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School of Veterinary Medicine and Science

Royal College of Veterinary Surgeons
Self Evaluation Report 1

2021

CONTENTS

0 INTRODUCTION

0.1 MAIN DEVELOPMENTS SINCE THE 2017 VISITATION

Response to recommendations

The two recommendations were addressed and reported to RCVS in 2018.

Organisation
In terms of risk mitigation and long term planning of clinical rotations, it is recommended that a structured process be put in place for an annual review meeting with the Clinical Associates. Alongside review of the clinical teaching, this should include, but not necessarily be limited to, evaluation of caseload trends, the physical facility and the financial health and ongoing business planning of these partners

Actions:
- An annual review, carried out by the Clinical Director, of contracts with all Clinical Associates is undertaken
- Quarterly meetings with the Clinical Director and Clinical Associate staff have been scheduled to raise and address any issues
- Informal visits carried out by the Student Placements Manager take place every 2 months to raise and address any issues

Facilities and Equipment
The School must ensure that all of its Clinical Associate partners maintain a clinical working environment that enables best practice, which includes appropriate isolation facilities and timely resolution of any material damage to flooring and furniture

Actions:
- Remedial works have been carried out at PDSA Nottingham to address the issues raised in the review

Main organisational responsibilities

New or repositioned roles, providing further resource or focus are marked with a *

Major Roles	**2017**	**2021**
Dean	Prof Gary England	Prof Gary England
Deputy Head of School	Prof Malcolm Cobb	Prof Malcolm Cobb
Head of Division of Population Science	Dr Tracey Coffey	Prof Tracey Coffey
Head of Division of Biomedical Science	Dr Steve Dunham	Prof Nigel Mongan
Head of Division of Global Health	Prof Malcolm Bennett	Prof Malcolm Bennett
Head of Division of Veterinary Clinical Sciences	Prof Kate White	Prof Kate White
Head of Operations (Research, HR, Technicians)*	Dr Karen Braithwaite	Simon Clifford
Head of Operations (Students, Finance)*	Dr Karen Braithwaite	Dr Karen Braithwaite
Director of Research*		Prof Richard Emes
Research and Business Sub-Dean	Prof Jamie Leigh	Dr Cinzia Allegrucci
Research and Business Sub-Dean	Dr Nigel Mongan	-
Director of Education	Prof Liz Mossop	Dr Kate Cobb
Programme Lead BVMedSci (TLA Sub-Dean)	Dr Kate Cobb	Dr Erica Gummery
Programme Lead BVM BVS* (TLA Sub-Dean)		Dr John Remnant
Clinical Skills Sub-Dean*		Dr Sarah Cripps
Director of Equality, Diversity and Inclusivity*		Prof Jasmeet Kaler
Research Postgraduate Sub-Dean	Prof David Haig	Dr David Gardner
Research Postgraduate Sub-Dean*		Dr Catrin Rutland
Taught Postgraduate Sub-Dean*		Dr Robert Atterbury
Clinical Taught Postgraduate Sub-Dean	Dr John Burford	Dr John Burford
Clinical Sub-Dean (Equine)	Prof Sarah Freeman	Prof Sarah Freeman
Clinical Sub-Dean (Small Animal)	Prof Malcolm Cobb	Prof Malcolm Cobb
Clinical Sub-Dean (Farm Animal)	Dr Chris Hudson	Dr Chris Hudson
Clinical Sub-Dean (Pathology)*		Dr Mike Clarke
CPD Sub-Dean	Prof Rob White	Prof Rob White
Director of Knowledge Exchange*		Dr Marnie Brennan
EMS Sub-Dean	Dr Steve Brogden	Dr Steve Brogden
Admissions Sub-Dean	Dr Ian Self	Dr Karen Braithwaite

Deputy Admissions Sub-Dean*	Dr Neil Foster	Dr Nigel Kendall
Director of Strategy and Innovation*		Dr Karen Braithwaite
Director of Safety	Dr Mike Jones	Dr Mike Jones
Senior Tutor	Dr Mike Targett	Dr Mike Targett
Senior Tutor	Ms Alison Curzon	Morag Hunter
Senior Tutor	Dr Jess Tomlinson	Dr Rebecca Sumner
Senior Tutor	Dr Adelle Bennett	Dr Imogen Richens
Senior Tutor*		Dr Georgina Bladon
Senior Tutor*		Dr Mike Clarke
Senior Tutor (Postgraduates)	Dr Julia Kydd	Dr Marco Duz
Senior Tutor (Postgraduates)*		Dr Katie Woad
Exams Officer	Dr Karen Braithwaite	Kay Millward

The Director of EDI is now part of the School Executive team.

New policies related to teaching

Three are no major policies changes that have adversely affected the programme, emergency policies related to Covid are reported in quarterly reports to the RCVS and available in SER2.

New buildings and equipment

In January 2019 approval was given to approve the capital requirements necessary to enable the expansion of the School of Veterinary Medicine and Science with an overall budget of £7M attributed to the capital works. Phase 1 has included the refurbishment of the small group teaching rooms, along with three significant building extensions to the Clinical Building, increasing teaching, cold storage and office space. Phases 2 –4 involve the refurbishment of existing facilities and new build to accommodate the increase in staff and student numbers. A key component is the construction of a new Simulated Veterinary Practice to provide final year students with the required practical experience to complete their studies. Spread across two buildings, it houses consulting and clinical facilities typically found in a commercial practice, with all associated spaces and additional seminar and office facilities for teaching and CPD use. In addition, a variety of small items of teaching and research equipment has been procured (portable radiography, several ultrasound machines, ultracentrifuge, gel imaging system).

The School now operates the recently refurbished, on-site fully licensed abattoir for teaching

The university has also recently invested £1.2M in the refurbishment of an on-site CL3 laboratory for infectious disease research. This investment forms part of larger plans to refurbish vacant laboratory space previously occupied by AHPA, to create a centre for global virus research.

Main changes to the study programme

The introduction of the dual intake curriculum has been a major curriculum change. To enable the September and April cohorts to be delivered within the year, the total teaching time has been reduced in years 1 and 2 by 2 weeks. Year 3 has been extended by 2 weeks to accommodate some of the year 4 content from the pre-2019 curriculum. Modules in years 1 and 2 have been consolidated, students study 4 compulsory modules in each year, which has addressed repetition of some content and reduced the assessment burden. Veterinary professional skills have been given an increased emphasis and are brought together in a 2 week block, in a synoptic fashion, at the end of the year in a 6-week teaching block, during which years 1 and 2 students are also able to undertake up to 4 weeks EMS.

The year 3 research project module has been reduced from 10 to 6 weeks; Veterinary Public Health has moved from year 4 to year 3. A new year 3 module, Fundamentals of Clinical Practice, runs for 10 weeks and consolidates many of the embedded modules introduced in years 1 and 2, namely pharmacology, microbiology, parasitology, immunology, diagnostic imaging, anaesthesia and surgery. Finally, Veterinary Professional Skills 3, delivered over 5 weeks includes key business skills, clinical reasoning and consultation skills and euthanasia teaching. Practical skills delivered in both years 3 and 4 will be summatively assessed in an OSCE at the end of year 4 prior to the start of clinical rotations.

Plans for the new curriculum in year 4 include 3 species based clinical modules: farm animal and veterinary public health, equine and small animal. Students will then undertake all core rotations before completing their chosen track rotations and remaining CEMS.

There have been some changes associated with year 5:

- A compulsory introductory week prior to rotations starting has been restructured to offer health and safety information and pastoral support for the final year, including a day on 'mental flex'. The week has refresher practicals, advice about DOPS and assessment, CV and financial planning sessions, and visits from VDS, BVA and RCVS representatives
- Students now attend Pinfold Vets and Shelton Lock as one small animal practice rotation
- A new site at the RSPCA Radcliffe on Trent has been introduced to the PDSA rotation and provides increased opportunity for surgical experience for all students.
- The Pride hospital 2-week small animal rotation, now consists of a week of decision-making training around the referral medicine caseload, and a week in wards, focussing on in-patient management.
- All students undertake a 2-week equine skills School-based based rotation and 2 weeks at Oakham Veterinary Hospital as their core equine rotations. Scarsdale Equine no longer delivers teaching.
- The core Farm rotations comprise 2 weeks Farm Health Skills run from the School and 2 weeks of farm animal practice at Scarsdale Veterinary Hospital
- In addition to 21 weeks of IMR, students can now 'track' for 6 weeks in small animal (primary care and referral), farm animal, equine, mixed practice, research or veterinary public health. 2 weeks of the track is counted as compulsory CEMS.

In addition to curricular changes there have been some changes with assessment:
- The reflective portfolio is now credit bearing and is the method of assessment for VPS in years 1 and 2 and in year 3 in combination with the business plan. The structure of the portfolio has been revised, students in years 1 and 2 and have a number of compulsory assets which cover topics such as work-life balance, communication, ethics, research and clinical and practical skill development.
- In years 1 and 2, all spot tests have been replaced with online short answer papers which are equally weighted with the MCQ papers in each module.
- The Fundamentals of Clinical Practice module in year 3 is assessed by an MCQ paper, the practical and clinical skills taught within this module will be assessed in an OSCE at the end of year 4. Previously there was no summative practical assessment in year 4. Practical skills delivered in years 1 and 2 are now summatively assessed at the end of year 2 with those in years 3 and 4 are assessed at the end of year 4. There is no change to the assessment of clinical skills via the DOPS in year 5.

The School is now offering RCVS Advanced Clinical Practice modules as part of a higher-degree apprenticeship.

Important decisions made by the University or School

The major decisions have been to implement a dual intake and 2 apprenticeship programs.

Changes in funding and major staffing changes

There have been no major changes in funding to the School, albeit an increase in funds related to the dual intake resource requirements. In addition there have been in-year requests for savings relating to the University and the UK's economic position and as a result of the impact of Covid.

Problems encountered by the School

The only major problem has been the Covid-19 pandemic. This SER details normal operations, with modifications due to Covid detailed in the quarterly reports to RCVS (included in SER2).

0.2 OBJECTIVES

The School of Veterinary Medicine and Science contributes to University strategy as set out in http://www.nottingham.ac.uk/about/strategy/index.aspx. As part of the wider Faculty strategy the School has 10 strategic priorities:

- Estates and Facilities: Improve our estate through engagement with the University Campus Planning Groups and 'Tomorrow's NUH' programme, developing proposals for immediate and longer-term needs.
- Education and Student Experience: Improve the quality and equity of our students' experiences, evaluated by their feedback, and moving quickly but thoughtfully to a 'new normal' where we employ more online learning blended with face-to-face education.
- Research and Knowledge Exchange: Improve our research outcomes, impact and income, particularly through investment in professional services support and increasing engagement with internal and external partners.

- People: Support colleagues through the financially challenging, post-Covid period, embedding a culture of inclusion, equality and diversity and improving staff satisfaction, development and engagement.
- Ways of Working: Improve the efficiency and effectiveness of how we work through better management of our time, budgets and facilities. Where appropriate, embed hybrid and agile working across the Faculty.
- Education and Student Experience: Optimise the size and shape of our educational provision to suit societal and University needs, and diversify our portfolio through apprenticeships, Continuous Professional Development (CPD) and online delivery.
- Research and Knowledge Exchange: Demonstrate the value of our researchers, including postgraduate research students, through improvements in training, support and recruitment.
- Governance and Assurance: Ensure we work in compliance with relevant legal requirements and regulatory bodies, including information security and health and safety, developing shared approaches and reporting mechanisms.
- Global and Civic Engagement: Support and grow our international, national and civic collaborations in education and research including working on the Universities for Nottingham agendas.
- Alumni and Philanthropy: Build better links with our alumni and increase involvement with, and income from, philanthropy.

These 10 areas are translated into 67 detailed SMART objectives. The Schools progress against these objectives are reviewed quarterly with the Faculty Pro-Vice Chancellor and are given narrative and a visual "Red, Amber, Green" (RAG) rating. Detail will be provided in the dataroom.

School Mission: We will enhance society by carrying out research to tackle key issues in fundamental science, animal health and global sustainability. We will educate veterinary surgeons to enable them to have a broad impact on animal health and welfare and to public health, and to contribute significantly to the veterinary profession as a whole.

School Vision for Education: All members of staff of the School and our Clinical Associates will have pride and confidence in every graduate that we produce. Our graduates will be world-leading in their practical and professional approach to veterinary medicine.

School Vision for Research: The School will be recognised internationally for research excellence in our four major strategic research areas, impacting on animal and human health worldwide.

Overarching Strategic aims:

Education
- To educate and train veterinary students, providing them with the knowledge, intellectual, practical and professional skills to fulfil the demands required of them to succeed and develop as accomplished and well-rounded veterinary professionals. They will be equipped with a thorough preparation in all aspects of basic, applied and clinical veterinary science, together with a capacity for deductive thought, ethical reasoning, problem solving, business skills, and research and committed to continued professional development
- To provide a dynamic environment which will deliver an inspirational learning experience drawing upon internationally renowned leading-edge pedagogic methods and the latest research advances
- To provide an excellent student experience, whilst ensuring that the veterinary profession maximises the potential contribution from all areas of society by attracting and recruiting outstanding students from a diverse range of backgrounds
- To communicate new advances and ensure lifelong learning through the provision of Continuing Professional Development (CPD) to the veterinary community

Research:
- To initiate and conduct world-leading basic, applied and clinical research to improve animal and public health and welfare, enhance clinical practice, improve the economic efficiency and safety of animal production, and deliver research-led veterinary education
- To apply and transfer knowledge, concepts and technology to improve society and the economy, ensuring our research is relevant to our stakeholders; veterinarians, the scientific community, UK and world animal industries, government and their agencies and bodies, non-governmental organisations, students and the public at large

Fundamental aims:
- To champion equality and diversity

- To operate with openness and fairness
- To ensure facilities and a financial model that is appropriate and sustainable for a modern veterinary school.

0.3 COMMENTS

We believe that we are progressing well against our objectives.

Strengths

- Pioneering, talented, and committed School staff who share an ambition to deliver excellence in teaching and research, with staff recognised within the University, nationally and internationally for their teaching, research, clinical, administrative and technical expertise
- An engaging outcomes-based student-centred curriculum that combines a clinically focussed basic science curriculum with clinical learning opportunities and an appropriate clinical caseload, as to ensure our students develop professionally and practically and so have true 'Day One' skills
- Evidence-based and innovative teaching methods including a community-based clinical model with supportive Clinical Associates who value our mutual relationship
- An integrated research programme produces research-literate veterinarians with a penchant for life-long learning
- Rated second in UK for research power in the 2014 Research Excellence Framework assessment, with 37% of our work assessed as world-leading and 80% of internationally excellent quality. Research in the School is strengthened by a dynamic community of postgraduates
- The School is continually rated top of the UK's National Student Survey and the Association of Veterinary Students Survey for student experience suggesting that our students appreciate their experience, both in their teaching and learning and through support mechanisms
- The School again won the student-nominated Best School Award at the University's Staff Oscar's 2021
- Highly popular Veterinary School as measured by undergraduate applications, with novel student recruitment processes leading to a wide diversity of students, with over 30% of students from disadvantaged backgrounds
- High employment rates and salaries for graduates who are sought-after in the profession
- The School takes pride in our students, who are engaged and committed, and work in partnership with staff and the local community. The School's exceptional student engagement was recognised with an ASPIRE award, the first veterinary school to be awarded this international accolade
- Unique research facilities in the Centre for Dairy Science Innovation and the Wolfson Centre for Global Virus Research
- The School is financially robust, efficient and effective with substantial ongoing investment in facilities and resources supported by the University
- Quality assurance and control is integral to all aspects of the Schools activities such that it has become engrained in School culture

Weaknesses/challenges

- New Veterinary Schools are replicating our educational ideas, and the increased numbers of Schools coupled with applicant numbers remaining somewhat static may result in the future recruitment of lower quality applicants within all UK veterinary schools
- Uncertainty about what government expects from and how it will reward Knowledge Exchange (although we are very good at this)
- As is common to all Veterinary Schools, recruitment and retention of clinical staff continues to be an issue
- Few senior research leaders and the high teaching load reduces potential for research

0.4 SUGGESTIONS FOR IMPROVEMENT

1 ORGANIZATION

1.1 FACTUAL INFORMATION

1.1.1 Contact information

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Dean of School: Professor Gary C.W. England, BVetMed PhD DVetMed CertVA DVR DipVRep DipECAR DipACT PFHEA FRCVS
Foundation Dean and Professor of Comparative Veterinary Reproduction

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Vice-Chancellor and President: Professor Shearer West, BA, PhD, CBE
Deputy Vice-Chancellor and Provost: Professor Andy Long, BSc, MSc, PhD, FREng

1.1.2 University organisation and governance

University College, Nottingham, was founded in 1881. It was awarded its Royal Charter in 1948, becoming The University of Nottingham. The Quality Assurance Agency for Higher Education (QAA) works with Higher Education institutions to define, safeguard and improve academic standards and the quality of Higher Education in the UK. In the 2016 QAA Institutional Audit the University was recognised as a provider of high quality and standards with the award of the Quality Mark, and awarded Gold in the 2017 Teaching Excellence Framework.

Two main bodies are involved in the governance of the University, the Council and the Senate, which include representatives from staff and students. The day-to-day management of the University is the responsibility of University Executive Board (UEB). Senior Officers directly relevant to the School are:

- Vice-Chancellor: Professor Shearer West CBE
- Deputy Vice-Chancellor: Professor Andy Long
- Pro-Vice-Chancellor, Education and Student Experience: Professor Sarah Speight
- Pro-Vice-Chancellor, Research and Knowledge Exchange: Professor Dame Jessica Corner
- Pro-Vice Chancellor, Faculty of Medicine and Health Sciences: Professor John Atherton
- Registrar: Dr Paul Greatrix
- Chief Financial Officer: Mrs Margaret Monckton
- Chief Estates and Facilities Officer: Mrs Linda Goodacre
- Chief Marketing and Communications Officer: Ms Helen Pennack
- Director of Human Resources: Mrs Jaspal Kaur

The School is part of the Faculty of Medicine and Health Sciences, which also comprises the School of Medicine, School of Health Sciences and School of Life Sciences (Appendix 1). The primary decision-making

Committees are the weekly Faculty Management Board (the Dean and Heads of Operations are members along with other School Heads, the Faculty PVC, Faculty Associate PVC for Education and Student Experience, Faculty Associate PVC for Research, Faculty Finance Manager) and monthly Faculty Board (membership as per Management Board, Faculty Associate PVC for Equality, Diversity and Inclusion, Faculty Global Engagement Lead and Faculty HR Manager). A number of University Committees provide strategic oversight and governance; these Committees have either Faculty or cross-University representation from academic Schools.
(http://www.nottingham.ac.uk/governance/universitycommittees/index.aspx).

The School is supported by administrative staff in the School and in the University's central Professional Services teams, e.g. Student Services, Human Resources, Finance etc.

The School of Veterinary Medicine and Science (SVMS), established in 2006, has the same recognition, status and autonomy as other University Schools. The veterinary programme is owned and operated entirely by the School, with some aspects of the curriculum taught and overseen by our academics in a community-based model in partner Clinical Associates organisations. The Dean of School, Deputy Head of School, Clinical Director and Director of Education are qualified veterinary surgeons and members of the Royal College of Veterinary Surgeons. The School is recognised by the Royal College of Veterinary Surgeons, with the last accreditation visit in 2017. The School has also achieved full accreditation by the European Association of Establishments for Veterinary Education (EAEVE).

1.1.3 School strategic and operating plan

The Faculty and School plan is provided as a separate document in SER2 (Supplementary Information)

1.1.4 How the School obtains and directs resources to achieve its mission

The University allows Faculties significant freedom to run their operations as they see fit and as directed by the Faculty Pro-Vice-Chancellor. The University budget model assigns budget based on an activity based budgeting basis to the School from a Faculty assignment based on an average cost per Faculty student (see section 2.1.1). All income associated with clinical work by our staff, Residents or Interns is retained by the Clinical Associate.

Budget for all aspects of the School's operations (except for research grants) is administered and managed in the School by the Head of Operations, and allocated to individual project budgets on a yearly basis, based on prior year and forecast future spend. Budgets are locally directed and utilised as required within the relevant budget envelope, by for example, technical staff for consumables, Research Manager for school-funded research, with procurement supported by a campus Finance Team. The School has a Management Accountant who compiles monthly reports with oversight by a Faculty Finance Manager. Non-pay spend over £5k, outwith normal expected operations, is reviewed and considered by Executive Team. Research projects are funded as per the funder's commitment and are managed by the Principal Investigator.

The Dean and Head of Operations discuss the Schools financial performance and plans quarterly with the Faculty PVC, and are able to make the case for additional spend in relation to any increased income, in line with the target contribution. The School is able to secure 50% contribution on small building developments from University Estates for projects up to £500k, in addition there is a central University Strategic Development Fund process for larger projects; the School was successful in gaining £7m funding for the Dual Intake through this process.

1.1.5 School organizational structure

The University is a highly devolved organisation. The main academic and budgetary units are the academic Schools. The University provides the legal, financial and organisational framework in which the Schools operate. The School utilises the highly developed quality framework employed by the University which covers quality management of learning and teaching (see www.nottingham.ac.uk/quality-manual), which covers aspects from design and approval of programmes, admissions through to student support and complaints.

The School is led by the Dean of School, a veterinarian, who is fully responsible for the strategic direction, quality management and operational and financial performance of the School. The School is organised into four Academic Divisions (Divisions of Veterinary Clinical Sciences, Biomedical Sciences. Global Health and Population Science) and an Operations Division, which primarily act to provide a line management structure (Appendix 2). A number of Sub-Deans have been appointed to provide strategic input into discrete

functional activities; these are supported by an administrative team or individual, normally in the School, although for Postgraduates and Student Welfare these staff are part of central Student Services.

The Dean of School is appointed by the University[1], whilst the Deputy Head of School, Heads of Divisions and Sub-Deans/Directors, and other leadership roles are appointed by the Dean of School, normally in consultation with the Faculty PVC or School Executive Team as appropriate.

Clinical Associates

In order that students encounter the most appropriate primary care, as well as secondary and tertiary referral caseload, and acquire true 'Day One' clinical competences, SVMS has developed a community-based teaching model, in which clinical teaching is delivered at a number of Clinical Associates. Rotations are overseen by School staff and students are taught by both School and Clinical Associate staff. Use of these Clinical Associates negates the need for an on-site hospital at the Veterinary School, consequently, both financial and personnel resource is redirected into supporting an effective experiential learning environment around a caseload wholly appropriate for teaching Day One competences. The School has contractual relationships with a number of Clinical Associates to deliver core rotations[2]:

- Oakham Veterinary Hospital, Oakham (Equine, Small Animal)
- PDSA, Derby (Small Animal)
- PDSA, Nottingham (Small Animal)
- Pinfold Vets (Small Animal)
- RSPCA, Ratcliffe (Small Animal)
- Scarsdale Veterinary Group, Derby (Farm Animal, Small Animal[3])

The individual contract varies per Clinical Associate in terms of the financial, resource and staff investment, and also the length of term of the contract. Subject to confidentiality, contracts will be available to inspect during the visit.

The community-based teaching activities (Intra-Mural Rotations - IMR) are planned overall and assigned by the Clinical Director, supported by a senior administrator. The Clinical Director is aided by 4 species/discipline leads (Pathology and Veterinary Public Health, Farm, Small Animal and Equine) and by Rotation Leaders, who have responsibility for developing and overseeing the delivery of learning outcomes and the overall organisation and student experience for each rotation.

1.1.6 Governance and School Committees

The School has established a number of focussed Committees, normally chaired by either a Sub-Dean/Director or a Head of Division (Appendix 3). These Committees act to advise the Dean and Executive Team on policy and process, have a remit for quality and also have decision making power (with strategic decisions or decisions with budgetary impact referred to Executive Team), and comprise staff from across Divisions, with student and external representation where appropriate. All Committees ultimately report into the weekly School Executive Team Meeting, which considers all strategic and operational concerns. Terms of Reference will be available to view during the Visitation.

Our policy is that staff are empowered to deal with issues as they arise, such that issues are resolved at the lowest levels, escalating as needed to Sub-Deans, line managers or School management.

Staff and students are able to influence the School's direction and decision making processes through a number of means:

- Flat organisational structure, whereby the vast majority of staff report to a member of Leadership Team, facilitating easy raising of issues or ideas for management consideration
- Monthly staff meetings, available to be attended by all staff, report on and seek feedback on key issues
- Wide School consultation on and review by all staff to gain input on policies, documents etc as needed
- Diagonal-slice cross-School working parties are established to address new projects or tasks
- Annual Staff Appraisal and Development Conversation meetings with the option for an interim meeting half way through the year

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[1] Heads of School are normally appointed for 3 years, through consultation between the School, Dean of Faculty and the Faculty PVC. The Dean of the Veterinary School does not have a fixed term appointment.

[2] In addition Defence Animal Training Regiment (Equine), Dovecote Veterinary Hospital (Small Animal), Dick White Referrals (Small Animal), Your Vets, Sheldon (Small Animal), Pool House (Equine) and Twycross Zoo are contracted as a Clinical Associates however these support track rotations

[3] Pride Veterinary Centre and Shelton Lock and Langley Mill branch practices

- Through various Committees (Teaching, Learning and Assessment (TLA), Research, Learning Community Forum (LCF), etc) with onwards decision making by Executive Team
- As part of surveys and feedback such as Student Evaluation of Teaching, Year, NSS, University or School staff surveys, rotation feedback
- Staff and student attendance at staff recruitment interviews
- Individual students also commonly directly contact relevant Sub-Deans/Directors, the Head of Operations or the Examinations Officer with feedback on an ongoing basis
- Anonymously through a feedback box in reception and in a Clinical Building corridor

The veterinary profession and wider public are involved in the running of the School on a number of levels:
- Members of the veterinary profession and public are members of the Admissions Committee
- Veterinary professionals undertake admissions assessments for undergraduate students
- Appropriately qualified and briefed veterinary professionals and other individuals deliver elements of teaching in the undergraduate programme
- Members of the veterinary profession act as External Examiners on both the 5 and 6 year programme
- Members of the veterinary profession, farming and other animal-related industries supervise students on EMS placements and provide feedback about the School's processes and individual students
- Local animal-owners are involved as clients of our Clinical Associates

Staff of the School are members of various regional, national and international professional bodies and associations and thus are able to develop working relationships with a variety of veterinary professionals ensuring that external views are adequately represented within the School. In addition lay members are involved in the management of campus and University (for example as members of the Ethics Committee, University Senate etc).

1.1.7 Structures that ensure alignment of the veterinary programme, veterinary hospital operations and curriculum leaders to support student learning

The Schools TLA Committee, is the major mechanism to ensure the overall alignment of the veterinary programme is maintained. Learning objectives developed for each teaching session, link to RCVS, EAEVE and AVMA criteria and overall module learning outcomes. Changes in specific learning outcomes are reviewed in an extensive module review process; when new learning objectives are proposed they are reviewed by the School clinicians on the TLA Committee to ensure that they are relevant to clinical outcomes.

The curriculum is overseen by the Director of Education and her Deputies, both supported by a Teaching, Learning and Assessment (TLA) team which comprises 9.6 FTE highly experienced administrative staff, who support all academics, and have a quality assurance and control remit across all years of the veterinary programme.

Working relationships with Clinical Associates are good, and as School staff are embedded within Clinical Associates, there is ongoing dialogue regarding all aspects of rotation teaching and support, however there are review meetings held yearly with Clinical Associates, and student feedback (which is compulsory) is reviewed at the end of every 2 week rotation and acted on as necessary by the Rotation Leader, Sub-Deans and Clinical Director. This ensures that the requirements of the veterinary curriculum are aligned with hospital operations.

1.2 COMMENTS

We believe our organisational structure ensures that individual autonomy is balanced with sufficient control to enable us to achieve our School mission. We have an enthusiastic and entrepreneurial team of staff with a 'can do' attitude who are committed to the ongoing development and expansion of the School's activities.

The School has embedded quality within its culture, such that there is a wide recognition of the importance of quality assurance and control and it has become part of normal School operations. The School, as part of the wider University, is guided by the strategies, procedures and policies set at Faculty and University level, including internal review of the School and its operations. In addition the School has put in place additional mechanisms for quality associated with various aspects of the School's operations, by providing proactive frameworks and guidance tools to ensure quality is embedded in delivery and outputs. Likewise quality control measures have been put in place to reactively gauge and monitor quality standards, including input from independent external experts. External evaluations are undertaken periodically by the University and also the Royal College of Veterinary Surgeons (2009, 2011, 2014, 2017) and the European Association Establishments for Veterinary Education (2011, 2014, 2017). The quality assurance and control measures

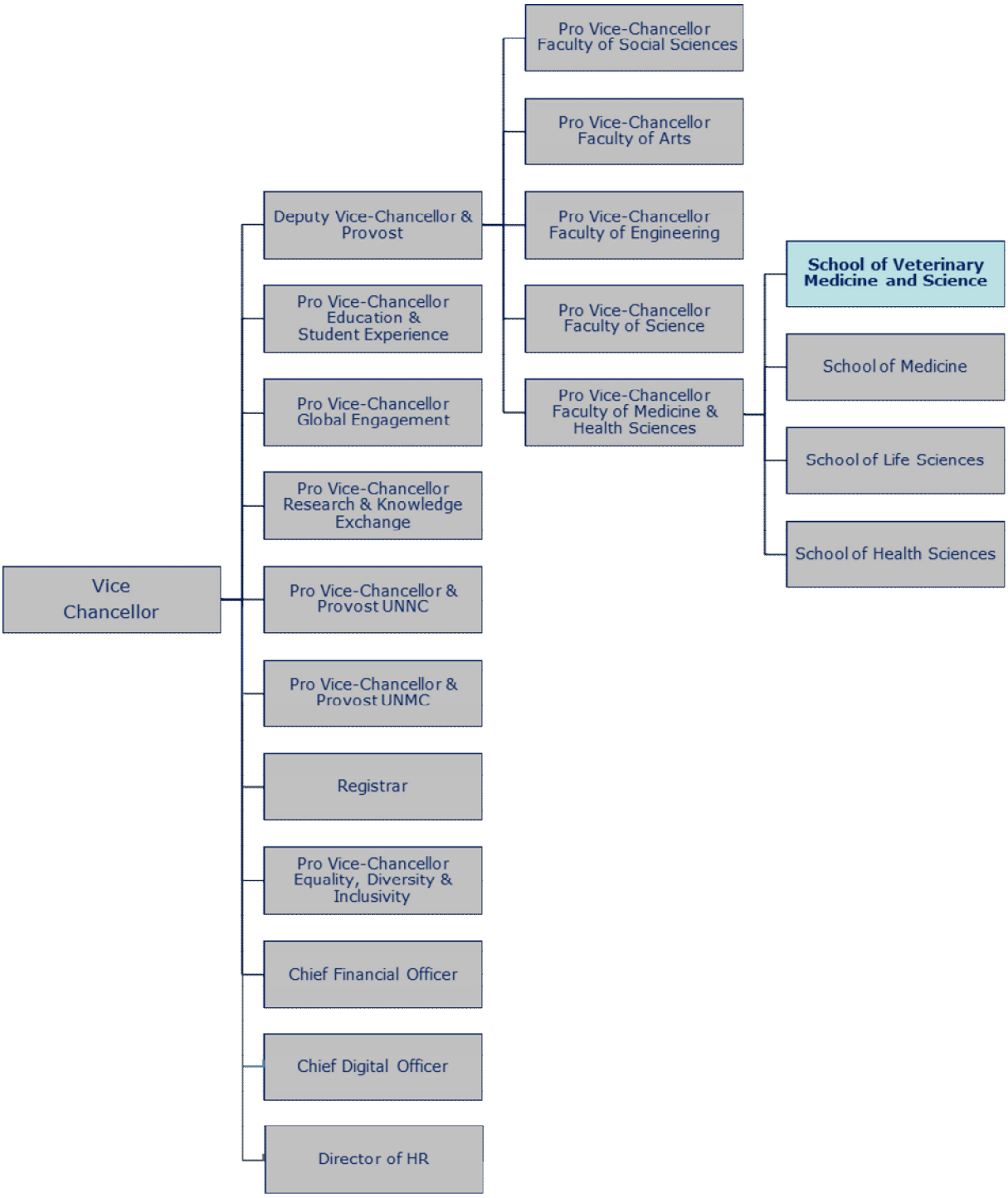
were first implemented in 2006, and have developed as the School successively grew with each additional cohort until the first undergraduate cohort graduated in 2011; however the School perceives quality improvement as ongoing and as such there is constant evolution of quality assurance and control mechanisms. School systems all normally employ Deming's management system model of plan-do-check-act (PDCA).

Risk is managed explicitly by quarterly review of the School's risk register at a Management Team Meeting; in addition there is quarterly review of both School performance and risk by Faculty Board. Risk associated with normal School operations is managed by Standard Operating Procedures, and Risk Assessments and also implicitly by quality assurance and control.

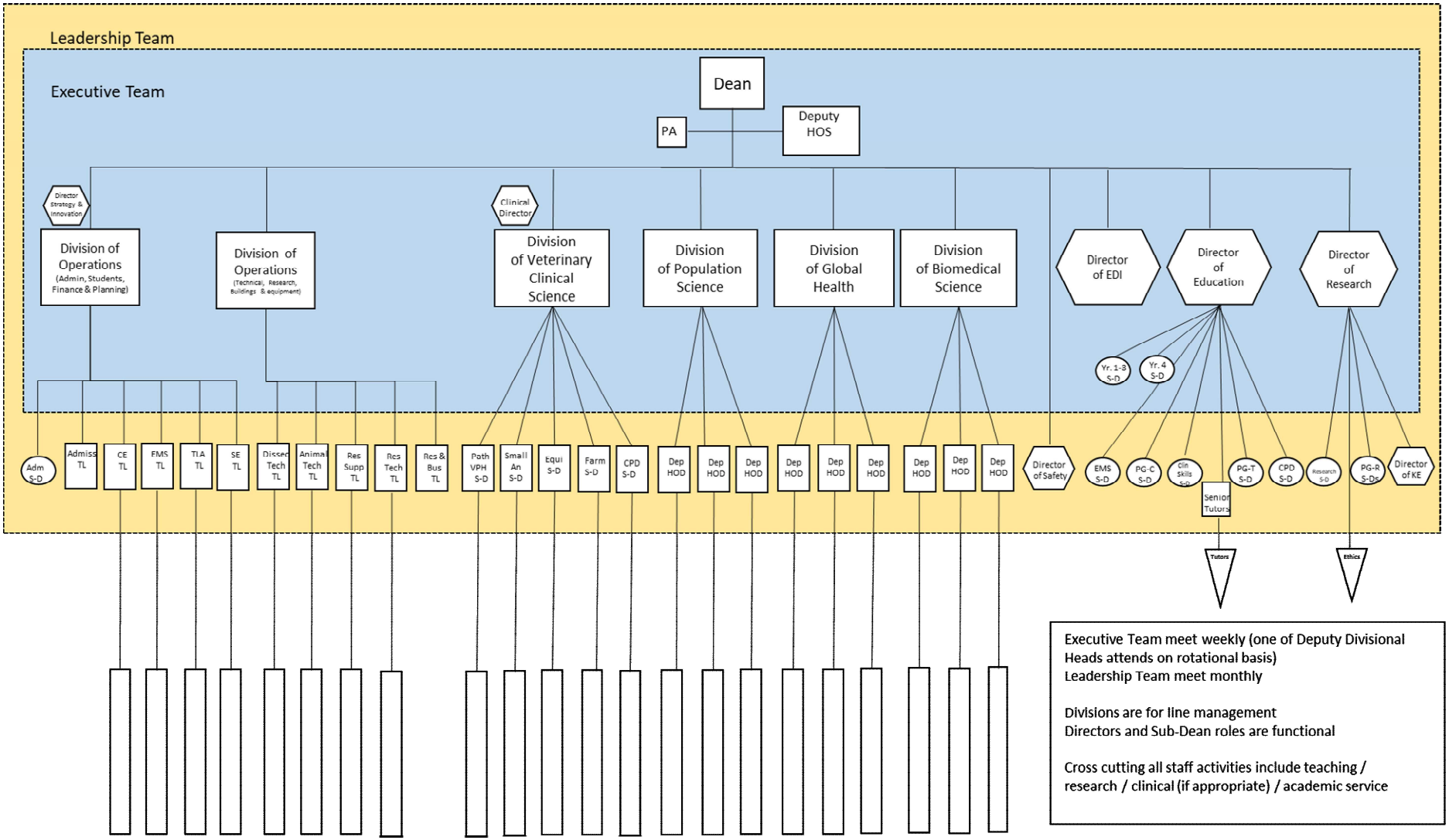
The Dean and Heads of Operation are also members of transient project groups associated with the School, Campus and wider University initiatives; currently these include groups to improve the campus student experience, development of a fourth veterinary building, campus development plan, and University student experience.

1.3 SUGGESTIONS FOR IMPROVEMENT

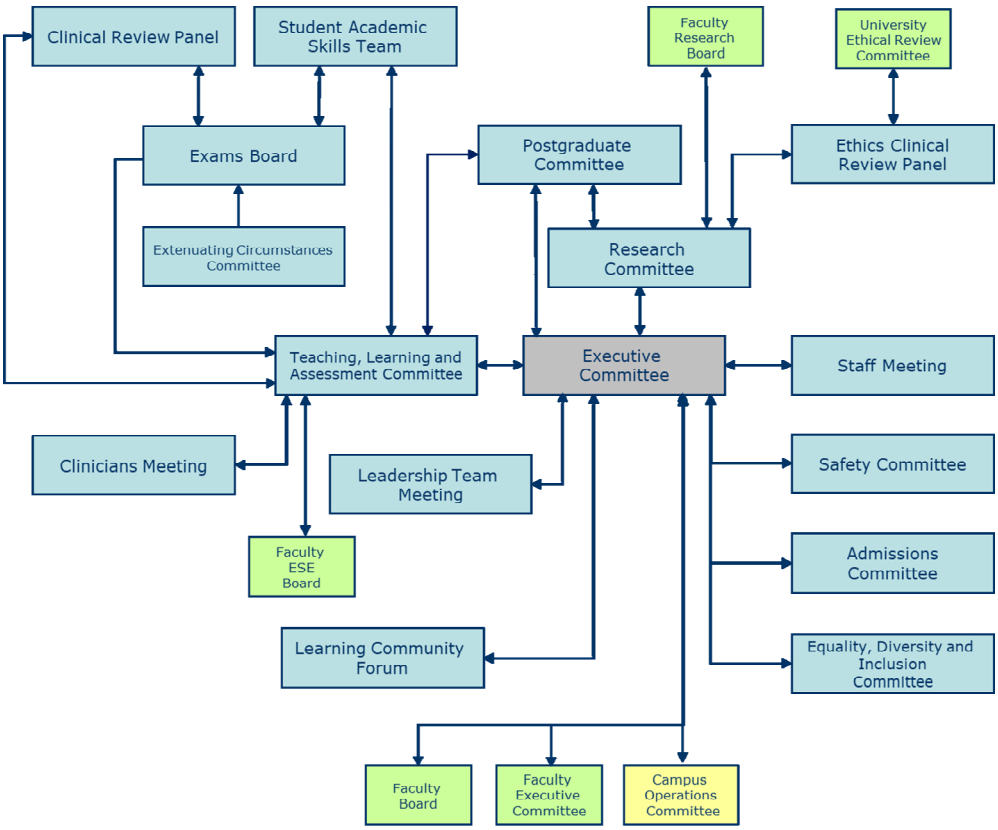
Appendix 1 Position of School in University structure



Appendix 2 School Organisation Chart



Appendix 3 School Committees



- Executive Committee, meeting weekly, comprises the Dean, Deputy Head of School, Heads of Divisions, Director of Education, Director of Research, Director of Equality, Diversity and Inclusivity. Meetings consider strategic and operational issues
- Leadership Team, meeting every two months, comprises the Executive Team and their direct reports, together with Sub-Deans/Directors. Meetings consider strategic and operational issues
- Teaching, Learning and Assessment (TLA) Committee, meets monthly and considers strategic and operational issues relating to teaching, learning and assessment including quality and assurance. Associated with TLA Committee are the School Exam Board, the Extenuating Circumstances Committee, Clinicians Meeting, Clinical Review Group and Student Academic Skills Team
- The Research Committee meets monthly and considers all strategic and operational issues relating to the School's research and business policies. Associated with this Committee is the Research Strategy Group
- The Committee for Animal Research and Ethics conducts business by circulation and meets as needed to review and approve all clinical research activities which involve either direct contact with animals, or indirect contact through their owners or keepers. It also considers all social and education research undertaken within the School from the perspective of ensuring compliance with data handling legislation
- Postgraduate (Research) Committee meets every 2 months and considers all strategic and operational aspects relating to postgraduate research students in the School
- Postgraduate (Taught) Committee meets every 3 months and considers all strategic and operational aspects relating to postgraduate students taught in the School
- Admissions Committee meets once per year to review the preceding year's admissions and the process for the forthcoming session is discussed and agreed
- Learning Community Forum (LCF) meets once a term, and discusses any matters of concern (academic, welfare or social) that are raised by either students or staff. LCF recommendations are considered by other Committees
- Safety Committee meets 3 times per year and is responsible for managing, formulating and monitoring the School's health and safety policy in light of relevant legislation, accepted University policy and developments in standards of good practice
- Equality, Diversity and Inclusion Committee meets monthly and considers all School strategic and operational aspects associated with equality, diversity and inclusion, and Athena Swan status
- Monthly Staff Meetings are open to all staff from the School and Clinical Associates. It allows an open forum for presentation and discussion of issues pertinent to the School as a whole

A number of project groups have been formed to address identified issues. Progress on these projects is reported to Management Team or to the respective Committee. In addition, scheduled meetings exist e.g. between Clinical Sub-Deans to discuss and progress operational issues.

2 FINANCES

2.1 FACTUAL INFORMATION

2.1.1 University funding model and budget allocation

The University allows Faculties significant freedom to run their operations as they see fit and as directed by the Faculty Pro-Vice-Chancellor (PVC). The Faculty PVC is assigned an overall budget and within that Schools are provided their own budget on an Activity Based Costing (ABC) basis. The School has >300 projects each of these are considered individually and costs per driver are established (e.g., travel cost per student headcount).

Income and expenditure is therefore delinked, with no expectations of contribution percentages by differing income streams to the University. Any increase or decrease in income will be reflected in a corresponding increase or decrease in budget (at quarterly forecast) on an ABC basis. This funding model therefore allows for considerable differences in the cost base of Schools, ie budget is assigned according to need rather than any artificial contribution percentage.

Separate budgets detailing expected income and expenditure are established and agreed with the PVC for services rendered and educational contracts (e.g., apprenticeship, CPD), and are outwith the core School budget process (as obviously would be research grant income and expenditure).

It is not possible, with the exception of funds associated with some research grants or services rendered projects, to retain any income or budget between years. The budget assigned to the School is required to support all operational costs incurred directly by the School, with the exception of central functions, i.e. the School budget covers pay, consumables, school funded research, equipment etc but not, for example IT services, library, sports centre, registry etc.

The School receives no income from hospital activities undertaken by School staff; all income associated with clinical activity undertaken by our academics, clinical Residents and Interns remains with the Clinical Associates as part of the contractual relationship.

2.1.2 School financial management (operating and capital budgets)

Budget for all aspects of the School's operations (except for research grants) is administered and flexibly managed centrally in the School by the Head of Operations, and allocated, with discussion with Dean of School, to individual project budgets on a yearly basis, based on activity based costing basis including spend required on any replacement, maintenance or planned procurement of new equipment or buildings. Budgets are locally directed and utilised as required within the relevant budget envelope, by, for example, technical staff for consumables, the Research Manager for school-funded research, with procurement supported by a campus Finance Team. Research projects are funded as per the funder's commitment and are managed by the Principal Investigator.

The School has a Management Accountant who compiles monthly reports with oversight by a Faculty Finance Manager. Non-pay spend over £5,000, outwith normal expected operations (for example a request for a new piece of equipment), is reviewed and considered by Management Team. Equipment over £30,000 is capitalised; in theory there is no set capital budget, albeit the depreciation charge must be sustainable within future operational budgets.

The Dean and Head of Operations discuss the School's financial performance and plans quarterly with the Faculty PVC, Management Accountant and Faculty Finance Manager and are able to make the case for additional spend in relation to any increased income, in line with the target contribution. The School is able to secure funds for small building developments from various University Estates Committees depending on the level of funding required, in addition there is a central University Strategic Development Fund process for consideration of funding new research or educational ideas (e.g. the School was successful in gaining funding to establish the dual intake).

The University financial year is August 1 to July 31.

2.1.3 Expenditure

Appendix 4 shows historical expenditure incurred in association with the Veterinary School; this includes any School costs for year 5 rotations undertaken at Clinical Associates (but not any costs incurred by Clinical Associates) and maintaining teaching animals.

The forecast expenditure (Appendix 5) assumes a similar spend to that budgeted in 2020/21 with the addition of known changes, based on agreed business plans (e.g. Dual intake, Apprenticeship etc). Calculated central charges are included for completeness.

Veterinary teaching hospital costs

The School has invested considerably in Clinical Associate teaching hospitals, as it does not own a teaching hospital. Investments vary from capital investment in buildings to equipment. Staff and/or postgraduates are placed at Clinical Associates, or in occasional cases a payment is made in lieu. Detail cannot be provided as these costs are part of the normal operations of the Clinical Associates.

Costs of veterinary training for the last 5 years

Table 5 shows the annual cost of teaching a veterinary student with and without the inclusion of student-related central charges and an attribution of general School costs.

Costs £k	**2020/21**	**2019/20**	**2018/19**	**2017/18**	**2016/17**
Annual cost of training a veterinary student (School budget only)	10,408	10,497	11,500	11,999	11,327
Annual cost of training a veterinary student (including student-related central charges, Clinical Associate pay and a proportion of School general costs)	**22,651**	**24,229**	**25,954**	**25,957**	**26,335**

Costs of veterinary training for the last 5 years

Notes: Central charges calculated on the basis of student headcount in Vet School include all Professional Services functions (e.g registry, estates) and utility charges, also included are actual costs associated with student bursaries. An estimation of pay for 13.6 FTE Clinical Associate staff effort has been made; in addition general costs are prorated on staff T and R split and MSc costs are removed from the expenditure related to teaching

2.1.4 Revenues

Appendices 6 and 7 show historical and planned revenues. The forecast revenue assumes a similar revenue to that budgeted in 2020/21 with the addition of known changes, based on agreed business plans (e.g. Dual intake, Apprenticeship etc).

Tuition fees

Tuition fees are charged to all undergraduate and postgraduate students.

- All HEU undergraduate students pay a University fee of £9,250 per year (2020/21 entry). This fee also applies to graduates undertaking the undergraduate programme
- International undergraduate students on the 5-year programme are charged £35,220 per year (2020/21 entry)
- HEU postgraduates on taught programmes pay a fee as per the price of the course, currently this is £4,320 (Veterinary Medicine and Surgery), £2,670 (Veterinary Education) and £14,715 (Veterinary Physiotherapy. HEU postgraduates on research programmes pay £4,121 fees
- International postgraduate taught students pay fees of £14,910 (Veterinary Medicine and Surgery), £2,670 (Veterinary Education) and £24,390 (Veterinary Physiotherapy). Postgraduate Research students pay fees varying between £23,760 and £43,500 per year dependent on the type of research project

The UK Government decides the fee for HEU students, and the fee charged also relates to the University rating in the Teaching Excellence Framework, a national audit of teaching standards. The University is rated in the highest 'Gold' bracket.

From 2021/22 European students will be required to pay international fees.

2.2 COMMENTS

The School is able to fulfil all required standards with its budget, however there are some issues that are worth noting:

- Whilst there is no longer a central charge for services provided centrally by the University, the School continues to challenge service departments where they do not deliver to our requirements and expectations and fall below our high standards
- In the context of the financial pressures due to Covid, the University required us to stop providing laptops to students. The School feels that this is significantly detrimental to the educational experience of our students who are undertaking dispersed year 5 teaching and EMS. The laptops are highly valued by our students, especially our 30% Widening Participation students.

Our number one priority for any increased funding would be to recruit more staff.

The School has a high degree of autonomy and flexibility in financial matters and is well supported by the Faculty PVC and the wider University UEB and Financial Management, however it is disappointed that laptops were singled out at a time when students needed them most, and there could better forecasting so that there is more smooth spend throughout the year rather than the last quarter.

As detailed previously, under ABC the income attributable to the School is delinked and there is no retention of income. Currently the ABC budgeting method works well, as our School budget was able to be granted within the Faculty financial envelope - it will obviously be important that this continues.

Financial growth over the next 5 years from the School is anticipated from the MSc Advanced Clinical Practice Apprenticeship and Dual intake. Any further revenue and budget growth will come from the approval of new business cases, however we would also like to suggest that an incentive mechanism is put in place to encourage opportunity taking.

There is significant University capital being invested to develop a fourth teaching building and also a new PDSA Nottingham hospital. Further details are in Chapter 3.

2.3 SUGGESTIONS FOR IMPROVEMENT

We feel that the School should have a return to pre-Covid full autonomy on its budget and the School intends to make the case to provide laptops to students on an ongoing basis, as the alternative to provide desktops at Clinical Associates is equivalent in cost to laptops.

We anticipate income associated with students is and will remain strong due to the high demand for places in the short term, however we suggest all veterinary schools will need to collaborate to increase the pool of applicants when further veterinary schools open.

Appendix 4 Annual expenditure for the last 5 years

Area of expenditure £k	2020/21	2019/20	2018/19	2017/18	2016/17
a. Personnel					
a.1 teaching staff	6,137	5,443	5,028	4,894	4,584
a.2 support staff	1,727	1,746	1,616	1,429	1,459
a.3 research staff	2,685	2,583	2,483	2,359	2,130
Total for a	**10,549**	**9,772**	**9,126**	**8,683**	**8,352**
b. Operating costs					
b.1 utilities					
b.2 expenditure relating to teaching	1,632	1,438	1,750	1,947	1,460
b.3 expenditure relating to research	2,222	2,265	1,980	2,119	1,843
b.4 general operations (excluding above)	544	623	999	423	610
Total for b	**4,399**	**4,326**	**4,728**	**4,489**	**3,913**
c. Equipment					
c.1 teaching	922	149	197	201	245
c.2 research	431	92	161	217	146
c.3 general (or common) equipment	141	2	5	15	10
Total for c	**1,494**	**243**	**364**	**432**	**401**
d. Maintenance of buildings	**2**	**12**	**21**	**64**	**53**
e. Central University costs attributable to the School	**9,700**	**8,890**	**8,160**	**7,560**	**7,730**
f. Total expenditure	**26,144**	**23,243**	**22,399**	**21,228**	**20,449**

Appendix 5 Projected future expenditure for the next 5 years

Area of expenditure £k	2020/21	2021/22	2022/23	2023/24	2024/25
a Personnel					
a.1 teaching staff	6,137	7,523	8,931	10,480	11,852
a.2 support staff	1,727	1,950	2,180	2,435	2,660
a.3 research staff	2,685	2,796	2,895	3,026	3,147
Total for a	**10,549**	**12,269**	**14,006**	**15,941**	**17,659**
b Operating costs					
b.1 utilities					
b.2 expenditure relating to teaching	1,632	2,125	3,009	3,926	4,381
b.3 expenditure relating to research	2,222	2,142	2,197	2,258	2,319
b.4 general operations (excluding above)	544	558	572	586	601
Total for b	**4,399**	**4,825**	**5,778**	**6,771**	**7,301**
c Equipment					
c.1 teaching	922	351	360	369	378
c.2 research	431	215	220	225	231
c.3 general (or common) equipment	141	36	36	37	38
Total for c	**1,494**	**602**	**617**	**632**	**648**
d. Building maintenance	**2**	**2**	**2**	**2**	**2**
e. Central University costs attributable to the School	**9,700**	**10,560**	**11,760**	**12,790**	**13,470**
f. Total expenditure	**26,144**	**28,258**	**32,163**	**36,136**	**39,080**

Notes for all expenditure tables: Data has been compiled from analysis of cost categories for over 300 project codes; forecast data is used for 2020/21. There is probably some minor element of miscoding in the financial data such that a small proportion of costs assigned to general are likely to be related to teaching or research. All postgraduate costs are assigned to research, with the exception of interns, residents and intercalated students (which are assigned to teaching). A detailed analysis of central costs has been undertaken and apportioned to the Vet School, e.g., on the basis of student headcount; in addition the central costs include capital investment in order to give an indicative total spend by the University in support of the Veterinary School

Appendix 6 Annual revenue for the last 5 years

Revenue source £k	2020/21	2019/20	2018/19	2017/18	2016/17
a. Revenue from State					
a.1 UG student related	9,884	7,772	7,043	6,654	6,524
a.2 PG student related	451	425	463	329	354
a.3 Research related	1,307	1,333	1,796	1,401	1432
Total for a	**11,642**	**9,530**	**9,302**	**8,384**	**8,310**
b. Revenue from private bodies	**138**	**6**	**166**	**182**	**83**
c. Revenue from research	**2,737**	**2,070**	**2,210**	**2,366**	**2246**
d. Revenue earned and retained by the School					
d.1.1 UG student fees (HEU)	9,106	7,574	6,752	6,320	5,867
d.1.2 UG student fees (overseas)	375	260	177	223	199
d.1.3 PG student fees (HEU)	864	681	596	278	189
d.1.1 PG student fees (overseas)	453	499	395	432	451
d.2 continuing education	95	152	265	272	133
d.3 clinical activities	-	-	-	-	
d.4 diagnostic activities	77	127	91	232	77
Total for d	**10,970**	**9,293**	**8,276**	**7,757**	**6,916**
e. Other revenue	**527**	**170**	**258**	**133**	**208**
f. Total revenue	**26,014**	**21,069**	**20,212**	**18,822**	**17,763**

Appendix 7 Projected future revenue for the next 5 years

Revenue source £k	2020/21	2021/22	2022/23	2023/24	2024/25
a. Revenue from State					
a.1 UG student related	9,884	11,139	12,394	13,648	14,623
a.2 PG student related	451	468	487	516	744
a.3 Research related	1,307	1,340	1,373	1,407	1,443
Total for a	**11,642**	**12,947**	**14,254**	**15,571**	**16,810**
b. Revenue from private bodies	**138**	**141**	**145**	**149**	**152**
c. Revenue from research	**2,737**	**2,376**	**2,401**	**2,476**	**2,526**
d. Revenue earned and retained by the School					
d.1.1 UG student fees (HEU)	9,106	10,296	11,487	12,677	13,602
d.1.2 UG student fees (overseas)	375	384	394	404	414
d.1.3 PG student fees (HEU)	864	936	1,362	1,896	2,389
d.1.1 PG student fees (overseas)	453	464	476	488	500
d.2 continuing education	95	475	487	499	511
d.3 clinical activities	-	-	-	-	-
d.4 diagnostic activities	77	179	183	188	193
Total for d	**10,970**	**12,734**	**14,389**	**16,152**	**17,609**
e. Other revenue	**527**	**540**	**554**	**568**	**582**
f. Total revenue	**26,014**	**28,739**	**31,743**	**34,915**	**37,678**

3 FACILITIES AND EQUIPMENT

3.1 FACTUAL INFORMATION

3.1.1 Premises in general

Description of the major functions / activities that take place in facilities

The School is based at the University's 1,000-acre Sutton Bonington campus, 7 miles from Nottingham, close to the M1 junction 24, and within 5 miles of East Midlands Airport. The campus comprises, in addition the School of Biosciences, central teaching and research facilities, the James Cameron-Gifford Library, student residences, music room and sports centre, as well as essential amenities including a restaurant and café.

The School is fortunate in having 4 specific and bespoke major buildings developed for the School, together with access to multiple animal and farm facilities and shared teaching and research facilities. Furthermore, through our Clinical Associates we have access to multiple veterinary hospitals for intra-mural rotations.

The three-storey Academic Building is the main hub of the School and comprises:
- 400-seat, 160-seat and 30-seat lecture/seminar spaces with full AV facilities, including lecture capture
- 30-seat computer room, which can be used flexibly as a seminar room
- 15 small-group teaching rooms
- Laboratories and support facilities for virology and microbiology, cell and tissue culture, (immuno)histology, cell and molecular biology, immunology, clinical sample handling and specialist laboratories for transmissible spongiform encephalopathies, gas chromatography and imaging
- Staff, research fellow, postgraduate and visitor offices, and social space

The predominantly single storey Clinical Teaching Building provides:
- 160-seat dissection room, fully equipped with stainless steel tables, sinks, hydraulic table, extraction system, walk-in freezers and fridges, hoist system, radiograph viewers together with 2 preparation rooms; adjacent 30-seat cadaver surgery suite
- 13 small-group teaching rooms, together with a Year 5 hub comprising 2 small-group teaching rooms
- 40-seat seminar room with AV facilities, electronic whiteboard and videoconference facilities
- 13 bay / 78-seat Clinical Teaching Lab extensively equipped with examination facilities and clinical equipment including ultrasound, ECG, anaesthetic monitors
- Clinical Skills Centre with specialised resources such as a virtual reality rectal simulator (haptic cow), clinical training models and aids as well as clinical diagnostic equipment.
- 30-seat Surgical Skills Centre containing 12 operating tables
- Simulated radiography suite, containing 3 decommissioned full size and dental x-ray machines
- Museum
- Staff offices
- Support facilities including 16 walk-in dog and 6 cat kennels, laundry, locker and changing rooms

The three storey Gateway Building provides:
- 120-seat seminar room
- 120-seat computer room
- Staff offices
- Other offices, laboratories and facilities for the School of Biosciences

Pathology Building provides:
- Post mortem suite with associated cold storage facilities, fully equipped with stainless steel tables, hydraulic table, sinks and hoist system
- Seminar/teaching room with multi-headed microscope facility
- Staff offices

The School also utilises the 200-seat campus high specification general teaching laboratory for the delivery of basic science practical sessions.

The School has facilities for animals at the campus detailed in section 3.1.3.

The School manages the on-site fully licensed abattoir and has plans to run this commercially, it includes a lairage, stunning facility, scalding tank, an overhead line, slaughter floor and gut room. There are two large

cold rooms, and a substantial cutting room and cold store. The abattoir facility has recently been refurbished with works including a new roof, windows and doors.

The School's own Pathology service unit with 3 board certified pathologists and technical support staff is based on the Sutton Bonington campus, adjacent to the University Sports Centre on a 0.5 acre site. These premises were previously used as a surveillance centre by the Animal and Plant Health Authority (APHA). The facility comprises purpose built, state-of-the-art post-mortem rooms with hoists, large hydraulic post mortem tables, class 1 and 2 safety cabinets. The University has invested in upgrading and expanding the facilities to include changing facilities including showers, new lairage, large walk-in cold room, staff offices, a student 'common room' with a kitchen and library, and a large seminar room with a 10-headed microscope with live projection onto a wide screen monitor and video conference facilities. The development provides the facility for handling a range of animals including farm species, zoo animals, cats, dogs and horses.

Our clinical facilities are based at our Clinical Associates, where, dependent on the terms of the contractual relationship the School has invested in facilities and equipment:

Oakham Veterinary Hospital
The Oakham Veterinary Hospital is a RCVS tier 3 Hospital and is set in a 9-acre site which includes equine and small animal departments. Within the equine hospital, facilities include 3 consulting rooms, 2 operating theatres, standing surgery area, examination facilities with stocks, scintigraphy room, standing MRI facility, CT suite, digital radiography room, post-mortem room, 26 horse boxes including isolation facilities, reproduction facilities including a dummy mare, farriery unit, sand arena, 2 trot-up areas, lunge pen, and a learning and teaching space for students. The site has 12 acres of grassland in small turnout paddocks, including mare and foal facilities. The diagnostic laboratory includes HBLB/ British Equine Veterinary Association (BEVA) CEM testing and the equine unit is an approved Artificial Insemination (AI) centre.

The small animal facilities include 4 consulting rooms, 2 operating theatres, digital radiography rooms, large central preparation area, pharmacy, isolation facility, kennels, separate cattery, teaching and seminar room.

In addition, the shared facilities include a fully equipped laboratory. The dedicated student facility comprises bedrooms, kitchen, social area, IT facilities, soft seating and workspace areas.

PDSA Derby
The Derby PDSA PetAid hospital consists of a waiting room, 6 consulting rooms, 2 operating theatres, operating preparation area, radiography suite, kennelling for 29 animals, isolation ward, and staff area. Students at PDSA Derby share study and amenity facilities with staff.

PDSA Nottingham
The Nottingham PDSA PetAid hospital consists of 2 waiting rooms, 6 consulting rooms, 3 operating theatres, operating preparation area, radiography suite, kennelling for 30 animals, isolation ward, staff area. Students at PDSA Nottingham share study and amenity facilities with staff. The school has invested in the capital phase of building the new Nottingham PDSA Hospital that will open in 2022.

RSPCA Radcliffe
The re-homing centre at Radcliffe includes a new education centre with a 16-seat seminar room and a newly purpose built veterinary suite with 5 dog kennels, 8 cat pods and 2 pods reserved for exotics. There are a further 3 cat pods in the isolation facility. There is a prep room, 1 operating theatre with 2 tables and 2 anaesthetic machines. Cat isolation can be used as a theatre, there is 1 operating table in there and 1 anaesthetic machine. The dental area is a separate area from both prep and theatre spaces, and has its own anaesthetic machine. Students usually share the staff room with local staff.

Pinfold Vets
Pinfold Vets is a first opinion small animal practice in East Leake, Leicestershire. There are 3 consulting rooms, 1 operating theatre, a digital radiography room, 8 dog and 4 cat kennels, 1 isolation place and a laboratory area. Students share study and amenity facilities with staff. There is a newly purpose built Preventive Medicine Centre, with 2 more consulting rooms and a large student room with breakout and IT facilities.

Scarsdale Veterinary Group (Markeaton: Farm)
Scarsdale is RCVS accredited as an Equine and Farm Animal General practice. The dedicated Farm and Equine unit has hospital and operating facilities for all species of farm animals. There are 6 pens for admission of adult cattle, numerous 'calf' pens for admission, and housing/isolation.

The student room comprises learning and teaching space, locker and changing facilities, kitchenette, IT facilities and workspace areas.

Scarsdale Veterinary Group (Pride Veterinary Centre)
Scarsdale's Hospital at Pride Park, Derby, is a RCVS accredited Small Animal Hospital and Emergency Services Clinic. It comprises substantial client waiting areas divided into species-related zones, 14 consultation rooms, multiple diagnostic rooms including advanced imaging, 5 operating theatres, species specific wards, isolation wards, intensive care, and a dentistry room. Other facilities include endoscopy, digital radiography, MRI and CT and an extensive laboratory. There is a substantial pharmacy, client retail and hydrotherapy. Students have a dedicated student room with learning and teaching space, kitchenette, library, and IT facilities.

Scarsdale Veterinary Group (Shelton Lock practice)
The Shelton Lock practice is a branch practice which also hosts Blue Cross charity cases, it is accredited by the RCVS Practice Standards scheme. Facilities include 2 consulting rooms, a preparation room and operating theatre. In addition, there is a small laboratory, ultrasound and digital radiography, Kennels are available for outpatients. Students share study and amenity facilities with staff.

Clinical facilities for track rotations are also based at Clinical Associates, where, dependent on the terms of the contractual relationship the School has invested in facilities and equipment:

Defence Animal Training Regiment
The Defence Animal Training Regiment (DATR), which specialises in military equine and canine veterinary medicine and surgery, is based on a 360-acre site at Melton Mowbray in Leicestershire. Up to 140 horses can be stabled at the DATR, whilst a further 260 can be at grass. There is an extensive equine training facility and the Army School of Farriery has a purpose built facility for both students and instructors. The Canine Division has facilities for kennelling over 200 dogs, training barns and training houses. The Veterinary Division facility has fully equipped hospitalisation, imaging, operating and treatment facilities for both canine and equine care. Facilities include an equine surgery suite and small animal surgery suite, examination, hospitalisation and isolation kennels and stables, digital radiography, canine hydrotherapy, canine post-mortem facilities and a horse walker. There is a dedicated student facility for teaching and learning and social space.

Dick White Referrals
Dick White Referrals is a state-of-the-art small animal veterinary referral hospital, based near Newmarket, Cambridgeshire. The centre combines modern clinical facilities with intensive care facilities, 12 consulting rooms, 5 operating suites, dedicated internal medicine investigation room, spacious climate-controlled accommodation for over 50 patients, diagnostic imaging including radiography and fluoroscopy and on-site diagnostic laboratory with extensive clinical pathology, histopathology and microbiology facilities. A separate building houses ultrasound, CT and MRI units. Facilities also include a dedicated physiotherapy unit and seminar room, the students stay in a house on site rented by DWR and have use of the staff amenities during the Phase 4 extensive build. Once complete the students will resume access to dedicated student accommodation and amenities.

Dovecote Veterinary Hospital
The Dovecote Veterinary Hospital is a RCVS tier 3 Hospital with six consulting rooms, separate kennelling for dogs and cats, an isolation facility, a prep area, 2 theatres and advanced imaging – CT and MRI. There is a large conference room and a kitchen and social area available to the students.

Pool House Equine Clinic
Pool house equine clinic is a tier 2 equine clinic and is set in 12 acre site. The site has undergone extensive redevelopment with a new diagnostic and surgical centre. This consists of a client consultation room, 4 general examination/consultation rooms, a separate standing theatre and dental theatre alongside 2 critical care stables. There are two operating theatres with separate induction and assisted recovery box. There is a standing MRI unit and dedicated farriery area alongside a designated reproduction unit with separate stocks and facilities to undertake fresh and frozen AI. Across the site there are 4 sets of stock to facilitate examination of cases. There are 31 stables including an isolation facility for 4 horses. There is turnout facilities across 12 acres. A laboratory is available onsite, including equipment for determination of ACTH concentrations. There is onsite accommodation in single occupancy rooms, a gym and student study / teaching room as well as a conference room with data projector facilities. Internet access is available across the site, and extension of the campus network is being installed. A kitchen and rest room is available for student use.

Scarsdale Veterinary Group (Langley Mill practice)
Scarsdale Langley Mill is an RCVS accredited practice with a small animal focus but with a large exotic pet caseload. Students on the exotic track spend 2 weeks at the practice.

Your Vets – Sheldon
Your Vets is an RCVS accredited practice with 4 consulting rooms, a prep area, digital radiography, ultrasound, 2 theatres, and student accommodation (2 bedrooms) and access to the staff amenities. Small animal track students spend a week at Your Vets and a week at RSPCA Radcliffe.

East Midland Zoological Society - Twycross Zoo
Twycross Zoo was established in 1963 and contains over 1,000 animals of 200 species. It occupies over 40 acres. Twycross Zoo has the largest collection of primate species in any zoo in the world. Working out of a dedicated veterinary unit most work is carried out in animal enclosures and the necessary anaesthesia and other equipment such as ultrasound scanners and sampling equipment is taken to the patient. In the veterinary unit, there is a clinical treatment/surgical area, recovery room and pharmacy/laboratory, digital radiography, ultrasound, endoscopy. There is a small post-mortem room, access to library and computers and basic laboratory facilities, with microscopes, a conference room and a seminar room, together with a dedicated student room.

Campus and area map

A campus map and map of Clinical Associates is included in SER2.

Strategy and programme for upgrading and maintaining buildings and equipment

School facilities are managed through a combination of in-house process and support from central University Estates; formal oversight is by the School Head of Operations/Technical and Facilities Manager. A reporting system exists within the School so that any staff member can report a facilities issue/defect – in addition to this, regular walk-arounds and audits are carried out by technical and administration staff to identify and report issues or areas for improvement. The University Estates Office provides a range of professional services including repairs and maintenance via a dedicated helpdesk. An online system for reporting maintenance items or defects provides users to gain access to progress of the job reported and to receive an email on completion. Emergency requests for maintenance which occur outside of normal working hours can be made via the University 24 hour Security Control Room.

The School upgrades facilities as required, in conjunction with University Estates, with larger scale improvements as required to support strategic initiatives (for example, improvement in teaching facilities to accommodate an increase in student numbers). Where Clinical Associate facilities are expanded embedded staff provide input into design plans, these are monitored by the School through regular meetings between clinical sub-deans and Clinical Associate partners.

Health and Safety measures and compliance

The University has a documented Health and Safety Policy, Codes of Practice and Guidance. The University Safety Office is the primary contact point with the Health and Safety Executive, The Environment Agency and the Fire Service. It also oversees all aspects of health and safety, advises in developing safety policies or procedures and monitors the implementation of safety policies (for further information see http://www.nottingham.ac.uk/safety/safetyhandbook.htm).

The School aspires to be a centre of academic and research excellence and seeks to ensure high standards in all areas including health and safety. The School expects, and is committed to the following principles:

- Attaining standards of health and safety which meet or exceed the requirements of the University of Nottingham
- Managers and staff/students working together to attain the highest standards of safety within the School
- Ensuring competence of staff and students through provision of information, instruction, training and adequate supervision
- Fostering a "no blame" culture to facilitate the reporting of all accidents, incidents and near misses so that effective action can be taken to rectify deficiencies and prevent reoccurrence
- Monitoring health and safety performance and using the information to inform decisions so that there is a continual improvement of health and safety performance

The School expects all staff and students to take reasonable care of themselves and others who may be affected by their actions. An outline of the School Health and Safety Management is provided in the School

Staff Safety Handbook and Student Handbooks. New staff and students have an induction into the building safety and the emergency procedures of the University by the School Director of Safety (DoS). Health and Safety is a standing item on the weekly Executive Team agenda and Monthly Staff Meeting agenda. School safety guidance, risk assessments, Standard Operating Procedures (SOPs), and School Safety Committee minutes are available for all areas and activities through the on-line School Health and Safety Workspace and Moodle platforms. Central University safety information is available online.

Consistent with University policy, the School maintains a School Safety Committee (SSC) chaired by the Dean of School, with student representation and coordinated by the School Director of Safety (DoS). The SSC reports directly to the University Central Safety Office to ensure health and safety complies with University and UK requirements. The role of the DoS is to create and maintain the health and safety management system on behalf of the Dean. Assisting the DoS are area specific safety assistants covering; radiation safety, biological safety and administration, research and teaching area activities. In addition to specific safety committee members all Principal Investigators and teaching leads have a responsibility to ensure the work/teaching they lead complies with School, University and national requirements.

Clinical Associates
Safety management in Clinical Associate practices is under their local safety management process. All Clinical Associates have health and safety policies and procedures in place to meet national requirements. The School undertakes to advise and assist Clinical Associates with implementation of policies and procedures. Staff and students receive a detailed induction and undertake to adhere to local protocols. Clinical Associate safety is reported to the Schools Safety Committee by the DoS.

EMS process
Students attend compulsory training on placement safety and animal handling. Placement providers are required to sign a Health and Safety agreement to confirm standard safety and insurance requirements. On placement students complete a personal standardised health and safety review to highlight risks. Prior to agreement for non-UK placements a standard checklist of requirements is completed and signed off by the student and School.

Facilities
The University Estates Office develops, services and manages the University estate. The Estates Service Level Agreement (SLA) defines the roles and responsibilities of the Estates Office and building occupiers. The SLA comprises a list of maintenance, servicing and safety activities and their responsibilities in relation to those activities. The Head of Operations, DoS and Estates representatives sit on the Campus Operations Group which reviews any campus-wide Health and Safety issues. On a day to day level, the School Management Team and DoS have a duty to ensure Estates provide a safe and efficient working environment within the School.

Emergency (Fire, Ambulance, and Security)
First aid is provided by trained First Aiders within the school. The call out of emergency services is facilitated through the University security team and they will support the first aiders and coordinate the most rapid response to locations on campus. The security team also attend and manage fire and security alarms.

Incident reporting
All incidents and near misses within the School are reported and recorded online. All reported incidents are investigated by the School Safety Officer and reviewed by the Central Safety Office and report to the School Safety Committee where appropriate follow-up actions will be reported and monitored. Required actions and notifications are made and a summary of all incidents are reviewed at the quarterly SSC meetings. Incident reports are maintained by the central University.

Audits and checks
Annual safety audits of the School are undertaken by the University Central Safety Office. Local audits and checks are carried out at the required intervals by a combination of external contractors, University Fire Inspector, DoS and the technical team to ensure compliance with safety policies and insurance requirements. School-managed derogated CL3 facilities are audited biannually by the University Safety Office.

Records
The DoS reviews and records audits, incident reports and other activities of the School in relation to Health and Safety, the minutes are uploaded on the workspace for accessibly for all staff and students. Training records are maintained for individual staff and research students, these are reviewed by line managers/research leaders dependent on staff activities (minimum frequency annual).

Recreational, study, locker and food facilities available to staff and students

Each student has access within the School to a Small Group Teaching Room (SGTR) for the purpose of study which they can access 24 /7 – all SGTR's are equipped with a wide range of teaching resources and computing facilities. The James Cameron-Gifford Library located on site provides further facilities for study. The School provides locker facilities for all veterinary students and staff.

Various food facilities are available on campus for use by both staff and students including the Mulberry Tree Café, The Square Restaurant and Costcutter Convenience Store. Students also have access to a range of facilities provided through the SB Guild such as the campus bar and a kitchen facility. The School also provides vending machines which are available to both staff and students. A newly refurbished staff room is provided within the Veterinary School for use by both staff and postgraduate students and includes sufficient soft seating areas and facilities for the preparation and consumption of food. A further campus staff room is available in the Barn Building. Students have 24 /7 access to the Atrium with soft seating.

The Sutton Bonington Sports Centre houses a range of sporting facilities for both staff and students, including a large sports hall, squash courts, climbing wall and fitness suite together with various external sports pitches and courts. Further sporting facilities, including a 25m swimming pool are available on the University Park campus, where a £40m investment has been recently made into sports facilities. Students have the added benefit of numerous sports societies as well as a wide range of other recreational societies and facilities ran through the SB Guild such as The Music Society.

3.1.2 Premises used for theoretical, practical and supervised teaching

Data on rooms and places are shown in Appendices 8, 9 and 10

3.1.3 Premises for animals

Dogs and cats
The School has 16 kennels for dogs and an outdoor exercise pen and also 6 separately housed cages for cats. The Schools holds an extensive register of normal and clinical case teaching animals that belong to staff and the local public. The School also has facilities for cats in converted outdoor buildings. Visiting animals are not held overnight and visit for a variety of daytime non-invasive practical clinical classes including palpation, ultrasonography, ophthalmological examination etc in all years of the course.

Children's pets and exotic animals
The School has a dedicated facility to house children's pets and exotic animals, comprising chinchillas, rats, mice, gerbils, guinea pigs, tortoises, corn snakes and bearded dragons. The animals are housed in various cages and vivariums, many with the ability to control temperature, UV lighting and humidity in two dedicated temperature controlled rooms. Each of these rooms also has automatic day/night lighting and an air extraction system. Rabbits are housed in a variety of hutches and run systems in the Clinical Building courtyard during the summer period. These animals are used for a variety of animal handling and physical examination practical classes and assessments across all years of the course. These facilities will be moved to new, purpose built facilities within the new Mock Veterinary Practice in 2023.

Laboratory and research animals
An animal house and research surgery complex (Bio Support Unit (BSU)) has facilities for holding and managing large and small research animals. BSU provides facilities for multi species animal research and teaching and services that include; facility and trial management, animal care and management, research and / or teaching assistance and surgical and procedural services. Facilities and equipment include fully equipped necropsy and surgery suites, imaging (ultrasound, DEXA, gamma scintigraphy, C-arm x-ray and CT scanning), races, weighing machines, animal transporter, and various cages and pens that can be configured in a variety of ways in order to hold different species.

Equine
The School has sixteen 4m x 4m loose boxes and associated yard, tack and feed rooms for students' horses, 20 acres of turn-out and a 30m x 20m floodlit indoor menage, which is used by the students for equine recreation and also for teaching animal handling and husbandry. In addition there is an EziWeigh equine weigh scale which is used as part of equine teaching. Students pay a charge for DIY livery, in return there is an expectation that their animals are used for teaching of palpation, lameness evaluation and physical examination of the normal animal across all years of the course. In addition the school also houses 3 horses on a long term loan which are used extensively for handling and non-invasive examination purposes.

Smallholding
A purpose-built smallholding contains accommodation pens for cattle, sheep and pigs, an examination area and static crush and student changing and wash room facilities. Outside the unit on hard standing there are further teaching areas and a sheep handling system with race and shedding gates. There is room in the smallholding for animal handling classes to be held. Other facilities include feed and straw storage. Adjacent to the smallholding is a large multipurpose teaching facility used for the examination of small mammals/exotics as well as housing a variety of farm animal related pieces of equipment.

Chickens are housed in a securely fenced coop. The School also has an apiary comprising five hives.

Farm
The 1,000 acre University Farm comprises several animal facilities. Facilities include various barns, sheep polypens each holding up to 100 sheep, and 2 environmentally controlled commercial pig fattening houses with facilities for pig handling and weighing.

The Dairy Unit comprises 350 Holstein/Friesian cows and 250 followers. Cows and bulling heifers are housed in sawdust-bedded cubicles with straw bedded pens for weaned and milk fed calves and dry cows. There is storage for silage, concentrate, sawdust and straw. Cows are milked through 4 Lely Astronaut A3 robotic units. The facility also contains an automatic individual feeding system for one quarter of the herd which allows nutritional research to be conducted. The Unit is also a Home Office designated research facility with handling and laboratory facilities plus reception room, seminar room, a covered handling system with holding pen, race and crush. Other equipment at the Dairy Unit includes fully hydraulic mobile cattle foot trimming crush, hurdles and gates which can be configured to create a variety of additional handling facilities as required. The unit has recently undergone a £6million expansion which resulted in an increase in herd size of 50%. The new unit provide states-of-the-art teaching and research facilities and includes a variety of technology-based sensor equipment.

3.1.4 Premises for clinics and hospitals

The facilities available at the Schools Clinical Associates are detailed previously in section 3.1.1. The facilities are maintained by Clinical Associates. The currency of standards is also monitored by Rotation Leaders and the Clinical Director, in conjunction with the Technical and Facilities Manager.

Appendix 11 shows premises available for clinics and hospitalisation.

3.1.5 Diagnostic Laboratories and Clinical Support Services

Diagnostic Laboratories

Across the School and its Clinical Associates facilities are available for:
- Necropsy
- Histopathology
- Histology
- Microbiology
- Nutritional analysis
- Clinical biochemistry
- Haematology
- Cytology
- Immunohistochemistry
- Parasitology
- Serology
- Endocrinology

Necropsy Examinations
The School Pathology unit is capable of handling a variety of companion, livestock, exotic, zoo and wildlife species. The post-mortem room comprises two large rooms with different sized tables (five for smaller to medium sized animals up to 250kg, one large hydraulic table for horses or other large animals up to 1000kg), a large, walk-in cold storage room, several freezers, and all the usual equipment needed for performing full post-mortem examinations (band-saw, oscillating saw, knives, scrubs, wellingtons, etc.). A seminar room with a 10 headed microscope with live projection onto a wide screen monitor for teaching purposes of cytological (clinical pathology) and histopathological (diagnostic pathology) sample analysis. A histology laboratory contains all the basic instruments for routinely processing slides for histological examination.

Gross teaching material can be stored chilled, frozen or in Klotz solution in the cold room, and general cadaver disposal is via skips that are removed by a licensed commercial service provider. A local 'knacker' provides a service for collection of equine carcases, delivered to the post-mortem room and final removal of waste material. Other material is transported between Clinical Associate sites and the School by the School technicians with other material transported to the post-mortem room by clients. Material is securely stored in clinical waste bags and transported in a School vehicle licensed for transport of this type of material. SOPs are available in the Pathology section of the Schools safety workspace. Further necropsy facilities are available at Twycross Zoo and Oakham (equine), while students may also undertake brief or partial necropsies on farms as part of the farm animal rotations, as this is often the case in private practice.

Histopathology
Recovery of tissue from necropsy cases is carried out within the post mortem room. Histological processing and specialised staining are carried out by a School technician. Specialised histochemical and immunocytochemical staining techniques are available through third parties as necessary stained microscope slides are returned for examination by pathologists. Supervised reports are generated based on gross findings by rotation students. Transmission and scanning electron microscopy, microCT and MRI are available on an adhoc basis as required, on the Sutton Bonington Campus or at University Park. Extensive facilities for processing histology, histochemical and immunohistocytochemical stains also exist within the School.

Microbiology
Within the School there are Containment Level 2 and 3 facilities, including associated equipment. Diagnostic bacteriology, mycology and parasitological investigations arising from post mortem examinations are carried out using laboratory facilities at private diagnostic labs like IDEXX or CTDS. Virology investigations for companion animal diseases use appropriate third-party specialist centres like IDEXX or CTDS.

Clinical Pathology
A clinical chemistry laboratory exists within the School; it is primarily used for the assessment of the nutritional status of farm animals. It has links with the Clinical Pathology Laboratory at Scarsdale Veterinary Group and with Division of Environmental Sciences at University Park.

Clinical pathology is included as part of the clinical rotations at locations which possess clinical pathology laboratories: Oakham, Pool House, Scarsdale, Pride Veterinary Centre, Shelton Lock, YourVets, Dovecote, and Dick White Referrals. Equipment at Dick White Referrals includes: an Olympus A400 wet chemistry analyzer, an Advia AD200 haematology analyzer and an Immulite 2000 for endocrine testing plus coagulation testing, blood gas analyser, various snap-ELISAs, blood typing etc. There are 3 qualified lab technicians plus a Clinical Pathologist Diplomate and a resident staffing the lab. At Pride, there is a Randox Daytona, clinical chemistry analyser, IDEXX Procyte Haematology analyser, a TOSOH immunoassay analyser and a teaching video screen microscopes and 3 dedicated laboratory technicians. Students also have access to multi-head high quality teaching microscope in the necropsy facility and also LCD screen microscopes in 2 student learning rooms (Year 5 hub and the Pride Student seminar room).

Central clinical support services

Clinical Associates host facilities and equipment for clinical support at core rotations:

Oakham Veterinary Hospital
Computerised and 2 digital radiography system with gantry based generator, several ultrasound machines for use both in the hospital and in an ambulatory setting, MRI, Bartech Scintigraphy, CT scanner (recumbent and standing), 2 equine anaesthetic machines with ventilators and multiparameter monitors including end-tidal monitoring and blood-gas analysis. Static and ambulatory ECG machines, endoscopes, blood pressure monitors, EMG and magnetic evoked motor potentials. Equipment available to undertake direct current cardioversion using a biphasic defibrillator. Objective lameness / gait analysis system.

PDSA Derby
Digital radiography facility, ultrasound machines, several anaesthetic machines

PDSA Nottingham
Digital radiography facility, ultrasound machines including colour Doppler ultrasound, several anaesthetic machines, multiparameter anaesthetic monitor and several pulse oximeters, ECG machines and flexible endoscopy facilities and microscopes

RSPCA Radcliffe
Three anaesthetic machines and dental unit.

Pinfold
Diagnostic imaging includes radiography and ultrasound, other equipment includes ECG, blood pressure machine and 2 anaesthetic machines

Scarsdale Markeaton Farm Animal
Equipment includes anaesthetic machines, several ultrasound machines, and digital radiography

Scarsdale Pride Veterinary Hospital
Digital radiography, fluoroscopy, 3 dedicated ultrasound rooms, CT, MRI, ECG, blood pressure monitors, endoscopes, extensive anaesthetic equipment

Scarsdale Shelton Lock
Anaesthetic machine, multiparameter monitor, dental machine, digital radiography, in house laboratory

Clinical Associates host facilities and equipment for clinical support at track rotations:

Defence Animal Training Regiment
Digital radiography facility, ultrasound machines including colour Doppler, anaesthetic machines and monitoring equipment, an ECG machine and endoscope facility

Dick White Referrals
Imaging suite, digital radiography, MRI, fluoroscopy, ECG, endoscopy, diagnostic ultrasound, colour Doppler ultrasound, extensive anaesthetic monitoring

Dovecote veterinary Hospital
Digital radiography, CT, MRI, ECG, endoscopy, diagnostic ultrasound, colour Doppler ultrasound, extensive anaesthetic monitoring

Pool House Equine Clinic
Digital radiography, several ultrasound machines, standing MRI. 2 equine anaesthetic machines with ventilators and multi parameter monitors. Ambulatory and fixed ECG, endoscopes including gastroscopes. Equipment available to undertake direct current cardioversion using a biphasic defibrillator. Objective lameness / gait analysis system.

Scarsdale Langley Mill
Anaesthetic machine and ventilator, multiparameter monitor, dental machine, digital radiography

Your Vets – Sheldon
Digital radiography, ultrasound, ECG, blood pressure monitors, endoscopes, anaesthetic monitoring equipment

Twycross Zoo
Digital radiography facility, including portable radiography, ultrasound machines, anaesthetic machines, ECG machines, blood pressure monitor, flexible endoscopes, pulse oximeter, microscopes, a digital stethoscope, laser thermometers, and a thermal imaging camera

3.1.6 Slaughterhouse Facilities

The School has recently refurbished its on-site abattoir, and is currently having it re-licensed. It has not been used for several years (owing to a desire to refurbish it and then covid delays), during which time a virtual abattoir has been used in combination with abattoir visits and food hygiene practical teaching (described in section 9.1.10).

Off site visits currently include a red meat abattoir where students observe the process from lairage to chiller (including ante-mortem and post-mortem inspection). Most students perform an ante-mortem DOP in situ as part of that visit. Red meat abattoir visits have already resumed after the COVID pandemic made such visits impossible for around one year. Pre-covid, students also visited a poultry abattoir; these visits have been replaced by practical sessions on campus but will resume as soon as possible. The School also currently utilises a number of local slaughterhouses (with 15-80 miles) to provide various cadavers and animal material for teaching in the VPH and other modules.

Once the onsite abattoir will be fully licensed, the aim is for it to run as a year-round, low throughput, local abattoir, providing a service to local producers and an in-depth, year round experience for students in years 1,3 and 5, allowing the offsite visits to focus particularly on the 'factory' high throughput experience. The Sutton Bonington abattoir will be fully licensed for slaughtering of pigs, sheep and small cattle, and include all the facilities found in a larger red meat abattoir including large cold rooms, and a substantial cutting room where students can learn some of the basics of butchery. Its advantage over the current use of offsite visits alone (although we believe them to offer high quality experience to students) will be in our ability to introduce the principles of abattoir processes from the beginning of the veterinary programme, and offer small group, quiet and controlled experience without the distractions of a busy high throughput facility. The food hygiene and VPH aspects of the programme are increasingly of interest to our students, so as well being a fantastic resource in the core curriculum and elective rotations, we intend that the abattoir will provide material for student research projects and potentially CPD and other postgraduate teaching. Between them these approaches meet the needs of the teaching programme. However, refurbishment of the School's abattoir will enable us provide a better teaching experience still, and provide resilience should problems arise with external red-meat visits.

In the final year core One health One Welfare rotation, students also visit local markets to learn about animal transport and inspection and welfare within the markets, factory and/or artisanal dairies and cheese producers. The visits are gradually resuming also, post covid. A new 'elective' rotation will also make use of the refurbished abattoir and includes visits to further food producing and processing facilities, for example specialising in game and other non-traditional food producers.

3.1.7 Foodstuff processing unit

During the final year Veterinary Public Health rotation students all spend a day visiting a dairy producer, either a dairy farm that makes cheese from unpasteurised milk, or a dairy cooperative producing a Protected Designation of Origin (PDO) cheese. The focus of this visit is the monitoring and inspection of these businesses and Hazard Analysis Critical Control Points (HACCP) analysis. The students also discuss technological considerations, certification and other challenges with the food business operators (FBOs). Further information on teaching in food processing units is detailed in section 9.1.10

3.1.8 Waste management

Clinical waste includes animal carcases, blood and tissue, bedding from animals, soiled dressings and swabs etc and other laboratory plastic clinical waste such as materials from cases, sharps etc. This waste is disposed of via licensed contractors managed by the Estates Department.

Infected clinical waste is disposed of on site or by a licensed contractor as per the guidelines laid out by the health and safety executive. Infected glassware is autoclaved using certified autoclaves in-house before being washed and sterilised.

Hazardous chemicals are disposed of as detailed in COSHH assessments. Bulk chemical disposal is carried out via the University Safety Office by a licensed contractor. Radioactive material is disposed of as appropriate depending on the radioactive source.

Manure from the livery yard and associated grazing is moved to the designated muck heap for regular collection by the University Farm. Waste (excrement) from the kennel facilities is collected in faeces bags and disposed of as described under clinical waste (above). Vet bedding is cleaned in house using the clinical building washing machines. Any areas contaminated by faeces or urine are cleaned and disinfected.

At all Clinical Associates, external contractors are employed to collect cadavers and for disposing of clinical waste and sharps.

3.1.9 Future changes

To support the increase in student numbers, and to also provide dedicated on-site teaching facilities for the delivery of school based clinical rotations, plans are currently being developed for the creation of a "mock" veterinary practice. Facilities will be split across two buildings:

Two storey small animal/academic building

- Two consultation rooms with associated viewing room
- Two fully equipped theatres and physiotherapy suite
- Clinical investigation area with associated diagnostic laboratory space
- Live x-ray

- Pharmacy
- Kennels and cattery
- Changing rooms
- Six small group teaching rooms
- Seminar room
- Staff offices
- Kitchen facility

Single storey equine/farm animal building
- Equine examination and trot up area
- Farm skills area
- Secure storage
- Two small group teaching rooms

The school is currently investing in the creation of a centre for veterinary innovation and design, equipped with facilities and resources for the design and manufacture of veterinary clinical task trainers and teaching aids.

From 2022 we will also use RSPCA Leicester, RSPCA Bolton and the new PDSA Nottingham hospital (to which we are making a financial contribution).

3.2 COMMENTS

The teaching facilities in the School have been, and continue to be, expanded to support the increase in student numbers. As part of the move to a dual entry model, significant investment in facilities has been made by the university to the value of £7M. Developments were split in four phases:

Phase 1 – Now complete
- Reconfiguration of Clinical Small Group Teaching Rooms to allow flexible use as teaching space

Phase 2 – Now complete
- Expansion of the Clinical Skills Laboratory and kennels facilities
- Expansion of the cold storage facilities within anatomy along with the creation of a purpose-built embalming area
- Expansion of the student locker room

Phase 3 – Now complete
- Refurbishment of the on-site abattoir, including new roof, windows and doors
- Relocation of the school histology laboratory to purposely designed facilities
- Refurbishment of the school staff room
- Upgrade of atrium furniture for student social/study use
- Increased provision of meeting room space

Phase 4 – In planning, with completion in early 2023. (see 3.1.9)
- Creation of a "mock" veterinary practice split across 2 dedicated buildings

The school is increasing its fleet of vehicles by purchasing four electric powered cars for use by students travelling to Clinical Associate practices

Research facilities have been expanded through the transfer of ownership of laboratories from the School of Bioscience, to the Veterinary School. The university has also recently invested £1.2M in the refurbishment of an on-site CL3 laboratory for infectious disease research. This investment forms part of larger plans to refurbish vacant laboratory space previously occupied by AHPA, to create a centre for global virus research.

3.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 8 Premises available for lecturing (core rotations)

School							
1 (A30)	2 (A29)	3 (A10)	4 (A14)	5 (LR9)	6 (LR2)	7 (LR3)	8 (LR4)
400	160	40	30	217	118	86	46
9 (LR11)	10 (SR5)	11 (SR6)	12 (SR7)	13 (SR8)	14 (B12)	15 (B13)	16 (Cwood)
65	18	24	26	16	66	36	120
17 (A28)	18 (B10)	19 (B08)	20 (B05)	21 (B09)	22 (A07)	23 (B01)	
30	12	14	23	26	120	120	
Oakham	**Pinfold**	**RSPCA Radcliffe**	**Scarsdale FA**	**Scarsdale Pride**			
1	1	1	1	1	2	3	
40	8	16	30	60	20	8	

Number of places in School lecture halls: 1813
Number of places in Clinical Associate lecture halls: 182

Appendix 9 Premises available for group work (core rotations)

School							
1 (A06)	2 (A07)	3 (A08)	4 (A09)	5 (A16)	6 (A17)	7 (A18)	8 (A19)
12	12	12	12	12	12	12	12
9 (A20)	10 (A21)	11 (A22)	12 (A62)	13 (A63)	14 (A64)	15 (A65)	16 (A66)
12	12	12	12	12	12	12	12
17 (A67)	18 (A68)	19 (A70)	20 (A71)	21 (A72)	22 (A73)	23 (A74)	24 (A75)
12	12	12	12	12	12	12	12
24 (A08)	25 (Library 1)	26 (Library 2)	27 (Pathology)	28 (A22b)	29 (A22c)	30 (A13)	
12	30	10	6	12	12	12	
Oakham	**Pinfold**	**Scarsdale FA**		**Scarsdale Pride**			
1	1	1	1	1			
18	10	10	8	8			

Number of places in School rooms for group work: 382
Number of places in Clinical Associate rooms for group work: 54

Appendix 10 Premises available for practical work (core rotations)

School							
1 (A42)	2 (A43)	3 (A49)	4 (B47)	5 (B63)	6 (B66)	7 (A05)	8 (A06)
15	25	50	10	10	8	35	35
9 (A12b)	10 (A59)	11 (A61)	12 (A52)	13 (A25)	14 (A27)	15 (A23)	16 (Superlab)
8	40	15	160	30	10	12	200
17 (Path 1)	18 (Path 2)	19 (A45)	20 (B62)	21 (B59)	22 (B52)	23 (C05)	
40	15	6	6	10	10	15	
Oakham	**Scarsdale Pride**						
1	1						
6	4						

Number of places in School rooms for group work: 765
Number of places in Clinical Associate rooms for group work: 10

Appendix 11 Places available for hospitalisation and isolation (core and track rotations)

		DATR	DWR	Dovecote	Oakham	PDSA Derby	PDSA Notts	Pinfold	Pool House	RSPCA Radcliffe	Scarsdale FA	Scarsdale Langley	Scarsdale Pride	Scarsdale Shelton	Your vets Sheldon	Twycross Zoo
Hospitalisation	Cattle										2					
	Horses	21			24				31							
	Small ruminants	1									4					
	Pigs										2					
	Dogs	13	85	20	19	16	18	8		6		6	68	3	23	
	Cats		10	10	12	8	12	4		10		6	34	3	6	
	Other species									2			18			Various
Isolation	Small animals	45	4	2	4	6	5	1		3		2	9		2	Various
	Farm animals and horses	2			2								0			

Notes:

- Defence Animal Training Regiment: Stabling is also available for 140 horses and 200 dogs in total
- Scarsdale Pride: 12 rabbit/small mammal, 5 vivaria and 3 parrot cages for hospitalisation
- Twycross Zoo: Hospitalisation and isolation facilities are in different enclosures according to species.

4 ANIMAL RESOURCES

4.1 FACTUAL INFORMATION

4.1.1 Anatomy

Fresh and preserved complete and part cadavers of the major domestic species, are used for practical teaching of anatomy in Years 1 and 2. Specifically, students work in groups of 3 or 4 to dissect the body regions of the dog relevant to the systems studied in specific modules throughout Years 1 and 2. These dissections are supplemented with material from other species as required. Further use of cadavers is made in the teaching of surgical techniques in Years 3, 4 and 5.

Animal cadavers are sourced from within the UK and our technical staff have been trained in preservation techniques. Sourcing fresh companion animal cadavers remains a challenge, although the volume is adequate.

Entire skeletons of each domestic species and a variety of high quality plastinated specimens, illustrative models and other learning materials are available in the museum, clinical building and dissection room. Each small group teaching room holds a skeleton of a dog and / or a cat, and various models. The School Museum also holds skeletons of less common and exotic species. This material is either bought or prepared by School technicians.

Live animals are normally used during anatomical classes and comprise dogs, cats, horses and exotic animals owned by the School, staff and students, together with cattle, sheep, pigs and chickens which form the Schools smallholding and also cattle from the Sutton Bonington Dairy Unit. Further access is provided to live dogs (approximately 200) and horses (approximately 250) at the Defence Animal Training Regiment (DATR), allowing students to practice live anatomy. Students also gain access to equine cadaver material from the DATR and Oakham, and exotic cadaver material from Twycross Zoo.

4.1.2 Pathology

Appendix 12 shows the number of necropsies over the last 5 years. The data is compiled from the School Pathology Service and from Clinical Associates

There is substantial use of exposure to necropsy material throughout the Year 3 and 4 modules in which pathology teaching is embedded; here materials are harvested and presented to students rather than being full necropsy examinations. This additional necropsy material derives from the formal necropsies as well as local abattoirs and slaughterhouses particularly in relation to the teaching of public health and food hygiene. Recently the School has entered into a contract with DEFRA to provide post-mortem examination services for the surveillance of farm animals, which will further increase caseload.

The average number of post-mortems undertaken by an individual student would be around 6 per student based on the ratio calculated, however students on the pathology rotation would work in small groups, and so would see a higher caseload.

4.1.3 Animal handling / husbandry

All major species of farmed animals and companion animals are available on Campus. In addition, contractual links have been made with local organisations and Clinical Associates to ensure a wide availability of a variety of animals for teaching basic sciences, animal husbandry and clinical subjects.

Live animals are used in a variety of classes during years 1 to 4 and resources comprise:

- School, staff and student owned animals (horses, dogs, cats, rabbits, birds, hamsters, lizards, tortoises, fish, etc) are used for a wide variety of classes (e.g. ophthalmology, cardiology, animal handling). The School has a register of normal and clinical case teaching animals that belong to students, staff and the local public that are available to be used in teaching. Students are able to livery their horses at the School, and the School holds its own collection of children's pets and common exotic species
- All the major farmed species are available for teaching animal health and welfare on site. The 1000-acre University farm comprises dairy cows and sheep. The School has a dedicated smallholding comprising cows, pigs, sheep, chickens and bees. All Year 1 students (in groups of 4 or 5) are required to care for the animals for 2 weeks each

- Visits to the Guide Dogs Breeding Centre for basic animal handling, dog care, dog behaviour, drug administration and reproduction
- Laboratory animals are provided on site or handling and animal health and welfare teaching
- Clients of local practitioners visit with animals for practical and client communication sessions (e.g. endocrine disorders)
- Ante-mortem inspection to butchering of pigs at the School abattoir and visits to a number of local abattoirs (red and white meat)

In addition, students will see a range of production animals during the 38 weeks of Extra Mural Studies throughout their course.

4.1.4 Food hygiene and Public Health

Students gain practical teaching in food hygiene, inspection and technology in Year 3 during the Veterinary Public Health module, the Year 5 Veterinary Public Health One Health One Welfare rotation, and as of this year, a new elective VPH rotation.

Students normally gain experience in a variety of situations including in the local abattoirs (red and white meat), markets and dairies/cheese plants. During Covid, there were obvious difficulties in visiting non-University sites during rotations, but most visits have now returned to normal, and refurbishment of the small onsite abattoir will enable student still greater exposure to all stages of the slaughter process in calm, controlled conditions, in years 1, 3 and 5. Further information of overall veterinary public health teaching is in section 9.1.10. Practicals, supporting lectures and SDL, in Year 3 include ante mortem inspection and inspection of fresh materials from ruminants, pigs, poultry and fish, proper captive bolt guns use (for emergency slaughter), food microbiology and small group scenario sessions on the control of zoonotic and notifiable outbreaks. In addition to visits to abattoir and processing plants, Year 5 rotation students have bee practicals (at the School) along with further discussion of animal welfare, disease control and surveillance and residues control. The new elective/track rotation builds on these with further hands-on experience through farm and other visits, focussing on food safety, and sessions on risk analysis, audit and disease ecology/modelling.

4.1.5 Organisation of clinical services

As detailed in section 1.1.5 the School has formal contractual relationships with a small number of veterinary practices and organisations that facilitates access to extensive caseload for year 5 clinical teaching.

Intra Mural rotations are planned overall and assigned by the Clinical Director, supported by a senior administrator. The Clinical Director is aided by 4 species leads (Farm, Small Animal, Equine and Pathology/VPH) and by Rotation Leaders, who have responsibility for developing and overseeing the delivery of learning outcomes and the overall organisation and student experience for each rotation, including evaluation of caseload.

The rotation planning process for year 5 begins for students in Year 3, where students can define preferred tracks, and the colleagues with whom they would like to undertake rotations. Final year rotation groups are always 10 students or less, typically split into smaller groups at the rotation site, for most rotations students are taught by School or Clinical Associate clinicians in groups of 3 or less, in many cases students are taught on a 1:1 basis providing an excellent student clinical learning experience.

Year 5 students on rotation at Clinical Associates and at the School, use a commercial piece of software My Progress. The My Progress system is the main interface through which students review the practical skills on which they are summatively assessed through DOPS on rotations (see section 10.1.2). My Progress is also one of the many ways in which students communicate with the School and each other, for example providing feedback from rotation leaders on performance to students and feedback from students about their experience whilst on rotation. Staff are able to flag areas of concern or weakness identified for a student on their rotation, so that these can be rolled forward and reviewed by subsequent Rotation Leaders; this information is shared with the student. Furthermore, the system allows for declaration and reporting of relevant medical conditions and emergency contact details so that clinical staff have access to all relevant information for a student.
The School and its Clinical Associate practices employ significant numbers of American, European and RCVS specialists School Specialist staff deliver across the clinically integrated curriculum, with predominant focus

on year 5. In the final year students are exposed to veterinary generalist staff and subject-matter experts as follows:

- Pride Veterinary Hospital – exposure to full range of specialist services staffed by 21 RCVS, European or American Board-certified practice and SVMS staff. In wards students are supervised by experienced qualified veterinary nurses
- PDSA – experienced primary care clinicians and SVMS staff
- RSPCA Radcliffe – experienced primary care clinicians and SVMS staff
- Pinfold - experienced primary care clinicians and SVMS staff
- Oakham primary care - experienced primary care clinicians and SVMS staff
- Dick White Referrals – exposure to full range of specialist services staffed by European or American Board-certified diplomats (319 staff, 91 vets, 93 nurses)
- Dovecote - exposure to neurology, orthopaedic and soft tissue surgery and dermatology specialist services staffed by European Board-certified diplomats or certificate-holding veterinary surgeons and first opinion small animal practice
- Twycross Zoo – student activities are supervised by the Veterinary Services Manager who is an experienced, certificate-holding zoo vet and an SVMS DVM student
- Oakham Equine Hospital and Ambulatory services – 4 Board-certified SVMS staff oversee the rotations (DACVIM, Dip ACVIM-LAIM, DipACVS-LA, DipECVAA, DipECVSMR), exposure to primary and referral work staffed by experienced equine clinicians and specialists (DipECVS)
- Defence Animal Training Regiment – 1 Diploma-holding member of staff is involved in this rotation (DipACVIM, DipACVECC)
- Equine skills rotation – 6 Diploma-holding school staff are involved in delivering this rotation (DipACVIM, DipACVECC, DipECVCP, DipECVS, DipECEIM, DipACT, DipECAR, DipECVAA)
- Pool House Equine - experienced primary care clinicians and diplomats in surgery and dentistry, and internal medicine diplomats from SVMS (DipECEIM and DipACVIM)
- Farm Animal practice – The rotation is supervised by a European Diplomate. Along with the experienced primary care clinicians, farm visits are conducted with two European College Residents who under the supervision of RCVS and European diplomats in Cattle Health and Production. Two European diplomats in total are involved in this rotation (DipECBHM)
- Farm skills – this rotation is led by a European Diplomat. In total 6 Diploma holding staff are involved in delivering this rotation (DCHP, DipECBHM, DipECRSHM)
- Advanced herd health, advanced farm practice and advanced farm skills – all rotations overseen by European diplomats (DipECBHM)
- Anatomic and Clinical pathology – supervised by 3 Diploma holding School staff, DipECVP, DipECVCP
- One Health, One Welfare rotation – supervised by 1 diploma holding School staff (DipECVPH)

Appendix 13 describes the supervision and monitoring of students and the contractual arrangements at each Clinical Associate. At Clinical Associates, teaching is predominantly overseen and monitored by School personnel; exceptions are Scarsdale Farm where Scarsdale staff and School Residents supervise students and Twycross Zoo where an DVetMed student supervises; both are visited by the Rotation Leader or Clinical Director at least fortnightly. Assessment of DOPS is undertaken by School staff, Residents and trained Clinical Associate staff. Students on rotation undertake case management and have full access to School and Clinical Associate subject Specialists as appropriate to the rotation. Safety management in Clinical Associate practices is under their local safety management process and is detailed in section 3.1.1.

Appropriate training is provided to staff at all levels in the Clinical Associate Institutions. Clinical Associate staff are trained as necessary, usually at the beginning of a relationship, with ongoing training provided as necessary on an ad hoc basis by placed staff. We are developing videos for Clinical Associates to use on induction of their staff. Clinical Associate staff have been also supervised by School staff to undertake residencies.

All Clinical Associates have high standard facilities accredited by RCVS Practice Standards, with the exception of PDSA, RSPCA and Defence Animal Training Regiment (as these are charity and military establishments) and Dick White Referrals (who believe that there is not an appropriate level which recognises the high quality of clinical facilities and expertise) and Pinfold. All Clinical Associates have appropriate learning space and facilities, for example all have mini-libraries with key texts, Wi-Fi coverage with linkage to University IT systems.

Working relationships with Clinical Associates are good, and as School staff are embedded within Clinical Associates, there is ongoing dialogue regarding all aspects of rotation teaching and support, however there are formal review meetings held yearly with Clinical Associates, and student feedback (which is compulsory) is reviewed at the end of every 2 week rotation and acted on as necessary by the Rotation Leader and Clinical Director. There is detailed systematic review and reflection on the effectiveness of the clinical educational experience, which includes normal TLA Committee quality assurance and control mechanisms

such as 6 monthly rotation review and annual module review process and graduate outcomes analysis (see section 9.1.6). In addition there are monthly meetings of Clinical Sub-Deans and twice-yearly Clinicians Meetings to review common themes and issues across rotations.

4.1.6 Caseload

Caseload data are compiled across Clinical Associates and are shown in Appendices 14, 15 and 16. There have been no major changes in the student's involvement in cases since the last visitation. These numbers only include core rotations due to the variability in student numbers for track rotations.

There is a significant and increasing canine and feline caseload, particularly due to growth in the caseload at Pride Veterinary Hospital, the addition of Pinfold and the addition of Blue Cross and Cats Protection League charity work undertaken at Shelton Lock branch practice (Scarsdale) and RSPCA Radcliffe respectively. Comparison with the prior reported data, reported numbers for exotics show a drop, however previous data included Twycross Zoo which is now a track rotation.

When the School was established the pathology caseload teaching material came from three sources. There were two Clinical Associates; the Animal and Plant Health Agency (APHA) providing farm cases and The Minster Veterinary Practice providing commercial poultry cases. Vet School pathologists provided a companion animal pathology service to Clinical Associate practices and other referring veterinary practices. Since the pathology rotation inception, the Minster Veterinary Practice has been bought out by a veterinary corporate and APHA has closed its Sutton Bonington regional laboratory, thus resulting in neither organisation being Clinical Associates. Since February 2021 SVMS has been the 3rd party provider for APHA surveillance in the East Midlands. This is a large geographic area with a diverse livestock sector. Therefore final year students see a variety of farm cases whilst on their pathology rotation. This, now, omni-species, in-house, pathology service ensures that every pathology rotation will have exposure to small animal, equine, poultry and farm caseload and occasionally exotics and wildlife.

Economic pressures on UK livestock sectors (especially dairy) have contributed to a reduction in farm animal caseload, as the number of dairy farms visited for routine work has declined (largely due to economic pressure on the UK industry). Other farm species caseload remains low with year to year variation, however it is currently adequate for teaching purposes. In order to secure teaching for the future in a milk pricing climate which is likely to remain volatile, discussions are well advanced with an additional Clinical Associate farm animal practice. In the short to medium term, UK milk prices are recovering and the industry is likely to be entering a period of increased price where it is anticipated that caseload will increase. Significantly restrictions associated with Covid have reduced the number of production animals seen over the last 2 years.

To ensure the student experience is not adversely affected with increased year and rotation group sizes, additional Clinical Associates have been recruited at Pinfold, RSPCA Radcliffe and Pool House Equine to facilitate excellent exposure to clinical cases. Further relationships are being developed to increase farm animal caseload and small animal caseload (RSPCA Bolton and RSPCA Leicester).

Our teaching strategy is to ensure that students meet RCVS Day 1 competences through exposure to an appropriate caseload. We feel that our community-based teaching model provides an excellent balance between first opinion and referral cases, with students being involved in the clinical management of both types of cases.

Appendices 13 and 17 show details of Clinical Associate placements, including contractual obligations.

4.1.7 Development of students' skills

Details of animal handling skills development and assessments, which are required to be passed to progress to year 4, are detailed in section 10.1. Year 5 students are fully engaged in all aspects of the healthcare management of all species, under the supervision of a qualified veterinary surgeon in order to develop Day 1 competences. They will normally undertake rounds, and have considerable responsibility in all aspects of case investigation, management, treatment, care of patients and interaction with clients including at our core rotations:

- Oakham Equine Hospital and Ambulatory– first and second opinion consulting and investigations (blood sampling, radiography, ultrasound, MRI) including admission and discharging of patients, in-patient care. Includes case presentation at twice daily rounds
- Pinfold / Shelton Lock Primary Care – first opinion consulting and medicine and first opinion anaesthesia and surgeries and investigations (blood sampling, radiography, ultrasound) including admission and discharging of patients and managing clinical records. Students are also involved in

admissions/reception desk duties, in order to also understand finance and insurance aspects of primary care including taking payment for services.

- Pride Referral – consulting, clinical reasoning, case management planning, assisting with case investigation, communicating with owners and referring veterinary surgeons, and in-patient care. This includes verbal case presentation at rounds of cases for which the student is responsible and a single complete case report on last day of the rotation. Regular morbidity and mortality rounds take place with results published in the hospital
- PDSA Nottingham/Derby and RSPCA Radcliffe – first opinion consulting (including telephone consultations) and first opinion surgeries, anaesthesia and investigations (blood sampling, radiography, ultrasound) including admission and discharging of patients in a charity clinic.
- Pride Out of Hours– out of hours (emergency) consulting, emergency triage, critical care and case management, in-patient care, communicating with clients.
- Equine skills – first opinion skills using cadaver material/models/teaching horses (including physical examination, ophthalmology on teaching horses, blood sampling, radiography and colic rectal exam on models, and nerve blocks, dentistry and suturing on cadavers)
- Scarsdale Farm Practice – all aspects of busy ambulatory farm practice, history taking, clinical assessment of stock, managing clinical records, routine procedures including surgery, plan generation and communication of plan to farmer. Rounds at the end of the two weeks with all farm rotation groups
- Farm skills – mostly farm skills acquisition/refinement and coverage of minor farm species. Rounds at the end of the two weeks with all farm rotation groups
- Veterinary Public Health One Health, One Welfare - abattoir visits including ante-mortem inspection and passport reviews, and Food Business Operator (FBO) visits – discussion with FBO around raw materials, manufacture, relevant legislation, quality control and pathogen surveillance and kennel and cattery visits. Students also lead in community based veterinary clinics for the vulnerable housed in Nottingham under the supervision of SVMS staff.
- Anatomic and clinical pathology – performing gross necropsies, contacting submitting veterinary surgeon with initial verbal report, completion of formal written report under supervision. Elements of pathogen surveillance are also covered. This rotation is also dedicated to clinical pathology in the second week.

On track rotations students will experience:

- Langley Mill – first opinion consulting and first opinion surgeries, anaesthesia and investigations (blood sampling, radiography, ultrasound) with a high (40-50%) proportion of exotic pets.
- Your Vets – first opinion consulting and medicine and first opinion anaesthesia and surgeries and investigations (blood sampling, radiography, ultrasound).
- Dick White Referrals – second opinion consulting and investigations (e.g. advanced imaging), in-patient care, assisting with second opinion medicine and surgery, clinical reasoning, case management planning. Students are able to choose the service they wish to join during this track rotation.
- Dovecote Veterinary Hospital - first and second opinion consulting and investigations (e.g. advanced imaging), in-patient care, assisting with second opinion medicine and surgery, clinical reasoning, case management planning. This is a track rotation with a neurology/surgery/primary care emphasis.
- Oakham Small Animal Primary Care – first opinion consulting and first opinion surgeries and investigations (blood sampling, radiography, ultrasound, MRI) including admission and discharging of patients, managing client records, in-patient care
- Twycross Zoo - Students are involved in all aspects of veterinary care of the zoo's collection, including husbandry and nutritional assessments, anaesthesia, case investigation and management and post-mortems
- Defence Animal Training Regiment – first and second opinion equine consulting and investigations (blood sampling, radiography, ultrasound) including admission and discharging of patients, in-patient care, work-up of all cases
- Pool House Equine first and second opinion consulting and investigations (blood sampling, radiography, ultrasound) including admission and discharging of patients, in-patient care, work-up of all cases, and ambulatory visits.
- Advanced Herd health – data driven population medicine. Visit to farm, discussion of problem and assessment of stock with owner, data review and plan generation – delivery of plan to stock owner at the end of the rotation. Sheep flock health planning. Rounds at the end of the two weeks with all farm rotation groups
- Advanced Farm Skills – high level farm skills acquisition aimed at those intending to work in clinical farm practice. Rounds at the end of the two weeks with all farm rotation groups
- Advanced Farm Practice – provided in conjunction with 4 XLVets farm practices. (Tyndale, Wright and Morten, Paragon Farm, Bishopton Veterinary Group).

As discussed, most of the Intra-Mural rotations are delivered in Clinical Associate practices. These are private veterinary practices and as such students are exposed to veterinary business, client communication (including complaint-handling), ethics and professional practice throughout their time on clinical rotation.

Our clinical staff, most of whom teach across the curriculum, are well positioned to utilise consented case material from our clinics in developing material and resources available to all students. Case material is shared with rotation groups at clinical rounds, clinical case examples are placed on year 5 discussion pages. Clinical relevance cases are also a good example of this where cases seen in clinic become the teaching material in a problem based case. Additionally, we have numerous on-line case-based Xerte Toolkits which utilise case material to assist in the development of clinical reasoning skills).

Students (particularly during year 4) will often undertake anatomy/pathology based teaching scenarios using specimens e.g. whole organs, that have been preserved from post mortem cases that were accepted to and reported upon by the School's Pathology Service Unit, along with histological slides from those consented cases.

On occasion, Clinical Associates submit consented cadaver material of anatomical/pathological interest to the anatomy lab, where the specimen along with anonymised case notes, radiographs, etc can be used during anatomy practicals. Specimens of osteological interest, from previous anatomy practicals or clinical cases, are also prepared to be handled in a dry state for use in small group teaching, clinical skills practicals, or placed at Clinical Associates for use during year 5 rotations.

As discussed above, in the lecture-free final year students spend 2 weeks in a total of 10 core Intra-Mural Rotations during which they are fully engaged in all aspects of the healthcare management of all species. Students spend a further 6 weeks on track rotations in small animal, mixed, farm, exotics or One Health One Welfare. All students undertake a one-week introduction week prior to rotations starting. The educational experience is delivered by School staff placed in the Associate organisation and by Associate staff who have been trained as educators, all of which are experienced primary care or specialist clinicians. The placement of School staff in the clinical facilities and the provision of on-site dedicated student facilities provides the opportunities for students to investigate cases in sufficient depth with the help and support of School and Associate clinicians. The provision of referral rotations in small animal and equine practice and the farm Herd Health rotation ensure that students are exposed to cases which require extended diagnostic work up and problem solving that go beyond those typically encountered in primary care practice and these case discussions would typically include discussion of all treatment options. All Associate staff and School staff are encouraged to deliver evidence- and research-based clinical practice. The requirement for the students to complete Best-BETS during the final year formalises their engagement with evidence-based practice in particular (section 5.1.2). Clinical and procedural skills are assessed formatively throughout the final year, and summative through the requirement for students to self-certify that they are competent in the Directly Observed Procedural Skills (DOPS). Students are formally assessed in 6 DOPS, 2 from each species area and at least one per skills area. At least 4 DOPS must be graded as reactive supervision or higher on the entrustability scale. There is no maximum number of DOPS that can be attempted. All DOPS must be certified as complete before students are allowed to sit Finals (section 10.1.2).

4.2 COMMENTS

4.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 12 Number of necropsies over the past 5 years

Species		Number of necropsies undertaken					Estimated % of necropsies observed by or undertaken by veterinary students in 2020/21
		2020/21	2019/20	2018/19	2017/18	2016/17	
Food Producing Animals	Cattle	118	78	66	51	60	100%
	Small ruminants	115	72	56	66	52	
	Pigs	33	0	0	1	55	
	Other	12	5	0	6	13	
Equine		6	10	27	28	36	95%
Poultry		261	230	182	125	1,064	100%
Rabbits		27	34	40	39	23	95%
Dogs		189	163	287	294	233	95%
Cats		65	58	115	111	109	95%
Other/exotic		24	30	111	140	24	95%

Number of students graduated in the last year / Cadavers necropsied by students = 149/850 = 1/5.7

Appendix 13 Contractual arrangements at each Clinical Associate

Clinical Associate	Contractual arrangement	Teaching support	Supervision of students	Monitoring of students
Defence Animal Training Regiment	0.8FTE equine specialist staff placed. 2 year 5 students for every 9 days of equine track rotation	Equine musculoskeletal examination and farriery in Years 1 and 2. Equine skills rotation (core) Equine Hospital and Equine Ambulatory rotations (core and track)	Students are directly supervised by SVMS staff with input from DATR staff	Students are directly monitored by SVMS staff
Dick White Referrals	3.0 FTE interns and 0.3FTE staff placed Contribution to building costs of student accommodation Student numbers are variable as DWR is a track rotation	Small Animal Specialist Referral rotation (track) Surgery and internal medicine teaching years 1-4	Students are supervised daily by DWR staff who have fractional contracts with the University, with the Rotation Leader visiting fortnightly	Students are monitored by DWR staff who hold fractional contracts with the University
Dovecote	0.5 FTE specialist staff placed (surgery, neurology) student numbers are variable as Dovecote is a track rotation	Small Animal Specialist referral rotation (track)	Students are directly supervised by SVMS staff with input from Dovecote staff	Students are directly monitored by SVMS staff
Oakham Veterinary Hospital (Equine)	3.5 FTE SVMS staff placed at Oakham, and 3 interns. Contribution to building costs of teaching facilities. Up to 10 students on rotations possible every 2 weeks of the year.	Equine Hospital and Equine Ambulatory rotations (core and track)	Students are directly supervised by SVMS staff with input from Oakham staff	Students are directly monitored by SVMS staff
Oakham Veterinary Hospital (Small Animal)	0.1 FTE SVMS staff placed at Oakham. Student numbers are variable as Oakham small animal is a small animal or mixed track option	Small animal or mixed track rotation	Students are directly supervised by SVMS staff with input from Oakham staff	Students are directly monitored by SVMS staff
PDSA	2.0 FTE SVMS staff placed at PDSA Nottingham and PDSA Derby Contribution to building costs of teaching facilities at Nottingham. 5-6 students are on rotation every 2 weeks of the year (between Derby PDSA, Nottingham PDSA and RSPCA Radcliffe).	Small Animal Charity/Shelter rotation (core)	Students are directly supervised by SVMS staff	Students are directly monitored by SVMS staff
Pinfold	1.4 FTE SVMS staff placed at Pinfold up to 9 students are on rotation every 2 weeks of the year (between Shelton Lock and Pinfold)	Small Animal Charity/Shelter rotation (core)	Students are directly supervised by SVMS staff with input from Pinfold staff	Students are directly monitored by SVMS staff
Pool House Equine	0.6FTE equine specialist placed in hospital at Pool House and 0.5 FTE ambulatory vet	Equine track rotation	Students are directly supervised by SVMS staff	Students are directly monitored by SVMS staff

	Students on track spend 4 weeks at Pool House		with input from Pool House staff	
RSPCA Radcliffe	1.0FTE SVMS staff placed at Radcliffe	Small Animal Charity/Shelter rotation (core)	Students are directly supervised by SVMS staff with input from RSPCA staff	Students are directly monitored by SVMS staff
Scarsdale Veterinary Group (Farm)	2.0 FTE farm animal residents placed at Scarsdale Contribution to building costs of teaching facilities. 6-9 students in 1 rotation every 2 weeks of the year.	Farm Practice rotation (core)	Students are supervised daily by residents and SVMS staff with input from Scarsdale staff; Rotation Leader visiting twice a week	Students are directly monitored by SVMS staff
Scarsdale Veterinary Group (Pride, Langley Mill and Shelton Lock)	3.0 FTE staff placed at Pride/Shelton Lock Contribution to building costs for veterinary hospital, including development of teaching facilities. Up to 9 students every 2 weeks of the year at Pride. Up to 9 students are on rotation every 2 weeks of the year (between Shelton Lock and Pinfold) Emergency and Critical Care/Out of Hours rotation 2-3 students for 4-5 nights every week 0.2 FTE at Langley Mill, 1 exotics track student at Langley Mill periodically.	Small Animal Primary Care and Referral rotation, and out of hours rotation (core) and small animal practice rotation (with Pinfold) Exotics (track)	Students are directly supervised by SVMS staff with input from Scarsdale staff	Students are directly monitored by SVMS staff
Your Vets Sheldon	1 or 2 small animal track students	Small Animal (track)	Students supervised by SVMS graduate veterinary surgeon	Students are monitored by experienced SVMS graduate veterinary surgeon
Twycross Zoo	Contribution to building costs for veterinary clinic, including development of teaching facilities Numbers of students vary as Twycross is a track rotation	Exotics track rotation	Students are supervised daily by SVMS DVetMed students with input from Zoo staff; Rotation Leader or Clinical Director visiting fortnightly	Students are directly monitored by SVMS DVetMed students and Zoo staff

In many cases, to make best use of the clinical case resources, we exceed our contractual obligations. At certain times, for example during recruitment hiatuses a fee in lieu of placement of School staff may be made to the Clinical Associate.

Appendix 14 Clinical Production Animal cases involving students

Production Animals	(a) Received for consultation		(b) No. of hospitalised days		(c) No. of herds/flocks / average herd size		(d) No. of animals seen by students on farm/herd health visits		(e) Estimate % of first opinion vs. referral cases per species seen by students			
									First opinion		Referral	
	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20
Cattle	4	5	1	3	250/84	253/85	8,392	19,125	99%	99%	1%	1%
Small ruminants	43	43	30	29	80/150	80/150	1,600	3,400	100%	100%	0	0
Pigs	1	1	1	1			10	12	100%	100%	0	0
Camelids	5	9	3	2			52	181	100%	100%	0	0
Poultry	14	16	0	0			0	0	100%	100%	0	0

Note: Case numbers involving students for 2019-20 and 2020-21 are estimated from total case numbers. Under normal working practices, students would be involved in the majority of clinical cases, but under COVID-related restrictions this has reduced to around 40% of the total. Figures for 2020-21 are therefore 40% of the total case numbers for the practice (20979 cattle and 4000 sheep cases), and 2019-20 are reduced to 40% for 3 months of the year (totals 22500 cattle and 4000 sheep).

These numbers do not include animals seen on the two week School-hosted Farm Health Skills rotation: each farm would receive 1-2 visits (mostly virtual during 2020-21) focused on reviewing basic KPIs, reviewing management and identifying potential changes (with an emphasis on exposing students to the process of herd health and focusing on transferrable skills, e.g. communication, handling data etc).

Appendix 15 Clinical Companion Animal cases involving students, data to June 30 each year

Companion Animals	(a) Received for consultation		(b) No. of hospitalised days		(c) No. of animals seen by students		(e) Estimate % of first opinion vs. referral cases per species seen by students			
							First opinion		Referral	
	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20	2020/21	2019/20
Equine	7,376	7,120	3,901	3,765	7,376	7,120	79%	81%	21%	19%
Dogs	32,722	31,147	40,750	38,789	23,903	17,158	82%	82%	18%	18%
Cats	12,498	12,009	8,815	8,470	9,702	7,510	89%	89%	11%	11%
Caged pet mammals (Rabbits, gerbils etc)	4,192	1,381	1,805	595	3,686	553	97%	96%	3%	4%
Exotics and zoo animals	938	132	1,700	239	938	132	100%	100%	05	0%

Appendix 16 Herd health programme

Herd health programmes provided through private owned animals										
Animal Species	**2020/21**		**2019/20**		**2018/19**		**2017/18**		**2016/17**	
	Sites	**Animals**	**Sites**	**Animals**	**Sites**	**Animals**	**Sites**	**Animals**	**Sites**	**Animals**
Dairy	65	13,500	68	13,900	83	14,800	78	15,400	82	15,000
Beef cow-calf	104	6,240	115	5,750	125	5,625	145	6,526	165	7,000
Beef feedlots	56	4,000	56	4,000	56	4,000	50	3,000	50	3,000
Sheep	20	4,000	20	4,000	21	4,000	22	4,000	22	4,000
Goat										
Pig	0	0	0	0	0	0	0	0	0	0
Poultry	0	0	0	0	0	0	0	0	0	0
Fish	0	0	0	0	0	0	0	0	0	0
Horses	0	0	0	0	0	0	0	0	0	0

Note: During the core Farm Health Skills rotation each farm would receive 1-2 visits (mostly virtual during 2020-21) focused on reviewing basic KPIs, reviewing management and identifying potential changes (with an emphasis on exposing students to the process of herd health and focusing on transferrable skills, e.g. communication, handling data etc).

Appendix 17 Off-campus rotation information for each Clinical Associate

Placement name	Species	Duration of rotation	Number of rotations per year	No. students per year	Patient numbers	Students per rotation	Core
Defence Animal Training Regiment	Equine	2 weeks	22	140	>500*	2-4	Track
Dick White Referrals	Small Animal	2-4weeks	25	Variable	>7,000*	0-6	Track, students can choose discipline(s)
Dovecote	Small animal	2 weeks	Variable	Variable	4,544*	0-6	Track, students can choose discipline(s)
Oakham Veterinary Hospital (Equine)	Equine	2 weeks core	25	140	7,376*	6-10	Core but students can track here too
Oakham Veterinary Hospital (Small Animal)	Small Animal	2 weeks	variable	Variable	5,478	0-2	Track
PDSA Derby	Small Animal	2 weeks (or PDSA Notts or RSPCA Radcliffe)	25	45	2,000*	2	Core but location optional instead of Derby PDSA or Radcliffe RSPCA
PDSA Nottingham	Small Animal	2 weeks (or PDSA Derby or RSPCA Radcliffe)	25	45	3,800*	2-4	Core but location optional instead of Derby PDSA or RSPCA Radcliffe
Pinfold	Small Animal	1 week (with 1 week Shelton Lock)	25	140	11,500*	6-7	Core with Shelton Lock
Pool House	Equine	2 weeks	Variable	Variable	>7000*	0-2	Track
RSPCA Radcliffe	Small Animal	2 weeks (with PDSA Derby, Nottingham)	25	45 (core) Track numbers variable	800*	2-3	Core but location optional instead of Derby or Nottingham PDSA. Tack students can also attend this site

Scarsdale Veterinary Group (Farm)	Farm Animal	2 weeks	25	140	10,054**	4-7	Core
Scarsdale Veterinary Group (Pride)	Small Animal	4 weeks (includes 2 weeks Out of Hours)	25	140	26,400*	6-7	Core
Scarsdale Veterinary Group (Shelton Lock)	Small Animal	1 week (plus 1 week Pinfold)	25	140	8,750*	6-7	Core
Scarsdale Group (Langley Mil)	Exotic			variable	7,500*		Track
Your Vets, Sheldon	Small Animal	1 week (with 1 week at RSPCA Radcliffe)	variable	variable	6,500*	1-2	Track
Twycross Zoo	Zoo	2 weeks	variable	variable	N/A	2	Track

Note – Year size assumed to be 140 to indicate relative size of cohort that attends each rotation.
* number of consultations seen
** number of animals seen on herd /flock visits

5 INFORMATION RESOURCES

5.1 FACTUAL INFORMATION

5.1.1 Information resources available to the School and their access

School information resources

Students have 24 hour access to a range of learning resources in their small group teaching room mini-libraries. This facility is valued by students and has resulted in extensive use of the rooms with students working together outside of normal teaching hours. The resources include all course textbooks, all British Small Animal Veterinary Association (BSAVA) Manuals, various other specialist and reference textbooks, skeletons, models and posters. Mini-libraries have been set up at each of the Clinical Associates used for placement in Year 5, together with the Year 5 teaching hub. In addition to hard copy material, the Virtual Learning Environment, Moodle, hosts a range of learning resources including embedded image and video resource hyperlinks to other sites and reusable resources. The number of videos of procedures has greatly increased in the first lockdown of Covid-19 and enhances this facility.

Virtual Learning Environment

All teaching materials are delivered online and supported through the Virtual Learning Environment (VLE), Moodle. Moodle is used to organise and distribute course materials and schedules from a central location, as well as enhance students learning through interactive activities and resources. No paper handouts are provided to students; all relevant resources are available online, including presentations, briefing notes, and links to relevant videos, databases and web resources. Students and staff can access Moodle on and off campus through the internet. The School also uses audio recording (podcasting) and video recording (vodcasting), including Echo360 lecture capture, and video resource libraries to support the learning experience and disseminate information.

The Library

All staff and students have access to all University libraries (https://www.nottingham.ac.uk/library), part of the Libraries, Research and Learning Resources (LRLR) function. The James Cameron Gifford (JCG) Library based at Sutton Bonington occupies 1,126m^2 floor space, and offers seating for 324. Opening hours are: Monday to Friday 8am - 9.45pm; Saturday 9am - 4.45pm; Sunday 9.30am - 4.45pm. The library is open 24 hours at key points of the year, including during examination periods. There is wireless access throughout the library and self-service printing and photocopying facilities are available. There is also self-service check out and return facilities. The JCG holds a wide range of resources associated with animal biology, animal welfare and care, veterinary sciences and allied subjects such as food production and agriculture etc. The JCG holds at least one copy of all the books on student reading lists, and multiple copies of key textbooks, together veterinary journals and access to veterinary eBooks, eJournals and databases. Library statistics are shown in Appendix 18.

Staff and students are able to access an extensive range of library resources using the NUsearch library discovery system that allows students to search for books, reports and journals that are held across all eight University of Nottingham libraries. NUsearch provides a single interface through which all members of the University can access not only material held in the University libraries but also electronic resources available globally and relevant to their subject (including access to databases such as Web of Science, Scopus, Medline, CAB Abstracts and Vetstream). Remote access to subscription based journals is enabled for University staff and students through a browser plug-in.

The JCG Library is staffed by 6.1 FTE customer services staff who are available during core hours. The staff comprise of one full time supervisor plus a team of Library Advisors who offer the front-line service to students, each with extensive experience in library provision. Further support is offered from Senior Librarians from the STEM libraries. Funding for library materials is held by the library and is based on the number of staff and students. The School liaises closely (via the Teaching, Learning and Assessment Team) with the Library team leader for the JCG Library. On a quarterly basis, the TLA work with Module Convenors to collate a list of resource requirements for the library, which are then procured by the Library. Any feedback from the various School Committees (e.g. Learning Community Forum, Postgraduate Committee etc) is considered when formulating a list of requirements. The School has also representation by the Head of Operations on the Campus Operations Committee which provides a function to quality assure, monitor and review learning opportunities, and provide a mechanism for two way feedback.

5.1.2 Relationship of the school and the central university in the provision of library, IT and e-learning services, including IT support for staff and students

The School has an active and effective relationship with the central university, with School staff contributing to Faculty wide committees and steering groups e.g. University wide curriculum and e-assessment planning. The School is actively supported by teams from central libraries, IT and e-learning enabling us to adapt, evolve and improve the resources we provide for students. The school benefits from an internal Digital Learning Group committee comprised of our Digital Innovations and Media Officer (DIMO), eLearning manager, and academics. This group liaises between student and staff bodies to assess, address and anticipate needs of both.

The University has a central IT Services function responsible for all aspects of IT provision, supported operationally by local campus-based teams. IT Services operates an email and telephone helpline, which is manned 24 hours. The local IT Support team provide support for a wide range of equipment and operating systems and operate an open-door policy for students and staff to visit for assistance. The local team comprises 5 staff – a Group Leader and four IT technicians, one of which has a speciality in Audio Visual systems. The Head of Operations is the IT Representative for the School and has regular meetings with the IT Group Leader.

5.1.3 Processes to evaluate new technology

The School uses IT extensively to support learning and horizon scans to identify ideas, packages and applications both with the veterinary and medical sector and wider afield. New technologies are identified by both staff such as the DIMO and students and piloted on a small scale with feedback sought from teachers and learners. Benefits to learning are evaluated and if a large-scale purchase is required for implementation, a business case produced for Management Team approval of financial spend. Training is then provided by either TLA staff, relevant academics or the central LRLR Learning Technologies team. Staff in the School have been recognised both internally in the University and externally in their promotion and use of new technology.

5.1.4 Learning aids

The clinically integrated nature of our curriculum necessitates extensive use of part task trainers and simulation-based learning. Our clinical skills centre and laboratory are equipped with a range of models for developing various techniques (e.g. venepuncture, rectal examination, ophthalmological examination, CPR) which are a mix of commercially available and school produced. We also utilise simulated clients (professional simulators) extensively throughout our communication skills curriculum. Models are available on an ad-hoc basis for students to continue the development of their skills during Clinical Skills Centre drop-in sessions outside the formal timetable.

However, perhaps most important as an educational resource that enhances our educational mission is the fact that the entire body of curriculum materials are delivered electronically via the electronic learning environment, Moodle. It is unusual for the entire curriculum to be delivered in this manner, and to be supplemented by additional learning resources for example the extensive video bank (MediaSpace), an online anatomy museum, an award-winning Twitter finals revision class (https://twitter.com/VetFinals), virtual patients and cases (using digital toolkits) and the clinical image repository.

5.1.5 Audiovisual and electronic learning media available to students and their role in supporting student learning and teaching

The development and management of digital assets within the school is led by our DIMO. A catalogue of videos is integrated within and complements the core curriculum, and is accessible to any student, on any device able to access the internet, at any time. This video library currently holds 1052 videos.

Our Clinical Skills Lab space is provided with 12 iMac computers enabling students access to online and software resources, during their teaching sessions. A range of software resources are available to students e.g., CLIVE Pre-Clinical and Clinical, VetStream, Digital Slide box (virtual histology), and various statistical analysis packages. In addition, we utilise virtual reality – recreations of environments across the curriculum. These resources are integrated in our recruitment, teaching and assessment. The School leads and manages the "DigiVetTools" catalogue, which collects and organises free online tools to support student learning. This resource has been shared with veterinary educators, students, clinicians, internationally to very positive feedback.

5.1.6 Learning and information technology support for the design of learning materials

A Libraries, Research and Learning Resources (LRLR) team has a specific responsibility for delivery of Information Skills, which is a series of in person and online teaching sessions designed to help students develop their learning techniques and access resources; these are mapped against key points in the student lifecycle. Staff and postgraduates can access advice direct from Librarians and IT Services (as can undergraduates), but can also attend a wide range of courses run by LRLR and by Staff Development (https://training.nottingham.ac.uk/cbs-notts/Portal/DesktopDefault.aspx).

The School Teaching, Learning and Assessment (TLA) team supports all academics, including providing specialist advice on development of new learning technologies and techniques. TLA liaise closely with a LRLR specialist Learning Technologies team who provide a systems, content and special projects function. The remit of the Learning Technology department of LRLR is to support staff and students in the area of technology enabled learning. This includes: developing, maintaining and upgrading the core University teaching and learning systems and providing multi-media and video production services for staff to develop creative and interactive learning resources. The 1.0FTE Digital Innovations and Media officer, liaises with TLA, DLG, student bodies, and central University teams to identify current and future needs and provide solutions for these. The DIMO also provides support public engagement for example via social media.

The School Student Academic Skills (SAS) team has developed and delivered over 20 study skills session to support students with their study strategies with over 1200 students attending these sessions. This pro-active approach equips students with different ways of learning enabling them to pass their modules. The SAS-vet team also liaises with TLA on ways to make the curriculum accessible to all students.

5.1.7 IT facilities

Within the school, students can access a PC and smartboard within in each of the 28 small group teaching rooms, the school Computer room (A28) provides access to 30 desktop PCs (across the campus students can access over 195 desktop PCs). Lecture theatres across campus are fully equipped with the high-quality audio-visual facilities including lecture capture facilities (Echo360) and audio capture for podcasting etc. Investment in state-of-the-art audio-visual facilities has been made throughout the teaching rooms of the School. Additional facilities include teaching microscopes, and overhead high-definition visualisers. Teaching rooms at Clinical Associates include computing facilities and, in some cases, electronic whiteboards or LCD screens for presentations. Teaching rooms at Clinical Associates are equipped as per small group rooms or lecture theatres as required.

The school also provides 12 iPads for use in practical classes and the clinical skills centre for student use. Staff are also supported with IT to enhance their teaching and student assessment with 58 iPads (18 support student clinical reasoning sessions, 40 used in assessments. All students on the 5 year course are currently provided with a £400 voucher for purchase of a laptop for their own use at all times. Postgraduate students are provided with a desktop or laptop computer, as required for their research. Staff are provided with a laptop or desktop computer as requested, replaced on a 3 year cycle.

There are high quality high speed wired and wireless Eduroam networks across the campus. The School has established a dedicated high-speed data network between the School and Clinical Associates, which mirrors the learning environment of the School to the Clinical Associates, such that students (and staff) have access to the same support and resources offered when on the campus; where this has not been possible students are provided with BT wi-fi dongles.

5.2 COMMENTS

For 2020/21 the School has gifted £400 vouchers laptop computers to students so that they are able to keep them and downloaded learning resources (e.g. images, videos, lecture notes, Portfolio pieces etc.) at the end of their course. We are very disappointed that the University has requested that laptops are to be no longer provided for veterinary students, as we believe this supports student learning and is vital for EMS and clinical rotations. This is a policy decision and is not a budgetary decision (we are the only School who provides laptops for its students).

The School is investing in developing a Veterinary Innovation Resources Laboratory which will increase the number and range of physical and virtual resources for students.

5.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 18 Library statistics (5 year comparison)

Year	2019/20	2018/19	2017/18	2016/17	2015/16
Total Budget	£12,852,960	£12,779,674	£12,102.598	£13,912,000	£11,388,033
Total book budget	£1,197,000	£1,316, 864	£1,260,000	£1,330,350	£1,152,000
JCG Library staff (FTE)	6.07	6.38	6.11	6.1	6.1
Library staff (FTE)	170.78	182.07	173.6	163.7	166.3
Total number of paid-for journals	168,511	77,601	35,757	42,074	48,825
Total journal subscriptions (£)	£5,323,090	£5,164,424	£5,070,630	£4,768,000	£4,485,526
Acquisitions *(Total)	£6,520,090	£6,481,288	£6,330,630	£6,098,350	£5,637,526

Note:
Historical information in not available on volumes held, however the JCG currently provides access to:

- Hard copy books: 16,874 total, of which 5,011 are veterinary specific. The increasing use of ebooks has led to reduced reliance on hard copy in most of our libraries in the last 4 years - and consequent removal of older unused books,
- Electronic journals: 168,511 total, of which 175 are veterinary specific
- 2020/21 figures are not yet available

6 STUDENTS

6.1 FACTUAL INFORMATION

6.1.1 Undergraduate students

The School offers 2 undergraduate BVM BVS veterinary programmes, a 5-year course (with September and April entry each of 150 students) and a 6-year 25-intake course including a Preliminary Year (for widening participation and also high achieving non-science students) (Appendix 19). The majority of students are UK, with normally <10 from EU countries and <5 from other international countries in each year group. Details on funding are in section 2.1.4. Applications data are shown in Appendix 20.

The School has decreased the cohort sizes for the 5 year intakes to 150 each; there are no plans to increase student above this level to ensure that resources are effectively used and the student experience is maximised. The 6 year course will remain at an intake of 25 to ensure quality applicants for the course. There is no specific number of places available for international students or graduates, they are considered within the overall pool of candidates.

All students graduate with a BVMedSci degree in year 3. Students who do not meet the BVM BVS progression requirements in years 1 and 2, but meet the lower University progression requirements can continue but are required to exit with a BVMedSci degree at year 3[4]. Students are able to intercalate degrees, most commonly after year 3, but occasionally after year 4. The School has funded students to intercalate PhDs, MRes and PGCertificate in Veterinary Education degrees. Students are also able to intercalate at other universities, albeit they need to self-fund or be successful in gaining other funding.

In addition, the School runs a module in Principles of Animal Health and Disease for up to 60 students in years 2 and 3 from the School of Biosciences. These students utilise the small holding, stables and teaching laboratory facilities for a total of 12 hours per year in addition to a 3 hour session run at the Dairy Centre.

The teaching facilities in the School have been, and continue to be, expanded to support the increase in student numbers, however, there are only 2 lecture theatres available that will accommodate the increased class size. Timetabling currently ensures access as required but the School continues to make representation to the University to increase lecture hall facilities. Clinical Associate facilities provide an exceptional clinical experience for students, recently Pool House has been recruited to further support clinical rotations for an increased cohort size, and the relationship with the RSPCA and PDSA charities will be expanded in Nottingham, Leicester and Bolton. The School has invested significantly in the new PDSA Hospital Nottingham.

The capacity for teaching will be expanded at the School with the construction of two new buildings comprising the £4.5M 'mock practice'. The appointed architects CPMG have designed a two storey academic building totally 1250m^2 for small animal teaching including theatres, diagnostic areas, physiotherapy suites and seminar rooms, offices and lecture space. Adjacent to this building an equine and farm animal teaching space of 650m^2 including diagnostic area, trot up space and seminar rooms will provide the capacity for teaching an increased cohort. Planning permission is in progress, with the building due for completion in 2022.

6.1.2 Postgraduate students

Detail on Postgraduate programmes is available in section 11.2.1 and detailed in Appendix 21.

[4] The pass mark for modules is 50% on the 5 year course. Students have to pass all module examinations (with the exception of AHDOPS and OSPEs) before they enter later years of the course, and also gain a minimum of a 2.2 BVMedSci degree in order to progress to year 4[4]. University progression requirements are a compensatable 40% pass mark per module. The pass mark on the Preliminary Year course is 60%.

6.1.3 Student services and support

The School, the University centrally and other students provide both conventional and specialist academic and pastoral support to the students. Student support is provided immediately from pre-acceptance and throughout the course.

Students are provided with a wide range of information to help induction and enculturation into the School (e.g. campus map, clothing and equipment brochure, voucher to buy a laptop computer, congratulations card, Guild brochure, equine livery reservation form, new student information guide, student entry agreement, student handbook, study skills booklet, survival leaflet, Vet Society information, module details). Students are contacted by their Personal Tutor to welcome them to the School.

A welcome week (Fresher's Week) provides a wide variety of induction events including an Opening Ceremony, School tour, initial animal handling practical on Day 1, Tutorials, Social events, Tutor group social events, a visit to Twycross Zoo, together with introductory talks on safety, School structure, the curriculum, assessment, student support and EMS. In addition, students receive profiles of all staff members, together with their equipment and clothing. Students are introduced to the school's commitment to the values of equality, inclusion and diversity; and this is reinforced through mandatory training.

The School employs a number of measures to ensure that students experiencing difficulties with their studies or with any non-academic problems are identified and supported. In addition, students are directed to establish and maintain individual Portfolios and Skills Diaries for self-support both during and after their studies. Alignment of support processes, school philosophy and teaching reinforces our core School values (including professionalism and equality and inclusiveness in all we do).

Academic support

Academic support is provided predominantly by the School, and provides support to learning utilising:

- Pre-registration information packs and online registration
- Pre-term animal husbandry training for international students
- School-based identification of dyslexia and other learning difficulties
- Induction and orientation weeks at the beginning of each year, including a Day 1 meeting with the Personal Tutor[5], followed by timetabled Tutorials to review academic progress
- Student handbook
- Portfolio and Skills Diary
- Provision of web-based learning environment that incorporates core curricular material and details, and facilities for learning support (e.g. self-assessment, learning objectives) and student feedback
- Provision of Employment Tutors for specialised career pathway advice
- Student Academic Skills[6] for support of students with academic difficulties
- Students in higher years (via the veterinary family[7] and Vet Soc run Big Vet, Little Vet peer mentor scheme)
- Extensive staff contact in practical classes
- Small group case studies with dedicated group facilitators
- Dedicated Student Placement team to facilitate EMS
- Student Experience focussed administrative staff
- One-to-one access to a Year 3 project supervisor
- Library facilities (paper-based and electronic), Twitter and Flickr resources

[5] Students are assigned a Personal Tutor for the entire 5 years of a course. The Personal Tutor's role is to review academic progress, provide pastoral support, and to support specific academic requirements of the course, including the review of the Portfolio, Skills Diary and planning and reviewing placement activities. Personal Tutors provide examination marks for degrees, and help failing students understand their weaknesses. The School has timetabled tutorials within the curriculum. Tutorials are structured with a formal agenda so that a high quality of tutoring is provided and that all students receive the same tutorial experience.

[6] The Student Academic Skills (SAS) vet team comprising of 5 academic staff, 1 University SAS member and 6 students, delivers whole year group support sessions in their development of academic skills (i.e. note-making, revision and exam strategies). They typically deliver 20-25 sessions over the academic year with peer-support from students being integral to these sessions. The SAS-vet team also offers individual meetings to any student who feels they are academically struggling. The SAS team will invite any student who has failed or just-passed a module to have an individual discussion on their study approach and strategy. Their tutor will be invited to along as well. In typical year, we will have 30-40 individual meetings.

[7] All new veterinary students in Nottingham are allocated to a 'Veterinary Family' for the whole of their course. The main aim of the Family is to provide a framework for pastoral support of students both horizontally in each year and vertically between years. The family comprises all of the tutees from two Personal Tutors.

- Provision of a £400 computer voucher to all 5 year course students
- Computing facilities, and basic IT skills training with access to computer-based self-learning packages
- 24 hour access to study room and museum with extensive teaching resources
- An open door policy providing access to all teaching and administrative support staff
- Access to University support services (e.g. study support, dyslexia support, disability support)

Pastoral and Welfare support

Pastoral and welfare support is currently provided by the following means:

- Personal Tutor, supported by Senior Tutors providing pastoral support and advice, and Senior tutors for Professionalism
- Dedicated Student Welfare Manager with the role to advise and support students, liaising as necessary with other University support agencies
- Disability Liaison Officer to provide a point of reference, advice and guidance for staff and students in the School about disability issues and support
- Pre-arrival Health Declaration questionnaire, reviewed by the University's Occupational Health team, identifies support requirements for each student and assures fitness to study
- Veterinary family and Vet Soc-run Big Vet, Little Vet schemes with trained older students providing mentoring for younger students
- Personal and Professional Skills module covering aspects of work-life balance
- Welfare Week to promote support available across the School and University
- Access to University support and advice services (e.g. disability support, confidential counselling, mental health advisors, career development, advice and support on financial matters, accommodation advice, legal advice, visa advice to international students)
- The VetSoc, Student Guild and Student Union offers an extensive range of social and sporting activities together with various support services including 24 hour telephone help lines (https://www.su.nottingham.ac.uk/)
- International student global café
- Chaplains and prayer rooms for various faiths
- Sutton Bonington Hall tutors
- University Warden for off-campus affairs
- Outside agencies, e.g. local Doctor, Samaritans, VetLife, Vet helpline

During term, the Student Welfare Team (Senior Tutors and Student Welfare Manager) meet weekly to discuss and action general matters in terms of professionalism, pastoral and academic progress across the student body. Members of this meeting are also interlinked with external bodies such as VetLife.

The School complies with the Faculty's dual 'Expression of Concern' process, which is divided into welfare and behaviour/professionalism issues. Any concern raised relating to a student is reviewed by Senior Tutors (there are two arms to the Senior Tutor team (a) providing pastoral and welfare support (n=5 tutors) and (b) providing professionalism support (n=2 tutors)) and is acted on as appropriate to the circumstances (e.g. welfare/pastoral support, disciplinary proceedings, Fitness to Practise enquiry etc).

In addition to the University Support mechanisms available for undergraduates, postgraduates are able to access the support of the on-site Graduate Centre, Graduate School as well as campus Postgraduate Society. Complementary to the support provided by the two Postgraduate Sub-Deans, the School has appointed two Senior Tutors, dedicated to postgraduate pastoral and welfare support. Student elected Postgraduate Representatives attend Postgraduate Committee meetings, raising any issues and receiving advice or feedback on resolutions.

Support for ill and disabled applicants and students

We expect all students to declare any requirements for disability support (including dyslexia) early in the admissions process, in order that the School can evaluate and implement support needs throughout the admissions process and/or as soon as the student commences the courses. The School also meets students prior to admission to provide review and advice on potential reasonable adjustments that can be made to the course.

Applicants who declare a disability on their UCAS form are reviewed by the University Disability Support Team. The team, together with a Senior Tutor and Welfare Manager will meet students at, or prior to Assessment Centres if needed for further discussion, particularly around the potential demands of the veterinary course.

All students are required to complete a medical assessment form which is reviewed by the University Occupational Health Team prior to joining the course. This may result in referral to Occupational Health prior to admission or assessment by University of Nottingham Academic or Disability Support staff. Occupational Health will provide recommendations on the suitability of the applicant to study on the course. These assessments may result on preparation of either an Academic or Disability Referral Form. These will provide for reasonable adjustments to be put in place for teaching or examinations, which will be discussed with the School to determine whether providing these adjustments is feasible. The assessment may suggest reasonable adjustments required and in extreme cases, has required students to undertake a gap year in order to improve their health prior to joining the course. The Occupational Health team assesses students against national Higher Education Occupational Physicians guidance (http://www.heops.org.uk/guide.php) to ensure that students are able to meet RCVS Day 1 competences.

All students undertake a mandatory online dyslexia assessment during year one.

Students who become ill or disabled during the course are supported in school by the Student Welfare Team or out of school by the University Student Service Centres. These teams can provide guidance and signposting to appropriate support services either within the University, including counselling, mental health, academic support and disability support services, or external to the University. Students may be referred to the University Academic or Disability Support staff who may suggest reasonable adjustments so that the student is able to manage their illness or disability (for example additional time in exams, rest breaks etc). Students with long term illnesses or disabilities who engage with the School Welfare Team are offered regular reviews appropriate to their condition, especially prior to starting clinical rotations.

Students who believe that their performance in examinations or during teaching has been impaired can apply online for extenuating circumstances. These applications are considered against University of Nottingham procedures by a committee within the school which can make recommendations to the relevant Exam Board that the student should be allowed a further attempt at the affected assessment.

Methods used to identify and remediate failing students

All students gain feedback for all forms of summative assessment. Students who fail examinations are offered individual feedback from the module leader (in years 1-4) and are also contacted by the Student Academic Skills team. Year 5 students who fail a Rotation Professional Assessment are required to meet with the Clinical Review Group to understand reasons for failure and ways to improve, and also whether further assessment is required (which may include repeating a rotation). Students who fail end of year assessments in year 5, may be able to repeat rotations prior to reassessment

Students recognised as struggling with the course, mentally or physically by a concerned staff member or peer may be raised formally via the 'Expression of Concern' process or directly to the Welfare Manager or Senior Tutors who may informally meet with a student.

Careers and employment support to graduates

Career development and job selection and application techniques are taught within the Year 4 Personal and Professional Skills module, topics include CV writing, and interview techniques; students can also access the University careers team for advice and training. A "Careers Day" is held yearly for all students but especially year 4 students. This exposes students to a range of careers in the veterinary profession and hosts a job fair and talks from practitioners from across the profession. We also provide links, presentation opportunities and marketing materials from large veterinary employment organisations, such as British Veterinary Association (BVA) regularly.

Students work with their Personal Tutor to plan a variety of experience during their EMS study appropriate to their career and personal interests; students commonly build up strong relationships with hosts, which lead to job offers before graduation. Students can also work with species or areas focussed Employability tutors for guidance and advice.

A member of our staff is also a dedicated "Careers link" who can support students but is also responsible for the creation and delivery of a dedicated Careers area in our Virtual Learning Environment, a regular careers newsletter for time sensitive information dissemination to students, and liaison with the central University Careers Service and industry. They also lead the innovative #VetCareers posts via the schools Instagram account, sharing positive role models with our student body, students in other vet schools, and the public. The school regularly works with and supports student groups eg VetSoc in offering social and evening events hosting career role models.

The School has developed an optional Nottingham Advantage Award[8] module "Careers skills for vet students". This module aims to provide students with knowledge and a range of skills that will allow them to reflect upon issues surrounding personal development and professional aims in relation to a career in the veterinary profession.

Both Undergraduate and Postgraduate students can access support from the University Careers Service. The Central Careers team provide a wide range of both veterinary focussed and alternative careers support for all students, with an excellent website, 1:1 appointments and CV reviews offered year-round to any student. In 2019/20 and 2020/21 to date the Careers service has helped in 1:1 appointments 300 students, primarily from our year 4 and 5 cohort students.

Nottingham alumni have an active Facebook group where job offerings are also posted.

6.1.4 Mechanisms for student suggestions, comments and complaints

Students are involved in quality assurance at national, University and School level. The University student engagement policy covers the University of Nottingham's arrangements to ensure that students are fully involved and represented in all aspects of their learning experience and have a range of opportunities to engage in the University's quality assurance systems, at University level, at programme and academic level. As detailed in section 1.1.6 students are able to influence the School's direction and decision-making processes by a number of means, including making comments as to compliance with RCVS/EAEVE standards. Students are involved in influencing the School's direction, providing suggestions, comments and complaints by the following methods, with consideration and action as appropriate:

- Attendance at staff recruitment interviews
- National Student Survey (NSS) to provide opinion and feedback on the student experience completed by all UK final year students, considered on a detailed basis by both the School and University
- Association of Veterinary Students Survey on teaching, learning and student support completed by all students
- Student Evaluation of Module questionnaires (SEM) completed on every module to provide feedback on overall delivery and learning, with outcomes considered in module reviews
- Student Evaluation of Teaching questionnaires (SET) completed on all academic staff teaching to provide feedback on teaching by individual, scores are considered by the Dean and also in promotion
- Student Evaluation of Year questionnaire is structured as per the NSS and is run by the School to gather feedback from students on their experience of the year of programme as a whole
- Rotation feedback questionnaires are compulsory for year 5 students and are completed at the end of every 2 week clinical rotation, reviewed by the Clinical Director
- Learning Community Forum (LCF) meetings, are held termly and discuss any matters (academic, welfare or social) that are raised by either students or staff, matters are referred to an appropriate committee if the LCF feels that a referral is necessary. In practice the majority of operational issues raised at this meeting are resolved at the meeting
- Committee meetings including Teaching, Learning and Assessment and Postgraduate Committee
- Yearly student survey conducted by the University
- Undergraduate and postgraduate student membership of other relevant Committees and Sub-Committees at Faculty, Campus and University level
- Year representatives meet the TLA Sub-Dean and Head of Operations regularly to discuss various topics and provide feedback
- Veterinary students are highly engaged and motivated and individual students also commonly directly contact relevant Sub-Deans, the Clinical Director, the Head of Operations or the Examinations Officer with feedback on an ongoing basis
- Ad-hoc focus groups convened around particular topics
- The School also has an open door policy providing access at any time during the working day to all teaching and support staff; any student feedback is either directed to the appropriate review mechanism or addressed and actioned if appropriate
- Anonymous suggestion box in reception
- For our April cohort we established weekly meetings between Year Reps and Senior School Staff

[8] The Nottingham Advantage Award allows students to gain recognition and additional credits for extra-curricular activities. A completion certificate is awarded when 30 credits are completed.

Undergraduate students elect a School Educational Representative, who is the lead representative for the students. Each undergraduate year and each postgraduate programme also elects 2 representatives, who represent student views at Committees including:

- Learning Community Forum meetings
- TLA Committee meetings
- Postgraduate Committee
- Student membership of other relevant Committees and Sub-Committees at Faculty, Campus and University level

In addition the School funded Veterinary Education interns act as Student Liaison Officers, liaising between staff and students to help improve teaching and pastoral support.

In all routes of student feedback the relevant School Committee consider information and implement any required actions, with the exception of any negative feedback received as a result of SET, in which case the Dean, the Director of Education, and member of staff would consider required improvements and/or development needs, in conjunction with the Divisional Head. Feedback on student feedback is provided, (e.g. as part of the examination feedback process). In addition, at the start of each academic year, a dedicated session is held so that the students are provided with a summary of their feedback and how issues raised have been addressed for the prior year and also details changes in their forthcoming year based on student feedback raised by students in the year above them. Examples of actions taken following student feedback range from providing students with funding to support bar facilities (request to Head of Operations), adding a week's holiday in the curriculum prior to the start of year 4 teaching following year 3 exams (Year rep request to TLA Committee), through to improving assessment feedback with attainment mapped to learning outcomes (NSS feedback) and travel allowance payments to final year students.

The School follows University regulations on student complaints. It is desirable that complaints are resolved informally and quickly between the relevant parties, and the formal University process is only started if that fails. (https://www.nottingham.ac.uk/academicservices/currentstudents/complaints.aspx).

The School follows University regulations on harassment, abuse and discrimination which provides access to clear mechanisms for report and support (https://reportandsupport.nottingham.ac.uk/). In addition the School provides specific guidance for students on AHEMS and CEMS placements.

6.2 COMMENTS

The School has undertaken significant additional support mechanisms during Covid-19. These are detailed in the quarterly RCVS Education Committee reports (SER2).

There is significant focus being given to the development of Sutton Bonington Campus. A PVC with responsibility to oversee and improve the student experience on SB has been appointed, and there is a senior level Campus Development Group looking at longer term strategy and development.

The pastoral system around Halls is being changed. Halls no longer have a Hall Warden, but are managed by a team of Residential Managers and Coordinators cross all Halls, with a dedicated Student Experience Manager appointed and located at SB.

6.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 19 Students enrolled on the undergraduate veterinary programme (31.7.2021)

Year	2020/21	2019/20	2018/19	2017/18	2016/17
Prelim year	46	36	28	28	24
First year – Sept intake	165	154	163	166	163
First year - April	145	152	-		-
Second year – Sept intake	152	163	155	156	138
Second year- April intake	148	-	-		-
Third year	163	153	151	134	119
Fourth year	145	152	119	112	111
Fifth year	149	114	111	109	120
# graduated	142	114	108	109	120

Note: Data are pending resits, thus 7 year 5 students have not yet graduated

Appendix 20. Applications, offers and acceptances data for the 5 and 6 year courses

Academic Year (entry)	UK and EU students		Overseas students		Total students	
	A/P*	O/A	A/P	O/A	A/P*	O/A
2020/21 Sept	1,630	307/183	126	10/3	1,756/300	317/186
2020/21 April		316/139		15/1		331/140
2019/20 Sept	1,764	307/188	123	8/5	1,887/300	315/192
2019/20 April		302/146		9/4		311/150
2018/19	1,592	379/190	143	11/2	1,735/150	390/192
2017/18	1,481	347/169	145	15/3	1,626/150	362/172
2016/17	1,485	296/158	128	9/1	1,613/150	305/159

A/P Applications/Places available O/A Offers made/Offer acceptances

*P Places are not assigned to home or overseas students, as the School will admit the best student irrespective of home location. There are 150 places on each intake of the 5 year course (of which 25 progress from year 0).

Appendix 21 Students enrolled on postgraduate programmes

Year	Interns (PGCert Vet Med and Surgery)	Residents (MVM)	Residents (DVM)	PGCert Vet Education	PGDip/MSc Vet Physiotherapy	Msc Adv Clin Pract	MRes Bioinformatics	MRes	PhD
2020/21	10	10	5	5	87	55	17	14	86
2019/20	6	14	3	4	87	0	0	9	94
2018/19	7	10	3	1	55	0	0	8	81
2017/18	6	10	2	2	25	0	0	10	68
2016/17	12	10	2	5	0	0	0	4	67

7 ADMISSION AND PROGRESSION

7.1 FACTUAL INFORMATION

7.1.1 Selection and admission

The School has a formal Admissions policy, approved by the Admissions Committee, which comprises School and University staff, external veterinary professionals and local secondary school teachers. The policy defines requirements and processes, including training of assessors. It reviews annual data relating to the prior admissions cycle and proposed changes.

The admissions policy for the veterinary courses aims to encourage diversity within Veterinary Medicine. The School particularly wants to encourage people with ability and commitment, but whose circumstances might make attainment at School difficult, or who would be less likely to apply to Nottingham. Enrolling a diverse group of students enriches the learning environment for all students and produces a veterinary profession that better reflects the communities it serves.

The School provides a range of information to pre-applicants: all UK Secondary Schools are provided with marketing material (available for viewing during the visitation), detailed information is available on the School website (https://www.nottingham.ac.uk/vet/study-with-us/undergraduate/index.aspx), and the School holds 4 interactive Open Days for pre-applicants per year. In addition, the School visits secondary schools across the UK on request to provide admissions talks or demonstrations, and attends local country and career fairs. The School hosts a Summer School for students from disadvantaging backgrounds, and supports a number of local lower achieving schools through staff and student visits. The School endeavours to provide a balanced view of both the course and the veterinary profession, including the personal, financial and academic demands on applicants whilst as a student and ultimately, as a regulated veterinary professional.

Academic requirements for admission

The minimum requirements for undergraduate admission are detailed in school brochures, the University website and through the Universities and Colleges Admissions Services (www.ucas.com) and are higher than the University minimum.

GCSES:
- Minimum of 5 grade 7s (A) to include Chemistry and Biology (or Double Science), one of Physics or Maths must be passed to grade 7 (A)
- Minimum of grade 6 (B) in Maths and 4 (C) in English Language

A levels:
- Minimum of grades AAB, in Chemistry, Biology (or Human Biology) and a third subject (excluding Citizenship Studies, Critical Thinking, General Studies and Global Perspectives). Chemistry and Biology must be passed at grade A.
- A pass in science practical tests will be required, where these are assessed separately.

Scottish qualifications:
- Minimum of 5 Grade As at National level to include Chemistry and Biology (or Double Science), one of Physics or Maths must be passed to Grade A
- Minimum of Grade B in Maths and C in English Language at National level
- Minimum of Grades AABBB at Higher level in any order, to include Biology and Chemistry
- Minimum of Grades AA in Advanced Higher in Biology and Chemistry

International Baccalaureate:
- Minimum total score of 34 overall with grade 6 in Higher Level Chemistry and Biology and grade 5 in a third subject at Higher Level, with supporting level 2 qualifications

Degree:

- First undergraduate degree, or a postgraduate degree such as a Masters or PhD in a science-related subject. Supported by GCSE grade 6 (B) in maths and 4 (C) in English language

Or

- 2:1 undergraduate degree in a science-related subject
- A level biology and chemistry grade B
- GCSE grade 6 (B) in maths and 4 (C) in English language

Or

- 2:2 undergraduate degree in a science-related subject
- A level biology and chemistry grade A and grade B in a third subject*
- GCSE grade 6 (B) in maths and grade 4 (C) in English language

International Qualifications:

- The School will consider on an individual basis qualifications taken by international students. These qualifications will need to be equivalent to our A level and GCSE requirements

Other qualifications, including alternative routes into education are considered. The School offers a 6 year programme (which includes a Gateway or Preliminary Year) to widen participation by accepting students who may have been disadvantaged during their education (and often enter with vocational qualifications or poorer grades) and also for high achieving non science students; the A level offer is BBB and AAB respectively. The course provides a thorough grounding in biology, chemistry, maths together with animal care.

Work experience

All applicants are required to have a minimum of 4 weeks animal-related work experience prior to application. We count study on the Work Experience MOOC as 2 weeks (https://www.futurelearn.com/courses/vet-school-application-support).

Disabilities

As detailed in Section 6.1.3 we expect all students to declare any requirements for disability support (including dyslexia) early in the admissions process, in order that the School can evaluate and implement support needs throughout the admissions process and /or as soon as the student commences the courses. The School also meets students prior to admission to provide review and advice on potential reasonable adjustments that can be made to the course.

All students are required to complete a medical assessment form which is reviewed by the University Occupational Health Team prior to joining the course. This may result in referral to Occupational Health prior to admission or assessment by University of Nottingham Academic or Disability Support staff. Occupational Health will provide recommendations on the suitability of the applicant to study on the course. These assessments may result on preparation of either an Academic or Disability Referral Form. These will provide for reasonable adjustments to be put in place for teaching or examinations. The Occupational Health team assesses students against national Higher Education Occupational Physicians guidance (http://www.heops.org.uk/guide.php) to ensure that students are able to meet RCVS Day 1 competences.

All students undertake a mandatory online dyslexia assessment during year one.

Further details on disability support are detailed in section 6.1.3.

Admissions process

The admissions process has been designed to assess a range of personal and practical skills including animal orientation, communication, enthusiasm and professional potential as well as academic ability for our courses. The admissions process has been developed with consideration of attributes and qualities required of a new veterinarian as articulated in the RCVS 'Day One Competencies' and 'Code of Professional Conduct for Veterinary Surgeons'.

Phase 1 – Academic Review

All Students must apply through UCAS. All applications are initially reviewed to check that applications meet minimum academic standards. The School does not consider predicted grades.

Phase 2 – Non Academic Personal Qualities Review
Personal and Referees Statements on the UCAS form are reviewed to assess understanding of the profession, motivation, interests.

Phase 3 – Widening Participation and Work Experience Detail Collection (via online survey)
Applicants are requested to complete an on-line further information paper in order to supply further information for Widening Participation criteria and work experience.

Phase 4 – Motivation, ability, attitude and attribute assessment
The on-line questionnaire also provides an opportunity to provide further evidence that the applicant has the motivation, ability, attitudes and attributes for a career in the veterinary profession; this includes considering an individual's other experiences or achievements (e.g. sporting achievements, expeditions, music etc). The questionnaire is marked by veterinary qualified staff and is based on elements from the RCVS Guide to Professional Conduct.

Phase 5 - Situational Judgement Test
The Situational Judgement Test (SJT) assesses key attributes that have been identified as important for veterinary students. Applicants are presented with a set of hypothetical but relevant scenarios associated with the veterinary profession and asked to make judgements about possible responses. The competency framework consists of four attributes; empathy and building client relationships, professional integrity and trust, resilience and team work. The SJT builds on UK medical doctor selection methodologies and was developed in conjunction with psychologists.

Phase 6 - Assessment Centre
Candidates are ranked on their scores and the top applicants are invited to attend our Assessment Centre. The aim of this final phase of the selection process is to assess and select candidates who are academically able enough to cope with the course, who are motivated towards a career in veterinary medicine and science, who have insight into the implications of this career choice and who have, or appear to have, the potential to acquire the personal and practical skills expected of veterinary practitioners.

- The interview will normally be conducted by a staff member and either Nottingham alumni or an associate vet. Usually, at least one will be a vet and one a member of academic staff. The interview uses a scoring scheme to evaluate the depth of: motivation, insight into a veterinary career and interest in veterinary topics together with communication skills, animal orientation and personal attitudes and attributes.
- A practical aptitude assessment is undertaken by all applicants. During the assessment, applicants deal with animal material and clinical information and are scored using a scheme that assesses enthusiasm and aptitude including observational and analytical skills and animal orientation.

Staff receive initial training, are offered refresher training yearly and are briefed in detail at every ahead of every session.

Phase 7 – Offers
All Assessment Centre data is compiled and standardised to reduce any differences in marking between assessors. Students are then ranked. The information is reviewed by the Admissions Team and Admissions Sub-Deans. Applicants are considered solely based on their merits, abilities and potential, regardless of gender, ethnic or national origin, age (subject to the University regulations on minimum age), disability, religion, sexual orientation or any other characteristic. Decisions on offers are made by comparison with the candidate pool, rather than by individual. Applicants are then telephoned by one of their interviewers and made a conditional or unconditional offer,or are rejected and informed of alternative course options within the University by email correspondence. Any offer is made subject to an Occupational Health assessment. All students offered a place on the course are required to accept the Veterinary School Code of Practice by signing a Student Entry Agreement; this ensures that the student is aware of the specific objectives and standards for professional attitudes and behaviour required by the School and the profession.

For international students, the applicant may be telephone interviewed, and some leniency may be given regarding the full 4 weeks work experience, dependent on local conditions. International applicants must also meet English language criteria (British Council IELTS test with a minimum score of 7.5).

Widening participation and enhancing diversity

The School was established with a remit to increase diversity in the veterinary profession in the UK, and as detailed previously implements a range of measures (e.g. summer workshops, School visits, contextual offers, Preliminary Year course) to enhance diversity.

We are particularly successful in attracting a wider range of applicants to the School, especially via the Preliminary Year route, however, male student numbers are consistently low and reflect low application numbers nationally. There are also, historically low numbers of ethnic minorities participating in the veterinary profession due to wider factors including cultural influences. We have now a BAME student group that is working with School Equality Diversity and Inclusion committee to develop initiatives to enhance ethnic diversity.

Review of admissions criteria and processes

The Admissions process for undergraduate students is overseen by the Admissions Sub-Deans and reviewed annually by the Admissions Committee, which considers information such as demographics and admissions performance. In this way, the School monitors the Admissions process and ensure that there is no discrimination

Admissions policies and procedures are validated through feedback on the performance of students on the course and reviewed at Admissions Committee. Analysis is undertaken on cohorts of students admitted to the course. Data are cross checked against the admissions process for that cohort to highlight whether the admissions process has impacted on success in the course. This process is ongoing and informs decisions on the admissions process, via the Admissions Committee, to ensure it is identifying students who will perform to the standards and values required in the School's mission statement.

We believe that the admissions process is very successful; we have recruited students from a wide range of backgrounds, with normally over a third of any year being 'widening participation', and commonly put emphasis on the performance at Assessment Day over academic ability (for example a personable, capable, communicative student who has achieved highly at Assessment Centre but fails to meet the academic offer is likely to still be accepted at ABB through "Clearing"). The student attrition rate is low and we are content that we are selecting students academically capable of qualifying as veterinary surgeons; our high emphasis on personal qualities and communication selects students that are able to conduct themselves professionally as veterinary surgeons. We believe the diversity of our students will in future add significantly to the profession.

The admissions process has not substantially changed from that commended in the last RCVS Visitation.

Applicants can find further information on the programme, entry requirements and selection criteria at https://www.nottingham.ac.uk/vet/study-with-us/undergraduate/index.aspx

7.1.2 Veterinary student progression and attrition

Progression requirements

Progression criteria are made clear to students at the start of the course, in their student handbooks and yearly through the circulation of an addendum to the handbook which covers all aspects of assessment (assessment timetables, detail on types of assessment, extenuating circumstance claim processes and progression criteria etc.). All information is available to students via Moodle.

For specific details of assessments please see Chapter 10.

Progression is automatic from year 0 to year 1 on meeting the pass mark of 60% for each module; in addition students are required to undertake 2 weeks Animal Husbandry EMS placements. On average 10-20% of the Preliminary Year exit the course due to failure to progress academically.

For students on the 5 year course, to progress between years students must pass all modules at 50% and pass the portfolio and practical assessments. Students are required to pass 70% of OSCE / OSPE stations. To ensure high standards are maintained students have one opportunity to resit their assessments before they are required to leave the 5 year veterinary course, with the exception AHDOPS (Animal Handling Directly Observed Procedural Skills), held in years 1 to 3 where there is no limit to the number of resits available.

In addition to passing all year 3 exams, students are required to have passed all Animal Husbandry DOPS, completed Animal Husbandry EMS and gain a minimum of a 2.2 BVMedSci degree in order to progress to year 4.

Year 5 students need to have passed RPAs, met the minimum DOPS requirements and completed all EMS to be eligible to sit finals exams.

Student attrition rates are shown in Appendix 22. Students who transfer course mostly transfer to the BVMedSci only course (students who do not meet the BVM BVS progression requirements in years 1 and 2, but meet the lower University progression requirements (40% compensatable pass mark per module) can continue but are required to exit with a BVMedSci degree at year 3). Absolute attrition reasons are predominantly due to long term ill health or decisions to change career. There are ongoing reviews of reasons for attrition in order to inform admissions requirements and also welfare support.

Students must complete the veterinary course within 10 years and cannot take more than 3 years to complete 1 year. Data on average duration of studies for the 2021 graduating cohort is shown in Appendix 23. Data includes periods of suspension (e.g. maternity).

Academic misconduct and fitness to practice

Suspected cases of academic misconduct during teaching or examinations are regulated by University of Nottingham procedures. Following initial investigation by the Dean or nominated representative proven allegations may result in either a school-imposed penalty such as a written warning or the award of a mark of zero. More serious offences may be referred to the University Academic Misconduct Committee for consideration under the University of Nottingham Student Code of Discipline. In the most serious cases University Ordinances allow for exclusion of a student from the University. https://www.nottingham.ac.uk/qualitymanual/assessment-awards-and-deg-classification/pol-academic-misconduct.aspx

Fitness to Practise is regulated by the University of Nottingham Faculty of Medicine and Health Sciences Fitness to Practise Board, (https://www.nottingham.ac.uk/qualitymanual/2-documents/fitness-to-practise-procedure-mhs.pdf.) Investigations into allegations are initially undertaken in School with preparation of a report which is considered by the Dean of School who may recommend school-based sanctions or escalation to a formal Faculty of Medicine and Health Sciences Fitness to Practise Committee investigation. The formal committee has the power to apply sanctions up to and including exclusion from the course. More minor, non-Fitness to Practice disciplinary issues are considered by Senior Tutors, which may result in a formal warning or if the disciplinary issue is outwith School operations then it is considered under the University Code of Discipline (https://www.nottingham.ac.uk/governance/documents/code-of-discipline.pdf).

The School is enrolled in the Excluded Student Database of the Medical, Dental, Pharmacy and Veterinary Schools Councils and the details of any student excluded from the course will be entered into this database.

Identification and support to failing students

The School provides mechanisms to identify and support failing students; these have been previously described in section 6.1.3.

Policies for appeals

The School abides by the University policy for appeals against academic decisions and progression (https://www.nottingham.ac.uk/qualitymanual/concerns-complaints-and-appeals/pol-academic-appeals.aspx). Students cannot appeal matters of academic judgement (i.e. a student's assertion that the result unfairly reflects the merit of their work or their ability is not grounds for appeal). In summary students make a written case which is initially reviewed by central university before the School makes a response (normally this is by the Examinations Officer or the Director of Education). Should the School issue a revised recommendation which is not satisfactory to the student, or uphold the original decision, the case will then be considered by an Academic Appeal Panel. Once the internal academic appeal procedure has been completed, if the student is still not satisfied with the outcome, they may take their case to the Office of the Independent Adjudicator (OIA). The OIA operates externally to the University. It will not normally look at a case unless and until all relevant internal procedures have been exhausted.

Students are made aware of the appeals procedure through their student handbook, in an assessment addendum (detailing examinations timetable, progression information etc) and are also given advice as required by their Personal Tutor, Examinations Officer or Director of Education.

Applicants can appeal through a complaints process about misleading or incorrect information by the University and concerns about the application or interview process:

(https://www.nottingham.ac.uk/qualitymanual/admissions/pol-applicant-complaints.aspx). However they cannot challenge the academic judgement of a member of staff and/or School, including the outcome of an admissions decision nor disagreement with the admissions policy rather than its application. The complaint is handled initially at local level, followed, if required by Head of School then ultimately by a Head of Service or Faculty. Applicants are informed of this policy in their initial contact letter with the School.

7.2 COMMENTS

We have, in conjunction with other established Veterinary Schools led the development of the successful MOOC for virtual work experience, over 10,000 applicants have registered on this. In addition, we are developing a cross-Nottingham MOOC to provide a refresher of Biology and Chemistry for offer holders prior to joining Nottingham, this is important to mitigate the disruption to education by Covid, but post-Covid will provide a careers resource and support to widening participation students through demonstration of courses that can be undertaken with Biology and Chemistry A'levels.

In recent years we have changed our policy in recruiting international students, such that we now admit the best applicants irrespective of home country, they are all selected on the same criteria; we had found that there was a higher attrition rate of international students due to cultural fit and academic ability. The number of students admitted is set at 150 per intake of the 5 year course, however in reality due to the inherent impreciseness of forecasting places the intake can be slightly more or less than this (especially for 2020 entry due to several last minute changes in grade awards decisions by the UK government).

We have found that the incidence of support needs (especially for disabilities associated with mental health) has increased in recent years; we aim to ensure students are identified and supported as early as possible during the course, however we do advise students to delay starting veterinary school or interrupt studies if we feel that this would be the best approach for them to manage their health.

We feel that progress made by students in their studies is good and that the levels of attrition seen are appropriate. Ongoing curricular changes and improvements consider progression and attainment data, for example, Veterinary Public Health has been moved from year 4 to year 3 and delivered as a block module rather than a long module, this decision was informed by lower assessment attainment compared to other courses.

The School has extensive support mechanisms in place to support students who are not progressing satisfactory, which have been recognised by the University with a prestigious Lord Dearing Award, which recognises excellence in enhancing the student experience. The School is confidant in its academic and support processes so that only those able to practise competently as veterinary surgeons are able to graduate. Over the last 5 years 87% of intakes eventually graduate

As detailed previously the teaching facilities in the School have been, and continue to be, expanded to support the increase in student numbers. Timetabling also currently ensures access as required but the School continues to make representation to the University to increase lecture hall facilities. As a result of offering new options for rotation tracks from 2018, the School is able to accommodate increased student numbers at existing Clinical Associates, with the exception of Farm track rotations, where additional practices will be utilised.

7.3 SUGGESTIONS FOR IMPROVEMENT

Although the current standard of students is high we suggest all veterinary schools will need to collaborate to increase the pool of applicants when further veterinary schools open.

Appendix 22 Attrition of veterinary students

Entering class	Total Students	Reason for relative attrition			Absolute attrition		Total Attrition	
		Academic failure	Personal	Transfer to other UoN courses	Academic	Personal	n	%
2016/17	163	5	3	0	0	3	11	6.7%
2017/18	166	6	2	0	2	2	12	7.2%
2018/19	163	5	5	1	0	1	12	7.4%
2019/20S	154	3	3	2	0	1	9	5.8%
2019/20A	152	2	1	0	1	1	5	3.3%
2020/21S	165	0	1	0	0	0	1	0.6%
2020/21A	143	0	0	0	0	0	0	0.0%

Attrition = Relative attrition + absolute attrition
Relative attrition = students moving to an earlier year or transferring to other University courses
Absolute attrition = students who leave and never return (excluding those on other University courses)
Students who intercalate are not included in this table.

Appendix 23 Average duration of studies for the 2021 graduating cohort

Duration of studies	5 year course	6 year course including a Preliminary Year
5 years	113	0
6 years	10	13
7 years	3	1
8 years	2	0
9 years	0	0
10 years	0	0
Average duration of studies (years)	5.1	6.1

Note: Time spent intercalating is not included as an enhanced duration on the 5 year course; 7 resitting year 5 students are not included.

8 ACADEMIC AND SUPPORT STAFF

8.1 FACTUAL INFORMATION

8.1.1 Staff allocation to and within the School

Staff are not allocated to the School, rather they are recruited to it. The School has an ongoing recruitment programme phased in relation to the development of the School; academic staff work within Strategic Research Areas well as contributing to or leading teaching modules. The allocation of additional staff to the School is based on incremental growth (and replacement of any exiting staff) associated with the dual intake and apprenticeship business cases. Any additional recruitment above these plans would be considered through further business cases and/or agreement with our Faculty PVC. Recruitment in relation to non-budgeted posts is determined by the requirements of the research grant or external contract.

There are currently 191.3 FTE / 222 headcount staff in the School, of which 73.7 FTE / 95 headcount are vets (24.7FTE/37 headcount Specialists). Academic staff demographic data are shown in Appendices 24 and 25.

Academic staff are recruited to one of three main career paths within the research and teaching job family dependent on the focus of the role:

- A combination of research and teaching;
- Wholly or mainly involved in research;
- Wholly or mainly involved in teaching and learning.

Levels of academic appointments as follows:

- Professor (level 7)
- Associate Professor, Clinical Associate Professors and Readers (level 6)
- Assistant Professor and Clinical Assistant Professor (level 5)
- Teaching/Research Associate/Fellow (level 4)

Research staff are recruited to the relevant category dependent on the needs of the research grant or external contract.

Honorary staff may only be appointed using criteria of standing that is equivalent to normal University appointments. They have particular contractual rights and responsibilities and deliver some teaching at Clinical Associates, or on the course.

The staff organogram and management structure is shown in Appendix 2. Each of academic divisions comprises academic staff from all grades including Postdoctoral Research Assistants. Allocation to Divisions is made on similarity between research and teaching interests of the individuals.

Technical staff are either entirely dedicated to supporting teaching (e.g. the preparation of material for dissection, organising and demonstrating clinical equipment, looking after animals etc) or in a combined research/teaching role, where the majority of focus is on supporting staff with research and also providing input and guidance to postgraduate students and Year 3 project students. There are 5 levels of technician recruited in the School. The administrative staff in the School undertake a range of activities. There are 6 levels of administrative staff in the School. School support staff demographics are shown in Appendix 13.

8.1.2 Staff recruitment policies and processes

Staff are appointed to permanent or fixed-term contracts. Most are appointed on open-ended permanent contracts, with funding ultimately by the Office for Students (OfS) and student fees. No staff are appointed in relation to clinical income (as this is retained by the Clinical Associate); staff theoretically may be employed from service income, however there are no staff funded in this way. Staff on fixed-term contracts are predominantly recruited to Research Associate/Fellow positions on fixed-term research grants or recruited to provide cover for example to cover maternity leave.

The University utilises a thorough recruitment process that utilises the following stages:

- Identifying and approving a vacancy
- Recruitment planning and preparation, including advertisement in veterinary and other websites as appropriate

- Shortlisting
- Interviewing and selection which include presentations (academics) and/or tests (support staff)
- Offer and onboarding

Following local, national- and international advertisement, a shortlist is compiled by assessing applications against the identified criteria in the person specification. Decisions are based on objective reasons, and it is ensured that selection criteria are applied consistently to all applicants. Shortlisting is conducted by at least two members of staff and for all academic and teaching posts normally by the Dean of School and Heads of Divisions.

Up to and including appointment at the level of Associate Professor, University HR arranges the interview panel, which will include the Faculty PVC as Chair, an independent Head of School or Senior Academic who has had Chair training, together with School representatives. Professorial appointments include an interview panel comprising the Faculty PVC, Dean of School, School representative, and 2 External Assessors.

All interviewees for the posts of Assistant Professor and above, give presentations and a question and answer session to School staff; these are scored by staff and the results provided to the interview panel. The School has also initiated a process such that selected students attend provide feedback on staff interview presentations and interviews for staff on teaching contracts. Contracts for employment are only provided once appropriate references have been received together with evidence of qualifications.

Induction is managed by the School and includes a timetable of activities such as introductory meetings with their line manager and other key staff, safety and biosecurity briefing, training needs assessment and the provision of detailed information around policies and procedures including Ethics and equality, diversity and inclusivity (EDI); it is tailored to the requirements of the individual and may include a follow-up review with the individual. The University also provides a half-day session to introduce new starters to the University, held quarterly.

8.1.3 Staff recruitment and retention challenges and maintaining a stable cohort of staff; management of longer terms gaps in filling appointments

The major challenge to the School, as is common at all UK Veterinary Schools, is the recruitment and retention of suitably qualified clinical staff; there is little difficulty in recruiting non-clinical or support staff. The pool of suitable candidates for clinical positions is small, because of the expansion of Veterinary Schools and commercial competition from private practice for diplomate level staff. Although there has not been significant difficulty in attracting applications for positions in the School, the School has maintained its approach of only appointing those candidates who understand and meet the School ethos and culture, as well as being able to demonstrate the appropriate capabilities and potential for the role. Thus, there have been instances where no candidate has been appointed after interview, and the position has remained open.

The School has put in place financial incentives to attract clinical staff including a consolidated and pensionable 10% or 15% market supplement. In addition, a further clinical supplement is available for staff based at Clinical Associates undertaking clinical work and out of hours activities, this supplement is 15% or 20% of salary after addition of the market supplement. These clinical supplements do go some way to meeting the difference between academic and commercial salaries, however there are a number of additional tangible and intangible benefits associated with employment in an academic institution (e.g. pension scheme, sports facilities etc), as well as the academic environment generally and the ability to impart knowledge and skills to a new generation of the profession.

Specifically, in relation to clinical staff, the School has been able to retain excellent undergraduates, postgraduates and residents and recruit them to positions in the School. There are strong benefits in this approach, including cultural understanding and fit; currently there are 11 ex-students who have joined the staff. In addition, the School (supported by the Faculty PVC) have provided guidelines which supplement the University's promotion criteria for clinical staff. This allows veterinary clinical activity to be considered within the University Teaching and Learning promotion track.

The School ensures that School staff based at Clinical Associates undertake a full role in the School's activities and are part of the collegiate community through the following:

- Twice yearly clinician meetings take place at the School
- Monthly Clinical Sub-Dean meetings take place at the School
- Staff are expected to attend monthly staff meetings
- A member of Leadership Team visits each Clinical Associate regularly

- Staff have full access to the University and School's systems, including intranet, and receive minutes and notes of meetings through this
- Clinical staff are fully included in all normal School operations and have opportunities to contribute to a range of activities, such as TLA Committee, student recruitment etc

To attract the highest calibre individuals (both clinical and non-clinical) and also to reflect the fact that most staff cannot bring research funding with them, the School has made available funding for every academic staff member to have a pump-prime fund on joining the School, and has also allocated strategic money to fund postgraduate students and postdoctoral workers.

The School has put in place a number of measures to embed EDI in our culture and these are overseen by the EDI and Athena Swan committees. For example, we have created an EDI website, providing information on support for all protected characteristics, and useful contacts within and outside the SVMS for support. To attract and retain a diverse faculty, we internationally advertise all academic positions, and our adverts highlight our commitment to Equality, diversity and inclusivity.

The School was awarded the Athena Swan Bronze status in 2018 (http://www.ecu.ac.uk/equality-charters/athena-swan), and continues to implement various diversity measures and interventions to progress to Silver status.

Several School staff are employed on part -time contracts, 0.2 FTE roles are available for staff facilitating clinical relevance sessions – these roles are especially attractive to parents who wish to balance childcare / family commitments. All part-time staff are fully integrated and treated as any other member of University staff.

There are a variety of policies designed to maintain a stable cohort of academic and support staff. The School complies with university policies on parental leave and flexible working and encourages part-time working to all staff to improve work-life balance. As an example, all administrative staff have at some point opted to undertake "flexible" working of some description. Divisional Heads recognise the importance of staff development in maintaining a stable cohort of staff, and are good at developing bespoke programmes for individuals.

Loss and recruitment of academic staff for the last five years is shown in Appendix 26, with an average staff turnover of 3.7% over the last 5 years.

Short-term gaps in filling appointments are normally covered within the workload of current staff, for example maternity cover, however for clinical post maternity cover the School will either employ a locum, offer a fixed-term position or provide a payment to Clinical Associates to cover their additional staff effort. Longer term gaps in appointments occur in times of recruitment 'freeze' by the University, in light of financial pressures. When these have occurred the School has been able to successfully argue a case for appointment for academic and clinical staff on the basis of the requirements of accreditation; for technical and support staff the School employs temporary members of staff. Longer term gaps have also occurred in relation to clinical appointments, where the School has not been able to select appropriate candidates; in this case we would employ locum staff or make payments to Clinical Associates.

8.1.4 Staff teaching competence and expertise

The University requires that all newly appointed academic staff undertake the Postgraduate Certificate in Higher Education (PGCHE); 39 staff possess at least a PGCHE and 73% of staff have a teaching qualification (compared to 68% in the wider University). The School actively encourages staff to seek recognition as Fellows of the Higher Education Academy (HEA): 3 staff are Principle Fellows of the HEA, with a further 48 staff Fellows/Senior Fellows. 75% of our staff have a HESA-recognised teaching qualification; 79 staff have received the prestigious University Lord Dearing award for teaching.

The School organises a number of relevant initial or refresher courses or workshops in-house on a regular basis, covering all aspects of teaching, learning and assessment, (e.g. facilitation skills, introduction to ultrasound, MCQ/EMQ writing, use of YouTube for teaching and learning, admissions, personal tutoring). There are strong links with several other veterinary schools, where there is collaboration in development of staff skills and curricular activities, School staff have attended relevant external training courses such as EMQ training and assessment in clinical rotations.

Appropriate training is provided to staff at all levels in the Clinical Associate institutions. Clinical Associate staff are trained as necessary, usually at the beginning of a relationship, with ongoing training provided as

necessary on an ad hoc basis by placed staff. We are developing videos for Clinical Associates to use on induction of their staff. Clinical Associate staff have also registered to undertake educational Masters programmes; Clinical Associate staff have also been supervised by School staff to undertake residencies.

There is some supplemental teaching delivery by other University and external staff, when appropriate or niche expertise does not reside within the School; these staff may be paid as consultants or are honorary staff. All external deliverers are appropriately briefed and monitored by the Module Convenor, including pre-appointment and pre-delivery briefings and a post-delivery review. In 2020/21, they delivered 98 hours of teaching (4% of the total in years 1-4).

The University of Nottingham also offers staff who teach the opportunity to be observed by an experienced academic from outside their school via the Teaching and Learning Observation College (TLOC). TLOC aims to support colleagues who wish to improve their teaching through observation of their teaching and learning practice. The TLOC has recruited experienced staff from across the University who will provide professional and independent feedback. Staff can also request to observe a TLOC member with a view to developing their own practice. The benefits are to:

- Encourage staff to reflect on the effectiveness of their teaching
- Increase their awareness of the whole student experience
- Identify areas for improvement and put in place an action plan

The TLOC uses information collected anonymously by the college to identify and publicise good practice around the University. It also provides summarised feedback to academic management identifying general strengths and weaknesses in teaching as sampled through the observations of individuals.

8.1.5 Staff support and development

Appraisal and Development Conversations (see section 8.1.9) ensure personal development is a key action. The University Professional Development Unit provides development advice and courses for all groups of staff though a varied programme of short courses and accredited qualifications. Themes such as professional and personal development, managing people and projects and equal opportunities are delivered through a variety of methods, such as e-learning, forums and traditional courses (https://www.nottingham.ac.uk/hr/services/professional-development.aspx). All staff are encouraged to attend courses, and most are offered free of charge.

Each academic member of staff has a yearly fund to attend scientific meetings or professional development. There is also a centrally held training budget, which is also used to subsidise additional attendance at relevant professional development opportunities where there is justification that attendance would aid a member of staff's personal development. The School also supports staff to undertake academic and clinical qualifications. Support staff also access this funding, and support has been provided for a variety of courses – from day courses through to MBAs.

8.1.6 Processes for mentoring and supporting staff especially junior academics

A 'buddy' Peer Observation of Teaching process is in place. All academics are assigned to work in a group of 2-4 and are encouraged to observe teaching of other members of the group annually. This allows them to improve their own curriculum literacy whilst providing a mechanism for informal feedback to other academics in their group.

The School has joined the School of Medicine Mentoring Scheme and contributes financial support and mentors to the programme. The programme matches the skills, interests, and requirement of mentees with mentors and will allow cross-school pairing from across the three job families.

8.1.7 Opportunities to attend conferences and take sabbatical leave

As detailed above, each academic member of staff has a yearly fund to attend scientific meetings (this programme was on hold during the pandemic), and has access to a centrally School-held training budget that is also used to subsidise additional attendance at relevant meetings, where there is justification that attendance would aid a member of staff's personal development. The School strives to maintain excellence in both teaching and research. In order to encourage research activity within the School, funding for relief teaching, examining or administrative duties may be given up to a maximum of £5,000. The focus of this scheme is to provide a sabbatical for academic staff to allow them to visit and collaborate with international-leading research teams in fields that have clear strategic focus for the individual, research group and School. The sabbatical scheme is intended for staff to visit a leading international group or

institution for a period of 3-6 months, requests for shorter intensive visits are also welcomed. All academic staff within the School are eligible to apply.

8.1.8 Rules governing outside work

The University encourages members of staff to undertake external professional work. Interaction with industry, business, public organisations and the community in general (whether regionally, nationally or internationally) has the dual benefit of broadening the experience of (and providing additional income for) staff and enhancing the reputation of the University. Staff are able to devote up to a maximum of 50 working days a year to outside work with not more than 30 days falling within University term-time. The permission of the Dean of School is required to undertake all outside work not conducted within individual's annual leave or at weekends. University academic staff have the choice of whether to undertake the work privately or through Nottingham University Consultants, a University organisation which provides management and commercial support and expertise to academic staff wanting to carry out consultancy work. Currently Nottingham University Consultants charges a top slice fee of 15% on the total project costs. Staff employed as clinical academics are unable to undertake external clinical work under the 50-day rule.

8.1.9 Review and planning of staff performance

The University has a robust Appraisal and Development Conversations (ADC) process[9] to enable the School to manage salary progression in a way which ensures that individuals are appropriately rewarded, based on the contribution they make, clearly linked to the objectives of the School, Faculty and University. For individuals, it provides the opportunity to be rewarded through a goal-based process which is transparent and fair.

Progress, achievements and delivery are reviewed and assessed on how they have contributed to the faculty/school/department in the relevant balanced framework[10] of:

- Teaching and learning / Strategic and operational objectives
- Research and knowledge exchange (Academic only)
- Contribution
- Culture and climate

Contribution is measured in a variety of ways and includes

- Clinical teaching and assessment responsibilities and achievements
- Research grants applied for and awarded
- Publications
- Supervision of research students, interns, residents and postdoctoral research fellows
- Administrative duties and other contributions to the School, University, and external bodies

The ADC process enables the School to identify and respond to the development needs of all staff, including both short-term development and more long-term career aspirations. Furthermore, the process sets goals for the coming year. Appraisals are held with the direct line manager, which for all academics is the Head or deputy Head of Division, except for Professorial staff who are appraised by the Dean; Research Associates/Fellows are appraised by the Principal Investigator of the grant on which they are employed. Support staff are appraised by their line manager, who will be a team leader, or a Head of Operations. Excellent performance is recognised by staff nomination through the Nottingham Reward Scheme; additional increments can be awarded resulting in accelerated progression within a band, together with an option to award bonuses up to 9% of salary. Poor performance results in a review of development and support needs within the context of University guidance on managing underperforming staff.

The University has instigated a workload planning (WLP) system. The underlying ethos driving WLP framework is to allow effective planning of academic time and to enable a more open and transparent view of planned workload. It is assumed that all academic staff will have time allocated to undertake each of the following: teaching – including preparation, delivery and assessment - research, citizenship and academic service. The workload plan is populated centrally in the School and staff can comment on their assignment to correct inaccuracies. Research data are made available to line managers and the Dean via an Academic

9 Further details are available at http://www.nottingham.ac.uk/hr/guidesandsupport/performanceatwork/index.aspx

10 The Faculty Balanced Scorecard aims to ensure all staff contribute across the four theme (see SER2 for further information)

Profile Tool. An individual's workload is discussed at ADC, with changes made as necessary for the subsequent year.

8.1.10 Promotion policies and processes

The University's promotion process for academic staff recognises a high level of achievement in 3 broad areas of activity:

- Research and scholarship: research activity (including research income and publications), and standing within the UK and international research community
- Teaching and curriculum leadership: teaching quality, teaching leadership, educational research, teaching innovation and good citizenship, including PhD supervision, outreach etc. For clinical staff, clinical activity is also considered within teaching
- University/Academic service and good citizenship: e.g. leadership, management, administration, collegiality, knowledge transfer or pastoral care within the University, or by engaging with the wider community on behalf of the University

All academic staff may put themselves forward for promotion if they consider they match the relevant criteria as detailed in the relevant Academic Staff Promotion Criteria & Career Pathway Framework provided by the University. Progress towards promotion is discussed with all staff at their ADC, and the School provides support through the promotion process with workshops and mentoring. All applicants for promotion are expected to demonstrate high achievement in the areas applicable to the focus of their role, and must include evidence of academic service. Each individual case is judged on its merits with weight given to teaching, clinical work, research and other activities according to the career track an individual wishes to be considered for; there is no set weighting, however a summary of expectations is available at https://www.nottingham.ac.uk/hr/guidesandsupport/promotionandregrading/promotion/index.aspx. The School Promotions Panel considers each application against the University's promotion criteria prior to submission to the Faculty PVC. Following discussion by the relevant committee, led by the Faculty PVC and including Heads of Schools, a decision is made, and the outcome is provided to each individual. For promotions to level 7, applications supported by a University Promotions Committee are sent for external review prior to a second meeting of the University Promotions Committee. Feedback and further support is given to unsuccessful staff. Detailed criteria will be available to view during the visitation. There is no financial or numerical limit within the promotion process.

There are no promotion opportunities for support staff, instead they can move to a higher grade role or the role is regraded (rather than the individual).

8.1.11 Role of Interns, Residents and postgraduate students in teaching and assessing veterinary students

Residents, Interns and DVetMed students are integrally involved with year 5 clinical teaching. They may work closely with the students on an informal daily basis, and may be involved in scheduling activities, and feedback, with academic staff and other members of Clinical Associates about student performance to Rotation Leaders. Residents may be involved in assessing DOPS, however otherwise no students are involved in assessment. Other non-clinical postgraduates (e.g. PGCertificate, MRes, PhD) act as demonstrators in practical sessions in years 1-4. It is normally expected that students undertake university courses in teaching and demonstrating and school teaching induction courses. Some students may undertake the Associate Teacher Program and gain HEA status.

8.1.12 Secondary roles of academic staff

A list of secondary roles of academics is shown in section 0.1, with Committee membership shown in SER2.

8.2 COMMENTS

In order that the School can ensure a pipeline of clinical applicants to fill positions the School is considering whether it is possible to establish a programme where students can undertake a residency programme that culminates in tenure as a full clinical academic, subject to satisfactory performance.

At Faculty level work is ongoing to ensure consistency of practice within the workload planning system: for example, ensuring a uniform approach to time allocated for teaching preparation.

8.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 24 School staff support for teaching and research (data at 31.7.21)

	Technical staff FTE	Administrative and other staff FTE
Responsible for the care and treatment of animals	19.5	0
Responsible for the preparation of practical and clinical teaching		0
Responsible for administration, general services, maintenance etc	0	29.0
Support staff primarily engaged in research	8	1.0
Total	**27.5**	**30.0**

The teaching technical team care for School teaching animals (approximately 0.2 FTE) and prepare for practical teaching so the category is merged.

In addition, there are 24.8 FTE staff based in central University functions (e.g., Student Services, Estates, HR, Dairy Farm, and Finance etc) that directly support the School.

Appendix 25 Academic staff of the veterinary programme – numbers and qualifications (data at 14.6.17)

Associate staff include veterinary nurses, farriers, and army staff and are not differentiated into categories. Diploma holders may also possess Certificates

Clinical Associate staff include many staff with Certificates and Diplomas however it is overly complicated to assign the FTE per Clinical Associate to qualification categories

Postgraduates include residents in farm animal, pathology and equine.

A weighted average of Clinical Associate and postgraduates on track rotations is included.

No external teaching deliverers, apart from Clinical Associate effort is included.

		Non- veterinarians				Veterinarians					
									Veterinary Specialists		
Status	**Title**	**Non degree**	**BSc**	**MSc**	**PhD**	**Veterinary degree only (and Clinical Associates)**	**MSc**	**PhD**	**Board certified or diploma holders**	**Board / Dip and Masters**	**Board/Dip and PhD**
Full time (>75%)	**Dean**										1.0
	Professor				8.0		1.0	2.0	2.0		4.6
	Associate Professor				14.0		0.8	6.0			6.0
	Assistant Professor				5.8	14.8	3.0	1.8	1.0	1.0	5.0
	Teaching Fellow	2.0	0.8		5.6	8.8	2.0	2.0			
	Research Fellow		7.0		10.9						0.9
Part time (<75%)	**Administrator**										
	Professor				0.4	0.1			0.4	0.1	0.4
	Associate Professor								0.3		0.7
	Assistant Professor	0.3				1.0	0.4		0.1	0.5	0.6
	Teaching Fellow		1.0	1.4	1.0	2.4	1.5	1.2			
	Research Fellow	0.6		0.7	0.6	0.4					
	Postgraduates					7.0					
	Clinical Associate Staff					16.2					
Total		**2.9**	**8.8**	**2.1**	**46.3**	**50.7**	**8.7**	**13.0**	**3.8**	**1.6**	**19.2**
Total Non-veterinarians:		**60.1**				**Total School specialist veterinarians**				**24.7**	
						Total veterinarians				**73.7** **97.0** (including Clinical Associates and Postgraduates)	

Appendix 26 Loss and recruitment of faculty over the last 5 years -

	Faculty lost		Faculty recruited	
Year	**Category of staff**	**Discipline**	**Category of staff**	**Discipline**
2020/21	L (Henson) L (Waine) L (Stavisky)	Teaching / Equine Teaching / Pathology Teaching / SA	L (Morey Matamalas) UT (Sidhu) UT (Lowton) UT (Messina)	Pathology Teaching Teaching Teaching
2019/20	AP (Ewers) AP (Wapenaar) AP (Foster) AP (Kydd) AP (Eu) AP (Nova Chavez) AP (Voigt) P (Loughna) P (Hannant) P (Barrow) TA (Curzon) TA (Sherwin) TA (McKinlay) TA (Yates) TA (Gordon) TA (Foden)	Imaging Medicine and Epidemiology Immunology & Infection Applied Immunology Pathology VPH Behaviour & Neuroscience Integrated Physiology Applied Immunology Infectious Diseases Teaching Teaching Teaching Teaching Teaching Teaching	AP (Blanchard) AP (Trimble) AP (Shaw) AP (Sherwin) AP (Waine) AP (Bruce) AP (Bailey) AP (Murphy) AP (Henson) AP (Pickles) AP (Vazquez Diosdado) AP (O'Hara) P (Hall) P (Campbell) P (Demetriou) P (Corletto) P (Foale) P (Arthurs) P (Smithson) P (Dunning) TA (Richens) TA (Spalding) TA (Child) TA (Payne) TA (O'Boyle) TA (Lightfoot) TA (Reyneke) TA (Brignell) TA (Choudhary) TA (Hillen) TA (Bass) TA (Bhandare) TA (Sumner) TA (Alderson-Knight)	Bioinformatics Anaesthesia Dermatology Farm Animal Medicine Pathology Exotics Equine Pathology Equine Equine Precision Livestock Technologies Imaging SA Surgery Vet Ethics SA Soft Tissue Surgery Anaesthesia SA Medicine SA Orthopaedic Surgery Dental, Oral and Maxillofacial Surgery SA Internal Medicine Teaching Teaching Teaching/Veterinary Physiotherapy Teaching/Farm Teaching Teaching Teaching Teaching Teaching Teaching Teaching Teaching Teaching
2018/19	AP (Rigo) AP (Self) TA (Merritt)	SA Practice Anaesthesia & Analgesia Teaching	AP (Ortiz) AP (Rigo) AP (Hackney) AP (Hill) AP (Clarke)	Pathology SA Practice SA Practice Equine Clinical Practice Poultry

			AP (Quieros) AP (Richardson) AP (Zoltowska) AP (Hughes) AP (Harland) TA (Williams) TA (Corah) TA (Sandoval-Barron) TA (Turpie) TA (Sherwin) TA (Ferguson)	Veterinary Education Veterinary Education SA Practice Veterinary Education SA Practice Teaching Teaching Teaching Teaching Teaching Teaching
2017/18	AP (Dean) AP (Hobson-West) AP (Davies) AP (Grau Roma) AP (De Brot) P (Huxley) P (Mossop) TA (Meisl) TA (Ambler) TA (Henstridge)	Feline Medicine Welfare, Ethics and Society Sheep Health and Production Pathology Pathology Farm Animal Production Medicine Veterinary Education Teaching Teaching Teaching	AP (Randall) AP (Down) AP (Eu) TA (McKinlay) TA (Morrow) TA (Hewitt) TA (Jones) TA (Redpath) TA (Henderson) TA (Lawlor) TA (Black) TA (Coates) TA (Bardill) TA (Haines) TA (Drinkall)	Ruminant Health and Welfare Equine Practice & Diagnostic Imaging Pathology Teaching Teaching Teaching Teaching Equine Medicine Teaching Teaching Teaching. Veterinary Physiotherapy Teaching. Veterinary Physiotherapy Teaching. Veterinary Physiotherapy Teaching. Veterinary Physiotherapy Teaching. Veterinary Physiotherapy
2016/17	AP (Doles) AP (Davies) AP (Bexfield) L (Habershon-Butcher)	Equine Surgery SA Clinical Practice SA Medicine and Oncology Equine Medicine	L (Wieser) L (Dubuc) TA (Roots)	SA Practice Equine Surgery Teaching

9 CURRICULUM

9.1 FACTUAL INFORMATION

9.1.1 Overview of the programme

Introduction

The School is undergoing an extensive curriculum review to accommodate the dual intake model. At the time of accreditation years one to three are following the new dual intake curriculum and years four and five are following the pre 2019 curriculum.

The curriculum review and development at Nottingham is driven by the learning outcomes that students are required to display at graduation, and is the culmination of extensive consultation and planning. The curriculum has thus been designed to meet the RCVS Day One competences, and EAEVE Subject Areas. The dual intake initiative has enabled us to review and refine curriculum content, whilst maintaining a student-centred approach which ensures our graduates have excellent employment prospects and excel in practice and other roles both within the veterinary profession and beyond. The clinically integrated nature of our curriculum ensures students are engaged, motivated and enjoy their learning, whilst developing problem solving, team working and communication skills.

Our key aim is to educate and train veterinary students, providing them with the knowledge, intellectual, practical and professional skills to fulfil the demands required of them to succeed and develop as accomplished veterinary professionals. Specifically, the aims of the programme are that students should have, on graduation:

- Broad knowledge of the basic sciences on which the activities of veterinary surgeons are based
- Broad knowledge of the structure and functions of healthy animals in relation to husbandry, health, welfare, housing, reproduction, behaviour, nutrition and hygiene
- Knowledge of animal health and its promotion and of disease and its causes, diagnosis, management, treatment and prevention
- Practical competences allowing accurate, safe and practical handling, examination, diagnosis and sample collection and analysis
- Knowledge of clinical pharmacology, medical and surgical skills and techniques
- Knowledge of veterinary public and animal health standards, processes and issues including animal foodstuffs, transmittable and notifiable zoonotic diseases and animal welfare
- Problem solving and clinical reasoning ability, including knowledge, understanding and skills in contemporary research
- Professional skills and attributes ensuring effective communication, liaison and team working with clients, colleagues and other stakeholders
- Understanding of the professional, legal and ethical responsibilities of the veterinary surgeon with regard to RCVS guidelines and in the wider society
- Ability to demonstrate personal and professional limits and understand the obligation for a commitment to continuing professional development
- Skills and attributes for further professional development including self-audit and continual lifelong learning as a veterinary surgeon

Our programme is mapped to RCVS Day One competences, EAEVE and AVMA clinical competences.

The 5-year veterinary curriculum at the School of Veterinary Medicine and Science, is unique in culminating in the award of two degrees:

- Bachelor of Veterinary Medical Sciences (BVMedSci) at the end of Year 3
- Bachelor of Veterinary Medicine (BVM) and Bachelor of Veterinary Surgery (BVS) at the end of Year 5 (awarded jointly)

The curriculum is delivered in a vertically (clinically) and horizontally (subject) integrated programme using a range of innovative teaching methods. Each major body system is delivered within Years 1 and 2 in the following modules:

- The neuromuscular system
- The circulatory and respiratory systems
- The gastrointestinal system
- The endocrine and integument systems

- The urogenital system

These systems-based clinical science modules cover structure and function in the normal animal. Currently, each of these systems-based modules is repeated in Year 4, when the clinical aspects of disease, diagnostics and treatment are delivered. Within the dual intake curriculum, these systems will be revisited within three species based clinical modules.

A problem-oriented approach ensures integration is emphasised appropriately. Delivery methods are diverse and include core 'signposting' lectures and practical classes, alongside facilitated small group problem-based learning sessions. The development of lifelong learning skills is supported through the inclusion of self-directed and group work.

In addition to 'block' system-based modules, there are also 'long' modules running throughout the year. Long modules cover some of the key skills and knowledge required across the veterinary field (for example Animal Health and Welfare in Year 1, and Veterinary Professional Skills in years 1 and 2). Integration between these long modules and the body system modules ensures relevance and engagement.

In a typical problem-orientated curriculum, matrices of subject and topic are mapped into the individual cases that are delivered throughout the course. When doing this there is the potential for particular topics to become 'hidden' to teachers and learners. To avoid this we identify and map learning outcomes of "embedded" modules, a process overseen by dedicated module convenors for these areas. Examples include biochemistry, ethics, and anatomy and embryology (see Appendix 27).

Year 3 acts as a transition year between clinical science and clinical modules. A six week, free choice research project at the start of year 3 allows students to develop scientific curiosity and research skills of literature searching, experimental design, analysis of data and scientific writing techniques; many students are involved in formal publication of their work. The students also study veterinary public health, the fundamentals of clinical practice and veterinary professional skills, which builds on skills already delivered within the systems-based teaching and prepares students for learning in the clinical workplace.

Year 5 is lecture free and students undertake a series of Intra-Mural Clinical Practice Rotations that comprise small-group clinical teaching in the hospital / practice / laboratory situation (Appendix 98). The year allows students to further develop clinical skills, reasoning, knowledge and professionalism in the context of the workplace. Teaching and learning is based upon practical experience, observation and discussion and may also include seminars, case rounds, practical classes and self-directed learning; students are normally under the supervision of University academic staff placed at, and working within, the institution. The 26 weeks of rotations are delivered over a period of 50 weeks and include:

- 8 weeks of core small animal rotations
- 4 weeks of core equine rotations
- 4 weeks of core farm animal rotations
- 2 weeks of veterinary public health
- 2 weeks of pathology
- 6 weeks of track rotations

During year 5, students also undertake up to 20 weeks of Clinical Extramural Studies.

Students meet RCVS requirements to undertake Animal Husbandry and Clinical Extra-Mural Studies (EMS) in vacation periods (Appendix 28).

- A minimum of 12 weeks Animal Husbandry EMS (AHEMS) is scheduled in Years 1, 2 and 3
- A total of 26 weeks Clinical EMS (CEMS) is scheduled from the end of Summer of Year 2
- The temporary requirements for EMS due to the COVID-19 pandemic are currently being followed for each cohort.

Appendices 30 and 31 show hours per unit of study and of disciplines and subjects. Details of units of study including learning outcomes are available in the SER2.

Basic subjects

The curriculum is delivered in an integrated programme; the systems-based modules in years 1 and 2 cover all basic science subjects. There is incremental development of understanding in a range of basic science subjects including anatomy, physiology, biochemistry, embryology, immunology, genetics, molecular biology and microbiology within the systems based modules undertaken in Years 1 and 2. Subjects which traditionally have been considered as 'paraclinical' such as pathology, microbiology, parasitology and

immunology are also taught within the system based modules in Years 1 and 2 and are complemented and reinforced by additional teaching in a Year 3 Fundamentals of Clinical Practice Module. Basic subjects and sciences are considered as embedded modules within the curriculum and tracked to ensure elimination of any omissions or duplications across the modules. It is expected that when the students progress to the clinical modules in Year 4 they are conversant with all the material taught in the clinical science system-based modules and the long modules delivered in Years 1 and 2.

Animal production
Animal production is primarily covered within the Animal Health and Welfare module which is a "long module" running through year 1. Teaching is integrated with concurrent systems-based teaching where appropriate. Three of the guiding aims of these modules are to provide:

- An introduction to the health and husbandry of the common species on which to build throughout the remainder of the course.
- A basic understanding of UK animal industries and the role of the different species in society
- The key animal handling and practical skills to enable students to effectively and efficiently learn during preclinical farm based Extra Mural Studies (EMS) and clinical EMS

Animal production is consolidated during clinical teaching in year 4 and Year 5 rotations (e.g. Farm practice, Herd Health)

Clinical subjects
Delivery of clinical sciences exploits the vertical integration of the course to allow effective embedding of clinical concepts and skills alongside basic sciences from Year 1. In Years 1 to 3 clinical material is used to reinforce and contextualise the basic subjects and sciences, and practical skills which are core to later development of clinical competence are taught, practised and assessed. In Year 4 of the course emphasis is primarily clinical, utilising and building upon earlier concepts and knowledge. Year 4 and 5 students are also involved in peer led teaching to earlier years thereby ensuring they are cognisant of all the relevant basic science relating to that module. The development of clinical knowledge is also supported by the process of EMS.

The lecture-free Year 5 is mainly based at the Clinical Associates in which structured, quality assured clinical teaching is delivered in the context of a large, varied caseload, relevant to the 'Day One' veterinary graduate. Total Intra-Mural Rotations are 26 weeks; details of clinical rotations, durations and locations are shown in Appendix 29.

Food hygiene
The principles of food production in a variety of species, epidemiology, milk production and microbiology are delivered alongside the body systems in years 1 to 4 where appropriate e.g. microbiology teaching occurs in all modules. In Year 3 the Veterinary Public Health (VPH) module integrates the principles and concepts of food hygiene, population medicine and veterinary epidemiology. Furthermore, the management and surveillance of zoonotic and notifiable diseases is developed and its context with regard to legislation and enforcement defined. The students develop an understanding of the public health issues relating to other food sources and exhibit a working knowledge of the basic food sciences including food technology, processing and preservation as well as the relevant environmental and economic issues associated with food production.

Food hygiene knowledge is applied in context during the year 5 VPH rotation.

Preventative medicine
Preventative medicine topics are integrated within the curriculum as appropriate. The majority of vaccination teaching, for example, is included in the host-disease interaction teaching in Fundamentals of Clinical Practice in year 3. Preventative medicine teaching is consolidated during final year, where students commonly lead vaccination/wellness consultations during Shelton Lock and PDSA rotations, and design farm animal health preventative strategies during Farm Animal Practice and Herd Health rotations.

Professional skills
Veterinary professional skills are delivered in each year of the curriculum, ensuring a strong emphasis of important topics such as communication and teamworking skills, ethical reasoning, mental health awareness and business. This material is taught in two ways; firstly, the stand-alone Veterinary Professional Skills (VPS) modules, and secondly, learning outcomes related to professionalism are integrated at multiple points throughout the curriculum (including, for example clinical relevance sessions). This philosophy avoids the common pitfall of professional skills and knowledge being seen as 'soft' and underlines the importance

of this teaching to the students. Within the VPS modules, teaching is often experiential or discussion-based and uses techniques such as the use of medical actors for communication skills sessions. Professional skills and professionalism are examined throughout the curriculum through an annual ePortfolio assessment and communication skills OSCEs and DOPS. Professionalism is a separate and specific must-pass assessment for each Year 5 rotation.

9.1.2 Unusual and innovative aspects of the curriculum

There are many examples of unusual and innovative aspects of the curriculum:

- A true clinically vertically integrated curriculum that both demonstrates the clinical relevance and application of the basic sciences from the start of the course and reinforces the importance of basic sciences during the clinical modules, through a spiral curriculum. Much of Years 1 and 2 learning is emphasised and supported by clinical cases using the principle of contextual learning. Discipline based subjects are embedded within the systems modules and are assured by a group of Module Convenors, with responsibility for embedded modules within the curriculum
- Within Year 3, students undertake a research project, enabling them to gain insight and develop knowledge and skills in a range of disciplines as determined by the interest and needs of the student.
- The emphasis on professionalism, that is embedded throughout the course, provides a unique opportunity for students, in early years, focussing on reflective ability, communication skills training, mental health awareness, development of resilience and business management and entrepreneurship. Assessment of professional behaviour is a core component of student evaluation in Year 5
- Integrating clinical skills into the early years of teaching, and developing clinical skills in later years before entrance into the clinical final year, combined with the explicit assessment of these clinical skills through Objective Structured Practical and Clinical Examinations (OSPEs and OSCEs) that align with final year Directly Observed Procedural Skills (DOPS), and to RCVS Day 1 Competencies, functions to guide student learning and demonstrates a roadmap of clinical skills development throughout the programme to post-graduation. Students' individual development of clinical skills is captured through a self-audit within the professional portfolio.
- Key to the delivery of the School Intra-Mural Rotations (IMR) has been the identification of clinical situations in a community-based model that provide an appropriate and authentic learning and assessment opportunities for our students.
- Students are able to attend our Vets in the Community Clinic, providing free healthcare for the pets of homeless and vulnerably housed people. Students carry out the clinical work, supported by SVMS staff members. The mobile clinic is managed by a student committee responsible for outreach, fundraising, stock control and publicity.
- Peer assisted learning (PAL) provides essential support within the curriculum. Students participating in teaching EMS, the Nottingham Advantage Award, teaching interns and Vet Coaches contribute to PAL sessions, including facilitation of problem based learning, practical demonstration and providing support within the clinical skills lab.
- As part of digital innovation within the curriculum a series of 360^{o} video tours have been produced to support students with the transition to vet school, in preparation for rotations and practical exams and to help familiarise staff and students with Covid restrictions in the move back to face to face teaching during the COVID-19 pandemic.
- The blended approach to the curriculum includes all curriculum content and resources being available on Moodle, whilst the use of Microsoft Teams allows interactive delivery to be maintained in online teaching off site as well as in face to face sessions on campus.

9.1.3 Strengths and weaknesses of the curriculum as a whole

Strengths

- Our outcome based student-centred curriculum encourages students to learn in an independent fashion, and they have responsibility for their own education. It encourages a more active approach to learning, building on prior knowledge, and learning by doing, in order to assimilate and accommodate their own learning
- By combining a clinically focussed basic science curriculum and providing clinical learning opportunities around first and second opinion cases the curriculum delivers true 'Day One' skills.
- An integrated research programme produces research-literate veterinarians
- Emphasis on professional skills ensures graduates develop their own employability throughout the 5 years and are optimally prepared for their future careers.
- Utilisation of a wide range of eLearning initiatives such as online assessments, audience response software, the combination of our virtual learning environment (Moodle) and Microsoft Teams to enhance

delivery, our video library within MediaSpace which now comprises over 1,000 videos within the SVMS channel and high quality visualisation equipment in the dissection laboratory
- A focus on student engagement, encouraging our students to develop beyond the boundaries of core curricular content, leading to enhanced employability skills (recognised by the ASPIRE award)
- Our position within a wider medical faculty, allowing us to learn from other clinical degree providers, and work together on a range of projects designed to enhance the student experience. For example, the faculty Inclusive Curriculum Task and Finish Group, which includes a focus on decolonisation of the curriculum
- Engaging, innovative and committed teaching staff, evidenced by a large number of local and national teaching awards
- Our community based model of final year teaching, which exposes students to the relevant caseload in order to develop professionally and practically
- The recent dual intake model has required extensive curriculum review resulting in a streamlined curriculum, reduced assessment burden and improved student experience

Weaknesses

- The university has moved to centralise some aspects of student services, which has led to challenges to our model of support. The school is working hard to ensure this does not impact on student experience
- The implementation of Campus Solutions, a new university wide database for hosting all student records, has produced some challenges for us as a School.

9.1.4 Major curricular changes that have occurred since the last visitation

The introduction of the new dual intake curriculum has been a major curriculum change since the last visitation. At the time of the accreditation visit, Years 1, 2 and 3 are all following the new curriculum whilst years 4 and 5 remain on the pre-2019 curriculum. To enable the September and April cohorts to be delivered within the year, the total teaching time has been reduced in years 1 and 2 by 2 weeks. Year 3 has been extended by 2 weeks to accommodate some of the year 4 content from the pre-2019 curriculum. Modules in years 1 and 2 have been consolidated, students study 4 compulsory modules in each year, which has addressed repetition of some content and reduced the assessment burden. Veterinary professional skills have been given an increased emphasis and are brought together, in a synoptic fashion, at the end of the year in a 6-week teaching block. During this time in years 1 and 2 students are also able to undertake up to 4 weeks EMS.

The year 3 research project module has been reduced from 10 to 6 weeks, VPH teaching in year 3 remains unchanged. A new year 3 module, Fundamentals of Clinical Practice, runs for 10 weeks and consolidates many of the embedded modules introduced in years 1 and 2, namely pharmacology, microbiology, parasitology, immunology, diagnostic imaging, anaesthesia and surgery. Finally, Veterinary Professional Skills 3 is delivered over 5 weeks and includes key business skills, clinical reasoning and consultation skills and euthanasia teaching. Practical skills delivered in both years 3 and 4 will be summatively assessed in an OSCE at the end of year 4 prior to the start of clinical rotations.

Plans for the new curriculum in year 4 include 3 species based clinical science modules: farm animal and veterinary public health, equine and small animal. Considerable mapping of learning outcomes has been undertaken and as such new modules are effectively re-timetabling of previous systems based clinical module teaching. Students will then undertake all core rotations before completing their chosen track rotations and remaining CEMS.

There have been some changes associated with year 5 (Appendix 29),
- A compulsory introductory week prior to rotations starting has been restructured to offer all the health and safety information and pastoral support for the final year, including a day on 'mental flex' in preparation for learning in the clinical workplace. The week has practicals, advice about final year assessment, plus CV and financial planning sessions, and a visit from VDS, BVA and RCVS representatives
- Students attend Pinfold Vets and Shelton Lock as one small animal practice rotation
- A new site at the RSPCA Radcliffe on Trent has been introduced to the PDSA rotation and provides increased opportunity for surgical experience for all students. Small animal track students spend an additional week at the RSPCA site combined with a week at the Sheldon branch of YourVets.
- The Pride hospital is the site for the 2-week small animal referral rotation, which now consists of medicine, anaesthesia (and pain clinics) and diagnostic imaging. Students can also spend time with other referral disciplines

- All students undertake a 2-week equine skills rotation based at the School and 2 weeks at Oakham Veterinary Hospital as their core equine rotations. Scarsdale Equine no longer delivers equine teaching.
- The core Farm rotations comprise 2 weeks Farm Health Skills based at SVMS and 2 weeks of farm animal practice at Scarsdale Veterinary Hospital
- In addition to 21 weeks of IMR, students can now 'track' for 6 weeks in small animal (primary care, charity or referral), farm animal, equine, mixed practice, veterinary public health or research. 2 weeks of the track is counted as compulsory CEMS.
    - Equine track rotations are completed at Pool House Equine (a new clinical associate site), the DATR and a further 2 weeks at Oakham Veterinary Hospital
    - Farm animal track rotations include farm animal practice based at XL vets and advanced herd health and farm skills based at SVMS
    - The Zoo/exotics track includes a new skills rotation based at SVMS. Exotics teaching on the track rotation includes time spent at a branch practice of Pride for primary care exotics teaching, and referral practice teaching at Pride (in addition to time at Twycross Zoo)

In addition to curricular changes there have been some changes with assessment:

- The reflective portfolio is now credit bearing and is the method of assessment for VPS in years 1 and 2 and in year 3 in combination with the business plan. The structure of the portfolio has been revised, students are given less free choice in years 1 and 2 and have a number of compulsory assets which cover topics such as work-life balance, communication, ethics, research and clinical and practical skill development.
- In years 1 and 2, all spot tests have been replaced with online short answer papers which are equally weighted with the MCQ papers in each module.
- The Fundamentals of Clinical Practice module in year 3 is assessed by an MCQ paper, the practical and clinical skills taught within this module will be assessed in an OSCE at the end of year 4. Previously there was no summative practical assessment in year 4. Practical skills delivered in years 1 and 2 are now summatively assessed at the end of year 2 and those delivered in years 3 and 4 are assessed at the end of year 4. There is no change to the assessment of clinical skills via the DOPS in year 5.
- Due to the Covid-19 pandemic, changes have been made to all Rogo assessments for 2020/21: years 1 to 3 exams were delivered remotely as open book assessments. Years 4 and 5 were delivered on campus as invigilated open book assessments. All practical and clinical assessments were delivered in 2020/21.

9.1.5 Plans for future curriculum changes

We are in the process of implementing our dual intake curriculum. 2022/23 will see the delivery of the new 4th year curriculum for the first time. The 3 species-based modules will replace the 8 systems-based modules in the current 4th year, (all learning objectives have been tracked for this timetabling exercise). This will reduce the assessment burden for both staff and students, as recommended by external examiners, and better prepare students for their clinical rotations and final year clinical practice modules.

Final year will comprise the existing clinical rotations clustered into 3 clinical practice modules (farm animal and veterinary public health, equine and small animal) and a Veterinary Professional Skills module, delivered across 20 weeks of core and 6 weeks of track rotations. Students will complete their core rotations in the first half of the year, followed by a clinical reasoning exam for each clinical practice module. The remainder of the year will be spent completing their chosen track rotations and clinical EMS, enabling students to enhance their employability before completing the Veterinary Professional Skills assessment comprising the reflective portfolio and an MCQ assessment based on the RCVS Code of Professional Conduct.

9.1.6 Process for curriculum evaluation, review and revision and process for gathering and using feedback from stakeholders, reviewers and moderators and from assessment outcomes

The School has put in place significant mechanisms for ongoing curriculum review and assessment:

- Weekly debriefing of facilitators reviewing material delivered in Clinical Relevance sessions
- Biannual module and rotation reviews (e.g. student feedback, external review, focus groups etc)
- Evaluation of individual teachers by student evaluation of teaching and peer observation
- External Examiner reports on each assessment
- Annual programme reviews, including student feedback on their experience of the year
- Annual School Enhancement Plan as required by the University of Nottingham
- Periodic Education Enhancement and Assurance Review as required by the University of Nottingham
- Periodic review and accreditation by the RCVS and EAEVE

Module reviews are the primary mechanism to identify good practice, overlaps, redundancies and omissions and are undertaken annually by the Module Convenor with the aid of contributors to the module. A Module review meeting is chaired by the Module Convenor and comprises:

- Consideration as to whether delivery matched published learning objectives: why were there differences, what may have impeded success, what may be improved, what worked well etc
- Review of feedback and comments from the multiple inputs collated for the meeting
- Plan for modification of both learning outcomes and proposed delivery strategies

A Module Review document is subsequently presented to TLA Committee for discussion. The document compiles information from the following sources:

- Informal comments received during delivery
- Output from meetings with technicians and key administrative support staff, observation of teaching delivery by Module Convenor, de-briefing of facilitators
- Feedback from external deliverers on the course
- Student Evaluation of Module (SEM) and rotation feedback[11]
- Student Evaluation of Teaching, where appropriate
- Student focus group
- Review of assessments

Thus, any ongoing required changes to outcomes on a module basis are proposed by the Module Convenor prior to review and approval by the Schools TLA Committee, to ensure the overall curriculum content is maintained. Learning objectives developed for each teaching session, link to RCVS, EAEVE and AVMA criteria and overall module learning outcomes. Changes in specific learning outcomes are reviewed in the module review process; when new learning objectives are proposed they are reviewed by the TLA Committee to ensure that they are relevant to clinical outcomes. Programme and module specifications, defining aims, delivery methods, assessment and learning outcomes for a programme are reviewed annually as an output of the component module review process. The School is also required to submit a report as part of the University's Annual Monitoring process for all degrees.

During Examination Boards, performance data are considered by both internal and external examiners. Figures from the previous five years of examinations are available for comparison during this process. External examiners report annually to the school, and these reports are responded to and changes implemented as required through the TLA committee.

There is a strong ongoing commitment to monitor delivery by individual teachers. Methods include:

- Evaluation of individual teachers by a School-managed Student Evaluation of Teaching (SET)[12]
- Peer observation – both internally and through the university wide Peer Observation College
- Module Convenor observation of external deliverers
- Module Review
- Informal Student feedback
- Yearly staff appraisal

In addition to School mechanisms, the University conducts Educational Enhancement and Assurance Reviews (EEARs) to ensure high quality, competitive, and well managed academic programmes are maintained. Reviews are constructive and holistic exercises, covering quality assurance and quality enhancement. They operate according to a 3-year schedule (http://www.nottingham.ac.uk/academicservices/qualitymanual/curriculum/teaching-and-learning-review.aspx).

[11] Student Evaluation of Module (SEM) is completed to gather feedback from students on modules for curriculum development. A School-specific modified University standard questionnaire is used, and provided to students near the end of each module. Year 5 students are required to complete feedback on each rotation. This information is collated via a School specific standard questionnaire, and analysis of rotation evaluations is made by the Rotation Leader. A Student Evaluation of Year questionnaire is completed to gather feedback from students on their experience of the year of programme as a whole, and will be used to identify strengths and weaknesses, overlaps and deficiencies. A School-specific questionnaire based on the National Student Survey is used.

[12] Academic staff are required to gather student evaluations on their teaching (SET). The SET process is carried out by a standard questionnaire comprising School-specific questions.

The recent review and development of the dual intake curriculum has involved all teaching staff support staff and students. Programme meetings have been held annually to ensure alignment and integration between years and modules. More frequent meetings have been held at the year and module level, with regular updates provided to the University Programme and Operational working groups. Timetable and learning outcome documents have been developed by the module convenors and made available to all teaching staff via Microsoft Teams for comment. Learning outcome documents include tracking where content has moved between modules and years. External examiners have been updated with the changes to the curriculum and assessment as a result of the new curriculum.

9.1.7 The Teaching, Learning and Assessment Committee

Acting on behalf of the Dean of the School of Veterinary Medicine and Science, the Teaching, Learning and Assessment Committee has responsibility for the design, development, implementation of teaching learning and assessment. Its role is to

- Advise the Dean of School or on all strategic issues relating to teaching and learning
- Advise the Dean of School on all aspects of teaching quality and assurance, and assessment while carrying delegated responsibility for dealing with day-to-day matters
- Ensure the implementation of University and School policies

Example activities include approval of Module Reviews and recommendations for any changes to teaching delivery within modules; consideration of the views of the student body raised through appropriate channels; reviewing the effectiveness and appropriateness of the curricula in helping students develop capabilities, skills and competencies; consideration of student support, e-learning and EDI within the curriculum.

The Director of Education is the Committee Chair with the Quality Assurance Officer as Secretary. There are at least 2 student representatives from each cohort within each year of the course. All academic staff, the Disability Liaison Officer, Head of Operations, Student Placement Officer and Technical and Facilities Manager are all members. The Committee meets once a month throughout the year.

The Committee receives regular reports from Examinations Board, Postgraduate Committee, Clinicians Meeting, Rotations Leaders Meeting, Student Progress Committee, Clinical Review Panel and Faculty Teaching and Learning Board; it reports to Executive Team.

9.1.8 Teaching training

The School identifies the need for any teacher training at appointment, at appraisal and an ongoing basis (either proactively suggested by staff member or in a response to a change in circumstances, for example taking on a new educational leadership role). The TLA Committee provides input into teaching training needs identification and processes.

Section 8.1.4 details how training needs are meet for school and external staff. Teacher training is compulsory.

9.1.9 Elective subjects

There are no elective subjects within the curriculum, however there are inherently elements of choice:

- Students are able to select the topic of their year 3 research project
- Flexibility in Extra Mural Studies allows students to focus their activities in species of interest
- Year 5 includes the ability to track for 6 weeks

Students may not always get their first-choice research project, clinical projects in particular tend to be over-subscribed, however a process is in place to ensure students get suitable alternative topics. There are no restrictions on EMS placements.

9.1.10 Arrangements for teaching in abattoirs and premises for food production

Students undertake a 3 week module on Veterinary Public Health in year 3. Additionally, learning objectives of veterinary public health relevance are embedded in body system modules in Year 4. The VPH module is delivered by School staff and external specialists. During Year 5 students undertake a 2 week One Health One Welfare rotation. In this rotation visits are undertaken to a variety of abattoirs and food production

units. Specific course teaching in VPH (and other modules) associated with abattoirs and food production includes:

Veterinary Public Health microbiology
- Demonstration of staining methods used for the identification of pathogenic bacteria in clinical specimens
- Showing how antibiotic resistance can spread between bacteria
- Tracing the spread of a marker organism through a human population
- Use of a multi-stage selective enrichment process to isolate a pathogen from contaminated food samples
- Identifying and categorising pathogens using slide agglutination tests with specific Antisera
- Explanation of the basic principles of bulk tank bacteriology
- Demonstration of how to undertake plate counts and calculate bacterial concentrations in milk

Meat and carcass inspection
- Ante-mortem inspection routine for ruminants, pigs and poultry
- Demonstrations of ante-mortem inspection routine for ruminants and pigs at the SVMS small holding
- Common pathological findings at post mortem of food animals
- Demonstrations of routine of meat and carcass inspection of ruminants, pigs and poultry in an abattoir

Humane slaughter
- Demonstration and hands on experience of the common techniques of humane slaughter: use of captive bolt, bleeding and pithing
- Basic slaughterhouse design, function and cleaning
- Cutting room traffic, function and cleaning

Case studies
- *Salmonella* on chilled pork carcasses
- *E.coli* 0157 on chilled carcasses
- Risk profiling of cooked, sliced, vacuum packed ham
- Small animal case studies (*Campylobacter*, ringworm)
- Equine case studies (horse passport etc)

Students are required to spend 2 weeks on a Veterinary Public Health One Health One Welfare rotation in Year 5. This Veterinary Public Health rotation very much reinforces the teaching in Year 3 in a much more hands-on manner:

Red meat abattoir visit
All students visit either a small, medium or full throughput slaughterhouse (four sites visited throughout the year) in groups of 6-8 . The students are accompanied by one staff member. Additionally, the students are given the chance to use a virtual slaughterhouse prior or post-visit to reinforce their knowledge and solve any doubts.

Poultry abattoir visit
When possible, all students visit the same high throughput unit/processing plant in groups of 5 or 6 for 1 day. Students are accompanied by one staff member. The processing plant visited is Moy Park, Anwick (processes over 2 million chickens per week) (57 miles). As an alternative site, students visit a small seasonal turkey processor, Leicestershire Farm Fresh Turkeys (200 birds a day) (27 miles). During Covid and when Avian Infuenza outbreaks, visits may be forbidden to us and to any other non-essential visitors. In these cases, the students work on real scenarios that a staff member debriefs afterwards.

Animal market visit
All students visit the same high throughput animal market (Melton Mowbray Animal Market (20 miles)) in groups of 5 or 6 for 1 day. Students go on their own but after the visit they discuss with School staff the official controls performed at the market, the types of animal welfare incidents that typically occur as well as biosecurity issues.

Food processing plant visit
All students spend a day visiting a dairy food producer – either a dairy farm that produces unpasteurised cheese, or a large dairy cooperative that produces a cheese with Protected Designation of Origin (PDO). Visits are groups of 5 or 6 for 1 day. Students are accompanied by one staff member. Sites include
- Leicestershire Handmade Cheese Company (28 miles)
- Long Clawson Dairy (19 miles)
- Stichelton Dairy (40 miles)

- Lincolnshire poacher (80miles)
- Everest Foods Ltd (20miles)

Beekeeping
The SVMS has 5 bee hives on site. Each rotation group spends a day learning about beekeeping and the implications to veterinary public health. The sessions consist of lectures and a practical activity when possible, which may include hive inspections and/or honey production and are delivered by staff members.

Case studies
Students also undertake a number of case studies whilst on the 2 week rotation.
- Epidemiology
- Human disease outbreaks
- Equine case study (horse passports)

In addition to the Year 3, 4 and 5 curriculum components, students also gain relevant experience and knowledge of food hygiene during other practical and theoretical areas of the curriculum for example muscle transformation to meat (Year 1). Across all years the course teaches students to determine the difference between healthy and unhealthy animals and to be aware of biosecurity and animal welfare issues.

9.1.11 Extra Mural Studies

Students are obliged to undertake a total of 12 weeks Animal Husbandry EMS and a total of 26 weeks Clinical EMS (Appendix 28). The School organises EMS according to guidelines provided by the RCVS. EMS is supported by a 4 FTE administrative team, with academic and strategic input from the Student Placement Sub-Dean. This team aids students in selecting suitable EMS placements from an extensive database if required, and provides administrative support around booking of placements, guidance for hosts, insurance and safety information and assessment of and feedback from, and about, students.

Animal Husbandry EMS

Twelve weeks of animal husbandry EMS are required to be undertaken in Years 1 and 2 in order to meet the requirements of the BVMedSci degree. Animal Husbandry EMS (AHEMS) allows students to gain experience of the management, husbandry and normal behaviour of animals in typical management systems during the early years of their course. Relevant topics in the wider curriculum prepare students for AHEMS (e.g. a lambing practical is held before Easter vacation in Year 1) and also encourage students to maximise their opportunities on placement.

Clinical EMS

Students are required by the RCVS to undertake 26 weeks of Clinical EMS (CEMS) in order to graduate with the BVM and BVS degrees. They can only undertake CEMS once AHEMS is completed, and are only able to complete up to 6 weeks before their 3rd year examination.

As per RCVS guidelines, clinical EMS comprises two phases:
- Preparatory phase – 6 weeks on completion of AHEMS. During this period students are encouraged to undertaken a variety of different placements to experience a range of veterinary work, as defined by RCVS guidelines.
- Practical EMS – the remainder of student selected CEMS. This is entirely free choice for the students, the School does not insist a minimum number of weeks in different subject areas are completed. The view of the School is that it is the School's responsibility to deliver core teaching in all species areas, leaving EMS for students to concentrate on areas of particular interest OR on areas where they feel they would benefit from additional experience.

The majority of CEMS will be carried out at a first opinion practice. Students are encouraged to experience as many clinical situations as possible and to attend a range of practices, including specialist practices. This allows students to practice a wide variety of clinical, personal and professional skills, whilst experiencing a range of management systems and processes

All hosts are sent and introductory letter ahead of each placement, giving logistical details, a commitment statement by the school and a health and safety disclosure. Students are advised to complete an Action Plan ahead of each placement, in consultation with their Personal Tutor. Whilst on EMS placement students are required to complete a Health and Safety Questionnaire, and are encouraged to complete pieces for the

Portfolio and entries in their Skills Diary. Students are expected to discuss their action plans, experience and learning objectives for the placement with the host on arrival. After the placement students are required to complete a Placement Feedback Form to provide general feedback about their placement. Hosts are requested to complete feedback on the student's skills, attitudes and behaviours and areas for improvement. Feedback is discussed at Personal Tutorials (or earlier if specific immediate concerns have been raised). Placement Hosts will be contacted for more details if they have raised any specific issues or areas of concern. Experiences on Placement are thus assessed by:

- Host feedback on the student
- Review of outcomes of the Action Plan with the Personal Tutor
- Portfolio pieces reviewed by the Personal Tutor
- Review of Skills Diary by the Personal Tutor

9.2 COMMENTS

9.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 27 Embedded modules

- Anatomy and embryology
- Animal production
- Behaviour
- Biochemistry
- Clinical and practical skills
- Clinical Pathology
- Clinical reasoning
- Diagnostic imaging
- Epidemiology and statistics
- Emergency and Critical Care
- EDI
- Ethics
- Genetics
- Immunology
- Microbiology
- Numeracy
- Nutrition
- Oncology
- Pathology
- Parasitology
- Pharmacology and toxicology
- Physiology
- Preventative medicine
- Mental Health and Wellbeing

Appendix 28 Animal Husbandry (AHEMS) and Clinical (CEMS) EMS requirements

Nature of AHEMS work	Minimum period	Minimum number of animals on farm/unit
Lambing	2 weeks	200
Equine	2 weeks	Commercial establishment
Dairy	2 weeks	75
Free choice (e.g. vet nursing, cattery, zoo)	6 weeks	

Nature of CEMS work	Type	Minimum period
Track rotations	Formalised, structured rotation in areas of student choice	2 weeks
Other	Free choice - student selected based on learning needs, likely career choice and discussion with Personal Tutor, e.g. practice, research, veterinary business, veterinary education	24 weeks

Appendix 29 Core and track rotations

Core Rotation		
Small Animal	Primary Care (2 weeks)	Pinfold and Shelton Lock
	Decision-making (2 weeks)	Pride
	Charity/Shelter (2 weeks)	PDSA Derby and PDSA Nottingham /RSPCA Radcliffe
	Out of hours/Emergency and Critical Care (2 weeks)	Pride out of hours service
Equine	Equine skills (2 weeks)	School
	Equine practice (2 weeks)	Oakham
Farm	Farm skills (2 weeks)	School
	Farm practice (2 weeks)	Scarsdale
Veterinary Public Health	One health, One welfare (2 weeks)	School and visits
Pathology	Anatomic and clinical pathology (2 weeks)	School
Introduction	Introduction (1 weeks)	School

Track Rotation	**Each block is 6 weeks; (4 weeks IMR, 2 weeks CEMS)**
Small Animal	Combination of:
	Oakham
	Dick White Referrals
	Your Vets Sheldon and RSPCA Radcliffe
	Dovecote
Equine	Combination of:
	Oakham
	Defence Animal Training Regiment
	Pool House Hospital and ambulatory
Farm	Advanced Farm Skills
	Advanced farm practice
	Advanced Herd Health
Exotics	Twycross Zoo
	Langley Mill
	Exotic and zoo skills
Mixed	Oakham
	Advanced Herd Health
	Equine track
Veterinary Public Health	Veterinary Public Health
	Advanced farm skills
	Advanced Herd Health
Research	Veterinary School based

Appendix 30 Digest of units of study (hours)

Module	Credits	Hours						
		Lectures	Tutorials, seminars & PBL	Online and Other	Labs and supervised practical's	Clinical	EMS	Total
Year 1								
VETS1007 - Circulatory and Respiratory Systems	40	44	56		37	19		**156**
VETS1008 - Animal Health and Welfare	20	19	12		21			**62**
VETS1009 - Neuromuscular System	40	52	67		58	29		**206**
VETS1010 - Veterinary Professional Skills 1	20	10	13	10	7	3		**44**
Extra Mural Studies	0						210	**210**
Total	**120**	**125**	**148**	**10**	**123**	**51**	**210**	**667**
Year 2								
VETS2007 - Veterinary Urogenital Systems	30	53	50	2	28	14		**145**
VETS2009 - Veterinary Professional Skills 2	20	6	12	10	11	5		**44**
VETS2011 - Veterinary Gastrointestinal Systems	40	56	50		16	8		**130**
VETS2013 - Veterinary Endocrine and Integument Systems	30	45	28		27	14		**113**
Extra Mural Studies							210	**210**
Total	**120**	**160**	**139**	**11.6**	**82**	**41**	**210**	**643**
Year 3								
VETS3001 - Principles of Clinical Veterinary Science	40	37	34		19	10		**99**
VETS3002 - Veterinary Research Project	20	7		180	1	1		**188**
VETS3004 - Veterinary Public Health	30	22	12		7	7		**47**
VETS3005 - Clinical and Professional Skills	**30**	24	13	10		54		**100**
Extra Mural Studies							210	**210**
Total	**120**	**90**	**58**	**190**	**26**	**70**	**210**	**644**
Year 4								
VETS4001 - Veterinary Cardiorespiratory System 2	30	35	25		6	19		**85**

VETS4002 - Veterinary Gastrointestinal System 2	30	55	46		6	18		**124**
VETS4003 - Veterinary Neuroscience 2	10	31	16					**47**
VETS4004 - Veterinary Personal and Professional Skills 4	10	21	10	13	5	14		**63**
VETS4005 - Veterinary Musculoskeletal System 2	30	37	41		4	12		**94**
VETS4006 - Veterinary Reproduction 2	30	38	28	1	4	13		**84**
VETS4007 - Veterinary Urinary System 2	10	15	14		2	5		**36**
VETS4009 - Lymphoreticular Cell Biology 2	10	13	10		1	4		**28**
VETS4014 - Veterinary Endocrine and Integument System 2	20	28	29		6	18		**81**
Extra Mural Studies	0						350	**350**
Total	**180**	**272**	**217**	**14**	**35**	**104**	**350**	**992**
Year 5								
VETS5001 - Veterinary Personal and Professional Skills	35	9	10	13		22		**54**
VETS5002 - Veterinary Clinical Practice: Equine	40					163		**163**
VETS5003 - Veterinary Clinical Practice: Farm and Veterinary Public Health	50					233		**233**
VETS5004 - D15SMA Veterinary Clinical Practice: Small Animal	55					303		**303**
TRACK						140	70	**210**
Extra Mural Studies							280	**280**
	180	**9**	**10**	**13**		**861**	**350**	**1243**
	720	**655**	**572**	**238**	**266**	**1129**	**1330**	**4189**

Note:

- Data is completed for all teaching delivered for years 1 to 4 and for rotations in year 5 in the academic year 2020/21, and rounded to the nearest hour
- Year 3 hours relate to the old curriculum delivered in 20/21. The new year 3 curriculum will be delivered for the first time commencing September 2021
- Practical classes in years 1 to 4 include clinical work, based on a proportion of classes a valid assumption has been made that 1/3 of the time of any practical class (except Animal Health and Welfare 1, Lymphoreticular Cell Biology, Clinical and Professional Skills, Veterinary Public Health and Personal and Professional Skills 4) is spent on clinical work in years 1 to 3, and 3/4 of the time of any practical class is spent on clinical work in year 4. Veterinary Public Health is assumed to be 50% clinical work. Year 3 Clinical and Professional Skills and all of year 5 rotations is assumed to be 100% clinical work
- The 'Other' category of delivery type includes timetabled formative assessments and Research Project
- The 'Tutorials, Seminars/Problem based learning' category of delivery type includes Clinical Relevance sessions, Self and Directed Group Learning
- EMS profiles are individual to the student however the data assumes 6 weeks in years 1 -3 and 10 weeks in years 4 and 5
- Curriculum hours have been assigned as accurately as possible using a bespoke database. Average hours per week are assumed to be 32 hours for the Research Project and 35 hours for year 5 and EMS.

Appendix 31 Digest of disciplines and subjects (hours)

Subject	Hours						
	Lectures	Tutorials, seminars & PBL	Online and Other	Labs and supervised practical's	Clinical	EMS	Total
Basic subjects and sciences							
Anatomy, histology, embryology	49	58	0	64	40		211
Biochemistry	11	6	0	0	0		18
Biology, cell biology	29	17	0	5	3		54
Chemistry	3	2	0	1	0		6
Physiology	70	38	0	9	6		122
Molecular biology	8	6	0	1	1		17
Scientific Method			180				180
Biostatistics	2	4		2	2		10
Genetics	4	2		1	1		8
Epidemiology	6	4		0	0		10
Immunology	16	10		3	2		31
Microbiology	21	15	0	9	6		52
Pathology, pathophysiology	7	6	0	2	3		19
Pharmacology	9	5	0	2	1		18
Pharmacy	5	3	0	1	1		9
Toxicology	2	1			0		3
Environmental protection and conservation	2	1		0	0		4
Parasitology*	10	11	0	4	3		27
TOTAL	**255**	**189**	**181**	**104**	**69**		**797**
Animal Production							
Agronomy	0	0		0	0		1
Animal nutrition	10	10	0	1	2		23
Animal husbandry & production, incl. aquaculture	14	8	0	4	2		28
Livestock production economics	12	6	0	2	1		22
Animal behaviour & behavioural disorders	4	4	0	1	0		9
Animal protection & welfare	7	6	0	1	1		15
Preventative vet medicine, health monitoring**	7	7	0	0	1		15
Reproduction & obstetrics**	13	11	0	4	3		31

TOTAL	**67**	**53**	**1**	**14**	**10**		**144**
Clinical subjects							
Anaesthesia	10	7		1	40		57
Clinical examination & diagnosis	22	24	0	58	151		255
Clinical pathology	21	19	0	9	38		88
Diagnostic imaging	21	30	0	13	52		117
Clinical medicine	83	73	0	22	103		281
Surgery	26	25	0	8	74		133
Therapeutics	33	29	0	5	56		122
Emergency & critical care	14	20	0	4	62		100
Exotic & epizootic disease	1	1		0	10		12
Zoonoses & public health	4	3		1	43		52
Government veterinary services	2	1		0	37		41
Anatomic pathology*	7	6	0	2	3		19
TOTAL	**245**	**238**	**1**	**125**	**669**		**1277**
Food hygiene							
Veterinary certification	3	3		0	23		30
Regulation & certification of animal & animal products	3	3		0	6		12
Food hygiene & quality	5	2		2	13		22
TOTAL	**11**	**8**		**3**	**42**		**64**
Professional knowledge							
Professional Ethics & behaviour	8	11		5	76		100
Veterinary legislation	3	3		0	16		23
Communication skills	8	11		5	45		69
Practice management & business	10	5		2	42		59
Information literacy & data management	13	15		2	12		42
TOTAL	**42**	**46**		**15**	**191**		**293**
Other							
Learning, group working and interpersonal development	7	10	56	5	6		83
Tutorial		23					23
Career planning and opportunities	29	6		1	1		37
EMS						1260	1260
TRACK					140	70	210

TOTAL	**36**	**39**	**56**	**5**	**147**	**1330**	**1613**
TOTAL	**655**	**572**	**238**	**266**	**1128**	**1330**	**4189**

Note:

- Alignment of the curriculum has been calculated by mapping individual learning objectives for each delivery session; any differences in the totals between tables reflect rounding
- * Parasitology and anatomic pathology have been added as subject areas as we feel these do not map clearly to other areas
- ** Preventative vet medicine, health monitoring and Reproduction & obstetrics whilst listed under 'Animal Production' include significant clinical time
- 'Learning, Group Working and Interpersonal Development' represents generic objectives associated with the majority of delivery sessions (e.g. 'work as a group to solve a problem'
- It is not possible to map EMS to subject areas as the content varies on an individual student basis

10 ASSESSMENT

10.1 FACTUAL INFORMATION

10.1.1 Overview of assessment practice, mapping and alignment to programme outcomes

The School is fully compliant with the University's Quality guidelines and procedures, which are set in the context of external quality assurance frameworks. To this end, there are rigorous rules, regulations and processes for assessment and progression including, for example, disability requirements, e-assessment, moderation, External Examiners, etc. The School is responsible for ensuring that the rules and regulations for progressing from one stage of a programme to another and for qualifying for an award are publicised to students through appropriate channels. Any changes to regulations or arrangements for examinations are ratified by the TLA Committee and if the change is outside normal guidelines, by the University Quality and Standards Committee.

The School assessment strategy is a coordinated program of assessment designed to align the progress of the student towards overall clinical competency in order to meet RCVS Day 1 competencies. The strategy is designed to assess knowledge and its application, clinical and practical skills and underpinning professionalism across all 5 years of the course. Assessment methods are selected based on the content to be assessed and stage of the course, optimising validity and reliability and ensuring constructive alignment within the curriculum.

All members of staff teaching on a module or rotation are required to submit questions for the module formative and summative assessments. Staff are advised of the number and format of questions per module or rotation based on the credit weighting of the module or time allowance of a rotation. To ensure content validity, such that a representative sample of the taught course is examined, the assessment for each module is blueprinted to the module learning objectives (and therefore inherently programme outcomes) by the Module Convenor. All staff are trained in the relevant assessment technique prior to acting as an assessor for a summative assessment. All questions and papers are reviewed by the Module Convenor, and then by the Director of Education or Programme Leads before formal review and sign off with External Examiners.

Years 1 to 4

Knowledge is principally assessed in the examinations which are held online (all modules also include a formative online knowledge based assessment). All modules in years 1 and 2 include a single best answer (SBA) paper and a short answer paper. SBA question formats include MCQs, EMQs, drag and drop, "fill in the blanks". In years 3 to 5 clinical reasoning is assessed in a unidirectional case based online exam in addition to the SBA format. Our online examination software allows us to include images in questions, increasing the validity of questions.

The School has aligned assessment with teaching ensuring an appropriately blueprinted range of skills and behaviours are demonstrated via examination and uses assessment forms such as coursework, OSPEs (Objective Structured Practical Examinations), OSCEs (Objective Structured Clinical Examinations), AHDOPS (Animal Handling Directly Observed Procedural Skills), individual research projects, reflective Portfolios and Portfolio viva assessments. AHDOPS exams (held in years 1 to 3) assess animal handling in a realistic situation. There is no limit to the number of attempts available, however all students must have attempted the assessment and received feedback on their handling skills before completing AH EMS in the relevant species area. Students are required to demonstrate that they are competent in handling small animals (cat or dog, small mammal or exotics), horse, cattle, sheep or pig before progressing into year 4 of the course.

Practical skills taught in years 1 and 2 are assessed during an OSPE at the end of year 2, a formative OSPE opportunity is provided in year 1. A range of skills including clinical exam, diagnostic skills, lab skills, communication, anaesthesia and surgical skills are tested. Year 3 skills are assessed in year 4 OSCEs and include professional practice, clinical exam, emergency situations, diagnostic skills, lab techniques, anaesthesia and pain control, surgical skills and case management.

The school has an emphasis on the development and assessment of professionalism and this is carried out through a longitudinal portfolio tool. ePortfolio software 'PebblePad' is used by all students throughout the course, and the content is submitted at the end of each year as part of the assessment for the Veterinary Professional Skills modules. The portfolio is discussed with personal tutors and regular formative feedback is given. Annual qualitative feedback is provided to ensure the development of reflective writing skills.

Year 5

End of Year 5 examinations (Finals) evaluate knowledge through an on-line SBA examination. This tests higher order learning outcomes through a series of cases scenarios or vignettes. These skills are further examined via an online clinical reasoning (written) exam, which is delivered uni-directionally, with additional information becoming available on each subsequent screen, enhancing validity of the cased based scenarios.

Core clinical skills are assessed through Directly Observed Procedural Skills (DOPS) using case material in the performance of normal duties and activities and assessed by an appropriate clinician. There are 49 skills each representing core skills defined by the RCVS day one competencies (Appendix 32). The students drive the assessment process for their DOPS examinations by indicating when they feel they are ready to be assessed and receive feedback on their performance. To qualify to sit the Finals examination, students must have completed 6 DOPS assessments, one from each skill area and 2 from each species area.

Each DOPS is rated on an entrustability scale and carries no marks towards Finals. To be eligible to sit finals students must demonstrate their performance at the level of 'reactive supervision' in 6 DOPS assessments.

At each clinical rotation a Rotational Professionalism Assessment assesses the professional skills and behaviours of each student. It is undertaken by all staff working with the student (including academic, Clinical Associate clinician and support staff), with reference to the RCVS Code of Professional Conduct. The outcomes are that the student either passes (exemplary, good or borderline) or fails that assessment (in need of improvement or poor). Failure results in a referral to a clinical review panel, where an action plan is developed which may or may not entail repeating that rotation. The professionalism of students is also assessed through the Portfolio viva which is based on 5 portfolio pieces, and assessment of the written content which consists of case studies, action plans and reflective pieces.

10.1.2 Methodology for the assessment of clinical skills and strategies in place to ensure that every graduate has achieved the minimum level of competence, as prescribed in the RCVS Day 1 Competences, at the point of graduation

Clinical skill development is assessed longitudinally through the curriculum. Early practical skills are assessed through Objective Structured Practical Examinations (OSPEs) in years 1 and 2. More clinically orientated skills are then examined through Objective Structured Clinical Examinations in year 4. During final year, students undertake a number of workplace based clinical skill assessment – Directly Observed Procedural Skills (DOPS) – across the range of species.

There are 49 DOPS which are divided into 6 skill areas, and students must be assessed on at least one from each of the 6 skill areas (Appendix 32). There is no limit to the number of times a student can attempt each assessment or the number of assessments they attempt. The overall evaluation of the student performance is rated on an entrustability scale:

- To supervise others
- To complete independently
- To complete with reactive supervision
- To complete with proactive supervision
- To assist

As previously mentioned, all students must have demonstrated performance at the level of 'reactive supervision' in 6 DOPS assessments, 1 from each skill area and 2 from each species area, to be eligible to sit finals examinations. The DOPS assessments do not carry any marks towards finals. Students reflect on their DOPS assessments within a clinical skills asset in their portfolio. Students in years 1 – 4 also complete a compulsory clinical skills asset as part of their portfolio.

DOPS skill areas map directly to the RCVS/EAEVE Day 1 Competences, and as these are "must pass" assessments students cannot graduate without passing these assessments. Further details on mapping of the curriculum and demonstration of Day 1 competences is detailed in section 12.1.2.

The DOPS process recognises the fact that different individual assessment opportunities will, due to the fact that they are conducted on real animals in a real clinical situation, be of variable difficulty. To address this variability assessors are trained in both the process of assessment and feedback before completing DOPS assessments.

10.1.3 How assessment supports student learning, supports student achievement of learning objectives at programme and unit-of-study levels and demonstrates progression and achievement and is accompanied by constructive and timely feedback to help guide student learning.

We ensure assessment is appropriately embedded and aligned to our curriculum so that as well as benchmarking performance, students can use assessment to inform their learning and map their progression to competency. Regular formative assessments, both in class (often utilising voting software) and as assessments in their own right, provide students with feedback which is then discussed in wrap up sessions and with tutors. Students are able to identify areas of strength and weakness, and plan accordingly assisted by tutors and module convenors. Summative assessments are also supported with timely individual feedback mapped to learning objectives, ensuring results feed forward into future study plans. Students who are struggling to achieve the learning outcomes of the programme are offered support from the Student Academic Support Committee if additional support is required (see section 6.1.3). All assessments are mapped to session and subsequently module outcomes, ensuring students can benchmark their achievements and map their attainment of the Day One Competencies. . The ePortfolio further supports this process through a compulsory academic progression action plan in years 1 – 3 and a clinical progression and employability action plans in years 4 and 5.

Assessment underpins decisions on progression; students are unable to progress if they do not pass examinations (it is not possible to 'carry' a failed module). Standard progression is a 50% pass mark per module, with one resit allowable, with the exception of students with Extenuating Circumstances. Additional must pass assessments required for progression are OSPE/OSCE exams and AH DOPS.

Assessment workloads for students and staff

Assessments are carefully scheduled to try to minimise burden on students and this is supported by feedback from the student body. The recent curriculum review has resulted in merging several modules and therefore reducing the number of must pass assessment hurdles. Staff assessment allocations are planned annually by the Director of Education and Programme Leads in consultation with line managers and is included in the workload planning management system.

10.1.4 Development, implementation and review of the assessment strategy

The assessment strategy within the veterinary course has been devised and kept under constant review by an Assessment Working Group of the TLA Committee. It is a coordinated program of assessment designed to align the progress of the student towards overall clinical competency in order to meet RCVS Day 1 competencies.

All assessments are implemented, coordinated and delivered by the TLA Team and Examinations Officer, in conjunction with academic and other staff as required, for example, the Clinical Skills Sub-Dean for OSPEs. Various contingency plans are in place to deal with any problems if they arise (e.g. queries over questions, loss of electrical power, injury, computer failure etc).

SBA questions are standard set, using Ebel's method which assigns an examination question to one of the nine categories based on its relevance and difficulty. Judgements are then made about the percentages of items in each category that borderline test-takers would have answered correctly, and a pass mark is calculated based on these percentages (such that an 'easy and essential' question contributes more to a pass mark than a 'hard, nice to know' question). A small working group specific to each module assesses all questions for the end-of-year examinations. The assessment marks and the standard set pass mark for a module are normalised to the required 50% pass mark.

Other assessments, for example OSPEs, OSCEs and short answer papers are trialled against marking criteria, ahead of the assessment being delivered. OSPEs and OSCEs are subsequently standard set using a borderline regression method.

The end-of-year SBA, short answer and clinical reasoning exams are delivered online using bespoke eAssessment software (Rogo); this allows access pre- and post-examination and review of questions by External Examiners, and tracking of question modification and performance over time. The University has developed a system to track assessment of learning objectives which is integrated with Rogo, and provides increased feedback to students on the basis of their exam performance.

Examination guidelines are provided to all students in their Student Handbook, available online and in hard copy and is supplemented by information available online in the University's Quality Manual. In addition, the

assessment type (and progression requirements) for the programme overall and each module is published on MyNottingham (the University's student administration system), and is further reinforced at the start of each module. Students also receive a detailed Assessment Addendum detailing times and dates of examinations, information on formats, extenuating circumstances, regulations and frequently asked questions. Mark schemes and criteria for non-online assessments are also provided to all students. The Student Handbook details clear criteria and expectations across the full range of available marks (i.e. 0 - 100%).

10.1.5 Procedures to ensure fairness, validity and reliability of assessment, including moderation processes

As detailed above there are significant quality assurance processes enacted prior to assessments being delivered which underpin the fairness, validity and reliability of assessment (blueprinting, trialling, standard setting, External review etc).

Post assessment delivery all marks are moderated by someone other than the first marker. Methods of moderation utilised in the School include:

- A standardisation process has been put in place to ensure consistent use of mark schemes and to improve interrater reliability; this process is applied to written assessments and coursework. A sample of scripts are marked by all assessors, this is followed by a standardisation meeting where allocation of marks is discussed in each of the sample scripts and the mark scheme is amended so that its interpretation is consistent between examiners. The remaining scripts are then marked using the amended mark scheme
- Sampling, either by an External Examiner or by an internal second marker
- Additional marking of borderline students, high marks and fails
- Additional marking where there is significant disparity between the different elements of assessment for an individual student, in a unit or across the programme
- Additional marking or standardisation where there is significant disparity between the marks of different markers in a particular unit or programme

There is a thorough internal quality assurance and control process associated with the marks for modules and rotations. This involves:

- Initial data input and review by the TLA Team
- Marks collation and calculation by the Examinations Officer
- Students being able to feedback on any assessment queries or issues directly to the Examinations Officer
- Review of the performance of each summative question for the module against available data (e.g. performance of cohort for each question against the standard or mark assigned, review of cohort performance against previous cohorts) by the Module Convenor, and further review by the Director of Education or Programme Leads
- Review meeting between Director of Education, Programme Leads, Examinations Officer and Module Convenor, at which any potential changes where problems have been identified (such as removal of poorly performing questions, student comments) are discussed in detail
- Verification checks of module marks and year marks by the TLA team
- Internal Exam Board review of marks and discussion of any changes
- Exam Board, with the attendance of External Examiners to review and confirm marks and progression

The University's Charter requires that all assessments for courses and modules must involve one or more independent External Examiners. The role of the External Examiner is to ensure that degrees and other awards are comparable in standard to those in similar subjects in universities throughout the UK, and that marking and classifications are of an appropriate standard in comparison with other universities. The School appoints 2 or 3 External Examiners for each year of the 5-year course. The External Examiners contribute significantly to the assessment process and are key to ensuring a robust and appropriate assessment of the course. Comments from External Examiners are considered and responded to by the Director of Education or Programme Leads and reported at Exam Boards. The role of the External Examiner includes:

- Reviewing and approving draft examination questions
- Reviewing marking schemes to determine if they are of an appropriate standard
- Discussion of any post-assessment changes with individual Module Convenors
- Attending the relevant Examinations Board
- Considering failures at resit if a student is leaving the course
- Providing an annual written report
- A review of a sample of scripts, with other scripts available to an External Examiner on request

10.1.6 Process by which grades are awarded including requirements for barrier assessments requirements

A Final Exam Board for each year of the programme, attended by External Examiners confirms the marks and/or any extenuating circumstances and the progression decision for each individual student.

All results from examinations are entered onto Campus Solutions (the University's student administration system) and form the official University record of student performance. Students are able to access this transcript from their student portal through a system termed Bluecastle, however results for each cohort are also released by the School TLA team on Moodle following external exam board. Failing students from all years are advised to get in touch with their Personal Tutor to receive information relating to resits or pastoral support; students are informed by letter of resit requirements and are offered an invitation to a supportive meeting with a member of the Student Academic Support Committee.

The pass mark for modules in the Preliminary/Gateway Year is 60%, and 50% on the 5 year course. Students have to pass all examinations before they enter later years of the course, and also gain at least a 2.2 BVMedSci degree in order to progress to year 4. Students must complete the veterinary course within 10 years and cannot take more than 3 years to complete 1 year. Students are allowed only one retake opportunity for a module. Students are required to pass 70% of year 2 OSPEs and year 4 OSCEs stations.

10.1.7 Staff training in assessments

Assessment training is a core component of general teacher training. Staff undertaking the PGCHE qualification (a university requirement) will cover general principles of assessment during this training. Specific school courses are then delivered throughout the year e.g. OSCE training, MCQ writing. Ad hoc training is also delivered as required e.g. Clinical Associate staff assessing DOPS. In addition, generic and introductory courses are available through the University's Professional Development Unit. Many staff participate in intra-University cooperation to share and learn from best practice elsewhere in the University, for example through the Faculty Education Research Group. The School also has strong links with a number of other veterinary schools, where there is collaboration in teaching development and training. In addition, many staff attend and present at national and international conferences on veterinary education.

10.1.8 Appeal process

The School abides by the University policy for appeals. This is detailed in section 7.1.2.

10.2 COMMENTS

The University has introduced exceptional regulations in 2019/20 and 2020/21 in response to the Covid-19 pandemic

During the Covid-19 pandemic in 2020/21, examinations for years 1 to 3 have been delivered in a remote open book format, for years 4 and 5 examinations have been open book, invigilated and sat on campus. Students have received guidance and support in preparation for the open book format. There is a statement at the beginning of each paper which students must agree with, to say they have read the University 'Essential Guidance for Students on Academic Integrity in Online Exams' and that the answers submitted are their own and they have not collaborated with anyone else. Students are required to sign onto the exam software using their university username and password and each paper has a password sent to the students in advance.

10.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 32 Year 5 DOPS

Paraprofessional Skills
Apply bandage, casts or splints
Dental scale and polish
Equine tooth rasping
Express anal glands
Disbudding
Foot trimming in cattle
Remove shoes from horses
Injection technique
IV injection
Microchip

Anaesthesia and Surgery
Assessment of pain
Equine castration
Equine urinary catheter placement
Farm animal castration
Local anaesthesia
Maintenance of general anaesthesia
Preparation for and induction of general anaesthesia
Skin suture
Surgical procedure

Diagnostic skills
Blood sample
Collect milk sample
Equine endoscopy
Microscopy
Radiography
Record and interpret ECG
Transrectal ultrasound
Ultrasonography
Urinalysis

Emergency Medicine and care
Assisted reproductive delivery
Emergency slaughter
Euthanasia
Fluid therapy
IV cannula placement
Pass a nasogastric tube
Triage
Wound management

Physical Examination
Colic assessment
Dermatological exam
General clinical exam
Lameness evaluation in the horse
Musculoskeletal exam
Neurological exam
Ophthalmology exam
Population scoring exam
Rectal exam

Veterinary Public Health
Ante mortem inspection
Equine identification
Equine passport
Post mortem examination

11 RESEARCH PROGRAMMES, CONTINUING AND HIGHER DEGREE EDUCATION

11.1 FACTUAL INFORMATION

11.1.1 School research programme

The School has built a world-class reputation in its research. In the 2014 national Research Excellence Framework (REF) exercise, the School, in a joint submission with the School of Biosciences, was assessed as being second in the UK for research power; 37% of our work was assessed as world-leading and 80% was of internationally excellent quality. The School provides a vibrant environment where cutting-edge research is facilitated by state-of-the-art facilities and specialist technical support. Our community includes internationally-recognised academics and research leaders who are undertaking high quality-research that advances the understanding of their field and also has wider benefits to society, animal welfare and the economy. International collaborations are a particular strength of the School.

Four major Strategic Research Areas (SRAs) have been selected as foci for research excellence within the School. These have increased visibility of the research activities of the school and provide a strategic focus for growth to drive high-quality discovery-led research outputs. :

- **Diagnostics and Therapeutics** - Identification of novel diagnostic and therapeutic targets in non-communicable human and companion animal disease, with a particular focus on cancer, cardiovascular, renal and neuro-degenerative diseases. Students gain exposure to research work on non-communicable disease during teaching throughout years 1 to 4, and also through clinical cases seen at specialist clinics on Small Animal year 5 rotations
- **Translational Infection Biology** – Supports the development and implementation of novel methods for pathogen detection, control and treatment. Students are exposed to genomics research throughout the curriculum and particularly in infectious disease and disease control sessions.
- **One Virology** - One Virology brings together experts with an interest in virology from across the University of Nottingham to enhance the understanding of viral diseases to improve diagnosis, treatment and control of viruses that affect people and animals. One Virology is embedded throughout the curriculum.
- **Ruminant Population Health** - Builds on the national Centre for Innovation and Excellence in Livestock, hosted at Nottingham and brings together clinicians and researchers collaborating on areas of ruminant health, welfare and production. As a cohesive, collaborative group they have an international reputation for delivering high impact solutions to improve ruminant health, welfare and productivity. The outcomes of the research in this SRA are delivered across all years of the course and is a special focus in year 5.

In addition, the School hosts or co-hosts a number of University centres of excellence whose staff deliver research-informed teaching. These interdisciplinary centres provide reach into the wider research of the University and also provide a platform for growth externally, and include:

- Centre for Applied Bioethics
- Centre for Dairy Science Innovation
- Centre for Evidence-based Veterinary Medicine
- Centre for Large Animal Biotechnology
- Advanced Data Analysis Centre

All staff are involved in research to varying extents (e.g. ranging from holding externally-funded competitive research grants, through educational research and supervision of year 3 students) with the exception of staff on 0.2 FTE facilitator contracts (Appendix 33). Staff are encouraged to integrate latest research findings into teaching and research-focussed staff are expected to teach on the curriculum. Research Associates/Fellows, recruited on fixed term contracts, also contribute to teaching, for their career development. The variance in research active staff is mostly related to fluctuations in the number of Postdoctoral Research Associates/Fellows.

11.1.2 Postgraduate programmes

The School offers opportunities to study on an academic track for MRes and PhD degrees, in a wide range of veterinary, biomedical, biological, educational and statistical research fields. In addition, the School offers a PG Certificate course in Veterinary Education and in Veterinary Medicine and Surgery. Studentships are available through University and externally-funded sources. The School currently offers taught MSc programmes in Veterinary Physiotherapy and degree apprenticeships in Bioinformatics and Advanced Clinical Practice (Veterinary). The School has also developed a clinical track which comprises a PG Certificate course aimed at new or recent veterinary graduates to develop further clinical experience through an PGCert Internship, and clinical residents undertaking MVM / MVS and DVetMed / DVetSurg degrees which are commonly combined with a clinical Certificate or Diploma (awarded by a European Specialty College). These are usuallly based at one or more of the Schools' Clinical Associates or with the School's pathology team.

Programme specifications for each of the postgraduate programmes offered (academic and clinical track), along with assessment details (and progression requirements) for each overall programme, and any individual components, are published in the Quality Manual. All postgraduate students are provided with a Student Handbook at induction that specifies examination regulations and guidelines; this is available online and in hard copy.

Applications are accepted in response to advertised studentships or following speculative applications for all academic and clinical track postgraduate positions.

All postgraduate students are integrated into the University of Nottingham's Researcher Academy. The Researcher Academy has graduate centres based at all University campuses including Sutton Bonington (SB). The SB centre offers facilities including social and study spaces, computer facilities and seminar rooms. All postgraduate students are encouraged to develop a portfolio of research and employability skills and may apply to undertake one of the many hundreds of short-courses offered by the Researcher Academy. The acquisition of these skills is supported by a range of training programmes run by the School, the Faculty of Medicine and Health Science, the Researcher Academy and Professional Development. This ensures that students benefit from a high standard of education and generic skills that are approved by the UK GRAD Programme enabling them to become independent researchers with a range of specialist and transferable skills. The skill areas include communication skills, presentation skills, research management, time management and career development.

The Postgraduate Research and Postgraduate Taught Committees, on which there is student representation, monitor student progress and also discuss student welfare, support and operational issues associated with postgraduates. The TLA Committee is the main quality assurance process route for all programme matters associated with taught postgraduate programmes (PG Certificates, Masters programmes and taught component of DVetMed or DVetSurg), after review by the Postgraduate Committees. Postgraduate students are also represented on the Learning Community Forum and Safety Committee, where they are able to discuss any matters (academic, welfare or social). Postgraduates are also able to specifically raise any issues directly to the Sub-Dean for Clinical Postgraduates, the sub-dean for Taught Postgraduates, the Sub-Deans for non-Clinical Postgraduates and/or with the dedicated Senior Tutors for Postgraduates, of which we have a basic science and clinical academic.

Academic track postgraduate programmes

Data on 2020/21 academic track postgraduate students are shown in Appendix 34.

PGCertificate Veterinary Education
There are 4 School funded places for intercalating students on the 1 year PGCertificate programme. Other studentships may be self-funded, or supplemented by external organisations.

This 60 credit course provides a basic level of knowledge and skills of veterinary education. Students spend their time being mentored in the workplace of the Veterinary School in order to develop their teaching skills. Students will be exposed to a wide range of teaching experiences, as well as being tutored in educational theory and different approaches to teaching and assessing veterinary medicine. Every student is allocated to a supervisor, or supervisors. Progression through the year of study is closely monitored through regular meetings (a minimum of 10 per year). The PGCert consists of 3 elements - an education-based research dissertation (up to 8,000 words), compilation of a teaching portfolio and production of a research plan.

Students also have the opportunity to apply to be an Associate Fellow of the Higher Education Academy. The course is overseen by an External Examiner.

MSc Veterinary Physiotherapy
All places on the MSc are self-funded.

This part-time 180 credit course is accredited by the Animal Health Professions' Register (AHPR) and recognised by the Recognised Education Provider RAMP.

The course runs over 36 months and provides lectures and practicals delivered by either live online or attendance sessions at the School on designated weekends. The course includes 28 clinical placement days at veterinary physiotherapy practices and 15 work-based learning days.

Students will learn the theory and practical elements required to become a veterinary physiotherapist. Qualification to practice is achieved after two years with a PGDip qualification, with many opting to complete a third year MSc research project. The course is overseen by an External Examiner.

MSc Advanced Clinical Practice (Veterinary) Apprenticeship
The MSc Advanced Clinical Practitioner ACP(V) programme, the first ever degree apprenticeship programme in veterinary medicine, is designed to combine expert clinical skills with research, education and clinical leadership. The aim of this 3.5 year 180 credit programme is to produce well-rounded advanced clinical veterinary practitioners capable of leading the team within any small animal general practice.

The ACP(V) programme is in three phases:

- Phase One - is designed to solidify and advance new graduates' knowledge, skills and behaviours in small animal general practice, while practising evidence-based veterinary medicine. This allows them to complete their VetGDP within a structured and supportive environment.
- Phase Two – develops advanced clinical skills. Apprentices progress to more advanced areas of small animal clinical practice, gaining an RCVS Certificate of Advanced Veterinary Practice (CertAVP).
- Phase Three – key knowledge, skills and behaviours linked to advanced clinical practice, with an End Point Assessment which determines the apprenticeship grade of distinction, pass or fail. Successful apprentices will be awarded an apprenticeship certificate alongside their MSc.

Modules are taught on-line with designated tutor led days of live online or attendance learning. Apprentices spend 20% of their working hours learning off-the-job. This takes a number of forms, including clinical mentoring in practice, contact teaching days, self-directed study, e-learning, webinars and preparation for assessments.

Apprentices undertake on-the-job and off-the-job learning to develop the knowledge, skills and behaviours relevant to their role. Apprentices attend regular tripartite reviews with their employer and academic tutor.

MRes programme
The School offers 2-3 funded, intercalation opportunities for MRes studentships to current veterinary students once they have completed their first BVMBVS degree; all other MRes studentships are either self-funded, funded by external organisations or funded from research grants.

The 180 credit MRes programme is a one-year course and provides a training programme in a specific research area of veterinary science The masters of research course aims to enhance awareness and understanding of the latest veterinary science research developments, whilst providing tailored in-depth training relating to the research interests of the student. Every MRes student is allocated to a supervisory team comprising a minimum of two supervisors. The MRes degree course consists of two elements - a single research project which runs continuously throughout the duration of the programme (160 credits) and generic training in key skills (20 credits), although it is possible to take advanced taught courses, with the research project element reduced accordingly. Progression through the year of study is closely monitored through regular meetings (a minimum of 10 per year). Students are required to produce a dissertation of a maximum 35,000 words (or equivalent) which is examined by one Internal Examiner and one External Examiner.

MRes Bioinformatics Apprenticeship
A degree apprenticeship is an employer-led programme that combines employed work with a programme of academic study. Apprentices undertake on-the-job and off-the-job learning to develop the knowledge, skills

and behaviours relevant to their role. Apprentices attend regular tripartite reviews with their employer and academic tutor

The 180 credit Bioinformatics MRes equips students with the applied computational skills, knowledge and behaviours needed to process, analyse and interpret complex biological data in an effective and reproducible way.

PhD programme
The School offers one opportunity each year to intercalate after year 3 and begin a PhD programme for 3 or 4 years. All other PhDs in the school are either self-funded or funded by doctoral training programmes such as BBSRC, MRC and Wellcome Trust (for which the school currently provides 5 x 50% matched funding) or are funded by external organisations, including charities or funded from research grants.

A 3- or 4-year PhD degree involves specialist study, postgraduate training and original and independent research on a specific topic under the supervision of academic members of staff in the School. Additional supervisors including at least one other experienced member of staff (up to a maximum of 3 staff members) are also appointed to form a Supervisory Committee. The research project may be carried out in the School or in collaboration with industrial partners, other university departments in Nottingham or other universities and private or publicly funded research institutes. In some cases students may spend time at international academic establishments or research institutes. Students undertaking the 4-year PhD programme may complete a structured training programme in the first year of study.

PhD students are subject to review annually, with progression through the year being closely monitored through regular supervisory meetings. At their end of the period of study, students are required to submit a thesis of not be more than 100,000 words. Normally each research submission will be examined by one Internal Examiner and one External Examiner.

Clinical track postgraduate programmes

Data on 2020/21 clinical track postgraduate students is shown in Appendix 35.

PG Certificate in Veterinary Medicine and Surgery
Junior Clinical Training Scholars (Interns) are registered for a 1-year Postgraduate Certificate (PGCert) in Veterinary Medicine and Surgery. Studentships may be self-funded, funded by the School or supplemented by external organisations, including Dick White Referrals.

This 60 credit course provides appropriate focussed training in the candidates' chosen clinical subject area. This is facilitated by appropriate exposure to clinical case load and scholarly activity. Students are required to complete clinical practice (training and study) under the direct supervision of specialist academic or Clinical Associate staff, spending between 75% and 85% of their time engaged in supervised clinical activities. Students typically undertake a rotating-style programme, spending time focussing on different disciplines within their focussed species group. Clinical training is through the management of cases under the supervision of specialist academic staff and provides candidates with experience in their chosen field and provides exposure to an appropriate clinical caseload. Students gain comprehensive experience in all aspects of the diagnosis, treatment and care of patients, and are provided with an opportunity to undertake research in their area of interest. The PGCert consists of 4 elements - a research plan, clinically based research dissertation (up to 5,000 words), compilation of a clinical portfolio and production of a clinical case report.

The clinical PGCertificate programme has annual monitoring, assessment and progression and the appointment of External Examiners are on the same basis as those of the PGCertificate in Veterinary Education.

MVM MVS programme
Senior Clinical Training Scholars (Residents) are registered on a 3- or 4-year Master of Veterinary Medicine (MVM) or Master of Veterinary Surgery (MVS) programme. Studentships may be self-funded, funded by the School (2 Farm, 2 Pathology Residents yearly) or supplemented by external organisations (e.g. Crown Pet Foods and CVS Equine). The MVM and MVS degrees are to provide appropriate training to allow the student to fulfil the requirements of the relevant European College residency programme, under the direct supervision of specialist academic or Clinical Associate staff. Students select a species or discipline as the focus of their clinical activities and are considered for either the MVM or MVS degree as appropriate. There are three elements of MVM and MVS programme:

- Generic training to support the development of personal and professional skills associated with clinical practice and research (20 credits)
- Clinical training is through the management of cases under the supervision of specialist academic staff and will equip candidates to work at a specialist level in their chosen field, and provide appropriate exposure to the clinical caseload. Students gain comprehensive experience in all aspects of the diagnosis, treatment and care of patients in the chosen area of speciality. During clinical training students study their chosen subject area, participate at rounds and seminars, and present case reports. Students may also attend other centres of excellence in the field and participate at conferences and courses. Students are normally expected to undertake residency training for membership of the relevant specialty European and/or American Boards depending on the qualification of their supervisor. Candidates are required to demonstrate that at least 75% of their time during the course is focussed on clinical activities through the compilation of a clinical Portfolio.
- Clinical Research is conducted, requiring the design and execution of a 35,000 word research project in the chosen area of speciality (160 credits)

The MVM MVS programme is allied to the programme specification of the MRes and as such as such annual monitoring, assessment and progression and the appointment of Internal and External Examiners are on the same basis as those of a MRes.

DVetMed / DVetSurg programme

Students on the 3- or 4-year DVetMed DVetSurg programme may be School funded (with 1 Zoo DVetMed yearly), self-funded, funded by an external organisation or funded from research grants. The programme comprises of taught elements which are worth 120 credits focused primarily around clinical caseload and a research project allied to the area of focus. The aim of the programme is to develop research and clinical excellence in veterinary-qualified staff and engage veterinarians from clinical practice into research. The degree involves specialist study, postgraduate training and original and independent research on a specific topic under the supervision of academic members of staff in the School. Students are expected to undertake 120 credits modules at Master's level in research methods, critical appraisal of literature and research planning. In addition students are required to submit a research thesis. The research project may be carried out in the School or in collaboration with industrial partners, other university departments in Nottingham or other universities and private or publicly funded research institutes. In some cases students spend time at international academic establishments or research institutes. Every DVetMed and DVetSurg student is allocated to a supervisor, or supervisors. The programme is allied to the programme specification of the PhD and as such annual mentoring, assessment and progression and the appointment of Internal and External Examiners are on the same basis as those of an PhD.

A candidate for the degree of DVM or DVS must:

- Submit and pass a research portfolio (60 credits)
- Produce a 10,000 word critical appraisal of literature (30 credits)
- Develop a 8,000 word research plan (30 credits)
- Submit a thesis of up to 60,000 words

11.1.3 Integration of research activities with the veterinary programme

Our curriculum is research-informed. All academic staff are engaged in research (including educational research) and scholarship and this expertise is exploited to ensure the curriculum is updated as necessary. From year 1 and throughout the curriculum, our students learn the methodologies, concepts, critical evaluation and rigour required in research and how this relates to veterinary medicine and continuous professional development. We embed in students the value of critical evaluation of evidence and guide them as they use these skills to embrace a passion for lifelong learning.

As outlined below, all undergraduate students participate in a formal research project. This research-based learning experience enables students to acquire practical research skills and develop professional independence and resilience that will benefit them throughout their careers. To this end all undergraduate students are supervised by an academic staff member. These projects are developed as a partnership between the student and academic and student involvement in these projects often continues beyond graduation.

The School has taken a number of opportunities to provide exposure of undergraduates to our postgraduate community. The outcome is such that undergraduates become enthused into considering research as a career option, evidenced by the number of our students that choose to intercalate their veterinary degree or return to complete research degrees after a number of years in practice. In addition, exposure to postgraduate researchers for example those doing clinical Internships and/or Residencies and to non-clinical

postgraduate researchers through teaching or other opportunities, such as embedding student research projects within research groups with significant postgraduate presence, ensures that our undergraduate veterinary students have considerable exposure to our postgraduate research community.

11.1.4 Nature and level of participation of students in clinical and research training

The School believes that it is vital for undergraduate students to gain knowledge, understanding and skills in contemporary research to develop problem solving abilities and a penchant for lifelong learning. Research related topics are taught:

- Year 1, using the library
- Year 2, writing a literature review on a research topic and planning of the year 3 project
- Year 3, conducting a substantial 6 week research project
- Year 5, conducting BestBETs
- All years, optional research-track extramural studies

Specifically, the School has incorporated a significant 30 credit Research Project module into Year 3 for all students. The aim of the Research Project is to provide students with:

- An appreciation of the value of research in modern veterinary medicine and science – particularly how research contributes to furthering veterinary knowledge and continuing professional development
- An understanding of the possibilities for a career in research whether this be pure research, governmental or commercial or other forms of applied research
- Skills in discovery and hypothesis-driven veterinary science that will be of value in practice and which forms the basis of understanding evidence-based veterinary medicine
- Acquisition of new technical skills, for example laboratory analysis
- Transferable skills relating to planning, project management, analysis, evaluation and writing of a research project from the point of inception to publication and to illustrate to students that this is something that that could be achieved while in practice
- Development of critical thinking skills
- Development of lifelong learning skills, professional independence, and resilience

The Research Project module requires students to construct a research programme over a maximum of a 6-week period in the Autumn term (for September cohort) or Summer term (for April cohort), with supervision and oversight by a School academic supported by the experienced Projects module convening team. Prior to starting their research projects students are provided with an introductory week of didactic and practical sessions covering diverse aspects of research methods, study design and statistics. Weekly timetabled advice sessions with module convenors are also provided to students to ensure adequate support for their research projects. It is normal for the workload to be uneven during the project, but students are expected to spend at least 30 hours per week working. Since 2017/2018 we have offered formal statistical support at the project midpoint to consolidate the material covered in the introductory week. Students conduct their research projects at a variety of locations, dependent on the choice of project:

- Placement in a research group at the SVMS, working in collaboration with existing academic, post-doctoral and post-graduate scientists
- Placement in a research group at the SVMS in a joint project with a second school e.g. Biosciences, Biomedical Sciences, Biology, Mathematics, Pharmacy or another relevant School. This will be either as a result of existing collaborations or a new collaboration set up for a specific project.
- Placement at one of the Clinical Associate Institutions
- Placement with other institutions in the UK or abroad (e.g. USA, Australia, Cyprus, Spain, Gambia, India)
- Other options (after discussion with Project Supervisor), including at international centres

All academic staff at or above level 5 are expected to supervise undergraduate projects. Staff at level 4, are considered in light of their skill set and prior experience (e.g. PhD/research background) to ensure suitable supervision will be provided.

In addition to the research project there are several opportunities for undergraduate students to be formally involved in research both within and outside the School, including:

- Students are able to undertake 6 weeks of research as part of EMS
- Students are able to undertake summer research projects at the School, either unpaid or subsidised by a stipend from the supervisor. Competitive funding has been available from the University and commercial and charitable organisations such as the Wellcome Trust, BBSRC, MSD Animal Health, Academy of

Medical Sciences, INspire award, The Microbiology Society, World Horse Welfare and RCVS Trust for students to undertake vacation research projects

- Students are able to volunteer to assist with research projects, for example, >10 students per year have participated in pedigree dog genetics-linked longitudinal health studies involving Irish Wolfhound, Rottweiler and Spaniel breeds coordinated by our internal medicine specialist
- The School funds 1 PhD and 2-3 MRes and 4 PGCertificate (Veterinary Education) positions for intercalating year 3 or 4 students on an ongoing basis. Where PhD candidates do not apply, an extra MRes scholarship is made available.
- The School has won substantial INspire grants from The Academy of Medical Sciences (£30,000 in the last three years) to give further opportunities for undergraduate students to attend evening research lectures and receptions, present their research at conferences, undertake paid studentships and participate in year-round research. We have also helped promote and facilitate the annual Inspire undergraduate conference with 10-25 SVMS students attending each year. Few external scholarships allow funded support of students to participate in vacation research scholarships prior to the mid point of their degree, however we wrote an Inspire grant which included placement of 1st years from the 2020/2021 academic year. All students who applied were awarded a scholarship.
- The School is able to help students achieve recognition for their extracurricular research activities. Staff developed and run a 10 credit (non-academic) module which contributes towards achieving the 'Nottingham Advantage Award', this is formally stated on their degree paperwork and awarded at the graduation ceremonies. Therefore all students can get formal recognition for organising, volunteering at, or attending, research related activities
- Students and staff are encouraged to apply for both internal and external grants to participate in widening participation activities related to research, such as the £500 Anatomical Society grant awarded to an academic which enabled several volunteer UG students to write scientific papers for young people worldwide. Differing types of research-related widening participation and outreach opportunities are relayed to students on a regular basis.
- Support for research activities does not cease once our students have graduated. The School runs a research programme for graduates who wish to be actively involved in further research even if they are not undertaking internships/further education/research positions. For example, veterinarians in practice often contribute to the writing of papers with existing staff, collect samples that may contribute toward research results in a manuscript. This programme is being extended after consultation with our alumni and will include mentoring opportunities and further research activities

Appendix 36 shows veterinary students involvement in research projects. The involvement of research-active staff in all teaching and especially in supervising Year 3 projects ensures that this part of the course is often carried out at a level which is sufficiently high for scientific publication in peer reviewed journals and is additionally quality assured through the university quality system. A number of national research awards have been won by undergraduates including prestigious British Undergraduate Research Conference awards and European and International conference awards. Students have the opportunity to present their work at national/international conferences, these may be funded by the School (either as prizes, or directly) or research grants. To date nearly 300 students have been named on national and international conference abstracts, with over 193 students named as co-authors on peer-reviewed publications. Over 130 students have won vacation studentships to undertake extracurricular research within the school. In addition, more than 120 students have been offered funding to attend conferences in the UK or abroad. Nottingham students have been able to attend national conferences run at the university for free, or have been supported in applying for funding to attend conferences, examples include the European Association of Veterinary Anatomists, The Society for Reproduction and Fertility, and The Nutrition Society.

Around 10% of our alumnni have undertaken PhD or Masters level study post-graduation or have undertaken Internships or Residencies.

11.1.5 Availability of clinical postgraduate training and appropriately qualified supervising staff

The School has a proportionate number of residents and interns to support the clinical staff and final year teaching and research interests of staff.

Clinical postgraduate training is carried out either in conjunction with the clinical services offered by the school (e.g. pathology residencies) or in the Clinical Associate practices. In all cases the primary supervisor is a recognised Specialist within their field of interest. Additional support may be given by other clinical veterinary surgeons.

Students completing MVM or MVS degrees will typically undertake specialist training programmes which have been approved by the relevant European college. Typically DVetMed/DVetSurg degrees are offered in fields where there are no specialty colleges, however where possible meeting the requirements of specific residency training programmes is encouraged (for example, European College of Zoological Medicine).

11.1.6 Continuing Education

The School aims to provide the highest quality Continued Professional Development (CPD) for veterinary surgeons and allied professionals. This engages the school with the wider veterinary community, perpetuating the philosophy of lifelong learning developed in the undergraduate curriculum and further developing the School as a centre of educational excellence. We provide courses at the basic, intermediate and advanced levels to suit the CPD requirements of the profession.

We offer face-to-face, high quality one- and two-day courses covering a wide range of subject matter across all disciplines of veterinary medicine and surgery, together with the MSc Advanced Clinical Practice (Veterinary) (see section 11.1.2) and RCVS A, B and C modules. The programme is strategically overseen by the CPD Sub-Dean and operationalised by the CPD Manager who undertakes all aspects of the programme administration (communication with deliverers and attendees, scheduling, organisation and evaluation analysis). The CPD Sub-Dean and Manager have undertaken a number of national surveys to determine the needs of the veterinary profession and within this context, individual courses are initiated by individual clinicians in discussion with the Sub-Dean.

Quality assurance is similar to undergraduate teaching and ensures:
- Learning objectives are defined
- Teaching materials are developed and available to all attendees
- Peer observation of teaching delivery

Quality control involves
- Consideration of feedback from participants, by means of a paper based questionnaire
- Consideration of feedback from session leader (encompassing consideration as to delivery format, whether delivery matched published learning objectives, what may be improved, what worked well etc.)
- Evaluation of any improvements or changes for future sessions

Appendix 37 shows CPD courses provided by the School in 2020/21, which is much less than previous years due to Covid.

We have an established commercial relationship with an external industry partner (Veterinary Instrumentation) to further develop and deliver bespoke surgical courses within our Veterinary Surgical Training Academy (VSTA). A number of VSTA courses are endorsed by The Royal College of Surgeons (Eng). The endorsement requires an annual quality review by the Royal College to ensure it meets their standards. We are the only veterinary college in the UK to have a number of our courses accredited in this way. This brings integrity and standardisation to the teaching of basic veterinary surgery.

Our aim is to offer standalone RCVS A, B and C Modules from 2022. Our portfolio will include new and innovative C Modules to align with the Advanced Clinical Practitioner (Veterinary) programme. These modules are aimed at the practitioner wishing to improve and enhance their general practice skills. The RCVS has approved our application for the following modules:

- A-FAVP.1 Foundations of Advanced Veterinary Practice
- B-SAP.1 Small Animal Practice
- C-SAM.7 Small Animal Neurological Medicine
- C-SAM.8 Small Animal Medicine (A)
- C-SAM.9 Small Animal Medicine (B)
- C-SAM.10 Small Animal Medicine (C)
- C-SAACP.1 Small Animal Advanced Clinical Practice – Core Medicine
- C-SAACP.2 Small Animal Advanced Clinical Practice – Core Surgery
- C-SAACP.3 Small Animal Advanced Clinical Practice – Emergency Critical Care
- C-SAACP.4 Small Animal Advanced Clinical Practice - Dermatology
- C.SAACP.5 Small Animal Advanced Clinical Practice - Ophthalmology
- C.SAS.1 Small Animal Surgery - Core
- C.SAS.2 Soft Tissue A
- C.SAS.3 Soft Tissue B
- C.ECC.1 Critical Care
- C-VA.1 Small Animal Anaesthesia and Analgesia
- C.VCR.1 Veterinary Clinical Research
- C-VD.1 Veterinary Dermatology - Core
- C-VDI.1 Imaging in Practice
- C-VGP.1 Clinical Audit
- C-VGP.2 Consultation Skills
- C-VP.2 Clinical Pathology – Laboratory Diagnostics

A new facility has been designated for the delivery of wet-lab courses. To this end, we have increased our pool of internationally renowned small animal clinicians within the fields of orthopaedics, soft tissue surgery, internal medicine, imaging, anaesthesia, dentistry, dermatology and ethics. These fractional Level 7 Professorial appointments aim to increase the breadth and access to high quality clinical teaching.

11.1.6 Involvement of interns, residents and research students in student teaching

Residents, Interns and DVetMed students are involved with year 5 clinical teaching, they may work closely with the students on an informal daily basis, and may be involved in scheduling activities, but ultimately feedback about student performance to Rotation Leaders. Residents may undertake year 5 DOPS assessment but otherwise no students are involved in assessment. Other non-clinical postgraduates (e.g. PGCertificate, MRes, PhD) act as demonstrators in practical sessions in years 1-4. It is normally expected that students undertake university courses in teaching and demonstrating and school teaching induction courses. Some students, for example Residents may undertake the Associate Teacher Program and gain HEA status.

Interns and Residents are involved in case management and teaching at several Clinical Associates. Interns and Residents in all cases work as part of a team managed by a senior clinician, typically a board-certified specialist, who will manage conflicts in relation to case management. All Residents have a supervisor who is a senior clinician, typically a board-certified specialist, who will ensure any research elements required of the residency programme are completed.

11.1.7 Research ethics

All research projects require ethics review and approval by the School's Committee for Animal Research and Ethics (CARE) to ensure compliance with the highest ethical standards and to anticipate and mitigate any potential conflicts with respect to case management and research.

11.2 COMMENTS

The School is redeveloping Containment Level-2 and 3 laboratories vacated by APHA. These facilities will support the EU-funded research into bluetongue virus (BTV) and a wide range of research in partnership across the University into the control of key viral and bacterial pathogens.

11.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 33 Summary of research programmes in the veterinary school and outputs

Year	Total academic staff FTE	Total FTE academic staff involved in research who teach on the veterinary degree	Total FTE research active staff	Externally funded grants		No. of original, peer-reviewed research publications
				No.	£k	
2020/21	133.8	112.3	133.8	26	£2,737	217
2019/20	122.0	102.8	122.0	24	£2,070	140
2018/19	107.6	92.7	107.6	30	£2,210	156

Appendix 34 Academic track postgraduates (2020/21)

Qualification	No of students on Taught courses	No of students on Research courses	Duration of training
PG Certificate Veterinary Education	5	0	1 year
PG Diploma Veterinary Physiotherapy	8	0	2 years
MSc Veterinary Physiotheraphy	79	0	3 years
MSc Advanced Clinical Practice apprenticeship	55	0	3.5 years
MRes Bioinformatics apprenticeship	0	17	2.5 years
MRes	0	14	1 year
PhD	0	86	3 or 4 years

Appendix 35 Clinical track postgraduates (2020/21)

Clinical Discipline	No of Interns	No of Residents	No of DVetMed / DVetSurg students	Diploma title
Farm	0	3	1	DipECBHM
Small Animal	7	2	0	DipECVIM, DipECVS
Pathology	0	4	0	DipECVP
Equine	3	1	0	DipECVS
Zoo	0	0	1	

Appendix 36 Veterinary student's involvement in research projects and intercalations after year 3 or 4

Academic year	No. of students in funded and unfunded research projects					No. of peer reviewed publications in which UGs are authors/ co-authors	No. of students in joint postgraduate programme (intercalating)		
	Year 1	Year 2	Year 3	Year 4	Year 5		PhD	Masters	PGCert Vet Ed
2020/21	7	5	Whole year	15	10	59	0	4	4
2019/20	0	3	Whole year	6	2	43	0	3	3
2018/19	0	2	Whole year	4	1	32	0	4	1
2017/18	0	2	Whole year	3	1	66	1	2	2

Appendix 37 CPD courses run in 2020/21

Course title	No. of participants	Course hours
Back yard poultry	10	8
Wound reconstruction	8	8
Challenging GI cases – a problem solving approach	6	8
Small animal dermatology	9	8
Medicine made simple	5	8
Mineral masterclass	160	4
Evidence-based veterinary medicine	3	35

12 OUTCOMES ASSESSMENT

12.1 FACTUAL INFORMATION

12.1.1 How outcomes monitoring is used to improve the educational program

The School uses a number of quality-related outcome assessment measures in order to achieve the following outcomes:

- To assure the quality and standard required for a veterinary degree as determined by the RCVS, EAEVE and AVMA
- To ensure the highest standards and implementation of best practice across the School's operations
- To facilitate delivery and dissemination of high quality, internationally recognised, education and research which addresses the needs of stakeholders

Decisions regarding curriculum development are driven by the exit learning outcomes that students are required to display at the end of the course. The veterinary curriculum at Nottingham has thus been designed to meet the RCVS Day One competences, and EAEVE Subject Areas, as well as being driven by the need for students to have a grounding in basic science, to be research literate and to develop as professionals.

Outcome assessment at School level is an ongoing activity that results in a regular appraisal of data in order to monitor and inform curriculum development and graduate competency and associated School strategy and includes data collected from students, staff and external stakeholders. Data are collected at year, module and activity level (e.g. facilitated sessions, practicals), methods employed are:

- Surveys (School/University managed: Year survey, SET, SEM, graduate survey, employers, University all student survey (NSES). External: NSS, RCVS/VSC graduate and employer surveys)
- Data analysis (assessment results, admissions qualifications)
- Individual feedback (e.g. student, staff, External Examiners, EMS host)
- Committees (e.g. Student Progress, TLA, LCF)
- Ad-hoc focus groups convened around particular topics
- Peer observation (e.g. teaching)

Outcome findings are considered and responded to through ongoing operations (e.g. in the case of requirements for additional resources or equipment) or through the appropriate Committee. Examples of outcome findings which have improved the educational programme include:

- Consolidation of modules to reduce the assessment burden in response to feedback from students and External Examiners. Financial support for all final year students to cover travel costs associated with IMR and EMS
- Compulsory out of hours emergency care rotation incorporated into year 5 rotations – decision informed by graduate survey
- Students are able to gain online assessment feedback based on attainment against module learning objectives – decision driven by student feedback in year survey, NSS and staff feedback
- Clinical nutrition teaching is now better incorporated into the curriculum following feedback from the graduate outcomes survey

12.1.2 Student outcomes

Employment rates of graduates

HESA collect information on the destinations of leavers (6 or 15 months post graduation). The average employment (and further study) rate is 98% over the last 5 years and ranges from 95% to 99%) (Appendix 38).

We recognise that the HESA data do not provide the granularity on employment sector and further study we would wish, and as such we also collect destination data on Graduation Day. Data for the 2021 graduates show 92.4% employed in veterinary practice, and 3% undertaking advanced further study (Internships/Residencies). Of the 133 respondents, 4.6% had not found jobs by Graduation. All but 2.2% are working in the UK.

Our employment rates are high, and our graduates are keenly sought by employers, reflecting the knowledge, skills and professionalism attained on the Nottingham course. We review the outcome data and feedback direct from students to inform decisions on careers support provided to graduating students.

Demonstration of achievement of RCVS Day 1 competences

As detailed previously the School has put in place a wide range of mechanisms to collect outcomes data around Day 1 competence, including an extensive assessment strategy designed to test knowledge, skills and professionalism, benchmarking by External Examiners and feedback from employers.

Our whole curriculum is carefully mapped to the RCVS Day 1 Competencies and summative assessments aligned with teaching ensure the Day 1 Competencies are taught, assessed and achieved by all students (Appendix 39). For example:

- Our final year assessment strategy examines practical competencies and professionalism in the workplace (through DOPS and the Rotation Professionalism Assessment), mapping to RCVS Day 1 competences and RCVS Guiding Principles
- Knowledge and clinical reasoning skills are assessed in final examinations which are blueprinted to ensure species and topic coverage, mapped to RCVS Skills, Knowledge and Professionalism
- Students link all Portfolio assets to RCVS Day 1 Competences; the Portfolio is defended in a viva

Assessments of graduating final year students

We recognise alumni-based evaluations as an important part of the process of ongoing evaluation for our outcomes based curriculum. There has been a rolling programme of alumni assessment since the first graduating cohort in 2011 (see https://bvajournals.onlinelibrary.wiley.com/doi/10.1136/vetreco-2015-000116http://vetrecordopen.bmj.com/content/2/2/e000116). Year 1 graduates have been surveyed annually by the School and asked how well prepared they feel for different aspects of clinical practice and on their general experience post-graduation and also space for free text comments. Response rates have ranged from 21% to 37% over the last 5 years. Data are shown in Appendix 24. No clear overall trends are discernible, however there are areas of lower scores.

The data from the graduate survey are considered at TLA Committee, and changes are made to the curriculum as necessary, for example:

- Increased opportunity for surgical experience: developed a relationship with RSPCA as a clinical associate site for IMR; improved surgical experience through Small Animal primary care rotation
- Clinical nutrition: RVN assigned to role of embedded module convenor for clinical nutrition who is currently working with teaching and clinical staff to identify areas for improvement

In addition the Higher Education Statistics Agency (HESA) collects data annually from graduates 15 months after graduation. 96% (2017/18) and 93% (2018/19) graduates agree that their activity following graduation is "on track" with their future plans.

The School is unaware of any students that have undertaken NAVLE examination.

Employer satisfaction with new graduates

The School receives data from the VSC and RCVS employer and graduate surveys which were last completed in 2019 (https://www.vetschoolscouncil.ac.uk/wp-content/uploads/2020/06/VSC-Graduate-Employer-Surveys-2019.pdf). The individual data for Nottingham will be available during the visitation.

12.1.3 Institutional outcomes

School evaluation of progress in meeting its mission

The School has yearly performance targets in common with all University Schools which relate to NSS overall satisfaction, University student surveys, staff engagement, Athena Swan, research awards, REF and HESA qualified staff. The School is progressing well against its targets. In addition, there are quarterly meetings with Faculty Management to consider progress against the Faculty action plan. The School also has a risk register that is reviewed on a quarterly basis.

The School undertakes a wide range of activities to gain outcome information, however benchmarking is provided through 5 main mechanisms.

- National Student Survey (NSS). The NSS is carried out across all UK degree courses by Ipsos MORI on behalf of the Higher Education Funding Council. Students in their final year complete a standard set of questions, and can also provide free text feedback. Since the School's establishment it has been consistently ranked as the top UK Veterinary School for overall satisfaction (and normally every other category as well), with a 5 year average of 4.81, compared to a University average of 4.05. Appendix 40 shows 2020/21 data for UK veterinary schools. Data from the survey have resulted in a number of changes, for example an increase in feedback mechanisms and volume
- The Association of Veterinary Students survey is conducted every 3 years and evaluates various aspects such as teaching, learning and support. Again the School has been top of this survey, with data feeding into teaching and welfare reviews
- External Examiners provide benchmarking and assurance that the programme outcomes are of a comparable level to other Veterinary Schools. The School acts on any feedback received as part of the report provided by Examiners
- The University undertakes Educational Enhancement and Assurance Reviews (EEARs) to ensure high quality, competitive, and well managed academic programmes are maintained – these 3-yearly reviews include external representation to ensure benchmarking.
- The University provides benchmark data to support strategy and plan development, this includes, degree classifications and entry tariff data

Less formal feedback is obtained from staff acting as External Examiners, members of accrediting teams, membership of cross-University and Veterinary School Committees.

Significant indicators of quality of the educational processes

A number of other indicators of quality have been made internally and externally in the form of awards and achievements, we would use these outcomes in assessing that the School is delivering on educational strategy and quality:

- The School has received a number of teaching awards including the ASPIRE award for student engagement and the Guardian Award for Employability.
- NSS and AVS survey results (as detailed above)
- 79 staff have received the prestigious University Lord Dearing award for teaching.
- Three staff are Principle Fellow of the Higher Education Academy, with a further 48 staff Fellows/Senior Fellows; 75% possess a HESA-recognised teaching qualification
- Research Excellence Framework (4 yearly review), the School together with the School of Biosciences, was 2nd in the Agriculture, Veterinary and Food Science Unit of Assessment for research power, and top for research environment
- Staff serve as Presidents, Members of Council or on Committees of e.g. RCVS, BEVA, BCVA, Society of Reproduction and Fertility, UK Government Advisory Committee - the Elephant Welfare Group, Society for Veterinary Epidemiology and Preventive Medicine
- Professional recognition and awards such as FRCVS, CEVA Animal Welfare Vet of the Year, BBSRC Innovator of the Year, Selbourne Medal

Staff and students can raise comments on their perception of adequacy of resources, facilities and equipment which support the educational process by a number of mechanisms within the School:

- Directly to relevant technical and administrative staff to resolve operational issues, and through line managers, Module Convenors as relevant and/or ultimately to the Senior Technical and Facilities Manager or Heads of Operations for discussion regarding any development or investment requirements; approval above £5k spend requires Executive Team approval
- Through various Committees (TLA, Research, LCF, Staff Meeting, etc) with onwards decision making by Management Team
- As part of surveys such as SEM, Year, NSS, University or School staff surveys
- Anonymously through a feedback box in reception

Results of surveys/analysis of outside opinion (including alumni and other stakeholder groups) as to whether the school is achieving its objectives

There are a number of surveys and data analysis that demonstrate that the School is achieving its educational objectives, both internal and external to the University detailed previously in this chapter, e.g. EEAR, alumni surveys, employer surveys, NSS Survey, AVS survey. External validation of research through the Research Excellence Framework provides a view of the achievement of the research objectives.

12.1.4 Professional competences that students must achieve

The intellectual, clinical, personal and business competences that students must achieve by the end of the veterinary degree are described in the programme specification (See SER 2). Evidence that the students have achieved these outcomes is through summative assessment throughout all years of the course as detailed previously in Chapter 10.

The Portfolio leads into the VetGDP in that students have demonstrated competence in reflective practice which is essential for VetGDP.

12.1.5 Other

Education research in the School has conducted in-depth projects, for example on communications skills, outcomes based assessment and anatomy teaching. The Veterinary Education Research Group (VERG) meets regularly and has developed a strategy to prioritise research within the School under three main themes: teaching learning and assessment; readiness for the profession and the staff and student experience. Within the theme of student experience, research has been conducted on mental health and wellbeing. This has resulted in the integration of mental health awareness within the curriculum, for example mental health first aid sessions within the veterinary professional skills module, and the addition of mental health and wellbeing as an embedded module.

12.2 COMMENTS

12.3 SUGGESTIONS FOR IMPROVEMENT

The School intends to ensure greater involvement of Clinical Associate staff in planning and review of the programme.

We will also review the success of the Dual Cohort programme, as part of a Post Investment Appraisal for the University.

In order to continue relationships with alumni we will investigate the use of LinkedIn for professional profiles alongside Facebook profile.

Appendix 38 Employment rates (HESA data)

Graduating class	Full time employ	Part time employ	Further study only	Work and study	Unemployed	Other	Total respondents
2014/15	72	1	1	0	0	1	75
2015/16	60	0	2	0	2	1	65
2016/17	103	0	3	0	1	2	109
2017/18	69	0	0	1	0	1	71
2018/19	64	3	0	3	1	0	71

Appendix 39 Graduate outcomes data

Learning outcome	2011	2012	2013	2014	2015	2016	2017	2018	2019
Knowledge of underpinning basic science	4.21	4.13	4.17	4.14	4.25	4.32	4.44	4.39	4.25
Veterinary clinical knowledge	4.11	4.26	4.15	4.11	4.13	4.09	4.44	4.32	4.21
Clinical and surgical skills	4.04	3.95	3.90	4.29	4.03	3.91	4.09	4.03	4.33
Clinical examination skills	4.61	4.55	4.44	4.59	4.75	4.51	4.75	4.71	4.75
Diagnostic reasoning ability	4.18	4.24	4.02	4.03	4.28	4.03	4.50	4.52	4.13
Case management and therapeutic strategies	3.96	3.79	3.88	4.16	3.91	4.09	4.47	4.16	4.00
Dealing with emergency and critical care cases	3.54	3.63	3.50	3.86	3.50	3.69	4.16	3.87	3.79
Promoting preventative healthcare	4.21	4.05	4.15	4.46	4.34	4.31	4.52	4.39	4.42
Population health and epidemiology	4.00	3.82	4.05	3.89	4.00	3.89	4.06	3.94	4.00
Veterinary public health and zoonotic issues	3.75	3.66	3.78	3.81	3.69	3.37	4.03	4.00	3.88
Recognition for need and implementation of euthanasia	4.50	4.50	4.55	4.62	4.61	4.54	4.75	4.48	4.71
Veterinary practice and financial management	3.86	4.19	4.05	3.84	4.09	3.91	4.00	3.77	4.00
Recognising own limitations and seeking advice	4.68	4.55	4.68	4.62	4.78	4.66	4.78	4.61	4.75
Ability to seek, evaluate and utilise new information	4.25	4.44	4.33	4.43	4.59	4.54	4.69	4.52	4.50
Knowledge of veterinary legislation	3.54	3.66	3.50	3.73	3.81	3.66	4.03	3.68	4.04
Compassion and the application of ethics to animal welfare	4.68	4.76	4.70	4.56	4.69	4.57	4.72	4.65	4.63
Awareness of professional responsibilities	4.50	4.47	4.53	4.62	4.50	4.68	4.66	4.65	4.67
Communication skills	4.82	4.63	4.58	4.65	4.88	4.54	4.88	4.71	4.54
Interpersonal and teamwork skills	4.36	4.42	4.40	4.49	4.66	4.55	4.78	4.48	4.50
Robustness and managing pressure and stress	4.11	4.13	4.03	4.00	4.09	4.06	4.16	4.03	4.13
Flexibility and ability to cope with change	4.39	4.18	4.31	4.19	4.34	4.17	4.41	4.35	4.29
Self-reflection and maintaining a work-life balance	4.29	4.10	4.21	4.05	4.31	4.11	4.31	4.26	4.33
Systematic approach to problem solving and critical thinking	4.32	4.21	4.20	4.30	4.34	4.37	4.53	4.61	4.46
IT skills	4.36	4.24	3.93	4.00	3.94	4.27	4.16	4.00	4.08
Research skills	4.04	4.03	3.83	4.05	4.38	4.20	4.13	4.10	4.25
Overall competence to do the job for which you were hired	4.36	4.11	4.13	4.19	4.45	4.26	4.41	4.52	4.38

Scoring ranges from 5 = excellent preparation and 1 = not at all prepared

Appendix 40 2020/21 National Student Survey data (weighted average)

NSS 2021 Weighted score (1-5 max)	Nottingham	RVC	Liverpool	Surrey	Bristol	Edinburgh	Glasgow
1 Staff are good at explaining things	4.75	4.26	4.17	4.30	4.31	4.40	4.18
2 Staff have made the subject interesting	4.57	4.18	4.13	4.45	4.22	4.38	4.24
3 The course is intellectually stimulating	4.85	4.67	4.71	4.79	4.69	4.77	4.73
4 My course has challenged me to achieve my best work	4.68	4.14	4.38	4.43	4.06	4.35	4.23
5 My course has provided me with opportunities to explore ideas or concepts in depth	4.63	4.17	4.15	4.41	3.92	4.30	4.22
6 My course has provided me with opportunities to bring information and ideas together from different topics	4.66	4.47	4.28	4.48	4.36	4.41	4.42
7 My course has provided me with opportunities to apply what I have learnt	4.88	4.26	4.74	4.68	4.63	4.34	4.47
8 The criteria used in marking have been clear in advance	4.19	3.65	3.72	4.20	3.85	4.02	3.61
9 Marking and assessment has been fair	4.39	3.83	3.92	4.06	4.02	4.21	3.68
10 Feedback on my work has been timely	4.37	3.61	3.67	3.78	3.55	3.55	3.25
11 I have received helpful comments on my work	4.20	3.65	3.73	3.87	3.70	3.90	3.82
12 I have been able to contact staff when I needed to	4.71	4.20	4.17	4.38	4.26	4.40	4.37
13 I have received sufficient advice and guidance in relation to my course	4.64	3.76	4.02	4.28	3.98	4.08	3.99
14 Good advice was available when I needed to make study choices on my course	4.59	3.72	3.77	4.03	3.95	4.03	3.95
15 The course is well organised and running smoothly	4.55	3.38	4.01	3.93	3.40	3.65	3.55
16 The timetable works efficiently for me	4.57	3.81	4.02	4.12	3.83	3.71	4.02
17 Any changes in the course or teaching have been communicated effectively	4.30	3.25	3.73	4.02	3.21	3.45	3.67
18 The IT resources and facilities provided have supported my learning well	4.50	4.01	3.98	4.03	4.07	4.13	4.03
19 The library resources (e.g. books, online services and learning spaces) have supported my learning well	4.33	4.28	4.01	3.97	4.23	4.23	4.37
20 I have been able to access course-specific resources (e.g. equipment, facilities, software, collections) when I needed to	4.62	4.12	4.09	4.30	4.27	4.30	4.34
21 I feel part of a community of staff and students	4.63	3.93	4.14	4.38	4.17	4.29	4.23
22 I have had the right opportunities to work with other students as part of my course	4.78	4.43	4.37	4.63	4.48	4.52	4.55
23 I have had the right opportunities to provide feedback on my course	4.75	4.47	4.28	4.46	4.28	4.51	4.59

24 Staff value students' views and opinions about the course	4.50	3.56	3.87	4.39	3.90	4.12	4.06
25 It is clear how students' feedback on the course has been acted on	4.26	3.27	3.68	4.19	3.77	3.98	3.78
26 The students' union (association or guild) effectively represents students' academic interests	3.73	4.00	3.23	3.67	3.26	3.62	3.70
27 Overall, I am satisfied with the quality of the course	4.84	4.08	4.43	4.61	4.23	4.33	4.40

Red text indicates highest score per indicator.

There are no data for Cambridge Veterinary School as they failed to reach the minimum 50% response rate threshold.

13 ESEVT INDICATORS

13.1 FACTUAL INFORMATION

Data are shown in Appendix 41 with resultant ESEVT ratios in Appendix 42. Data is primarily compiled from information shown in relevant tables throughout the SER. No data from EMS or track rotations is included. Non equine companion animals seen on Intra Mural Rotations are also seen extra mural to the University (as we have no teaching hospital due to our community-based teaching model) and as such the same caseload data are shown in both intra and extra mural categories.

For 2020/21 practicals were delivered in person with the exception of 5 weeks when they may have been delivered in alternative formats for years 2 and 3 due to closure of University as a result of Covid.

Year 5 students were absent from clinics for 6 weeks which affected caseload seen in 2019/20

13.2 COMMENTS

The community-based teaching model ensures a high caseload from core rotations. Data from track rotations is not included.

The School meets the minimal values for all indicators, albeit ruminants are seen on-farm rather than at the practice.

13.3 SUGGESTIONS FOR IMPROVEMENT

Appendix 41 Raw data for ESEVT Indicators

	Raw data from the last 3 full academic years	**2020/21**	**2019/20**	**2018/19**	**Mean**
1	FTE academic staff involved in veterinary training	154	148	130	**144**
2	Undergraduate students	1,113	924	717	**918**
3	FTE veterinarians involved in veterinary training	90	84	78	**84**
4	Students graduating annually	142	114	108	**121**
5	FTE support staff involved in veterinary training	82	79	76	**79**
6	Hours of practical (non-clinical) training	896	869	738	**834**
7	Hours of clinical training	1,129	1,191	1,151	**1,157**
8	Hours of FSQ & VPH training	199	214	191	**201**
9	Hours of extra-mural practical training in FSQ & VPH	40	40	40	**40**
10	Companion animal patients seen intra-murally	33,605	24,668	39,611	**32,628**
11	Ruminant and pig patients seen intra-murally	49	49	63	**54**
12	Equine patients seen intra-murally	7,376	7,120	7,831	**7,442**
13	Rabbit, rodent, bird and exotic patients seen intra-murally	5,130	1,513	2,240	**2,961**
14	Companion animal patients seen extra-murally	33,605	35,571	39,611	**36,262**
15	Individual ruminants and pig patients seen extra-murally	10,054	22,718	32,200	**21,657**
16	Equine patients seen extra-murally	4,708	4,544	5,832	**5,028**
17	Visits to ruminant and pig herds	1,193	2,012	2,800	**2,002**
18	Visits to poultry and farmed rabbit units	-	11	12	**8**
19	Companion animal necropsies	254	221	415	**297**
20	Ruminant and pig necropsies	278	155	124	**186**
21	Equine necropsies	6	10	28	**15**
22	Rabbit, rodent, bird and exotic pet necropsies	312	64	141	**172**
23	FTE specialised veterinarians involved in veterinary training	25	29	28	**27**
24	PhD graduating annually	21	17	13	**17**

Appendix 42 Calculated ESEVT Indicators

Calculated Indicators from raw data		UoN values	Median values	Minimal values	Balance
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0.16	0.15	0.13	0.03
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0.69	0.84	0.63	0.06
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	0.65	0.88	0.54	0.11
I4	n° of hours of practical (non-clinical) training	834.33	953.50	700.59	133.74
I5	n° of hours of clinical training	1157.00	941.58	704.80	452.20
I6	n° of hours of FSQ & VPH training	201.30	293.50	191.80	9.50
I7	n° of hours of extra-mural practical training in FSQ & VPH	40.00	75.00	31.80	8.20
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	268.91	62.31	43.58	225.33
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	0.44	2.49	0.89	-0.45
I10	n° of equine patients seen intra-murally / n° of students graduating annually	61.34	4.16	1.53	59.81
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	24.40	3.11	1.16	23.24
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	298.87	5.06	0.43	298.44
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	178.49	16.26	8.85	169.64
I14	n° of equine patients seen extra-murally / n° of students graduating annually	41.44	1.80	0.62	40.82
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	16.50	1.29	0.54	15.96
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0.06	0.11	0.04	0.02
I17	n° of companion animal necropsies / n° of students graduating annually	2.45	2.11	1.40	1.05
I18	n° of ruminant and pig necropsies / n° of students graduating annually	1.53	1.36	0.90	0.63
I19	n° of equine necropsies / n° of students graduating annually	0.12	0.18	0.10	0.02
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	1.42	2.65	0.88	0.54
I21 *	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0.22	0.27	0.06	0.16
I22 *	n° of PhD graduating annually / n° of students graduating annually	0.14	0.15	0.07	0.07

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