senior Management Group who meet monthly with an annual away day. The current leadership positions within the School who sit on the Schools Senior Management Group are:

Position	Incumbent
Head of School	Professor Susan Dawson, BVMS PhD MRCVS
School Administrator	Mrs Rachael Atkins, BA (Hons) PGDip
Head of Small Animal Division	Professor Laura Blackwood, BVMS PhD MVM CertVR DipECVIM-CA (Onc) MRCVS
Head of Equine Division	Professor Cathy McGowan, BVSc MACVSc PhD DEIM DipECEIM MRCVS FHEA
Head of Livestock, Health & Welfare and Farms Division	Dr Dai Grove-White**,** BVSc MSc PhD FRCVS
Head of Preclinical Division	Dr Kieron Salmon, BVSc PhD MRCVS
Head of Veterinary Pathology	Interim position Dr Julian Chantrey, BSc BVMS PhD FHEA FRCPAth DipECZM MRCVS
Head of Veterinary Education	Dr Kieron Salmon, BVSc PhD MRCVS
Veterinary Research Lead	Professor Peter Clegg, MA VetMB PhD CertEO DipEVCS MRCVS
Academic lead for Businesses, Finance and Estates	Mr Peter Bowling, BVSc MRCVS
Technical Manager (Leahurst)	Dr David Pattwell BSc (Hons) PhD

Comments

1.7. The school is currently part of the Institute of Learning and Teaching of the University of Liverpool. In 2016, reorganisation will lead to the formation of the Institute of Veterinary Science which will be a stand-alone entity within the University structure. The school has a mission ("vision") statement, a set of objectives that embraces all the accreditation standards and an operating plan for the current structure, however there was no written plan for the new standalone Institute which will be operational in August 2016.

1.8. The Head of the School is a veterinarian who has overall control of the teaching and budgetary processes. Following the reorganisation of the Faculty, the current Head of School, Professor Dawson, will be appointed Head of Institute on an interim basis for 18 months. Following this period, external recruitment will be conducted for the appointment of a permanent Head. The appointment will be in-line with all appointments at this level at the University

1.9. Currently the Head of Research is not a member of the School staff and while this situation is working effectively, there may be problems should the current Head leave his post. There is a proposal to create a Head of Research position within the new Institute of Veterinary Science and this would add stability and focus for research within the Faculty

1.10. It is noted that the school is still experiencing difficulties in recruiting staff in clinical and paraclinical areas.

Suggestions

1.11. It is pleasing to see that personal development reviews are a routine part of management and this should help support succession planning, however the number of direct reports should be monitored closely as there is the potential for staff shortages to result in pressure on senior members of staff.

Recommendations

1.12. A strategic and operating plan was provided which did not cover the proposed changes to the status of the school. The new plan must be made available to RCVS when it is produced.

1.13. The School and the University must develop a plan to look urgently into methods of making clinical and paraclinical employment more attractive to prospective veterinary employees

Standard 2 – Finances

Finances must be demonstrably adequate to sustain the educational programmes and the requirements for the school to meet its mission.

Schools with other veterinary-related professional and non-professional (eg. veterinary nursing, animal science) undergraduate degree programmes must clearly report finances (expenditures and revenues) specific to those programmes separately from finances (expenditures and revenues) dedicated to all other educational programmes.

Resources allocation must be regularly reviewed to ensure it meets the requirements for accreditation of the professional veterinary degree.

Clinical services, field services, and teaching hospitals must function as instructional resources. Instructional integrity of these resources must take priority over financial self-sufficiency of clinical services operations. Clinics must be run as efficiently as possible, for example with transparent business plans, in order to set an example of good business practice for students.

Background

2.1. Budget planning for the School is overseen by Professor Susan Dawson and Mr Peter Bowling. The University has a three-year planning cycle with two within-year forecasts. The School manages all School income and expenditure including eleven separate businesses listed below. While each business plan individually agrees a budget with the Faculty and University, any surplus generated by these activities is taken into the overall School plan. This allows the management of resource within the School and provides an opportunity for subsidy of some areas by those producing a higher surplus. Support is provided by central University finance from Mr Naz Nanji and Miss Karen Fleming. The business plans as a whole are overseen at a School level by Professor Dawson and Mr Peter Bowling. An annual meeting is held to discuss the whole activity of each business and how it fits in with the strategic plan and there are quarterly meetings for budget planning and accounting.

Business plans within the school

Small Animal Teaching Hospital	Professor Laura Blackwood
Small Animal Practice	Mrs Chiara Cambi
Philip Leverhulme Equine Hospital	Professor Cathy McGowan
Equine Practice	Professor Cathy McGowan
Farm Animal Practice	Miss Helen Williams
KE Consultancy	Professor Rob Smith
Veterinary Laboratories Services	Dr Lorenzo Ressel
Wood Park Farm	Mr John Cameron
Ness Heath Farm	Mr Nigel Jones
Diagnosteq and LVPD	Dr Jane Hodgkinson and Professor Diana Williams
CPD	Mrs Ros Carslake and Ms Nichola Steel

Table 2.1: Annual expenditure of the School in the last 5 years (overall figures including business plan activity)

Area of Expenditure	2015-16 £,000s	2014-15 £,000s	2013-14 £,000s	2012-13 £,000s	2011-12 £,000s
a. Personnel					
a.1 teaching and support staff	13,615	11,727	10,841	9,438	8,272
a.2 research staff *	760	723			
Total for a	14,375	12,450	10,481	9,438	8,272
b. Operating costs					
b.1 utilities	NA	NA	NA	NA	NA
b.2 expenditure relating specifically to teaching	679	764	963	524	330
b.3 expenditure relating specifically to research **			101	163	136
b.4 general operations (excluding the above)					
Total for b	679	764	1064	687	466
c. Equipment					
c.1 teaching	1298	1608	1155	301	
c.2 research**					
c.3 general (or common) equipment					
Total for c					
d. Maintenance of buildings					
e. Total expenditure					

*Payments made to research staff following the teaching funding model (applicable to 15-16 only)

** Research income and expenditure is mainly through research institutes and so does not appear on Vet School budgets

Table 2.1.1: Projected future expenditure of the School for next 5 years

Area of Expenditure	2015-16 £,000s	2016-17 £,000s	2017-18 £,000s	NA £,000s	NA £,000s
a. Personnel					
a.1 teaching staff	13,615	13,935	14,245		
a.2 research staff *	760	800	840		
Total for a	14,375	14,735	15,085		
b. Operating costs					
b.1 utilities	NA	NA	NA	NA	NA
b.2 expenditure relating specifically to teaching	711	713	759		
b.3 expenditure relating specifically to research **					
b.4 general operations (excluding the above)					
Total for b	711	713	759		
c. Equipment					
c.1 teaching	1298	807	459		
c.2 research**					
c.3 general (or common) equipment					
Total for c					
d. Maintenance of buildings					
Total expenditure	16,384	16,255	16,303		

*Payments made to research staff following the teaching funding model (applicable to 15-16 only) and for future years, an increase of 5% based on this figure will be budgeted for

** Research income and expenditure is mainly through research institutes and so does no appear on the Vet School budgets

Table 2.1.2: Sources of expenditure for the Veterinary Teaching Hospitals (all business plan activity) for last 5 years

Area of Expenditure	2015-16 £,000s	2014-15 £,000s	2013-14 £,000s	2012-13 £,000s	2011-12 £,000s
1. Salaries for support staff *					
2. Salaries for teaching staff	7,972	6,766	6,260	5,286	4,812
3. Maintenance of buildings and equipment					
4. Costs of consumable items, drugs, etc. incl. Stock carried in-house	5,955	5,443	5,447	4,881	4,429
5. Equipment costs and depreciation	693	458			
6. Costs of maintaining teaching animals	NA	NA	NA	NA	NA

*Included in 2. Salaries for teaching staff

Table 2.1.3: Projected future expenditure for the Veterinary Teaching Hospitals (all business plan activity) in next 5 years (3 year planning cycle)

Area of Expenditure	2015-16 £,000s	2016-17 £,000s	2017-18 £,000s	NA £,000s	NA £,000s
1. Salaries for support staff *					
2. Salaries for teaching staff	7,972	8,269	8,521		
3. Maintenance of buildings and equipment					
4. Costs of consumable items, drugs, etc. incl. Stock carried in-house	5,955	6,042	6,154		
5. Equipment costs and depreciation					
6. Costs of maintaining teaching animals	NA	NA	NA	NA	NA

*Included in 2. Salaries for teaching staff

Table 2.1.4: Cost of veterinary training for the last 5 years

Annual cost of training a veterinary student	2015-16 £,000s	20114-15 £,000s	2013-14 £,000s	2012-13 £,000s	2011-12 £,000s
	19.9	17.8	17.3	15.5	

*Equipment costs not included, as C1 also includes business activities

Table 2.2.1: Annual revenues of the School for the last 5 years

Revenue source	2015-16 £,000s	2014-15 £,000s	2013-14 £,000s	2012-13 £,000s	2011-12 £,000s
a. Revenue from the state or public authority	8,132	7,250	7,944	6,527	7,403
b. Revenue from private bodies					
c. Revenue from research	127	369	365	222	315
d. Revenue earned and retained by the School					
d.1. registration/tuition fees from students (domestic and international)	6,294	5,855	6,612*	5,344*	4,476*
d.2. revenue from continuing education	1,213	1,197	1,156		
d.3. revenue from business activities	12,343	12,206	11,467	10,830	10,396
e. Revenue from other sources (endowments)	133	155	137	109	95
f. TOTAL REVENUE FROM ALL SOURCES	28,258	27,160	26,302	23,032	22,685

*Fee income including CPD

Table 2.2.1: Projected future revenues of the School for the next 5 years (3 years planning cycle)

Revenue source	2015-16 £,000s	2016-17 £,000s	2017-18 £,000s	NA £,000s	NA £,000s
a. Revenue from the state or public authority	8,132	7,895	8,167		
b. Revenue from private bodies					
c. Revenue from research	127	127	127		
d. Revenue earned and retained by the School					
d.1. registration/tuition fees from students (domestic and international)	6,294	7,061	7,404		
d.2.revenue from continuing education	1,213	1,210	1,210		
d.3. revenue from business activities	12,343	12,542	12,726		
e. Revenue from other sources (endowments)	133	132	131		
f. TOTAL REVENUE FROM ALL SOURCES	28,258	28,967	29,764		

Table 2.2.3: Sources of revenue for the veterinary business plans for the last 5 years

Income sources	2015-16 £,000s	2014-15 £,000s	2013-14 £,000s	2012-13 £,000s	2011-12 £,000s
1. Core funds from University					
2. Income from business activities	12,343	12,206	11,437	10,722	10,146
3. Sponsorship from industry					
4. Benefaction and donations					
5. Grants for equipment					

Table 2.2.4: Projected future revenues for the veterinary business plans for the next 5 years (3 years planning cycle)

Income sources	2015-16 £,000s	2016-17 £,000s	2017-18 £,000s	2018-19 £,000s	2019-20 £,000s
1. Core funds from University					
2. Income from business activities	12,343	12,542	12,726		
3. Sponsorship from industry					
4. Benefaction and donations					
5. Grants for equipment					

2.2. The University works on a three year planning performance and budgetary cycle. For the School of Veterinary Science this planning is carried out by the Head of School and Mr Peter Bowling along with the School Senior Management Group. Previously plans were reviewed for approval at both Institute and Faculty level but with the change to a Veterinary Institute this will be at Faculty level only. Income flows to the area where it is generated in this model and so all the student income, both HEFCE and student fee income, is allocated to the School. Within the School there are also clinical and diagnostic services providing income, run as business plans within the School overall budget. Each business plan is managed separately with planning done for that area and then quarterly meetings take place at School level to review forecasts and confirm actual figures. The forecast surplus on the budget is set as the contribution to the University. The required contribution to the University is set at the School

level, allowing the School the flexibility to manage the business plans strategically. The overall contribution for 2014/15 was 29.7%.

2.3. A separate budget is planned for each of the Research Institutes with targets for research income set for the next three years aligned to their research strategy. A small number of research grants still sit within the School but over time these will move to research departments. Where staff salaries are paid by the Research Institute a teaching-funding model has been developed to allocate appropriate salary costs to the School. This figure, in 14-15, was £723K and is therefore a relatively small proportion of the total salary bill. The recent review of the Faculty recommended that subsequent to the teaching funding allocation all Institutes should have an agreed surplus, and will not be allowed a planned deficit budget.

2.4. Capital planning and equipment replacement (above £5,000 then £25,000 from 15-16) is part of the same planning cycle. As with income and other expenditure, capital plans are initially produced separately for each business plan and then put together to create an overall School plan which goes to the Institute and Faculty for approval.

2.5. There is an opportunity twice yearly to review the plans. Where changes are necessary, for example where additional students have been recruited or additional research income awarded, pay and non-pay expenditure forecasts can be adjusted in line with requirements. Forecasts are also carried out twice yearly for each business plan. Where something unexpected is required, for example the failure of a piece of equipment, then approval would need to be gained at Institute and Faculty level for expenditure not budgeted on plan.

2.6. Estates Management are responsible for upkeep and maintenance of the estate and this is budgeted for centrally. In addition, opportunities may arise where the University capital plan allocates new additional resource; for example, the £10M investment in estates for the School in 2012 was allocated from the University capital plan. When new outside funds have been acquired for projects requiring either matched or additional funds, then the Head of School can make a case to the Faculty for further capital resources. The Leahurst Learning Centre, completed in May 2013, was resourced through endowment funds with an additional £900K from the Faculty to allow the full development to be carried out.

2.7. The School of Veterinary Science generates significant extra income through clinical and diagnostic services run as business plans. There is no set proportion of turnover from each business which is required as a contribution by the University (see above). This allows much more flexibility for the School whereby the Head of School can make decisions to allow an individual business plan to run at a loss where there are requirements for the activity. An example would be the first opinion small animal practice in Liverpool which has produced a deficit budget in previous years but provides an excellent part of the student experience. Subsidy from more financially successful areas within the School allows an assurance that all activities needed for student learning can be continued even in the face of a financially less successful year.

2.8. From 2012 onwards, Home/EU students pay tuition fees of £9,000 per year. Students who are on full-fees pay tuition fees of £21,830. All fee income flows to the School and is planned and budgeted as previously described.

Comments

2.9. The School currently makes a positive contribution to the University and the University appears to be content with this current level. It should be noted that the reported surplus does not reflect a real contribution as it occurs prior to allocation of certain overheads. The expectation for future contribution levels was unclear. The new organisational structure ensures the Head of School is represented at the Faculty level where decisions on the levels of contributions to Faculty are made; this is welcomed.

2.10. There has been a recent decision that all Institutes will be required to make a surplus. With the introduction of the teaching funding model, the School is allocated some salary costs from research institutes and the visibility of this to the Head of School is essential.

2.11. The Head of School has the necessary level of autonomy over the 12 business plans allowing appropriate local decisions to be made. This is being applied proactively to ensure the focus of the various business units remains as a teaching resource as opposed to a source of income generation. An example of this is the recent introduction of subsidised contracts for the Farm Animal Practice as it took on a greater teaching load with the move to a 36 week final year.

2.12. Regular quarterly review of budgets with budget holders is to be commended. Those with responsibility for budgets had good awareness of their current progress and had a sensible approach to planning for the next financial year.

2.13. The clinical hospitals, field services and farms all function primarily as instructional resources albeit they also generate income. The levels of contribution of the different units to the overall school is difficult to ascertain as there is variable allocation of staff costs and overheads are not allocated.

2.14. There is a process for submitting proposals for capital expenditure that is known to business plan owners. Essential items are funded.

2.15. The School has very little research income with researchers being employed by and the income allocated to the Research Institutes.

2.16. It was noted that the apparent cost of training a veterinary student has increased by approximately 28% over the last 4 years. This may be due in part to changes with calculation. However it was also suggested it may be due to the increased numbers of students leading to the need for more staff to maintain teaching quality. If true this may suggest under use of resources.

2.17. At this time, finances appear to be adequate to sustain the educational programme and currently there is evidence of a good relationship and strong support for the School from the University. The 3 year budget planning suggests the current level of contribution will be maintained and clarity from the University that this will remain acceptable would allow full confidence regarding long term financial sustainability.

Suggestions

2.18. The Head of School should have awareness of research income generated by veterinary research teams based in other Institutes and should be able to supply that information.

2.19. Whilst it is evident that there is central funding for building maintenance and equipment replacement, the school is urged to ensure that it has a clear picture of the funds available to it in order to ensure that its facilities and equipment are suitably maintained, and replaced as required.

Recommendations

None.

Standard 3 – Facilities and equipment

All aspects of the physical facilities must provide an environment conducive to learning.

The veterinary school must describe a clear strategy and programme for maintaining and upgrading its buildings and equipment.

Lecture theatres, teaching laboratories, tutorial rooms, clinical facilities and other teaching spaces must be adequate in number and size, and equipped for the instructional purposes and must be well maintained. Students must have ready access to adequate study, recreation, locker and food services facilities.

Offices, teaching preparation and research laboratories must be sufficient for the needs of the academic and support staff.

Facilities must comply with all relevant jurisdictional legislation including health, safety, biosecurity and UK animal welfare and care standards.

The institutions' livestock facilities, animal housing, core clinical teaching facilities and equipment must:

- **be sufficient in capacity**
- **be of a high standard and well maintained**
- **be fit for purpose**
- **promote best husbandry, welfare and management practices**
- **ensure relevant biosecurity and bio-containment**
- **be designed to enhance learning**

<u>Clinical teaching facilities</u>

Core clinical teaching facilities may be provided on campus and/or externally through a 'distributed' model. The school must ensure standards of teaching clinics (whether on campus or elsewhere) remain comparable with the best available in the private sector, through regular review. Any hospitals and practices involved with core teaching must meet the relevant RCVS Practice Standards and (for UK schools) be accredited under the RCVS Practice Standards Scheme.

All core teaching sites (whether on campus or external) should provide dedicated learning spaces including adequate internet access.

The School must ensure students have access to a broad range of diagnostic and therapeutic facilities, including but not limited to: pharmacy, diagnostic imaging, anaesthesia, clinical pathology, primary care settings, intensive/critical care, surgeries and treatment facilities, ambulatory services and necropsy facilities.

Operational policies and procedures must be posted for staff, visitors and students. Appropriate isolation facilities must be provided to meet the need for the isolation and containment of animals with communicable diseases. Such isolation facilities must be properly constructed, ventilated, maintained and operated to provide for animal care in accordance with accepted modern methods for prevention of spread of infectious agents.

Background

3.1. The School of Veterinary Science moved to new/refurbished premises on the Liverpool site in 2012. This comprises the School of Veterinary Science Home (containing administration and student social learning), The Veterinary Teaching Suite (home to the clinical skills laboratory, practical teaching rooms, staff laboratory, cold storage and workshop), Practical Teaching Laboratories A-F (where pre and paraclinical practical classes are delivered), University Veterinary Practice (small animal first opinion practice) and Research Institutes.

3.2. Leahurst site covers an area of approximately 200 acres in Neston and comprises the Small Animal Teaching Hospital, Philip Leverhulme Equine Hospital (PLEH) & Equine Practice, Livestock Health & Welfare (LHW) and Farm Practice (housed within the Henry Edwards Learning Centre), Main Building (housing reception, administration & student experience offices, clinical skills laboratory, 2 data centres, and pathology facilities), Mammalian Behaviour and Evolution (MBE incorporating a Behavioural Isolation Unit and Small Mammal Centre), National Consortium for Zoonosis Research (NCZR), Leahurst House (containing conference facilities and student refectory), Ritchie House (which comprises office space and meeting/teaching rooms), Oxenhale Laboratory and the Wellcome Building (which consists of offices and laboratories used by staff and postgraduates for research and diagnostic services).

3.3. The University currently has a shortage of lecture space in Liverpool and has plans to refurbish new teaching spaces on the Liverpool site.

Upgrading and maintaining buildings and equipment

3.4. The strategy and programme for upgrading and maintaining buildings is the responsibility of the central Facilities, Residential and Commercial Services (FRCS) department. Minor maintenance issues are reported, assigned a job number and response time, and an appropriate contractor is then assigned to the job. Larger maintenance projects are assigned a project lead from FRCS and subcontracted to the most appropriate contractor from an approved University of Liverpool list. Capital projects are included on the School's capital plan which is part of the University capital & performance planning round. Approval for large capital projects such as this rests with the University's SMT and University Council.

3.5. General equipment such as air conditioning, ventilation, boilers, fume cupboards, pressure vessels, lifting equipment etc. are maintained through FRCS. Specific pieces of equipment are maintained through service contracts set up during the procurement of the equipment e.g. MRI scanners etc. Such equipment is replaced on a rolling cycle.

Health and Safety Measures

3.6. The formal responsibility for safety and biosecurity In the Faculty of Health & Life Sciences falls to individual Departments, Schools and Institutes. Accordingly, heads of Institutes are responsible for the management of safety and biosecurity, advised and assisted by site-based Committees. For the Veterinary School, the most relevant is the *Safety and Biosecurity Committee*. This is chaired by an Academic Lead, and has representation for all activities, management units, and students. It takes advice from activity-specific subcommittees and

the site-based Safety Coordinators. Each Site Safety Coordinator has either one or more deputies who can act in their absence and oversee particular areas of activity.

3.7. The Faculty expects all staff and students to recognise that there is a clear responsibility on them to exercise self-discipline and accept responsibility to do everything they can to prevent injury to themselves and others.

3.8. Safety and biosecurity matters are subject to (at least) annual review and updated accordingly in order to achieve progressive improvement in safety performance. Each area has to undertake twice-yearly safety monitoring and inspection, and compile a report to the University's Safety Advisor. In addition, the University undertakes regular Safety Audits.

Recreational, study, locker and food facilities available to students

3.9. At Leahurst there is a Student Common Room (seating 90) located in the main building. It is equipped with microwave ovens and large fridges for food storage, a kitchen area and hot water boiler, plus 4 vending machines. The Refectory located in Leahurst House serves hot and cold food and seats 25 people, there is also a staff and student common room located in this building that seats 30 people. Lockers are provided for all 4th and 5th year students. A student PC suite is available for all undergraduate students.

3.10. Students use the front lawn on the Leahurst Campus for sporting activities. The Liverpool University Veterinary Society (LUVS) also runs many social events throughout the year making use of the student bar which is in Leahurst House. Students studying at Leahurst mainly reside in the town of Neston and also make use of the recreational facilities in this town, as well as surrounding areas including the Neston Recreational Sports Centre. Showers are available for staff and students to use in Leahurst House, HELC and in the Zoonosis Building.

3.11. At the Liverpool site the veterinary facilities are located in the middle of the University campus and staff and students located here have a large choice of cafes and restaurants within easy walking distance. In addition, the Thompson Yates Building houses a student common room area with a cold drinks vending machine. The main University campus also houses the Sports Centre.

Premises used for theoretical, practical and supervised teaching

Table 3.1.2a: Premises for lecturing – Leahurst

Number of lecture halls Number of places per lecture hall	
Hall	Lecture Theatre (Main 901)
Places	181
Total Number of places in lecture halls	181

Table 3.1.2b: Premises for group work – Leahurst

Number of rooms that can be used for group work (supervised work) Number of places in the rooms for group work:				
Room	*Student Computer suite*	*Meeting room (main building)*	*Library*	*Seminar room A (Henry Edwards)*
Places	12	20	48	14
Room	*Seminar room B (Henry Edwards)*	*Seminar room C (Henry Edwards)*	*Large meeting room (NCZR)*	*Small meeting room (NCZR)*
Places	20	20	14	8
Room	*Seminar room (PLEH)*	*Imaging seminar room (PLEH)*	*Equine library (PLEH)*	*Seminar room (Sandstone Cottage)*
Places	30	20	18	6
Room	*Computer suite (Sandstone Cottage)*	*Seminar room A (SATH)*	*Seminar room B (SATH)*	*Computer bench area (SATH)*
Places	4	16	16	9
Room	*Hot desk area (SATH)*	*John Share Jones room (Leahurst House)*	*JOL King room (Leahurst House)*	*EG White room (Leahurst House)*
Places	12	48	8	20
Room	*JG White room (Leahurst House)*	*Owen Williams room (Leahurst House)*	*Seminar room (Ritchie House)*	
Places	18	30	12	
Total number of places in rooms for group work/supervised work:				423

Table 3.1.2c: Premises for practical work – Leahurst

Number of laboratories for practical work by students + number of places per laboratory			
Room	*Student laboratory (MB)*	*Large PM Room*	*Small PM Room*
Places	30	15	8
Room	*Student Experience Room (HELC)*	*Multi-headed Microscope Room (HELC)*	*Cow Lab*
Places	12	10	8
Total Number of places in laboratories:			83

Premises for animals

3.12. There are two farms. Wood Park dairy farm currently milks 200 high yielding cows and rears all its own replacements. Ness Heath mixed farm has approximately 470 Lleyn and Lleyn-Cross breeding ewes, 20 breeding Gloucester Old Spot sows and 20 Hereford beef suckler cows with followers.

Premises used for clinics and hospitals

3.13. The School has three practices and two referral hospitals: The University Veterinary Practice (UVP SA, Liverpool), the Leahurst Equine Practice, and the Farm Animal Practice (FAP, Leahurst). The two referral hospitals cater for equine (PLEH) and small animal (SATH) referrals, respectively, in a range of disciplines. The FAP conducts both first-opinion and referral work. Students visit two external clinical facilities for their ophthalmology and wildlife/exotics rotations. Internally, the premises are inspected on a rolling basis of fault and repair reporting by the premises facilities managers. Externally, the premises have been awarded the RCVS PSS accreditation which measures the standards of the premises under Section 4. All premises passed the most recent inspection in July 2015.

Table 3.1.4: Places available for hospitalisation and animals to be accommodated

Regular hospitalisation	**Species**	**No. places**				
	cattle	8				
	horses	45				
	small ruminants	11				
	pigs					
	dogs	SATH	62*	SAP	11	Eye Vet 6
	cats	SATH	26	SAP	11	Eye Vet 6
	other[1]	SAP	Rabbits (2) Rodents (2)			
Isolation facilities	farm animals and horses	4				
	small animals	SATH (4; 2 can be used for dogs or cats)				SAP (8)
	Other[1]	1 (Equine)				

*****(Includes ICU, Recovery and Chemotherapy)

Diagnostic laboratories and clinical support services

3.14. Diagnostic laboratories at the Liverpool site include LVPD, UVP and the central clinical support services. Laboratories at the Leahurst include the Clinical Pathology Laboratory, Bacteriology service, hospital and practice laboratory facilities, veterinary pathology and the central clinical support services (which include the anaesthesia and diagnostic imaging service).

3.15. Two rotations are undertaken at non-University facilities: The ophthalmology rotation is undertaken at Eye Vet Referrals, a dedicated veterinary ophthalmology practice located in Sutton Weaver, Cheshire. For student teaching, there is a tutorial room and a small library facility. The wildlife/exotics rotation is undertaken at the RSPCA's Stapeley Grange Wildlife Hospital and Cattery.

3.16. The School has access to the following abattoirs and foodstuff processing units.

Abattoir	Species/product	Throughput	Distance
Two Sisters Poultry Ltd. Sandycroft Glendale Avenue, Deeside, Clwyd, CH5 2QP, Wales	Chicken	180,000 per day	8.7 miles
Two sisters Poultry Ltd. Llangefni Anglesey, Gwynedd, LL77 7UX, Wales	Chicken	107,000 per day	71 miles
Johnson & Swarbrick Goosnargh Ltd. Swainson House Farm Goosnargh Lane, Preston, Lancashire, PR3 2JU	Chicken, ducks	3,000 chicken per week, 300 ducks per week	66 miles
Woodheads Bros – Colne, Wm Morrisons Supermarket PLC Junction Street, Colne, Lancashire, BB8 8LH	Cattle, sheep, pigs	300 cattle per day, 5,000 pigs per day, 1-2,000 lambs per day	76 miles
Randall Parker Foods Ltd. Dolwen Llanidloes, Powys, SY18 6LX	Cattle, sheep	5,000 lambs per day	80 miles
Euro Quality Lambs Ltd. Euro House, Dale Street, Craven Arms, SY7 9PA	Sheep	3,000 per day	76 miles
Tulip Ltd. Ashton, Bow Street Dukinfield, Cheshire, SK16 4HY	Pigs	3,500 per day	50 miles
W Nixon & Sons Ltd. Outwood Farm, Bolshaw Road, Cheadle, SK83PS	Cattle, sheep, pigs	small throughput	40 miles
A H Griffiths Ltd. 22 High Street , Leintwardine, Craven Arms , SY7 0LB	Cattle, sheep, pigs	small throughput	83 miles

Food industry premises used for Public Health rotation teaching

Plant	Species/product	Activity	Distance
Two sisters Poultry Ltd. Sandycroft Glendale Avenue, Deeside, Clwyd, CH5 2QP, Wales	Chicken	Cutting and packing chicken	8.7 miles
Tulip Ltd. Ashton, Bow Street Dukinfield, Cheshire, SK16 4HY	Pigs	Cutting and packaging pork	50 miles
A H Griffiths Ltd. 22 High Street , Leintwardine, Craven Arms , SY70LB	Cattle, sheep, pigs	Local butcher producing burgers, sausages and a variety of meat products and preparation for the shop	83 miles
HS Bourne The Bank, Malpas, SY14 7AL	Cheshire cheese	Cheese making	24 miles

3.17. The School has comprehensive waste management procedures for dealing with potentially infected waste, waste bedding and manure, recyclables and confidential waste.

Comments

3.18. The School has facilities that provide an environment conducive to learning. There has been a substantial programme of investment at both the Liverpool and Leahurst campuses. The University has shown a commitment to providing excellent facilities for the students and staff of the School. The opening of the Henry Edwards Learning Centre and the refurbishment and expansion of the lecture theatre and student common room at Leahurst are the most recent of a sustained series of investments by the University.

3.19. The School recognises that the shortage of lecture theatre space in Liverpool limits flexibility with timetabling and requires the use of lecture theatres that do not provide a suitable teaching environment. The University has given priority to acquiring more appropriate lecture theatre space to rectify this problem.

3.20. Hospitals for large and small animals are excellent and provide up to date, high standard clinical and teaching facilities. All these premises have passed RCVS PSS inspections. The students in clinics at the Liverpool site have access to services from diagnostic laboratories and on the Leahurst site, the students in the clinics and hospitals have access to services from diagnostic laboratories and central clinical support services including anaesthesia and diagnostic imaging.

3.21. The clinical facilities are currently adequate for the numbers of students however the expected increase in student numbers in the next academic year raises questions as to whether facilities such as the SATH will be able to provide adequate study and service areas. Further increases in the admission of students would raise concerns that the capacity of teaching facilities would be exceeded.

3.22. The School provides appropriate isolation facilities in its SAP and SATH, PLEH and FAP. The PLEH has one assigned box for isolation of horses and one “back-up” box. The assigned isolation box is not physically separated from other animal housing that is in regular use. Other animal housing facilities and protocols in the equine hospital are also used to provide appropriate biosecurity.

3.23. Not all vehicles transporting students are equipped with safety netting or screening to provide a physical separation from transported equipment.

Suggestions

3.24. Attention should be given to ensuring that adequate study and service areas for students are provided in the SATH clinical facilities.

3.25. A purpose built and physically separated isolation facility would be more appropriate for an equine hospital with such a large case load.

Recommendations

3.26. Appropriate lecture theatre facilities, adequate for the number of students, must be provided on the Liverpool site by the time of the next RCVS visitation.

3.27. All vehicles transporting students must be equipped with netting or screening to provide safe physical separation from transported equipment.

Standard 4 – Animal resources

Normal and diseased animals of various domestic and exotic species must be available for instructional purposes, either as clinical patients or provided by the institution. Whilst precise numbers are not specified, the school must provide access to sufficient numbers of animals and quality of animal material to provide the necessary quantity and quality of animal husbandry and clinical instruction.

It is essential that a diverse and sufficient number of surgical and medical patients be available for the students' clinical experience including patients in primary care settings.

Experience can include exposure to clinical education at external sites, provided the school quality assures these clinical experiments and education outcomes to at least the same standard as university owned facilities. Further, such clinical experiences should occur in a setting that provides access to subject matter experts at the appropriate level, reference resources, modern and complete clinical laboratories, advanced diagnostic instrumentation and ready confirmation (including necropsy). Such examples could include a contractual arrangement with nearby practitioners who serve as adjunct faculty members and off-campus field practice centres.

The teaching hospital(s) must provide nursing care and instruction in nursing procedures. A supervised field service and/or ambulatory programme must be maintained in which students are offered multiple opportunities to obtain clinical experience under field conditions.

Under all situations students must be active participants in the workup of the patient, including physical diagnosis and diagnostic problem oriented decision making.

Medical records must be comprehensive and maintained in an effective retrieval system to efficiently support the teaching, research, and service programmes of the school.

Background

4.1. Live animals are used in practical anatomical training. Dogs and cats are brought in by members of staff and local dog groups. Farm animal species and horses from the Leahurst farms and equine teaching herd (7 horses and 2 ponies). A range of other animal species including birds (pigeons, hens and psittacines), reptiles (snakes, tortoises and various lizards) and small mammals (rabbits, rodents and ferrets) provided by external collectors and brought into the VTS.

4.2. Fresh dog cadavers are collected each week, sourced from authorised council dog pounds. Student:cadaver ratio is usually 5:1. Sheep and horse cadavers are collected as required from local abattoirs. Other species cadavers include fish, rodents, rabbits and chickens, and are obtained immediately prior to the relevant class (from butchers, research laboratories, pest control companies, game dealers (rabbits), and battery farms).

4.3. Fresh specimens are used to increase learning in specific areas e.g. eyes, heads, GIT and reproductive tracts (including gravid uteri) of all species. Student:cadaver ratio is usually 2:1 – 5:1.

4.4. External anatomy models (dog, horse), specific anatomy (limbs/joints, eye, ear, heart), and clinical anatomy (surgical spaying, auscultation and endotracheal intubation) as well as real bones are available. The school has developed detailed high quality photographic interactive dissection guides to canine axial skeleton, abdomen, forelimb, head, hind-limb, perineal region, eye, and equine abdomen.

Table 4.1: Ratio: Students/post-mortem animals

Number of students graduated in the last year (2014/15)	136
Number of cadavers necropsied (2014)	1169

4.5. Number of post-mortems by species undertaken by a typical student during their training: at least 3 dogs, 2 cats, 1-2 horses, 3-10 bovines of all ages, 2 sheep, 4 chickens and 2 exotic species. (Many students experience more than this).

4.6. Third year students have two necropsy practical classes, (1 dog, 1 sheep). Dogs from Manchester Dogs' Home, and the sheep are cull ewes from University farms.

4.7. Pathological anatomy classes are taught by using material from the slaughterhouse and an archive of specimens fixed in Klotz solution.

Table 4.2: Number of necropsies over the past five years

Species		**Number of necropsies undertaken**					**Estimated % of necropsies observed by or undertaken by Veterinary undergraduate students in most recent full year**
		2014	**2013**	**2012**	**2011**	**2010**	
Food-Producing animals:	Cattle	249	177	112	159	112	70
	Small ruminants	85	139	81	66	52	
	Pigs	35	18	28	13	17	
	Other farm animals	11	5	6	7	9	
Equine		92	110	78	61	92	70
Poultry		172	129	152	169	158	70
Rabbits		20	21	15	25	23	
Dogs		138	142	114	124	151	70
Cats		57	35	36	24	47	
Other/exotic		310	306	243	233	137	50

4.8. The University's two working farms provide firsthand experience of dairy cattle, pigs, sheep and beef suckler herds.

4.9. For food hygiene and public health teaching, there is an adequate supply of farm animals and products of animal origin. For meat inspection, practical classes use organs and carcasses collected after rejection during regular meat inspection at local abattoirs. The collection of red

meat occurs throughout the year by a meat inspector who also assists in teaching the class. Poultry specimens are collected from a local poultry abattoir with high throughput using only fresh specimens.

4.10. For classes in food microbiology and technology, fresh foods are purchased and allowed to spoil (milk including milk from the farm before heat treatment, fish, eggs, honey etc.) and for packaging the school has an archive of different long-life products.

4.11. Clinical rotations are typically 1 week in duration and the 36 weeks of internal rotations are distributed amongst the 3 main divisions (Small Animals, Equine and LHW) and a week in diagnostic pathology.

Table 4.3: Number of clinical cases involving students

Table 4.3(a): Production Animals

Production Animals	**No. of cases in previous year involving undergraduate students**											
	(a)		(b)		(c)		(d)		(e)			
	Rec'd for consultation in School's clinics		Number of hospitalised days		Number of herd/flocks & average herd size		Number of animals seen by students on farm/herd health visits (not including EMS)		Estimate % of 1st opinion v. referral cases per species seen by students			
									1st op'n		Referral	
Last full year; Previous year	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**
Cattle *	86	123	395	735	20/850	21/800	10143	11465	99%	99%	1%	1%
Small ruminants *	68	58	120	75	46/125	46/125	621	584	99%	99%	1%	1%
Pigs *	34	20	70	80	26/8	15/10	139	47	75%	75%	25%	25%
Food producing Rabbits & other production animals	42	12	71	37	23/4	20/4	68	51	50%	50%	50%	50%
Poultry	3	7	3	7	5/10	8/15	13	11	100%	100%	0	0

#Figures indicate FAP and referrals only; see Table 4.3 for external farms used for herd/flocks visits. These figures only include animals which students have directly seen and NOT the animals seen in the environment at herd health visits.

Table 4.3(b): Companion Animals

Companion Animals	No. of cases in previous year involving undergraduate students									
	(a)									
	Rec'd for consultation in School's clinics		Number of hospitalised days		Number of animals seen by students (not including EMS)		Estimate % of 1st opinion v. referral cases per species seen by students			
							1st op'n		Referral	
Last full year; Previous year	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**	**2014-2015**	**2013-2014**
Equine	5591	5502	6658	6528	2043	1782	67%	66%	33%	34%
Dogs	14627	14396	2508	2377	9690	9778	34%	38%	66%	62%
Cats	3567	3578	378	376	2422	2430	32%	31%	68%	69%
Pet rabbits/ other exotic	334	386	0	0	226	262	100%	100%	0%	0%

Table 4.3(c): Herd health programmes

Rotations and elective in 2014-2015 academic year

	Herd/flock health programmes provided through University owned animals		**Herd/flock health programmes provided through private owned animals or government services**	
	SITES (N) (Blank if none)	ANIMALS (N)	SITES (N) (Blank if none)	ANIMALS (N)
Dairy	1 (Woodpark Farm) for 30 herd monitoring/ training weeks + 12 Herd Health 2 weeks	400	20 private farms for 48 student weeks (18 Herd Health 2 and 30 Herd Health 3)	Holdings range from 100-1000 cows plus equivalent youngstock.
Beef Cow-Calf or rearing	2	24 cows plus calves	13	Holdings range from 50-200 cows plus equivalent youngstock.
Beef feedlots				
Sheep	2	590 ewes plus lambs	13	Flocks range from 100-1000 ewes approximately.
Goat	1		0	
Pig	1 (30 clinical skills groups' work at Ness	15 sows plus boars and young	0	
Poultry	0		0	
Fish	0		0	
Horses	NA			
Other	NA			

Rotations and electives in the 2010-2011, 2011-2012, 2012-2013 and 2013-2014 academic years

	Herd/flock health programmes provided through University owned animals		Herd/flock health programmes provided through private owned animals or government services	
	SITES (N) (Blank if none)	ANIMALS (N)	SITES (N) (Blank if none)	ANIMALS (N)
Dairy	1	400	15	Herd size varies 50-200 cows plus followers
Beef Cow-Calf or rearing	1	24 cows plus calves	5	Herd size varies 100-200 cows plus followers
Beef feedlots			1	1000
Sheep	1	500 ewes plus lambs	3	Larger flock 2000 ewes
Goat	0		0	
Pig	1	15 sows plus boars and young pigs	0	
Poultry	0		0	
Fish	0		0	
Horses	NA			
Other			2 Mixed farms open to public	Mixture of species

Table 4.4(d): External placements

Placement Name	Species	Duration of Rotation	Students per Rotation	Patient Numbers	Core? Y/N	Other Comments[1]
Wildlife and Exotics Clinical Rotation	All Species of British wildlife, plus domestic rabbits & ferrets. Domestic rodents, passerines, psittacines, reptiles depending on caseload.	5 days	3-5	~6500 per year, seasonal variation	Y	Primary contact: Bev Panto
Ophthalmology	Cats and dogs	2 days	3-5	**TOTAL: 5595** First: 832 Further: 1699 Follow up: 1004 Post-op: 1579 OOH: 176 Surgery: 305	Y	Primary contact: Peter McElroy
Behavioural medicine	Cats and dogs	2 days	3-5	801 Diagnostic (34 seen at SATH[2]) 84 Management 868 Rehabilitation	Y	Primary contact: Sarah Heath

[1] For all rotations, the primary contact is an honorary lecturer at the University, and there are no embedded University Staff.

[2] Numbers for Behavioural medicine shown as total numbers for practice. Cases from the overall caseload are selected to be seen at the SATH explicitly to support undergraduate teaching.

4.12. All areas of clinical skills are supported by pre-clinical skills training in new curriculum, imaging and surgery commencing in year 1, as well as EMS placements, clinical skills rotations and the one-week in the small animal practice first opinion rotation.

4.13. Dedicated anaesthesia and surgery rotations are carried out in the SATH and PLEH. First opinion field surgeries performed in the LEP and FAP such as castrations and wound management offer day 1 skills development. In patient farm animal surgeries using the two operating theatres (one equipped with stocks for standing surgeries, the other with a hydraulic operating table designed for animals <150 kg) enable students to be more involved than would be possible if every procedure was performed on the farm of origin. Larger animals requiring recumbency for surgery are accommodated in the operating theatres of the PLEH.

4.14. The PLEH and SATH have ICU's and OOH rotations that provide extensive supervised experience in emergency and critical care. The FAO supplies 24-hour services both to registered clients and to referring veterinary practices; students are involved in every case, and gain extensive experience in assessment and management of the emergency case.

4.15. For primary and referral medicine, students gain experience through both the referral hospitals and first opinion practices to develop their skills in history taking, clinical examination, creating problem and differential diagnosis lists, and formulating diagnostic plans.

4.16. Clinical and pathology teaching across all years of the veterinary course is led by Martina Piviani DipECVCP within the new curriculum. Her input ensures that the School can better prepare the students for clinical rotations, particularly interpreting haematology and biochemistry results and basic cytology.

4.17. During clinical rotations, clinical pathology is an integral part of case management during the rotations of the medicine disciplines and is supported by tutorials where applicable. To support this teaching, the hospitals have in-house laboratories where students can develop skills in sample preparation, analysis and interpretation. Diagnostic imaging is an integral part of case management across hospital and practice rotations, but dedicated imaging rotations in the SATH and PLEH consolidate learning. All images are accessible to students for review on all hospital PCs via PACS system.

4.18. Within SATH, UVP (SA), LEP, and PLEH, electronic patient records are used; Tristan is the current software package, but this is due to be replaced with 'Beagle' (a purpose-designed package) in two years. Clinical rotation students have access to all hospital records allowing them to prepare prior to the consultation, and to review results, discharge instructions and letters from hospitalised patients. During hospitalisation, some patient records and forms are still currently paper-based and some are recorded on Tristan e.g. daily TPR and SOAPS. Across all disciplines students play a major role in patient record keeping and completion of forms e.g. clinical examination forms under the supervision of the attending clinicians.

4.19. When on clinical rotations, students are integral to the clinical services they are participating in whether they be first opinion cases or hospitalised cases. Student involvement includes taking the consultation (e.g. introducing themselves and welcoming the client, taking the history, performing the initial physical examination), summarising the clinical history and

examination findings to the clinician, and discussing the case (main clinical features, differential diagnoses, further diagnostics and management). The student then follows that case during each investigation and, if the patient is hospitalised, takes care of the patient, including administration of treatments, patient monitoring, and writing of SOAPs. The student is also responsible for core tasks such as blood sampling, managing intravenous fluid therapy and interpreting the results of diagnostic tests. Finally, the student presents each of their cases both at morning and evening rounds, to enable discussion with staff and other students.

4.20. Involvement of the students in the cases is evidenced by their entries in clinical records (e.g. histories, written record of clinical examinations, SOAPs, discharge instructions etc.). In addition, they are assessed on patient care, client communication, and practical skills, and on their discharge instructions, which demonstrate involvement and understanding. In several rotations, students must demonstrate involvement in a number of different cases in order to pass, and must log these cases with a summary of their involvement. The learning outcomes of the rotations are designed to ensure that students must actively participate and use the learning opportunities the cases present.

4.21. All SATH and PLEH and some LWPH cases are referrals, and the majority will have more extended investigations than cases seen in primary care practice. This will include more detailed investigations (to the standards expected of that referral discipline) including advanced imaging, when necessary.

Comments

4.22. The animal resources, including types of species available, fresh and fixed specimens, cadavers, necropsy material from external sources, and animals on farms, are adequate and effectively used for all teaching and training purposes.

4.23. The materials, products of animal origin, organs, carcasses, red meat, poultry specimens etc. from local abattoirs are adequate for food hygiene and public health teaching. The presence of a meat inspector that assists in teaching the class is useful in creating a link between theoretical teaching and practice.

4.24. The involvement of students in cases is well documented.

4.25. Student feedback on the adequacy of animal resources and their effective use in teaching is very positive.

4.26. The School has a satisfactory plan for animal resources to cope with the intended increase in student numbers.

Suggestions

None.

Recommendations

None.

Standard 5 – Information resources

Libraries and information retrieval are essential to veterinary medical education, research, public service, and continuing education. Timely access to information resources, whether through print, electronic media or other means, must be available to students and faculty. The library must be administered by a qualified librarian. The school must have access to the human and physical resources necessary for development of instructional materials.

The school must provide students with unimpeded access to learning resources which include scientific and other relevant literature, internet and internal study resources, and equipment for the development of procedural skills (e.g. models). It will demonstrate how the use of these resources is aligned with the pedagogical environment and learning outcomes within the programme, and have mechanisms in place to evaluate the teaching value of innovations in learning resources.

Background

5.1. Libraries comprise the Harold Cohen Library and the Sydney Jones Library on the main campus and the Leahurst Library, on the Leahurst Campus, housing **1,909,918** volumes, receiving **816** periodicals in printed format, subscribing to **65,263** electronic journals, with access to **673,577** electronic books and online access to most major databases. They provide around **2,300** computer and study spaces, with **934** PCs and **192** loanable laptops. The entire Library stock is included in the online catalogue and electronic resources can be accessed on or off campus. The two main libraries are open 24/7 throughout the academic year.

5.2. The University Library home page, http://www.liv.ac.uk/library/, provides access to databases such as CAB Direct, Veterinary Science Database, Medline, Scopus, Web of Science, Agricola and BIOSIS and to the University of Liverpool's unified search tool 'DISCOVER', an index of the University of Liverpool Library's print and e-resources. *ReadingLists@Liverpool* allows students to access recommended materials easily and ensures that recommended material is available to meet demand. Reading Lists are accessible from the Virtual Learning Environment (VITAL) and from the Library Web pages. There are copies of all recommended texts in the Library stocked at a minimum ratio of one copy per 10 students (and as e-books wherever possible).

5.3. Computing Services Department (CSD) based in Liverpool is the main provider of IT and e-learning services. There are PCs in centres across campus, at Halls of Residence and at Leahurst. On the main Liverpool Campus, there are roughly 1800 TC (Teaching Centre) PCs for approximately 12,000 student usernames (7:1 student:pc ratio). Students can use any PC centre across campus with access to their personal file storage. This is available outside campus from any computer, mobile or tablet. CSD is responsible for implementation and maintenance of VITAL, the School's Virtual Learning Environment. Access to online resources is 24/7 on and off campus.

5.4. The Faculty has a TEL (Technology-Enhanced Learning) team to provide support for AV equipment, VITAL and databases and driving improvements in pedagogy via TEL. The School

also has an e learning team (eLT) of 3 full time staff, providing bespoke learning materials and resources for the undergraduate curriculum and CPD activities. Institution-wide support for e-learning is via the eLU (the central university e-learning unit), educational development, and CSD.

5.5. The School encourages staff to introduce and evaluate appropriate technology to enhance their teaching. All projects undertaken by the School's e-learning team (eLT) are based on best practice pedagogical principles, and evaluated for impact and effect using feedback from students and staff, and by analysis of examination scores and other performance indicators. Findings are fed back and disseminated through the veterinary science educational research group (VSERG) and TEL.

5.6. Physical and virtual learning aids form a vital part of teaching throughout the School. The introduction and development of clinical skills teaching from year one has necessitated sourcing and creation of a large number of models and mannequins enabling students to practise skills repeatedly. Staff and student feedback has been very positive regarding the range and realism of the techniques developed using the models, highlighted by their improved confidence tackling tasks during EMS and clinical rotations. Feedback from students' EMS placements reflects this.

5.7. Models and virtual learning aids are also used extensively in anatomy teaching, enabling students to consolidate their learning from cadaver dissections. DIVA (Digital Interactive Veterinary Anatomy) is a set of online digital interactive photographic and video guides that directly relate to the dissection room, enabling students to simulate and consolidate repeatedly their dissection learning experiences and may be accessed through VITAL at any time. Virtual aids used elsewhere include interactive tools for equine colic and dentistry, augmented reality aids to revisit anatomy in the higher years and QR codes enabling students to link directly from physical tasks to notes and videos via mobile phones and tablets. The School has developed various branching online cases using XERTE (open-source tools producing interactive learning materials) for use in the clinical years. Clinical skills are supported by bespoke video guides accessible via VITAL.

5.8. VITAL supports tools such as wikis, blogs, journals and discussion boards, for both the UG and PGT curriculae. Streaming tools are used to connect the two campuses and to stream research seminars between the Institutes, and journal clubs in the online CPD courses. Other IT tools available include:

- A screen capture system enabling lectures to be recorded live and uploaded directly on VITAL
- *PeerWise* – allowing students to write, share, answer and review relevant questions
- *Poll Everywhere* – allowing users to conduct polls and see the results in real time
- Multiple commercial software tools used in teaching (e.g. Interherd, NATOM)

5.9. Most materials are developed by the individual lecturer with support and advice from the eLT, working alongside TEL and eLU.

5.10. There are 26 PCs for 240 student usernames (9:1 student:pc ratio) at Leahurst with 5 PCs in the social zone area of the School building in Liverpool. Each clinical division has a pool of

computers for students on rotation: LHW (12 PCs), Small Animal (13 PCs) and Equine (19 PCs). All teaching areas on campus and Leahurst have free wireless access.

5.11. Staff and students are supported by CSD, based in Liverpool, with drop-in sessions at Leahurst. The Education development unit (EDDEV) and eLU provide training for all university staff to support research and teaching, including an annual Learning and Teaching Conference. New staff must complete the Certificate in Postgraduate Studies in Learning and Teaching in Higher Education. The School eLT supports smaller project and provides targeted support with drop-in sessions at Leahurst and Liverpool.

	Current Year available (2013/2014)	2012/13	2011/12	2010/11	2009/10
Total Budget	£9,014,143	£8,637,358	£8,209,234	£8,813,568	£9,067,740
Personnel	103.9	110	*109**	109	109.5
Volumes held	1,909,918	1,917,676	1,898,256	1,898,535	1,919,239
Number of paid for journals	65,907*	54,057*	28,261	26,252	25,643
Journal subscriptions (£)	£4,107,050	£3,781,871	*£3,828,616**	£3,828,616	£3,818,779
Acquisitions (Total)	£670,596	£705,986	*£615,721**	£615,721	£747,212

5.12. Students can access the library at all times. Students may access online resources 24/7 on or off campus via VITAL. Access to physical models for development of procedural skills is timetabled to ensure each student has ample time to develop their skills. Students may access the lab at free times, and access online instructional videos 24/7. All students receive a dedicated one week taught period in both LHW and Equine clinical skills clinical rotations. The small animal clinical skills stream is currently blended into the individual rotation weeks, although this is under review. Students may access LHW, Equine, SA clinical skills areas 24/7.

Comments

5.13. There has been a comprehensive programme of refurbishing, upgrading and expanding the information resources available to students at both sites.

5.14. Student satisfaction with the information resources, 24 hour response to problems and library/online access is high.

5.15. Use of information resources is well aligned with learning outcomes.

5.16. In addition to 12 computer stations and 15 study spaces in the Leahurst Library there is a personal computer room with an additional 12 spaces in the PC room of the Main Building, adjacent to the library. The Student Common Room, located next door to the library, is also used by students with laptops. An adjacent seminar room has an additional 12 computer spaces. With the increasing use of personal laptops there is confidence that the available resources will accommodate greater student numbers.

Suggestions

5.17. A clearer, more structured and formal process should be implemented that drives decision making on the upgrading and innovation of information resources (group/committee, minutes, records of decisions).

Recommendations

None.

Standard 6 – Students

The number of professional veterinary degree students must be consistent with the resources and the mission of the school.

Veterinary schools should establish post-graduate programmes such as internships, residencies and advanced degrees (e.g., MSc, PhD), that complement and strengthen the professional programme.

Provisions must be made, by either the university or school, to support the physical, emotional and welfare needs of students. This includes, but is not limited to, learning support and counselling services, careers advice, and fair and transparent mechanisms for dealing with student illness, impairment and disability during the programme. This shall include provision of reasonable accommodations/adjustments for disabled students, consistent with all relevant equality and/or human rights legislation.

There must be effective mechanisms for resolution of student grievances (e.g. interpersonal conflict or harassment).

Mechanisms must be in place by which students can convey their needs and wants to the school.

The school must provide students with a mechanism, anonymously if they wish, to offer suggestions, comments and complaints regarding compliance of the school with the RCVS standards for accreditation. These materials must be made available to RCVS as part of the annual report.

Background

6.1. Since 2011-12 undergraduate numbers have increased from 614 to 758 (including students on suspension of studies or repeating a year or rotation). Table 6.1 shows the total as 761 but this includes Year Zero, a pre-veterinary year established as a widening access route, chiefly taught at Carmel College. There are no current plans to change the number of students admitted.

6.2. Numerous support mechanisms exist to assist students experiencing difficulties with their studies or with non academic issues. These include:

- School-based Personal Tutors/Academic Advisors
- The School Pastoral Support Team and the University support network
- Two Senior Tutors (one at each campus) oversee Student Support within the School

6.3. All students are allocated a Personal Tutor (Academic Advisor) for the duration of their studies who is also responsible for supervision of their Professional Development Planning (PDP). Personal Tutors are the first port of call if a student is having problems with their academic studies, but there is also a Pastoral Support Team available should Tutors be temporarily unavailable or if a tutee wishes to speak to a member of staff in addition to, or instead of, their Tutor.

6.4. Specialist teams and experienced advisers are available to support students on a range of issues. These include the Disability Support Team, Financial Support Team, International Support Team, Support for Care Leavers, Counsellors and GPs. In addition to staff-based support, the School also has over 30 trained student *Peer Supporters*, trained by the Counselling Service to support students experiencing problems with student life. All new students are allocated student "Buddies" from the years above. Buddies are encouraged to steer more serious issues to Peer Supporters and staff.

6.5. All University of Liverpool students are entitled to apply for a number of bursaries and grants within the University. The University also offers students with financial difficulties grants from the University Hardship Fund (UHF). Students with disabilities may also be entitled to the Disabled Students' Allowance (DSA). The School has two additional sources of funding available for students: the *Clare Harrison Memorial* and *Enid Holden Funds*, primarily to assist undergraduates suffering severe financial difficulty.

6.6. *Liverpool Guild of Students* is the representative body for students at the University. Its mission is to support students through advice, lobbying and a range of extracurricular activities, as well as being at the heart of student social life. *Liverpool University Veterinary Society (LUVS)* and other societies for veterinary students are responsible for organising events, with the aims of providing an unforgettable student experience. Events organised range from a "vet welcome week" at the start of first year to regular events in later years including debates and weekly 'Clinical Club' talks.

6.7. *Sport Liverpool* provides a wide-ranging sporting experience for students of all abilities. The University's Athletics Union comprises 49 sports clubs run by student officers with professional support from the University's Sports Development staff offering a wide range of sports. Internal sports leagues and sessions are offered through the University's Campus Sport programme.

6.8. Students are directed to familiarise themselves with the School's Safety and Biosecurity procedures (www.liv.ac.uk/vets/safety) and all students receive relevant H&S talks prior to animal handling sessions and clinical rotations. Working with laboratory animals is covered by the University Code of Practice on Allergy to Laboratory Animals and the Code of Practice on Animal Hazards. The School has a Code of Practice covering safe working practices with domestic animals in clinical and teaching settings including working on farms.

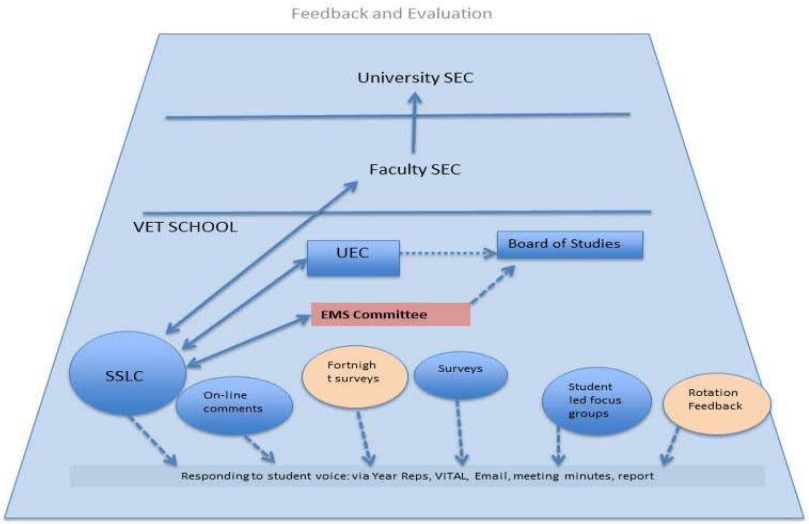
6.9. Students failing to engage are first identified through failure to attend sessions. School Student Support staff identify reasons for persistent absence and provide appropriate support. Students who fail to progress to the next academic year are identified through examination performance and attend Progress meetings with the Head of Veterinary Education and/or Assessment Officer to identify areas for improvement and means of support.

6.10. If a student is unwell and unable to attend for up to one week, they may self-certify. If unwell for a longer period, then a Doctor's note is required. They may also consider an application for consideration of mitigating circumstances, should they feel their absence may impact significantly on their academic progress or examination performance. If students experience physical injury (e.g., a broken arm), but are otherwise fit to attend sessions, they are risk-assessed by the School Health & Safety Officer. They may apply for mitigating circumstances

or suspension if unable to attend sessions depending on duration of anticipated absence. Students are informed that they will need to be assessed by the Occupational Health (OH) team for fitness to study upon their return.

6.11. The School seeks and values the views of its students and provides multiple mechanisms (Fig 1) for collecting those views. The School Feedback and Evaluation policy is available on the School's VOCAL page.

Fig 1: Evaluative mechanisms within School of Veterinary Science



6.12. The Staff Student Liaison Committee (SSLC) meets thrice annually and comprises student representatives from each year (1-5), a representative from the Guild of Students, and the Head of Veterinary Education, Director of Student Experience, School Assessment Officer, Senior Tutors and Library Representative. Other mechanisms for gathering student comments include:

- Discussion boards sited in the Feedback and Evaluation folder in the VITAL School page
- Student surveys administered bi-annually. Results are discussed and together with the staff response, are placed on VITAL
- Survey Projects. First and Second Year Leads are trialling regular short surveys with results shared with students and staff.
- Rotation Feedback Focus Groups are held twice a year, with a representative from each clinical rotation group attending. A member of staff independent of the Vet School facilitates the group and subsequently produces a report for students and staff. A discursive meeting follows and a response is sent to rotation students
- Student-Led Focus groups

Table 6.1: Numbers of veterinary students enrolled in the Veterinary School

	This Year N (2015-16)	N -1 (2014-15)	N -2 (2013-14)	N -3 (2012-13)	N -4 (2011-12)
Year Zero/foundation years if applicable	3	5	6	5	5
First year	168	178	167	132	119
Second year	181	156	123	142*	145
Third year	144	124	142	142	107
Fourth year	124	147	137	116	118
Fifth year	140	136	101	101	118
Sixth year	1	2	14	11	2
#Graduated	N/A	136	113	109	117

*Includes fast-track students who joined the cohort in Y2.

Table 6.2: Veterinary applications, offers, acceptances

	UK/EU students				OSI				Total			
	A	P	OM	OA	A	P	OM	OA	A	P	OM	OA
2015-2016	1105	165	267	193	69	*	3	3	1174	165	270	196
2014-2015	1289	165	235	189	51	*	0	0	1340	165	235	189
2013-2014	1319	165	250	183	72	*	0	0	1391	165	250	183
2012-2013	1360	165	190	174	75	*	0	0	1435	165	190	174
2011-2012	1318	137	247	198	63	*	3	2	1381	137	250	200

A: Applications; P: Positions available; OM: Offers made; OA: Offers accepted

Table 6.3: Postgraduate students, including interns and residents (head count)

	Interns (n)	Residents (n)	Resident + MSc (n)	Resident + PhD (n)	Other postgrad quals*	PhD
Current year (2015-2016)	SA 10 Eq 5	SA 19 Eq 4 LHW 2 Path 2	Eq 3 LHW 2	0	VS MSc 0 DBR 12 VPS 490	
2014-2015	SA 9 Eq 4	SA 18 Eq 3 LHW 2 Path 2	Eq 3 LHW 2	0	VS MSc 0 DBR 13 VPS 736	
2013-2014	SA 9 Eq 4	SA 18 Eq 6 LHW 1 Path 3	Eq 1 LHW 1	1	VS MSc 10 DBR 15 VPS 534	
2012-2013	SA 8 Eq 4	SA 18 Eq 6 LHW 1 Path 2	Eq 1 LHW 1	0	VS MSc 15 DBR 15 VPS 0	
2011-2012	SA 7 Eq 4	SA 17 Eq 6 LHW 2 Path 3	Eq 1 LHW 1	0	VS MSc 12 DBR 13 VPS 0	

SA: small animal; Eq: equine; LHW: Livestock health and welfare; Path: pathology; VS: Veterinary Science

Comments

6.13 The number of students has increased to 758 in the academic year 2015/2016. This would appear to be the maximum number that the school facilities can support.

6.14 There is a strong internship and residency programme which attracts graduates from around the world. These students take an active part in the clinical education of undergraduate

students and are well supported by the Faculty with regular assessments evaluating their progress. Teaching courses are available although uptake appeared to be variable.

6.15 There are numerous and effective mechanisms available for students which provide them with support should it be needed. Peers and Buddies (older students) may be the first port of call. The well-publicised and highly-regarded Peer Support Team is available to provide confidential assistance and guidance to students. Pathways after that include Personal tutors and the Pastoral Support Team who may direct students to the University, Medical, Disability and Financial Support Teams for further advice.

6.16 There are well established routes to enable students to give their views. The Staff Student Liaison Committee meets three times a year and reports on problems. The outcomes are reported back to the students through the "You said – we did" section of their online resources. The school web site VITAL has a section for Feedback and Evaluation and the Student Complaint Policy and Procedure is documented along with mechanisms to resolve student grievances.

6.17 The school has well publicised Safety and Biosecurity Policies with information posted around the buildings and on the website (www.liv.ac.uk/vets/safety). The students were well aware of the information and importance of these subjects.

6.18 The Liverpool University Veterinary Student Society (LUVS) has recently organised a number of career events which have been well received.

Suggestions

6.19. There is an assumption that veterinary students will embark upon a clinical career. It would be useful if a structure to provide career planning and advice was embedded within the programme given formally to students during their fourth year, ensuring all students are aware of the avenues that may be open to them when they qualify as well as the factors they should consider when looking for a job in clinical practice.

Recommendations

None.

Standard 7 – Admission and progression

University veterinary schools are in effect the initial 'gatekeepers' for the profession in that the majority of students who are admitted to a veterinary degree programme will be entitled to register to practise once they graduate. It is therefore very important to ensure that students are well informed before they are admitted, and that the school undertakes the initial selection process and makes ongoing progression decisions with a view to students' eventual status as veterinary professionals.

The selection criteria for admission to the programme must be consistent with the mission of the school. The number of students admitted must be consistent with the resources available to the school.

In relation to enrolment, the school must provide accurate information in all advertisements regarding the educational programme by providing clear and current information for prospective students. Further, printed catalogue or electronic information must state the purpose and goals of the programme, provide admission requirements and procedures, state degree requirements, present faculty descriptions, clearly state information on tuition and fees along with procedures for withdrawal, give necessary information for financial aid programmes, and provide an accurate academic calendar. The information must include the accreditation status of the degree course (whether by RCVS or other relevant accrediting bodies), and the requirements for eventual registration/licence, including fitness to practise.

The selection and progression criteria must be clearly defined, consistent, defensible, be free of discrimination or bias, and take account of the fact that students are admitted with a view to their entering the veterinary profession in due course.

An accurate description of the selection criteria and processes must be published and readily available to potential students. The school must regularly review and reflect on the selection processes to ensure they are appropriate for students to complete the programme successfully, including consideration of their potential to meet all the RCVS Day One Competences across the common UK domestic species.

Adequate training (including periodic refresher training) must be provided for those involved in the selection process to ensure applicants are evaluated fairly and consistently.

Potential students must be advised of the demands of the veterinary course and RCVS requirements for fitness to practise.

Factors other than academic performance should be considered for admission, with the aim of selecting students who will be capable of succeeding in a variety of fields within the profession.

The school must have a strategy for widening participation and engaging students from a variety of social backgrounds.

If not otherwise covered within the early part of the course, the entry criteria for the programme must include evidence that the student has a solid background in the chemical, physical and biological science and mathematics, in order to meet the requirements of the EU Directive on basic subjects.

Students with a disability

There must be clear policies and procedures as to how applicants with disabilities or illness will be considered and, if appropriate, accommodated on the programme, taking into account the requirement that all students must be capable of meeting the RCVS Day One Competences by the time they graduate.

Student Progression

The basis for decisions on progression (including academic progression and professional fitness to practise) must be explicit and readily available to the students. The school must provide evidence that it has mechanisms in place to identify and provide remediation and appropriate support (including termination) for students who are not performing adequately (including areas such as practical animal handling, client communication etc).

The school must have mechanisms in place to monitor attrition and progression and be able to respond and amend admissions selection criteria and student support if required.

Student Exclusion

Mechanisms for the exclusion of students from the programme, either for academic reasons or under fitness to practise procedures, must be explicit.

Appeals and misconduct

School policies for managing appeals against decisions, including admissions, academic and progression decisions, should be transparent and publicly available. The process for exclusion of students on any grounds must be explicit.

Policies for dealing with student misconduct and fitness to practise must be explicit.

Background

7.1. The number of applications to Veterinary Science at the University of Liverpool has declined slightly over the last two years, with 1391 in 2013-14 and 1340 in 2014-15. Of the overall number of applications to Veterinary Science via UCAS, the percentage of applications to study at Liverpool has remained consistent, at between 15% and 17% between 2010 and 2014. The selection process for admission to the BVSc course has three stages, as follows:

- **Stage 1 Academic Criteria:** All applicants, whether UK, EU or International students, must provide evidence in their UCAS application which satisfies the academic requirements at level 2 (GCSE or equivalent) and level 3 (A-level or equivalent).

- **Stage 2 Work Experience Questionnaire:** Candidates who meet the minimum academic criteria, typically between 1000 and 1100 each year, are selected for interview on the basis of the information provided in their work experience questionnaire. Applicants must demonstrate a range of animal husbandry and veterinary practice experience. The threshold for progression from stage 2 to stage 3 may vary from year to year depending on the competition.
- **Stage 3 Interview:** Interviews of approximately 450 applicants are held in December and are of a "multiple mini-interview" format, during which applicants discuss specified topics. The interviewers score the candidates and these scores are standard set to allow for inter-interviewer variability with the top scoring applicants being offered a place. All candidates are informed of the decision regarding their application by 31st January.

7.2. The School of Veterinary Science has an established commitment to the University's strategic objective of Widening Participation (WP), supporting initiatives at University, Faculty and School level. Veterinary staff and students engage in a range of outreach activity, including visits and bespoke events. For applications for 2016 entry onto clinical courses, the University will be undertaking a pilot project using contextual data based on a combination of several indicators (including post code, school performance, disability, time in social care). Assessment of these criteria will identify help to applicants who demonstrate academic potential in the context of difficult personal circumstances.

7.3. The School has also developed a Year Zero foundation programme for Home/EU students without appropriate level 3 qualifications; successful completion of which permits students to progress onto the BVSc course. Applicants who are currently undertaking the Royal Veterinary College's "Gateway" programme are guaranteed an interview.

7.4. Prospective applicants can find out more information regarding the course on the School of Veterinary Science website https://www.liv.ac.uk/veterinary-science/undergraduate/ and in guidance notes https://www.liv.ac.uk/veterinary-science/undergraduate/prospective-applicants/. The University of Liverpool also publishes a prospectus and a School specific guide which are available to applicants, particularly at University Open Days, which are held four times a year.

7.5. The School encourages applications from disabled students and, though there are some disabilities that preclude a career as a veterinary surgeon (e.g., use of wheelchair, blindness), they provide intensive support for physical, learning, and mental disabilities. Declared conditions are forwarded to the Occupational Health team, so as to coincide with start-of-term student appointments to assess fitness to study. Students are referred from here to the Disability Support Team for development of a support plan. There are central University policies (e.g. CoPA) that address assessment of students with disabilities.

Year	**Applications**	**Number admitted**				
		Standard intake	Rising year 0	Graduate entry		**TOTAL**
				5 year programme	4 year programme	
2014-15	1340	128	5	32	N/A	**165**
2013-14	1391	143	4	18	N/A	**165**
2012-13	1435	130	5	2	28	**165**

7.6. In keeping with RCVS standards, once students are admitted to the Programme, the School makes ongoing decisions about their progression, always in their own best academic interests and with a view to their eventual status as members of the veterinary profession. Progression is governed by assessment practices prescribed by central University policy and guidelines, which are publicly available online in the University's CoPA (http://www.liv.ac.uk/tqsd/code-of-practice-on-assessment/). Further information on progression is available in the Programme Handbook.

7.7. Specific details of the requirements for the veterinary course are:

- **Years 1-3:** Compulsory formative exams are held in January, and summative exams are held in May with a re-sit opportunity in August. To progress students must pass all six Semester 2 papers every year.
- **Year 4:** Summative examinations are held in March, with a re-sit opportunity in August. Three written exams are sat, and students must pass all three examinations.
- **Year 5:** To be eligible to sit the final BVSc examinations, students must have passed all their clinical rotations, satisfactorily completed an elective, a referral letter task, their professional skills portfolio, and to have completed a CEMS Portfolio including completion of a minimum of 26 weeks of approved Clinical Extra-Mural Studies (CEMS). The final summative exams are held in May, with a re-sit opportunity in August. Each of the three subject area examinations must be passed. Failed candidates are required to re-sit both components in the failed subject(s).

7.8. Attendance is monitored according to central University policy and adapted to the specific requirements of our students. Requests for absence must be documented on a *pro forma* and authorised by the School's Assessment Officer. Overall, this activity enables the School to be alerted as early as possible to patterns of behaviour, which may identify a struggling student (e.g. where there is lack of engagement with the Programme).

7.9. For some student conduct matters, within-School management is applied where appropriate, whilst other matters are dealt with centrally by the University. Student conduct and discipline are governed by central University policy, and also guided by the RCVS Fitness to Practise Guide for UK Veterinary Schools, with details available online.

7.10. Students failing to engage are often first identified through the School Absence Policy. Students who fail 'examinations are called to progress meetings (more helpfully termed 'feedback meetings'), where key points are raised for discussion, to establish where students have gone wrong and form an action plan going forward. Within the new curriculum, academic staff with the roles of Year Lead organise feedback sessions providing both generic feedback to the entire cohort (where students have made similar errors) and individual feedback on exam scripts for failed students. Clinical years students are expected to spend time with clinical subject area staff prior to re-sit where they can revise and hone skills.

7.11. Where students continue to struggle for reasons of ill health or other personal circumstances, or where they require a break from study for other reasons, such as the desire to carry out charity work abroad, they are entitled and, where appropriate, strongly encouraged to suspend studies whilst their issues are resolved. In the rare cases where resolution is not possible, students have the option of withdrawing from studies at the University. In both

cases, they are now required to attend a meeting to discuss key dates, action plans for future study, re-engagement with the University (in the case of suspension) and awareness of financial implications.

7.12. Prospective students who fail to meet admissions criteria are provided with feedback by email, the timing and content of which depends on the stage at which they were unsuccessful, where their scores are compared to those obtained by other candidates. Where students are dissatisfied with the outcome of assessment, and their grievance cannot be resolved informally, they have the right of appeal, though only on the grounds of procedural/administrative irregularity. Academic judgement cannot be challenged.

7.13. Once admitted to the programme, students are introduced to key University and School policies and procedures in Professional Skills and Study Skills components of the Year 1 curriculum. This information is available in more detail in written form in the Programme Handbook. Where School policy is not compliant with central policy, policy documents are also made available on this page and circulated by the Assessment Officer to cohorts throughout the year.

Table 7.2: Average duration of veterinary studies (graduates of 2014-2015)

Students who intercalate are not included in this table

Duration of studies	Full course (n)	Advanced standing/ accelerated programme (n)
4 years		21
5 years	106 (including intercalaters)	2
6 years	5	
7 years	2	
Average duration of study for students who graduated in the current year (or immediate past year)	4.96 years	

Comments

7.14. The admission and selection process is well defined and fair. The criteria used for assessment are based on three stages that consider academic as well as non-academic factors. The selection criteria for admission to the programme are consistent with the mission of the School. Requirements for admission are well advertised to potential applicants via the website and University prospectus, as well as through different activities such as open days.

7.15. The School has clear policies and procedures for the admittance of applicants with disabilities and also runs a successful widening participation programme.

7.16. Requirements for progression are well communicated to students at every stage of the course and are based on the skills expected to be gained for students to meet the Day One Competences. The monitoring process is consistent and is complemented by a policy of support for the students who are not performing adequately. This is evidenced by the low percentage of students that drop out from their studies.

7.17. There is an explicit, transparent and easily available policy for academic misconduct and exclusion.

7.18. Appeals are a right of vet school applicants as well as students at each stage (admissions, academic progression), with well defined criteria and coherent policy which is readily available.

Suggestions

None.

Recommendations

None.

Standard 8 – Academic and support staff

The institution must ensure that all staff are appropriately qualified and prepared for their roles.

The total number, qualifications and skills of all staff involved with the programme, including teaching staff, 'adjunct' staff, technical and support staff, must be sufficient and appropriate to deliver the educational programme and fulfil the school's mission.

Staff who participate in teaching must display competence and effective teaching skills in relevant aspects of the curriculum, regardless of whether they are full or part time, residents, interns or postgraduate students, adjuncts or off-campus contracted teachers.

Academic positions must offer the security and benefits necessary to maintain stability, morale, continuity, and competence of the academic staff. Academic staff should have a balanced workload of teaching, research and service depending on their role; and should have reasonable opportunity and resources for participation in scholarly activities.

The veterinary school must provide evidence that it utilises a well-defined, comprehensive and publicised programme for the professional growth and development of staff; including formal appraisal and informal mentoring procedures, especially for junior academic staff. Staff must have the opportunity to contribute to the school's direction and decision making processes.

The school must be able to demonstrate that it has a programme for staff development in tertiary teaching theory/practice, and how that programme is managed.

Promotion criteria must be clear and explicit. Promotions must recognise excellence in, and place equal emphasis on all aspects of teaching (including clinical teaching), research, service and other scholarly activities.

Background

8.1. Over the last 3 years, overall School FTE teaching staff numbers have slightly fluctuated with 113 in 2013, 115 in 2014 and 107 in 2015. The small reduction in numbers in 2015 is accounted for by a new way of registering resident or intern staff as a maximum of 0.2 FTE. In 2015, given 45 of the School's teaching staff are residents or interns, this would equate under the old system, to an additional 36 FTE staff, taking the final figure to 143. This would suggest an overall increase in (or at least a stable level of) staff numbers.

8.2. The allocation of School staff is part of the planning cycle. Requirements for additional staff are determined by the Senior Management Group and allocation to divisions is made by areas of need, based on new or increased activity. For research posts, allocation is determined in consultation between the relevant Research Institute and the School. All staff have at least an annual PDR and there are mentorship opportunities within the University. Criteria and timescales for annual review are available on the University website and open sessions for anyone considering this are available. For new academic staff, there is a confirmation in appointment process at the end of three years and, as part of this exercise, they would be expected to have completed the CPS training

8.3. Retention and recruitment of staff are problematic in certain disciplines, most usually the clinical or paraclinical areas. To address this issue, the School has identified three areas to work on namely progression pathways, clinical supplements and workload.

- A clear progression pathway for academics in the veterinary disciplines has been established so if clinical staff achieve an RCVS Diploma or equivalent, it allows them to move to grade 8. Furthermore, RCVS specialist status allows consideration for promotion to senior lectureship with the specialist status being used to score their scholarly and knowledge exchange activity. The annual review in November 2015 saw ten Veterinary School staff achieve promotion to senior lectureship. In addition, there have been three staff awarded personal chairs since 2012
- A veterinary market rate salary supplement is being instigated. Proposals will be drawn up by the School Senior Management Group and taken to the University for consideration early in 2016.
- Plans to reduce workload are in place to ease the clinical commitment of staff who are 70-80% time on clinics where possible. These changes cannot be immediate and are more difficult to achieve in disciplines which are currently understaffed; however, the School has ambitions to make headway in all disciplines over the next two years.

8.4. For vets in clinical/paraclinical areas an annual CPD budget is provided (£1,200). For staff in other areas provision is made for scientific and education meetings through application to Head of Division/Department. There are several endowed travel awards and grants available within the School and in addition, there are in-house development opportunities which staff are encouraged to take advantage of through their PDR.

Table 8.1: Academic staff of the veterinary programme – numbers and qualifications

ROLE	Non Vets			VETS			VET SPECIALISTS		
	Bachelors degree	Masters degree	PhD or other doctorate	BVSc/DVM (or equivalent)	Masters degree or equivalent	PhD or other doctorate	Board Certified/ Diploma holders	Board Certified / Dip holders & Masters (or equivalent)	Board Certified/Dip holders & PhD (or equivalent)
Dean/HoD	0	0	0	0	0	1	0	0	0
Professor	0	0	2	0	0	0	0	0	4.75
Associate Professor	0	0	0	0	0	0.1	0	0	0.8
Senior Lecturer	0	0	0.7	1	1	2.7	2.8	8	12.3
Lecturer	1	2	3.8	16.4	9.8	10.4	4	3	6.3
Tutors	0	0	0.2	4.8	2	0.1	0	0	0
Part Time Faculty (<75% time)	0	0.5	0.1	2.75	1.3	0.6	0	0.6	0.125
TOTALS	1	2.5	6.8	24.95	14.1	14.9	6.8	11.6	24.275
						Total specialist vets:	42.675		
Total	***Non vets:***	**10.3**		***Vets:***	**96.625**				

Table 8.2: Support staff of the veterinary programme

Role	Technical staff FTE	Admin & other staff FTE
Responsible for care and treatment of animals	61.9	0
Responsible for the preparation of practical and clinical teaching	4.8	0
Responsible for administration, general services, maintenance etc.	8.9	53.0
Support staff primarily engaged in research	5	5.4
Other	22	2
Total support staff	**101.2**	**60.4**

Table 8.3: Loss and recruitment of staff (both academic and clinical equivalent)

Rank/position	Number of Faculty lost	Discipline/Speciality	Number of Faculty recruited	Year
Professor	1	Parasitology		2014
Senior lecturer	1	Animal husbandry		2014
Lecturer		Clinical pathology	1	2014
Lecturer		Clinical skills	4	2013-2015
Senior lecturer		Herd health	1	2014
Senior lecturer	1	Epidemiology		2014
Professor	1	Equine medicine		2014
Senior lecturers		Equine medicine	2	2011
Lecturer		Pre-clinical	3	2013-15
Total	4		11	

Comments

8.5. Academic and support staff numbers are adequate, however, resources have fluctuated recently, with a loss of staff that needs to be addressed.

8.6. Staff are dedicated to their teaching of veterinary students, and the students recognise their teaching skills and commitment.

8.7. Clinical teachers are enthusiastic about teaching students and expressed a preference to spend additional time teaching extra groups rather than increasing student group size which would reduce student learning experience. The Visitors commended the integration of the teaching staff into the wider professional body through their engagement in various specialist forums and associations.

8.8. Qualifications of the academic and support staff are appropriate. It was noticeable that the number of veterinary specialists came close to 50% of the total number of veterinarians involved in teaching, yet the number of staff holding a PhD was less than expected.

8.9. Promotion and tenure policies follow the protocols set by the University of Liverpool. Gaining further teaching qualifications is encouraged and an active research involvement assists staff promotion.

Suggestions

8.10. The committee strongly supports the proposal that the School supplement the veterinarian salary in clinical/para clinical areas, and defines and implements a strategy supported by the University of Liverpool to allow veterinarian academic staff to engage more intensively in research and professional skill development.

Recommendations

8.11. The School should develop a strategy to diminish the impact of the reduction in clinical staff and actively aim to improve the areas which have a lack of sufficiently accredited and skilled academic professors.

Standard 9 – Curriculum

The curriculum must be designed, resourced and managed to ensure all graduates have achieved the graduate attributes expected of a degree programme at level 7 in the European Qualifications Framework, the minimum training requirements in the European Directive 2013/55/EU on the mutual recognition of professional qualifications and the RCVS Day One Competences.

The learning outcomes for the programme must be explicitly articulated to form a cohesive framework.

Programme learning outcomes must be communicated to staff and students and:

- **underpin and ensure the effective alignment of all content, teaching, learning and assessment activities of the degree programme;**
- **form the basis for explicit statements of the objectives and learning outcomes of individual units of study; and be reviewed, managed and updated to ensure they remain relevant, adequate and are effectively achieved.**

Management

The School must have a formally-constituted committee structure (which includes effective student representation), with clear and empowered reporting lines, to oversee and manage the curriculum and its delivery. The committee(s) must:

- **determine the pedagogical basis, design, delivery methods and assessment methods of the curriculum,**
- **oversee quality assurance of the curriculum, particularly gathering, evaluating, making change and responding to feedback from stakeholders, peer reviewers and moderators, and data from examination/assessment outcomes,**
- **review the curriculum at least every seven years and**
- **identify and meet teacher training needs for staff, maintaining currency of their skills and competence for future curriculum development.**

Content

The curriculum should include the following:

- **understanding of biological principles and processes of veterinary significance**
- **expertise in recognising and advising on normal animal structure and function, husbandry, behaviour, nutrition and feeding, reproduction and breeding, homeostasis, pathophysiology, agents of disease and the natural history and clinical manifestations of important animal diseases**
- **expertise in medicine, surgery, and anaesthesia applicable to a broad range of common species. Students must develop entry-level skills in physical examination and laboratory diagnostic techniques and interpretation (including clinical pathology, diagnostic imaging and necropsy), disease prevention, biosecurity, therapy (including surgery and pharmacotherapeutics), patient management and care (including primary care, intensive care, emergency medicine, surveillance and**

isolation procedures) for individual animals, herds, flocks and other populations

- **knowledge, skills, values, attitudes and behaviours necessary to contribute, as a veterinarian, to promoting animal health and well being, within changing societal expectations**
- **clinical, epidemiological, pathophysiological and regulatory skills in management of animal diseases which are:**
  - **endemic to the UK and the EU**
  - **endemic to and of special consideration in the country in which the school is located;**
  - **exotic to the UK and the EU and which are currently regarded as being of concern as potential emergency animal diseased or diseases of global veterinary significance**
  - **significant emerging disease**
- **entry level capability (to OIE standards) in preventative medicine/epidemiology, zoonoses, food safety and hygiene, regulation of animals and animal products, and management of the interrelationship of animals and the environment. This training must include experience in abattoirs.**
- **professional level problem solving skills in evidence-based diagnosis and clinical management, and data and information management skills**
- **capacity for professional communication; the ability to acquire information from the owners of animals by direct interaction as well as retrieval of archival data from medical records, communication with colleague, regulatory bodies and clients**
- **skills in application of professional ethics, delivery of professional services to the public, personal and business finances and management. An appreciation of the breadth of veterinary science, career opportunities and relevant information about the veterinary profession**
- **self-management skills in identifying and meeting personal learning needs, maintaining well being and professional relationships.**

Extra Mural Studies (EMS)

EMS must be an integral and structured part of the education and training of veterinary students. Veterinary schools must demonstrate how it is incorporated in the curriculum.

Evidence must be provided that extramural farm animal husbandry practical work is used within the curriculum to complement intramural studies to support students' attainment of comprehensive understanding of livestock and farm systems.

Intra-mural core teaching must be supported by extramural clinical studies.

There must be a system in place to enable EMS providers to provide feedback to the school on the performance of students during EMS and on the EMS programme.

There must be a member of the academic staff responsible for the overall supervision of all types of EMS, including liaison with EMS providers and ensuring all students secure required placements.

The school must have mechanisms in place to support students to take responsibility for their own learning during EMS, including preparing before each placement, setting learning objectives in consultation with tutors, being familiar with guidance provided by their university and RCVS for EMS, communicating effectively with placement providers before, during and after placements, and maintaining a reflective log of their EMS experience.

Background

9.1. The BVSc programme is a 5-year, non-modular, full-time programme. The new curriculum was introduced in September 2013, and has been rolled out gradually since that time. There are **9 major learning outcomes**, supported by associated specific learning outcomes that are delivered via **7 themes** that run throughout all 5 years of the programme.

- Normal structure and function (NSF).
- Management of individuals and populations (IAP).]
- Disease processes (DP).
- Public Health, Epidemiology, & Welfare (EPHW).
- Professional Skills (PS), including Communication & Business Skills (BS).
- Study Skills (SS)/Research Skills (RS).
- Management of Disease (MOD).

9.2. The curriculum is based on a spiral model, where there is vertical and horizontal integration between themes, and this integration is promoted by an integrated assessment strategy.

Table 9.1: Digest of units of study (hours)

Unit title	Unit ref	Credits	Lectures	Tutorials/ Seminars/ PBL	Online & other	Labs & practical	Clinical	EMS	*Total*
Year 1									
Consolidation	CONS		0	44	0	0	0	0	44
Clinical skills	CSI		8	0	8	26	42	0	42
Epidemiology, Public Health & Welfare	EPHW		12	0	29	0	0	0	41
Individuals & populations	IAP		43	20	0	13	0	0	76
Infectious Diseases	DP (ID)		22	4	5	6	0	0	37
Normal structure & Function	NSF		157	12	0	70	0	0	239
Professional Skills	PRO		0	42	0	0	0	0	42
Scenarios	SCEN		0	44	0	0	44	0	44
Study Skills	STUDY		0	44	0	0	0	0	44
Preclinical EMS	PCEMS		0	0	0	0	0	240	240
Clinical EMS (Including public health)	CEMS		0	0	0	0	0	80	80
Year 2									
Consolidation	CONS		0	48	0	0	0	0	48
Clinical skills	CSI		8	0	8	26	42	0	42
Epidemiology,	EPHW		35	4	0	2	0	0	41

Public Health & Welfare									
Individuals & populations	IAP		28	24	16	2	0	0	70
Infectious Diseases	DP (ID)		20	0	0	0	0	0	20
Normal structure & Function	NSF		57	10	0	75	0	0	142
Parasitology	DP (PARA)		22	0	0	12	0	0	34
Pathology	DP (PATH)		49	0	0	19	0	0	68
Professional Skills	PRO		0	86	0	0	0	0	86
Research	RES		0	0	40	0	0	0	40
Scenarios	SCEN		0	44	0	0	44	0	44
Preclinical EMS	PCEMS		0	0	0	0	0	240	240
Clinical EMS (Including public health)	CEMS		0	0	0	0	0	120	120
Year 3									
Consolidation	CONS		0	44	0	0	0	0	44
Clinical skills	CSI		0	0	0	44	44	0	44
Epidemiology, Public Health & Welfare	EPHW		24	8	5	4	0	0	41
Infectious Diseases	ID		20	0	0	0	0	0	20
Management of disease (All species)	MOD (ALL)		34	8	4	12	58	0	58
Management of disease (Equine)	MOD (EQ)		34	2	0	0	34	0	34
Management of disease (Exotic)	MOD (EX)		6	0	0	0	6	0	6
Management of disease (Livestock Health and Welfare)	MOD (LHW)		28	0	0	0	28	0	28
Management of disease (Small Animal)	MOD (SA)		46	14	3	2	65	0	64
Parasitology	ID (PARA)		30	6	0	20	0	0	56
Pathology	PATH		48	0	0	33	0	0	81
Professional Skills	PRO		0	44	0	0	0	0	44
Research	RES		0	0	65	0	0	0	65
Scenarios	SCEN		0	44	0	0	44	0	44
Clinical EMS (Including public health)	CEMS		0	0	0	0	0	280	280
Year 4									
Clinical Integration	CI		0	120	0	0	120	0	120
Epidemiology, Public Health & Welfare	EPHW		11	0	0	0	0	0	11

Management of disease (Equine)	MOD (EQ)		56	10	11	2	86	0	79
Management of disease (Exotic)	MOD (EX)		20	0	0	20	40	0	20
Management of disease (Livestock Health and Welfare)	MOD (LHW)		93	3	1	11	108	0	108
Management of disease (Small Animal)	MOD (SA)		91	24	11	0	125	0	125
Clinical rotations	MOD (CR)		See below	See below	See below	See below	See below	See below	See below
Clinical EMS (Including public health)	EMS		See below	See below	See below	See below	See below	See below	See below
Year 5									
Clinical rotations (4th & 5th year)	MOD (CR)		0	0	0	1440	1440	0	1440
Elective	ELEC		0	0	0	120	120	0	120
Clinical EMS (Including public health) (4th & 5th)	EMS		0	0	0	0	0	560	560

Table 9.2: Digest of disciplines and subjects (student hours in course)

Unit title	Lectures	Tutorials/ Seminars/ PBL	Online & other	Labs & practical	Clinical	EMS	*Total*
Basic Subjects and courses							
Anatomy, histology, embryology	139	33	0	157	0	0	329
Biochemistry	7	0	0	0	0	0	7
Biology, cell biology	5	0	0	0	0	0	5
Chemistry	0	0	0	0	0	0	0
Physiology	104	33	0	0	0	0	137
Molecular biology	2	0	0	0	0	0	2
Scientific method	5	2	0	0	0	0	7
Biostatistics	2	10	4	0	0	0	16
Genetics	4	2	4	0	0	0	10
Epidemiology	28	14	16	0	0	0	58
Immunology	21	0	0	8	0	0	29
Microbiology	92	22	2	38	0	0	154
Pathology, pathophysiology	68	0	0	58	0	0	126
Pharmacology	48	1	0	0	0	0	49
Pharmacy	0	4	2	0	0	0	6
Toxicology	7	0	1	0	6	0	8
Environmental protection and conservation	1	0	1	0	0	0	2
Animal Production							
Agronomy	4	0	0	0	0	0	4
Animal Nutrition	17	25	11	0	20	0	53
Animal husbandry &	24	17	11	0	0	0	52

production incl. aquaculture							
Livestock production economics	2	5	5	0	0	0	12
Animal behaviour & behavioural disorders	19	8	0	12	25	0	39
Animal protection & welfare	20	12	1	0	10	0	33
Preventative vet medicine, health monitoring	28	7	0	0	0	0	35
Reproduction & obstetrics	30	19	15	13	0	0	77
Clinical subjects							
Anaesthesia	23	42	14	6	85	0	85
Clinical examination & diagnosis	16	0	104	20	140	0	140
Clinical pathology	33	4	0	34	71	0	71
Diagnostic imaging	11	10	2	6	29	0	29
Clinical medicine	177	32	5	13	227	0	227
Surgery	88	22	11	19	140	0	140
Therapeutics	22	0	1	0	23	0	23
Emergency & critical care	13	2	0	0	15	0	15
Exotic & epizootic disease	21	7	9	0	37	0	37
Zoonoses & public health	15	5	9	0	29	0	29
Government veterinary services	6	0	0	0	6	0	6
Food hygiene							
Veterinary certification	3	0	0	3	3	0	6
Regulation & certification of animal & animal products	10	9	0	0	0	0	19
Food hygiene & quality	28	14	0	0	0	0	43
Professional Knowledge							
Professional Ethics & behaviour	10	3	12	0	10	0	25
Veterinary legislation	18	8	0	0	0	0	26
Communication skills	14	0	0	8	22	0	22
Practice management & business	5	5	0	0	0	0	10
Information literacy & data management	3	7	0	0	0	0	10
Multiple-subject teaching (not included in the above)							
Consolidation (and clinical integration in 4th year)	0	136	0	0	136	0	136
Scenarios sessions	0	0	12	0	10	0	132
Clinical integration	0	120	0	0	120	0	120
Clinical rotations (all weeks at 40h)	18	8	0	0	0	0	1440
Electives	14	0	0	8	22	0	120
Preclinical EMS	0	0	0	0	0	720	720
Clinical EMS	0	0	0	0	0	1040	1040

Table 9.3: Clinical Rotations

	List of individual rotations	Duration	Year of programme
Core intramural rotations	***Small Animal Studies*** Anaesthesia Cardiology Dermatology Diagnostic Imaging Internal medicine	 1 week 1 week 1 week 1 week 1 week	4th or 5th for all

	Neurology Oncology/haematology Orthopaedics Out of hours (emergency, critical care, inpatient care) Small Animal Practice (1st Opinion) Soft tissue Surgery Communication skills[1] ***Equine*** Anaesthesia Clinical skills Diagnostic pathology[2] Medicine Out of hours Orthopaedics 1 Orthopaedics 2 (diagnostic imaging) Practice (1st opinion) Soft tissue surgery ***Livestock health & welfare*** Clinical skills Disease investigation Herd monitoring Herd health Lameness Practice Public health Reproduction	1 week 1 week 1 week 1 week 1 week 1 week 1 day 1 week 1 week 1 week 1 week 1 week 1 week 1 week 1 week 1 week 1 week 1 week 1 week 3 weeks 1 week 1 week 1 week 1 week	 4th or 5th for all 4th or 5th for all
Core distributed rotations	Ophthalmology Wildlife and exotics Behavioural medicine[3]	2 days 1 week 2 days	4th or 5th 4th or 5th 4th or 5th
Elective rotations	***Possible internal electives*** Equine Medicine Equine Orthopaedics Equine Soft Tissue Equine Dentistry Farm Animal Practice Advanced Dairy Practice Beef Practice Small Ruminants Small Animal Surgery Small Animal Imaging Small Animal Practice Small Animal Medicine Oncology Neurology Cardiology Dermatology Wildlife Anaesthesia Pathology Professional & business Skills ***External electives*** Various (organised by student)	3 weeks (student chooses 1)	5th (after final exams)
Other	N/A		

[1] Included within small animal weeks for timetabling reasons, but relates to all species

[2] Included within equine weeks for timetabling reasons, but relates to all species

[3] Behavioural medicine is taught on the Leahurst Campus, but is classed here as a distributed rotation because it is taught by external teachers.

9.3. The programme is delivered through a mixture of learning and teaching methods including:

- **lectures (face-to-face and on-line)** used to deliver essential knowledge
- **small group seminars** used to provide the opportunity for in-depth discussion about a topic
- **practicals,** including animal handling, dissection classes, clinical skills development and post mortems
- **group-work:** case or scenario-based learning, used to promote integration between subjects
- **self-directed learning,** often in preparation for seminars
- **clinical rotations and electives**
- **experiential learning,** including role-play scenarios used for communications skills teaching
- **research projects**

9.4. External veterinary (or other professionals) are involved in teaching students on an occasional basis. Examples include:

- Outsourcing of ophthalmology, behaviour medicine, and wildlife/exotics teaching for MOD in years 4 and 5; with honorary lecturers teaching the subject matter.
- Visiting speakers, such as colleagues from Chester Zoo or Government Veterinary Surgeons, who give talks on alternative areas of practice.
- Visiting teachers are employed to cover areas where the School does not have "in-house" expertise, such as pig medicine, exotic medicine and veterinary dentistry.

9.5. The School is committed to encouraging students to become independent learners who can take responsibility for their own education. In recognition that these skills do not develop overnight, the School has used external funding to develop a contextual web-based support resource called "*Things You Might Find Useful*" (TYMFU). This is further supported via a series of 'Study Skills' session in 1st year.

9.6. Learning outcomes have been developed afresh for the whole of the course and are mapped to the RCVS list of essential Day One competences, which are very closely aligned with the QAA Subject Benchmark Statement for Veterinary Science, and the EAEVE requirements. The overarching 'subject-based' learning outcomes are:

- Recognise and describe normal structure and function in healthy animals of the common domestic species **(mainly taught in NSF; AIMS 1, 5).**
- Demonstrate competence in the care and management of individual animals and groups of the common domestic species **(mainly taught in IAP; AIMS 1, 5).**
- Explain and evaluate disease processes in individual animals and in groups **(mainly taught in DP; AIMS 1, 5).**
- a) Undertake the role as a key participant in essential areas of public health and food safety **(mainly taught in EPHW; AIMS 1, 3 5).** b) Show primary concern for the welfare of animals **(mainly taught in EPHW; AIMS 3, 5).**
- Effectively source and evaluate evidence, make use of research in decision-making, and demonstrate a commitment to continuous development in the profession **(mainly taught in RS AIMS 2, 4, 5).**

- a) Include ethical and legal reasoning in decision-making **(mainly taught in PS; AIMS 3, 5).** b) Appreciate the business, personnel and management skills required for success in various areas of veterinary employment, including the ability to cope with change **(mainly taught in PS and BS; AIMS 3, 5, 6).** c) Demonstrate effective communication skills in a variety of situations **(mainly taught in MOD; AIMS 1, 5, 6**).
- Demonstrate competence in the diagnosis, treatment and management of common diseases in individual animals and in groups **(mainly taught in MOD; AIMS 1, 6).**

9.7. These **7 major learning outcomes** are supported by associated **specific learning outcomes** that run throughout all 5 years of the programme. This ensures that the curriculum is mapped at fine detail, and can be used as the basis for curriculum review and improvement. The database that houses the curriculum map has been purpose-built, and was based upon the LiftUpp software developed by our Dental School, which has been successfully commercialised.

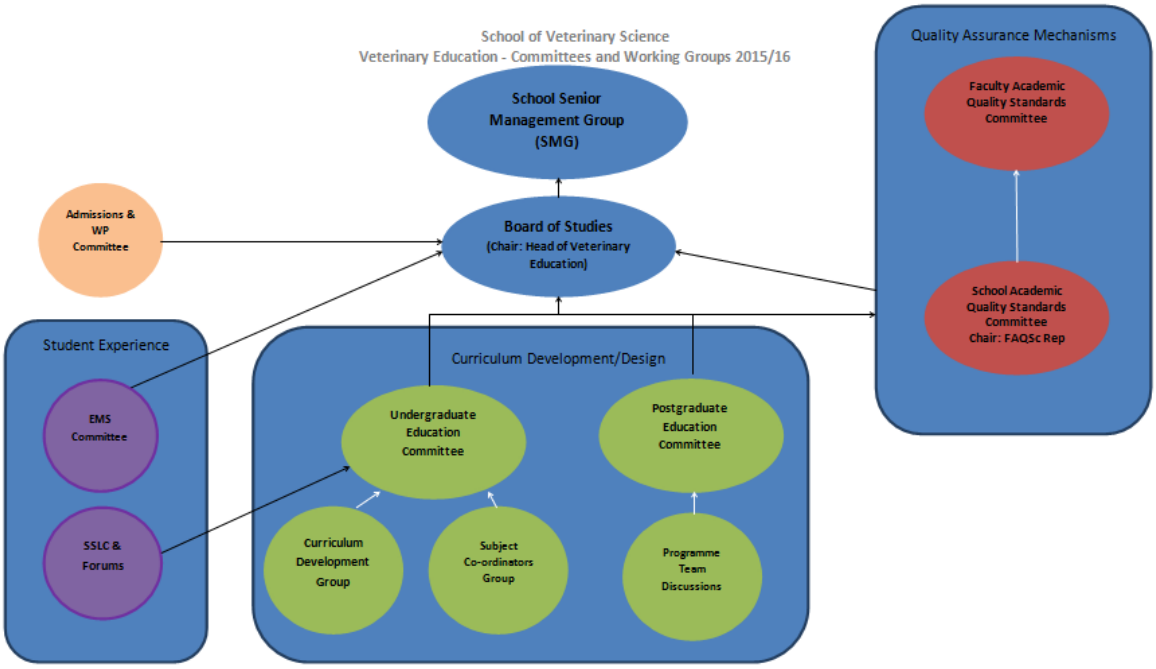
9.8. A major curriculum review was conducted over a 5-year period, and involved key members of academic staff, and initially, employers, researchers and recent graduates, and commenced with first year students in September 2013. Proposals for the new curriculum were reviewed by two external curriculum experts, Professors Stuart Reid (Royal Veterinary College) and Susan Rhind (Royal (Dick) School of Veterinary Studies).

9.9. A spiral model design was adopted for the new curriculum with both vertical and horizontal integration between themes, and the integration being promoted by an integrated assessment strategy (with some examinations covering different subject areas within the same question). There was also a ~15% reduction in the number of lectures in the new curriculum, with time saved being used for more practical-based and group-taught sessions. To avoid lecture overload, the new timetable also aimed for a maximum of 30 hours' teaching per week in the first 3 years, with greater division of time up amongst themes, and including blocks of integrated teaching. A proportion of clinical theory (especially the introductory aspects for different subjects) has been brought forward into 3rd year, and integrated with teaching of pathology. As well as more clinically relevant practical sessions being integrated into the clinical teaching, other subjects have moved to 4th year most notably Public Health teaching.

9.10. A final change for the new curriculum was an increase in clinical rotation time with 32 weeks, rather than 24 weeks of rotations, divided into 2 x 3 blocks (small animal, equine and farm animal practise). At the time of writing, all students are now on the new curriculum, although it is still acknowledged that not all have derived the complete benefit from it.

9.11. In light of the fact that a major curriculum review has just been completed, there are no plans for another review in the near future. However, the School is committed to reviewing their curriculum on a regular basis, with major updates typically occurring every 3 years. Each of the School's committees meets at least 3 times per year, but more regularly if necessary, to discuss matters relating to teaching and assessment. At University level each year, the School is required to complete an **Annual Subject Review** (ASR). Every six years, the School must also undergo a **periodic review,** which is used to monitor the quality and standards of the programmes and awards offered by each department.

9.12. The School has a formally developed committee structure that reviews and governs the programme.



BVSc curriculum changes are discussed/proposed via CDG/Subject Co-ordinators Group, then fully discussed with a wider group of academics at UEC (Subject Leads and Year Leads). If UEC supports the proposal, it would then be considered at SAQSC, to determine whether the changes constitute minor (less than 25%) or major changes (25% or more) to the programme. If the changes are MINOR, the changes would be formally approved by the School Board of Studies (Chaired by the Head of Veterinary Education). If the changes are MAJOR, they would be endorsed by the School Board of Studies, and formally approved by Faculty Academic Standards Committee.

9.13. The **School of Veterinary Science Board of Studies** is the highest academic decision-making body in the School, and has oversight of teaching, academic and student experience issues in the School. It is supported by a range of other committees with specific remit:

- The **School Academic Quality Standards Committee** (SAQSC) is responsible for oversight and administration of teaching and academic issues on both UG and PGT programmes, including quality assurance
- The **Undergraduate Education Committee** (UEC) and **Postgraduate Education Committee** (PEC) oversee and administer issues on the undergraduate and postgraduate programmes, respectively, within the School. Further support for the UEC comes from the curriculum development group, who have been responsible for designing and implementing the new curriculum over the last 5 years
- The **Staff-Student Liaison Committee** (SSLC) oversees all student experience issues on both UG and PGT programmes. SSLC reviews School activities relevant to student experience; whilst it does not have a formal remit for academic issues, it can refer matters to the UEC/BoS as required
- The **Extra-Mural Studies** (EMS) Committee is responsible for the oversight of EMS activities
- **Admissions and Widening Participation Committee** (AWPC) oversees and administers admissions to the BVSc programme, widening participation, and also organises Open Days

9.14. In addition, the veterinary science education research group (VSERG) meets regularly to discuss topics relevant to pedagogical research.

9.15. There are student representatives on these committees as follows:

- **School Board of Studies** – one UG student representative. It is not feasible to invite a PGT representative to sit on the School Board of Studies, as the School's PGT programmes are currently all delivered online
- **Staff-Student Liaison Committee**- one representative from each of years 1-5, plus Faculty Student Voice Co-ordinator and the President of the Liverpool University Veterinary Society (LUVS)
- Appropriate student representatives are also appointed to working parties and sub-committees that review specific parts of the course, e.g. clinical training, extra-mural studies, e-learning and assessment etc.

Electives

9.16. For internal electives, students submit their top three choices that are then randomised between the services. In most cases, students will be allocated to either their first or second service choice. For external electives, the student must first get approval from the elective provider practice/ specialist (prior feedback may be considered). They must then submit their 10 learning objectives, and have these approved.

9.17. The School aims to allow students as free a choice as possible when selecting the right elective to study. Therefore, few limits are placed on their choice. The only things that might limit the student in their choice include:

- *Limited number of external places available due to the assessment requirements*
- *Insurance cover*
- *External electives are self-funded*
- *Elective provider should be a specialist in their discipline*
- *Elective provider acceptance of the student and their learning objectives*

Abattoir visits

9.18. The Public Health, Epidemiology, & Welfare (EPHW) curriculum has been improved since the last evaluation in 2012. The main changes are in accordance with the School strategy of integrating themes and assessments, and aligning other subjects with EPHW. The distribution of the training has moved earlier in the curriculum to allow students to gain practical exposure to public health in the first years of their training. Currently, the units of Food Hygiene are Veterinary Certification, Regulation & Certifications of Animals & Animal Products, and Food Hygiene & Quality (including basic studies on food production and meat quality). The curriculum covers epidemiology of human and animal diseases, legislation controlling food production, and environmental protection and principles of risk analysis applied to the food chain.

9.19. The students receive training in research during the second and third years undertaking a literature review and then a critical evaluation on risk assessment. For meat inspection practical classes, students use organs and carcasses collected after rejection during regular

meat inspection at local abattoirs (previously frozen and archives, and defrosted when needed), as well as poultry from abattoirs when needed.

9.20. The training in food microbiology during the second year is important as it is a basis for the activities during the rotation week. All students complete a one-week clinical rotation in Public Health. As part of this week, they have two visits to abattoirs, one to a chicken abattoir in Sandycroft, Flintshire (approximately 10 miles from the School) and one to a lamb abattoir in Gaerwen, Anglesey (approximately 70 miles from the School). This is only one part of the practical aspect as Meat inspection is taught in-house in practical classes with specimens collected from local abattoirs. Animal welfare and traceability are addressed, and an overview of the activities of the OVS is given.

9.21. The School has increased the number of available slaughterhouses up to 7 for rotation, 3 for poultry and 4 for red meat. During the Public Health week, a dairy enterprise (cheese) is visited and one risk evolution food hygiene case (10 documented cases) or outbreak is tracked, using fresh foods samples that are spoiled for students training. The week ends with a report and presentation of the risk assessment of the case.

Table 9.4: EMS

	Minimum Duration	Year of Programme
Production animal farm experience (pre-clinical)	4 weeks	1-2
Companion animal preclinical experience	2 weeks	1-2
Preclinical – other (choice PCEMS)	6 weeks	1-2
Clinical – companion animal	6 weeks	1-5
Clinical – production animal	3 weeks	1-5
Clinical – other (choice CEMS)	15 weeks	1-5
Food hygiene, abattoir	1 week	3-5
Public health – disease surveillance	1 week	3-5

9.22 The RCVS requirement for 12 weeks of preclinical EMS (PCEMS) and 26 weeks of clinical EMS (CEMS) is further divided at Liverpool into compulsory and choice EMS, the latter providing students with the flexibility to focus on areas in which they feel they need to gain further experience or in which they have developed a particular interest.

9.23. The School of Veterinary Science EMS Office oversees the organisation and monitoring of EMS, and consists of two members of academic staff, supported by two administrative staff. Students are able to access the EMS Office at any time, during term-time and vacation periods, to discuss problems associated with EMS. The School has developed an EMS database to ensure students meet their EMS requirements. Development of the EMS database has allowed EMS staff to ensure that students are on target with their EMS requirements for each year of their course and that the EMS regulations are being adhered to. In addition, the EMS Office makes random checks with placement providers to check on student attendance and performance.

9.24. The School provides a comprehensive guide to help students plan their EMS throughout the undergraduate course. They are expected to refer back to this (the School's EMS handbook

is available on the School's VOCAL site and the EMS database is accessed via the School's VITAL page) when arranging EMS placements. The EMS co-ordinators deliver lectures to students in years 1-4 to give them advice about organising their placements. Prior to attending their first placement, students are thoroughly briefed on health and safety and are required to confirm that they have read a health and safety document. In addition to undertaking animal handling classes in year 1, students are required to complete the RCVS animal husbandry and clinical EMS driving licences prior to undertaking PCEMS and CEMS respectively.

9.25. Students make their own arrangements with placement providers after discussions with their tutor during their PDP meetings and/or the EMS office. On completion of the placement, the student must return a completed feedback form to the EMS office. Problems (e.g. poor feedback, paperwork errors, unusual placements) are picked up by the EMS Office and the student is asked to discuss the placement and learning objectives with their tutor and/or the EMS panel. The EMS panel is held once per semester and is formed of a group of academic staff.

9.26. If a student experiences health problems or develops other concerns during a placement, they can contact the EMS Office and have the email addresses of both academic EMS coordinators. In addition, in the event of an-out-of-hours emergency whilst on placement, students are directed to a 24-hour emergency number (0151 794 3252).

9.27. Students are required to keep a reflective log of their placements in the form of their EMS journal. Students are also encouraged to log their clinical development on the RCVS SEL.

9.28. An overview of EMS at the University of Liverpool is available to placement providers via the RCVS and University of Liverpool websites. Copies of the EMS presentations given to students in years 1-4 are also available to practice providers who wish to know what instructions the School has given to students prior to them undertaking clinical placements. At the start of each student placement, EMS providers also receive a letter (available on the School's VOCAL page), outlining the importance of, and requirements for, EMS, and contact details for the relevant EMS coordinator.

Comments

9.29. The current curriculum was introduced in 2013 and at the time of the visitation all students were following this curriculum. The current students in years 4 and 5 of the curriculum are following the extended clinical rotations of the "new" curriculum but followed the previous curriculum for the first three years of their study.

9.30. The coverage of the curriculum was considered to be satisfactory and to meet the criteria for approval. The School should be congratulated on its development of the new curriculum and the implementation of the changes required.

9.31. The School has a formally developed committee structure that reviews and governs the programme. There are student representatives on the School Board of Studies (1) and the Staff-Student Liaison Committee (7) and students are appointed to working groups and sub-committees. The School also has working groups that discuss and propose curriculum

changes to formal committees. The implementation of approved changes is undertaken by Subject and Year Leads that are members of the formal committee structure.

9.32. The students and staff were aware of the programme learning outcomes that underpin the curriculum and are delivered in the 7 themes that run through all 5 years of the teaching programme. These learning outcomes are mapped to the essential Day One competences and are evaluated by an integrated assessment strategy.

9.33 The mapping of learning outcomes has been performed manually and learning outcomes for a course are available as part of standard course descriptions prior to the start of teaching. The electronic mapping of learning outcomes to Day One competences is planned and is to be strongly encouraged as this would be a useful work tool for staff and students and would aid ongoing development and quality assurance of the programme.

9.34. The students expressed support and motivation for the current curriculum. The students showed good knowledge of the structure and objectives of the curriculum and had knowledge of expected learning outcomes.

9.35. In the Public Health curriculum, the allocated time and resources are sufficient to cover the main aspects of public health incorporating the concept of “farm to fork” and addressing the main animals of origin. It would improve student awareness if they were exposed to fish and fish processing, risk evaluation and the determination of freshness. It is noteworthy that the School has reduced student group sizes (5 to 6 students) in its Public Health teaching. It would be desirable to increase the number of hours of training for students on meat inspection, particularly in the abattoirs lines with the OVS.

9.36. There is a maximum of 30 hours’ teaching per week in the first 3 years but in the final 2 years of the programme the clinical rotation time has been increased to 32 weeks rather than 24 weeks of the previous curriculum. This increase in length of teaching time enabled student group sizes in the clinics to stay small (approx. 5 students) but represented an increased workload for students.

9.37. The introduction of increased clinical rotation time together with the integrated assessment strategy have given indications that this clinical period is stressful and tiring for the students. A re-assessment of this combination could alleviate the workload on students and retain the achievement of learning outcomes.

9.38. EMS is incorporated into the curriculum and is an integral part of the education and training of veterinary students at the School.

9.39. It was commented that, with the introduction of clinical skills teaching earlier in the course, students were undertaking some clinical EMS before they had completed preclinical EMS, which focuses on animal handling and husbandry. Attention should be given to ensuring that students have completed their preclinical EMS requirement for a particular species before undertaking the clinical EMS for that species.

9.40 It was noted that the method for logging EMS experience is changing from use of the RCVS SEL to extended use of the internal on-line portfolio system. The impact of this change on student and tutor engagement with EMS and feedback should be monitored.

Suggestions

9.41. It is suggested that students should complete preclinical components of EMS for a species to ensure that they have the appropriate animal handling and husbandry skills before undertaking the respective clinical component of EMS.

9.42. It is suggested that students visit the "official inspection point" as this is an important new strategy to increase the awareness of the globalisation of the food trade and the meaning of the inspection services.

Recommendations

9.43. The School must assess the impact of the extended clinical rotation period and the integrated assessment policy for clinical skills on student workload and progression. Measures should be implemented to alleviate student workloads, if appropriate.

9.44. The use of electronic tools for the mapping of learning outcomes to Day One competences should be implemented.

Standard 10 – Assessment

Management

The institution must ensure that there is a clearly identified structure within the school showing lines of responsibility for the assessment strategy to ensure coherence of the overall assessment regime and to allow the demonstration of progressive development across the programme towards entry level competence. The strategy must be underpinned by robust quality assurance mechanisms.

Policy and Regulation

The assessment tasks and grading criteria for each unit of study in the programme must be clearly identified, and available to students in a timely manner well in advance of the assessment.

Requirements to pass including the effect of barrier assessments must be explicit.

Mechanisms for students to appeal against assessment outcomes must be explicit.

The school must have a process in place to review assessment outcomes and to change assessment strategies when required.

Assessment methods and design

Programme learning outcomes covering the full range of professional skills and attributes must form the basis for assessment design and underpin decisions on progression

Assessment must inform student learning and students must receive timely feedback.

Assessment load must be planned and managed to achieve appropriate workloads for students and staff.

Assessment strategies must allow the school to certify student achievement of learning objectives at the level of the programme and individual units of study.

Methods of formative and summative assessment must be valid and reliable and comprise a variety of approaches. Direct assessment of clinical skills (some of which may be on simulated patients), must form a significant component of the overall process of assessment in the clinical disciplines.

Assessment standards and quality assurance

There must be procedures in place to maximise the fairness, validity and reliability of assessment outcomes, including but not limited to academic peer review of assessment content, proofing of scripts, supervision and invigilation, maintenance of records and moderation processes.

Schools must have appropriate moderation processes in place to ensure parity within and between individual units of study, across the programme, with other institutions; and to ensure that each student is fairly treated.

The school must be able to demonstrate that there are appropriate measures in place to ensure that grades awarded reflect an appropriate standard of performance by students against the relevant learning objectives.

Background

10.1. There are two formal examination periods in an academic year (January and May/June) with re-sit examinations in late August. The types of assessment used include: MCQ (multiple choice questions), EMQs (extended matching questions), SAQs (short answer questions), Integration (synoptic, where questions are asked across subjects), practical 'spot' examination, OSPE/OSCE (objective structured preclinical/clinical exam), and portfolio activities (coursework, often submitted online). In order to ensure academic rigour, the School has developed an assessment database to deliver a centralised examination creation and feedback delivery process.

10.2. Due to the increase in student numbers, the logistics of running clinical OSCEs has become more challenging. For this reason, a greater emphasis will be placed on 'Directly Observed Procedures' (DOPs) assessment of students during their clinical rotations.

10.3. The role of the external examiners is to monitor standards to ensure that our assessments are fair, rigorous, appropriate, and consistent. They approve assessments before they are set, and have access to marks, scripts and other appropriate information and data. External examiner reports are discussed at subsequent meetings of the Undergraduate Education Committee and ratified at the School Board of Studies.

10.4. The pass mark for all BVSc written examinations and assessments is standard set and normalised to 50% (see below for details). Students failing an examination, have a resit opportunity in August/September. Resit examinations are capped at 50%, unless due to mitigating circumstances students were permitted to resit the examination as a 'first attempt'. Final year BVSc students can resit up to two failed clinical rotations. Further failed or incomplete rotations, electives, or CEMS, may have to be completed in the summer prior to the August examinations. Students who fail resit examinations are not normally permitted to proceed into the next year of studies. If the student has demonstrated some improvement at the resit examinations, they may be permitted to repeat the year of studies, retaking those papers which they have failed, with or without attendance. Students who have previously repeated a year of studies (other than under mitigating circumstances) are usually required to terminate their studies.

10.5. Clinical skills are assessed in the first three years via Objective Structured Preclinical Examinations (OSPEs), during which students must demonstrate an appropriate level of competency in one randomly selected skill. Assessment of clinical skills in the rotation phase is twofold. First, students are observed and assessed during each rotation to ensure they meet the required learning outcomes for that rotation. The learning outcomes are set at the appropriate level for a year-one graduate. The teaching of small animal clinical skills is embedded into the existing small animal hospital rotations, while farm and equine clinical skills each have a dedicated week, which students must pass. In the near future, the school will use Directly Observed Procedures (DOPs) for assessment of rotations. Second, assessment also takes place via the end-of-course Objective Structured Clinical Examinations (OSCEs), which assess clinical skills alongside other competencies. OSCEs are run as practical final assessments in year 5, with one round of 9 or 10 stations in each division.

10.6. During the pre-clinical years (1-3), students sit a formative examination in January, and a summative examination in May. The formative examination requires compulsory attendance but students are not required to pass it. Each student also receives detailed feedback on their performance, based upon the learning outcomes mapped to each question and also receive a comparison of their score against the class average.

10.7. Assessment during the clinical years is based on examination and performance during clinical rotations. The current system requires students to pass each individual rotation week. A mid-week feedback meeting is arranged in an attempt to allow students not performing adequately to improve their performance and pass that rotation week. In future, assessment of rotations will be delivered via continuous assessment using LiftUpp, and will be applied to generic skills applicable across all subject disciplines, with the subject-specific competencies being assessed via OSCEs. This will allow continuous monitoring of student performance and immediate feedback to the student, judged over a longer period of time, to allow more time for students to act on feedback and improve their performance whilst on rotations.

10.8. The School's assessment strategy is to use a range of assessment methods, in order to ensure a balanced and fair process. Teaching staff determine which types of question are suitable for their teaching material, and then submit questions to the centralised assessment database. Year leads / assessment leads generate exam scripts and these are reviewed by an assessment team, prior to being sent to an external examiner for review. After each examination sitting, all questions undergo detailed reliability statistical analysis with a focus on individual question ability to discriminate between poor and good students, and level of difficulty. Questions that are poor discriminators or too easy / too hard are sent back to the question writer for modification.

10.9. Assessors are required to follow the School's guidelines on assessment. Model answers provide a guide to expectations from the scripts of students. Moderators and second markers should ensure that summary comments at the end of the script are consistent with the terminology used in marking descriptors and with the mark awarded and should be written and aimed at the student (i.e. constructive comments).

10.10. Failed students are identified at the meeting of the Board of Examiners. Upon the release of results to students after this meeting, failing students are formally notified by email and a follow-up letter from the Assessment Officer, which also reminds them of their right of appeal, should they be dissatisfied with this outcome. Appeals are only allowed on the grounds of procedural or administrative irregularity; academic judgement cannot be challenged. At the time of lodging an appeal, students first meet with the Chair of the Board of Examiners to clarify any possible misunderstandings about the assessment process before they launch a formal appeal. To help manage student expectations, they are given information about the appeals process early on in year 1 of our new curriculum, in the form of a short presentation by the Assessment Officer.

10.11. Students can claim personal circumstances in mitigation, where they believe their academic progress has been affected and results of assessment may not be a true reflection of their capabilities. However, a key point of understanding for them is that an accepted claim does not allow their mark to be changed, only that they then have the right to re-sit an exam as a first attempt (marks are not capped at 50%).

Comments

10.12. The assessment system is well defined with students undertaking two examination periods in an academic year with options for one re-sit examination later on. The types of assessment are diverse and this allows teachers to monitor the students' learning in an appropriate way. The school also has an assessment policy, detailed in the University "Code of Practice on Assessment 2015-16".

10.13. The school plans to change the assessment during clinical rotations from OSCEs (Objective Structured Clinical Exam) to DOPs (Directly Observed Procedures) due to the increase in student numbers. This type of assessment will be used for students in the 4th and 5th years of the curriculum. Whilst not yet implemented, the school is confident that this new method of assessment will work well.

10.14. The use of external examiners, professors from other veterinary schools and professionals to monitor assessment standards is positive.

10.15. The assessment system, including re-sit examinations and the possibility of repeating a year if the student had demonstrated some improvement, allows students to study in an effective way.

10.16. The assessment of clinical skills is well organised and allows teachers to verify the level of learning and competence of students in each of the different clinical fields.

10.17. The formative examinations and feedback on student performance during pre-clinical years allows students to monitor their learning and developing competence and helps prepare them for further examinations later in the course.

10.18. The current system of assessment during the clinical years allows students to monitor their learning twice a week, however the system will be further improved with the introduction of continuous monitoring of student performance.

10.19. The school has a good system to assess the quality of examinations, based on: i. a centralized assessment database, ii. review by external examiners and iii. modification of questions that are not adequate to assess the level of preparation of students.

10.20. The School's guidelines on assessment ensure the consistency of marking.

10.21. Students who fail at any stage of the course are guaranteed the right of appeal if procedural or administrative error occurs. The process of mitigation is fair and robust.

Suggestions

None.

Recommendations

10.22. Assessment procedures must be developed as a programme wide policy that reflects the strategy in an understandable way.

10.23. The current system for assessment during clinical rotations overloads students. The school must take into account the reduction of work overload and excessive pressure on students when it implements the new assessment system based on DOPs (Directly Observed Procedures).

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Standard 11 – Research programmes, continuing and higher degree education

The veterinary school must demonstrate significant and broad research activities of staff that integrate with and strengthen the veterinary degree programme through research-led teaching.

All students must be trained in scientific method and research techniques relevant to evidence-based veterinary medicine. All students must have opportunities to participate in research programmes.

Veterinary schools must provide advanced postgraduate degree programmes, internships, residencies and continuing education programmes that complement and strengthen the veterinary degree programme and are relevant to the needs of the profession and community. Programmes and the numbers of students in them must be commensurate with the facilities, clinical and other resources and staff.

Background

11.1. Substantial amounts of veterinary research are undertaken in the Institutes of Ageing and Chronic Disease; Infection and Global Health and Integrative Biology which integrate research across the medical, veterinary, and biological sciences as well as clinical research within the School itself. A number of academics in the School of Veterinary Science are allied to these institutes either as associate or full members.

11.2. Areas of veterinary research strength include infection biology, epidemiology and musculoskeletal biology.

11.3. The University had a substantive return in UoA6 of the Research Excellence Framework in 2014 which demonstrated the overall research profile to be 42% 4*, 40% 3*, 17% 2* and 1% 1*. The School has put resources into developing veterinary clinical research support, and provides a budget of £50k/annum to allow members of staff to apply for support for specific clinical research projects.

Table 11.4: Summary of all research programmes in the Veterinary School in past 3 years

	Total # academic staff	# academic staff involved in research who teach on the professional vet degree	Total research FTE	Externally funded research grants		Number of original peer-reviewed research publications
				Number	Value	
2014-2015	72	52	52	46	£7,543,788	171
2013-2014	72	51	43	40	£6,834,780	170
2012-2013	72	48	54	49	£5,216,747	208

11.4. The new curriculum places a very strong emphasis on the acquisition of research skills, from year one. Study skills sessions, on effective and efficient literature search strategies and biostatistics, are given early in the first semester of the course with evidence-based veterinary medicine taught first semester of second year.

11.5. The second year includes a substantial literature review as an element of the required coursework, which will provide the basis for the research project in year 3, designed to give them an insight into the research process, develop critical thinking skills, effective literature searching and scientific writing. The students also gain experience of the development of a practical research question, project design, and answering the research question. The research projects can involve either wet laboratory projects, analysis of existing datasets, or critically-assessed topics.

11.6. A clinical case report, which must demonstrate the use of evidence-based medicine, is completed in year four, and marked on a pass/fail basis as part of the required coursework for eligibility to sit final examinations. Part of the marking criteria for this element is the use of current and relevant literature in the chosen clinical area.

11.7. Electives are offered in many clinical areas, and most involve some form of clinical research task, or the use of evidence-based approaches to investigate aspects of clinical disease and presentation of findings. A purely research elective is possible, although the short timespan may preclude the possibility of undertaking primary research.

11.8. Vacation studentships for veterinary undergraduates are extremely popular and are always oversubscribed. Vacation studentships have been funded by the Wellcome Trust, BBSRC, charities and industry. From 2015-2016, three additional internally funded vacation studentship opportunities will be offered. Two members of academic staff manage these vacation studentships, by organising the application process and awarding of the studentships.

Table 11.2: Summary of veterinary students' involvement in research projects

Year [1]	Type of research project	# veterinary students undertaking a research project				
		Year 1	Year 2	Year 3	Year 4	Year 5
2014-2015	BVSc undergraduate projects[1]	0	0	124	0	1
	Vacation research projects[2]	3	5	7	0	0
2013-2014	BVSc undergraduate projects[1]	0	0	141	0	0
	Vacation research projects[2]	0	3	1	3	2
2012-2013	BVSc undergraduate projects[1]	0	0	138	0	1
	Vacation research projects[2]	1	5	3	1	0

[1]This is a requirement for all BVSc students

[2]Year indicates years of undergraduate course completed

11.9. Intercalation for a BSc or MSc/MRes degree is available to all students. Most intercalating students undertake these studies at Liverpool, for example undertaking the MSc Veterinary Science or an MRes, but a number each year move to other veterinary schools, or even other science-based universities.

11.10. Students are encouraged by putting on an introductory session relating to opportunities in veterinary research, veterinary research careers, and specifically opportunities for undergraduates in research. These sessions are offered to first, second and third year students, as most intercalation takes place between years 3 and 4.

11.11. In the last few years there have been fewer students intercalating. This is mainly due to financial reasons relating to student financing, and the loss of Wellcome Trust support in this area.

11.12. From 2016 the School has introduced 3 bursaries to provide financial support to students to intercalate, as well as providing more research introductory seminars so students are made aware of the opportunities available to intercalate in high quality bioscience environments.

Table 11.3: Numbers of veterinary students intercalating in last 3 years

Year	# students intercalating
2014-2015	2
2013-2014	2
2012-2013	7

11.13. The School has approved EBVS training programmes across many disciplines (see Table 11.4). In addition, residents can register for a part-time post-graduate training (PGT) clinical programme (PGCert, PGDip or MSc) through the MSc Veterinary Professional Studies Programme or Diploma in Bovine Reproduction programme where the taught programme is designed specifically around many resident training processes.

11.14. Some residents register part time for a MPhil (research) degree, in particular, those that are awarded a Scholarship and come in on a 4-year programme. Many interns will be registered for individual CertAVP/PGT modules and will be working towards the Cert AVP.

Table 11.4: Postgraduate clinical training (interns and residents 2014-2015)

Clinical discipline	No. of interns	No. of residents	Diploma or anticipated title
Equine medicine and surgery	4	0	N/A
Equine surgery	--	4	DiplECVS
Equine Sports Medicine and Rehabilitation	--	1	Dip ACVSMR
Equine medicine	--	2	DiplECVIM
Farm animal	1	2	Resident is also PT MSc
Small animal studies	4	--	N/A
Small animal cardiology	--	3	DipECVIM-CA (cardiology)
Small animal oncology	--	3	DipECVIM-CA (oncology)
Small animal internal medicine	--	1	DiplECVIM-CA (internal medicine)

Small animal surgery	1	3	DiplECVS
Dermatology	--	1	DiplECVD
Imaging	--	3	DiplECVDI
Neurology	--	3	Residents DiplECVN
Anaesthesia	4	3	Residents DiplECVAA
Pathology	--	2	DiplECVP

11.15. The School of Veterinary Science has a dedicated Veterinary Postgraduate Unit, which delivers both CPD and postgraduate programmes for veterinarians. The Veterinary Postgraduate Unit also delivers a smaller programme consisting of evening courses for veterinary nurses. During the academic Year 2013-14, 31 veterinary nurses attended 4 hours of evening meetings and in 2014-2015, 29 vet nurses also attended 4 hours of evening meetings.

Table 11.5: Postgraduate programmes (include any external/distance learning courses)

Qualification (indicate discipline and/or dept)	No. of students on taught courses, incl. external/distance learning	No. of students by Research	Duration of training
Diploma/Specialist level			
1. EBVS and ACVSMR	31 residents see table 11.1.1 above	N/A	3-4 years
Masters Level (incl. postgrad cert/dips)			
1. CertVBM	54	N/A	Max 3 years
2. Cert/Dip/MSc VPS	689	N/A	3/ 5 / 6 years
3. **DBR**	13	N/A	2 years
4. VSMS	0	N/A	1 year
5. CPD	183	N/A	undefined
PhD/Doctorate level			
1. PhD	N/A	58	3-4 years

Table 11.1.3 – Continuing education courses provided by the school

Title of course		**Number of participants**	**Course hours**
Equine CPD practical course days	2013-2014	439	189
	2014-2015	325	168
	2015-2016 (to date)	74	49
Small animal CPD practical course days	2013-2014	522	166
	2014-2015	415	152
	2015-2016 (to date)	234	91
Production animal CPD practical course days	2013-2014	33	19
	2014-2015	0	0
	2015-2016 (to date)	3	14

11.16. Although growth is not the ambition of the School, the RCVS CertAVP module provision is very well integrated into the School and University, with excellent central support due to the dual university accreditation as PGT modules. There is also excellent support from the

clinical divisions where PGT/RCVS Cert contributions support academic clinical staff in demonstrating pedagogy and development in teaching and learning, to provide opportunities for clinical research supervision of masters students as well as providing financial incentives to support research, personal CPD/travel or personally.

Comments

11.17. The Continuing Professional Development programme is highly successful and effective.

11.18. There is significant research activity of high quality however the breadth of research is less satisfactory.

11.19. Postgraduate programmes are diverse, adequate and demonstrably strengthen and complement the veterinary degree course.

11.20. Communication and leadership within the School and between the School Senior Management Group and Institutes of Research appears effective, with collegial relationships, but is informal.

Suggestions

None.

Recommendations

11.21. There must be a periodic, comparative review of and report on the quality and breadth of research.

11.22. The School must appoint a Head of Research employed within the new Institute of Veterinary Science, with the remit of leading clinical research and liaising with other Institutes within the University.

11.23. The School must initiate a more formal system of communication and decision making involving the School and Research Institute leadership with minutes, records of decisions and a reporting system.

Standard 12 – Outcomes assessment

In the interests of quality assurance and enhancement, the veterinary school must have mechanisms to gather data routinely to demonstrate that its institutional and educational objectives are being met.

Specifically, the school must provide evidence that:

its strategic goals are appropriate and that it is progressing towards achieving these goals
it is complying successfully with its operating plan
its veterinary programme is subject to internal and external evaluation and validation processes by long feedback loops (e.g. graduate destination surveys, employer surveys) in addition to the short loops (e.g. unit of study evaluations).

The school must provide evidence that all its graduates have (or for a new school, will have) achieved the programme's stated learning outcomes, including the level of competence required of an entry-level veterinarian (RCVS Day One Competence).

There must a system for students to keep a record of, and reflect on, their developing practical and clinical skills over the duration of programme. There must be evidence that such experience logs inform the learning and assessment process for individual students, and evidence that the school uses consolidated data to monitor the achievement of competence and experience levels of students across the programme as a whole.

There must be procedures to review the evidence of student experience and student achievement of Day One Competence, and demonstrate implementation of change on the basis of such review. Outcomes of the review process must be communicated to relevant internal and external stakeholders.

The school must have a strategy for the continuous improvement of the quality of the veterinary programme.

In the case of a school that has yet to produce graduates, evidence must be presented that provides RCVS with reasonable assurance that the school's programme outcomes will be achieved. Evidence must be available to show progress to date in achieving the desired outcomes in the programme, and the measures to be taken in the remainder of the programme to ensure their achievement by the completion of the veterinary degree.

Evaluation of outcomes is the most important source of information to a school about its success and its drive for continued enhancement of quality. However, in contrast to inputs, which are relatively easy to measure, outcomes assessment is more complex. It is easy to become confused by the fact that the same raw data can be repurposed to assess outcomes at the level of the school or at the level of the individual student. This means that everyone involved needs to be clear about the use of data and the presentation of results.

All schools with an established quality assurance and enhancement culture will evaluate outcomes at school, programme, module and individual student levels. This will be achieved through results in assessments, feedback forms of various types, surveys, publication counts and a host of other measures. Different schools will place emphasis on different measures, but a report on outcomes should include a matrix that employs a variety of different measures providing information relevant to the foci of the other standards. Repetition of the measures over an extended period (at least five years) will then demonstrate progress in each area. Specifically, evaluation of outcomes related to the veterinary programme, individual students (throughout their studies as well as at graduation) and employability must be included, but RCVS will expect schools to include other outcomes evaluations of their choice. In addition, evidence of quality assurance, together with both reactive and proactive quality enhancement will be expected.

Background

12.1. One recommendation from the 2012 RCVS Accreditation visit was that the School establish an outcomes assessment project in line with best practice. Two members of staff (Jo Oultram and Fay Penrose) were appointed to lead the outcomes assessment project, and have established a framework for this. This is ongoing.

12.2. The University's periodic review process is used to monitor the quality and standards of the programmes and awards offered by each department. The School of Veterinary Science undergoes a periodic review every 6 years. The process is student-focused; students are engaged in the development of the self-assessment document and invited to participate in periodic review meetings. External assessors are involved, usually an expert from another UK higher education institution with relevant experience. The review also considers reports from external examiners and professional bodies.

12.3. A range of other types of information are used by the School in order to measure its performance against its mission, and to benchmark against other institutions. These include: reviewing admissions data (including admissions tariff scores, open day registration statistics, application statistics, confirmation and clearing statistics, open day feedback), progression data (progression rates, 1st year retention rate), degree classification, and NSS data (separately as well as part of the ASR). In addition, since the start of the new curriculum, the first year teaching lead has been monitoring the progress of students, in relation to the qualifications which they obtained to fulfil the academic requirement for application to the BVSc course.

12.4. New process for outcomes assessment, designed to collect short-, medium- and long-term outcomes for the BVSc course, have been developed.

12.5. **Objective:** The School of Veterinary Science Outcomes Assessment Protocol is a long-term, ongoing, project to seek opinion from recent graduates, and their employers, regarding how well prepared they felt they were for conducting first-day, and first-year, skills as specified by the RVCS. In particular, the project seeks feedback about general preparedness and individual competencies, and there is also the opportunity for recent graduates to feed back about which parts of the undergraduate course they felt were directly relevant to their first day skills. Employers can comment on the recent graduates' strengths and weaknesses. As this information is gathered, it will be used to feed forward into future curriculum planning, especially, in the short term, will be the differences between vets graduating from our old and new curricula.

Method: Anonymous, on line survey of new and 5 year graduates and employers, designed with Dr Simon Watmough, from the Faculty of Health and Life Sciences, who has been running similar outcomes assessment exercises for several years with graduates from the School of Medicine and School of Dentistry.

12.6. A range of measures are used to gauge the satisfaction of current students with the programme, and these include information gathered from the staff-student liaison committee, online information, student surveys, focus groups, and results of the NSS.

12.7. The annual Professional Development Review (PDR) process provides an opportunity to reflect on achievements and progress made during the academic year, and discuss these with line managers. Peer observation of teaching is now undertaken regularly and data from these sessions can be used to determine both individual performance, and overall performance within the School. Furthermore, new members of academic staff are required either to undertake the CPS, or have their previous teaching experience formally recognised with an ULTRA award.

12.8 Within the new curriculum, there are associated specific learning outcomes for each of the main subjects. These learning outcomes have been mapped to the RCVS list of essential Day One competences, which are very closely aligned with the QAA Subject Benchmark Statement for Veterinary Science, and the EAEVE requirements. Learning outcomes are examined in all BVSc professional examinations and it is a requirement for all students to pass every professional exam within the five-year course, including the final examinations. In order to ensure that examinations are robust and fit for purpose, a consistent approach to standard setting is used. Performance in all professional examinations is consistently good; typically, 90% of students pass examinations at the first attempt, with the majority of those who fail passing at resit. Only a small number of students fail the resit, and repeat a year, with most of these successfully progressing thereafter. All of these results confirm that the majority of students are achieving their learning objectives whilst studying on the course.

Comments

12.9. The establishment of the outcome assessment project as recommended in the 2012 Visitation report is to be welcomed although it is disappointing that it was initiated in May 2015 and hence currently has limited data. The plans to develop long term outcomes assessment via surveys of recent graduates and employers is welcomed. It should also be noted that the outcomes assessment project is focussed on a narrow aspect of outcomes assessment.

12.10. The level of feedback received from employers was reported as being particularly disappointing.

12.11 The process for review of outcomes assessment (such as student feedback and examination results) and how this feeds through to change including curriculum development was explained. Whilst the system does appear to be functional, it is complex with a lack of clear accountability for ensuring outcomes measures are reviewed in their entirety and any changes prioritised.

12.12 Large volumes of data relating to outcomes assessment were provided but there was no overall matrix summarising the data and the School's strategy for evaluating trends on an ongoing basis is unclear.

Suggestions

12.13. The Outcomes assessment group should develop a strategy for improving feedback from employers; this could involve working with other veterinary schools and organisations.

Recommendations

12.14 The School must implement a broad and co-ordinated strategy of outcomes assessment with clear leadership at a senior academic level.

12.15. The School must be able to demonstrate use of a range of outcome measures at whole programme, individual unit and individual student level and the process by which these are used to drive improvements in teaching and learning over time.

Academic and support staff list

OFFICERS WITHIN THE SCHOOL OF VETERINARY SCIENCE	
Position	**Incumbent**
Head of School	Professor Susan Dawson
Director of Business, Estates & Finance	Mr Peter Bowling
Head of Epidemiology & Population Health	Professor Matthew Baylis
Head of Equine Division	Professor Cathy McGowan
Head of Infection Biology	Professor Diana Williams
Head of Livestock, Health & Welfare and Farms Division	Dr Dai Grove-White
Head of Musculoskeletal Biology	Professor Eithne Comerford
Head of Public Health	Professor Jim Scudamore
Head of Small Animal Division	Professor Laura Blackwood
Head of Veterinary Pathology	**Vacant**
Head Vet (Equine Practice)	Mrs Angela Holland
Head Vet (Farm Animal Practice)	Miss Helen Williams
Head Vet (Small Animal Practice)	Mrs Chiara Cambi
Farm Manager (Ness Heath)	Mr Nigel Jones
Farm Manager (Wood Park)	Mr John Cameron
Head of Veterinary Education	Dr Kieron Salmon
Director of Postgraduate Study	Professor Cathy McGowan

BVSc Programme Director	Dr Alex German
Assessment /Disability Support Officer	Dr Lucy Pickavance
Director of Admissions	Dr Gail Leeming
Directors of CPD	Mrs Ros Carslake Ms Nichola Steel
Director of Student Experience	Ms Margaret Hannigan
Directors of EMS	Ms Laura Buckley Dr Karen Noble
Senior Tutor (Liverpool)	Dr Richard Barrett-Jolley
Senior Tutor (Leahurst)	Ms Avril Senior
School Research Lead	Professor Peter Clegg
School Athena Swan Lead	Mr Rob Pettitt
School Administrator	Mrs Rachael Atkins
Technical Manager	Dr David Pattwell

School of Veterinary Science		
VETERINARY EDUCATION DIVISION		**FTE**[1]
Academic Lead - Business, Estates & Finance	**Mr Peter Bowling** *BVSc MRCVS*	0.25
Senior Lecturer (Animal Husbandry)	**Mrs Karin Mueller** *StateCertVetMed MVSc (Therio) DCHP DipECBHM MRCVS*	1
Senior Lecturer (Learning Technology)	**Mrs Avril Senior** *BVSc MA MRCVS*	1

Senior Lecturer (Pre-clinical Veterinary Science & Clinical Skills) and Head of Veterinary Education	**Dr Kieron Salmon** *BVSc PhD FHEA PGCert(HE) MRCVS*	1
Senior Lecturer (Pre-clinical Veterinary Science)	**Dr Karen Noble** *BVM&S DBR PhD MRCVS*	1
Lecturer/Director of Student Experience	**Ms Margaret Hannigan** *BSc MSc PGCE*	1
Lecturer (Animal Science)	**Ms Helen Higgins** *BSc BVSc CertCHP MSc PhD MRCVS*	1
Lecturer (Obesity & Endocrinology)	**Dr Lucy Pickavance** *BSc MSc PhD FHEA*	1
Lecturer (Pre-clinical Veterinary Science)	**Dr Zeeshan Durrani** *DVM MPhil PhD*	1
Lecturer (Pre-clinical Veterinary Science)	**Ms Alison Reid** *BVMS PGCert(SAM) FHEA MRCVS*	1
Lecturer (Pre-clinical Veterinary Science)	**Ms Rosie MacDiarmid** *BSc BVM&S FHEA MRCVS*	1
Lecturer (Professional Skills)	**Mrs Emma Ormandy** *BVSc MSc MRCVS*	1
Lecturer (Small Animal Clinical Skills & Clinical Pathology)	**Ms Martina Piviani** *DVM SPCAA MSc DipACVP (Clinical Pathology) MRCVS*	1
Lecturer (Veterinary Biology)	**Ms Fay Penrose** *BA PGCert(HE) FHEA*	1
Lecturer (Learning Technology)	**Mr Denis Duret** *BEng MSc PGCertHE FHEA*	1
Technical Staff		
Technical Manager	Dr David Pattwell	1

Deputy Health & Safety Co-ordinator	Mr Gareth Roberts	0.6
Senior Programmer/Analyst (Beagle)	Mr Farrukh Saeed	1
Technical Supervisor	Mrs Jan Brett	0.8
Technician (Diagnostic)	Miss Hannah Cantopher	1
Technician (Diagnostic)	Ms Susan Quinn	1
Technician (Diagnostic)	Mr Peter Taylor	1
Technician (Handyman)	Mr Stephen Maltby	0.5714
Technician (IT)	Mr Alan Bannister	1
Technician (IT)	**Vacant**	
Technician (IT)	Mr Bob Read	1
Technician (Services)	Mrs Buddhini Bandara Athauda	1
Technician (Services)	Mr Mark Dowling	1
Technician (Services)	Mr John Kane	1
Technician (Teaching)	Mr Paul Gilmore	1
Technician (Teaching)	Mr Catalin Bivolaru	1
Technician (Teaching)	Mr Michael Jones	1
Technician (Teaching)	Mr Lee Moore	1
Technician (Teaching/Research)	Mr Dave Jones	1
Technician (Teaching/Research)	Mrs Sue Jopson	0.74
Technician (Teaching/Research)	Ms Jenny Llewellyn	1
Technician (Teaching/Research)	Mrs Jean Routly	1
Technician (Teaching/Research)	Ms Karen Ryan	1
Clerical/Administrative Staff		
School Administrator	Mrs Rachael Atkins	1
PA to the Head of School/ Head of Veterinary Education & Academic Lead - Business, Estates & Finance	Mrs Sylvia Yang	1
Admin Assistant (Conferencing)	Mr Fred Rylands	1

Admin Assistant (EMS)	Mrs Anne Mulville	0.6429
Admin Assistant (EMS)	Mrs Helen Shelley	0.8571
Admin Assistant (UG/Finance)	Mrs Jeanette Hughes	0.5
Admin Assistant (UG)	Miss Victoria James	1
Administrator (Admissions)	Miss Vivien Jump	1
Administrator (Finance)	Mrs Elsie Doyle	0.5143
Administrator (Finance)	Mrs Jane Hart	0.7571
Administrator (HR)	Mrs Gill Barker	1
Administrator (PGT – DBR)	Mrs Pauline Redmond	0.5
Administrator (UG)	Ms Helen Barry	0.5
Administrator (UG)	Mrs Janet Hardman	0.5
Administrator (UG)	Mrs Julie Fitzsimmons	0.65
Administrator (UG)	Mrs Karen Wood	0.8
Administrator (UG)	Mrs Nicky Wylie	1
Administrator (UG)	Miss Judi Young	1
Finance Team Leader	Ms Clare Kenny	1
Receptionist	Mrs Ruth Harvey	1

VETERINARY CPD/PGT UNIT		
Lecturer	**Mrs Ros Carslake** *BVetMed MVSc MRCVS*	0.6
Lecturer	**Ms Nicky Steel** *BVM&S CertAVP (EM) MRCVS*	0.6
Lecturer	**Mr Denis Callanan** *MVB PGCert (SAM) MRCVS*	0.5
Lecturer	**Ms Suzanne Cottriall** *BA BSc MSc Vet Physio MCSP*	0.5

Lecturer	**Dr Victoria Nicholls** *BSc BVetMed CertAVP (EM) CertAVP (ED) BAEDT MRCVS*	0.5
Lecturer	**Ms Rebekah Tee** *VSc CertVC MRCVS*	0.5
Clerical/Administrative Staff		
Admin Assistant (PGT)	Mrs Lucy Atkins	1
Admin Assistant (Finance)	Miss Nicky Chambers	0.7143
Admin Assistant (CPD)	Mrs Carol Clarke	1
Administrator (CPD)	Mrs Dee Connolly	1
Administrator (PGT)	Ms Charlotte Whelan	1
Administrative Team Leader (CPD)	Mrs Gill Beckett	1

EXTERNAL ROTATIONS (OFF-CAMPUS CONTRACTED CENTRES)		
Behaviour	**Ms Sarah Heath (Behaviour Referrals Ltd)** *BVSc MRCVS*	0.2
Ophthalmology	**Mr Peter McElroy (Eye-Vet Referrals)** *BVSc CertVOphthal MRCVS*	0.2
Wildlife & Exotics	**Ms Beverley Panto (RSPCA Stapeley Grange)** *BVetMed MRCVS*	1

EQUINE DIVISION		
Head of Equine Division/Professor of Equine Internal Medicine	**Professor Cathy McGowan** *BVSc MACVSc PhD DEIM DipECEIM MRCVS FHEA*	0.8
Professor of Equine Orthopaedics	**Professor Peter Clegg** *MA VetMB PhD CertEO DipECVS MRCVS*	0.25

Professor of Equine Surgery	**Professor Debbie Archer** *BVMS PhD CertES (Soft Tissue) Dip ECVS MRCVS*	0.8
Senior Lecturer (Equine Internal Medicine)	**Mr Fernando Malalana-Martinez** *DVM DipECEIM FHEA MRCVS*	1
Senior Lecturer (Equine Medicine)	**Mr Harry Carslake** *MA VetMB DipACVIM MRCVS*	1
Senior Lecturer (Equine Orthopaedics)	**Dr Peter Milner** *BVetMed BSc PhD Cert ES (Orth) MRCVS*	0.7
Senior Lecturer (Equine Orthopaedics)	**Dr Ellen Singer** *BA DVM DVSc DACVS/ECVS MRCVS*	0.7
Senior Lecturer (Equine Orthopaedics & Surgery)	**Dr Luis Rubio Martinez** *DVM DVSc PhD DipACVS DipECVS DipACVSMR MRCVS*	1
Senior Lecturer/Head of Equine Anaesthesia	**Mr David Bardell** *BVSc CertVA DipECVAA MRCVS*	1
Senior Lecturer (Equine Anaesthesia)	**Dr Alex Dugdale** *MA, VetMB PhD DVA DipECVAA PGCert(LTHE) FHEA MRCVS*	1
Senior Lecturer (Equine Anaesthesia)	**Dr Mark Senior** *BVSc CertVA DipECVAA PhD MRCVS*	0.6
Senior Lecturer (Soft Tissue Surgery)	**Mr Padraig Kelly** *MVB DipECVS MRCVS*	1
Senior Lecturer (Veterinary Anaesthesia)	**Dr Eva Rioja Garcia (20%)** *DVM DVSc PhD DipACVAA MRCVS*	0.8[2]
Lecturer (Equine Clinical Skills)	**Mr Luke Edwards** *BVSc Cert AVP MRCVS*	1

Lecturer (Equine Orthopaedics)	**Miss Alison Talbot** *BVM&S Cert EP CertES(Orth) MRCVS*	1
Lecturer (Equine Practice)	**Mrs Angela Holland** *BSc BVSc Cert AVP (EP) MRCVS*	0.8
Lecturer (Equine Practice)	**Miss Rebecca Kent** *BVSc Cert AP(EP) MRCVS*	1
Lecturer (Equine Practice)	**Mr Elliot Smith** *BVSc Cert AP(EP) MRCVS*	1
Lecturer (Equine Surgery)	**Ms Justine Kane-Smyth** *BVM&S MRCVS*	1
Resident	**Dr Anna Ehrle** *DVM MRCVS*	0.2
Resident	**Ms Giulia Lipreri** *DVM MRCVS*	0.2
Resident	**Miss Catriona MacKenzie** *BVMS CertAVP(EM) MRCVS*	0.2
Resident	**Miss Mariana Miranda De Castro Martins** *DVM MRCVS*	0.2
Resident	**Miss Cajsa Isgren** *BVetMed CertAVP (ESST, ESO) MRCVS*	0.2
Resident	**Mr Matthew Robin** *BVSc BSc CertAVP(EM) MRCVS*	0.2
Resident	**Miss Claire Robinson** *BVSc MSc CertAVP (EM) MRCVS*	0.2
Intern (Equine Medicine)	**Miss Clare Carrigan** *BVSc MRCVS*	1[3]

Intern (Equine Medicine)	**Miss Eleanor Child** *BVSc MRCVS*	1[3]
Intern (Equine Medicine)	**Miss Flora Collingwood** *BVSc MRCVS*	1[3]
Intern (Equine Medicine)	**Dr Matthew Sinovich** *BVSc, MRCVS*	1[3]
Intern (Equine Medicine)	**Miss Harriet Barnes** *BVSc MRCVS*	1[3]
Technical Staff		
IT Specialist	Mr Philip Stratford	1
Nursing Manager	Mrs Jane Devaney	1
Nurse (Auxilliary)	Mrs Jean Robinson	1
Nurse (Auxilliary)	Miss Nicola Robinson	1
Nurse	Mrs Sarah Clark	0.6
Nurse	Ms Elizabeth Grieve	1
Nurse	Mrs Susan Littler	0.7857
Nurse	Ms Sarah Baldock	1
Technician (Animal)	Miss Zoe Hill	1
Technician (Animal)	Mrs Rachel Hirst	0.5429
Technician (Animal)	Mr Anthony Jopson	1
Technician (Animal)	Miss Jennifer Knight	1
Technician (Animal)	Miss Sophie Neil	1
Technician (Animal)	Miss Leanne Robinson	1
Technician (Animal)	Miss Anna Sharp	0.6
Technician (Animal)	Ms Jayne Tansey	1
Technician (Animal)	Miss Laura Downing	1
Technician (Facilities)	Ms Helen Braid	0.7143

IT Support Officer	Mr David Richardson	1
Technician (Services)	Miss Fiona Thompson	1
Cleaner	Ms Joyce Johnson	0.2
Clerical/Administrative Staff		
Senior Clinical Services Manager	Mrs Lisa Scott	0.6
Clinical Services Manager	Miss Nicky Clarke	1
Admin Assistant	Mrs Adele Benbow	0.5
Admin Assistant	Mrs Janet Smith	0.5
Admin Assistant	Ms Alison Keating	1
Admin Assistant (Services)	Mrs Jenny Callow-Walker	1
Client Services (Finance)	Mrs Jane Barnes	0.8
Client Services (Finance)	**Vacant**	
Client Services (Receptionist)	Miss Claire Burdett	1
Client Services (Receptionist)	Miss Sally Burgess	1
Client Services (Receptionist)	Ms Susan Haddad	1
Client Services (Receptionist)	Miss Sharon Knott	1
Practice Manager	Mrs Deborah Torgersen	1
Practice Administrator	Mrs Siobhan Whitehead	1
Practice Administrator	Mrs Jane Wilson	1

LIVESTOCK, HEALTH & WELFARE AND FARMS		
Professor (Veterinary Science)	**Professor Rob Smith** *BSc BVSc PhD DipECAR DipECBHM MRCVS*	1
Senior Lecturer (Herd Health)	**Mrs Jo Oultram** *BVSc DBR MRCVS*	1

Senior Lecturer (Farm Animal Practice)	**Miss Helen Williams** *BVSc CertCHP DipECBHM MRCVS*	1
Senior Lecturer (Livestock, Health & Welfare)	**Dr Jennifer Duncan** *BSc BVM&S PhD DipECSRHM MRCVS*	1
Senior Lecturer (Livestock, Health & Welfare)/Head of Division	**Dr Dai Grove-White** *BVSc DLSHTM DBR MSc PhD DipECBHM FRCVS*	1
Lecturer (Livestock, Health & Welfare)	**Dr Emma Fishbourne** *BSc BVSc PhD MRCVS*	1
Lecturer (Livestock, Health & Welfare)	**Miss Amy Gillespie** *BVMS MSc MRCVS*	1
Lecturer (Livestock, Health & Welfare)	**Miss Amy Holman** *BVM&S DBR MRCVS*	1
Lecturer (Livestock, Health & Welfare)	**Dr Georgios Oikonomou** *DVM PhD MRCVS*	1
Lecturer (Livestock, Health & Welfare)	**Dr Jan Van Dijk** *DVM PhD MRCVS*	0.4
Resident (Livestock, Health & Welfare)	**Miss Philippa Mahen** *MAVetMB MRCVS*	0.2
Resident (Farm Animal Practice)	**Miss Sarah Nichol Fisher** *BVSc MRCVS*	0.2
Technical Staff		
Farm Manager (Ness Heath)	Mr Nigel Jones	1
Farm Manager (Wood Park)	Mr John Cameron	1
Deputy Farm Manager (Wood Park)	Mr Andrew Parkinson	1
Herdsman	Mr Alistair Tollett	1
Technician (Ness Heath)	Mr Liam Roberts	1

Technician (Animal)	Mrs Amanda Dennis	0.608
Technician (Animal)	Ms Erin Coulter	0.2286
Technician (Animal)	Mr Ray Ellis	1
Technician (Animal)	Mr Jason Mutch	1
Technician (Animal)	Mr Alistair Fletcher	1
Technician (Teaching)	Mrs Catherine Astbury	0.5714
Technician (Teaching)	Mrs Janet Davies	0.5714
Technician (Teaching)	Mrs Johanna Sutherst	0.7143
Technician (Wood Park)	Mrs Linda Cameron	0.5
Apprentice	Miss Annielee Kelly	1

SMALL ANIMAL DIVISION		
Professor of Small Animal Oncology/Head of Division	**Professor Laura Blackwood** *BVMS PhD MVM CertVR DipECVIM-CA (Onc) MRCVS*	1
Professor of Small Animal Studies and Head of Department (Musculoskeletal Biology)	**Professor Eithne Comerford** *MVB PhD CertVR CertSAS PGCertHE DipECVS FHEA MRCVS*	0.8
Royal Canin Reader in Small Animal Medicine	**Dr Alex German** *BVSc PhD CertSAM DipECVIM-CA MRCVS*	0.6
Senior Lecturer (Small Animal Neurology)	**Miss Rita Goncalves** *DVM MVM DipECVN FHEA MRCVS*	0.8
Senior Lecturer (Veterinary Anaesthesia)	**Miss Briony Alderson** *BVSc CertVA DipECVAA MRCVS*	1
Senior Lecturer (Veterinary Anaesthesia)	**Dr Eva Rioja-Garcia (80%)** *DVM DVSc PhD DipACVAA MRCVS*	0.8^{2}

Senior Lecturer (Veterinary Cardiology)	**Dr Joanna Dukes-McEwan** *BVMS MVM PhD DVC DipECVIM-CA(Cardiology) MRCVS*	1
Senior Lecturer (Veterinary Dermatology)	**Dr Neil McEwan** *BVM&S MVM DVM DVD DipECVD MRCVS*	1
Senior Lecturer (Veterinary Dermatology)	**Dr Vanessa Schmidt** *BVSc CertVD DipECVD PhD MRCVS*	1
Senior Lecturer (Veterinary Diagnostic Imaging)	**Mr Fraser McConnell** *CSAM DVR DipECVDI, MRCVS*	1
Senior Lecturer (Internal Medicine)	**Dr Dan Batchelor** *BVSc PhD DSAM DipECVIM-CA MRCVS*	1
Senior Lecturer (Internal Medicine)	**Dr Peter-John Noble** *BSc BVM&S PhD MRCVS*	1
Senior Lecturer (Small Animal Cardiology)	**Dr Hannah Hodgkiss-Geere** *BVM&S MSc PhD DipECVIM-CA (Cardiology) MRCVS*	1
Senior Lecturer (Small Animal Clinical Oncology)	**Dr David Killick** *BVetMed PhD CertSAM DipECVIM-CA (Onc) MRCVS*	1
Senior Lecturer (Small Animal Oncology)	**Mrs Mary Marrington** *MA VetMB CertSAM DipECVIM CA MRCVS*	0.6
Senior Lecturer (Small Animal Neurology)	**Dr Gemma Walmsley** *MA VetMB DipECVN PhD MRCVS*	0.5
Senior Lecturer (Small Animal Orthopaedics)	**Mr Robert Pettitt** *BVSc PGCertLTHE DSAS(Orth) FHEA MRCVS*	1
Senior Lecturer (Small Animal Soft Tissue Surgery)	M**iss Rachel Burrow** *BVetMed CertSAS CertVR DipECVS MRCVS*	1

Senior Lecturer (Small Animal Soft Tissue Surgery)	**Dr Alistair Freeman** *BVM&S PhD DSAS(Soft Tissue) MRCVS*	1
Senior Lecturer (Veterinary Dermatology)	**Ms Laura Buckley** *BVetMed CertVD DipECVD MRCVS*	1
Senior Lecturer (Veterinary Diagnostic Imaging)	**Dr Thomas Maddox** *BVSc PhD CertVDI DipECVDI MRCVS*	0.8
Lecturer (Small Animal Internal Medicine)	**Mr Kevin Murtagh** *MVB CertSAM MRCVS*	1
Lecturer (Small Animal Internal Medicine)	**Mr Paolo Silvestrini** *DVM SPCAA MSc DipECVIM-CA MRCVS*	1
Lecturer (Small Animal Neurology)	**Dr Daniel Sanchez-Masian** *DVM MRCVS*	1
Lecturer (Small Animal Neurology)	**Miss Camilla Cooper** *BVSc MRCVS*	1
Lecturer (Small Animal Neurology)	**Miss Erika Bersan** *DVM MRCVS*	1
Lecturer (Small Animal Clinical Oncology)	**Miss Isabel Amores-Fuster** *DVM MRCVS*	1
Lecturer (Small Animal Clinical Oncology)	**Dr Riccardo Finotello** *DVM PhD MRCVS*	1
Lecturer (Small Animal Cardiology)	**Miss Brigite Pedro** *DVM MSc MRCVS*	1
Lecturer (Small Animal Diagnostic Imaging)	**Dr Patricia Laborda-Vidal** *DVM PhD MRCVS*	1
Lecturer (Small Animal Diagnostic Imaging)	**Mr Luis Mesquita** D*VM PhD MRCVS*	1
Lecturer (Small Animal Diagnostic Imaging)	**Miss Inmaculada Ferrandis-Rodriguez** *DVM CertVDI MRCVS*	1

Lecturer (Small Animal Orthopaedics)	**Dr Andrea Pratesi** *PhD CertSAS DipECVS MRCVS*	1
Lecturer (Small Animal Soft Tissue Surgery)	**Mr Brandan Wustefeld-Janssens** *BSc Agric BVSc MRCVS*	1
Lecturer (Veterinary Anaesthesia)	**Dr Clara Rigotti** *DVM PhD MRCVS*	1
Lecturer (Small Animal Anaesthesia)	**Miss Joanna Raszplewicz** *DVM MRCVS*	1
Lecturer (Veterinary Anaesthesia)	**Miss Sarah Boveri** *DVM MRCVS*	1
Head Veterinary Surgeon (Primary Care)	**Ms Chiara Cambi** *DVM MRCVS*	1
Veterinary Surgeon (Primary Care)	**Miss Lindsey Harland** *BVetMed MRCVS*	0.6
Veterinary Surgeon (Primary Care)	**Mrs Amy Leather** *BVMS MRCVS*	1
Veterinary Surgeon (Primary Care)	**Miss Cristina De Matea Bernal** *DVM MRCVS*	0.6
Veterinary Surgeon (Primary Care)	**Miss Ana Maria Tomaz Coelho** *DVM MRCVS*	1
Resident (Small Animal Cardiology)	**Mr Xavi Navarro-Cubas** *DVM MRCVS*	0.2
Resident (Small Animal Cardiology)	**Mr Joao Almeida Neves** *DVM MRCVS*	0.2
Resident (Small Animal Clinical Oncology)	**Miss Katerina Stiborova** *DVM MRCVS*	0.2

Resident (Small Animal Clinical Oncology)	**Miss Irina Gramer** *DVM MRCVS*	0.2
Resident (Small Animal Diagnostic Imaging)	**Mr Jeremy Mortier** *DVM CEAV (Int. Med.) CES (Clin. Path.) MRCVS*	0.2
Resident (Small Animal Diagnostic Imaging)	**Miss Frederike Schiborra** *DVM MRCVS*	0.2
Resident (Small Animal Internal Medicine)	**Miss Erin O'Connell** *BVSc MRCVS*	0.2
Resident (Small Animal Neurology)	**Miss Irene Espadas Santiuste** *DVM MRCVS*	0.2
Resident (Small Animal Neurology)	**Miss Beatrice Carletti** *DVM MRCVS*	0.2
Resident (Small Animal Surgery)	**Ms Lara Dempsey** *MVDr MRCVS*	0.2
Resident (Small Animal Surgery)	**Dr Matteo Rossanese** *DVM SPSA MRCVS*	0.2
Resident (Small Animal Surgery (Orthopaedics))	**Mr Andrew Tomlinson** *BVSc MRCVS*	0.2
Resident (Veterinary Anaesthesia)	**Miss Aurora Zoff** *DVM MRCVS*	0.2
Resident (Veterinary Anaesthesia)	**Miss Stefania Scarabelli** *DVM MRCVS*	0.2
Resident (Veterinary Anaesthesia)	**Miss Jodie Hughes** *BVSc MRCVS*	0.2
Resident (Veterinary Dermatology)	**Miss Eva Espadale Reballi** *DVM MRCVS*	0.2

Resident (Veterinary Oncology)	**Mr Aaron Harper** *MA VetMB MRCVS*	0.2
Intern (Small Animal Soft Tissue Surgery)	**Mr Benjamin Mielke** *BVSc MRCVS*	1[3]
Intern (Small Animal Studies)	**Miss Natalie Bruniges** *BSc BVSc MRCVS*	1[3]
Intern (Small Animal Studies)	**Miss Daisy Norgate** *BVetMed MRCVS*	1[3]
Intern (Small Animal Studies)	**Mr Jose-Carlos Pizarro Del Valle** *DVM MSc MRCVS*	1[3]
Intern (Small Animal Studies)	**Miss Philippa Tucker** *BVSc MSc MRCVS*	1[3]
Intern (Veterinary Anaesthesia)	**Mr Isaac Del Busto Castro** *DVM MRCVS*	1[3]
Intern (Veterinary Anaesthesia)	**Ms Anna Jones** *BVSc MRCVS*	1[3]
Intern (Veterinary Anaesthesia)	**Mr Diogo Nora Amaro Neves** *DVM MRCVS*	1[3]
Intern (Veterinary Anaesthesia)	**Miss Crystal White** *BVetMed MRCVS*	1[3]
Technical Staff		
Head Nurse	Ms Rachel Rankin	1
Head Theatre Nurse	Ms Louise Dale	1
Senior Medical Nurse	Ms Elizabeth Sweeney	1
Patient Care Veterinary Nurse	Ms Kathryn Barnes	1
Patient Care Veterinary Nurse	Ms Faith Der Haroutunian	0.7334
Patient Care Veterinary Nurse	Ms Marcala Green	1

Patient Care Veterinary Nurse	Ms Natalie Greenhalgh	0.4
Patient Care Veterinary Nurse	Ms Sarah Jackson	0.7334
Patient Care Veterinary Nurse	Mrs Rachael Jones	1
Patient Care Veterinary Nurse	Ms Katherine Jones	0.8571
Patient Care Veterinary Nurse	Miss Sian Lidford	0.7334
Patient Care Veterinary Nurse	Ms Katie Liles	0.7334
Patient Care Veterinary Nurse	Miss Holly Riding	0.7334
Patient Care Veterinary Nurse	Ms Francesca Pleavin	0.4714
Patient Care Veterinary Nurse	Miss Helen Parrish	1
Night PCVN	Ms Paula Billingsley-Lumberg	0.7334
Night PCVN	Ms Nicola Casement	0.7334
Night PCVN	Ms Natalie Saunders	0.7334
Patient Care Veterinary Nurse (UVP)	Miss Sarah Charlton	1
Nurse (UVP)	Mrs Louise Grew	1
Nurse (UVP)	Mrs Nancy Taylor	0.4
Nurse (Cardiology)	Miss Nikki Graef	1
Nurse (Dermatology)	Ms Clara Macfarlane	1
Nurse (Medicine)	Miss Stephanie Worsley	1
Nurse (Neurology)	Mrs Lucy Stretch	1
Nurse (Oncology)	Mrs Josephine Jones	1
Nurse (Oncology)	Mrs Paula Wynne	1
Nurse (Oncology)	Ms Viki Weigh	0.7334
Nurse (Orthopaedics)	Ms Tracy Maffitt	1
Nurse (Radiology)	Miss Alisa Dean	1
Nurse (Pharmacy)	Ms Karen Stanier	1
Nurse (Soft Tissue)	Miss Lucy Gott	0.5286
Nurse (Soft Tissue)	Ms Kim Wilson	0.5286

Nurse (Surgical)	Miss Liza Ebeck	0.6
Nurse (Surgical)	Ms Evangeline Jones	0.6
Nurse (Surgical)	Ms Kathryn Jones	1
Nurse (Surgical)	Mrs Katherine Piggin	1
Nurse (Surgical)	Mrs Zerelda Wustefeld-Janssens	0.7
Nurse (Theatre)	Miss Anna Reeves	0.7
Royal Canin Weight Clinic Nurse	Ms Georgiana Woods	1
Auxillary	Mrs Pamela Heron	1
Auxillary	Mrs Julia Marsden	0.4643
Auxillary	Mrs Joan Powell	1
Technician (Theatre)	Mrs Shelagh Roberts	1
Animal Care Technician	Mrs Emma Redfern	1
Radiographer	Mr Martin Baker	1
Radiographer	Mrs Lydia Norton	1
Clerical/Administrative Staff		
Senior Hospital Administrator	Mr Sam Kennedy	1
Clinical Services Manager	Mr Phil Wood	1
Client Accounts Administrator	Mr Nicholas Dath	1
Client Services	Miss Sharon Duckers	0.8571
Client Account Administrator	Ms Niki McKeown	1
Client Account Administrator	Ms Denise Lewis	1
Client Services	Mrs Susan Ward	1
Client Services	Miss Sarah Bellis	1
Client Services	Miss Jenni Higgins	1
Client Services	Mrs Joan Toohey	0.8571
Procurement	Mrs Hannah Quinn	1
Procurement	Mrs Elizabeth Bygrave	0.7143

Client Services	Miss Emma Baker	0.6429
Client Services	Miss Amy Jones	0.5143
Secretary	Mrs Sally Healy	1
Practice Administrator (UVP)	Mr Gareth Quinn	1
Admin Support (UVP)	Mrs Susan Thurston	1
Admin Support (UVP)	Miss Claire Davies	1

EPIDEMIOLOGY AND POPULATION HEALTH		
Professor of Epidemiology and Head of Department	**Professor Matthew Baylis** *BA DPhil (Oxon)*	0.2
Professor of Veterinary Science and Head of School	**Professor Susan Dawson** *BVMS PhD MRCVS*	1
Professor of Epidemiology	**Professor Kenton Morgan** *BA VetMB PhD MRCVS*	0.1
Professor of Bacterial Zoonotic Diseases	**Professor Nicola Williams** *BSc PhD*	0.3
Professor of Epidemiology/Public Health	**Professor Sarah O'Brien** *MB BS FRCP FFPHM DTM&H*	0.1
Reader (Epidemiology) and Interim Head of Department	**Dr Rob Christley** *BVSc DipVetClinStud MVetClinStud MANZCVS DipECVPH (PM)* *PhD MRCVS*	0.2
Senior Lecturer (Epidemiology)	**Dr Gina Pinchbeck** *BVSc Cert ES PhD DipECVPH MRCVS*	0.2
Lecturer (Epidemiology)	**Dr Sophia Latham** *BSc PhD*	0.1

Research Fellow (Epidemiology & Population Health) /Tenure Track Fellow	**Dr Carri Westgarth** *BSc MPH PhD*	0.1
Postdoctoral Research Associate	**Dr Claire Scantlebury** *BSc BVSc PhD MRCVS*	0.1
Clerical/Administrative Staff		
Admin Support (Research)	Mrs Jenny Brown	0.6
Admin Support (Research)	Ms Kathryn Jackson	1
Admin Support (Research)	Mrs Sue McCall	1
Admin Support (Research)	Ms Helen Nelson	1

INFECTION BIOLOGY		
Professor of Veterinary Parasitology and Head of Department	**Professor Diana Williams** *BSc PhD*	0.3
Professor of Foodborne Zoonoses (Poultry)	**Professor Paul Wigley** *BSc PhD*	0.3
Professor of Veterinary Pathology	**Professor Stuart Carter** *BSc PhD FIMLS FRCPath*	0.3
Reader (Infection Biology (Small Animal))	**Dr Alan Radford** *BSc BVSc PhD MRCVS*	0.1
Senior Lecturer (Infection Biology)	**Dr Nicholas Evans** *BSc PhD FHEA*	0.3
Senior Lecturer (Infection Biology (Poultry))	**Dr Clive Naylor** *BSc PhD PGCE*	0.1
Senior Lecturer (Infection Biology/Veterinary Anaesthesia)	**Dr Mark Senior**[4] *BVSc PhD CertVA DipECVAA MRCVS*	
Senior Lecturer (Veterinary Parasitology)	**Dr Jane Hodgkinson** *BSc PhD*	0.3

Senior Lecturer (Veterinary Parasitology)	**Dr John McGarry** *MSc PhD*	1
Lecturer (Infection Biology)	**Dr Janine Coombes** *BSc DPhil*	0.1
Lecturer (Infection Biology)	**Dr Andrew Jackson** *BSc MSc DPhil*	0.1
Lecturer (Infection Biology (Poultry))	**Dr Kannan Ganapathy** *DVM PhD MRCVS*	0.1
Lecturer (Molecular Parasitology)	**Dr Ben Makepeace** *BSc MSc PhD*	0.1
Technical Staff		
Technician (Research)	Ms Catherine Hartley	1
Clerical/Administrative Staff		
Admin Support (Research)	Miss Jill Hudson-Browne	0.8
Admin Support (Research)	Mrs Jackie Lee	1

INTEGRATIVE BIOLOGY		
Professor of Animal Science	**Professor Jane Hurst** *BSc PhD*	0.1
Professor of Molecular Physiology & Biochemistry	**Professor Soraya Shirazi-Beechey** *BSc PhD*	0.1
Professor of Mammalian Behaviour & Evolution	**Professor Paula Stockley** *BSc DPhil*	0.3
Research Fellow (Mammalian Behaviour & Evolution)	**Dr Jakob Bro-Jorgensen** *BSc MSc PhD*	0.1

MUSCULOSKELETAL BIOLOGY		
Senior Lecturer (Veterinary Neuroscience & Neuropharmacology) and Senior Tutor	**Dr Richard Barrett-Jolley** *BSc DPhil (Oxon) FHEA FBPharmacolS*	0.3
Senior Lecturer (Musculoskeletal Biology)	**Dr Elizabeth Laird** *DipStat(Open) BSc PGCertHE PhD FHEA*	0.1
Senior Lecturer (Musculoskeletal Biology)	**Dr Simon Tew** *BSc, PhD*	0.1
Wellcome Trust Clinical Intermediate Fellow	**Dr Mandy Peffers** *BSc MPhil PhD BVetMed MRCVS*	0.1

VETERINARY PATHOLOGY AND PUBLIC HEALTH		
Professor of Veterinary Pathology	**Vacant**	
Professor of Livestock and Public Health	**Professor Jim Scudamore** *BVSc BSc DipECVPH MRCVS*	0.125
Senior Lecturer (Veterinary Pathology)/Interim Head of Division	**Dr Julian Chantrey** *BSc BVM&S PhD FHEA FRCPath DiplECZM MRCVS*	1
Senior Lecturer (Veterinary Pathology)	**Dr Lorenzo Ressel** *DVM PhD DipECVP FHEA MRCVS*	1
Senior Lecturer (Veterinary Public Health)	**Dr Eleni Michalopoulou** *DVM MSc PhD DipECVPH MRCVS*	1
Lecturer (Diagnostic Bacteriology)	**Dr Dorina Timofte** *DVM PhD MRCVS*	0.8
Lecturer (Epidemiology/Public Health)	**Dr Philip Jones** *BVSc MPVM PhD FHEA MRCVS*	0.5
Lecturer (Veterinary Pathology)	**Dr Richard Blundell** *BVetMed MSc PhD DiplECVP FHEA MRCVS*	1

Lecturer (Veterinary Pathology)	**Dr Gail Leeming** *BVetMed MPhil PhD FRCPath MRCVS*	1
Lecturer (Veterinary Pathology)	**Dr Emanuele Ricci** *DVM PhD DipECZM MRCVS*	1
Lecturer (Veterinary Pathology)	**Dr Ranieri Verin** *DVM PhD DipECZM MRCVS*	1
Lecturer (Veterinary Public Health)	**Dr Dragan Antic** *DVM MSc PhD DipECVPH*	1
Lecturer (Veterinary Public Health)	**Miss Rita Papoula Pereira** *DVM PhD MRCVS*	1
Lecturer (Veterinary Public Health/Veterinary Surveillance)	**Miss Ann Courtenay** *DVM MRCVS*	1
Resident (Veterinary Pathology)	**Mrs Hayley Crosby-Durrani** *BVMS MRCVS*	0.2
Resident (Veterinary Pathology)	**Mr Josep Monne-Rodriguez** *DVM MRCVS*	0.2
Resident (Veterinary Pathology/Diagnostic Bacteriology)	**Mr Alessio Bortolami** *DVM MRCVS*	0.2
Technical Staff		
Technical Supervisor	Mr Anthony Brandwood	1
Technician (Diagnostic)	Mr Adam Bertram	1
Technician (Diagnostic)	Ms Cynthia Dare	1
Technician (Diagnostic)	Dr Julie Haigh	0.5
Technician (Diagnostic)	Ms Kathy Joyce	0.5
Technician (Diagnostic)	Ms Valerie Tilston	1
Technician (Bacteriology)	Ms Elena Maciuca	1
Technician (Bacteriology)	Ms Christine Saunders	1

Technician (Bacteriology)	Mr Andrew Wattrett	1
Technician (Electron Microscopist)	Miss Marion Pope	1
Technician (Mortuary)	Mr Ben Jones	1
Technician (Mortuary)	Mrs Helen Smith	0.8
Technician (Mortuary)	Mr John Blagborough	1
Clerical/Administrative Staff		
Administrator (VLS)	Mrs Carolynne Graham	0.6
Administrator (VLS)	Mrs Emma Rygielska	0.6857

Additional information:

[1]Please note that for academic staff, the FTE is based on their contribution to teaching.

[2]Dr Eva Rioja Garcia splits her time between the Equine Division (20%) and the Small Animal Teaching Hospital (80%). She appears twice on the list.

[3]Residents are 1 FTE but have been allocated a fractional FTE of 0.2 based on their contribution to teaching.

[4]Dr Senior's FTE in relation to contribution to teaching is returned under the Equine Division.

ACADEMIC STAFF – TEACHING ACTIVITY

NAME	TEACHING ACTIVITY
Miss Briony Alderson	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Miss Isabel Amores-Fuster	Clinical theory, clinical rotations, electives
Dr Dragan Antic	Clinical rotations, research projects
Professor Debbie Archer	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Mr David Bardell	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Miss Harriet Barnes	Pre-clinical (IAP) clinical rotations, electives
Dr Richard Barrett-Jolley	Pre-clinical (NSF)
Dr Dan Batchelor	Pre-clinical (MoD), clinical theory, clinical rotations, electives

Professor Matthew Baylis	Pre-clinical (EPHW), research projects
Miss Erika Bersan	Clinical theory, clinical rotations, electives
Professor Laura Blackwood	Clinical theory, clinical rotations, electives, research projects
Dr Richard Blundell	Pre-clinical (PATH), clinical rotations, electives
Mr Alessio Bortolami	Clinical rotations
Miss Sarah Boveri	Clinical theory, clinical rotations, electives, research projects
Dr Jakob Bro-Jorgensen	Pre-clinical (IAP), research projects
Miss Natalie Bruniges	Clinical rotations, electives
Ms Laura Buckley	Clinical theory, clinical rotations, electives
Miss Rachel Burrow	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr Denis Callanan	PGT/CPD
Ms Chiara Cambi	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr John Cameron	Pre-clinical (IAP) clinical theory, clinical rotations, electives
Miss Beatrice Carletti	Clinical rotations, electives
Miss Clare Carrigan	Pre-clinical (IAP), clinical rotations, electives
Mr Harry Carslake	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mrs Ros Carslake	PGT/CPD
Professor Stuart Carter	Pre-clinical (PATH), research projects
Mr Isaac Del Busto Castro	Clinical rotations, electives
Dr Julian Chantrey	Pre-clinical (PATH), clinical rotations, research projects
Miss Eleanor Child	Pre-clinical (IAP), clinical rotations, electives
Dr Rob Christley	Pre-clinical (EPHW), research projects
Professor Peter Clegg	Clinical theory, clinical rotations, electives, research projects
Miss Ana Maria Tomaz Coelho	Clinical rotations, electives
Miss Flora Collingwood	Pre-clinical (IAP), clinical rotations, electives
Dr Eithne Comerford	Clinical theory, clinical rotations, electives, research projects
Dr Janine Coombes	Pre-clinical (ID)

Miss Camilla Cooper	Clinical theory, clinical rotations, electives
Ms Suzanne Cottriall	PGT/CPD
Miss Ann Courtenay	Clinical rotations
Mrs Hayley Crosby-Durrani	Pre-clinical (PATH), clinical rotations
Professor Susan Dawson	Pre-clinical (ID, EPHW), research projects
Miss Mariana Miranda De Castro Martin	Clinical rotations, electives
Miss Cristina De Matea Bernal	Clinical rotations, electives
Ms Lara Dempsey	Clinical rotations, electives
Dr Alex Dugdale	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Dr Joanna Dukes-McEwan	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Dr Jennifer Duncan	Pre-clinical (IAP, MoD), clinical theory, clinical rotations, electives
Mr Denis Duret	E-learning
Dr Zeeshan Durrani	Pre-clinical (NSF), research projects
Mr Luke Edwards	Pre-clinical (MoD), Clinical theory, clinical rotations, electives
Miss Anna Ehrle	Clinical rotations
Dr Nicholas Evans	Pre-clinical (ID), research projects
Miss Inmaculada Ferrandis-Rodriguez	Clinical rotations, electives
Dr Riccardo Finotello	Clinical theory, clinical rotations, electives
Dr Emma Fishbourne	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Ms Sarah Nicol Fisher	Clinical rotations, electives
Dr Alistair Freeman	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Dr Kannan Ganapathy	Pre-clinical (ID), research projects
Dr Alex German	Pre-clinical (IAP, MoD), clinical theory, clinical rotations, electives, research projects
Miss Amy Gillespie	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Miss Rita Goncalves	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Miss Irina Gramer	Clinical rotations, electives

Dr Dai Grove-White	Pre-clinical (NSF, MoD), clinical theory, clinical rotations, electives
Ms Margaret Hannigan	Professional Skills
Miss Lindsey Harland	Clinical theory, clinical rotations, electives
Mr Aaron Harper	Clinical rotations, electives
Ms Sarah Heath (Behaviour Referrals Ltd)	Clinical theory, clinical rotations, electives
Ms Helen Higgins	Pre-clinical (IAP), research projects
Dr Jane Hodgkinson	Pre-clinical (PARA), research projects
Dr Hannah Hodgkiss-Geere	Clinical theory, clinical rotations, electives
Mrs Angela Holland	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Miss Amy Holman	Clinical theory, clinical rotations, electives
Miss Jodie Hughes	Clinical rotations, electives
Professor Jane Hurst	Research projects
Miss Cajsa Isgren	Clinical rotations, electives
Dr Andrew Jackson	Pre-clinical (ID), research projects
Ms Anna Jones	Clinical rotations, electives
Mr Nigel Jones	Pre-clinical (IAP), clinical theory, clinical rotations, electives
Dr Philip Jones	Pre-clinical (EPHW), research projects
Justine Kane-Smyth	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr Padraig Kelly	Clinical theory, clinical rotations, electives
Miss Rebecca Kent	Pre-clinical (MoD), clinical theory, clinical rotations
Mr David Killick	Clinical theory, clinical rotations, electives
Dr Patricia Laborda-Vidal	Clinical rotations, electives
Dr Elizabeth Laird	Pre-clinical (NSF), research projects
Dr Sophia Latham	Pre-clinical (EPHW)
Mrs Amy Leather	Clinical theory, clinical rotations, electives
Dr Gail Leeming	Pre-clinical (PATH), clinical rotations
Ms Giulia Lipreri	Clinical rotations

Ms Rosie MacDiarmid	Pre-clinical (NSF), clinical skills
Miss Catriona MacKenzie	Clinical rotations, electives
Dr Tom Maddox	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Miss Philippa Mahen	Clinical rotations, electives
Dr Ben Makepeace	Pre-clinical (PARA)
Mr Fernando Malalana-Martinez	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mrs Mary Marrington	Clinical theory, clinical rotations, electives
Dr Luis Rubio Martinez	Clinical theory, clinical rotations, electives
Mr Fraser McConnell	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr Peter McElroy (Eye-Vet Referrals)	Clinical theory, clinical rotations
Dr Neil McEwan	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Dr John McGarry	Pre-clinical (PARA)
Professor Cathy McGowan	Pre-clinical (MoD), clinical theory, clinical rotations, electives, infectious diseases
Mr Luis Mesquita	Clinical theory, clinical rotations, electives
Dr Eleni Michalopoulou	Pre-clinical (EPHW), clinical rotations, research projects
Mr Benjamin Mielke	Clinical rotations, electives
Dr Peter Milner	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Mr Josep Monne-Rodriguez	Pre-clinical (PATH), clinical rotations
Professor Kenton Morgan	Pre-clinical (EPHW), research projects
Mr Jeremy Mortier	Clinical rotations, electives
Mrs Karin Mueller	Pre-clinical (IAP), clinical rotations, electives
Mr Kevin Murtagh	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr Xavi Navarro-Cubas	Pre-clinical (MoD), clinical rotations, electives
Dr Clive Naylor	Pre-clinical (ID)
Mr Joao Almeida Neves	Clinical rotations, electives
Mr Diogo Nora Amaro Neves	Clinical rotations, electives

Dr Victoria Nicholls	PGT/CPD
Dr Karen Noble	Pre-clinical (NSF), research projects
Dr Peter-John Noble	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Miss Daisy Norgate	Clinical rotations, electives
Professor Sarah O'Brien	Pre-clinical (ID), research projects
Miss Erin O'Connell	Clinical rotations, electives
Dr Georgios Oikonomou	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mrs Emma Ormandy	Professional Skills, clinical Skills
Mrs Jo Oultram	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Ms Beverley Panto (RSPCA Stapeley Grange)	Clinical rotations, electives
Miss Rita Papoula Pereira	Pre-clinical (EPHW), clinical rotations
Ms Brigite Pedro	Clinical theory, clinical rotations, electives
Dr Mandy Peffers	Electives, research projects
Ms Fay Penrose	Pre-clinical (NSF)
Mr Rob Pettitt	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Dr Lucy Pickavance	Pre-clinical (NSF)
Dr Gina Pinchbeck	Pre-clinical (EPHW), research projects
Ms Martina Piviani	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Mr Jose-Carlos Pizarro Del Valle	Clinical rotations, electives
Dr Andrea Pratesi	Clinical rotations, electives
Dr Alan Radford	Pre-clinical (ID), research projects
Miss Joanna Raszplewicz	Clinical theory, clinical rotations, electives
Miss Eva Espadale Reballi	Clinical rotations, electives
Ms Alison Reid	Pre-clinical (NSF, clinical skills), research projects
Dr Lorenzo Ressel	Pre-clinical (PATH), clinical rotations
Dr Emanuele Ricci	Pre-clinical (PATH), clinical rotations

Dr Clara Rigotti	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research projects
Dr Eva Rioja Garcia	Pre-clinical (MoD), clinical theory, clinical rotations, electives, research
Mr Matthew Robin	Clinical rotations
Miss Clare Robinson	Clinical rotations, electives
Dr Matteo Rossanese	Clinical rotations, electives
Dr Kieron Salmon	Pre-clinical (NSF), clinical skills, clinical rotations
Dr Daniel Sanchez-Masian	Clinical theory, clinical rotations, electives
Miss Irene Espadas Santiuste	Clinical rotations, electives
Dr Claire Scantlebury	Research projects
Miss Stefania Scarabelli	Clinical theory, clinical rotations, electives
Miss Frederike Schiborra	Clinical rotations, electives
Dr Vanessa Schmidt	Clinical theory, clinical rotations, electives
Professor Jim Scudamore	Pre-clinical (EPHW), research projects
Mrs Avril Senior	E-Learning
Dr Mark Senior	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Prof Soraya Shirazi-Beechey	Research projects
Mr Paolo Silvestrini	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Dr Ellen Singer	Pre-clinical (NSF, MoD), clinical theory, clinical rotations, electives
Dr Matthew Sinovich	Pre-clinical (IAP), clinical rotations, electives
Mr Elliot Smith	Clinical rotations, electives
Professor Rob Smith	Pre-clinical (NSF, IAP, MoD), clinical theory, clinical rotations, electives
Ms Nicky Steel	PGT/CPD
Miss Katerina Stiborova	Clinical rotations, electives
Professor Paula Stockley	Pre-clinical (IAP)
Miss Alison Talbot	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Ms Rebekah Tee	PGT/CPD
Dr Simon Tew	Pre-clinical (NSF), research projects

Dr Dorina Timofte	Pre-clinical (ID)
Mr Andrew Tomlinson	Clinical theory, clinical rotations, electives
Miss Philippa Tucker	Clinical rotations, electives
Dr Jan Van Dijk	Pre-clinical (MoD), clinical theory, clinical rotations, electives
Dr Ranieri Verin	Pre-clinical (PATH), clinical rotations, research projects
Dr Gemma Walmsley	Clinical theory, research projects
Dr Carri Westgarth	Pre-clinical (IAP), research projects
Miss Crystal White	Clinical rotations, electives
Professor Paul Wigley	Pre-clinical (ID, EPHW), research projects
Professor Diana Williams	Pre-clinical (PARA)
Miss Helen Williams	Clinical theory, clinical rotations, electives
Professor Nicola Williams	Pre-clinical (ID, EPHW), research projects
Mr Brandan Wustefeld-Janssens	Clinical theory, clinical rotations, electives
Ms Aurora Zoff	Clinical theory, clinical rotations, electives

KEY:

EPHW Epidemiology, Public Health & Welfare

IAP Management of Individuals and Populations

ID Infectious Diseases

MoD Management of Disease

NSF Normal Structure & Function

PARA Parasitology

PATH Pathology

School of Veterinary Science
Academic Staff - Teaching Qualifications

Surname	First Name	Programme	Status	Year Awarded
ALDERSON	BRIONY	CERT/TLHE CTHE Postgraduate Certificate	In progress	
AMORES-FUSTER	ISABEL	CPS/LTE EDLT Certificate in Professional Studies	In progress	
ANTIC	DRAGAN	CPS/LTE EDLT Certificate in Professional Studies	In progress	
ARCHER	DEBRA	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2011
ASHWORTH	ALEXANDRA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
BAKER	MARTIN	CPS/LTHE EDLT Certificate in Professional Studies	In progress	
BARDELL	DAVID	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2015
BARRETT-JOLLEY	RICHARD	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2011
BLUNDELL	RICHARD	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2015
BUCKLEY	LAURA	CERT/LTHE CTHE Postgraduate Certificate	In progress	
CAMBI	CHIARA	CERT/LTHE CTHE Postgraduate Certificate	In progress	
CARSLAKE	HARRY	CERT/LTHE CTHE Postgraduate Certificate	In progress	
CARSLAKE	ROSALIND	CERT/LTHE CTHE Postgraduate Certificate	In progress	
CHANTREY	JULIAN	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2006
COLLINS	MARISOL	CPS/LTE EDLT Certificate in Professional Studies	In progress	
COURTENAY	ANN	CERT/TLHE CTHE Postgraduate Certificate	In progress	
DUGDALE	ALEX	CERT/TLHE CTHE Postgraduate Certificate	Awarded	2011
DUNCAN	JENNIFER	ULTRA Framework	Awarded	2015
DURET	DENIS	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2015
DURRANI	ZEESHAN	CERT/LTHE CTHE Postgraduate Certificate	In progress	
FISHBOURNE	EMMA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
GASPER	SARAH	CPS/LTE EDLT Certificate in Professional Studies	In progress	
GILLESPIE	AMY	CPS/LTE EDLT Certificate in Professional Studies	In progress	

GONCALVES	ANA	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2011
GRINT	NICOLA	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2007
HODGKISS-GEERE	HANNAH	CPS/LTE EDLT Certificate in Professional Studies	In progress	
HOLLAND	ANGELA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
HOLMAN	AMY	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2015
KENT	REBECCA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
KILLICK	DAVID	CERT/LTHE CTHE Postgraduate Certificate	In progress	
LEATHER	AMY	CPS/LTE EDLT Certificate in Professional Studies	In progress	
LEEMING	GAIL	CPS/LTHE EDLT Certificate in Professional Studies	In progress	
MACDONALD	JILL	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2011
MALALANA-MARTINEZ	FERNANDO	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2013
MCGARRY	JOHN	ULTRA Framework	Awarded	2015
MICHALOPOULOU	ELENI	Degree in Pedagogic Science, Athens	Awarded	
MILNER	PETER	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2011
MUELLER	KARIN	CPS/LTE EDLT Certificate in Professional Studies	In progress	
NEWITT	ANNA	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2009
NOBLE	KAREN	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2015
OIKONOMOU	GEORGIOS	CPS/LTE EDLT Certificate in Professional Studies	In progress	
PAPOULA PEREIRA	RITA	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2015
PENROSE	FAY	CERT/TLHE CTHE Postgraduate Certificate	Awarded	2011
PETTITT	ROBERT	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2014
PICKAVANCE	LUCY	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2011
PIVIANI	MARTINA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
PRATESI	ANDREA	CERT/LTHE CTHE Postgraduate Certificate	In progress	
REID	ALISON	CERT/LTHE CTHE Postgraduate Certificate	Awarded	2015
RESSEL	LORENZO	CPS/LTE EDLT Certificate in Professional Studies	Awarded	2015

RICCI	EMANUELE	CPS/LTE EDLT Certificate in Professional Studies	In progress	
SALMON	KIERON	CERT/TLHE CTHE Postgraduate Certificate	Awarded	2011
SCHMIDT	VANESSA	CPS/LTE EDLT Certificate in Professional Studies	In progress	
SENIOR	AVRIL	ULTRA Framework	Awarded	2014
SILVESTRINI	PAOLO	CPS/LTE EDLT Certificate in Professional Studies	In progress	
STEEL	NICHOLA	CERT/LTHE CTHE Postgraduate Certificate	In progress	
VERIN	RANIERI	CPS/LTE EDLT Certificate in Professional Studies	In progress	
WILLIAMS	SARAH	CPS/LTHE EDLT Certificate in Professional Studies	Awarded	2010

Timetable for the visit

Visit by

The Royal College of Veterinary Surgeons

to

School of Veterinary Science University of Liverpool - 2016

TIMETABLE

Sunday 6th March

Thornton Hall Hotel
Neston Road, Thornton Hough
Wirral CH63 1JF
Tel. +44(0) 151 336 3938

Visitors arrive at hotel

Visitors' private meeting

Visitors' private dinner at hotel

Monday 7th March (Liverpool)

07.30	**Visitors depart hotel to travel to Liverpool**
08.30-09.00	**Welcome & Introductions**
9.00-10.30	**Organisation, Finance & Facilities**
10.30-10.45	***Break***
10.45-12.45	**Tours – Liverpool (Veterinary Teaching Suite and Thompson Yates)**
13.00-14.00	**Buffet lunch with Years 1-3 students (The Hub, Foresight Centre)**
14.00-15.15	**Curriculum 1 (overview, teaching strategy +/- Liverpool teaching)**
15.15-15.30	***Break***
15.45-17.00	**Tour of Liverpool Veterinary Practice, Life Sciences +/- Library**
17.00	**Visitors depart from Liverpool and return to hotel**
19.00	**Visitors private dinner**

Tuesday 8th March (Leahurst – majority of tours at Leahurst)

08.00-09.00	**Meeting with Head of School and School Administrator (if required)**
09.00-09.45	**Free time**
10.00-12.30	**Tours (Equine, Small Animal, main building teaching areas and PM Rooms)**

Alternative
08.00-13.00 Visit to abattoir: Woodhead Bros (Morrisons) in Colne
(Two visitors travel by car with Dr Eleni Michalopoulou)

12.30-13.30	**Buffet lunch with visitors & students (Years 4 & 5)**
13.30-16.00	**Tours** (**Farms & Farm Animal Practice, library, Henry Edwards [teaching and clinical labs])**
16.00-16.45	**EMS**
Evening	**Dinner with visitors & senior School staff (at hotel)**
7pm	**Pre-dinner drinks - Vernandah**
7.30	**Dinner – Pulford Suite**

Wednesday 9th March (Leahurst)

08.00-09.00	**Meeting with Head of School and School Administrator (if required)**
09.00-10.15.	**Curriculum 2** **(Leahurst teaching, Public Health +/- follow-up on questions arising during visit to date)**
10.15-10.45	**Assessment**
10.45-11.00	***Break***
11.00-11.45	**Animal resources**
12.00-13.15	**Buffet lunch with visitors, interns & residents**
13.15-13.45	**Information resources**
13.45-15.30	**Research programmes, continuing & higher degree education**
15.30-16.00	***Break***
After 16.00	**Alumni, EMS providers, employers**
17.30	**Visitors depart**
18.00-19.00	**Visitors private meeting at hotel (if required)**

Thursday, 10th March (Leahurst)

08.00-09.00	**Meeting with Head of School and School Administrator (if required)**
09.00-09.45	**Admissions & progression**
10.00-10.45	**Outcomes assessment**
10.45-11.15	***Break***
11.15-12.00	**Student Support**
12.00-13.00	**Confidential meetings**
13.00-14.00	**Buffet lunch with research students**
Afternoon	**Visitors' private meeting, report writing, consideration of additional Liverpool paperwork (RCVS Visitors/Chair only); allow for visitors to make individual arrangements to return to see any particular facilities/staff earlier in the visit if necessary**

Friday, 11th March (Liverpool)

08.00 (tbc)	**Chairman of visitors meeting with Head of School**
10.00-11.00	**Exit meeting with Vice Chancellor and Head of School in Liverpool**
	Visitors depart

University response

Response from the University of Liverpool to RCVS Visitation Report August 2016.

The University of Liverpool thank the RCVS and the SAVC for their report on the visit to the School of Veterinary Science in March 2016. The School are grateful to the visiting team for their care and attention during the visit and their work both before and after the visit in compiling the report.

The University of Liverpool appreciates the commendation for our ongoing and strong commitment to the continuation of Veterinary Education including the Veterinary Postgraduate Unit. We welcome the commendation for our ongoing financial investment and our provision of animal resources throughout all stages of the programme. We are grateful that the visitors recognised the benefit provided by the review of the Institute of Learning and Teaching and of course were delighted that the visitors found our students to be, without exception, enthusiastic and articulate both about the programme and the staff.

The School of Veterinary Science also appreciates the recommendations and suggestions made in the report as these allow us to benchmark against international standards and we will act on these to ensure that we continue to provide a high quality registerable degree.

Our response to the recommendations is below:

Standard 1 – Organisation

Recommendations

a. A strategic and operating plan was provided which did not cover the proposed changes to the status of the school. The new plan must be made available to RCVS when it is produced.

b. The School and the University must develop a plan to look urgently into methods of making clinical and paraclinical employment more attractive to veterinary employees.

Following the Faculty Education Review which reported at the end of 2015 the decision was made to change the School of Veterinary Science to a standalone Institute. Other changes took place in the structure within the Faculty of Health and Life Sciences and the implementation of these has been an ongoing process throughout 2016. The Institute of Veterinary Science was formed at the beginning of August 2016 and at the time of writing has almost completed the selection and recruitment to Heads of Departments posts and Senior Professional Services roles. Following completion of this implementation process the Institute Senior Management Team will review the strategy for the Institute in light of the University Strategy 2026 and will provide this to RCVS.

The University has carried out a benchmarking review for veterinary clinical and paraclinical salaries and a market rate supplement has been introduced where required to ensure retention of suitable qualified staff and improve recruitment opportunities. This will be reviewed on a regular basis. Workload models are being introduced across the University of Liverpool and the Institute of Veterinary Science has had significant input into this process to ensure that we create appropriate models for all staff including veterinary clinicians.

Standard 3 – Facilities and equipment

Recommendations

a. Appropriate lecture theatre facilities, adequate for the number of students, must be provided on the Liverpool site by the time of the next RCVS visitation.

b. All vehicles transporting students must be equipped with netting or screening to provide safe physical separation from transported equipment.

The University of Liverpool capital plan includes the development of appropriate lecture space at Liverpool and the Institute of Veterinary Science looks forward to showing these facilities at the next RCVS visit.

Changes have been made to the arrangements for vehicles in the equine practice such that all vehicles are now pool cars and so can be appropriately fitted out for transporting students and equipment safely.

Standard 8 – Academic and support staff

Recommendations

a. The School must develop a strategy to diminish the impact of the reduction in clinical staff and actively aim to improve the areas which have a lack of sufficiently accredited and skilled academic professors.

As described above the Institute of Veterinary Science has implemented a market rate supplement where appropriate and is introducing a workload model. There has been success in recruiting to clinical posts following these changes and the Institute will regularly review retention and recruitment of veterinary staff to ensure that there is no detrimental effect on student experience.

Standard 9 – Curriculum

Recommendations

a. The school must assess the impact of the extended clinical rotation period and the integrated assessment policy for clinical skills on student workload and progression. Measures must be implemented to alleviate student workloads, if appropriate.

b. The use of electronic tools for the mapping of learning outcomes to Day One competences must be implemented.

Reduction of student workload is one of our key priorities. Placing more of an emphasis on continuous assessment during clinical rotations will reduce the assessment burden. We are currently reviewing the length of clinical rotations (currently 36 weeks) with an aim to reduce this to 30 weeks.

The learning outcomes are currently mapped to teaching sessions, themes and subjects in spreadsheets, and themes are mapped to RCVS / EAEVE day one competences. These will be

uploaded this summer into a searchable database. The mapping will also be uploaded to the LIFTUPP system to allow us to blueprint assessment.

Standard 10 – Assessment

Recommendations

a. Assessment procedures must be developed as a programme wide policy that reflects the strategy in an understandable way.

b. The current system for assessment during clinical rotations overloads students. The school must take into account the reduction of workload and excessive pressure on students when it implements the new assessment system based on DOPs (Directly Observed Procedures).

We have reviewed our assessment strategy for years 1-3. We have increased the MCQ and EMQ assessment papers and combined the short answer and integrative questions to allow a wider coverage of topics. A greater emphasis will be placed on continuous assessment via DOPs during clinical rotations to reduce assessment burden and workload and improve formative feedback.

Standard 11 – Research programmes, continuing and higher degree education

Recommendations

a. There must be a periodic, comparative review of and report on the quality and breadth of research.

b. The School must appoint a Head of Research employed within the new Institute of Veterinary Science, with the remit of leading clinical research and liasing with other Institutes within the University.

c. The School must initiate a more formal system of communication and decision making involving the School and Research Institute leadership with minutes, records of decisions and a reporting system.

The Institute of Veterinary Science will recruit a Head of Veterinary Clinical Research whose role will encompass the recommendations above. This Head of Research will sit on the Institute Management Team and report to IMT. In addition, the Head of the Institute will sit on the Faculty Management Team (this did not happen previously) and so there will be direct communication at this level with Heads of other research Institutes. Both IMT and FMT meet monthly with minutes taken and decisions recorded.

Standard 12 – Outcomes Assessment

Recommendations

a. The school must implement a broad and co-ordinated strategy of outcomes assessment with clear leadership at a senior academic level.

b. The School must be able to demonstrate use of a range of outcome measures at whole programme, individual unit and individual student level and the process by which these are used to drive improvements in teaching and learning over time.

We have developed an outcomes assessment strategy that will be co-ordinated by 3 senior members of staff and fed into our veterinary education committee structure.

Outcomes are assessed by a short feedback loop (in course outcomes assessment via exam results and student feedback surveys / focus groups) and a long feedback loop (recent graduate / employer surveys / focus groups). This data is then sent to subject leads to address good and bad practice and make recommendations. These recommendations are then considered by the Undergraduate Education Committee which will then oversee their implementation in the curriculum.