



UNIVERSITY OF
COPENHAGEN



SELF-EVALUATION REPORT

University of Copenhagen
Faculty of Health and Medicine
School of Veterinary Medicine and Animal Science

COPENHAGEN, DENMARK

30 March – 3 April 2020

Accreditation site visit by EAEVE/ESEVT



“Health and welfare for animals and people in a changing world”

Welcome

In welcoming the EAEVE international team to the University of Copenhagen, School of Veterinary Medicine and Animal Science, we look forward to presenting our Self-Evaluation Report in real time, sharing the most recent developments in our 246-year history and receiving critique on our efforts and achievements.

Best wishes,



Ulla Wewer
Dean



Hans Henrik Dietz
School Director

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Introduction

Brief history of the Establishment and its previous ESEVT visitations The School of Veterinary Medicine and Animal Sciences has its origins in the establishment of a veterinary school in 1773. The school was located at Christianshavn, a district of Copenhagen. The founder, Peter Christian Abildgaard, initially ran the school as a private enterprise, but in 1776, the government took over the school and granted a royal charter in 1777.

In 1856, the government acquired farmland in Frederiksberg near Copenhagen to build a new university. Michael Gottlieb Bindesbøll, an important and contemporary architect at the time, designed the university at Frederiksberg Campus, which was erected 1856 - 1858.

After 1858, all higher education disciplines within the veterinary and agricultural sciences were taught at Frederiksberg at what had now become The Royal Veterinary and Agricultural University (KVL).

Today, the campus in Frederiksberg covers about 16 hectares. The University Hospital for Large Animals is located at the Taastrup Campus, about 15 km west of Copenhagen, in an area covering 175 hectares. The main veterinary clinical buildings at Frederiksberg Campus were constructed from 1963 to 1976. After a completely new library was built, an extension and renovation project for the buildings on Frederiksberg Campus began in 1991.

The veterinary curriculum has undergone three major revisions within the present millennium, in 2000, 2005 and 2009. In 1987-1988, the programme was evaluated by the Advisory Committee on Veterinary Training (ACVT). In 2001, the first EAEVE visitation took place, resulting in full approval. As one of the first Establishments in Europe the Copenhagen veterinary programme was Stage 1 and Stage 2 accredited in 2010 according to the then new EAEVE standards, again with no major deficiencies.

The veterinary programme was evaluated by the Danish Evaluation Institute in 1998 and nationally accredited in 2016 according to the Danish Act on the Accreditation Agency for Higher Education (Accreditation Act)¹.

The Veterinary School, University of Copenhagen (UCPH) is ranked #3 in the Shanghai global ranking list of veterinary academic establishments² and #15 in the QS-ranking list³ as of 2019.

Main features of the Establishment The Veterinary Medicine programme at the Faculty of Health and Medical Sciences (SUND), School of Veterinary Medicine and Animal Science (VetSchool), UCPH strives to be among the best veterinary study programmes in the world by offering an international, research-based, cutting-edge education using modern educational principles and learning platforms.

In Denmark, undergraduate veterinary education is only offered under the Veterinary Medicine programme at SUND. Postgraduate veterinary education, e.g. PhD programmes, MSc programmes and postdocs are also offered by other universities in Denmark.

SUND has 13 departments⁴. Of these, two departments are mainly involved in the veterinary programme:

- Department of Veterinary and Animal Sciences (D-VAS)
- Department of Veterinary Clinical Sciences (D-VCS)

¹ <http://www.acedenmark.dk/index.php?id=277#c1101>

² <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/veterinary-sciences.html>

³ <https://www.topuniversities.com/university-rankings/university-subject-rankings/2019/veterinary-science>

⁴ <https://healthsciences.ku.dk/research/departments/>

Each department is headed by a Department Head who is a Doctor of Veterinary Medicine (DVM). The area of veterinary medicine is organised under the overarching School of Veterinary Medicine and Animal Sciences (VetSchool). The School is headed by a School Director who is also a DVM. From 2018 – 2019, the Danish national surveillance on notifiable diseases, diagnostic and research services has been incorporated into the VetSchool as a collaboration between UCPH and Statens Serum Institut (SSI)⁵. The cooperation includes responsibility for day-to-day diagnostics of notifiable diseases, communicable diseases, national and EU-directed disease surveillance, etc. This work is financed by a specific grant from the Danish government and includes provision of evidence-based advice to the Danish Veterinary and Food Administration.

The overall mission of the Veterinary Medicine programme at SUND is to educate highly qualified veterinarians to serve society through the continuous improvement of animal and human health. These veterinarians should have knowledge of basic animal science, disease biology and food safety from a One Health perspective, as well as knowledge of the diagnosis, treatment and prevention of animal diseases.

The commitment to undergraduate education includes a commitment to provide instruction and clinical opportunities for students in a wide variety of domestic species, including both companion and production animals, as well as tracking opportunities in biomedicine and food safety.

A set of competence profiles closely following the EAEVE Day One Competences has been drawn up to ensure the outcome of the programmes. Additionally, SUND wants to ensure that it continues to provide veterinary services of a high international standard and to such an extent as to fulfil our educational and research mission⁶.

The most important goals for the Veterinary Medicine programmes are:

- to develop world-class teaching and learning in line with international recommendations
- to be a preferred research partner within the core academic fields of veterinary science
- to communicate veterinary research and its importance for health and for the prevention, control, diagnosis and treatment of diseases in animals and humans
- to create an attractive university environment with a view to attracting the best scientific, clinical and technical staff to the faculty, both nationally and internationally
- to further develop the BSc and MSc curricula in line with international standards.

Main developments since the last visitation The VetSchool was very proud of the wording in the Executive summary of the 2010 visitation.

“These shortly summarized recommendations do not in any way reflect serious deficiencies.

The Veterinary School of the LIFE faculty was, in all areas evaluated, not only far above required standards, in fact, the team unanimously felt that overall, the school is excelling as an exemplary European veterinary teaching and research facility. In short that is: state-of-the-art facilities, research-based and hands-on teaching, an equilibrated output oriented curriculum, a sound financial basis, a dedicated and enthusiastic staff and quality assessment procedures well in place and enacted.

The visiting team therefore recommends unanimously to award full accreditation to the Veterinary Departments of the LIFE Faculty (the Veterinary School of Copenhagen).”

⁵ <https://en.ssi.dk/>

⁶ For details see: [Strategy, mission and vision for the Copenhagen School of Veterinary Medicine and Animal Science](#)

However, there were a few minor recommendations, which are detailed under section 1.7 of this self-evaluation report. All of these recommendations have been addressed, including the introduction of the overarching structure of the School of Veterinary Medicine and Animal Science with a veterinarian as School Director.

KVL came under the jurisdiction of the Ministry of Education in 1972 and became a full mono-faculty university. In 2007, KVL changed its name to Faculty of LIFE Sciences and merged with UCPH and in 2012, the four veterinary departments formed the School of Veterinary Medicine and Animal Science (VetSchool), merged into three veterinary departments and moved to the Faculty of Health and Medical Sciences (SUND), forming a new faculty structure with five schools:

- School of Veterinary Medicine and Animal Science
- School of Medicine
- School of Odontology
- School of Pharmaceutical Sciences
- School of Public Health

and a number of research centres.

The former Department of Small Animal Clinical Sciences moved into renovated facilities at Frederiksberg Campus in 2010/2011. Further to this in 2016, the three veterinary departments were reorganised into the present two: Department of Clinical Veterinary Science (D-VCS) and Department of Veterinary and Animal Science (D-VAS).

The 2009 curriculum has undergone minor modifications several times since 2010 following the QA-responses both internally and from external stakeholders including accrediting agencies like EAEVE and AVMA.

Major problems encountered by the Establishment The national financial system for the universities does not fully cover the expenses for educational purposes (2% decrease every year)

- The curriculum is busy with a complex structure. A new curriculum addressing major challenges of the present curriculum is under development and will be implemented in 2022
- Investing in the renewal of expensive infrastructure is financially challenging
- Recruitment and retention of faculty staff for some veterinary clinical disciplines is difficult
- Current issues with maintenance of buildings and facilities.

For this Self-evaluation report, the ESEVT May 2019 SOP was used throughout.

Standard 1: Objectives, Organisation and QA Policy

1.1 The Establishment must have as its main objective the provision, in agreement with the EU Directives and ESG recommendations, of adequate, ethical, research-based, evidence-based veterinary training that enables the new graduate to perform as a veterinarian capable of entering all commonly recognised branches of the veterinary profession and to be aware of the importance of lifelong learning.

The Establishment must develop and follow its mission statement, which must embrace all the ESEVT standards.

Vision and Mission for the VetSchool

Vision: *Health and welfare for animals and human beings in a changing world.*

Mission: *To deliver research and research-based teaching necessary for education in veterinary medicine and animal science, including research and research-based teaching in the challenges emanating from interaction between animals and human beings. Our research contributes to solving actual societal tasks and to anchoring the evidence-based growth of our society.*

The VetSchool **vision** is further detailed as:

- To ensure research, teaching and clinical activities are world class
- The VetSchool adds significantly to the University of Copenhagen's ranking by being ranked highly within veterinary medicine

The VetSchool **mission** is further detailed as:

- To ensure veterinary teaching hospitals support clinical research and teaching at the highest international level
- Performing high-quality veterinary research to the benefit of individual animals, animal populations and human beings
- To develop and customise diagnostic procedures, treatment and care to enhance health and welfare for the individual animal
- Based on our high professional level, to train and educate future veterinarians for a professional and balanced work life
- To communicate our knowledge at a high level to society

The strategy of the VetSchool and the two veterinary departments closely follows the general SUND⁷ and UCPH⁸ strategies 2019 – 2023, which have been approved by the UCPH management and board.

The overall University of Copenhagen strategy 2023 is subdivided into four main pillars: (1) Attracting, developing and retaining academic talent, (2) Education with closer ties to research and practice, (3) Collaboration and societal commitment – nationally and globally, and (4) One unified and focused university.

UCPH supplies candidates to all common veterinary fields in Denmark, including the pharmaceutical industry (research).

The learning outcomes of the present veterinary programme based on the BSc and MSc curricula include specific learning goals of the mandatory programme courses that were aligned with the ESEVT Day One Competences and recognised as such at the EAEVE visitation in 2010. Please see Section 3.3 for details.

⁷ <https://healthsciences.ku.dk/about/strategic-goals/>

⁸ <https://about.ku.dk/strategy2023/>

1.2 The Establishment must be part of a university or a higher education institution providing training recognised as being of an equivalent level and formally recognised as such in the respective country.

The person responsible for the veterinary curriculum and the person(s) responsible for the professional, ethical, and academic affairs of the Veterinary Teaching Hospital (VTH) must hold a veterinary degree.

The decision-making process of the Establishment must allow for implementation of its strategic plan and of a cohesive study programme, in compliance with the ESEVT standards.

All universities in Denmark are under the auspices of the Ministry of Higher Education and Science⁹. Official names and contact information include:

- Minister of Higher Education and Science: **Ane Halsboe-Jørgensen**, Børsgade 4, DK-1215 Copenhagen K, Tel: +4533929700, E-mail: min@ufm.dk, URL: https://ufm.dk/en/the-ministry/the-minister?set_language=en&cl=en
- Rector, UCPH: **Henrik Wegener**, Nørregade 10, Postboks 2177, Tel: +4535335113, rektor@adm.ku.dk, URL: <https://om.ku.dk/ledelse-strategi/rektor/henrik-wegener/?pure=da/persons/132206>
- Dean, SUND: **Ulla Wewer**, Blegdamsvej 3, 2100 København Ø, Tel: +4535327051, ullaw@sund.ku.dk, URL: <https://sund.ku.dk/om-sund/organisation/dekanatet/>
- School Director, VetSchool: DVM, PhD, Associate Prof., Prof. h.c. **Hans Henrik Dietz**, Grønnegårdsvej 2, DK-1870 Frederiksberg C, Tel: +4521497090, hhd@sund.ku.dk, URL: <https://vetschool.ku.dk/english/about/organization/>

Formal decision-making framework The UCPH has an overall structure of decision-making procedures at three levels: university, faculty and departmental level (see Figure 1). For more information about the overall structure of the UCPH, please consult the [UCPH website](#).

The day-to-day activities of UCPH are regulated by the [University Act](#), the [Statutes of the University of Copenhagen](#) and the [University's development contract with the Ministry](#). The formal conditions also relate to the management instructions and the rector's delegation powers in staff matters. Decisions are made by the rector, unless authority has been delegated to the pro-rector, the university director, the main academic areas, the faculties headed by Deans or the departments headed by department heads. The UCPH Board is the highest authority at the university and has responsibility for the general and strategic management of the university. The structure at UCPH is therefore basically hierarchical with the rector having the overall management authority in all matters.

Decision-making in practice In practice, most decisions are made following dialogue with the advisory committees and the collaboration organisation across UCPH. Some of these forums have been set up based on the University Act and the Statutes of the UCPH. Others have been set up by the rector to ensure the involvement of academic or other experts¹⁰. In practice, the university does not have a top-down hierarchical structure, and in some contexts, advisers also act as decision-makers. However, the authority for decision making ultimately rests with the rector.

⁹ https://ufm.dk/en/the-ministry/the-minister?set_language=en&cl=en

¹⁰ An [overview of UCPH councils, boards and committees is found here](#), while a similar overview for the [SUND is found here](#).

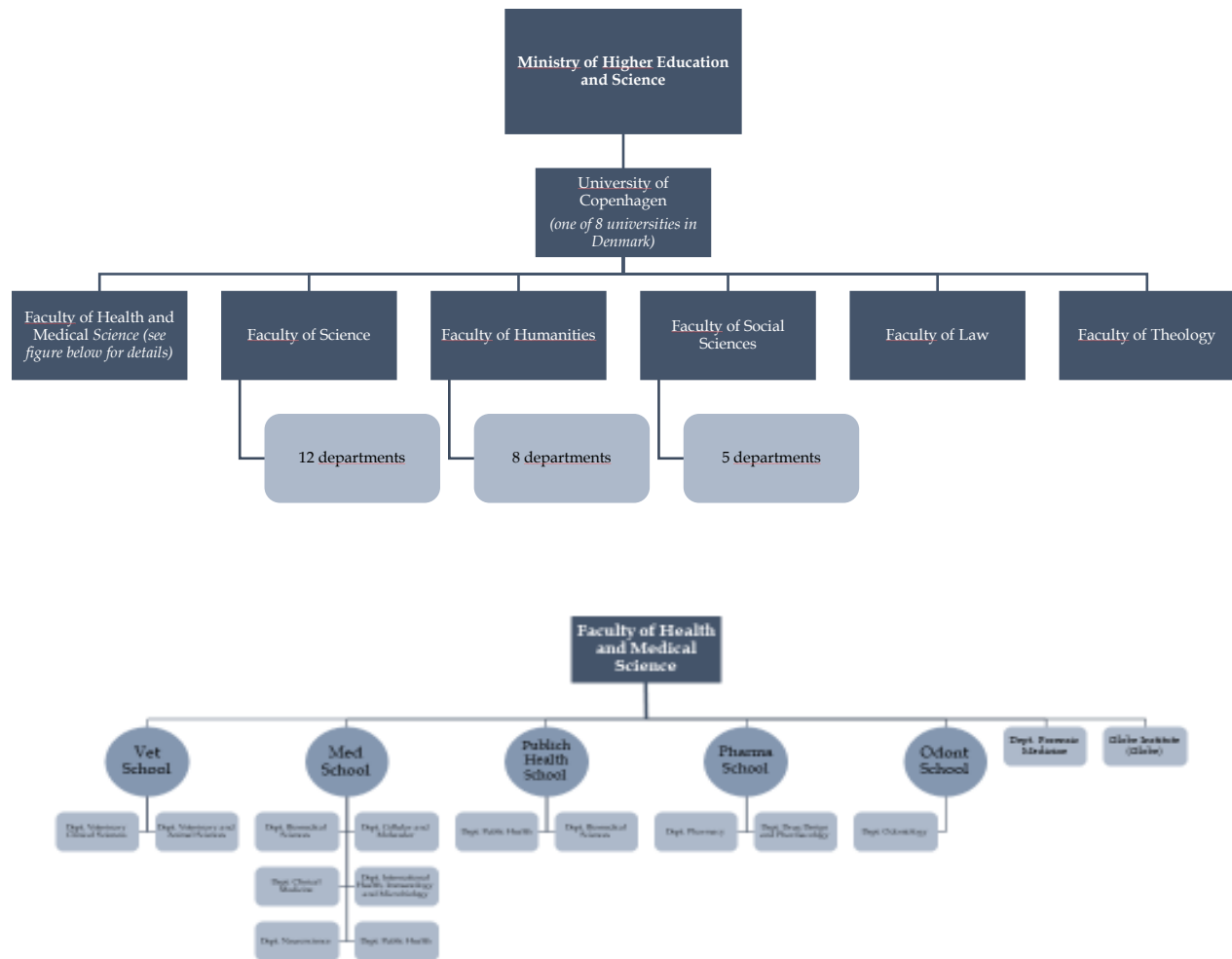


Figure 1: Faculties within UCPH and schools and departments within SUND.

All but two first-semester BSc courses in the veterinary programme are organised and taught by the two veterinary departments, which are the actual administrative and technical units.

Department of Veterinary Clinical Sciences (D-VCS)¹¹

Head of Department **Asger Lundorff Jensen**, Professor, DVM, PhD, DrVetSci, MLP.

Sections:

- [Medicine, Oncology, and Veterinary Clinical pathology](#)
- [Medicine and Surgery](#)
- [Surgery, Neurology, and Cardiology](#)
- [Veterinary Imaging](#)
- [Veterinary Reproduction and Obstetrics](#)

¹¹ <https://ikv.ku.dk/english/about/>

Staff members responsible for the University Veterinary Teaching Hospitals:

University Hospital for Large Animals (VTH-LA): Hospital Director **Susanne Nautrup Olsen**, Associate Prof., DVM, PhD, DipECEIM (Founding Member)

University Hospital for Companion Animals (VTH-CA): Hospital Director **Merete Holst Nissen**, DVM, MPG (student)

The D-VCS contributes through teaching, research and dissemination within veterinary clinical sciences to the pre- and post-graduate education of veterinarians in Denmark and to the research-based development of veterinary clinical practice. The Department employs approximately 160 staff members (full-time equivalent; FTE) and it is located in buildings at Frederiksberg Campus (VTH-CA) and in Taastrup (VTH-LA). The department's mission is to work for the benefit of animals and humans through research, teaching, innovation and propagation at a work place based on shared values. The department's vision is to build on strong and internationally recognised scientific disciplines and to create new standards for cross-disciplinary research, education and innovation within the field of animal health and disease. It is our aim to be among the best public workplaces in Denmark.

Department of Veterinary and Animal Sciences (D-VAS)¹²

Head of Department **Birgit Nørrung**, Associate Professor, DVM, PhD.

Sections:

- [Parasitology and Aquatic Pathobiology](#)
- [Food safety and Zoonoses](#)
- [Experimental Animal Models](#)
- [Veterinary Clinical Microbiology](#)
- [Animal Welfare and Disease Control](#)
- [Production, Nutrition and Health](#)
- [Pathobiological Sciences](#)
- [Comparative Paediatrics and Nutrition](#)
- [Animal Genetics, Bioinformatics and Breeding](#)

D-VAS provides skilled candidates and creates new knowledge in food safety, antibiotic resistance, animal models and animal welfare, immune system and lifestyle diseases. The department covers a wide spectrum of animal and human disease biology in close collaboration with other departments at the UCPH. Researchers are among the most excellent in disease control, cell pathology, host-agent interactions, along with food safety and health in developing countries.

The VetSchool councils/boards/committees A descriptive list of councils/boards/committees related to the VetSchool can be found on the [VetSchool's website](#). This includes the VetSchool Educational Council and the [Veterinary Study Board](#), known as Study Board (equivalent to a Curriculum Committee).

The persons responsible for the veterinary curriculum are:

- Head of Studies **Peter Holm**, Associate Prof., DVM, PhD, PGDipVetEd
- Chair of the Study Board, **Charlotte Bjørnvad**, Professor, DVM, PhD, DipECVCN

¹² <https://ivh.ku.dk/english/>

The two departments both have a Teaching Committee (chaired by DVMs) and an Occupational Health and Safety Committee with members elected among students and appointed among staff. In addition, each department has a Collaboration Committee to which staff members are elected and representatives from the department leader group participate. The two latter committees are chaired by the Department Head. See also [Appendix 1.1](#) for further details.

Informal educational collaboration often precedes formal agreements, e.g. Erasmus or other programmes. In addition to the formal educational collaboration, many staff members have formal research collaboration both nationally and internationally. The non-exhaustive list in [Appendix 1.2](#) provides an overview of the main collaborative partners.

1.3 The Establishment must have a strategic plan, which includes a SWOT analysis of its current activities, a list of objectives and an operating plan with a timeframe and indicators for its implementation.

A SWOT analysis and a summary of the strategic plan for the VetSchool is given in [Appendix 1.3](#).

The [UCPH strategy 2023](#) is entitled "Talent and collaboration" and has been mentioned above (see section 1.1).

Each department has developed its own strategy based on the overall university strategy, with action plans that are reviewed and reported to the Faculty on an annual basis and that feed into the yearly "strategic dialogue meetings" between the Dean and the Department Heads.

1.4 The Establishment must have a policy and associated written procedures for the assurance of the quality and standards of its programmes and awards. It must also commit itself explicitly to the development of a culture that recognises the importance of quality, and quality assurance, within their Establishment. To achieve this, the Establishment must develop and implement a strategy for the continuous enhancement of quality. The development and implementation of the Establishment's strategy must include a role for students and other stakeholders, both internal and external, and the strategy must have a formal status and be publicly available.

The UCPH was nationally accredited by the [national agency](#), Danish Accreditation Institution - which is ENQA accredited - in June 2019 and we therefore follow the ESG-2015 standards. The veterinary programme was also accredited nationally (again following ENQA and ESG-2015 procedures) in 2016.

UCPH has a University-wide quality assurance (QA) system, which is implemented by the faculties. UCPH has a culture of QA and continued enhancement of quality and clearly defined management responsibilities. According to Section 35 of the Statutes of UCPH, the faculties are responsible for study programmes. As such, it is their responsibility to develop faculty systems for QA under the umbrella of the principles and structure laid down in the University-wide system.

The system consists of a series of documents that are arranged hierarchically in relation to each other. The [QA system at the University of Copenhagen](#) is described on a designated website, as are the [Faculty's QA system and procedures](#). The QA policy, objectives, concept, culture, research base, sub-policies, and standards are all specified here.

The University's QA policy stipulates that the faculties must define [quality standards](#) that support the current strategies. These quantifiable quality standards for a number of parameters must at least meet the specific objectives stipulated in UCPH and faculty strategies and target plans. The Dean and faculty management conduct an annual review of these standards to ensure that the day-to-day QA work is consistent with the faculty goals.

UCPH has two fixed overall processes to monitor whether targets have been reached and to follow up on any issues identified: (1) Reporting back on the target plan and (2) the annual faculty reports on QA work.

Programme reports The faculties draw up annual programme reports for all study programmes. The requirements for programme reports are stipulated in the [Guidelines for Annual Programme Reports at the University of Copenhagen](#). SUND has drawn up a [procedure for annual programme reports](#) based on the guidelines.

The QA procedures related to the veterinary programme are governed by the Study Board and managed by the Head of Studies with support from the Department of Student Affairs, SUND. All changes to the curricular learning outcomes are discussed by the veterinary departments and their respective teaching committees, the Board of the VetSchool and the Employer Panel before a decision is made by the Study Board, with final approval by the Dean. Major curriculum changes are also sent to an external hearing at the Danish Veterinary Association and the Danish Veterinary and Food Administration (see further details in Standard 3).

Programme evaluations Each faculty evaluates its study programmes at least every 6 years. The requirements for this are stipulated in the [Guidelines for Programme Evaluations at the University of Copenhagen](#) and SUND has drawn up a [procedure for programme evaluations](#) based on the guidelines.

Reporting to the Rector The [annual faculty reports](#) submitted to the Rector are based on the annual programme reports and on the programme evaluations. QA reports on the study programmes must be approved by the Dean of the faculty before they are submitted to the Rector.

Follow-up on reports submitted to the Rector The Rector's approval process is described in the [University Procedure for Approval of and Follow-up on the Faculties' Quality Assurance Reports](#). The UCPH University Education Service, which is part of Central Administration, studies the reports and follows up on any ambiguities before they are submitted to the Rector for approval. If a faculty report indicates that its QA work does not comply with the University guidelines, or that activities have not had the desired effect, the Rector may approve the report but include comments for follow-up work. The Rector then tells the faculty what to follow-up and report back on the following year. The Rector may also stipulate follow-up points for the whole university. The Rector is responsible for ensuring that UCPH meets the requirements stipulated in its own QA system. The Deans are responsible for ensuring that their faculties meet the requirements stipulated in their own QA systems. The Deans have the option of delegating this responsibility.

Evaluation of the QA system UCPH wants its QA system to be effective and therefore develops it on an ongoing basis. After each QA cycle, the work for the year is evaluated at both university

and faculty level. One of the reasons for this is to develop and optimise the system so that it copes with current challenges.

The QA Plan-Do-Check-Adjust (PDCA) cycles at both university and at faculty level are illustrated in [Appendix 1.4](#).

Communication about the QA system As outlined above (including the aforementioned QA guidelines and procedural description), the QA system regularly informs staff, students and stakeholders and involves them in QA processes. Specific responsibilities including communication of QA results lies with the Dean (including overall responsibility for the faculty's study programmes; appointing heads of studies, chairs of study boards and heads of departments, chairs of teaching committees and course organisers, whose specific responsibilities related to QA are explained in the descriptions of functions for: [Chairs of study boards](#); [Heads of studies](#); [Course organisers – with teaching committee](#); [Exam organisers](#); [Chairs of teaching committees](#); [School Directors \(Chairs of educational councils\)](#).

All forums and agents communicate closely with each other about the study programmes and quality of education.

Five academic educational councils (among them the VetSchool) have been set up at SUND. These are advisory bodies, but also ensure mutual communication between heads of department, heads of studies, chairs of study boards, course organisers, examination organisers and students.

1.5 The Establishment must provide evidence that it interacts with its stakeholders and the wider society. Such public information must be clear, objective and readily accessible; the information must include up-to-date information about the study programme, views and employment destinations of past students, as well as the profile of the current student population. The Establishment's website must mention the ESEVT Establishment's status and its last Self-Evaluation Report and Visitation Report must be easily available for the public.

SUND conducts ongoing and systematic dialogue with a number of external stakeholders concerning the study programmes' quality and relevance. There is a focus on whether graduates are in relevant employment within a reasonable period of time after graduation, and on whether the graduates' competences reflect the needs of the employment market.

Both the SUND Faculty¹³ and the Vetschool publish a monthly newsletter for students and staff on the UCPH intranet.

The Establishment's status and the latest EAEVE self-evaluation report are accessible from the VetSchool website¹⁴ - Stage 1¹⁵ and Stage 2¹⁶.

Dialogue with employer panels Interaction with stakeholders is formally ensured via biannual meetings with the [Employer Panel](#), which is composed of veterinarians from private practice, professional organisations, the Danish Veterinary Association (umbrella organisation under FVE for all Danish veterinarians), agronomists and other stakeholders including students and

¹³ <https://healthsciences.ku.dk/faculty-news/>

¹⁴ <https://vetschool.ku.dk/english/>

¹⁵ https://www.eave.org/fileadmin/downloads/SER/CopenhagenStageI_SER_2010.pdf

¹⁶ https://www.eave.org/fileadmin/downloads/SER/CopenhagenStageII_SER_2010.pdf

management of the Faculty and the School. The Employer Panel is chaired by the Danish Chief Veterinary Officer and the School Director acts as deputy. Typical issues discussed with the Employer Panel include: reports from the Head of Studies; current reports from the Study Board; current reports from the Head of the group of external examiners, presentation of recent graduate surveys¹⁷, attrition rates, average study time, employment rate for new graduates and input from stakeholders.

Dialogue with chairs of the external examiners The faculties have established a procedure to involve the chairs of the external examiners to ensure and develop the quality and relevance of the programmes. The chair of the external examiners' report is published on the SUND website¹⁸ and is also included in the annual study programme reports and study programme evaluations.

Dialogue with graduates In addition to the Employer Panel, all study programmes at UCPH undergo a national programme evaluation every 6 years, which involves a visit by a panel of external experts who meet with programme management and student and lecturer representatives, cf. Standard 1.6 below. Furthermore, graduate surveys are carried out every 3 years, which for the veterinary programme also includes surveys for employers of newly graduated veterinary candidates.

Dialogue with regulatory agencies and other public and private stakeholders In general, there is a plethora of official and unofficial contacts with civil servants in the central administration and this includes close cooperation with several offices in the Danish Veterinary and Food Administration, Ministry of Foreign Affairs and others.

SUND is in ongoing dialogue with the Danish Veterinary and Food Administration about the BSc and MSc programmes in Veterinary Medicine. The regulatory agency receives new curricula and significant changes to existing curricula for consultation, before these are submitted to the Dean for approval, and then to the regulatory agency for final approval.

In addition, there is close collaboration with private Danish companies e.g. agribusiness and the pharmaceutical industry, typically centred around collaborative research projects.

1.6 The Establishment must monitor and periodically review its activities, both quantitative and qualitative, to ensure that they achieve the objectives set for them and respond to the needs of students and society. The Establishment must make public how this analysis of information has been utilised in the further development of its activities and provide evidence as to the involvement of both students and staff in the provision, analysis and implementation of such data. Any action planned or taken as a result of this data analysis must be communicated to all those concerned.

As described in 1.5 and illustrated in [Appendix 1.4](#), UCPH continually monitors and evaluates its QA activities. The entire QA system at both UCPH and faculty level, including the quality standards, is available on the relevant websites. The annual faculty reports are published on the websites each year. The reports describe how the faculty management and/or the programme management of individual programmes take action to ensure or improve the quality of the study programmes. See also Standard 3 for details on the veterinary programme.

¹⁷ <https://sund.ku.dk/om-sund/uddannelseskvalitet/evaluering-paa-sund/veterinaermedicin/>

¹⁸ Links to the annual reports (in Danish) for the Board of VetSchool external examiners, see: <https://sund.ku.dk/uddannelse/censor/vet/>

1.7 The Establishment must undergo external review through the ESEVT on a cyclical basis. Evidence must be provided of such external evaluation with the assurance that the progress made since the last ESEVT evaluation was linked to a continuous quality assurance process. The latest EAEVE site visit was performed 27 September – 1 October 2010 for Stage I & II (combined), and the ECOVE decision was made in January 2011.

There were a few suggestions made to the VetSchool, viz.: some international visibility and identity of the veterinary aspect of the faculty has been lost; reintroduce the name VetSchool; ensure that a veterinarian is responsible for the School; establish rotating clinical internships; increase the number of E(A)BVS Diplomates within the faculty; increase the number of residencies and residents enrolled; ensure the 24-hour small animal emergency service is better staffed so that it runs more efficiently during the second half of the night; student rotations during those late hours should be mandatory; measures should be taken to further increase the caseload in farm animal teaching.

All issues have been addressed as demonstrated in Standard 3 of this 2020 SER and Standard 9 (regarding number of European and American veterinary diplomates, see [Appendix 9.2](#)).

Comments on Standard 1

The organisation effective 1 January 2012 with a merger of the School of Veterinary and Animal Sciences and School of Pharmaceutical Sciences under the umbrella of SUND with 5 Schools

- School of Veterinary and Animal sciences
- School of Pharmaceutical Sciences
- School of Odontology
- School of Medicine
- School of Public Health

has created a unique and powerful frame for a true One Health-approach to present and future challenges for veterinarians, the veterinary profession and stakeholders and society. In combination with the magnitude of the Faculty (annual turn over of 3.5 billion DKK = 470 Mio EUR, 1,350 researchers, 7,800 students, 1,550 PhD students, 21,500 articles published annually with 185,000 citations), this adds a considerable strength and sustainability to the organisation.

Suggestions for improvement on Standard 1

None.

Standard 2. Finances

2.1 Finances must be demonstrably adequate to sustain the requirements for the Establishment to meet its mission and to achieve its objectives for education, research and services. The description must include both expenditures (separated into personnel costs, operating costs, maintenance costs and equipment) and revenues (separated into public funding, tuition fees, services, research grants and other sources). The UCPH receives its basic funding from the Danish Ministry of Science, Technology and Innovation (VTU). The funding covers all basic academic and administrative activities. Funding for the costs of the study programmes is partly provided to the University according to the

documented progress of students (the taximeter system¹⁹). The funding is channelled by the Rector to the faculties according to internal university guidelines. A proportion (70%) of the funding provided based on student progress is given to the faculties.

At SUND, basic funding as well as the funding from the taximeter system is distributed to the central Faculty administration and to the Departments through a half-yearly budget process, taking into account research and educational activities and the approved development plan of each department. There is no direct link between student activity at the Departments and the funding received by the Departments, but student activity is one of the indicators in the half-yearly budget process.

Due to the higher-than-average expense of the DVM programme, the annual basic funding for the DVM and similar programmes is comparatively higher than other programmes.

An important part of the funding is the external research funding. Here, the revenues come from multiple sources, e.g. the national research councils, the European Union framework programmes, private foundations and the pharmaceutical, agricultural and food industries.

Ongoing maintenance is decided and financed by the buildings department at SUND together with the central UCPH buildings department (CAS). The veterinary departments cooperate closely with the buildings department concerning maintenance.

There is no particular mechanism for funding major equipment. It is at the Departments' discretion to fund equipment either from the annual funding or from external funding. In a number of cases, SUND has supplied funding to purchase equipment. Please see comments.

Overheads on revenues from services and research grants are not paid to official authorities. Overheads are retained at the department level.

Danish and EU students do not pay tuition fees once they have been accepted to a specific training programme.

Area of expenditure	2019	2018	2017	Mean
Personnel	33,449,868	31,159,145	29,521,868	31,376,960
Operating Costs	11,814,596	12,293,160	11,448,380	11,852,045
Maintenance costs*	-	-	-	-
Equipment**	24,415	159,885	490,803	297,368
Total Expenditure	45,505,879	43,612,190	41,461,052	43,526,373

*This is directly paid by the official authority; see estimation of utilities in the text below.

**Equipment is defined as depreciations

Revenues source	2019	2018	2017	Mean
Public authorities	26,410,494	18,817,046	19,686,430	21,637,990
Clinical services	11,923,411	5,826,163	5,220,485	7,656,686
Diagnostic Services	612,333	438,023	353,819	468,058
Research Grants	18,447,241	16,448,543	168,052	11,687,945

¹⁹ https://ufm.dk/en/education/higher-education/danish-universities/the-universities-in-denmark/funding-for-danish-universities?set_language=en&cl=en

Other services	327,457	143,266	15,033,357	5,168,026
Continuing education	463,864	767,096	493,952	574,971
Other sources*	943,748	676,454	935,312	851,838
Total revenues	59,128,548	43,116,591	41,891,407	48,045,515

Academic year	Total expenditures	Total revenues	Balance*
2017	41,461,052	41,891,407	430,355
2018	43,612,190	43,116,591	- 495,598
2019	45,505,879	43,759,699	- 1,746,180

*Total revenues minus total expenditures

Estimation of the utilities (e.g. water, electricity, gas, rent) and other expenditures directly paid by the official authority and not included in the expenditures tables. The estimation covers campus Taastrup and campus Frederiksberg as a **mean for the years 2017-2019 11,057,564 €**.

2.2 Clinical and field services must function as instructional resources. Instructional integrity of these resources must take priority over financial self-sufficiency of clinical service operations. The Establishment must have sufficient autonomy in order to use the resources to implement its strategic plan and to meet the ESEVT Standards.

The Faculty's grant to the D-VCS is provided as an educational grant including hospital operations and a research grant.

Income and overheads from both University Veterinary Teaching Hospitals including the clinical Master's programme and continuing education activities are transferred in full to the Department. Overheads from external research grants are also transferred in full to the Department.

The Department decides how to spend these income sources to cover education, hospital operations and research according to the study plan and the Department's strategic plans.

Most of the basic income can be used by the Faculty and the Departments as they choose. It is up to the Faculty and the departments to allocate funding to teaching and research activities, but also to choose whether to use the funding on salaries, running costs or equipment. The general infrastructure of SUND is financed by the Faculty, whereas salaries, running costs and equipment in general are financed by the departments. Housing is financed and paid for directly by UCPH.

2.3 Resource allocation must be regularly reviewed to ensure that available resources meet the requirements.

A list of major ongoing and planned investments for developing, improving and/or refurbishing facilities and equipment is given in [Appendix 2.1](#).

The levels of expenditure and revenue are stable and are expected to continue within a small margin and eventually with a small upward trajectory in the next 3 academic years.

Expenditure, investments and revenue at department level are discussed and decided by the departmental leader group headed by the Head of Department. The budget and the actual expenditure, investments and revenue are also regularly discussed with the Dean (four times per year) and in the local departmental liaison committee, which advises the departmental leader group

and the Head of Department. In this way, decisions, implementations, assessments and revisions are regularly communicated to and discussed within the official departmental structures. Staff are informed in a number of ways, e.g. by written minutes, annual presentations and regular newsletters. Students are informed through the departmental teaching committee. Stakeholders are informed and plans are discussed at the biannual economy/strategy meetings with the Dean's Office and the department management.

Comments on Standard 2

A new budget model was implemented and became effective as of 2019²⁰.

Due to general financial constraints with respect to long-term investment, it is difficult to ensure the replacement and renewal of hospital equipment in both the VTH-LA and the VTH-CA. It is also evident that the owner-generated income at the hospitals is not sufficient to sustain long-term investment in infrastructure within the financial limits of the Department of Clinical Veterinary Sciences. Furthermore, it is difficult to obtain external funding for clinical infrastructure. However, the Faculty management and the University management are aware of this situation and a long-term solution ensuring the renewal and replacement of infrastructure is anticipated within the current strategy period.

The present negative revenue is covered by the Faculty.

Suggestions for improvement on Standard 2

None.

Standard 3. Curriculum

If an Establishment offers more than one study programme to become veterinarian, e.g. in different languages or in collaboration with other Establishments, all study programmes and respective curricula must be described separately in chapter 3.

UCPH offers one full DVM programme (BSc + MSc).

3.1 The curriculum must be designed, resourced and managed to ensure all graduates have achieved the graduate attributes expected to be fully compliant with the EU Directive 2005/36/EC (as amended by directive 2013/55/EU) and its Annex V.4.1. The curriculum must include the subjects (input) and must allow for acquisition of the Day One Competences (output) listed in Annex 2. This concerns Basic Sciences, Clinical Sciences in companion animals (including equine and exotic pets), Clinical Sciences in food-producing animals (including Animal Production and Herd Health Management), Food Safety and Quality, and Professional Knowledge.

Educational aims of the Establishment The educational aims of the veterinary programme, which consists of a BSc programme followed by an MSc programme, are as follows (cited from §§ 1 in the Veterinary [2009 BSc curriculum](#) and [2009 MSc curriculum](#), respectively, published (in Danish) on SUND's website www.sund.ku.dk):

The veterinary BSc programme aims to:

- train undergraduates who have general academic knowledge and skills

²⁰ <https://kUNET.ku.dk/about-ucph/topics/new-budgetmodel/Pages/default.aspx> at UCHP intranet

- educate undergraduates who have specific knowledge, skills and competencies within veterinary medicine, including veterinary communication and collaboration, health promotion and animal welfare
- contribute to fulfilling the professional requirements for veterinary education as described by the European Association of Establishments for Veterinary Education (EAEVE) and the American Veterinary Medical Association (AVMA)
- train undergraduates who qualify for admittance into the MSc programme in veterinary medicine.

The veterinary MSc programme aims to provide students with:

- the necessary skills to treat sick animals (including those suffering from infectious and transmissible diseases), to prevent diseases, to perform professional veterinary functions within a One Health/veterinary public health field (including food safety and hygiene inspection) and to assess and protect animal welfare
- the necessary skills to identify, describe and solve or deal with complex veterinary problems
- the necessary skills to be able to independently maintain and develop their scientific and professional qualifications
- more comprehensive knowledge, skills and competencies within one given veterinary subject area (minor tracking)
- the necessary knowledge and skills, values and attitudes to ensure animal welfare in relation to changing societal expectations
- the necessary qualifications to fulfil professional requirements for veterinary undergraduate training according to the European Association of Establishments for Veterinary Education (EAEVE) and the American Veterinary Medical Association (AVMA).
- the necessary qualifications to begin a PhD programme.

The aims of the programmes (and of the individual courses) are supported by intended learning outcomes, i.e. competences (knowledge, skills and attitudes) that embrace the EAEVE Day One and other competences meeting national, societal and professional needs.

The entire veterinary programme is 5.5 years (330 ECTS, i.e. 60 ECTS per year), divided over the 3-year BSc curriculum (180 ECTS) and the 2.5-year MSc curriculum (150 ECTS). Both curricula include a final thesis, i.e. a BSc thesis (10 ECTS) and an MSc thesis (30 ECTS). The entire mandatory core programme consists of 303.5 ECTS, i.e. the whole BSc programme plus 2 years of the MSc programme including the MSc thesis, leaving one semester for a minor professional tracking called “differentiering” in Danish (26.5 ECTS).

A curriculum year consists of four 9-week quarters, Blocks 1-4, separated by an interim week. Each block includes 15 ECTS. Most courses are adapted to either 7.5, 15 or 30 ECTS.

The BSc programme is designed as a disciplinary curriculum with some vertical and horizontal integration across selected subject areas (see below). The MSc curriculum design is professionally oriented, allowing the above-mentioned minor tracking within the final year. Both programmes are taught in Danish except for a few MSc courses, which are taught in English. Both programmes have been designed and resourced for 180 students per year. All but two courses are offered by one of the two veterinary departments. The exemptions are Veterinary Zoology, offered by the Department of Plant and Environmental Sciences, Faculty of Natural Sciences, and Chemistry and Biochemistry for veterinary students, offered by the Department of Drug Design and Pharmacology.

At department level, all courses at SUND are financed on the basis of individual course budgets that are revised annually.

The combined BSc and MSc curricular framework²¹ was implemented according to national law in 2005. The current BSc and MSc curricula covering all EAEVE subject areas with minor professional tracking were subsequently developed in 2006-2008 and implemented in 2009 and 2012, respectively, following an internal and an external hearing process and final approval from the Study Board and the Dean.

Since then, the programme has been subject to several minor changes as a consequence of recommendations obtained through the yearly QA procedures, the regular outcome assessment surveys for new graduates, employers and external examiners, along with specific strategic initiatives and workshops for course organisers.

Curricula descriptions for the BSc and MSc programmes can be found in Danish at the faculty website: <https://sund.ku.dk>. An overview of the curricula and the individual courses is given in [Appendix 3.1](#). Details about how the core veterinary courses contribute to (i) the subjects included within the subject areas mentioned in 2005/36/EC and (ii) the ESEVT Day One Competences are listed in [Appendix 3.2](#) and [Appendix 3.3](#), respectively.

Basic sciences are integrated into the basic science courses within the BSc programme and into some MSc courses: i.e. [Anatomy and Physiology I & II](#), [Veterinary Zoology](#), [Chemistry and Biochemistry for Veterinary Students](#), [Cytology and Basic Histology](#), [Veterinary Genetics](#), [Basic Statistics and Epidemiology](#), [Veterinary Pharmacology and Toxicology](#), [Animal Nutrition](#) and [Veterinary Imaging](#).

Students qualified to apply for enrolment into the veterinary programme have obtained high and relatively uniform levels of knowledge and skills in mathematics, physics, chemistry and biology during their national high school education, as verified by the final national high school exams. Admission to the health education courses at Danish universities, including the veterinary programme, requires specific high school grades in the above-mentioned subjects (see Standard 9). The teaching of basic subjects within the veterinary programme therefore aims to expand upon the knowledge and skills acquired at high school to a level that facilitates comprehension of the essential underpinning knowledge of basic veterinary sciences and subsequent achievement of the necessary veterinary Day One Competences.

Basic veterinary science is taught from start of Year 1 of the BSc programme. The subjects progress from biochemistry, cytology, histology, anatomy, physiology and general and molecular genetics provided in Year 1 to immunology, general pathology, pathophysiology, infectious microbiology (including parasitology), pharmacology and toxicology (including pharmacy and clinical pharmacology) and epidemiology (including aspects of data management) in Year 2. In Year 3, this progresses further to animal nutrition, ethology and welfare, aspects of animal health economics and practice management, professional ethics and communication, and information literacy and data management. Furthermore, clinical and para-clinical aspects of anatomy, pharmacotherapy, chemistry/biochemistry, microbiology, pathology, animal nutrition, welfare and health economics and practice management, as well as professional ethics and communication are integral topics of one or more of the core MSc courses, rotations and the tracking courses. See [Appendix 3.2](#) for details about which specific programme courses contribute to the above-mentioned subject areas listed in 2005/36/EC.

²¹ See Jensen, AL, 2006. The new veterinary curriculum at the Royal Veterinary and Agricultural University, Denmark. *J Vet Med Educ*, 33, 209-213

Animal production subjects are introduced at the very first teaching block in Year 1 as an integral part of the course in [Veterinary Bioethics and Philosophy of Science](#), i.e. aspects of animal husbandry, common animal production forms and related herd health management and animal welfare issues. These topics are further expanded upon in the [Basic Statistics and Epidemiology](#) course in Year 2 and the [Animal Nutrition](#) course in Year 3. The final year of the BSc curriculum also provides teaching in [Animal Breeding](#), herd health management (as a major integral part of the [Herd Health and Public Health](#) course) and handling of large animals (as part of the [Large Animal Basic Clinical Theory](#) course). Furthermore, animal production topics (e.g. husbandry and herd health management) are revisited and expanded within the MSc programme in the core rotation course [Practical Herd Health Management](#) and the elective tracking in herd health comprising [Herd Health Consultancy and Veterinary Public Health](#) and [Herd Health Management](#).

Clinical Sciences core teaching related to companion animals (including exotic animals), horses and production animals is provided from Year 3 of the BSc programme and continued in Year 1 and 2 of the MSc programme. It starts with a basic propaedeutic related to companion and large animal veterinary medicine in the courses [Large Animal Basic Clinical Theory](#) (BCT) and [Companion Animal BCT](#). These two basic clinical courses are complemented by lectures on medicine and therapy in swine, lectures and exercises on poultry, fish and mink diseases and basic preventive medicine, herd health management, biosecurity and related One-Health issues associated with the aforementioned production animal species in the [Herd Health & Public Health](#) course.

Parallel to these basic clinical subjects, training in pathology (including anatomical and diagnostic pathology and hands-on necropsy) is provided in the course [Special Pathology and Poultry Diseases](#) (SPPD) – theory and [SPPD – Practicals](#), comprising all pathology of common domestic species including poultry, mink and exotic animals. See BSc curriculum overview in [Appendix 3.1](#). In the first semester of the MSc programme, the courses [Medicine, Surgery and Reproduction \(MSR\) – Companion Animals](#) and [MSR – Large Animals](#) provide the core hands-on practical propaedeutic exercises and theoretical clinical knowledge in relation to companion animals and ruminants, pigs and horses, respectively. The exercises comprise clinical examination and basic anaesthetic and surgical techniques including aseptic and biosecurity procedures, making use of skills lab facilities, teaching dogs, horses and pigs, as well as selected ruminant and pig patients. Theoretical knowledge is provided in lectures and videos about medicine (including related herd health and veterinary public health aspects), surgery, reproduction, anaesthesiology and therapy of companion animals including exotic and large animals (ruminants and horses).

The following two MSc semesters (i.e. Blocks 3 & 4 of MSc Year 1 and Blocks 1 & 2 of Year 2) are dedicated to core clinical and para-clinical rotations, including a food safety and quality (FSQ) rotation. The rotations include six separate courses, which are provided in each of the four blocks. Students are assigned to four teams of 45 students progressing through the four blocks. The rotation courses are: (1) [Veterinary Imaging](#) (7.5 ECTS, includes radiographic anatomy; both VTHs involved), (2) [Veterinary Paraclinics](#) (7.5 ECTS, includes clinical pathology, clinical (bio)chemistry, microbiology, parasitology and haematology at the Veterinary Diagnostic Laboratory and other intramural laboratory facilities), (3) [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#) (7.5 ECTS, day-time clinical exercises and work (including caesareans on cattle and sows) and evening and night duties at both VTHs), (4) [Practical Herd Health Management and Meat Inspection](#) (7.5 ECTS, includes 1 week of porcine and 1 week of bovine herd health management with several days of training at farms on Zealand and in Jutland and 2 weeks of FSQ training), (5) [General Clinical Practice, Large Animals](#) (15 ECTS; including

ruminants and horses at the large animal VTH, plus 1 week of External Practical Training (EPT)), and (6) [General Clinical Practice, Companion Animals](#) (15 ECTS; includes dogs, cats and exotic animals at the companion animal VTH, plus 2 weeks of External Practical Training (EPT)). The latter two courses cover hands-on clinical training in medicine, surgery, reproduction and therapy of the aforementioned species with a focus on primary/first-opinion cases, basic surgical procedures and basic gynaecological²²/ andrological procedures. See the MSc curriculum overview in [Appendix 3.1](#).

FSQ, Veterinary Public Health (VPH) and the One Health Concept are integral parts of both the core BSc and MSc curricula and of the tracking. The associated course syllabi allow students to achieve the minimum Day One competences required for probationary employment as Official Veterinarians (see Regulation (EC) No 854/2004, Annex I, Section III, chapter IV, Litra A1-A3), and the ESEVT Day One competences relating to these subject areas. The FSQ and VPH syllabi and the related competence levels have been discussed and accepted by the competent veterinary authority²³.

Students are introduced to VPH and FSQ aspects of the veterinary profession in Year 1 through the [Veterinary Ethics and Philosophy of Science](#) course. In the first semester of Year 2, the [Infectious Microbiology](#) course provides knowledge and skills regarding zoonoses (e.g. agent-host interactions and related morbidity, principles for disease prevention, tracking and control) and includes VPH/ One-Health topics (e.g. prevention, detection and control of antibiotic resistance and basic risk assessment). The [Microbial Food Safety](#) course in Year 2 (Block 4) focuses on food microbiology, zoonotic pathogens and their transmission, survival, tracking and control from within the food chain. This course also includes food technology and principles, as well as the prerequisites for hygiene and HACCP self-control within the food industry and retail. In Year 3, the patho-anatomical basis for meat inspection (pigs, cattle and poultry) is provided through the courses [Special Pathology and Poultry Diseases](#) (SPDD) – theory and [SPPD – practice](#), incorporating relevant chapters of Regulation (EU) 854/2004/EC. SPPD also includes management of animal welfare problems and control of zoonotic diseases in poultry farming. Food chain considerations in relation to livestock production and public health (including risk analysis, quality management, antibiotic resistance, globalisation, housing, feed and water hygiene and waste management) are main issues in Block 2 of Year 3 in the [Herd Health and Public Health](#) course. Related aspects of veterinary legislation (including official controls, regulatory veterinary matters and certification) are subsequently provided in the [Veterinary Jurisprudence and Laboratory Animal Science](#) course in Block 4.

In the MSc core programme, the rotation [Practical Herd Health Management & Meat Inspection](#)²⁴ provides an applied and practical approach to the management of zoonotic diseases and animal

²² Hands-on training in gynaecological examination of cattle is provided extramurally at Danish Crown's cattle abattoir in Aalborg, Jutland ([see video](#)). From 2019, the module has also included ante-mortem inspection of abattoir cattle (not shown in the video).

²³ Graduates qualify directly for probationary employment as Official Veterinarians in Denmark: no extra theoretical exam is required (see Regulation (EC) No 854/2004). Veterinary MSc students who have passed the BSc programme and the MSc courses in Medicine, Surgery and Reproduction, Large Animals and Companion Animals and Practical Herd Health and Meat Inspection may work as substitute official auxiliaries (e.g. during summer holidays) in post-mortem meat inspection in Denmark on the basis of an exemption from the Danish Veterinary and Food Administration.

²⁴ Practical hands-on training in ante-mortem inspection and abattoir animal welfare assessment is provided extramurally in conjunction with the extramural gynaecology module of the GCP, Large Animal course at Danish Crown's cattle abattoir in Aalborg.

welfare in production animal farming (cattle and pigs) as well as food hygiene inspection and control including practical ante- and post-mortem inspection (cattle and pigs), hygiene inspection (audit) at food-producing facilities and the related legislation. This includes practical extramural training at a food-processing training facility and at a small private abattoir. Furthermore, since 2019 ante-mortem inspection of cattle is taught extramurally in conjunction with practical training in gynaecological examination at Danish Crown's cattle abattoir in Aalborg (see [General Clinical Practice, Large Animals](#)).

Professional knowledge issues (e.g. professional ethics and communication, and animal health economics and practice management) are also presented to students at the very start of the BSc programme in the [Veterinary Ethics and Philosophy of Science](#) course. Later, basic data management (e.g. herd health data collection, validation and management) skills are taught in the [Basic Statistics and Epidemiology](#) course in Year 2, and information literacy skills are developed in relation to the [BSc thesis](#) in Year 3. Furthermore, knowledge of the professional veterinary tasks undertaken as a Danish "Herd Veterinarian" ("Besætningsdyrlæge" in Danish) and "Official Veterinarian" (including legislative obligations and rights) is provided in the [Herd Health and Public Health](#) and [Veterinary Jurisprudence and Laboratory Animal Science](#) courses in BSc Year 3. Issues relating to client communication, professional ethics and animal welfare are taught in the [Large Animal Basic Clinical Theory](#) (BCT) and [Small Animal BCT](#) courses.

In the MSc programme, professional knowledge is an integral part of the core clinical teaching at the VTHs, as well as extramurally on farms and abattoir facilities. It is also a specific topic in the EPT within the rotation courses [General Clinical Practice, Large Animals](#) and [General Clinical Practice, Companion Animals](#), in which students must reflect on professional ethics and communication and practice management and economics. Veterinary legislation and veterinary obligations in relation to animal welfare are specifically addressed in the subsequent course [Veterinary Jurisprudence and Animal Welfare Assessment](#). Information literacy, data management, communication and research/evidence-based veterinary medicine competencies are developed again and assessed as part of the [MSc thesis](#) in the final Year of the veterinary programme.

Legal constraints imposed on the curriculum by national/regional legislation and the degree of autonomy that the Establishment has to change the curriculum The veterinary programme is governed by the Danish University Act²⁵, Ministerial Orders on BSc and MSc programmes^{26,27} and the Danish Act on Accreditation of Higher Educational Institutions²⁸.

Pursuant to these, all university study programmes must be divided into a BSc programme (3 years) and an MSc programme (2.5 years for veterinary medicine), as described by the Bologna Declaration, and must include core and elective subjects and a final thesis of certain ECTS points specified in the Ministerial Orders. Furthermore, a set of general academic criteria for knowledge, skills and competencies (including attitudes) achieved through BSc and MSc programmes and for

²⁵ Consolidation Act (LBK) no. 172 of 27/02/2018, see [link](#) on Danish Legal Information website.

²⁶ Ministerial Order (BEK) no. 1328 of 15/11/2016 ("Higher Education Order") see [link](#) on legal information website.

²⁷ Ministerial Order (BEK) no. 1062, 30/06/2016 ("Higher Exam Order"), see [link](#) on Danish legal information website.

²⁸ Consolidation Act (LBK) no. 173 of 02/03/2018, see [link](#) on Danish Legal Information website.

the examination formats (using a Grade Point Scale) are described in the Acts and Ministerial Orders.

The Establishment has the freedom to change the curriculum within the above-mentioned legal framework, with consideration of the general educational objectives, policies and regulations of UCPH and SUND regarding curriculum, course organisation and structure²⁹, and QA systems³⁰.

Identification and correction of curricular overlaps, redundancies, etc. The current veterinary programmes, i.e. the [2009 BSc](#) and [MSc curricula](#), ver. 2019/2020, are adjusted versions of the 2009 curricula implemented for all new BSc students in September 2009 and new MSc students in 2012. The 2009 BSc curricula were audited by EAEVE in 2010 and both the BSc and MSc curricula by AVMA in 2015. The current curricula therefore rests on a solid and proven basis.

The veterinary curricula and their course syllabi are subject to regular adjustments and improvements based on identified problems and challenges, financial requirements and new strategic initiatives:

- The QA cycle of the veterinary curriculum, which is subject to the QA system of the UCPH³¹, includes a yearly evaluation of courses by students with subsequent evaluation and written responses from the course organisers ([see quantitative part of students evaluations, in Danish](#)), including reflections on students' evaluations, exam results and suggestions for follow-up initiatives. These reports are discussed by the Teaching Committees of the departments. The Head of Studies summarises the above evaluations in an Annual Course Evaluation Report ([see here, in Danish](#)) including the status of actions taken earlier targeting identified problems. The report by the Head of Studies is presented and discussed by the Study Board and forwarded to the Dean. Actions targeting identified challenges are initiated either by the course organiser and the departmental Teaching Committee if this can be done within the existing syllabi and curricular framework, or by the Head of Studies in collaboration the Study Board if it requires adjustments to the syllabi and/or curriculum.
- Students and teachers suggest educational matters for discussion in the departmental Teaching Committees and the Study Board (both committees have 50% student representation).
- Both the VetSchool and the two veterinary departments organise yearly Teachers' Workshops, where educational and curricular matters are presented and discussed across the departments and the BSc and MSc programmes.
- The students select "Year Representatives", who have informal ad hoc meetings with course organisers regarding the teaching and syllabus.
- Students and teachers may – and do – contact the Head of Studies at any time in order to discuss educational matters and bring attention to possible problems.
- Veterinary programme outcomes are assessed every third year through [surveys for new graduates and employers](#) of newly graduated veterinarians.

²⁹ General Curricula Regulations at SUND, dated 01/09/18, see [link](#) on the SUND website.

³⁰ UCPH's and SUND's QA policy, organisation, delegation responsibilities, procedures, guidelines, standards, graduate and study environment surveys and other data & statistics are published at <https://uddannelseskaalitet.ku.dk/quality-assurance-of-study-programmes/> (UC) and <https://healthsciences.ku.dk/about/qualityeducation/>, respectively, including underlying pages.

³¹ The University of Copenhagen was awarded national "Institutional Accreditation" by the Danish Accreditation Institution 07/06/2019, see [Accreditation Report \(in Danish\)](#).

- The Board of External Examiners submits a yearly report ([see here, in Danish](#)) to the Study Board and Head of Studies evaluating the results of and progress in the exams attended by external examiners.
- The Head of Studies summarises an Annual Educational Statement on the basis of the above-mentioned evaluations and reports, exam results, admission and attrition statistics etc. ([see procedural description \[in Danish\]](#)) and including assessment of the research basis of the disciplinary teaching. This is discussed and commented on by the Study Board, the VetSchool Board and the Employer Panel, and then submitted to the Dean. The Rector receives a Dean's summary of the statement, which is [published on the faculty website \(in Danish\)](#).
- Every sixth year (next due in 2021), the Head of Studies submits an expanded Educational Report, including e.g. involvement of external veterinary experts and external students ([see procedural description \[in Danish\]](#)).
- EAEVE visitation every seventh year.
- National accreditation every sixth year.

Academic years*	A	B	C	D	E	F	G	H
Year 1	312	0	69	121	183	0	25	709
Year 2	257	6	180	230	0	10	18	701
Year 3♦	336	0	325	93	102	20	31	908
Year 4#	265	6	154	104	48	414	18	1009
Year 5§	16	6	179	0	0	472	5	678
Year 6♣	0	0	809	0	0	0	16	825
Sum	1186	18	1717	548	333	916	113	4830

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total.

* The academic year is divided into four quarters, i.e. Blocks 1, 2, 3 and 4. Year 6 consists only of Blocks 1 and 2. ♦ Includes 10 ECTS BSc thesis work; # Includes four (i.e. SVEK13002, 13006, 13043, and 13044) of the six core rotation courses offered in Blocks 3 & 4 in Year 4 and Blocks 1 & 2 in Year 5; § Includes two (SVEK13023 and SVEK13008) of the six core rotation courses offered in Blocks 3 & 4 in Year 4 and Blocks 1 & 2 in Year 5, but does not include the 26.5 ECTS of the restricted elective tracking courses offered in Blocks 3 & 4 in Year 5 or 6 (all students must select one of the six tracks). ♣ Includes 30 ECTS MSc thesis work.

Basic Subjects	A	B	C	D	E	F	G	H
<i>Medical physics</i>	10	0	0	0	0	0	0	10
<i>Chemistry (inorganic and organic sections)</i>	27	0	0	36	0	0	3	66
<i>Animal biology, zoology and cell biology</i>	35	0	6	9	6	0	3	59
<i>Feed plant biology and toxic plants</i>	4	0	2	0	0	0	0	6
<i>Biomedical statistics</i>	19	0	0	36	0	0	3	58
Basic Veterinary Sciences								
<i>Anatomy, histology and embryology</i>	101	0	6	18	144	0	4	273
<i>Physiology</i>	91	0	8	0	39	0	4	142
<i>Biochemistry</i>	19	0	0	20	0	0	3	42
<i>General and molecular genetics</i>	26	0	14	27	0	0	2	69

<i>Pharmacology, pharmacy and pharmacotherapy</i>	60	0	80	0	0	1	3	144
<i>Pathology</i>	26	0	11	24	0	0	2	63
<i>Toxicology</i>	13	0	18	0	0	0	1	32
<i>Parasitology</i>	18	2	4	30	0	0	1	55
<i>Microbiology</i>	37	4	19	57	0	0	2	119
<i>Immunology</i>	25	0	11	23	0	0	2	61
<i>Epidemiology</i>	12	0	0	24	0	0	2	38
<i>Information literacy and data management #</i>	5	0	710	3	0	0	5	723
<i>Professional ethics and communication §</i>	37	4	402	5	0	8	21	477
<i>Animal health economics and practice</i>	2	0	0	0	0	4	0	6
<i>Animal ethology</i>	27	0	10	20	0	0	4	61
<i>Animal welfare</i>	11	0	50	3	1	0	4	69
<i>Animal nutrition</i>	39	0	0	20	0	0	6	65
<i>Clinical Sciences</i>								
<i>Obstetrics, reproduction and reproductive disorders</i>	28	0	6	0	0	92	2	128
<i>Diagnostic pathology</i>	90	0	59	32	88	6	5	279
<i>Medicine</i>	144	1	51	2	4	34	7	242
<i>Surgery</i>	63	1	51	0	20	5	5	145
<i>Anaesthesiology</i>	18	2	6	0	1	21	1	48
<i>Clinical practical training in common animal species</i>	4	0	2	9	1	479	4	499
<i>Preventive medicine</i>	17	0	10	2	1	0	0	30
<i>Diagnostic imaging</i>	8	0	65	0	9	104	1	187
<i>Therapy in common animal species</i>	43	0	29	1	1	32	2	107
<i>Propaedeutics of common animal species</i>	10	4	0	20	4	94	1	133
<i>Animal Production</i>								
<i>Animal Production, including breeding,</i>	26	0	0	20	2	0	3	51
<i>Herd health management</i>	6	0	0	5	1	0	0	12
<i>Food Safety and Quality, Veterinary Public Health and One Health Concept</i>								
<i>Veterinary legislation including official controls</i>	35	0	58	31	1	32	5	162
<i>Control of food, feed and animal by-products</i>	16	0	8	31	10	4	4	73
<i>Zoonoses</i>	11	0	6	10	0	0	0	27
<i>Food hygiene and food microbiology</i>	23	0	12	26	0	0	2	63
<i>Food technology</i>	3	0	2	5	0	0	0	10

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others; H: total

*See [Appendix 3.2](#) for details about which curricular courses contribute to each of the listed EAEVE subject areas

includes an estimated 102 hours of the 278 hours provided for the bachelor thesis (10 ECTS) and an estimated 600 hours of the 825 hours provided for the master thesis (30 ECTS)

§ includes an estimated 162 hours of the 278 hours provided for the bachelor thesis (10 ECTS) and an estimated 209 hours of the 825 hours provided for the master thesis (30 ECTS)

Types	List of clinical rotations (disciplines/species)	Duration (weeks)	Year of programme
Intramural (VTH) - all students	Horses (<i>cf. note 1</i>)	5.5	4 th /5 th
	Production animals incl. herd health management (<i>cf. note 2</i>)	6	4 th /5 th
	Companion Animals (<i>cf. note 3</i>)	5.5	4 th /5 th
	Paraclinics (clinical chemistry, pathology & microbiology) (<i>cf. note 4</i>)	1	4 th /5 th
Ambulatory clinics - all students	Companion Animals (<i>cf. note 5</i>)	2	4 th /5 th
	Large Animals (<i>cf. note 6</i>)	0	4 th /5 th
FSQ & VPH - all students	Meat Inspection (<i>cf. note 7</i>)	0.6 (3 days)	4 th /5 th
	Hygiene Inspection (<i>cf. note 7</i>)	0.4 (2 days)	4 th /5 th
Electives (tracking courses) - all students must choose one of the tracking courses	Horse clinics (including mobile practice; <i>cf. note 8</i>)	14	5 th /6 th
	Advanced Companion Animal (<i>cf. note 9</i>)	13	5 th /6 th
	Herd Health (<i>cf. note 10</i>)	2.5 (5.5)	5 th
	Biomedicine (<i>cf. note 11</i>)	1.5	5 th
	One Health (<i>cf. note 12</i>)	0 (3)	5 th
	Alternative (international)	variable, max. 14	5 th /6 th
Others (specify)	Mink Health and Diseases (elective course, <i>cf. Note 10</i>)		5 th

* Core clinical rotations take place during the courses General Clinical Practice - Companion Animals, General Clinical Practice - Large Animals, Veterinary Imaging, Acute Medicine, Obstetrics, Intensive Therapy and Clinical Anaesthesiology, Practical Herd Health Management and Meat Inspection, and Veterinary Paraclinics.

(1) Includes 2 weeks medicine + 2 weeks surgery at VTH, including daily ambulatory horse patients (first-opinion cases) for the General Clinical Practice, Large Animal core course; 1 week of acute medicine and clinical obstetrics, including 3 evening/night duties (2 weeks split between horses and production animals) for the Acute Medicine, Obstetrics, Intensive Therapy and Clinical Anaesthesiology core rotation course, plus 2.5 days for the Veterinary Imaging core rotation course.

(2) Includes 3 weeks for the General Clinical Practice, Large Animal core rotation & 2 weeks of supervised teaching at farms for the Practical Herd Health and Meat Inspection course, plus 2 weeks of acute medicine and clinical obstetrics (including production horses) for the Acute Medicine, Obstetrics, Intensive Therapy and Clinical Anaesthesiology core clinical course, including 3 evening/night duties.

(3) Includes 2 weeks of general surgery for the General Clinical Practice, Companion Animal core clinical course, 1 week of acute medicine and intensive therapy, including 5 night/evening duties & 1 week of clinical anaesthesiology for the Acute Medicine, Obstetrics, Intensive Therapy and Clinical Anaesthesiology core rotation course, plus 1.5 weeks for the Veterinary Imaging core rotation course.

(4) Includes 1 week of hands-on paraclinical exercises (e.g. clinical pathology and microbiology) for the Veterinary Paraclinics core rotation course.

(5) Includes 2 weeks of ambulatory clinics for the General Clinical Practice, Companion Animals core clinical course.

(6) During rotations at VTH-LA for the General Clinical Practice - Large Animals, students participate in diagnosis and treatment of first-opinion horse cases entering and leaving the hospital the same day.

(7) Includes one afternoon of intramural practical training in pathoanatomical meat inspection diagnosis on abattoir material, 2 days of supervised meat-inspection on pigs and cattle at the teaching abattoirs (pigs) at Zealand Business College (ZBC) and at Slangerup private abattoir (cattle), 2 days of hygiene inspection and audit at the meat production facilities and retail store at ZBC and half day of supervised ante-mortem inspection at Danish Crown Aalborg cattle abattoir.

(8) Includes 4 weeks of medicine, 4 weeks of surgery, 2 weeks of reproduction, 1 week of emergency medicine and therapy and 3 weeks of ambulatory practice. The course also includes 3 weeks of EPT.

(9) Includes internal rotations relating to internal medicine, surgery, emergency medicine, oncology, neurology, cardiology, clinical nutrition, anaesthesiology, imaging and clinical pathology. The tracking course also includes 3 weeks of EPT.

(10) Includes 2 days on lameness, 3 days on reproduction, 0.5 day on feeding, 2 statistical analyses of herd data, 4 days on

(clinical) communication as a herd health advisor. This course also includes 6.5 weeks of supervised project work, where students perform a complete herd health management report of a dairy cattle farm or pig production farm, including herd health visits to the farm, collection and analyses of herd health data, and a written report, with a final seconded advisory service to the farmer. Moreover, the course includes 3-4 weeks of EPT or a 3-week intensive supervised course on mink herd health management. (11) Includes 1.5 weeks of laboratory animal handling, incl. experimental surgical procedures and clinical pathology on laboratory animals, i.e. rodents and pigs, leading to FELASA function ABD lab animal certification (according to Directive 2010/63 EU). (12) Includes 3-4 weeks of elective EPT or participation in a One-Health-related research project.

Table 3.1.4. Curriculum hours taken as electives for each student

<i>Elective subjects*</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
<i>Herd Health Management and Veterinary Public Health (5 ECTS)</i>	7	35	75	0	0	0	21	138
<i>One-Health track (21.5 ECTS; see 1)</i>	27	64	170	150	0	0	131	542
<i>Herd Health Management track (21.5 ECT; see 1)</i>	2	25	449	17	0	30	68	591
<i>Advanced Companion Animal track (26.5 ECTS, see 2)</i>	0	0	0	0	0	515	0	0
<i>Horse Clinic track (26.5 ECTS, see 2)</i>	0	48	0	44	0	460	11	563
<i>Biomedicine track (26.5 ECTS)</i>	139	40	222	50	0	35	25	511
<i>Alternative (international) track (26.5 ECTS, see 3)</i>	<i>variable</i>	<i>variable</i>	<i>variable</i>	<i>variable</i>	<i>variable</i>	<i>variable</i>	<i>variable</i>	<i>NA</i>

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others; H: total.

**All students must choose one of the tracking courses in Year 5, Blocks-3-4 or Year 6, Blocks 1-2. Students following the One Health and Herd Health Management tracks must pass the Herd Health Management & Veterinary Public Health course prior to enrolling in the final tracking course.*

1: Students may select 3-4 weeks of EPT as part of the track; 2: 3-4 weeks of EPT is a mandatory aspect of the tracks; 3: Includes an international veterinary internship or clinical rotation, a veterinary externship or project at a private organisation/practice (4.5 or 9 weeks of EPT) under faculty supervision and/or elective national or international veterinary courses at Master's level including summer clinics at the VTHs of the Establishment.

Table 3.1.5. Optional courses proposed to students (not compulsory)

<i>Course name</i>	<i>No. of hours</i>							
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>G</i>	<i>H</i>
<i>Mindfulness for students at SUND</i>		8	64					72
<i>Workshop on study techniques</i>		3						3
<i>Workshop on literature searches for veterinary BSc students (Royal Danish Library, Frederiksberg)</i>		3						3
<i>Workshop on literature searches for vet. MSc students (Royal Danish Library, Frederiksberg)</i>		3.5						3.5
<i>Mendeley for all students at SCIENCE and SUND</i>		2						2
<i>Tutorial on critical academic approaches to source materials (in Danish: Tutorial i kildekritik)</i>		1						1

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk based work, E: non-clinical animal work; F: clinical animal work; G: others; H: total

For more workshops, see: [Copenhagen University Library / Health Sciences](#)

Description of the core clinical exercises/practicals/seminars prior to the start of the clinical rotations Most theoretical and practical propaedeutic teaching introducing students to clinical work takes place within the final year of the BSc programme and the first semester of the MSc programme. However, some core clinical exercises/practicals/seminars are integrated into the clinical courses (see below).

Practical post-mortem techniques (including biosecurity measures) and diagnosis are taught during the final BSc year in [Special Pathology and Poultry Diseases \(SPPD\) - Theory](#) and [SPPD - Practicals](#), where groups of maximum 15 students work through a six half-day and a three half-day domestic mammal post-mortem module, respectively, supervised by two teachers, and in groups of maximum 30 students through a four-day and a two-day poultry post-mortem module, respectively, supervised by two teachers. Furthermore, students participate in two groups of 90 in morning or afternoon practical pathology demonstrations and exercises on abattoir and other post-mortem specimens. Students rotate between specimens that are afterwards explained in plenum.

Large animal handling, clinical anatomy, principles of hoof care and basic lameness examination and orthopaedics are taught in [Basic Clinical Theory - Large Animals](#) (sixth BSc semester course) during a one-week practical module through which students rotate in groups of maximum 24 under the supervision of 3-4 teachers.

Practical training in handling of dogs and cats, biosecurity, clinical examination (including problem-oriented medical recording, test sampling and some basic laboratory diagnostics), injection techniques, handling of medication, basic anaesthesia and analgesia, aseptic technique and handling of aseptic failures, suturing techniques and basic surgical procedures are taught in the two practical rotation modules on Clinical Examination Methodology (CEM, 26 half days) and Basic Surgical Techniques (BST, 19 half days) shared by the first MSc semester courses [Medicine, Surgery & Reproduction \(MSR\) – Companion Animals](#) and [MSR – Large Animals](#). Supervised by 2-3 teachers, students rotate in groups of 36 through the different practical sessions at the Skills Labs at VTH-CA and VTH-LA, and are subdivided into small teams of 3-5 students around the teaching stations and teaching animals (dogs, cats, horses, ruminants and pigs)³². The final training on basic surgical procedures (including anaesthesia) is done on research pigs after training in the skills lab.

Specific paraclinical and clinical training modules using simulators, phantoms, cadavers or clinical case materials are incorporated into the core clinical rotations in the 2nd and 3rd MSc semesters, i.e.:

- Radiography/radiology and ultrasound exercises in the [Veterinary Imaging](#) rotation
- Clinical pathology, haematology and microbiology laboratory exercises in the [Veterinary Paraclinics](#) rotation
- Exercises on resuscitation, catheterisation, intubation, anaesthesia and bovine foetotomy in the [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#) rotation
- Gynaecological examination of (abattoir) cattle in the [General Clinical Practice, Large Animals](#) rotation
- Dentistry exercises in the [General Clinical Practice, Companion Animals](#) rotation.

For student group sizes and numbers of students per teacher see below. For number of animals used for the exercises, see section 5.1.

Core clinical rotations and emergency services are organised as follows:

³² Teaching animals are healthy animals that are approved for educational use by The Animal Experiment Inspectorate (see: <https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/The-Animal-Experiments-Inspectorate/Pages/default.aspx>)

- [General Clinical Practice, Large Animals](#): Internal medicine (2 weeks), Surgery (2 weeks), Production animal clinics (2 weeks), Equine reproduction (1 day at the VTH), Bovine reproduction (4 days of teaching at the Danish Crown abattoir, Aalborg) and EPT (4 days at a private large animal practice). Maximum 12 students supervised by one teacher or 23 supervised by two teachers with 3-4 students per patient at VTH and extramural teaching at farms.
- [General Clinical Practice, Companion Animals](#): VTH introduction week (1 week, all 45 students), General medicine – ambulatory clinic (2 weeks), General surgery (2 weeks), Clinical case work (12 cases representing different common diseases), EPT (2 weeks at a private companion animal clinic). Maximum 12 students supervised by two teachers with one or two students per patient at VTH.
- [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#): Introduction seminar, practical skills and wet lab training in resuscitation, catheterisation, intubation and anaesthesia (2.5 days, all 45 students), Emergency and critical care - companion animals (1 week including evening and night shifts, one or two students per shift); Anaesthesiology, companion animals (1 week, maximum six students with one or two per animal); Emergency and critical care - large animals (two 16-hour evening/night shifts + one Saturday or Sunday day shift, two or three students per shift); Large animal obstetrical training, including foetotomy on euthanised calves and caesarean sections on late-term pregnant cows and sows. Groups of up to four students perform foetotomy twice on two consecutive (half-)days (two calves/four students) and groups of up to 12 students perform caesarean sections on both a cow and a sow (one cow + one sow/12 students). One teacher supervises each training session (12 students).
- [Practical Herd Health Management](#) and Meat Inspection.
 - “Pig week” comprising extramural teaching at two pig farms and including farm visit preparation, biosecurity measures, problem-oriented single animal examination, herd examination, test sampling, tentative herd diagnosis, therapy and suggestion of preventive measures (2 days), post-mortem examination of sampled dead pigs (1 half day), farm data analysis, reporting and presentations (2.5 days).
 - “Cattle week” comprising extramural teaching at four dairy cattle farms and including biosecurity measures, problem-oriented individual animal and herd examinations (assessment of condition, lameness and udder health of lactating cows, post-partum cows, dry cows and calves/heifers), interviews with farmers and farm workers, farm data analysis, test sampling, tentative herd diagnosis, therapy and preventive measures (3 days) with subsequent casework, report writing and presentations.
 - For both “cattle week” and “pig week”, a maximum of 23 students are split into groups of three to four students who work through the planned on-farm clinical exercises, perform the post mortems and prepare the various documents, reports and presentations on campus. Teams are supervised by two to three teachers at pig farms, three teachers at cattle farms and one teacher for the work done on campus.
- [Veterinary Imaging](#): Introduction seminar (radiation safety and physical and basic principles of the diagnostic modalities; 2.5 days, 45 students); Radiographic anatomy and diagnostic imaging (6 days, seminars, group work and practical exercises, 23 students); Companion animal and equine radiography and ultrasonography (6 days, practical exercises on patients, cadavers, dummies and live dogs, 12 students); Case work (5 days, 23 students).

One teacher supervises all rotation sessions. In practical exercises, students are divided into smaller groups of three to four students per patient/animal/dummy.

- [Veterinary Paraclinics](#): clinical pathology including haematology (2 weeks), clinical microbiology (bacteriology and parasitology; 2 weeks). Both modules consist of a mixture of lectures, practical laboratory-based exercises, theoretical exercises, case-solving and joint discussions.

All students (maximum 45) participate in the sessions and are supervised by one or two teachers per session. Students are divided into subgroups of two to four students in practical sessions.

In all described practical modules/sessions, students are responsible for performing the various clinical and paraclinical procedures and exercises by themselves (hands-on) under the supervision of the teacher(s). This includes client interviews and communication, clinical examinations, medical recording (in the medical recording system at VTH or on paper at farms), diagnostic test procedures, basic surgical and anaesthetic procedures, treatments, case presentations and farm reports.

Description of the teaching in abattoirs and on premises for the production, processing, distribution/sale or consumption of food of animal origin Extramural teaching in abattoirs and on premises for the production, processing, distribution/sale of food of animal origin takes place within the core rotation courses [Practical Herd Health Management and Meat Inspection](#) and [General Clinical Practice, Large Animals](#). The teaching takes place at Zealand Business College (ZBC), at a small private abattoir in Slangerup and at the Danish Crown cattle abattoir in Aalborg. The teaching consists of:

- Practical meat inspection (pigs) at the ZBC pig abattoir; 1 day, max. 23 students divided into teams of three to four students supervised by two teachers.
- Practical meat inspection (cattle) at a private abattoir; 1 half day, maximum 12 students supervised by one teacher.
- Practical hygiene inspection and audit of HACCP/GMP and food safety QA systems at an abattoir, meat processing and butcher shop premises at ZBC with subsequent report writing; 2 days, max. 23 students divided into teams of three to four students supervised by two teachers.
- Ante-mortem inspection of cattle at the Danish Crown abattoir and a review of HACCP points and animal welfare issues relating to the slaughter process; 1 half day, maximum 12 students supervised by one teacher.

For all described practical modules/sessions, students are responsible for performing the paraclinical procedures and exercises themselves (hands-on) under the supervision of the teacher(s).

Elective selection procedures for students The elective component of the veterinary programme consists of and is restricted to the tracking programmes (26.5 ECTS) of the MSc programme (see Table 3.14). The elective tracks are: [Companion Animal Track](#) (≤ 60 students), [Equine Clinic Track](#) (≤ 25 students), [Herd Health Management](#) (≤ 20 students), [One Health](#) (≤ 20 students), [Biomedicine](#) (≤ 35 students) and Alternative track, including international exchange (no maximum capacity, for details, see [KU intranet](#)).

Participation in a track is mandatory. Upon application for enrolment, students prioritise their tracking requests. Applicants are selected on the basis of their BSc programme Grade Point

Average. Students selecting the Alternative track compile their tracking programme with relevant MSc-level course(s), clinical rotation(s) and EPT, of which 80% must be offered/supervised by EAEVE- or AVMA-accredited Establishments. The Alternative tracking programme must be approved by the Head of Studies prior to its start.

Procedures used to ascertain the achievement of each core practical/clinical activity For the BSc programme, active participation in practical preclinical activities (e.g. the large animal handling module in [Basic Clinical Theory - Large Animals](#)) is generally mandatory (minimum of 80% attendance), and the students' active participation must be approved by the course organiser. Some courses also require the approval of ongoing formative tests and the submission of assignments, e.g. [Infectious Microbiology](#) and [Immunology, General Pathology and Pathophysiology](#). An exemption from the rule of attendance at practical exercises is [Special Pathology and Poultry Diseases - Practicals](#), which has a practical summative exam aligned with the practical intended learning goals of the course.

In the MSc programme, active participation in practical/clinical activities is mandatory and must be approved by the course organiser in order to obtain the Course Certificate³³. Active participation is approved on the basis of student's attendance (minimum 80%) in all practical/clinical courses (e.g. [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#)), including approval of submitted medical records and passing a basic surgical skills test (OSCE-like exam) in the Skills Lab ([Medicine, Surgery and Reproduction \(MSR\) – Companion Animals](#) and [MSR – Large Animals](#)); submitted assignments and ongoing formative e-tests and approval of practical assignments (e.g. [Veterinary Imaging, Veterinary Paraclinics](#)), direct observation of practical skills, approval of logbooks and EPT reports/case-logs ([General Clinical Practice, Large Animals, General Clinical Practice, Companion Animals, Equine Clinic Track, Advanced Companion Animal Track](#)) or approval of portfolios including case notes, logbooks, course reports ([Practical Herd Health Management and Meat Inspection](#)) or approval of course project reports ([Herd Health Management Track](#)). See also Standard 8 for more details about assessment methods.

3.2 Each study programme provided by the Establishment must be competency-based and designed so that it meets the objectives set for it, including the intended learning outcomes. The qualification resulting from a programme must be clearly specified and communicated and must refer to the correct level of the national qualifications framework for higher education and, consequently, to the Framework for Qualifications of the European Higher Education Area.

The Establishment must provide proof of a QA system that promotes and monitors the presence of an academic environment highly conducive to learning including self-learning. Details of the type, provision and updating of appropriate learning opportunities for the students must be clearly described, as well as the involvement of students.

The Establishment must also describe how it encourages and prepares students for self-learning and lifelong learning.

How the Establishment ensures that the study programmes meet the objectives The aims of the programme and of the individual courses are supported by intended learning outcomes, i.e. competencies (knowledge, skills and attitudes) embracing the EAEVE Day One and additional

³³ In addition to the Course Certificate, the majority of MSc courses also require students to pass a summative written course exam. The Equine Clinic Track runs a classical practical clinical exam.

competencies decided by the Establishment on the basis of Danish societal needs. The BSc and MSc curricula, including the respective intended learning goals (competences) are published on the SUND website (see §§ 2 in the [2009 BSc curriculum](#) and [2009 MSc curriculum](#) at www.sund.ku.dk in Danish, or [Appendix 3.1](#) in English).

The intended learning goals of specific courses specifying and feeding into the general curricular learning outcomes are listed in the respective course syllabi. In terms of the course learning goals, the assessment criteria of the course exam are listed in alignment with the specific exam format of the course. The course syllabi are published on the [UCPH course database](#)³⁴.

The general academic qualifications obtained through the programme are aligned with the national requirements for higher education expressed in the Danish University Act³⁵, Ministerial Orders on BSc and MSc programmes^{36,37} and the Danish Act on Accreditation of Higher Educational Institutions³⁸.

In accordance with the [UCPH QA procedures](#), learning outcomes of the veterinary programme are evaluated every third year through graduate surveys (SUND [2012 and 2015 graduate survey reports](#) and [2017 graduate survey report](#), in Danish). Since 2015, the VetSchool has provided surveys for veterinary employers in conjunction with the graduate surveys, asking employers their opinion on how the graduates fulfil the expected Day One competences (see the SUND faculty webpage with links to [2015 report](#) and [2018 report](#)).

Promoting an academic environment conducive to learning The [UCPH QA system](#) is based on [Standards and Guidelines for Quality Assurance in the European Higher Education Area](#) and the [Danish Accreditation Institution's guidelines](#). The QA system is therefore organised to ensure, promote and monitor the presence of an academic environment highly conducive to learning, including self-learning at university, faculty and programme levels (detailed in subsection 3.1.3). The present strategy of the University of Copenhagen, [“Talent and Collaboration – Strategy 2023”](#), as well as the [SUND strategy](#), which reflects the general university strategy, aim to enhance the quality of learning e.g. by *“further developing teaching and didactic competencies of teaching staff, maintaining a good culture, solid frameworks and skilled, engaged and competent students, employees and managers and attracting talented researchers and students”*.

All teaching staff including PhD students are offered pedagogical education and courses. Formal pedagogical education or similar proven educational competencies are required and specifically assessed when recruiting for faculty positions. Furthermore, academic teaching staff must keep a teaching portfolio, which forms the basis for educational discussion at the annual appraisal interviews. More information on the UCPH guidelines that aim to promote and optimise the learning environment can be found at <https://uddannelseskvalitet.ku.dk/quality-assurance-of-study-programmes/university-guidelines/pedagogic-basis-and-guidelines/>.

[Study environment surveys](#) (UMV - Undervisningsmiljøvurdering) are performed every third year as a central element in the efforts to optimise the framework for teaching and learning at UCPH. It involves identifying and resolving any study environment challenges in a sensible,

³⁴ For examples of MSc course descriptions in English, see the syllabi for [Veterinary Imaging](#), [Veterinary Paraclinics](#), [One-Health](#) and [Biomedicine](#).

³⁵ Consolidation Act (LBK) no. 172 of 27/02/2018, see [link](#) on Legal Information website.

³⁶ Ministerial Order (BEK) no. 1328 of 15/11/2016 (“Higher Education Order”), see [link](#) on Legal Information website.

³⁷ Ministerial Order (BEK) no. 1062, 30/06/2016 (“Higher Exam Order”), see [link](#) on Legal Information website.

³⁸ Consolidation Act (LBK) no. 173 of 02/03/2018, see [link](#) on Legal Information website.

constructive and prioritised way by gathering students' assessments of the study environment ([2019 UMV survey for veterinary medicine / SUND](#)).

Mandatory [workplace risk assessments](#) are carried out by employees every third year (at minimum) in order to ensure and promote a healthy working environment. It comprises questionnaires about both the physical and [psychological working environment](#), including the conduciveness of the environment in terms of teaching and research.

How the Establishment encourages and prepares students for self-learning and lifelong learning

Lifelong learning is part of the educational strategy and aims of UCPH and since 2009, it has been part of the learning goals of the veterinary programme as specified in the [MSc curriculum](#). It is supported by a variety of self-learning activities for students, e.g. case work, projects and theses work, including peer-feedback sessions and academic self-reflection papers.

Students are introduced to project work in the first semester of the BSc programme in [Veterinary Ethics and Philosophy of Science](#). This is continued in Microbial Food Safety in the fourth semester and supported with a BSc thesis in the format of a scientific review article on a self-chosen topic within the scientific BSc areas. Peer feedback is used in Veterinary Pharmacology & Toxicology in relation to written e-learning assignments.

In the mandatory part of the MSc programme, clinical case assignments are integrated into the [General Clinical Practice, Companion Animals, Veterinary Imaging](#)³⁹ and [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#) courses, where students have to find relevant scientific knowledge about diagnosis, treatment and/or prophylaxis for a number of common companion animal disorders in order to solve the cases. In the former two courses, cases must be presented to fellow students, who under the supervision of the teacher are asked to give peer feedback. Self-reflection assignments during the internal clinical rotation, including the 2 weeks of EPT for [General Clinical Practice, Companion Animals](#) are used to train students to identify gaps in their knowledge and plan how to overcome these.

Similarly, activities supporting students' life-long learning are included in the elective [Equine Clinic Track](#) and [Advanced Companion Animal Track](#). These and the other tracking courses [Herd Health Management](#), [One Health](#) and [Biomedicine](#) also include major projects related to present veterinary challenges within their respective professional fields. This kind of study activity is promoted in recognition that the adoption of static fact-based learning is completely inadequate in a rapidly changing veterinary world.

The veterinary programme is finalised by a MSc thesis (30 ECTS), which must include experimental work or original analytic work on raw data.

3.3 Programme learning outcomes must:

- **ensure the effective alignment of all content, teaching, learning and assessment activities of the degree programme to form a cohesive framework**
- **include a description of Day One Competences**
- **form the basis for explicit statement of the objectives and learning outcomes of individual units of study**
- **be communicated to staff and students**

³⁹ For details see McEvoy FJ, Shen NW, Nielsen DH, Buelund LE, Holm P, 2017. Online radiology reporting with peer review as a learning and feedback tool in Radiology; Implementation, Validity, and Student Impressions. *J. Digit Imaging*, 30, 78. <https://doi.org/10.1007/s10278-016-9905-x>

- **be regularly reviewed, managed and updated to ensure they remain relevant, adequate and are effectively achieved.**

The educational aims of the Establishment and the general strategy for the design, resources and management of the curriculum are described above.

The learning outcomes of the 2009 BSc and MSc programmes, including the specific learning goals of the mandatory programme courses were aligned with the previous Day One Competences and recognised as such during the EAEVE visitation in 2010. The programme and its intended learning outcomes were assessed at a VetSchool workshop that included teachers and students on 12 March 2018. It was concluded that the learning outcomes were aligned with the Day One Competences (see below).

Changes to learning goals of curricula and programme courses must be approved by the Study Board, who also ensure that they will not compromise the aim of programmes, which in § 1 for the BSc programme states: *“to contribute to fulfil the professional requirements in the veterinary disciplines described by the European Association of Establishments for Veterinary Education (EAEVE)”* and for the MSc programme: *“To provide students with the necessary qualifications to fulfil the academic requirements of the European Association of Veterinary Education (EAEVE) described in the veterinary medicine training”*.

See [Appendix 3.3](#) for details about how the veterinary courses of BSc and MSc curricula contribute to the ESEVT Day One Competences. See also the description in the previous section of the curricular “Plan-Do-Check-Act” cycles, ensuring a cohesive veterinary programme curriculum devoid of overlaps, redundancies, etc. in section 3.1.

How the learning outcomes are decided, communicated to staff, students and stakeholders, assessed and revised The learning outcomes of an educational programme at UCPH are initially set in the context of a curriculum establishment or renewal process. The [UCPH QA system](#) prescribes [guidelines for programme evaluation](#), which are adjusted by SUND (see [Procedures for programme management](#)). The QA system includes specific procedures for the development of new study programmes, including establishing learning outcomes at both [UCHP](#) and [SUND levels](#).

The described QA “Plan-Do-Check-Act” cycles in Section 3.1. aim not only to ensure a cohesive veterinary programme without redundancies and overlaps, but also to establish that learning goals are up-to-date and aligned with course content and intended curriculum outcomes.

The programme-related QA procedures are governed by the Study Board and managed by the Head of Studies with support from the Department of Student Affairs, SUND. All changes to the curricular learning outcomes are discussed within the veterinary departments and their respective teaching committees, the Board of VetSchool and the Employer Panel, before a decision is made by the Study Board, with final approval by the Dean. Major changes to the curriculum are also sent to external hearings at the Danish Veterinary Association and the Danish Veterinary and Food Administration.

Changes to the intended learning goals of courses are finally discussed and decided by the Study Board. If the changes do not affect the general learning outcomes and curriculum framework, the changes will be effectuated after approval by the Dean, without consulting external stakeholders.

The learning outcomes of the 2009 BSc and MSc curricula were decided after a curriculum-revision process as described above, involving students, academic staff and external stakeholders, e.g. the

Danish Veterinary and Food Administration and the Danish Veterinary Association. The 2009 curricula were based on the earlier 2005 BSc and MSc curricula⁴⁰.

All programme learning outcomes, their alignment with the ESEVT Day One Competences, and present societal requirements were recently reviewed as part of the ongoing curriculum-revision process at an educational workshop for teachers and students on 12 March 2018, at meetings within the veterinary departments and their teaching committees, at the Board of the VetSchool and the Employer Panel. On this basis, the Study Board decided that the present learning goals were adequately aligned with the ESEVT Day One Competences to form the basis for the future curriculum expected to start in 2022 (see [minutes from Study Board meeting no. 153, 27 June 2018](#)).

Minutes from the Study Board meetings (excluding personal/confidential information) are published on the SUND website (see webpages in Danish for the Veterinary Study Board [here](#) with a direct hyperlink to the [Minutes](#)). Units (e.g. the exams office, teaching committees) and persons (e.g. heads of departments, course organisers, students) directly influenced by a decision are informed directly by mail.

Detailed descriptions of the procedures for minor course revisions and curricula and major course changes (including how and when changes are communicated to the internal and external stakeholders) are set out on the [SUND QA web pages](#).

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

- **determine the pedagogical basis, design, delivery methods and assessment methods of the curriculum**
- **oversee QA of the curriculum, particularly gathering, evaluating, making changes and responding to feedback from stakeholders, peer reviewers and external assessors, and data from examination/assessment outcomes**
- **perform an ongoing and periodic review of the curriculum at least every 7 years by involving staff, students and stakeholders; these reviews must lead to continuous improvement. Any action taken or planned as a result of such a review must be communicated to all those concerned**
- **identify and meet training needs for all types of staff, maintaining and enhancing their competence for the ongoing curriculum development.**

The constituted committee structure and the delegation of educational responsibilities to fora and agents (i.e. the Study Board, the teaching committees, department heads and course organisers) are described and illustrated on the SUND webpage on [Quality of Education](#). This includes the communication lines and empowered reporting lines. The procedures and how and by whom the core curriculum is decided, communicated, implemented etc. correspond to the description regarding learning outcomes described above in Section 3.3.

The responsibilities of these fora and agents cover all requirements of Standard 3.4 as listed in the Section headline. For details, see the function descriptions of the mentioned fora by clicking on their names below:

⁴⁰ For details on the curriculum-revision process, see Jensen AL, 2006. The new veterinary curriculum at the Royal Veterinary and Agricultural University, Denmark. *J Vet Med Educ*, 33, 209–213.

- The [Course Organiser](#) is responsible for the teaching and assessment of students within the curriculum and syllabus framework decided by the Study Board and Dean. Specific names can be found in the relevant course descriptions (syllabi) on <https://kurser.ku.dk/>
- The [Teaching Committees](#) e.g. advise teachers and heads of department on teaching matters and ensure educational QA at the department level. The committee comprises 50% teachers and 50% students. A list of members of the Teaching Committee at D-VAS is available [here](#).
- The Heads of Departments ([function description in Danish](#)) are like CEOs responsible for e.g. the academic and pedagogical qualifications of the teachers who teach and assess students on the courses (Section 1.2 lists the current heads of departments).
- [The Board of the VetSchool](#) is chaired by the School Director, and constitutes the formal common forum of the management and educational divisions of SUND. The management division is represented by the heads of the departments. The educational division is represented by the Chair and Vice-Chair of the Study Board, the Chairs of the teaching committees, the Head of Studies, and the Chairs of the student organisations (see [VetSchool home page](#)).
- The [Head of Studies](#) works with the Study Board and the Study Affairs department to manage the veterinary programme, including student affairs. He/she refers to the Vice-Dean of Education. See Section 1.2. for details of the current Head of Veterinary Studies.
- [The Study Board for Veterinary Medicine and Animal Science](#) has the authority to make decisions in relation to the veterinary programme, including relevant student affairs. The Study Board comprises six faculty members elected by faculty members of the veterinary department and six student members elected by the students. The Chairman of the Board and the Vice-Chairman are elected by Study Board members. The list of members of Veterinary Medicine and Animal Science can be found on the SUND website, [click here](#).
- [The Employer panel for Veterinary and Animal Science](#) is an advisory board that serves as a forum for systematic dialogue between the VetSchool and those who employ its graduates about the curriculum and its competence profile, employers' wishes and requirements for the graduates' competences, developments in the labour market, etc. The external members of the panel are competent and committed individuals from veterinary, agricultural, food and biomedical companies, organisations and authorities. The Terms of Reference for Employer Panels⁴¹ at SUND is [available here \(in Danish\)](#).

3.5 External Practical Training (EPT) is compulsory training activity organised outside of the Establishment, the student being under the direct supervision of a non-academic person (e.g. a practitioner). EPT cannot replace the core intramural training nor the extramural training under the close supervision of academic staff (e.g. ambulatory clinics, herd health management, practical training in FSQ and VPH).

Since the veterinary degree is a professional qualification with Day One Competences, EPT must complement and strengthen the academic education inter alia by enhancing students' professional knowledge.

External Practical Training is part of the internal course rotations at the mandatory clinical rotation courses [General Clinical Practice, Companion Animals](#) (2 weeks of EPT) and [General Clinical Practice, Large Animals](#) (4 days of EPT). Our EPT aims to enhance students' insight into

⁴¹ The establishment of Employer Panels is stipulated in the [Danish University Act, § 13A](#)

professional communication, practice management and patient material of private companion and large animal practices (cf. the intended learning goals of the respective courses).

Similarly, EPT is a part of the elective courses [Equine Clinic Track](#) (2 weeks) and [Advanced Companion Animal Track](#) (3-4 weeks). Again, learning goals include professional communication and practice management, as well as diagnostics and therapy in private practice.

Within the [Herd Health Management Track](#), students can select a 3-week EPT in a private production animal veterinary practice and at diagnostic laboratories, with the aim of getting solid hands-on experience of production animal practice and diagnostic laboratory work. As part of the [One-Health Track](#), students can select 3 weeks of EPT at a Danish or an international (veterinary) public health institution or organisation, with the aim of obtaining experience of how private and public institutions work in the context of different One Health challenges. At all EPT, students must maintain logbooks or write reports/reflection papers describing their activities. The logbooks/reports are submitted to and approved by the course organiser (see examples of logbooks in [Appendix 8.1](#) and examples of EPT reports in [Appendix 8.2](#)).

Students selecting the Alternative tracking may choose a 4- or 8-week [EPT project course](#) within any veterinary professional field. The student, under supervision, must plan and agree on the professional focus area of the EPT project, including the specific academic requirements for the project report. The report is assessed and marked by the supervisor. The EPT project plan must be approved by the Head of Studies prior to initiation. The general aim of the EPT project courses is to contribute to the professionalisation of the student's competency profile by linking practical professional experience with theoretical academic, evidence-based reflection.

<i>Field of Practice</i>	<i>Minimum duration (weeks)</i>	<i>Year of the programme</i>
Production animals (preclinical)	0	n/a
Companion animals (preclinical)	0	n/a
Production animals (clinical) (cf. note 1)	0.8 (4 days)	4 th (1.5-2.5 year of MSc)
Companion animals (clinical) (cf. note 2)	2	4 th (1.5-2.5 year of MSc)
FSQ & VPH	0	n/a
Others	0	n/a

Notes: (1) the EPT is an integrated part of the large animal core clinical rotation (2) the EPT is an integrated part of the companion animal core clinical rotation.

3.6 The EPT providers must have an agreement with the Establishment and the student (in order to state their respective rights and duties, including insurance matters), provide a standardised evaluation of the performance of the student during their EPT and be allowed to provide feedback to the Establishment on the EPT programme.

There must be a member of the academic staff responsible for the overall supervision of the EPT, including liaison with EPT providers. The Establishment (represented by the course organiser / academic supervisor) supplies an EPT contract that has to be signed by the host and the student (see [Appendix 3.4](#)). In general, the students find their own EPT hosts matching specific professional quality criteria that are set by the course organiser. The contract informs the EPT host of the learning goals for the EPT and what is expected from the host. Upon completion of the EPT period, the host evaluates the student's performance by ticking one of two boxes: "Adequate" or "Less adequate" with the chance to supplement the assessment with a short comment. The student

evaluates the EPT as part of the regular course evaluation scheme at the Establishment. The course organiser reviews hosts' evaluations and students' evaluations.

For EPT project courses for Alternative Tracking students, the project supervisor has responsibilities as "course organiser".

Students and hosts may contact the course organiser/project supervisor at any time during the EPT in case of professional or academic issues. Personal issues (and problems) are handled by the Head of Studies, who has the overall responsibility for all EPT.

Students are fully insured by the practice insurance during EPT.

Name of the academic person(s) responsible for the supervision of the EPT activities

- Overall responsibility: **Peter Holm**, DVM, PhD, PGDiplVetEdu, Associate Professor, Head of Veterinary Studies
- General Clinical Practice, Companion Animals: **Charlotte Reinhard Bjørnvad**, DVM, PhD, DipECVCN, Professor, Chairman of the Study Board for Veterinary Medicine and Animal Science
- General Clinical Practice, Large Animals: **Nynne Capion**, DVM, PhD, Associate Professor
- Advanced Companion Animal Track: **Jørgen Koch**, DVM, PhD, Professor
- Equine Clinic Track: **Rikke Buhl**, DVM, PhD, Professor
- Herd Health Management Track: **Dorte Bay Lastein**, DVM, PhD, Assistant Professor
- One-Health Track: **Anders Dalsgaard**, DVM, PhD, Professor
- EPT project course: Professors (full, associate and assistant) at the Department for Clinical Veterinary Medicine and Department for Veterinary and Animal Sciences

3.7 Students must take responsibility for their own learning during EPT. This includes preparing properly before each placement, keeping a proper record of their experience during EPT by using a logbook provided by the Establishment and evaluating the EPT. Students must be allowed to complain officially and/or anonymously about issues occurring during EPT. The Establishment must have a system of QA to monitor the implementation, progress and then feedback within the EPT activities. For all EPT integrated into regular courses (see section 3.6), the requirements for students in relation to preparation for the EPT, logbook recording and reports, assessment and evaluation activities are posted on the respective course pages on Absalon (UCPH's Canvas learning management system). The course organiser assesses (approved/not approved) the student's EPT performance on the basis of the submitted EPT logbook/ academic reflection paper/ report and EPT host evaluation. The assessment of the EPT performance forms part of the final approval of the students' course performance (i.e. Course Certificate, see Standard 8 for a detailed explanation of the course assessment system).

For the EPT project course offered to Alternative tracking students, the requirements for preparation, recording and assessment of their EPT are published in general terms in the course description and in more specific operational terms on the UCPH intranet (see [here, in Danish](#)). Furthermore, in collaboration with the supervisor, the student prepares a specific project plan including the academic focus of the project and the professional requirements requested of the EPT host. The Head of Studies approves the project plan as a part of an approved Alternative tracking. The supervisor evaluates and grades the EPT report ("passed/not passed"). Students' abstracts of earlier EPT projects can be found [here](#).

Description of the complaint process in place concerning EPT The opportunity to complain and the related procedures are the same as those that apply to regular courses and exams. Specifically, for complaints regarding the assessment of the EPT report, see Section 8.2. Complaints about the supervisors should be directed to the Head of Studies, who together with the relevant Head of Department will take relevant action. Complaints about the EPT host must be directed to the supervisor and the course director, who will direct this to the Head of Studies, and appropriate actions will be taken depending on the nature of the case.

Comments on Standard 3

The programme meets the societal requirements, including the ESEVT Day One Competences. The clinical core rotation system functions very well and allows a steady flow of students into the hospitals throughout the year, hence ensuring the best possible exposure of patient material and utilisation of available teacher resources.

A curriculum-revision process is currently underway. The new BSc and MSc curricula are expected to be implemented in September 2022 and September 2025, respectively. This process was initiated in order to address legal requirements, challenges and inexpediencies within the present curricula and new educational ideas for improvement, summarised as follows:

- Failure to comply with the Education Order's requirement for elective elements in BSc programmes.
- An inadequate vertical relationship between basic veterinary science elements within the BSc programme and the professional clinical/FSQ and VPH elements at MSc programme.
- Fragmentation of learning in the BSc programme driven by a combination of:
 - Many summative course exams, mainly evaluating students' ability to rote-learn disciplinary facts
 - Limited self-study time
 - Few formative and summative assessments with emphasis on scientific analysis, reasoning and synthesis
- An excessive study load in the first semester of the MSc programme, i.e. Medicine, Surgery and Reproduction (MSR), Companion Animals and MSR, Large Animals
- The need for a clearer focus on communication and collaboration skills at start of the BSc programme
- Inclusion of a case week at the end of each semester in order to enhance both the horizontal and vertical alignment within the programmes
- Inclusion of progress testing in order to motivate students and as an educational QA tool
- Earlier student contact with live animals
- More formative assessments and fewer-but-broader summative exams allowing evaluation of students' ability to perform scientific/clinical analysis, reasoning and synthesis

These issues have all been addressed in the present curriculum-revision process.

Suggestions for improvement on Standard 3

None.

Standard 4. Facilities and equipment

4.1 All aspects of the physical facilities must provide an environment conducive to learning, including internet access. The veterinary Establishment must have a clear strategy and programme for maintaining and upgrading its buildings and equipment. Facilities must comply with all relevant legislation including health, safety, biosecurity, accessibility to

people with reduced mobility, and EU animal welfare and care standards. The veterinary curriculum is taught at two campuses: the Frederiksberg Campus and the Taastrup Campus. Frederiksberg Campus houses D-VAS as well as the companion animal part of the D-VCS. Frederiksberg Campus also includes lecture theatres, research laboratories, a university library, staff and departmental offices and the VTH-CA. The Taastrup campus houses the VTH-LA, which includes a teaching unit and the Mobile Practice. The Taastrup campus also includes teaching and research facilities for Large Animal Medicine and Surgery and Reproduction, as well as staff and departmental offices. The distance between Frederiksberg Campus and Taastrup Campus is approximately 18 kilometres. SUND provides shuttle buses for students and staff every weekday: once in the morning, at noon and once in the afternoon. The travelling time is approximately 40 minutes.

Maintaining facilities and equipment Outside areas and buildings are generally serviced by the faculty's and the university's campus services. Daily cleaning is performed by the Faculty's campus service. Specific hospital areas such as stables, cages, operation facilities, etc. are cleaned by trained hospital employees.

Minor building maintenance is done by the Departments' employees, hired staff or the campus service. Each year, a list of more extensive and necessary maintenance is prioritised across the departments and the Faculty before being admitted to the University for a final decision.

Relevant equipment is subject to a service agreement with the provider or company. A continually updated list of needs for replacement or renewal of teaching and hospital infrastructure is reviewed annually. New equipment is usually only obtained when sufficient funding has been secured and only if the equipment contributes to teaching, research and/or hospital activities.

Physical facilities' compliance with all relevant legislation Construction of new buildings and renovation of existing buildings is under the purview of the Campus Service (CAS)⁴² and typically the Government's Building and Property Agency. A local user group including the department management and representatives from the local occupational health and safety groups will initially be involved in the planning process.

Everyday occupational health and safety practice in existing facilities At the Faculty and Departmental levels, the Occupational Health and Safety Organisation (OHS) assures that physical facilities comply with relevant national and international legislation. The OHS at SUND consists of the Faculty OHS Committee (FAMU) and 19 local department OHS Committees with 84 OHS Groups in total, each with a management representative and a staff representative. Furthermore, each department has designated resource persons such as chemical coordinators and ergonomists. The OHS Committee meets regularly, at least four times per year. In addition, the OHS Groups conduct formal inspection of the premises and evacuation rehearsals once per year. Annual checks are conducted for biological safety cabinets, fume hoods, centrifuges, ladders and power tools, and there is a review of chemical storage. Every second year, the University conducts an occupational health and safety audit at each department (see also Standard 3.2 and Standard 9). Every third year, UCPH conducts a university-wide occupational health and safety survey (including students), addressing both physical and psychological aspects. Training in safety contingency programmes is routinely provided for employees and students. [A safety manual on laboratory safety is available here.](#)

⁴² <https://cas.ku.dk/english/>

Biosecurity All employees involved in clinical activities are specifically trained in biosecurity. Veterinary students are taught biosecurity as part of their training before their clinical rotations. Employees are required to wear appropriate working clothes and footwear provided by the Department. Washing/cleaning of work clothes is contracted to an external service provider.

Students are required to wear appropriate work clothes.

Procedures for correct hand hygiene are posted at handwashing stations and hand disinfection material is provided in relevant areas.

With special regard to methicillin-resistant *Staphylococcus aureus* (MRSA), all staff members handling pigs (and therefore all staff members at VTH-LA) have participated in the national hygiene course⁴³.

Overall, the national legislation and recommendations regarding contagious diseases are followed in all procedures at the hospitals.⁴⁴ Patients with suspected or confirmed contagious/zoonotic diseases are isolated in isolation wards. Written procedures are displayed at these wards.

Written procedures related to handling suspected or confirmed contagious/zoonotic diseases are present at both hospitals and in the VETlab. Nosocomial infections are rarely encountered.

Microbiological surveillance is conducted three times per year at the VTH-CA by a swab taken from five or six different places. The swabs are analysed for the presence of MRSA, methicillin-resistant *S. pseudintermedius*, extended-spectrum beta-lactamase producing bacteria and enterococci. At present, these agents have not been detected. At both hospitals, patients suspected of having a zoonotic disease are always examined for the suspected zoonotic agent. Samples are labelled "OBS. ZOONOSE". The appropriate official ministerial agency is also informed when required.

Waste with a potential zoonotic hazard is managed according to current European and Danish legislation. Cadavers from the veterinary teaching hospitals are either sent to the D-VAS for necropsy or disposed of according to national legislation. Disposal of large animal cadavers is handled by DAKA⁴⁵ and companion animal cadavers are handled by Ada's kæledyrskrematorium.⁴⁶

Waste from the hospitals is divided into:

- a. "Medical risk waste" (sharps and contagious material)
- b. Chemical waste
- c. Medical waste. The medical waste is returned to the pharmacy
- d. Waste from chemotherapy is handled according to national legislation⁴⁷
- e. Radioactive isotopes are handled according to guidance from the Danish Health Authority. Horses treated with radioactive isotopes are stabled in a restricted area with its own drainage and well. Companion animals (cats) treated with radioactive isotopes are kept in restricted areas with separate drainage
- f. Manure from the VTH-LA is collected in large containers, which are removed and dealt with by a private company on a daily basis

⁴³ <https://antibiotika.ssi.dk/hygiejnekursus>

⁴⁴ <https://www.retsinformation.dk/Forms/R0710.aspx?id=201483>

⁴⁵ <https://www.daka.dk/dk/daka/om-os/>

⁴⁶ www.adakrem.dk

⁴⁷ <https://amid.dk/regler/at-vejledninger/kraefttrisikable-stoffer-materialer-c-2-1/>

- g. All other waste is handled by the Faculty's waste provider and sorted according to applicable regulations.

Needles, scalpels and other types of sharp material are collected in special yellow hard-plastic containers, which are sealed when full and processed following a standard protocol for 'Biological Hazard'.

4.2 Lecture theatres, teaching laboratories, tutorial rooms, clinical facilities and other teaching spaces must be adequate in number, size and equipped for the instructional purposes and must be well maintained. The facilities must be adapted for the number of students enrolled. Students must have ready access to adequate and sufficient study, self-learning, recreation, locker, sanitary and food service facilities.

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

Lecture halls All lecture halls are equipped with projectors for projection of presentations via computer. Furthermore, blackboards are available.

- Three lecture halls accommodating a minimum of 180 students are available at Thorvaldsensvej 40, Frederiksberg (specifically accommodating 293, 208 and 200 people)
- Four additional lecture halls are available at Thorvaldsensvej 40 (for 144, 144, 136 and 143 people)

Rooms for group work, tutorials, etc.

- Four flat rooms with space for 143, 96, 96 and 144 people, respectively. The first three are at Thorvaldsensvej 40 and the latter at Dyrølægevej 7.
- Eight flat rooms for a minimum of 45 students.

Departmental facilities

D-VAS contains a dissection hall for anatomy, histology classrooms, pathology teaching theatres, microbiology laboratories, laboratory animal units, lecture rooms and departmental offices. More detailed information about the facilities is given in [Appendix 4.1](#).

D-VCS contains a large number of examination rooms, teaching rooms, skills labs, teaching laboratories, microscopy facilities, etc. More detailed information about the facilities is given in Appendix 4.2.

The location of the facilities mentioned above are shown in [Appendix 4.3](#) (Frederiksberg Campus) and in [Appendix 4.4](#) (Taastrup Campus).

Facilities for students There are several service areas for veterinary students around Frederiksberg Campus (see also Standard 6), including: two student cafeterias; one student café run by members of the student unions; one student bar run by the different academic student unions including the veterinary student union; The Frederiksberg Campus Botanical Gardens; a library with several study areas (see standard 5); one book store. Wireless internet is also available in the outside areas at Frederiksberg.

Service areas at Taastrup Campus include: a faculty-driven cafeteria for staff and students with limited opening hours; two recreational rooms at the hospital, each for two or three students on the

night shift at VTH-LA; one lounge area at the hospital with coffee and snack machines provided by the hospital; an outdoor sitting area; one small area for cooling and heating food.

At the VTH-CA, there is a lunch room and a separate room equipped with a refrigerator and coffee machine available in the basement for all students. Students on-call can also use the facilities in the hospital kitchen for preparing food or coffee during their shift.

Locker rooms are provided for students at both campuses, though the lockers are limited in space and number at Taastrup Campus. Appropriate sanitary rooms are available at both campuses.

The laboratory animal science exercise rooms have an entry lock for allergen-safe entry and exit, and dedicated rest rooms outside the barrier. In the lock, the students are supplied with reusable lab gowns.

Offices and research laboratories Staff offices and research laboratories are provided at both campuses. Most offices are one-person offices, while some offices accommodate two to four employees. Research laboratories and offices are linked with or close to laboratories and teaching hospitals.

4.3 The livestock facilities, animal housing, core clinical teaching facilities and equipment used by the Establishment for teaching purposes must:

- **be sufficient in capacity and adapted for the number of students enrolled in order to allow safe hands-on training for all students**
- **be of a high standard, well maintained and fit for the purpose**
- **promote best husbandry, welfare and management practices**
- **ensure relevant biosecurity and bio-containment**
- **be designed to enhance learning.**

Premises for research animals at D-VAS In the basement of building 1-71, there is a small rodent unit with a capacity of 132 cages for mice and 27 cages for rats across four rooms. This facility is used for research purposes, and the facility has one procedure room, one office, one washing room and one storage room. There is a gnotobiotic facility with eight isolators for gnotobiotic (germ-free) rats and mice, primarily used for mice. There is a preparation lab in addition to the two rooms each with four isolators.

Teaching rats and mice are housed in a smaller facility with one ventilated cabinet (12 cages) for mice and a similar cabinet for rats in conjunction with the laboratory animal science exercise rooms. These facilities are kept fully up-to-date. Some other facilities are in poor condition, and there are plans to replace these facilities with a state-of-the-art rodent facility and a larger gnotobiotic unit within the next few years.

Premises for healthy and hospitalised animals at D-VCS The VTH-CA has the capacity to house 73 dogs and 12 cats in separate cages. The patients are kept in six dog wards and one cat ward. Three of the dog wards house healthy visiting dogs during the daytime. The isolation unit has two wards, each with capacity for three to five patients. The dog ICU can hold 18 patients and the cat ICU can hold seven cats. Finally, VTH-CA has a dedicated ward that can hold two chemotherapy patients. There are no premises for research animals.

The VTH-LA has the potential to hold 46 equine patients. The patients are stabled in eight sections over two non-adjacent buildings. The equine isolation unit has three additional boxes. A further

ten boxes for the (healthy) teaching horses and 16 multi-purpose boxes are present in the Teaching Unit. Each of these multi-purpose boxes can also provide the space for one cow/four sheep, etc. Some of the healthy teaching horses are also used for non-invasive reference purposes (research purposes). There are no facilities for small research animals at the VTH-LA.

Premises for clinical and diagnostic activities D-VCS, VTH-CA The VTH-CA includes a large reception area. There are nine clinical examination rooms for community practice and three examination rooms for the specialist services (internal medicine, soft tissue surgery and orthopaedic surgery), as well as a hospital treatment room area (ten tables). Furthermore, there are dedicated rooms for cardiology (3D ultrasound, colour Doppler and ECG), oncology (chemotherapy treatment), neurology, clinical nutrition and ophthalmology (darkroom). The VTH-CA has an intensive care unit (ICU) located in the centre of the hospital in proximity to a fully equipped student laboratory containing emergency and cage-side laboratory equipment. For surgical procedures, the VTH-CA accommodates a preparation room in connection with five separate fully equipped surgical theatres, and there is an additional room specifically equipped for dentistry (including digital dental X-ray), as well as a dedicated room for the hospital's blood-banking unit. The VTH-CA also has a physiotherapy service equipped with a water treadmill, as well as an exercise treadmill that can accommodate a wide range of patient needs. Additionally, there is an isolation unit that is separate from the other wards, containing a dedicated changing room as well as its own examination room and two wards. The VTH-CA also contains a cold storage room for cadavers that are utilised for teaching purposes or saved for necropsy.

The diagnostic imaging unit is integrated within the VTH-CA and includes digital radiography, C-arm fluoroscopy, advanced ultrasound, CT, MRI, SPECT scanning and Dexa scanning. There is a dedicated PACS, and viewing stations are located throughout the diagnostic imaging service area. Images can also be retrieved on screens in the teaching hospitals. Three ultrasound units are available for instruction in ultrasonography. The diagnostic imaging unit also provides iodine-131 treatment of feline hyperthyroidism – with equipped facilities for housing. The veterinary diagnostic laboratory (Vet-Lab) is located in the same building complex as the VTH-CA. The Vet-Lab is a fully equipped state-of-the-art ECVCP-approved clinical pathology research laboratory. In addition to routine bloodwork, the laboratory also performs advanced diagnostic analyses of haemostatic and inflammatory disorders, flow cytometry and advanced endocrinological assays.

VTH-LA The Equine Hospital includes six examination rooms, all fully equipped with stocks, with each room designated for a primary function (emergency examination, X-ray, scanning, endoscopic examination and reproduction), two operation theatres offering advanced anaesthesia monitoring and with two recovery rooms per theatre. One theatre has a removable stock for standing operations. There is an ICU for approx. 15 horses including four large boxes for a mare and foal, opportunity to handle horses in slings, a distribution pharmacy, an emergency/after-hours laboratory (acid/base equipment and standard clinical chemistry), etc. An annex to the equine hospital contains stable facilities for an additional 31 horses, available across four sections, as well as a room for treadmill examination and a smithy (orthopaedic skills lab). The diagnostic imaging unit includes digital radiography, C-arm fluoroscopy, advanced ultrasound and scintigraphy. VTH-LA is supported by Imaging at VTH-CA and shares the PACS. Images can be retrieved on screens throughout the teaching hospitals.

The Teaching Unit houses animals owned by VTH-LA for teaching purposes (use is subject to the Danish law on research animals) and ruminant patients. It provides space for a herd of 10 horses and 16 cows and calves but is multifunctional as the stalls are used according to the present teaching needs.

A cold storage room for cadavers (for necropsies at Frederiksberg and for destruction) is available at VTH-LA.

The Locomotion Unit (KUSTOS-Hallen) has a riding arena including seating for approx. 100 people, a large trot-up area and a heated teaching room. The outdoor area includes paddocks, two lounging areas and a roofed trotting-up area adjacent to the hospital in Taastrup.

There is no on-campus pharmacy at Frederiksberg or Taastrup. Contractual agreements exist with two private pharmacies to meet the needs of each of the teaching hospitals. All drugs at both locations are dispensed and prescribed by veterinarians as required by Danish law. Additionally, narcotics and controlled substances are kept in a narcotic vault. All dispensations including waste are logged. Certified technicians are responsible for filing, auditing and monitoring any discrepancies. Pharmaceutical product shelf life is monitored and out-of-date products are removed from the inventory. All chemicals and pharmaceutical products are stored, labelled, dispensed or disposed of according to Danish law.

As both hospitals train residents in accordance with the rules of the European Board of Veterinary Specialisation (EBVS), the equipment within all areas is well documented. A more detailed but non-exhaustive description of the available equipment for clinical work at both hospitals is given in [Appendix 4.2](#).

Practical teaching in FSQ & VPH is conducted in three different abattoirs:

- DC Beef, Aalborg: Ante-mortem inspection and welfare evaluation are taught at the cattle abattoir DC Beef in Aalborg as part of a visit where the students are also trained in reproduction. A video from the facilities focusing on training in reproduction can be seen here: <https://video.ku.dk/secret/11446852/cef125d460a5b82e1d6e93ea00de7bde>. This abattoir slaughters only cattle (2,000-2,400 per week), and the cutting and packaging facility handles approximately 380-400 tons of beef.
- Harald Hansen Eftf., Slangerup, is a cattle and lamb abattoir located in Slangerup, 24 km from the VetSchool. Approximately 40-50 cattle are slaughtered per week and 8,000 lambs per year. Training in cattle meat inspection is carried out here. It takes place in groups of 12 students, where teams of two students inspect the heads, organs and halved carcasses.
- ZBC (Danish Meat Trade College, DMTC) is a training and research (swine) abattoir facility where the students practice pig meat inspection and audit the slaughter and butcher facilities. A video from the facilities focusing on the training of veterinary students can be seen here: <https://video.ku.dk/secret/11158600/dfb647477c33bbd66dbeb33c57580f3e>. It is located in Roskilde, 34 km from Frederiksberg Campus. The abattoir slaughters 300 pigs per week and also has a cutting and de-boning facility. Processing equipment is available for both industrial production and retail levels of meat processing such as mincing, salting, marinating, emulsifying, slicing and heat treatment.

4.4 Core clinical teaching facilities must be provided in a veterinary teaching hospital (VTH) with 24/7 emergency services at least for companion animals and equines. Within the VTH, the Establishment must unequivocally demonstrate that the standard of education and clinical research are compliant with all ESEVT Standards, e.g. research-based and evidence-based clinical training supervised by academic staff trained to teach and to assess, availability of facilities and patients for staff and students for performing clinical research and relevant QA procedures.

For ruminants, an on-call service must be available if emergency services do not exist for those species in a VTH.

The Establishment must ensure a state-of-the-art standard for teaching clinics, which remain comparable with or exceed the best available in the private sector.

The VTH and any hospitals, practices and facilities (including EPT) that are involved with the curriculum must meet the relevant national Practice Standards.

The heads of the VTHs are responsible for the daily management of the VTHs. Both hospitals are open 24/7/365. Outside of business hours, the hospitals provide care for hospitalised patients, research animals and emergency cases (first opinion, referrals and the mobile practice). Both hospitals are staffed 24 hours per day. A senior clinician is on call for mobile advice only outside of regular business hours at VTH-CA, and for VTH-LA, a senior clinician (surgery and medicine) is on call and can be at the hospital within 45 minutes.

The two teaching hospitals are organised to ensure an optimal (max. no. of patients, max. owner satisfaction, max. use of expensive equipment, etc.) flow of patients through the premises. At the VTH-CA, the daily schedule is structured to optimise patient numbers without causing excess waiting time for students and animal owners. Consultations are generally scheduled as 40 min. slots, providing the students with adequate time for history taking, physical examination and consultation with the responsible veterinarian. Ultrasound and X-ray timeslots can be booked electronically through the EPJ, again optimising patient flow and minimising waiting times. One veterinarian is assigned exclusively for emergency consultations, including both core-rotation students and tracking students. In most weeks with teaching activities, an additional veterinarian is assigned to cover in case of acute illness among the teaching staff. Veterinary nurses are assigned to all clinical services, and assist the students in managing their patients, including e.g. blood sampling, placement of IV catheters and evaluation of sample material in the student laboratory.

At VTH-LA, the daily schedule is organised to optimise the outcome for the students in terms of case selection and time. Whenever possible, elective surgeries are planned in accordance with the ongoing courses so that the largest number of students can benefit from each case and handle as many different cases as possible. At the daily morning rounds, cases are allocated to maximise the caseload of each group of students. To further develop clinical skills, all students participate in eight practical workshops on either the hospital's own horses (practical dentistry, lameness examination, pre-purchase examination, colic, diagnostic imaging; see section 5.1) or on material of animal origin (handling of wounds/bandaging, diagnostic nerve blocking, parasitology). The small group of students handling a case consists of core students and at least one tracking student, the latter acting as the senior, which is very beneficial for the core students. Vets and technicians are always present to assist students in all aspects of the cases.

The university hospitals follow current national legislation. The university has played a significant role in the development of several of the national standards. Radiation hygiene is a significant aspect of the veterinary teaching. The teaching is based on national legislation and is governed by the responsible departmental safety officer. Furthermore, annual control visits are made by the governmental control institution. Employees who are at risk of radiation are obliged to wear personal dosimeters that are checked monthly or every three months. Based on readings from the last several years, no employees have received any significant radiation dose.

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

At both hospitals, veterinary students participate in every aspect of the clinical work as part of their clinical rotations, including the rotation in 24/7 emergency medicine. Students are equipped with a student identity card that gives them access to the two hospitals and relevant buildings.

4.6 Appropriate isolation facilities must be provided to meet the need for the isolation and containment of animals with communicable diseases. Such isolation facilities must be properly constructed, ventilated, maintained and operated to provide animal care and to prevent spread of infectious agents. They must be adapted to all animal species commonly handled in the VTH.

Before admittance, great care is taken to take the patient history to avoid introducing infectious diseases to the hospitals, including non-notifiable diseases. All patients with a history indicative of an infectious disease are admitted directly to the isolation area. All animals are carefully assessed – often several times per day, and intervention will be immediate if any suspicion of contagious disease arises.

VTH-CA A newly built (2019) isolation unit separated from the other wards in the hospital contains a dedicated changing room as well as its own examination room and two separate wards, each with three to five boxes. Instructions are posted at the entrance.

VTH-LA The current facility is situated at a distance from all other patients and at the perimeter of the hospital buildings. It has its own entrance, changing room, three boxes and a storage room. Instructions are posted at the entrance.

4.7 The Establishment must have an ambulatory clinic for production animals or equivalent facilities so that students can practise field veterinary medicine and Herd Health Management under academic supervision.

Ambulatory clinic The mobile practice, which primarily serves equine clients and hobby farms, is situated in a building with no other animals at Taastrup campus. It is run by two senior clinicians. Rooms for morning rounds, offices, a garage for two cars (each with seating for five students) and storage rooms are provided. Field veterinary medicine is taught in the mobile practice, which is run by 2 - 3 senior clinicians. Two fully equipped practice cars (VW Caravelle TL 2.0 TDI, 2014) are available, each with four to five spaces for students. The practice cars have equipment for handling first-opinion cases, minor surgeries, equine dentistry, dehorning and a dart gun, etc. Additional equipment is provided by the hospital as required. The practice does not provide radiology. Such patients will be referred to the hospital. Referrals from the mobile practice to the hospital are at a reduced rate. A third car is available when required for transportation of multiple students for dentistry. Furthermore, ambulatory clinic-like work is done during the students' participation in Cattle Week <https://video.ku.dk/secret/59530351/23ad7228afc77a27ed7474a517c5810b>.

Production animal field veterinary medicine and Herd Health Management are practised under academic supervision during multiple herd visits to cattle, pig and poultry farms in collaboration with the respective herd veterinarians. For further details, please see section 3.1, 5.1 and 5.2. See also the video of extramural teaching in Dairy Herd Health management (link here) for the course in Practical Herd Health Management and Meat Inspection. A list of collaborating farms and their locations can be found in [Appendix 4.5](#).

4.8 The transport of students, live animals, cadavers, materials from animal origin and other teaching materials must be done in agreement with national and EU standards, to ensure the

safety of students and staff and to prevent the spread of infectious agents.

Students are transported from Frederiksberg to Taastrup by a bus provided by SUND. The daily number of seats required is based on information provided by VTH-LA twice per year. Students are furthermore transported for extramural activities by privately hired buses or by public transportation. This is organised and paid for by the university. However, the cost of transportation to the ZBC abattoir in Roskilde (37 km from Frederiksberg campus) is paid for by the students.

The importance of hygiene with regard to changing clothes and cleaning footwear is continuously addressed. The transportation of live animals and animal by-products is in accordance with national and EU standards.

4.9 Operational policies and procedures (including e.g. biosecurity, good laboratory practice and good clinical practice) must be taught and posted for students, staff and visitors and a Biosafety manual must be available. The Establishment must demonstrate a clear commitment for the delivery of biosafety and biosecurity, e.g. by a specific committee structure. The Establishment must have a system of QA to monitor and assure clinical, laboratory and farm services, including a regular monitoring of the feedback from students, staff and clients.

Safety for Students and Employees is a high priority at UCPH, and therefore an Occupational Health and Safety (OHS) Policy has been described to ensure a systematic and coordinated approach to a good work environment.

At the Group level, it is therefore the responsibility of the Group leader to ensure that the student has been given written and oral instructions about Good Laboratory Practice, Biological and Chemical safety and handling of chemical waste. If live animals are handled, it is the Group leader's responsibility to ensure that the students have passed an accredited course in laboratory animal science, including safe handling and occupational health issues. Students are obliged to sign an introduction document as proof of correct introduction before they are allowed to work in the laboratory. Moreover, a local representative from the OHS organisation is always nearby to guide and help in daily work life. Emergency kits and eye washers are available in the exercise rooms. If necessary, students injured during teaching will be taken to the emergency room at Frederiksberg Hospital, and if needed, will be accompanied by an employee. Common UCPH laboratory guidelines including a laboratory safety manual are available for all staff on the UCPH intranet⁴⁸.

All students are introduced to good laboratory practice and safety by the respective course teachers. In addition, students must participate in and pass a series of online laboratory safety course modules (i.e. [Introduction](#), [Chemicals](#), [Microbiology](#), [Fume cupboards](#), [Local exhaust ventilation](#), [Accidents](#), [Evacuation](#), [Risk assessment](#), [Physics](#)), which are available on the Laboratory Safety webpage⁴⁹ at the UCPH learning platform. Furthermore, all veterinary students are introduced to safety in the dissection hall and necropsy room prior to the first lesson, and procedures in the event of accident are posted next to the first aid kit at these locations. In case of accidents, first aid is provided by the staff, and depending on the type of accident, the students are advised to consult the nearby Frederiksberg Hospital (Emergency Department) or visit their own GP.

⁴⁸ See <https://kunet.ku.dk/medarbejderguide/Sider/HR/Laboratorie.aspx>

⁴⁹ See <https://absalon.ku.dk/courses/23466/pages/laboratoriesikkerhed-for-studerende-interaktive-videoer>

Comments on Standard 4

A severe outbreak of toxic mould has been identified in parts of the premises of the VTH-CA. The Faculty and University management, including all relevant committees i.e. departmental committees such as the local cooperation committee (LSU) and local occupational health committee (LAMU) handling such issues are aware of this situation. The University's Campus Service (CAS) and the university administrative units/sections generally responsible for the quality of premises throughout the university have also been made aware. Staff and students have been regularly informed about the problem. This information includes detailed information on how to act if you experience symptoms suggestive of exposure to mould.

All necessary precautions have been taken to prevent staff, students, animal owners and animals from having exposure to potentially toxic moulds. A number of staff have been relocated to other buildings including a temporary structure. A number of immediate mitigating technical solutions have been set up (e.g. increased ventilation and cleaning of ventilation tubes) following a thorough presentation of facts and potential solutions in relevant committees (e.g. Committee for Health and Hazards). At present, the university is in the process of deciding a course of action for the future of the VTH-CA.

Suggestions for improvement on Standard 4

None.

Standard 5. Animal resources and teaching material of animal origin

5.1 The number and variety of healthy and diseased animals, cadavers, and material of animal origin must be adequate for providing the practical and safe hands-on training (in the areas of Basic Sciences, Clinical Sciences, Pathology, Animal Production, Food Safety and Quality) and be adapted to the number of students enrolled. Evidence must be provided that these data are regularly recorded and that procedures are in place for correcting any deficiencies.

The Establishment's global strategy on the use of animals and material of animal origin There is a continuous focus from the two veterinary departments and the Veterinary Study Board to ensure that animals and material of animal origin are available for all students to achieve Day One Competences. The two VTHs attract patients from the wider Copenhagen area, as well as referral patients from the rest of Denmark and southern Sweden.

The VTH-CA attracts its first-opinion cases for general practice training from Frederiksberg and the surrounding urban areas. Patient recruitment is based on standard market terms and the pricing of most services is similar to neighbouring veterinary clinics. Exceptions are elective surgeries on dogs and cats, hospitalisation for equine orthopaedic examinations and all services for ruminants. At the VTH-LA, the ambulatory service ensures that the students see a wide variety of patients on-site. The intramural patient material at the VTHs is complemented with the teaching horses and visiting corps of dogs and cats.

Formal collaboration agreements with several veterinary practices and clinics, shelters, farms, riding schools and abattoirs help securing adequate patient numbers or material of animal origin for the students. Non-profit advise for private practitioners is an important part of ensuring continuous referrals. Furthermore, both hospitals invite practitioners for after work meetings introducing clinical and research work from the department/hospitals.

However, the number of production animal patients at the VTH-LA and the ambulatory clinic (the mobile practice does not serve any large commercial production farms) are relatively low in

relation to the number of core students. Therefore, supervised extra-mural teaching at commercial herds forms an essential part of the hands-on pre-clinical, clinical and herd health training at the production animal rotations (see 3.1 and below for further details).

Specific strategy to ensure that each student receives the relevant core clinical training At both VTHs and during the extramural clinical training, students participate in every aspect of the case and patient management, and they are considered a major resource in the daily clinical work at the hospitals. The aim is to provide as much hands-on training for the students as possible, including planned workshops and exercises on essential clinical procedures while, at the same time, allowing enough time for rounds, case discussions and reflections. Students are therefore expected to actively participate in e.g. requesting, collecting and submitting diagnostic materials (blood, urine, effusions, skin scrapings, etc.), performing diagnostic tests and procedures, entering all relevant data in the electronic patient record following the Patient-Oriented Medical Record (POMR) format, etc. Students are given responsibilities commensurate with their skills and competences under direct supervision of a staff veterinarian. Teams of 12-23 students generally work together in small groups of two to six during clinical exercises and clinical work at the hospitals, and in teams of 23-45 subdivided into smaller groups during the supervised extramural activities.

The clinical programme is designed to ensure progress in learning and skills to acquire the EAEVE Day One Competences (see Section 3.1. and [Appendix 3.3](#)). Specific clinical exercises, workshops and skill-training modules are organised to ensure that all students – regardless of the caseload at the university hospitals – have the chance to learn basic clinical procedures. These are executed within the core clinical courses and tracking courses at the hospitals on patients, in-house teaching animals or on animals purchased specifically for these purposes and as part of the extramural training at animal shelters, farms, riding schools and abattoirs (see below for details).

VTH-CA has a formal collaboration with 14 private practices with regard to out-of-hours duty work.

Planned preclinical and clinical procedures within the core curriculum

Handling of large animals including examination of gait (lameness) and hooves is taught at the VTH-LA: Teams of 24 students subdivided into groups of three to five train for 1 week on four or five teaching cows and nine or ten teaching horses.

Preclinical basic non-invasive examination of dogs and cats including correct animal handling is taught on visiting corps of normal, healthy dogs and cats recruited by VTH-CA. Teams of max. 36 students are subdivided into small groups of three to four, who train for 9 days with 12 dogs and 1 day with eight to nine cats. Moreover, ear examinations, catheter placement and cystocentesis are taught on cadavers: 1 day, 20 cadavers per max. 36 students. Handling of exotic animals is taught extramurally at Copenhagen Zoo: 1 day, 25 animals (e.g. rodents, rabbits, reptiles, spiders) per max. 36 students.

Preclinical basic clinical examination on large animals, including an assessment of body condition, neurological examination and lameness examination are taught on both healthy animals kept at VTH-LA and extramurally on animals from collaborating herds. Teams of max. 36 students subdivided into smaller groups of four to six have: 5 days of training on four cows, ten horses, 7 sheep and 16 pigs at VTH-LA; 2 days at Herlev Riding School working on approximately 70 horses, and 1 day at Assendrup Dairy Farm with access to cattle of all age groups, but with a focus on the approximately 200 calves made available for basic training.

Preclinical basic surgical techniques including aseptic procedures, suturing techniques, methods for castration, how to manage acute bleeding, injection techniques, basic anaesthesia and equine bandaging are initially trained in the two skills-lab settings using phantoms and incorporating e-

learning, video, demonstrations and role play: teams of max. 36 students are subdivided into smaller groups for 2 days in the small animal skills lab and 3 days in the large animal skills lab. Subsequently, the same students have 2 days of exercises on approximately 14 dog and cat cadavers and 1 day on eight pig cadavers. Finally, the students perform basic anaesthesia (1 day, eight to nine pigs) and basic surgical skills and techniques including anaesthesia on live pigs (6 days, eight to nine pigs per day). Adjacent to this module, students in groups of four learn IM and IV injection in the horse and cow and IM in pigs on the teaching animals at UC-LA.

Radiographic technique exercises including radiation safety and the correct positioning and exposure for standard views of the skeleton, thorax and abdomen in veterinary species are taught on patients that present during the scheduled time for the exercises, as well as on cadavers and phantoms. At the VTH-CA, groups of max. six students have hands-on training over 2 days, and at VTH-LA, groups of max. 12 students train on horse patients if available, and specimens (e.g. horse legs).

Basic ultrasound technique is taught on dogs during two half-day exercises at VTH-CA. Students in groups of max. six bring their own dogs and practise ultrasound location of the abdominal organs and heart.

Castrations and spays of dogs and cats are performed on patients gathered on specific days for planned surgical sessions at VTH-CA. Groups of max. 12 students divided into smaller teams of two to three perform the OHE or castration on four to five dogs/cats per day over 3 days and on two cats on 1 day. A reduced price is offered for this service to ensure an adequate number of patients for spaying and neutering.

Dentistry procedures in dogs and cats are taught on cadavers in conjunction with the clinical rotation at VTH-CA. In groups of four to six, the students follow the dentistry service for a full day, including cadaver training (aprox. three dentistry procedures and three to four consultations per day).

Dehorning of calves and clinical health assessment of groups of heifers, dry cows, lactating cows and calves. This supervised extramural training includes analgesia and dehorning of young calves, body condition scoring, lameness (claw), skin and udder examinations and milking procedures, and takes place at Gjorslev Dairy Farm . Teams of max. 23 students subdivided into groups of two to four perform supervised dehorning on approximately 30-60 calves and assess the health of approximately 450 calves and heifers, 300 lactating cows and 20 dry/post-partum cows in total over 1 day.

Problem-oriented clinical diagnostic skills in cattle is taught extramurally on various age-/production-groups as part of both the general clinical practice training and the herd health management training. In conjunction with the former training, this includes single animal examinations of calves and dry and lactating cows (lungs, digestive tract, udder, cloves) and general observation of health status in animals (screening examinations; e.g. body score, lameness). Teams of max 23 students subdivided into small groups of 2-4 students and each student has to examine and write a problem-oriented medical record on a total of 30-60 calves and 20 cows during the visit to Gjorslev Farm. For details on the herd health related teaching see below.

Problem-oriented clinical diagnostic skills in pigs is taught extramurally on various age-/production groups as part of the herd health management training. This includes observation of the health status of groups of animals, as well as individual animal examinations and necropsy of dead/euthanised diseased pigs selected in order to represent as many diseases/conditions as possible. Students also perform euthanasia of sick pigs under supervision and in collaboration with the herd veterinarian. Teams of max. 45 students are subdivided into small groups of two to four students, where each student examines a minimum of 20 sows with piglets/ 30 pregnant sows/ 200

growers during visits to two farms over 2 days, including a minimum of six patients suffering from different diseases, which are euthanised and brought back to Frederiksberg Campus for necropsy. Transrectal palpation and gynaecological examination in cows is taught extramurally at Danish Crown, Aalborg in collaboration with the breeding company Viking Denmark. Teams of max. 12 students examine approximately 150 pregnant as well as non-pregnant cows over 4 days. After slaughter, the students examine the reproductive organs and compare these with their clinical records. Most cows are normal with regard to reproduction, but pathologies are occasionally found (pyometra, ovarian cysts, mummified foetuses, etc.).

Basic transrectal palpation of the reproductive tract of mares is taught on the ten teaching mares at VTH-LA. Groups of max. 12 students spend 1 day on gynaecological examinations of mares (each student will examine two to three mares) and 1 day on microscopic evaluation of stallion semen and cytological specimens from the uterus of mares.

Abdominal surgery procedures in cattle are taught at VTH-LA on teaching animals bought for the purpose: teams of max. 13 students subdivided into groups of four to six students practice abdominal surgery and anaesthesia on two to three standing cows for 1 day.

Obstetrical procedures in cattle and pigs are taught on late-term pregnant cows and sows acquired for this purpose and euthanised young calves due to the very limited number of clinical dystocia cases (n=10-15). Groups of max. 12 students learn the procedures during a 4-day module that includes caesarean section on a pregnant cow and a pregnant sow (all students are allocated to do different parts of the procedure) and two training sessions of foetotomy in a phantom uterus using the six euthanised young calves purchased⁵⁰, including foetuses from the planned caesarean sections.

Examination of the ruminant GI tract is taught at VTH-LA during 3-hour workshops where six students per cow practice clinical examination, rectal examination, sampling of rumen fluid, urine sampling, and examination and evaluation of rumen fluid, urine and faeces in the student laboratory.

Clinical bovine mastitis diagnosis is taught at VTH-LA during 3-hour workshops: teams of 12 students (six students per cow) practise clinical examination and paraclinical tests in relation to the udders and milk.

Bacteriological evaluation of mastitis pathogens is taught during 3-hour workshops at VTH-LA for teams of 12 students. The students work with ten described cases of mastitis and related pathogens. The students have to identify the pathogens and answer the case questions in relation to treatment, prevention and control of mastitis.

Oral and dental examination of horses including demonstration of teeth floating is taught during 2-hour workshops at VTH-LA. Teams of max. 13 students work under supervision on one sedated teaching horse.

Examination procedures on horses with colic, including rectal palpation and insertion of stomach tubes are taught during 2-hour workshops at VTH-LA. Teams of max. 13 students are subdivided into groups of three to four students working under supervision on a sedated teaching horse.

⁵⁰ Due to several incidences of diagnosed cryptosporidiosis in students participating in the foetotomy, despite rigorous biosecurity and hygiene measurements, the Study Board has temporarily approved a reduction in the number of calves used to three and allowed student volunteers to attend the second foetotomy session. The Study Board awaits a suggestion from D-VCS on alternatives to the present foetotomy teaching that could be implemented from 2020.

Pre-purchase examination and certification of horses is taught during 2-hour workshops at VTH-LA. Teams of max. 23 students are subdivided into groups of two to four students working under supervision on the nine to ten teaching horses.

Lameness examination in horses is taught during 2-hour workshops at VTH-LA: teams of max. 23 students are divided into groups of two to four students working under supervision on the nine to ten teaching horses.

Basic laboratory animal procedures (as required for EU function AD certificate) are taught at the laboratory animal teaching laboratory at D-VAS. Teams of approximately 18 students subdivided into small groups of four to six learn the required skills on 9-12 mice and 9-12 rats in total over 2 days.

Planned clinical procedures within tracking programmes Castration and spaying for companion animal tracking students are trained extramurally at two nearby collaborating shelters – one cat shelter and one covering all companion animals (primarily dogs, cats and rabbits). All tracking students spend 4 days at the shelter, where they participate in neutering procedures supervised by the shelter veterinarian. The number of surgical procedures at the shelters varies, but each student performs at least two to three surgical procedures per day.

Advanced gynaecological and reproduction technology skills are taught in planned exercises during the equine clinic track: groups of max. 14 students learn palpation and ultrasound evaluation on the ten teaching mares over 2 weeks (4 hours per day), including biopsy, swab and uterine lavage, insemination techniques and endometritis treatment for mares.

Oral examination and dentistry procedures in horses are taught extramurally in planned exercises during the equine clinic track: groups of max. 14 tracking students perform dentistry in a herd of 25 horses over 1 day.

Advanced laboratory animal surgical and in-vivo pharmacokinetic procedures (fulfilling the EU function B requirements and, in part, the Module 24 requirements for designated veterinarians)⁵¹ are taught on experimental animals at the laboratory animal facilities at D-VAS during the Biomedicine track. Teams of max. 18 students subdivided into small groups of one to six learn the various procedures and skills on approximately 22 mice, 57 rats and six pigs in total over 5 days.

Problem-oriented clinical examination on various groups of cows, including transrectal palpation, is taught extramurally during the Herd Health track: the 10-15 tracking students who choose the dairy profile perform examinations on 150-200 cows each as part of the tracking course.

Clinical work on patients at the VTH-CA The caseload (approximately 19,000 consultations per year; 81% dogs, 17% cats, 2% rabbits, guinea pigs, pet birds, rodents, reptiles) comprises first-opinion companion animal cases including wellness and routine healthcare visits (approximately 70% of the total caseload), emergencies (15% of the total caseload), and secondary and tertiary referral cases (approximately 30% of the total caseload).

The primary practice where all students are trained (see also section 3.1) covers both general medicine and surgery including dermatology, exotic animals, dentistry and elective surgeries. The referral services where the tracking students are trained (see also section 3.1) include internal medicine, soft tissue surgery, orthopaedics, rehabilitation, cardiology, neurology, oncology and

⁵¹ All veterinary students obtain EU Function AD level during their BSc programme, and the laboratory animal module within the Biomedicine tracking supplements this, so students obtain the competences required for the EU-function ABD certification, plus some of the competences embedded in Module 24 designated lab. animal veterinarians.

clinical nutrition. The 24/7 emergency service covers all kinds of emergency consultations and core and tracking students are both trained in this service. Students' exposure to companion animal clinical work is supplemented with EPT as part of the core curriculum and tracking syllabus (see Standard 3.6). Approximately 200 veterinary practices throughout Denmark refer patients to the VTH-CA. There is a formal collaboration with several veterinary practices for the VTH-CA to handle their out-of-hours service. Necropsies on dog and cat patients from VTH-CA are demonstrated for students (and teachers) at the hospital in collaboration with the pathologist at the section hall at Frederiksberg Campus.

Currently, the VTH-CA can fulfil the need for patients/clinical cases (dogs and cats) in both the core and tracking curricula.

Clinical work on patients at the VTH-LA The equine caseload (approximately 1,250 equine patients) mainly from the islands of Zealand, Funen and from the southern part of Sweden comprises mostly secondary cases, specialist cases and emergencies. The mobile practice services first-opinion cases, mainly horses within a radius of 40 km of the VTH-LA, and generates referrals for the equine hospital. The VTH-LA maintains a herd of ten healthy horses (mares) for teaching purposes. These horses are used for training in handling, clinical examination, gynaecological examination (cf. above) and afternoon practical workshops for areas such as colic, lameness, respiratory examination, etc., and students from the general practice core rotation learn competencies such as abdominal puncture, passing a stomach tube, BAL, etc., as well as training with patients.

To ensure an adequate number of horses for spaying and neutering, a reduced price is offered for this service. Furthermore, VTH-LA has a reduced price for overnight stabling in relation to lameness examinations, to ensure that the students participate fully in the examination (which takes longer due to student participation), and production animal patients are treated free of charge and transportation is also paid by VTH-LA if required.

All core students participate in teams of max. 23 students or 13 students subdivided into groups of two to four students per patient for the equine clinical medical and surgical work at the hospital clinic, including all aspects of the 24/7 case handling over a 20-day period. Core student groups sometimes work with one or two equine tracking students. Participation in the mobile practice work is reserved for the equine tracking students.

The production animal caseload at VTH-LA Teaching Unit consists of a small number of referred ruminant patients (approximately 120-150 cattle, 40-50 small ruminants, four to five pigs). These patients represent chronic cases and some acute surgical ones (e.g. abomasal displacements and obstetrical conditions) referred from veterinary practices on Zealand. All core students do clinical work in teams of max. 23 students or 13 students subdivided into groups of two to four students per patient over a 9-day period. The clinical work is supplemented with planned training from clinical workshops and exercises, including extramural training (see above and 5.2.1). Furthermore, students are taught clinical examination and diagnostics on first-opinion bovine and porcine cases during their extramural training as part of the herd health management core course (see above and 5.2.1.).

Necropsies on equine and production animal patients from VTH-LA are demonstrated for the student (and teachers) at the hospital in collaboration with the pathologist and by direct videoconference to VTH-LA from the section hall at Frederiksberg Campus.

The caseload at VTH-LA, including the mobile practice and the caseload at extramural training at collaborating farms and riding schools, currently fulfils the need for large animal cases for 180 students per year.

Students' exposure to large animal clinical practice work at the VTH-LA and extramurally on farms (see section 5.2) is supplemented with EPT, both as part of the clinical core course syllabi and the tracking syllabi (see Standard 3.6).

Supervised extra-mural veterinary herd health work Bovine and porcine herd health management training and the related clinical hands-on work is done extramurally at commercial farms in collaboration with the respective herd veterinarians both within the core programme and at the Herd Health tracking. Thus, students are working “hands-on” under herd health scenarios, which they will meet as herd veterinarians in Danish production animal veterinary practices.

At the core programme, teams of max 45 students subdivided into small groups of 2-4 students spend 2 days at 2 pig farms holding approximately 800 sows / 4,000 weaners & growers and 410 sows / 2,100 weaners & growers and 800 finishers, respectively, and 3 days at 4 dairy farms, holding from around 300-800 cows plus young stock, including milk-fed calves and heifer. Students do clinical screening and examinations on various animal age groups and assess animal welfare, herd management, bio-security, housing facilities, climate, isolation pens, feeding, milking systems and compliancy with legislation as well as perform care taker interviews and collect welfare, health and relevant production data from relevant health and production databases. At the pig farms, each student does single animal examination and recording of a minimum of 20 sows with piglets / 30 pregnant sows / 200 growers as part of the herd health assessment including a minimum of 6 patients suffering from different diseases that are euthanised and brought back to Frederiksberg Campus for necropsy.

At the cattle farms, each student does problem-orientated single animal examination and recording of a minimum of 5 fresh cows, 20 dry cow, 20 top lactation cows plus 20 various cows and 10 single calves and watch problem-orientated necropsy of one or more calves within 3 days visiting 3-4 different dairy farms as part of the herd health assessment.

On this basis student groups subsequently perform in-depth herd health analysis and writes basic Herd Health Advisory Reports. Students perform the euthanasia under supervision and in collaboration with the herd veterinarians.

Students attending the One-Health and Herd Health elective tracking programmes (20-35 students per year) all participate in 1 day of extramural training at a collaborating dairy farm, where in groups of five to six they observe the health status and collect health data from the various age and production groups within the herd. These data combined with farm data extracted from the Danish Cattle Database are subsequently used for analysis of the herd health.

Students that subsequently continue on the specific Herd Health tracking course either visit dairy farms (dairy profile; typically 10-15 students per year) or pig farms (swine profile; typically three to five students per year) over a 10-week period, where in groups of three to four and under supervision from course teachers and in collaboration with the herd veterinarian, they perform in-depth herd health diagnostics and analysis and participate in a herd health advisory service based on their clinical observations, examinations, care-taker interviews, necropsies, diagnostic results and data from the production and herd health databases.

For details about training within the Herd Health management courses, see Section 3.1, and for specific details about the related hands-on clinical work at the farms, see above.

Hands-on training in poultry herd health management⁵² occurs extramurally at three commercial poultry farms: a non-caged egg-layer farm (approximately 20,000 hens in two flocks/houses), an organic egg-layer farm (approximately 40,000 hens in five flocks) and a conventional broiler production farm (approximate 20,000 broilers in houses) as part of the course in Herd Health and

⁵² The Herd Health management training visits to poultry farms has been implemented from 2019/20.

Public Health (see section 3.1). Students visit the farms in teams of up to 55 students subdivided into four groups of 10-14 students. Each group focuses on one of four herd management themes during the 3- to 4-hour visit, collecting data via (clinical) observation and examination of the herd and production environment, interviews with care-takers and by reading available production and health data. The themes are: (1) Production management (e.g. vaccinations, production data on weight gain, feed and water consumption, performance and production costs, sanitary procedures, stocking, slaughter programme, and breed of hens/broilers); (2) Internal and external biosecurity (e.g. vaccinations, protection against insects, rodents and wild birds, biosecurity procedures for staff and visitors, dry periods without animals, slaughter programme); (3) Health management (e.g. vaccinations, health status, drug consumption, death rates and handling of dead animals, pro-biotic programmes, disease prophylactics, airflow and ventilation) and (4) Animal welfare (e.g. plumage, footpads and body lesions, in-house bedding, vegetation/ planting in outdoor areas). Each student group prepares a herd health report on the basis of collected information and gives peer feedback to other groups on their reports.

Procedures to ensure the welfare of animals used for educational and research activities The principle of Replacement, Reduction & Refinement is an integrated aspect of planning the courses for veterinary students, including a continuous development of the D-VCS skills labs (see [article on the Danish 3R Center website](#), in Danish). All animals used for teaching or experimental purposes are bred, cared for, handled and housed in agreement with both the Danish legislation (Act LBK no. 474 from 15/05/2014 and Order BEK no. 12 from 07/01/2016) and the EU directive (Directive 2010/63/EU revising Directive 86/609/EEC) on the protection of animals used for scientific purposes. All procedures are licensed by the competent authority ([The Animal Experimentation Inspectorate](#)).

All activities involving experimental animals and the use of patient material for research are registered and evaluated by the Animal Welfare Bodies of the respective departments. All experimental/research animals are managed by experienced and educated staff members who hold the relevant FELASA certificates.

The VTH-LA herd of teaching horses is under intense supervision to ensure that there is a constant focus on the Danish animal welfare legislation. This applies to handling, access to pasture, allocated time of teaching etc.

The privately-owned corps of 18 healthy dogs and eight to nine healthy cats of different ages and breeds used for student training of non-invasive and non-painful clinical procedures are regularly health-checked by experienced staff, who are also in close contact with the owners.

Early humane endpoints are established for laboratory animals used for research purposes. Well-planned monitoring schedules are implemented to minimise the burden on each individual animal. Laboratory rodents used for teaching and educational purposes are used only after students have been instructed and trained in handling and injection techniques on dummies/toy rats/mice under supervision.

Large animal patients and animals seen and used for teaching in relation to farm visits and extramural clinical training at the collaborating commercial herds are housed and managed as commercial animals under the Danish Animal Welfare Act and adjacent relevant orders on protection and housing of large domestic animals⁵³. During these visits and extramural training modules, students observe and evaluate production systems in relation to animal welfare and health, and they (and the teachers) may meet cases of neglect. The students are informed about the

⁵³ E.g. [Animal Welfare Act no. 20 of 11/01/2018](#), [Order on dairy cattle husbandry no. 79 of 23/01/2017](#), [Order on protection of swine no. 17 of 07/01/2016](#), [Order on protection of calves no. 35 of 11/01/2016](#), etc.

overall responsibility of the animal owner, and about surveillance responsibilities of private “herd veterinarians”. They are also informed that if they encounter welfare issues, they must inform the teacher(s) and should not talk to the farmer/farm employee themselves. The teacher(s) are responsible for making contact with the owner in each case, based on their own judgement. The individual cases are discussed with the students to train them in practical decision making related to animal welfare and the distinction with animal cruelty. Prior to the extramural pig herd health teaching, the legal order about advisory services in pig production herds⁵⁴ and industry recommendations/checklists relating to Animal Welfare in pig production farms⁵⁵ are explained to the students.

During extramural clinical training, students perform clinical examinations of individual animals from a herd health perspective (see above, standard 5.1). Diagnostic sampling and euthanasia of diseased animals for necropsy is done under the supervision of a teacher with consent from the herd veterinarian and the owner.

Cadavers and material of animal origin for training in anatomy and pathology Cadavers for training in anatomy are obtained from several different sources. They are kept at +4°C or -18°C until use. Animal material such as organs from cattle, small ruminants and pigs is obtained from abattoirs. Whole cadavers from small ruminants are also obtained from abattoirs. When whole cadavers from cattle are needed for anatomical training, cows are slaughtered at the campus slaughter facility (“Anubis”). Cadavers from pigs used in surgical technique courses are obtained from the D-VCS. Mink cadavers are obtained from private farms. Material from cattle, small ruminants, pigs and mink are collected from the campus and destroyed by the animal by-product disposal company DAKA Denmark A/S. Cadavers of companion animals (i.e. dogs and cats) are donated by the owners through their local veterinary clinic or by animal shelters (e.g. Kattens Værn). Dogs used for dissection exercises are fixated in an ethanol/glycerol mixture and stored in 24% ethanol. Cadavers and other material from dogs and cats are destroyed by the companion animal cremation service (Ada’s Kæledyrskrematorium ApS). Otherwise healthy horses that are donated by their owners are slaughtered at the Campus slaughter facility. Organs and legs, etc. of these horses are used for practical anatomical training, while the carcasses are either used as feed for the carnivores in Copenhagen Zoo or sent for destruction by DAKA Denmark A/S. The organs and other material from the horses, which were used in the practical exercises in the anatomical teaching, are destroyed by DAKA Denmark A/S.

All cadavers and organs received are stored at the section for pathology at 5°C until being necropsied. Large animals are delivered by van every day from VTH-LA in Taastrup to Ridebanevej 3 on Frederiksberg Campus. The section for pathology regularly receives pet animals from the VTH-CA. Arrangements have been made with private veterinary clinics for the delivery of pet animals (cats and dogs). Occasionally, both large and companion animals are submitted for necropsy by veterinarians in practice, and these are also used for necropsy practicals with the students. Every Wednesday, a technician collects materials from slaughter animals (discharged during meat inspection due to lesions) from the Danish Crown swine abattoir in Ringsted and Herlufmagle cattle abattoir. Each week, approximately 40-50 organs are obtained from the two abattoirs. Annually, approximately 50 to 60 forensic cases (whole cadavers and organs) are used in necropsy practicals and demonstration practicals. Six times a year, selected material (40-50

⁵⁴ See [Ministerial order no. 1648, 18/12/18](#)

⁵⁵ See [Danish Pig Research Center, SEGES, Aarhus N](#)

organs with lesions) is submitted from major abattoirs in Jutland (Danish Crown Horsens swine abattoir, Danish Crown Skærbæk sow abattoir and Aarhus Slagtehus cattle abattoir).

Dead poultry from different production systems, layers (barn, organic and enriched cages), and broiler parents are submitted from producers once or twice a week during periods when practicals are performed with the students. In addition, broilers from a major abattoir are delivered each teaching week.

After necropsy, all material from large production animals and poultry is destroyed by DAKA (collected every week for destruction). ADAs Kæledyrskrematorium is used for the destruction of pet animals. All material is stored at 5°C until it is collected by the destruction companies.

Species	2019	2018	2017	Mean
Cattle	52	42	42	42
Small ruminants	77	78	78	78
Pigs	95	92	92	92
Companion animals	205	204	198	201
Equine	58	41	40	40.5
Poultry & rabbits	0	0	0	0
Exotic pets	0	0	0	0
Others (Mink)	146	0	0	49

* Only includes entire cadavers. Horses, for example, can be split into head, heart, lung, intestines and four legs, which are used as eight separate pieces of material of animal origin. Preparations re-used every year (bones, plasticised and fixed preparations) are not included.

Species	2019	2018	2017	Mean
Cattle*	302	280	346	309
Small ruminants	4	4	4	4
Pigs (1/3 VTH-LA; 2/3 VTH-SA)	254	247	256	252
Companion animals*	27	27	27	27
Equine**	10	10	10	10
Poultry & rabbits	0	0	0	0
Exotic pets**	25	25	25	25

* Including approximately 200 calves made available for supervised extra-mural training in clinical examination methodology at Assendrup dairy farm

** Teaching animals examined by several student groups throughout the year

*** Training conducted extramurally at the Copenhagen Zoo

Species	2019	2018	2017	Mean
Cattle	95	138	152	128
Small ruminants	39	23	48	37
Pigs	20	3	4	9
Companion animals	18,908	18,729	17,589	18,409
Equine	1477	1247	1245	1323
Poultry & rabbits	176	148	194	173
Exotic pets (<i>rodent, guinea pig, reptile</i>)	169	211	174	185
Others (<i>llamas and camels</i>)	0	4	6	3

Species	2019	2018	2017	Mean
Cattle* ^{\$}	2,348	2,338	970	1,885
Small ruminants	100	77	73	75
Pigs**	1,110	1,146	1,066	1,097
Companion animals (<i>shelter animals</i>)	85	85	85	85
Equine	1,398	1,381	1,429	1,403
Poultry & rabbits***	25	20	40	28
Exotic pets (<i>at a zoological garden</i>)	80	80	80	80
Others (<i>llama and camel</i>)	2	0	1	1

[#] Numbers include patients examined / treated in mobile practice run by LA-VTH and extra-murally at at herd visits during the production animal and herd health clinical rotations as well as at animals shelter during companion animal rotations.

^{\$} The bovine herd health core teaching where moved from Zealand to Jutland in 2018 resulting in significant more available cattle.

* An average of 32 cattle per year is attended in mobile practice the rest during the extra-mural general clinical practice and head health management training at herd visits. These registrations represent an estimation of the minimum numbers of individual cattle (cows, heifers and cows) that are made available (tied up / penned) partners for the single animal examinations, treatments and recordings by students and teachers at the collaborating farms and slaughterhouse. The numbers do not include animals that are seen during herd health welfare screening procedures at the farms, hence not individually recorded.

** An average of 24 pigs per year in attended in mobile practice, the rest during farm visits during herd health clinical course. These registrations represent an estimation of the numbers of pigs that are examined by examined and recorded by each student. Each students must examine at least 6 pigs suffering from different diseases. Some pigs are re-examined by other students during the visit.

*** Pet animal at activity playgrounds visited by mobile practice

Species	2019	2018	2017	Mean
Cattle*	96	95	95	95
Small ruminants	72	77	73	74
Pigs*	98	98	98	98
Companion animals	85	85	85	85
Equine	49	53	54	52
Poultry & rabbits	100	100	100	100
Exotic pets	80	80	80	80
Others (<i>e.g. goats, sheep, exotic pigs</i>)	97	96	98	97

* All production animals seen during extramural training are first opinion cases; see table 5.1.4

Necropsy of mink (*Neovison vison*) cadavers – a concerted effort

To increase the number of curriculum relevant cadavers for necropsy the VetSchool decided to introduce mink cadavers from commercial mink farms. Denmark is one of the world's leading mink producing countries and the Section for Pathology has a long standing tradition for serving this branch with pathology service as part of herd health programmes. Pathology wise mink may be compared to ferrets (and other mammals) with respect to prevalent diseases. Common diseases seen in mink include – bite lesions with formation of superficial abscesses; skin disorders; lung infections caused by e.g. haemolytic *E. coli* and *Pseudomonas aeruginosa*; heart conditions e.g. caused by malnutrition; *Staph. aureus* endocarditis; hepatic disorders including lipidosis; intestinal diseases due to different infections and foreign bodies; kidney disorders including hydronephrosis and haematogenic as well as ascending infections; congenital urogenital disorders; different types of cystitis; muscular disorders; bone disorders; CNS-disorders including congenital disorders and infections. Topped up with a number of serious viral diseases including parvoviruses and distempervirus mimicking similar diseases in cats and dogs.

In conclusion, it was decided that mink carcasses with a known history would be a relevant source of ample material for students to train necropsy techniques⁵⁶ and to acquire broad insight into pathological conditions common for mammals including companion animals.

Species	2019	2018	2017	Mean
Cattle*	51	52	52	52
Small ruminants	18	19	29	22
Pigs**	261	59	77	132
Companion animals	102	87	70	86
Equine	148	100	111	120
Poultry & rabbits***	809	787	750	782
Exotic pets	3	7	3	4

⁵⁶ Hammer, A.S. & Dietz, H.H. Necropsy of the Mink. In: Necropsy – A Handbook and Atlas. H.E. Jensen (Ed.). Biololia, 2011, pp. 231-250.

Others (<i>Mink (Neovison vison)</i>)****	240	338	422	333
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* Excluding 4 calves necropsied in 2018 and 2019, respectively, in conjunction with the extra-mural teaching at herd health farm visits in Jutland.

**Excluding 20 pigs necropsied at private laboratory in 2018 in conjunction with the extra-mural teaching at the Herd Health Tracking course.

*** Only poultry. There is not commercial rabbit farming in Denmark.

**** Please refer to the text above the table: **Necropsy of mink (*Neovison vison*) cadavers – a concerted effort**

Table 5.1.7. Number of visits to herds/flocks/units for training in animal production and herd health management

Species	2019	2018	2017	Mean
Cattle*	57	55	55	55
Small ruminants	0	0	0	0
Pigs**	33	34	34	34
Poultry**	4	0	0	1
Rabbits	0	0	0	0
Other: Equine (dentistry, vaccination)	10	10	10	10
Other: Mixed (activity playgrounds)	39	38	75	57
Other: Mink	2	2	2	2

* Includes an estimated average of 21 supervised dairy herd visits per year done by small groups of Herd Health tracking students as part of their Herd Health project assignment.

** Includes an estimated average of 9 supervised pig herd visits per year done by small groups of Herd Health tracking students as part of their Herd Health project assignment.

*** Herd visits to broiler farms and egg layer farm was implemented as part of the core curriculum. All farms consists of several flocks (houses with several thousands of poultry) that are studied by students at each visit.

Table 5.1.8. Number of visits in abattoirs and related premises for training in FSQ

Species	2019	2018	2017	Mean
Ruminant abattoirs*	24	16	16	19
Pigs abattoirs**	24	24	24	24
Poultry abattoirs	0	0	0	0
Related premises**	16	16	16	16

* Premises for production, processing, distribution or consumption of food of animal origin

* In 2019, supervised FSQ-visit including practical training in ante-mortem inspection was to the visit the Danish Crown cattle abattoir in Aalborg, where students are trained in transrectal palpation and gynaecological examination in stabled cows in the pre-slaughter has become mandatory for all students while attending the examination module at the abattoir (see text above).

** The pig abattoir facilities and the facilities for production, processing, distribution and consumption of food of animal origin are all part of Danish Meat College at ZBC in Roskilde. The abattoir facilities are visited for both practical meat and hygiene inspections and audit training. The related premises are visited for practical hygiene and audit training. All facilities are visited multiple times by small groups of students during their meat inspection module at the Practical Herd Health and Meat Inspection rotation.

Ensuring adequate number and variety of animals and material of animal origin for preclinical and clinical training The number and variety of animals (cadavers, healthy and diseased patients) required for training is based on practical considerations (availability and group size), and is managed by the responsible department within the curricular framework and the available caseloads. For preclinical courses and planned clinical exercises using teaching animals, including animals purchased for the purpose (see Section 5.1), the number of animals is adjusted to a

predefined student/animal ratio with the aim of including only the number of animals required. The number of animals (caseloads) and the amount of animal material are routinely evaluated by the preclinical and clinical teachers and course organisers based on an assessment of the students' learning in relation to expected learning outcomes including Day One competences and the students' course evaluations as part of the educational QA procedures (see Section 3.4). Identified critical issues and challenges (e.g. the lack of a certain type of patient) are subsequently discussed by the departmental teaching committee (and if not immediately solvable, by the Study Board) at all levels through dialogue with the Head of Studies, the affected course organisers, and the hospital directors where relevant. The Study Board makes a final decision on the necessary amount of animal material after input from the above-mentioned stakeholders.

5.2 In addition to the training provided in the Establishment, experience can include practical training at external sites, provided this training is organised under direct academic supervision and following the same standards as those applied in the Establishment.

The VetSchool does not manage a production animal teaching farm nor slaughter facilities for teaching purposes. Hence, student involvement in production and health management of farm animals and in meat inspection and processing is ensured through supervised extramural visits to, and hands-on training at, the collaborating commercial farms, abattoirs and food-processing facilities. The extramural teaching is integrated into both clinical and preclinical courses within the BSc and MSc programmes (see Sections 3.1 and 5.1 for details of the organisation, management and student involvement at the extramural collaborating sites). In addition to the supervised extramural (pre-)clinical and herd health management activities mentioned above, students are introduced to animal production, production animal life-cycles and related animal welfare issues and veterinary responsibilities through visits and extramural teaching at a mink farm, egg-laying poultry farm, pig farm and dairy production farms during the first block of Year 1 in the BSc programme as part of the Veterinary Ethics and Philosophy of Science course and later in relation to the Basic Statistics and Epidemiology course at a dairy farm, where students develop their understanding of life- and production cycles in farm animals and how these relate to data collected on-farm and subsequently used in herd health management. Transport for students and teachers to and from extramural activities is generally provided by professional bus companies (see Section 4.8).

5.3 The VTH must provide nursing care skills and instruction in nursing procedures. Under all situations, students must be active participants in the clinical work-up of patients, including a problem-oriented diagnostic approach together with diagnostic decision-making. Nursing care skills.

Nursing and handling of the different species is introduced through the preclinical courses (i.e. [Large Animal Basic Clinical Theory](#), Medicine, Surgery and Reproduction ([MSR](#)) – [Companion Animals](#) and [MSR – Large Animals](#)). During the clinical rotations at the two university hospitals, the students have primary patient responsibility, which includes nursing. For companion animals, this also includes feeding regimes and pet care such as walking dogs and emptying litter boxes. Within the course [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#), students are again mainly responsible for the care and nursing of their patient. This is especially emphasised in the rotation in anaesthesia and in the intensive care ward. At the VTH-LA, nursing and caretaking is of paramount importance during the foaling season, when care of immature and diseased foals is given specific attention. Veterinary nurses and veterinary technicians introduce nursing skills in the preclinical courses and supervise in the clinics.

Group size for the different types of clinical training The student group sizes and related numbers of patients, teaching animals and/or cadavers available for the students to perform the various types of preclinical and clinical procedures and work at the university hospitals, collaborating farms and shelters, as well as during the herd health training at farms are noted for each type of training as previously described.

The students' hands-on involvement in clinical procedures has also been described in detail above. The competencies and skills related to engaging in discussions, thinking and reading are gradually developed during the clinical teaching by means of both theoretical cases as well as student-teacher and peer-to-peer interactions:

During the [General Clinical Practice, Companion Animals](#) course, students follow a 2-week rotation where they work with 12 clinical cases representing diseases commonly encountered in cats and dogs. On the last day of the rotation, the students present a randomly selected case to their fellow students and are given feedback from both teachers and fellow students (peer-review).

In the [Emergency, Obstetrics, Critical Care and Clinical Anaesthesiology](#) course, an e-learning module with a virtual VTH-CA is provided with cases on common emergency cases. It is mandatory for the students to engage in these cases and this can be done during the shift if time allows, or at home. Feedback is given to the students at the end of the course.

In the [Veterinary Imaging](#) course, the didactic strategy is focused at students moving from class-work to work in larger, and then smaller groups and finally ending up with the students working as independently as possible mimicking daily work in clinical practice.

In the [Veterinary Paraclinics](#), students must answer around 80 multiple-choice questions in the IT-learning system Absalon. The questions cover clinical microbiology, parasitology and clinical pathology, and there is a mix of simple questions and questions concerning theoretical cases, with background information on e.g. the patient history, clinical findings and blood sample results. The students must answer all questions correctly and have approximately 3 weeks to complete the task. The questions test different taxonomical levels and can be answered an unlimited number of times, and an instant summative feedback (right or wrong) is provided after the student has given an answer. For the majority of questions, a feedback box with formative feedback is also shown immediately, explaining why the answer given was right or wrong. Students can choose to pause the questions at any time and continue later, allowing them to read about the theme in question or discuss it with fellow students or teachers. See also Standard 3.

Within the clinical rotations, daily morning and afternoon rounds provide the opportunity to discuss cases and patient management. The students take an active role in these rounds. As part of the POMR and electronic report writing, daily feedback is given in the journal system.

5.4 Medical records must be comprehensive and maintained in an effective retrieval system (preferably an electronic patient record system) to efficiently support the teaching, research and service programmes of the Establishment.

The VTH-CA has been using an electronic patient record system since August 2002. In May 2014, the latest edition of an electronic medical record system (VetNetManagement by a Danish company Tang Data) was introduced at both hospitals and in the mobile practice at VTH-LA. Data from the previous system (Vet Vision) has been transferred to VetNetManagement.

VetNetManagement is capable of archiving a comprehensive patient record, the quality of which depends upon those responsible for data entry (students, technical support staff and clinicians). The system provides all students and staff members with continuous access to comprehensive patient records including laboratory tests, discharge letters, billing information, etc. Results from some external diagnostic services are archived in the record of each patient. Diagnostic images are archived in an open source PACS, which is interfaced with the electronic patient record. Records

are detailed and safely stored, and access to files is under strict control. Retrieval for teaching and research purposes is often used.

The veterinary diagnostic laboratory (Vet-Lab) maintains its own records with the help of “Visualab” and can retrieve and generate datasets from its database.

For analysis of technical data from herds, several commercial record-keeping systems available on the farm or veterinary practice (Agrosoft, Bedriftsløsningen, VPA, Sim Herd) are used. Data sources from national databases e.g. CHR, Vetstat, SPF-sus, Landmandsportalen, kvægdatabasen, salmonelladatabasen, etc. are included in the herd analysis.

Comments on Standard 5

Means used to maximise the teaching value of each case across the curriculum

Within the VTHs, the teaching value of each case is maximised by the fact that new students in other services come in contact with the patient as required in the workup of each particular case. First-opinion patients in the core curriculum may be internally referred to specialist services in which tracking students are involved in the more detailed workup. Case material is an integral aspect of the clinical lectures, basic clinical training, e-learning and clinical case presentations during rounds. The formal use of case material across the entire curriculum does not occur per se. However, case material from the clinical department may be included in courses run by D-VAS. This use is at the discretion of the faculty member responsible for the particular course.

A recent example is the established collaboration with a nearby cat shelter to increase the number of spay/neuter procedures per student. Another example is that it has become increasingly difficult to obtain enough canine cadavers for preclinical training. Due to the increasing scarcity, D-VCS formed a group of teachers responsible for the courses and they first mapped the actual need for the different course activities, prioritised them and discussed possible solutions. Based on this work, some activities are now performed on pig cadavers instead of dogs and a great effort is made to eviscerate dogs directly after euthanasia to increase the number of times that each cadaver can be used for teaching.

Clinical case material may be included in microbiology, pathology, histopathology and ethics instruction either directly or indirectly. Large datasets derived from the clinical case material are available for MSc thesis students both within and outside of the clinical department.

Biosecurity requirements make it increasingly difficult for students to access commercial farms, particularly pig and poultry farms.

Suggestions for improvement on Standard 5

None.

Standard 6. Learning resources

6.1 State-of-the-art learning resources must be adequate and available to support veterinary education, research, services and continuing education. When the study programme is provided in several tracks/languages, the learning resources must be available in all used languages. Timely access to learning resources, whether through print, electronic media or other means, must be available to students and staff and, when appropriate, to stakeholders. State-of-the-art procedures for bibliographical searches and for access to databases and learning resources must be taught to undergraduate students.

Part of the SUND [strategy](#) is “to further develop teaching and didactic competencies of teaching staff. SUND will also be focusing on visible recognition of good, professional teaching and didactic

development efforts set to benefit both SUNDs educational programmes and extra-curricular activities.”

The library at Frederiksberg Campus, Copenhagen University Library, gives users access to more than 50 million full-text journal articles. From 1 January 2018, the library at Frederiksberg Campus has been part of the Royal Library, with the full scope and retrievability of the digital full-text information made available to the Faculty’s users, i.e. scientists and students.

An organisational merger also occurred on 1 January 2018 with the general UCPH library at Nørre Campus in order to ensure and develop the future ambitions to support education and research at UCPH with a special focus on health and science.

The library conducts sessions in information literacy – mostly integrated into ECTS courses during the course of students’ normal education. Additionally, the library produces e-learning resources on subjects such as plagiarism, Boolean operators, etc. To equip veterinary students with basic information-retrieval skills, the library offers special workshops on information retrieval for veterinary BSc students writing their theses. Students are offered support and training in literature searches, including specific guidance for MSc students within their own subject.

The SUND [Centre for Online and Blended Learning](#) (COBL) works to promote better education through the skilled use of educational technologies and inclusion of digital learning resources across the Faculty's many study programmes, courses and training activities. It provides support, workshops and courses for instructors, production of digital learning resources, as well as practical and pedagogical assistance with complete course makeovers.

COBL also provides support in the use of “Absalon”, the UCPH online course platform⁵⁷. Each time a course is run, an online course room is set up in Absalon and the relevant teachers and students are automatically enrolled. Here, teachers can share learning materials, communicate with students and set up features such as quizzes, assignments, plagiarism control and peer feedback. All staff and students can access Absalon through the UCPH intranet – “[KUnet](#)”.

The [Department of Science Education](#) (DSE) focuses on the specific nature of challenges related to science teaching, learning and research. DSE offers a range of courses and programmes for university staff. Students of any faculty programme can attend DSE courses and complete project work in science didactics, science communication and science studies.

Copenhagen University Library manages the procedures, negotiations, budgets and committee structure for learning resources such as books, databases and periodicals. However, students and staff enjoy the privilege of suggesting books, journals and databases for purchase via a standard form⁵⁸. The license portfolio is reviewed annually. Based on analytics such as usage and downloads, the portfolio then goes through a second phase in which it is reviewed by subject librarians. Thirdly, it goes through a review by a working group made up of appointed researchers from each department at SUND, the faculty librarian and the head negotiator of the library. This group then make a recommendation to the faculty management team to have the final say.

6.2 Staff and students must have full on-site access to an academic library administered by a qualified librarian, an Information Technology (IT) unit managed by an IT expert, an e-learning platform, and all the relevant human and physical resources necessary for the development of instructional materials by the staff and their use by the students.

The relevant electronic information, database and other intranet resources must be easily available for students and staff both in the Establishment’s core facilities via wireless

⁵⁷ Absalon is the UCPH name for its licensed [Canvas platform](#)

⁵⁸ <https://kunet.ku.dk/fakultet-og-institut/koebenhavnsuniversitetsbibliotek/bogforslag/Sider/default.aspx#>

connection (Wi-Fi) and from outside the Establishment through a hosted secured connection, e.g. Virtual Private Network (VPN).

The Faculty Librarian is Mrs. **Bonnie Frisendahl** (cand.scient.bibl.) and the Deputy Librarian is Mrs. **Lene Wendelboe** (cand.scient.bibl). Opening hours of the Library are 8:00-20:00 Monday to Friday, and 10:00-17:00 Saturdays and Sundays.

The total budget for the University Library is 286,939,175 DDK. Buildings, administration, IT, etc. account for approximately 50% of the total budget, the remainder being allocated to direct services. For direct services, the remaining budget is roughly divided 50/50 between staffing and licenses (Staff: 73,077,681 DKK (approx. 9.7 mio. EUR); Electronic resources (65,600,061 DKK (approx. 8.7 mio. EUR); Printed resources: 3,609,737 DKK (approx. 0.48 mio. EUR). The budget of each faculty library is based on a distribution key split between the Royal Library and the faculties of the university. This means that annually, 32,446,080 DKK is spent directly on electronic and printed resources within subject areas related to health and science, including veterinary sciences. The library at Frederiksberg provides study areas for 300 people. Approximately half of these can be used for group study if needed. There are 15 seats in the silent study area and a further 24 seats can be used as a silent study area when no classes are being held. There are 33 PC work stations. The library – as well as other student facilities – provide access to the wireless network Eduroam, accessible throughout UCPH. The library offers various tools to facilitate [bibliographical searches](#), and students can [book an information specialist](#) for up to 1 hour of (free) undisturbed instruction for their final BSc assignment or MSc thesis.

A UCPH IT servicedesk provides IT support to students and staff, as specified in “service descriptions” such as the document “[Support for students](#)”. The IT servicedesk at Frederiksberg Campus is open Monday to Friday 8:00-16:00.

The library at Frederiksberg campus employs 14.16 FTE permanent staff (excl. management) and 2.16 FTE student employees. Staff qualifications are constantly developing to better support students, researchers and faculty management. In recent years, we have had a special focus on Open Science skills such as open access publication, responsible metrics and data management, along with skills in Open Educational resources and project management.

Staff mainly work within three main areas:

- 1) User services: Face-to-face help desk; Websites and subject portals; Study environment.
Information literacy: The library conducts sessions in information literacy – mostly integrated into ECTSs courses during the students’ normal education. Additionally, the library produces e-learning resources on subjects such as plagiarism, Boolean operators, etc.
- 2) Researcher support: Research registration and validation; Open access publishing advice; PhD training; Plagiarism screening of PhD theses; Bibliometric reports; Researcher cafés with a focus on subjects like open access and data management planning.

The UCPH library hosts a number of “[datalabs](#)”, which are physical study environments for the students and staff of UCPH. It is for students who, individually or in groups, work on media and technology-based projects, and for staff members interested in integrating technology into their research and teaching.

6.3 The Establishment must provide students with unimpeded access to learning resources, internet and internal study resources, and equipment for the development of procedural skills (e.g. models). The use of these resources must be aligned with the pedagogical

environment and learning outcomes within the programme and have mechanisms in place to evaluate the teaching value of changes in learning resources.

The table below showcases key numbers of available electronic resources in 2018:

Total number of databases	610
Total number of e-books	965,304
Total number of electronic journals	134,488

A search in our catalogue based on Library of Congress Subject Headings (Veterinary, Animal husbandry, Pet medicine, Animal welfare, Livestock, Domestic animals, Animal medicine) with Dewey codes and a free-text search for *veterinar** gives a result of 2,712 when limited to books. A similar search limited to journals gives 1,337 results.

At the library at Frederiksberg campus, students and researchers are able to access a number of available printed materials:

Number of printed veterinary books from 1980 onwards	7,382
Number of printed animal husbandry books from 1980 onwards	5,657
Number of printed animal husbandry journals	11
Number of printed veterinary journals	18

The governance structure for materials and license negotiations are currently changing. DEFF (Denmark's Electronic Research Library⁵⁹) was recently moved to the Royal Library and a considerable mandate lies with Danske Universiteter (Danish Universities⁶⁰) to ensure that the universities have a substantial say in the negotiations.

All students are provided with an alumni e-mail address for communication with the educational administration and for more general purposes such as online access to the university library and literature databases. Teaching facilities are equipped with wireless internet and students can access Eduroam while using their student-specific login credentials.

Comments on Standard 6

To meet continued financial downsizing, we expect to have to cut down on licenses while advocating for Open Access. To govern this process, the (national) Royal Library has developed a new dialogue structure involving Deans and scientific staff in deciding which resources to cancel.

Suggestions for improvement on Standard 6

None.

Standard 7. Student admission, progression and welfare

7.1 The Establishment must consistently apply pre-defined and published regulations covering all phases of the student "life cycle", e.g. student admission, progression and certification.

In relation to enrolment, the Establishment must provide accurate and complete information regarding all aspects of the educational programme in all advertisements for prospective national and international students.

⁵⁹ <https://www.deff.dk/english/>

⁶⁰ <https://dkuni.dk/>

Formal cooperation with other Establishments must also be clearly advertised.

All information concerning enrolment into the UCPH education is published at the [UCPH admission webpages](#). Specific information about admission requirements and procedures for the veterinary programme can be found [here](#) (in Danish). Information about procedures are described below.

7.2 The number of students admitted must be consistent with the resources available at the Establishment for staff, buildings, equipment, healthy and diseased animals, and materials of animal origin.

Table 7.2.1. Number of new veterinary students admitted by the Establishment				
Type of student	2018/2019	2017/2018	2016/2017	Mean
<i>Standard students</i>				
BSc programme	181	183	182	182
MSc programme	163	133	172	156
<i>Full Fee Students</i>	0	0	0	0
Total	344	316	354	335

Table 7.2.2.a Number of veterinary undergraduate students registered at the Establishment - BSc programme*				
Year of programme	2018/2019	2017/2018	2016/2017	Mean
First year	261	246	243	250
Second year	158	177	187	174
Third year	190	168	178	179
Total	609	591	608	603

*This summary is constructed so that all BSc-students registered as of 31 August at the very last day of the respective Study Year 2018/2019, 2017/2018 and 2016/2017 are distributed as first, second or third year students according to their earned ECTS, ie. 0-60 ECTS (first year), 61-120 ECTS (second year) and 121-180 ECTS (third year).

Table 7.2.2.b Number of veterinary undergraduate students registered at the Establishment - MSc programme*				
Year of programme	2018/2019	2017/2018	2016/2017	Mean
First year	196	245	208	216
Second year	199	167	216	194
Third year	103	96	40	80
Total	498	508	464	490

*This summary is constructed so that all BSc-students registered as of 31 August at the very last day of the respective Study Year 2018/2019, 2017/2018 and 2016/2017 are distributed as first, second or third year students according to their earned ECTS, ie. 0-60 ECTS (first year), 61-120 ECTS (second year) and 121-180 ECTS (third year).

Type of students	2018/2019	2017/2018	2016/2017	Mean
BSc programme	163	132	161	152
MSc programme*	156	137	128	140

* Students graduating from the MSc-programme obtain the DVM-title and qualify for the Danish veterinary license issued by the Danish Veterinary and Food Administration

Duration	2019	2018	2017	Mean
above 0*	63%	68%	73%	68%
above 1 year	29%	24%	21%	25%
above 2 years	4%	5%	4%	4%
above 3 years or more	4%	3%	3%	3%

* The total duration of the studies matches the minimum number of years of the BSc-programme (i.e. 3years)

Duration	2019	2018	2017	Mean
above 0*	40%	63%	63%	55%
above 1 year	46%	35%	32%	38%
above 2 years	11%	1%	4%	5%
above 3 years or more	3%	0%	2%	2%

*The total duration of the studies matches the minimum number of years of the MSc-programme (2½ years)

Programmes	2019	2018	2017	Mean
Interns	12	12	10	11
Residents	21	22	23	22
PhD students	125	137	164	142
Others (MSc Students)	80	73	78	77

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

The Establishment must regularly review and reflect on the selection processes to ensure they are appropriate for students to complete the programme successfully. If the selection processes are decided by another authority, the latter must regularly receive feedback from the Establishment.

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

All applicants must fulfil the same requirements in terms of the entrance qualifications for the BSc programme in Veterinary Medicine. Foreign nationals must provide proof of their Danish skills. Students from the Nordic countries are, however, exempt from language testing.

There is a numerus clausus at 180 new veterinary students per year. For this reason, it is not possible to offer all qualified applicants, Danish or foreign, admission to the BSc programme in Veterinary Medicine. All students who obtain a Danish BSc degree in Veterinary Medicine are guaranteed admission to the MSc programme. Applicants will be considered for admission into the BSc-programme if they fulfil the following general and specific requirements prior to enrolment.

General requirements A) A nationally recognised university entrance exam from one of the member countries of the European Council. A conclusive list can be found at www.ufm.dk, Ministry of Higher Education and Science under ‘Facts about qualifications and assessments’. Applicants with different entrance exams from the ones listed are encouraged to contact the UCPH prior to applying.

B) International Diplomas, i.e. Baccalaureate avec Option Internationale (BOI/OIB), Danish/French Baccalaureate (DFB), European Baccalaureate (EB), International Baccalaureate (IB) and other diplomas/certificates from countries that have signed the European Convention on the Equivalence of Diplomas Leading to Admission to Universities.

C) In addition to the above-mentioned diplomas and certificates, a number of foreign certificates and diplomas from the USA may be considered as valid qualifications.

Specific requirements In addition to the general admission requirements, all applicants must document a specific level of competencies⁶¹ in Danish (i.e. level A), English (level B), Mathematics (level A), Physics (level B) and Chemistry (level B) or Biotechnology (level A) upper secondary school qualifications or in specific entrance exams. Foreign applicants must include information and transcripts about their levels (A/O level, higher/subsidiary level, number of years of study at secondary school or university) in relevant subjects.

All applicants with a valid entrance exam are considered for admission in two ways when applying to the BSc programme – either via ‘Quota I’ or ‘Quota II’. Since 2008, 50% of each cohort has been admitted via quota I and 50% via quota II for the BSc in Veterinary Medicine.

Quota I Applicants who apply via Quota I are evaluated exclusively on the basis of their academic grades obtained at the qualifying exams, i.e. the top 90 applicants are directly admitted. Application through quota I is only possible when the grading system of the applicant’s qualifying exam is translatable to the Danish grading system. Applicants with qualifying exams from countries with grading systems that are incompatible with the Danish grading system must apply via Quota II.

Quota II The applicants must have obtained academic grade points from their entrance exam corresponding to at least an average grade of 6 in the Danish grading system. The applicants are tested, interviewed and selected on the basis of the following stepwise procedure⁶²:

1. A multiple-choice test comprising a broad range of general and vocational questions relating to chemistry, medical physics, mathematics and statistics, biology, veterinary

⁶¹ Danish upper secondary school levels defined by the Danish Ministry of Education.

⁶² From 2020, this specific veterinary admission MCQ test will be replaced by a common aptitude test for all students applying for admission to UCHP through Quota 2. The subsequent interview used for the veterinary programme will continue, but with a new guide for the semi-structured interview that meets the general admission criteria of UCPH. See <https://studies.ku.dk/bachelor/quota-1-and-2-applications/new-quota-2/>.

- medicine, animal welfare and veterinary public health in society today. The best 180 applicants are invited to the following interview step.
2. Interview by a panel consisting of one senior academic staff member appointed by the veterinary departments, one veterinarian appointed by the Danish Veterinary Association and one veterinary student appointed by the Veterinary Student's organisation. Applicants are questioned about their personal motivation, experience with animals, knowledge about the veterinary field, animal welfare, study methods and more. Before the interviews are conducted, all new members in the panels are trained in a seminar held by the Head of Studies and an Academic Officer working with admissions.
 3. The 90 students with the best combined score in the multiple-choice test (weighted 1/3) and interview (weighted 2/3) are selected.

Appeal process An appeals guide is included in all Ruling Letters to the applicant. An appeal must be sent to SUND. The Faculty will forward the appeal and a statement from the Faculty to the Rector's office. The applicant will have the option to comment on the statement made by the Faculty before the appeal decision is made. The criteria and procedures are described on the University's homepage⁶³. If the applicants have any questions regarding the criteria, they can contact Student Guidance at the University.

Admission number The student capacity of the study programme in veterinary medicine was increased in 2006 from 140 to the present level of 180 students per year. Each year, a small number of additional applicants (i.e. 5-10) are admitted in order to match the anticipated early dropout level among admitted applicants. SUND has no plans to change the number of students admitted per year, and the VetSchool does not accept full fee paying students. The number is assessed every year by the Study Board and the Board of Vetschool, based upon available information about the need for veterinarians in Danish society.

Admission procedures, admission statistics and admission guidelines are published on the UCPH website (in Danish. Veterinary BSc: <https://studier.ku.dk/bachelor/veterinaermedicin/>; Veterinary MSc: <https://studier.ku.dk/kandidat/veterinaermedicin/>).

7.4 There must be clear policies and procedures on how applicants with disabilities or illnesses are considered and, if appropriate, accommodated in the programme, taking into account the requirement that all students must be capable of meeting the ESEVT Day One Competences by the time they graduate.

By law, applicants with disabilities are treated on a par with all other applicants. The ministerial order on examinations permits the university to adapt exam forms for students with e.g. dyslexia as well as students with mental or physical disabilities, as long as the academic level of the exam is not lowered.

7.5 The basis for decisions on progression (including academic progression and professional fitness to practise) must be explicit and readily available to the students. The Establishment must provide evidence that it has mechanisms in place to identify and provide remediation and appropriate support (including termination) for students who are not performing adequately.

The Establishment must have mechanisms in place to monitor attrition and progression and be able to respond and amend admission selection criteria (if permitted by national or

⁶³ <https://studier.ku.dk/bachelor/ansoegning-og-optagelse/>

university law) and student support if required.

The study programme in veterinary medicine is highly attractive, and the number of motivated applicants is high. This is reflected in a high level of student progression and a low drop-out rate compared to other BSc programmes at the UCPH. Student progression is highly regulated by a number of governmental regulations. Students:

- Must pass the first-year test within 2 years of enrolment. The first-year test refers to seven specific Year 1 courses and exams, i.e. a total of 45 ECTS
- Have a maximum of three attempts to pass exams
- Must fulfil the study activity requirement of passing 45 ECTS each year
- Must complete the BSc degree within 4 years of matriculation
- Must complete of the MSc degree within 3.5 years of matriculation.

Students' compliance with these rules is controlled in March and October. Student Affairs contacts students identified to be in conflict with these rules and asks them to send a motivated and documented application for exemption to the Study Board within 2 weeks. If a student does not respond, they will be deregistered from the university in accordance with the ministerial orders on admission to BSc and MSc programmes. They can appeal this decision within 2 weeks. The Study Board may grant a dispensation from these rules on the basis of a motivated and documented application if the student's circumstances are extraordinary and if the student shows academic aptitude.

The first year drop-out rate of the BSc programme varies from 4% to 8% (i.e. between 7 and 14 students) of the average admission of 182 students.

7.6 Mechanisms for the exclusion of students from the programme for any reason must be explicit. The Establishment's policies for managing appeals against decisions, including admissions, academic and progression decisions and exclusion must be transparent and publicly available.

Students can be excluded from the programme in three ways, cf. 7.5:

- 1) Students who are in conflict with a rule preventing them from finishing the programme (unless they are given an exemption from the rule) will be excluded from the programme by the administration unless they apply for an exemption within 2 weeks of being contacted by the administration.
- 2) Students who have applied for an exemption from a rule preventing them from finishing the programme will be excluded from the programme if the Study Board rejects their application.
- 3) Students may be temporarily or permanently excluded from a university programme as a result of a disciplinary measure taken by the university in cases where the student has violated university rules.

Students may appeal an exclusion to the Danish Agency for Science and Higher Education if the appeal concerns legal issues. Appeals are sent via the rectorate of the UCPH, which evaluates the case and issues a report on the appeal.

7.7 Provisions must be made by the Establishment to support the physical, emotional and welfare needs of students. This includes, but is not limited to, learning support and counselling services, career advice, and fair and transparent mechanisms for dealing with student illness, impairment and disability during the programme. This shall include provision of reasonable adjustments for disabled students, consistent with all relevant

equality and/or human rights legislation. There must be effective mechanisms for resolution of student grievances (e.g. interpersonal conflict or harassment).

Students in veterinary medicine are offered support services on many levels:

- 1) At the VetSchool, the Study Board has a strong focus on student well-being when making decisions about the curriculum and about individual applications for exemption. The student union for veterinary students, VMF (“Veterinærmedicinsk Forening”), is not only active in promoting student interests, they have also elected a student as a named person to contact in cases of problems with the mental work environment at the VTHs. In addition, the VetSchool has appointed faculty mentors (who are not involved in examinations) for students who wish to discuss the planning of their MSc programme or their subsequent career.
- 2) At SUND level, a number of full-time student counsellors are available for students requiring guidance on matters related to their studies including illness, disability and careers. SUND also employs a university chaplain, who is ready to listen to and mentor students regardless of creed.
- 3) At UCPH level, the university has a Special Educational Support office to help students with disabilities complete the programme on equal terms with other students. The UCPH also has an independent “student ambassador” whom students can contact if they need to discuss legal or other problems in official university decisions.
- 4) On a national level, Copenhagen, like other Danish university towns, has a branch of the Student Guidance Service (Studenterrådgivningen), which specialises in helping students with psychological issues including exam anxiety.

Student grievances are processed in a number of ways:

- 1) Complaints about exams are regulated by the ministerial order on examinations in the following way: the student sends a complaint no later than 14 days after the exam assessment is published. The exam administration invites the examiner (or course leader responsible) to comment on the complaint, presents these comments to the student and invites the student to comment on the response. The case is then usually decided by the exam administration. The decision may be either that the complaint is rejected or that the student is offered a new assessment (of a written exam) or a new examination. If the complaint is rejected, the student may appeal the decision, and the appeal will be submitted to a board of appeals whose verdict is final except for complaints concerning legal issues, which may be presented to the Danish Agency for Science and Higher Education.
- 2) Grievances about courses can be addressed either directly to the course leader responsible, the departmental teaching committee, the head of studies, or it could be taken up by the student representatives in the Study Board.
- 3) Grievances about incidents involving students that occur within the university are normally addressed to the head of the department who will investigate the matter and present a report about the incident to the Dean if it is deemed that there has been a violation of the regulations on student behaviour. The Dean refers the case to the Rector along with a recommendation. The Rector makes a decision about the case after consultation with the student.

7.8 Mechanisms by which students can convey their needs and wants to the Establishment must be in place. The Establishment must provide students with a mechanism, anonymously if they wish, to offer suggestions, comments and complaints regarding compliance of the Establishment with national and international legislation and the ESEVT standards.

The three main channels for students to influence the content and running of the programme are:

- 1) The Study Board, consisting of equal numbers of students and faculty staff elected by their respective groups. The Vice-Chair of the Study Board is always a student who has a direct influence on the agenda of the Study Board meetings.

2) The departmental teaching committees consist of 50% student representatives (following courses at the department) and 50% departmental representatives. These committees discuss issues relating to teaching development, issues identified based on students' course evaluations or issues brought to the committee directly from individual students or the student association.

3) Course evaluations: Courses at SUND are evaluated every second time they are taught. Evaluation takes the form of an online questionnaire to be completed anonymously with the opportunity for free-text comments, or the evaluations are based on dialogue meetings between course organisers, student representatives and course students. The student evaluations are presented to the course leader responsible, who is asked to consider whether the evaluation highlights any need for change/improvement. The results of the evaluation and the comments from the course leader responsible are processed by the departmental teaching committees, who grade the courses in terms of a possible need for changes, improvement or development. Finally, the Study Board decides how to act. The Head of Studies is responsible for following-up on action plans initiated by the Study Board based on the student evaluations. If a course has been identified as requiring intervention, it will be evaluated every time it is taught during the follow-up period. In addition, the Study Board can identify courses that need to be evaluated every year (see also Standard 3.1). Finally, the student representatives of the student years can contact any teacher, course organiser, Head of Study and Heads of Departments on behalf of single students or classes of students with any study related issues and problems.

Comments on Standard 7

The current interview system for admission changes slightly from 2020 onwards.

Suggestions for improvement on Standard 7

None.

Standard 8. Student assessment

8.1 The Establishment must ensure that there is a clearly identified structure within the Establishment showing lines of responsibility for the assessment strategy to ensure coherence of the overall assessment regime and to allow the demonstration of progressive development across the programme towards entry-level competence.

Assessment is an integral aspect of the veterinary curricula and is done (by law⁶⁴) within each course. The procedures and committees involved in the assessment strategy of the UCPH and in the related QA are identical to those involved in the curricula strategies and QA (see section 3.3). Assessments are evaluated by course organisers, the Head of Studies and the external examiners as part of the course evaluation process (see section 3.1).

Assessments are subject to legal requirements^{64,65} stating e.g. alignment with learning goals, assessment formats, allowed retakes, presence of external examiners, students' right to file complaints, timely communication of results, grade-point scales, etc. These requirements are reflected in the SUND [General Programme Regulations \(revised 9 January 2016\)](#) and in the overview descriptions of the veterinary curricula (see [BSc](#) and [MSc curricula](#)).

⁶⁴ [Ministerial Order \(BEK\) no. 1062, 30/06/2016](#) ("Higher Exam Order").

⁶⁵ [Ministerial Order \(BEK\) no 262, 20/03/2007](#) ("Grading scales and other assessment").

Students' acquisition of theoretical knowledge and practical/clinical skills are assessed within all courses of the programme through formative and/or summative assessments of various formats, depending on the course. In the BSc programme, all courses include a final summative exam that generally takes place within the ninth week of the respective blocks. Furthermore, courses that comprise practical training and assignments, e.g. laboratory and desk-based work, non-clinical animal work and/or courses that have a high study load (high ECTS weight) generally include a course-specific formative assessment programme referred to as the Course Certificate, which aims to support and motivate the students' active learning progression. The course organiser awards the student with a "completed"/"non-completed" Course Certificate based on the various elements of the course-specific formative assessment programme.

All practical MSc courses include formative assessments leading to specific Course Certificates, and final summative theoretical exams exist for some of the core and tracking courses.

The following assessment methodologies for assessing theoretical knowledge are used:

Summative exams

- Written essays, short-answer questions, MCQs or a mixture of these (e.g. for [Physiology examination](#), [Pharmacology & Toxicology](#), [Special Pathology & Poultry Diseases – Theory](#), [Infectious Microbiology](#), [Herd Health and Public Health](#), [Medicine, Surgery & Reproduction – Large Animals](#), [General Clinical Practice, Large Animals](#), [Herd Health Management](#), [Biomedicine](#))
- Station-based, written (e.g. for [Anatomy exam](#), [Special Pathology and Poultry Diseases – Practicals](#))
- Oral (e.g. for [Veterinary Ethics and Philosophy of Science](#), [BSc thesis](#), [Practical Herd Health Management examination](#), [Equine Clinic Track](#), [One Health Track](#), [MSc thesis](#))
- Written reports (e.g. for [Veterinary Project in Practice – EPT](#)), including oral presentation of a report ([BSc thesis](#), [Practical Herd Health Management examination](#), [MSc thesis](#), [One Health Track](#)).
- Portfolio (e.g. for [examination](#))

Formative assessments

- MCQ and other forms of e-based quizzes (e.g. for [Veterinary zoology](#), [Anatomy & Physiology, part 2](#), [Pharmacology & Toxicology](#); [Immunology](#), [General Pathology and Pathophysiology](#), [Veterinary Paraclinics](#), [Veterinary Imaging](#))
- Written assignments (lab reports/ project reports/ clinical reports/ scientific posters; e.g. for [Veterinary Chemistry and Biochemistry](#), [Veterinary Ethics and Philosophy of Science](#), [Microbial Food Safety](#), [Veterinary Imaging](#), [General Clinical Practice](#), [Companion Animals](#), [Herd Health Management](#), [Biomedicine](#))
- Oral presentations (e.g. for [Anatomy & Physiology, part 2](#), [Infectious Microbiology](#), [Veterinary Imaging](#), [General Clinical Practice](#), [Companion Animals](#), [One Health Track](#)).

Methodologies to assess preclinical practical skills and clinical practical skills

- 80% attendance for practical and clinical modules (see e.g. [Infectious Microbiology](#), [Basic Clinical Theory, Large Animals](#), [Microbial Food Safety](#) & all propaedeutic and clinical core courses and tracking courses in the MSc programme)
- Practical tests including OSCEs/OSCE-like assignments (see e.g. [Medicine, Surgery & Reproduction, Large Animals](#), [MSR](#), [Companion Animals](#), [Veterinary Imaging](#), [Veterinary Paraclinics](#))

- Written reports and/or oral presentation of practical assignments, clinical cases and clinical projects (see e.g. [Veterinary Chemistry and Biochemistry](#), [Infectious Microbiology](#), [General Clinical Practice](#), [Companion Animals](#), [Practical Herd Health Management and Meat Inspection](#), [Herd Health Management Track](#), [One Health Track](#))
- Logbooks approved by the course teachers (see all core clinical rotation courses, logbooks are shown in [Appendix 8.1](#))
- Workplace assessment including direct observation of procedural skills (DOPS) and multi-source feedback (MSF) in VTH-CA (students' performance is reviewed by clinical teachers once every week; see [General Clinical Practice](#), [Companion Animals](#), [Advanced Companion Animal Track](#) and [Appendix 8.2](#) for assessment sheets)
- Patient-based clinical exam (for [Equine Clinic Track](#)).

Methodologies for assessing soft skills

- BSc and MSc thesis: correct Danish or English written and oral communication is part of the assessment criteria of the BSc and MSc work (see [BSc thesis](#), [MSc thesis](#))
- Workplace assessment at VTH-CA includes direct observation of students' communication with colleagues and clients, work ethics and mental attitudes. Students' performance is evaluated on a weekly basis, see [General Clinical Practice](#), [Companion Animals](#), [Advanced Companion Animal Track](#), and [Appendix 8.3](#) for assessment sheets.
- Formative assessment of communication skills in relation to clinical rounds and oral presentation of clinical cases (see e.g. [General Clinical Practice](#), [Large Animals](#), [General Clinical Practice](#), [Companion Animals](#), [Advanced Companion Animal Track](#), [Equine Clinic Track](#))
- Communication role-play in relation to Herd Health Management (see [Herd Health Management Track](#))
- Assessment of Herd Health advice-related "soft skills" (e.g. communication with farmers and awareness of communication among farm staff) in the Herd Health Management Track exam
- Peer feedback in written and oral assignments (see [Veterinary Pharmacology & Toxicology](#), [Veterinary Imaging](#), [General Clinical Practice](#), [Companion Animals](#)).

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

The Establishment must properly document the results of assessment and provide the students with timely feedback on their assessments.

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

The QA of the assessments are subject to the requirements laid down in the UCPH policy paper on Quality Assurance of Study Programmes, which is based on the ESG standard, including ESG standard 1.3 Assessment of Students (see [UCHP QA policy paper, 2018](#)). Regulations regarding assessments (Course Certificates and summative exams) for SUND courses, including the veterinary programmes, are explained in the [General Programme Regulations document](#), which is published on the [SUND curricular webpages](#). These include: deadlines for course organisers to submit grades, normal periods for examinations and re-examinations, registration procedures for examinations and re-examinations, types of examinations allowed, grading scales, number of permitted attempts, procedures in case of cheating or plagiarism or if students fall ill at exams, special rules for disabled students, procedures for complaints, etc.

Students and staff can also access this information via the UCPH intranet in the context of the veterinary programmes and through a user-friendly interface, e.g. with links to the specific veterinary exam schedules, to “self-service pages” for online signing-in/-out of exams, to the Academic Record system (STADS) where the awarded exam grades are published and to online submission of waiver applications or exam complaints, etc. See the UCPH intranet exam pages for the [BSc programme](#) and [MSc programme](#) (in Danish).

The specific assessment criteria and procedures for the individual courses are reviewed yearly as part of the course and curriculum QA process (see Standard 3). The course-specific assessment criteria and procedures are described in the course syllabi (see [UCHP course database](#)), which also include information about forms of feedback for the course’s formative assessments, ECTS weight(s) of the course exam(s), type(s) of exam(s)/assessment(s), exam registration requirements, aids permitted at the exams, marking scale (7-step scale, passed/failed or completed/not-completed), type of examiners at summative exams (with or without external examiners, number of examiners), etc.

The specific schedules for the summative assessments are decided biannually by the Study Board based on frameworks set by course organisers and the SUND Exam Office, which coordinates all exams). The schedules are available from the SUND website ([Exam schedule pages](#)) and from the [UCPH intranet exam pages](#).

Processes for awarding grades, including explicit requirements for barrier assessments

Summative exams:

For written exams, the grade point marks are awarded by the examiner(s) and submitted (online) to the National Digital Exam System (DE) within 2 weeks of the exam date. For oral exams, grade point marks are awarded just after examination and immediately submitted to DE. Grade point marks submitted to DE will automatically be transferred to the central academic record system (STADS), which students can access through the UCPH intranet to see their personal study registrations including exam results.

In case of external censoring, the external examiner makes the final decision after deliberation with the internal examiner(s). Otherwise, the course organiser will make the final decision.

The assessment and awarding of grades are based on the degree to which students fulfil the requirements stated in the respective course descriptions (syllabi) under “Assessment Criteria”. The grade point scale for summative exams must by law⁶⁶ be either “passed/ not passed” or the 7-step scale (12, 10, 7, 4, 02, 00, -3), where e.g. “12” is awarded *“For an excellent performance displaying a high level of command of all aspects of the relevant material, with no or only a few minor weaknesses”*; “7” is awarded *“For a good performance displaying good command of the relevant material but also some weaknesses”*; “02” is awarded *“For a performance meeting only the minimum requirements for acceptance”* and “00” is awarded *“For a performance that does not meet the minimum requirements for acceptance”*.

Formative assessments in relation to Course Certificates

The course organiser decides on the Course Certificate grade points (i.e. completed/ not completed) after negotiation with the teachers involved in the assessments and feedback to students during the course. At the end of the course, the Course Certificate grade points are submitted to the Exams Office, where grades are entered into STADS. Requirements for completing the elements of the Course Certificate (e.g. 80% attendance for all course modules, quiz scores of at least 70%, oral

⁶⁶ Ministerial Order (BEK) no. 262 of 20/03/2007 (“Grading scales and other assessment”), see [link](#) on the Danish Legal Information website.

presentations, submission of written assignments, adequate performance in practical assignments, etc.) are posted on the respective Absalon course pages.

Processes for post-assessment feedback to students

Summative exams

There are no general feedback processes after summative exams apart from publication of the Grade Point Score (students can only see their own score in STADS). Students' responses in written exams are anonymous to the examiners. However, after written exams, most course organisers publish a "master exam paper" on the Absalon course page, which students can download from the digital exams platform (DE), thus allowing them to self-evaluate their own exam paper.

Specific feedback and guidance is provided on written exams by the course organiser or other examiners if and when students request it and reveal their anonymous exam number. The SUND Student and Career Guidance Office also provides specific [guidance and mentoring to students in relation to courses and exams](#).

Formative assessments

Feedback in relation to formative assessments is provided in numerous ways depending on the assignment task. The type of feedback used is described in the course description. This includes:

- Individual oral feedback by teachers or by peers (under supervision) on practical/ clinical work, oral presentations, written assignments (see e.g. [General Clinical Practice, Large Animals](#), [General Clinical Practice, Companion Animals](#))
- Common oral group feedback by teachers on written assignments (see e.g. [Veterinary Pharmacology and Toxicology](#), [Microbial Food Safety](#))
- Automated and IT-supported feedback on electronic MCQ and short-answer quizzes (see e.g. [Veterinary Paraclinics](#), [Anatomy and Physiology, part 1](#))
- Oral feedback on project work (see e.g. [Veterinary Ethics and Philosophy of Science](#), [BSc project](#), [Herd Health Management](#))

The appeal processes are described in the [General Programme Regulations document](#):

"Appeals concerning examinations or other forms of assessment, including rejections of award of certificates must be submitted by the student using the e-form found at www.KU.net.dk. Appeals must be written and the grounds for the appeal specified, e.g. legal issues, the basis for examination (questions, assignments, and the like), the examination process or the assessment. The appeal must be submitted no later than 2 weeks after grades have been published."

Complaints are first processed by Student Services, who examine possible legal and technical issues regarding the assessment/exam. The complaint is then sent to the examiners, who are asked to make a written statement regarding the issue of the complaint within 14 days. The statement must be concluded with a recommendation of "re-assessment" (in case of written exams), "re-exam" or "rejection of complaint". The examiners' statement and recommendation are sent to the complainant, who has 1 week to comment. Based on the examiners' statement and student's comments, the SUND Administration decides on the case on behalf of the Dean.

The processing time is 5-8 weeks from the announcement of the assessment until the decision is sent to the student via KUmail. A poorly reasoned complaint can be turned down for this reason, but the student will then have 1 week to rephrase or provide further arguments. Other negative outcomes can be appealed to the Dean. The regulations and procedures are described for students

on the [UCPH intranet](#).

8.3 The Establishment must have a process in place to review assessment outcomes, to change assessment strategies and to ensure the accuracy of the procedures when required. Programme learning outcomes covering the full range of professional knowledge, skills, competencies and attributes must form the basis for assessment design and underpin decisions on progression.

The QA procedures, supervisory structure and lines of communication related to assessments are identical to and form part of those described for the curricula (Section 3.4). The QA process regarding assessments includes a review of the annual report from the Board of External Examiners.

Links between learning outcomes and assessment design The veterinary curricula are competence-based courses, as are all other UCPH educational courses. UCPH course design policy requires alignment between intended learning outcomes, didactic methods and assessment(s) within the courses. The course organiser has the responsibility of ensuring that the type of exam and the assessment criteria listed in the course description complies with the intended learning outcomes and the UCPH and SUND rules (see [description of functions for course organisers](#)).

Written exams of various types (e.g. essays, short essays and MCQs; see section 8.1) are the prime choice for summative assessment of students' theoretical learning outcomes as these are well suited to the assessment of cognitive skills (e.g. knowledge, comprehension, interpretation and (theoretical) application of knowledge)⁶⁷. Written exams are generally preferred over oral exams as reliability is higher and oral exams with 180 students are logistically difficult to manage within the official exam periods and with number of available examiners.

Practical learning outcomes such as preclinical and clinical procedural skills are primarily assessed through direct observation of students' practical procedural performance (DOPS e.g. in a lab/skills lab, at a practical/clinical exercise, in a workplace situation) or via OSCE-like assignments. These types of assessment are well suited for assessing procedural skills⁶⁷ and form the basis for awarding students' their "Course Certificates" (see section 8.1).

Higher levels of behavioural learning outcomes such as students' performance in real work practice situations are assessed by composite examinations, e.g.:

- workplace assessment including DOPS at the core and the clinical companion animal specialisation (see [General Clinical Practice, Companion Animals](#) and [Advanced Companion Animal Track](#) and [Appendix 8.3](#))
- oral or written presentations and examination of farm management reports based on observations and interviews with farmers, clinical herd and animal diagnoses, and assessment and statistical analysis of farm data for the core and the elective course in herd health management courses (see [Practical Herd Health Management and Meat Inspection](#) and [Herd Health Management](#) track)
- a portfolio exam based on the meat inspection logbook and audit and hygiene inspection reports from visits to abattoirs and meat-processing facilities for the core course in meat inspection (see [Practical Herd Health Management and Meat Inspection](#))

⁶⁷ E.g. Jolly B, 2010. Written Examinations. In: Swanwick T (Ed.) *Understanding Medical Education: Evidence, Theory and Practice* (pp. 208–231). London, UK: Wiley-Blackwell; Baillie S, Rhind S, 2008. *A guide to assessment methods in veterinary medicine* (version 1.). London, UK.

- programmatic assessment of students' written reports, oral presentations and their ability to critically evaluate and provide constructive criticism to other course participants on their written work and oral presentations for the elective course in [One Health](#).
- Assessment of [BSc](#) and [MSc](#) theses (reports with oral presentation and examination).

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

The Establishment must ensure that the programmes are delivered in a way that encourages students to take an active role in creating the learning process, and that the assessment of students reflects this approach.

The QA policy and procedures related to assessment (see Section 8.2), including ensuring alignment and links between learning outcomes and assessment criteria (see Section 8.3) endorse the quality of the certifications (grade mark awards) related to the students' achievement of learning outcomes. Thus, completion of the Course Certificates and passing the course exams certifies that the student has obtained (at minimum) adequate competencies in terms of the learning outcomes/assessment criteria for the respective courses, and as the student progresses through the programme, these competencies build up to the full competence profile described in the BSc and MSc curricula overviews at graduation.

The national academic record system (STADS) holds information (e.g. dates, awarded grade points, awarded ECTS) in relation to students' admission into the programmes (BSc and MSc), enrolment and completion of courses, enrolment and results of exams and re-takes and other study-related information associated with students' progression, e.g. exemptions from general study regulations. STADS is set up to rule check the student's academic records in relation to formal admission and progression requirements (see Standard 7), including formal requirements for enrolment into specific courses and exams. When BSc students have completed all BSc Course Certificates and/or passed exams, thus being awarded 180 ECTS, they graduate from the BSc programme and are qualified to enrol in the MSc programme. Likewise, when MSc students have completed all core MSc Course Certificates, have passed core exams and have passed one of the six elective tracks, thus being awarded 150 ECTS, they graduate from the MSc programme. BSc and MSc Diplomas are issued on the basis of registrations in STADS. The diplomas include a transcription of awarded Course Certificates and grade point marks from the exams, as well as the related curricular learning outcomes in Danish and in English (see [Appendix 3.1](#)). Students have online VPN access to their own academic records in STADS.

Strategy to encourage students to take an active part in the learning process The UCPH aims to provide a highly creative learning environment and to enhance the quality of degree programmes. For example, the 2023 UCPH strategy states that UCPH will (i) promote challenging learning environments that provide more space for formal and informal meetings between academic staff and students, (ii) further develop models for student involvement in research activities and make it a credit-bearing element of their programme and (iii) strengthen students' opportunities to work with practice-oriented elements in the classroom, for example through case-based and problem-oriented teaching methods that also strengthen their interdisciplinary collaboration skills (see UCPH's [Talent and Collaboration – Strategy 2023](#)).

Since 2012, the VetSchool's strategy has been to support a learning environment and a student culture that allow for professional learning skills that encourage students to engage in lifelong learning and take responsibility for their education, training and learning. Furthermore, the aim is to allow more room for reflective self-learning and skills development by ensuring that course organisers/educators organise the courses so that the content and expectations are adjusted to the

time allotted (see [VetSchool Development Plan](#), in Danish).

At programme level, the strategies have encouraged course organisers, in collaboration with the Study Board, to reduce lectures by around 12% to allow for more time for self-study and exam preparation. Furthermore, with support from the [Centre for Online and Blended Learning](#) at SUND course managers have introduced a wide range of student-centred learning activities in their courses, e.g. blended learning sessions, quizzes, peer feedback and flipped-classroom teaching. These initiatives are ongoing and integrated into the curriculum-revision process.

8.5 Methods of formative and summative assessment must be valid and reliable and comprise a variety of approaches. Direct assessment of clinical skills and Day One Competences (some of which may be on simulated patients), must form a significant component of the overall process of assessment. It must also include quality control of the student logbooks in order to ensure that all clinical procedures, practical and hands-on training planned in the study programme have been fully completed by each individual student.

Veterinary graduates do not have to pass a board or licensing exam⁶⁸ to obtain the national license to practise veterinary medicine. Completion of the entire BSc and MSc programmes (i.e. passing all exams and completing all core courses in the BSc and one of the tracking courses), certifies that an adequate competence level has been reached. The assessment programme, including the various procedures, methodologies and grading systems (see Sections 8.1, 8.2 and 8.4), ensures that the all students have achieved adequate levels at the time of graduation. As the ESEVT Day One Competences are integrated into the curricular competencies both at programme level (see [2009 BSc curriculum \(ver. 2019/20\)](#) and [2009 MSc curriculum \(ver. 2019/20\)](#), in Danish) and at course level (see [Appendix 3.3](#)), the described assessment programme ensures that every graduate has achieved the minimum level of competence described in the ESEVT Day One Competences. See also sections 3.1 and 3.3.

Comments on Standard 8

None.

Suggestions for improvement on Standard 8

The current revision of the veterinary curricula aims to reduce the number of summative course exams testing pure knowledge, and replace these with fewer summative exams capable of testing higher taxonomic levels of learning outcomes and more formative assessment during the courses (e.g. online quizzes and assignments) testing the fact-based knowledge.

Standard 9. Academic and support staff

9.1 The Establishment must ensure that all staff are appropriately qualified and prepared for their roles, in agreement with national and EU regulations and must apply fair and transparent processes for the recruitment and development of staff.

A formal training (including good teaching and evaluation practices, learning and e-learning resources, biosecurity and QA procedures) must be in place for all staff involved with teaching.

⁶⁸ No academic professions in Denmark (medical doctors, dentists, veterinarians, chiropractors) have a board exam in order to obtain a national license after graduation from Danish Universities.

Most academic staff (calculated as FTE) involved in veterinary training must be veterinarians. It is expected that more than 2/3 of the instruction that the students receive, as determined by student teaching hours, is delivered by qualified veterinarians.

In addition to evaluations of courses and examinations of students performance, [SUND's policy](#) is to assure the quality of learning via the following two processes: (1) Improving lecturers' educational and didactic competencies through specific training and commitment, in order to ensure a high degree of professionalism and (2) Providing a good study environment and an appropriate and modern infrastructure that helps to engage and motivate students.

SUND wants lecturers, students and administrative staff to take personal responsibility for ensuring that the study programmes and teaching meet the quality standards that apply to UCPH programmes. The specific quality-assurance responsibilities assigned to the individual members of staff are described in the function or job descriptions, including for [course organisers](#). With regard to the students, the content and organisation of the teaching are designed to inspire critical thinking, while course evaluations and involvement in education policy serve to encourage them to play an active role in QA.

The guidelines and procedures are designed to ensure that:

- as far as possible, teaching is provided by active researchers and that all researchers with teaching duties are involved in the development of both the teaching and the programme
- a teaching portfolio is used to document the researchers' development as lecturers
- teaching portfolios are central to recruitment, promotion and development reviews
- student evaluations of teaching are used to develop individual lecturers' competencies
- all lecturers receive relevant educational skills-enhancement training opportunities
- there is compliance with UCPH's general policies for the Learning and Teaching in Higher Education programme and PhD supervision.

Lecturers' teaching competencies are monitored and enhanced via performance reviews and mandatory courses in educational theory and practice. The students regularly evaluate the individual teaching elements. All teaching staff including PhD students and postdocs are offered pedagogical courses. Upon employment, faculty teachers are evaluated on their teaching experience and are expected to have received formal university pedagogical training. If assistant and associate professors do not have this when employed, they are expected to participate in such training within the first 2 years of their employment (see also Section 9.4).

As part of the occupational health and safety survey done every third year (APV), problems with the physical environment in relation to teaching facilities are reported to the University's Campus Service (CAS)⁶⁹, who then prioritise and initiate maintenance or upgrading.

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

A procedure must be in place to assess if the staff involved with teaching display competence and effective teaching skills in all relevant aspects of the curriculum that they teach,

⁶⁹ <https://cas.ku.dk/english/>

regardless of whether they are full- or part-time, residents, interns or other postgraduate students, adjuncts or off-campus contracted teachers.

Names and titles of academic staff are given in [Appendix 9.1](#). All academic staff have teaching and research obligations.

	2019	2018	2017	Mean
Permanent staff including all types of professors, associate and assistant professors	138	124	116	120
Temporary PhD students with teaching obligations employed and paid by UCPH	6	6	6	6
Temporary, others (clinical veterinarians, senior veterinarians, teaching assistants)	40	38	34	36
Residents	7	6	4	5
Total FTE	191	174	160	167

*Table 9.2.1 only includes residents employed as residents while other registered residents are employed in other positions, such as PhD students or assistant professors. The total number of registered residents are listed in Table 10.1.1

Type of contract	2019	2018	2017	Mean
Permanent	59%	60%	57%	59%
Temporary	92%	91%	91%	91%
Total	68%	69%	67%	68%

Type of contract	2019	2018	2017	Mean
Permanent, including veterinarians in non-academic positions	158	155	154	156
Temporary	38	32	27	32
Student instructors e.g. in anatomy, microbiology and parasitology	1	1	1	1
Total	197	188	182	189

Type of contract	2019	2018	2017	Mean
Temporary	0	2	0	1
Scientific assistants	15	16	20	17
Postdocs	36	29	31	32
PhD students, not employed but trained and supervised by VetSchool	52	57	51	53
PhD students, employed, trained and supervised by VetSchool	54	59	68	60
Total	157	162	169	163

Names and titles of academic staff at the VetSchool are given in [Appendix 9.1](#). Of the academic staff, 39 are European or American diplomates (see [Appendix 9.2](#))

All academic staff has teaching and research obligations. Regarding didactic training see section 9.4. Paedagogical instruction and training is offered to all non-academic staff before and during participation in pen-side teaching/instruction.

The job structure at UCPH follows the legislation on [“Job Structure for Academic Staff at Universities”](#). An [overview](#) of the different types of academic positions – including information about job level, required qualifications, job content and period of employment is provided at the [UCPH](#). Support staff generally have a very high level of education from technical/vocational schools or local University Colleges with 3 to 4 years of training including both practical and theoretical teaching and ending with a practical/theoretical examination. This applies to animal care-takers, laboratory technicians, skilled labourers and veterinary nurses. All vacant positions are advertised and applications are scrutinised by the manager. A number of applicants are invited for an interview with the local manager, a representative of the staff, and for academics also a student. All new employees participate in a personal on-the-job training programme depending on the personal experience and skills of the new staff member.

Formal rules governing outside work, including consultation and private practice Staff members are allowed to work extra hours (incl. private practice) outside of the UCPH. However, academic staff members must have approval from the department head prior to this type of engagement.

9.3 Staff must be given opportunities to develop and extend their teaching and assessment knowledge and must be encouraged to improve their skills. Opportunities for didactic and pedagogic training and specialisation must be available. The Establishment must clearly define any systems of reward for teaching excellence in operation.

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

The UCPH wishes to ensure continued academic development and satisfactory career pathways for academic staff, which includes ensuring that potential career pathways are clear and that there is systematic support for career management. The personnel policies are based on a number of basic [principles](#) – and all personnel guidelines are compiled in a [handbook](#).

According to the Fixed-term Employment Act (Ministerial Order no. 907, section 5 (2), 2008), fixed-term employment contracts can be renewed a maximum of two times, and the maximum number of successive periods of employment is thus three. It is possible to appoint the researcher/lecturer to a new position at the university. The Fixed-term Employment Act applies to each level of the job structure. Only staff employed in positions stipulated in the “Job Structure for Academic Staff” may perform academic teaching activities at Danish universities. It is the responsibility of the university management to ensure the balance between research and teaching. Moreover, academic staff have academic freedom and are free to conduct research within the university’s strategic research framework. Veterinarians in non-academic positions may participate in pen-side instruction of students, e.g. training in osteology, dissection and basic training in clinical examination of animals.

Academic staff members are appointed through a four-step procedure:

1. A vacancy announcement formulated and made public with the intention of attracting a broad range of eligible applicants
2. Independent and informed academic assessment of candidates by a scientific committee
3. An appointment committee (including student) interviews candidates and makes recommendations to the Dean
4. The appointment decision is made by the Dean after consultation with the Department Head.

9.4 The Establishment must provide evidence that it utilises a well-defined, comprehensive and publicised programme for the professional growth and development of academic and support staff, including formal appraisal and informal mentoring procedures.

Staff must have the opportunity to contribute to the Establishment's direction and decision-making processes.

Promotion criteria for academic and support staff must be clear and explicit. Promotions for teaching staff must recognise excellence in, and (if permitted by the national or university law) place equal emphasis on all aspects of teaching (including clinical teaching), research, service and other scholarly activities.

The UCPH has common [guidelines](#) for teaching portfolios when appointing academic staff. Teaching portfolios must be submitted when applying for positions at the associate professor and professor levels. The guidelines should be seen in connection with the guidelines for the UCPH teacher training programme for assistant professors, which specifies how assistant professors receive teaching and practical training in the ongoing development and use of a teaching portfolio. The development of a teaching portfolio is an obligatory and integrated aspect of the assistant professor teacher training. The work on teaching portfolios in the assistant professor teacher training can form a basis for the development of a portfolio to be used in applications for positions at the associate professor and professor levels.

The [Department of Science Education](#) offers a comprehensive study programme to researchers and staff at the UCPH and tailors courses in philosophy of science, didactics, presentation skills and communication, as well as science education. In addition to the [general course catalogue](#), UCPH offers a number of [courses specifically tailored for academic staff](#), such as project management and intercultural communication. In addition, UCPH has a number of other offers, including a pre-manager training course for female academic staff.

Each year, all employees at SUND participate in a structured [performance and development review](#) with their closest supervisor. The aim of the review is to focus on the employee's results, goals related to teaching and research, general job satisfaction and wishes for professional development and continuing education.

9.5 A system for assessment of teaching staff must be in operation and must include student participation. Results must be available to those undertaking external reviews and commented upon in reports.

SUND regularly evaluates all courses (Sections 3.1, 7.8 and 8.1). In keeping with the guidelines for the evaluation of tuition set by the UCPH, all courses are evaluated by students and offer the opportunity to give personal comments on teachers' performance. The quantitative results of the evaluations are published on the [SUND webpages for Educational Quality](#). The personal comments are only available as "Confidential information" for the respective course organiser, teaching committee, Head of Department, Head of Studies and Study Board. It is the responsibility of the course organiser, teaching committee and Head of Studies to address issues related to the didactic

or academic competencies of named teachers; directly to the named teacher in the first instance, then if necessary to the Head of Section or Head of Department, who can act on the information.

Veterinary students at the VetSchool give an award for the “Best Teacher” every year. At faculty level, SUND students also give a “Best Teacher” award, chosen from SUNDs teachers.

The recruitment, promotion, support and assessment of academic and support staff are all done at the department level, and new positions and the reallocation of positions must be within the department budget. Before professorships are advertised, the Dean must approve the strategic considerations behind the decision. The Department Head constantly supervises the composition of all staff groups and eventually opens new or reallocates old positions. Furthermore, UCPH has established a set of criteria for recognising the merit of academic staff. The criteria articulate the UCPH goals of retaining, developing and attracting talent. These criteria are a tool for managers to use in recruitment processes and career dialogue. The criteria for recognising the merit of assistant professors, associate professors and professors are displayed on the [university’s intranet](#).

Comments on Standard 9

The VetSchool has a highly qualified academic staff with sufficient expertise to deliver the curriculum, and an equally highly qualified support staff to support all levels of teaching, practical training and research.

The Academic Staff is expected to increase slightly within the next three years following the trend already seen.

The number of PhD positions and PhD students has increased to a very high level and the number of support staff and the level of their qualifications is high and therefore sufficient to fulfil the mission of our school.

A slight weakness is the number of residencies. However, this is outweighed by the very high number of PhD students.

Suggestions for improvement on Standard 9

None.

Standard 10. Research programmes, continuing and postgraduate education

10.1 The Establishment must demonstrate significant and broad research activities of staff, which integrate with and strengthen the veterinary degree programme through research-based teaching.

The UCPH is a research-intensive university.

In 2009, the UCPH was number 51 on the THE-QS ranking list⁷⁰. Since the 2010 accreditation of the VetSchool, UCPH has been among the top 20 universities on the THE-QS list, and among the top five universities on the Shanghai list⁷¹. Additionally, UCPH collaborates with some of the top research universities in the world through the International Alliance of Research Universities (IARU).⁷²

⁷⁰ <https://www.topuniversities.com/university-rankings/university-subject-rankings/2019/veterinary-science>

⁷¹ <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/veterinary-sciences.html>

⁷² <http://www.iaruni.org/about/members>

By law, the university programme must be research-based, so examples of current research are included in individual courses and lessons when applicable. This goal is reached by integrating research and research results into the veterinary curriculum at both BSc and MSc level. The main focus of the research is in basic and applied research relevant to animal and human health, food production and environment. There are many different research programmes and projects within the veterinary domain. In general, these benefit the students greatly in attracting good academic staff and creating a study environment with a strong emphasis on research and innovation.

Research is an indispensable and essential aspect of all activities within the Danish veterinary programmes. Firstly research results are used in all parts of the veterinary courses to provide the students with the most recent evidence-based information. The students are taught how to critically evaluate sources and experience research first-hand through their BSc and MSc thesis work. Through this exposure, they experience the full impact of research on the veterinary profession and get inspiration to pursue a research education programme. Secondly, overhead from external research funding helps to finance and retain highly competent academic staff who teach at the veterinary programme.

Academic staff at the VetSchool are expected to develop independent basic and/or clinically oriented research and publish their results in professional/scientific peer-reviewed journals. Most academic staff are involved in international research committees, and national and international commissions. An international expert panel made an overall [assessment of the research quality and recommendations](#) for the future of the two departments (November 2017, headed by Prof. David Argyle, Edinburgh). The assessment commended the departments for the quality of their international research and impact on society, the excellent standard of PhD students and residents, the strength in teaching and the good balance of teaching and research activity. A list of publications from 2018 is given in [Appendix 10.1](#).

The Danish national surveillance (notifiable diseases), diagnostic and research service, Veterinary contingency work and perspectives for research-based teaching From 2019, the UCPH and Statens Serum Institut ([SSI](#)) have taken on responsibility for performing the veterinary public service agreement under the Danish Ministry of Environment and Food. The two institutions have together established the Danish Veterinary Consortium ([DK-VET](#)). The DK-VET will provide research, consultancy services, diagnosis and laboratory analyses in connection with the monitoring and control of approximately 80 different livestock diseases. Public sector consultancy includes activities from disease surveillance and handling of specific emergency tasks, including suspected disease outbreaks and offering assistance in the form of risk assessments, research projects, taking questions from the Minister, etc. DK-VET is entirely in line with the “One Health” mindset, which recognises that the prevention and control of diseases is best achieved through a collaboration among veterinarians, medical doctors, biologists and others, due to the close interaction between people, animals, food and the environment.

Extending the university activities to include research-based public-sector services will expand the opportunities for research-based teaching. This includes areas such as disease surveillance, risk assessments of disease transmission and food safety, as well as the establishment of fully integrated disease control programmes. Material and results from these activities can be used as examples and illustrations in several courses at both BSc and MSc level. Thus, in basic statistics and epidemiology, data can be used to illustrate methods for disease monitoring and surveillance, calculation of sample size to declare freedom from diseases, etc. In a clinical setting, relevant

examples can be used to discuss cardinal clinical signs of major contagious diseases (foot-and-mouth disease, swine fever, etc.), and at herd visits, several aspects of biosecurity and diagnostic test strategies will be relevant.

Please see [Appendix 10.2](#) for details on 379 major research projects amounting to 521m DKK for D-VAS and 24m DKK for D-VCS, giving a total of 545m DKK for the two veterinary departments.

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

SUND has the following [objectives for research-based teaching](#):

- That the content reflects the latest research findings
- That it has links with a recognised international research environment that conducts research in the subject area concerned
- That it is managed (but not necessarily provided) by researchers
- That it is provided by active researchers affiliated with the faculty within the relevant subject area, unless there are compelling reasons to use specialists or practitioners with other qualifications
- That students receive training in scientific methodology, both in theory and in practical interaction with researchers and participation in research projects
- That students gain an understanding of research and competencies, including critical and independent use of source material, acquisition of new knowledge, etc.

All students in their final BSc year must write a [BSc project](#) (thesis), through which they will learn to formulate research questions within their bachelor programme subject, search for and review relevant scientific literature and finally write their BSc thesis in the specific format of a scientific review article for a peer-reviewed scientific journal covering the field of their BSc thesis. During the final year of the MSc programme, students actively participate in research through their veterinary [MSc thesis](#) work, which includes an experimental research aspect – either a laboratory experiment, a clinical study or an analytical activity on raw scientific data materials. Both theses include an oral presentation of the project in conjunction with the examination. Furthermore, supervisors encourage their MSc students to publish their work in peer-reviewed journals and offer guidance during the process. The learning goals of the MSc thesis are to:

Knowledge

- identify scientific problems within the degree programme's subject areas
- use an appropriate set of methods and theory based on international research to formulate the research questions

Skills

- utilise and assume a critical stance towards theories and methods, their applicability and limitations
- assess the extent to which the production and interpretation of results depends on the selected theory/method and the selected delimitation
- discuss matters of relevance to the scientific and industrial environments raised by the thesis

Competencies

- draw clear and scientifically based conclusions in relation to formulating the research questions and, more generally, in relation to the overall problem and subject area

- discuss theories/models on the basis of an organised set of values and with a high level of independence
- assess the scientific and societal impact of the thesis from an ethical viewpoint
- begin and complete scientific work within a research setting
- solve complex problems and carry out development assignments in a work context

In addition, students are involved in research-related topics in several courses throughout the programmes, e.g. a bioethics project assignment in Year 1 of the BSc programme in the Veterinary Ethics and Science Philosophy course and experimental study design in Year 2 in the Basic Statistics and Epidemiology course. Within the MSc programme, students engage in research-related topics in relation to elective courses, e.g. Biomedicine and One Health, in which students either design or participate in research projects. As part of the Biomedicine track, DVM students are required to prepare scientific posters (in groups) that are presented and discussed in plenum. Furthermore, at the VTH-CA, MSc students have the opportunity to attend the weekly faculty seminar including presentations of PhD research.

10.3 The Establishment must provide advanced postgraduate degree programmes, e.g. PhD, internships, residencies and continuing education programmes that complement and strengthen the veterinary degree programme and are relevant to the needs of the profession and society.

Table 10.3.1. Number of students registered in postgraduate clinical training				
	2019	2018	2017	Mean
Training, Interns*				
Companion animals	12	12	10	11
Total	12	12	10	11
Residents**, EBVS disciplines				
European College of Veterinary Public Health	1	1	4	2
European College of Veterinary Pathologists	0	0	0	0
European College of Porcine Health Management	3	2	2	2
European College of Laboratory Animal Medicine	1	1	1	1
European College of Comparative Veterinary Nutrition	3	2	2	2
European College of Internal Medicine - CA (oncology)	2	3	3	3
European College of Internal Medicine - CA	2	3	2	2
European College of Clinical Pathology	1	1	1	1
European College of Veterinary Imaging	2	2	2	2
European College of Veterinary Dentistry	0	1	1	1
European College of Neurology	1	1	1	1
European College of Equine Internal Medicine	2	2	2	2
European College of Veterinary Surgeons (Large Animal)	1	1	1	1
Total	19	20	22	21

* The title Intern is not part of the official Danish salary and employment system for academics. Intern-like positions include e.g. Klinikveterinærer, research assistants, etc.

** The title Resident is not part of the official Danish salary and employment system for academics. Residencies are typically identified together with positions such as assistant professor, associate professor, etc. However, residents are registered as such for the relevant EBVS or ABVS programmes.

Degree	2019	2018	2017	Mean
PhD	120	119	125	121
MSc* (2+2 year postgraduate course)	80	73	78	77
Others	n/a	n/a	n/a	n/a
Total	200	192	203	198

*Master of Companion Animal Clinical Science, see <https://cacs.ku.dk/>

Table 10.3.3. Number of students registered at other postgraduate programmes in the Establishment but not related to either clinical or research work (including any external/distance learning courses) - None

Course:	2019	2018	2017	Mean
LabVet Europe, 30 ECTS	55*			18.3
Laboratory Animal Science EU Function ABD - postgraduate course, 7.5 ECTS	107	155	115	125.7
National Laboratory Animal Legislation, 1 ECTS	19	6	10	11.7
SVEK13040U One Health International summer course, 5 ECTS	35	17	27	26.3
SVEK13112U One Health (5-week or 12-week modules)**	25	20	15	20
Safe Pig Production in the Value Chain (12-week course)	20	23	20	21
Microbial Food Quality and Safety; laboratory and theoretical course (3 weeks)	25	20	20	22
Sirius course	8	8	8	8
Vet. nurse specialisation in Anaesthesia	22	22	23	22
Vet. nurse specialisation in Rehabilitation	9	5	17	10
Vet. nurse specialisation in Clinical Nutrition	8	8	0	5

* A total of 55 postgraduates have participated over the period 2017-2019 in this 30 ECTS EU Laboratory Animal Science Module 24 and 50 Part of ECLAM training course.

** Postgraduate students enrolled in modules of the One Health tracking course (SVEK13112U), are thus studying alongside veterinary One Health tracking students. The listed numbers refer exclusively to the number of postgraduate students enrolled in the course modules.

Prospective number of students registered in postgraduate programmes for the next 3 academic years Courses in laboratory animal science at EU Function ABD level, as well as a modular course programme for designated vets called LabVet Europe, which conforms to EU Module 24 and 50 and called LabVet Europe, are well established. The EU Function ABD course runs four times per year, with a total of approximately 180 participants per year. The current LabVet Europe programme runs continually and at present has 43 students. Likewise, the international continuing education courses within One-Health and Safe Pig production (see table 10.3.4) are well established and expected to attract 20 to 30 students per course per year during the next 3 years. Furthermore, at new 3 weeks continuing education laboratory and theoretical

course on Food Safety in the Dairy Sector is planned to take place from 27 April – 15 May 2020 at D-VAS. The course will be able to accommodate a maximum of 25 participants.

The postgraduate programme “Master, Companion Animal Clinical Sciences” was accredited by ACE Denmark in November 2012, and the first four modules of the MSc programme (“Fagdyrlæge/VETCEE”) were accredited by the European VETCEE initiative in April 2014 as one of the first two programmes to be approved. The programme enrolls postgraduate students with at least 2 years of experience as practising veterinarians in companion animal practice. An overview and details of the programme and courses are available through the website at www.cacs.ku.dk. A total of >100 students have enrolled in the programme (including the autumn 2019 enrolment), and 46 VETCEEs and 17 full MSc students have graduated. Several of the students have published in national or international journals including high-impact veterinary clinical journals such as The Veterinary Journal (one received best paper of the month) and the Journal of Veterinary Internal Medicine.

Description of how the Establishment’s postgraduate clinical training contributes to undergraduate veterinary education and how potential conflicts relating to case management between postgraduate and undergraduate students are avoided The income from postgraduate training has allowed the development of teaching materials including online and blended learning materials, which are also used for undergraduate teaching. It has also allowed for the purchase of relevant equipment to be used by postgraduate students (CACS: anaesthesia, imaging, cardiology), better equipment in the exercise rooms used for ABD exercises, and paid for a postdoc for 3 months per year to structure exercises, correct exam papers and support all course participants, whether undergraduate or postgraduate. CACS income supports the employment of additional staff to free up faculty resources for teaching CACS courses. In addition, it also enables payment of renowned international specialists and faculty members to teach on nearly all CACS courses.

Description of how the continuing education programmes provided by the Establishment are matched to the needs of the profession and the community Both EU Function ABD and LabVet Europe courses have been accredited by the Federation of European Laboratory Animal Science Associations (FELASA) for their fulfilment of EU demands. EU Function ABD courses are registered by the Danish Food Administration as a pre-requisite for performing animal experiments in Denmark. LabVet Europe is recognised by the European College of Laboratory Animal Medicine as part of diplomate/resident training.

The extensive PhD programmes have already been mentioned in several places throughout this report.

10.4 The Establishment must have a system of QA to evaluate how research activities provide opportunities for student training and staff promotion, and how research approaches, methods and results are integrated into the veterinary teaching programmes.

The system and procedures are specified on the [Faculty QA website](#). The VetSchool aims to conduct research-based education at the highest international level within its academic areas, and the teaching is mainly conducted by permanent academic staff. The teaching is based on both research-based basic knowledge and current research. Teaching conducted by active researchers ensures that students learn relevant research methods and scientific theories, especially in connection with major assignments, e.g. the BSc and the MSc theses. Contact with the research environment is established through academic planning of the study programme teaching. As a rule, course organisers must be permanently employed academic staff who have been active in research

in recent years. The heads of studies must ensure that planned teaching activities are based on relevant research areas and the head of department is responsible for ensuring that the teachers conduct current and relevant research. The Dean has the overall responsibility for ensuring that teaching is research-based and that the students have contact with researchers. The contact and the research basis are systematically assessed every sixth year in the programme evaluations, based on parameters for which the faculty has set certain standards, e.g. the relationship between student FTEs and research FTEs on the study programmes.

Research According to the Act on Universities and the [University's rules](#), academic freedom for individual scientific employees includes the freedom to choose the research subject, material and methods employed, and ways of communicating the research results. Research, however, depends on available funding and can only be conducted using resources available for the research project. In this way, the Head of Department can decide to allow or deny the use of departmental resources for research projects.

In most cases, the research projects must adhere to a number of other regulations such as obtaining approval for the use of research animals, ethical approval, GDPR requirements, data management requirements, HR requirements, etc. To assist individual researchers in planning and executing research, the University has an intranet site devoted to research ([Researcher Portal](#)). Some departments also have a formal research committee (e.g. D-VAS) or a formal [ethical administrative committee](#) (e.g. D-VCS).

At the departmental level, decisions on establishing new research areas or closing existing research areas are made by the Head of Department following discussions with the departmental leader group and the local departmental liaison committee. Staff, students and stakeholders are informed in different ways, e.g. email, newsletters, websites and oral presentations. Existing research areas are assessed and revised annually either through a self-evaluation process (at D-VAS) or an annual strategic meeting between the Head of Department and the individual Heads of Section (at D-VCS), and on an individual basis during the formal appraisal discussion held annually.

Research at university level is divided into the research areas included within the different faculties, the establishment and continuation of which are ultimately decided by the Board of the University. At SUND level, research areas are organised by department, e.g. veterinary clinical research on individual animals is mainly within the D-VCS, while herd-level animal research is mainly within the D-VAS. The establishment and continuation of departments is decided by the Dean, but must be formally approved by the Rector who acts within the limits set by the Board of UCPH.

Students are informed in various ways, e.g. during lectures where research findings are included, by completing their BSc and MSc theses, by public outreach activities, websites and newsletters. External stakeholders are also informed in various ways, e.g. via websites, newsletters, participation in research projects and public outreach activities.

Postgraduate education programmes PhD education is regulated by the [Ministerial Order on the PhD Programme at the Universities and Certain Higher Artistic Educational Institutions \(PhD Order\)](#). The Act on Universities dictates that the Rector must establish one or more Graduate Schools to handle PhD education. The Dean, by delegation from the Rector, is responsible for appointing the leader of the Graduate School. The Dean, by delegation from the Rector, initiates and follows-up on evaluations (including international evaluations) of the Graduate Schools. SUND has [The Graduate School of Health and Medical Sciences](#), the regulations of which are communicated on the [Faculty's external website](#). Information on evaluations (including international evaluation) of the Graduate School can be read on the [Faculty's external website](#).

Staff, students and stakeholders are informed in various ways, e.g. via email, newsletters and websites.

Continuing education programmes Continuing education programmes, i.e. professional Master's education programmes (which confusingly in English have the same name as Master's programmes for undergraduates) are regulated by the Act on Universities and several legal regulations, e.g. the [Act on Accreditation](#). SUND offers a number of [Professional Master's Programmes for working professionals](#). The programmes correspond to 1 full year of studies (60 ECTS) but may be taken on a part-time basis. The Professional Master's Programmes, such as the [Master of Companion Animal Clinical Science](#), are implemented, assessed and revised as previously described for the undergraduate programmes.

Staff, students and stakeholders are informed in various ways, e.g. via email, newsletters, websites and oral presentations.

Comments on Standard 10

The research output from the VetSchool is very strong.

Students' MSc-thesis research work contribute significantly to many research projects at the VetSchool.

The opportunities available for Danish students to participate in active research work are very good, and students may choose from any of the sections when selecting their subject area. To date, the VetSchool has not experienced any limitations in supervising capacity.

Despite the considerable efforts in terms of both time and finances, the Vet School concludes that students' research work at BSc and MSc level should continue to be an integral and important part of the curriculum.

Suggestions for improvement on Standard 10

None.

ESEVT Indicators (see Annex 4)

Name of the Establishment: University of Copenhagen, School of Veterinary Medicine					
Date of the form filling: 20 January 2020					
Calculated Indicators from raw data		Establishment	Median	Minimal	Balance ³
		values	values ¹	values ²	
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0,160	0,16	0,13	0,034
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0,848	0,87	0,59	0,258
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1,347	0,94	0,57	0,780
I4	n° of hours of practical (non-clinical) training	881,0	905,7	595,0	286,0
I5	n° of hours of clinical training	1. 916,0	932,9	670,0	246,0
I6	n° of hours of FSQ & VPH training	332,3	287,0	174,4	157,9
I7	n° of hours of extra-mural practical training in FSQ & VPH	37,3	68,0	28,8	8,5
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	131,2	70,5	42,0	89,2
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	2. 1,240	2,69	0,46	0,776
I10	n° of equine patients seen intra-murally / n° of students graduating annually	9,428	5,05	1,30	8,130
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	3. 2,570	3,35	1,55	1,025
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	0,606	6,80	0,22	0,382
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	21,919	15,95	6,29	15,624
I14	n° of equine patients seen extra-murally / n° of students graduating annually	9,995	2,11	0,60	9,400
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	4. 0,637	1,33	0,55	0,089
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	5. 0,010	0,12	0,04	-0,035
I17	n° of companion animal necropsies / n° of students graduating annually	6. 2,990	2,07	1,40	1,590
I18	n° of ruminant and pig necropsies / n° of students graduating annually	1,468	2,32	0,97	0,498
I19	n° of equine necropsies / n° of students graduating annually	0,853	0,30	0,09	0,760
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	5,603	2,05	0,69	4,911
I21*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0,268	0,20	0,06	0,205
I22*	n° of PhD graduating annually / n° of students graduating annually	0,247	0,15	0,09	0,159

Comments on Indicators

1. I5 – the number of hours represent hours for all students (core students). In addition to this students participate in clinical training in their respective tracking (see Table 3.1.4).
2. I9 – most production animal patients are seen during academically supervised, planned, extramural training. See section 5.1.
3. I11 – there is no commercial rabbit production in Denmark.
4. I15 – students visit rather few but very big herds. Danish cattle and pig herds has the largest average herd size in Europe.
5. I16 – generally visitors are not accepted in commercial poultry production facilities. In 2019 we succeeded in establishing an agreement with 4 different very large commercial farms each of which consists of several flocks, thereby demonstrating all aspects of poultry production (layers, broilers etc). We intend to continue with this practice
6. I17 – please note that necropsy of mink is included in these figures. For further details please refer to Section 5.1 - Necropsy of mink (*Neovison vison*) cadavers – a concerted effort.

Suggestions for improvement on Indicators

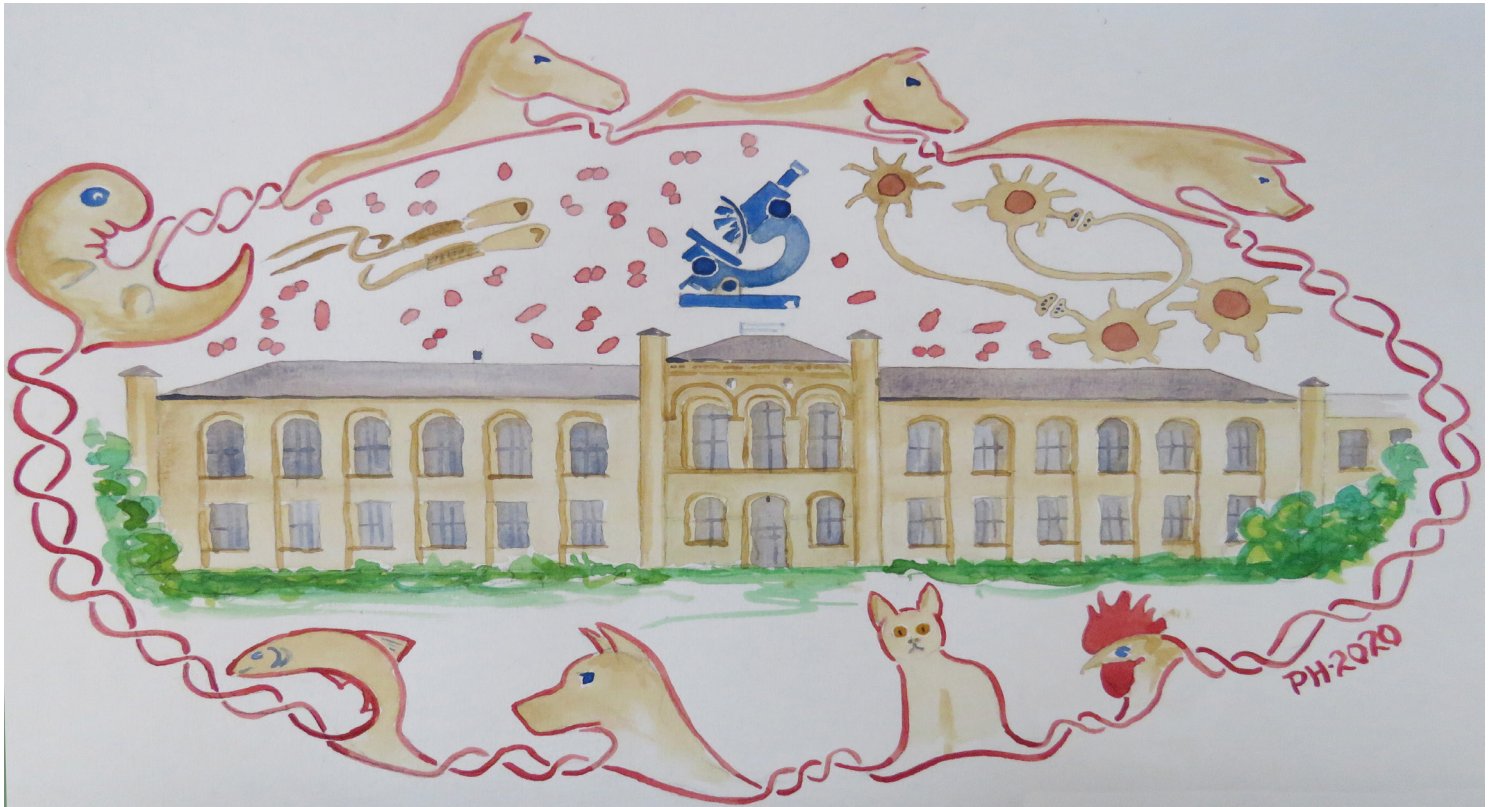
None.

Glossary

Absalon	- The IT learning platform used for sharing teaching and other materials
AVMA	- American Veterinary Medical Association
CHR	- Central Herd Registry (http://chr.fvst.dk/)
DAKA	- international rendering company (Saria) operating in Denmark
DrVetSci	- Doctor of Veterinary Science
D-VAS	- Department of Veterinary and Animal Science
D-VCS	- Department of Veterinary Clinical Sciences
DVM	- Doctor of Veterinary Medicine
EAEVE	- European Association of Establishments of Veterinary Education
EBVS	- European Board of Veterinary Specialisation
ECLAM	- European College of Laboratory Animals
ENQA	- European Association for Quality Assurance in Higher Education
FSQ	- Food Safety and Quality
FTE	- Full Time Equivalent
KU	- Københavns Universitet/University of Copenhagen
Kvægdatabase	- The Cattle Database (hosted by the national advisory services, SEGES)
KVL	- The Royal Veterinary and Agricultural University
Landmandsportalen	- Data repository for farmers and their advisors
MSR	- Medicine, Surgery and Reproduction
MSR-LA	- Medicine, Surgery and Reproduction, Large Animals
MSR-SA	- Medicine, Surgery and Reproduction, Small Animals
OHS	- Occupational Health and Safety
PhD	- Doctor of Philosophy
POMR	- Patient-Oriented Medical Record
QA	- Quality Assurance
SOP	- Standard Operating Procedure
SPF-sus	- The Health Status Management unit at SEGES. Manages specific pathogens (and specific pathogen freedom) in pig herds
SSI	- Statens Serum Institut
STADS	- The study administration system at KU and other Danish universities
SUND	- Faculty of Health and Medical Sciences
UCPH	- University of Copenhagen
UMV	- Study Environment Surveys https://uddannelseskvalitet.ku.dk/quality-assurance-of-study-programmes/educational-environment-assessments/
VetSchool	- School of Veterinary Medicine and Animal Science
Vetstat	- The national registry on prescription medicines used for veterinary purposes
VPH	- Veterinary Public Health
VTH-CA	- University Hospital, Companion Animals (Frederiksberg)
VTH-LA	- University Hospital, Large Animals (Taastrup)
ZBC	- Zealand Business College

List of appendices - provided in a separate document

“Health and welfare for animals and people in a changing world”



Transparency is key in accreditations. In art, watercolour expresses the highest degree of authenticity as the colour is transparent and cannot cover any errors in the painting. Hence, watercolour was chosen as the medium for the front page of this report. The centre of the painting is the historical profile of the former Royal Veterinary and Agricultural University facing Bülowsvej. The building is encircled by a DNA helix, which first dissolves into an embryo and thereafter into many of the species relevant to the veterinary curriculum. This captures the common ontology during embryonic development, along with the diverse phylogeny with the diverging evolution of the different species. Finally, microscopic details from the veterinary universe are displayed, including aspects of reproduction (sperm), neurology (neurons) and microbiology (bacteria).

Poul Hyttel 2020