Self Evaluation Report 2024

for the
European Association of Establishments
for Veterinary Education (EAEVE)

Stiftung Tierärztliche Hochschule Hannover
University of Veterinary Medicine Hannover, Foundation

Standard Operating Procedure (SOP)
Version 8 June 2023
valid for the Visitation 21–25 October 2024

Content

Introduction

Brief history of the establishment and of the previous ESEVT visitation

Stiftung Tierärztliche Hochschule Hannover (University of Veterinary Medicine Hannover, Foundation, here the Veterinary Education Establishment, later referred to as VEE) has been an independent establishment since its foundation in 1778.
VEE became an endowed university ("Stiftung"), effective 1 January 2003, the year of VEEs 225th anniversary. The change of VEE's legal status provided new opportunities and has resulted in excellence in research, learning, and our clinical and diagnostic services. VEE is committed to fostering sustained development and capitalizing on the opportunities as a stand-alone university and the legal status, which benefits not only its student body, but also the veterinary profession and society as a whole. In the pursuit of the highest quality standards, VEE continues to strive for excellence in all its endeavours. With its two sites in the capital city of Lower Saxony, the Campus Bischofsholer Damm and the Campus Bünteweg, VEE occupies an area of over 175,000 square meters. Both campuses provide room for development, as well as possibilities to adapt to special needs in education and research.
In compliance with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), universities are obligated to regularly conduct internal and external evaluations of research and teaching. As part of this procedure, it is mandatory to involve students in an annual teaching appraisal, and the outcomes of these evaluations and subsequent actions of the VEE are in the public domaine. The external evaluation of veterinary educational courses, as presented by European veterinary institutions, is overseen by the European Association of Establishments for Veterinary Education (EAEVE). EAEVE evaluated the VEE in 2008 and 2018, which were successful and where no major deficiencies were recorded. The minor weaknesses were all considered and resolved to improve quality in education as outlined and clarified in the interim report and below.

Main features of the Establishment

VEE is an independent university dedicated to veterinary medicine, which is unique in Germany. Operating as an independent foundation, VEE's activities are supervised by a Board of Trustees, or "Stiftungsrat". This body, entrusted with legal oversight, champions the interests of the public, stakeholders, and the government within the university's scope.
Each year, VEE offers approximately 260 places for undergraduate study, for which we receive over 1,000 applications. Including our PhD and doctoral candidates, the university has a total student number of around 2,300. Furthermore, VEE also offers education in biology (bachelor) in cooperation with Leibniz University Hannover and Hannover Medical School.
VEE has five sites including the two campuses: On the two campuses in Hannover, VEE features 6 clinics and 19 institutes. In addition, we operate a teaching and research farm in Ruthe (south of Hannover) as well as facilities in Bakum (near Vechta) and in Büsum at the North Sea coast, all of which are used for student training and for conducting research.
Since 2022, VEE has a branch office at the German Centre for Food Technology (DIL) in Quakenbrück. The reason for this arrangement is a joint international MSc programme in Food Process and Product Engineering (FPPE) under the auspices of VEE. Veterinary students can enrol in the FPPE progam in individual modules as electives.
Since 2020, VEE has offered part-time postgraduate training courses in veterinary medicine (BEST-VET). Students can obtain individual certificates or graduate with an MSc degree in "Veterinary Public Health" or "Laboratory Animal Science". The target audience of the programme are veterinarians working within the profession or veterinarians re-entering the profession. The programme was fully accredited in 2021.

Brief summary of the main developments since the last visitation

The main developments of the curriculum include expansion of professional skills education and improvement of online teaching and learning opportunities. The COVID-19 pandemic presented a formidable challenge and has had an impact primarily on teaching, but also research and clinical services. During the pandemic, we managed to open the teaching hospital for students of the Practical Year (PY) and for practicals in propaedeutics and anatomy just two weeks after the lock-down. Lectures and seminars were provided online using MS Teams and the learning platform Moodle. With all measures taken, students were able to finish their studies on time.

Changes to the curriculum included revision of the professional knowledge course in the 1st and 2nd semester. Various topics were added as mandatory courses, including evidence-based veterinary medicine (EBVM), ethics, digital literacy including artificial intelligence, resilience (well-being), communication and entrepreneurial skills (economics). In the 3rd year of study (6th semester), an obligatory interdisciplinary basic surgery course involving all clinics and across species was also established.

In the Clinical Skills Lab (CSL): the mandatory training of students in the PY was expanded and an obligatory longitudinal surgical training course with a logbook involving all animal species was established. In addition, training of communication skills was further developed. Those include a simulated patient owner programme using professional and lay actors in training, the development of E-OSCEs, and interprofessional communication. New simulators were created in CSL for imaging and surgery techniques in all animal species, simulators for exotic animals and birds were established (handling, blood sampling etc.). CSL teaching was digitised (videos to prepare seminars respectively for self-study, see list of YouTube videos).

The clinical training in all species was expanded. In the core curriculum a patient tracking documentation system was introduced to ensure broad clinical training with exposure to a large variety of all species. Evaluation forms for extramural elective practical training (extramural EPT) were adopted by all five German establishments for veterinary education. A platform created by our colleagues from Berlin VEE can be used starting this summer for contracts with veterinarians providing extramural EPT.

A continuous training concept for teaching staff was implemented as a seminar series during the COVID-19 pandemic. This training concept started in the summer of 2020 to stimulate and support teachers with digital tools, remote teaching and learning strategies. The weekly or bi-weekly training comprises short online lectures with ample time for discussions and lunchtime didactic seminars are offered. We further established “Train the teacher” didactic courses for academic staff, non-academic teaching staff, EPT providers and support staff involved in teaching, which includes a documentation system of attendance. Moodle was introduced as the learning management platform and is continuously expanded. Microsoft Teams serves as add-on information tool and communication technology.

Changes in biosecurity policies have been established, a Moodle course for information on biosecurity and occupational safety has been provided for students from the 2024 summer semester. A safety week was introduced.

The newly established Centre for E-Learning, Didactics and Educational Research (ZELDA) unites the E-Learning Service and CSL as well as dedicated staff who support and develop the use of digital learning technologies and innovative forms of teaching, learning, assessment and educational research.

Subtle changes were implemented in the selection process for veterinary medicine student admissions starting in the winter semester 2020/2021. As a new admission criterion, the German Test for Medical Study Programmes (TMS), an aptitude test, was officially introduced in the whole country. The admission numbers, however, are not affected by this change.

The well-established Progress Test Veterinary Medicine (PTT) was evaluated as part of a doctoral thesis and confirmed to be a valuable feedback tool. In addition, VEE is involved in

the development of an international progress test databank. VEE conducted extensive educational research (see publication list).
Changes of the Ordinance concerning the Certification of Veterinary Surgeons (TAppV) have been discussed among all five German VEEs and stakeholders, and the draft was submitted to the decision makers, i.e. the Federal Government.
Further important changes in buildings, institutes or clinics:

- Acquisition of a new research building at the Bünteweg campus and establishment of the Centre for Translational Studies (CTS)

Further important organisational changes:

- New president since April 2024
- Re-organisation of the Department for Student and Academic Affairs (DSAA) – new head and new staff for study organisation

Major problems encountered by the Establishment (whether resolved or not)

- COVID-19 pandemic - resolved
- Student numbers are directly linked to the number of teachers as regulated by law
- Owners of companion animals are more and more reluctant to donate their deceased animals to pathology
- Necessary changes of the TAppV were discussed amongst the German VEEs and stakeholders and submitted, but the decision will be postponed due to changes of the EU directive.

Version and date of the ESEVT SOP which is valid for the Visitation:
Standard Operating Procedure (SOP) as approved at the Leipzig General Assembly on 8 June 2023

Area 1: Objectives, Organisation and Quality Assurance Police

Standard 1.1: Main Objectives

1.1.1 Description of the mission statement and the objectives

Mission and vision statement of TiHo

Our **vision** at the University of Veterinary Medicine Hannover (TiHo) is to ensure excellent education, cutting-edge medicine and pioneering veterinary and biomedical research. The aim is to offer and promote world-leading solutions in the field of animal health and well-being under the paradigm of One Welfare.

TiHo's **mission** is to provide evidence-based training for competent veterinarians and professionals in biomedicine and the biosciences who can respond to the major challenges of the present and future and fulfil society's expectations for TiHo and its graduates. Teachers and students are guided by high ethical and professional standards and a commitment to lifelong learning. TiHo is a guardian of animal health and welfare as well as a pioneer and indispensable partner at the interface of animal, human and environmental health. The understanding of fundamental physiological and pathological processes in domestic and wild animals are in the centre of our work. The aim of TiHo's research, training and transfer activities is to develop modern veterinary medicine and to improve the quality of life of animals and humans in a healthy ecosystem.

Objectives:
The objectives are derived from mission statement.

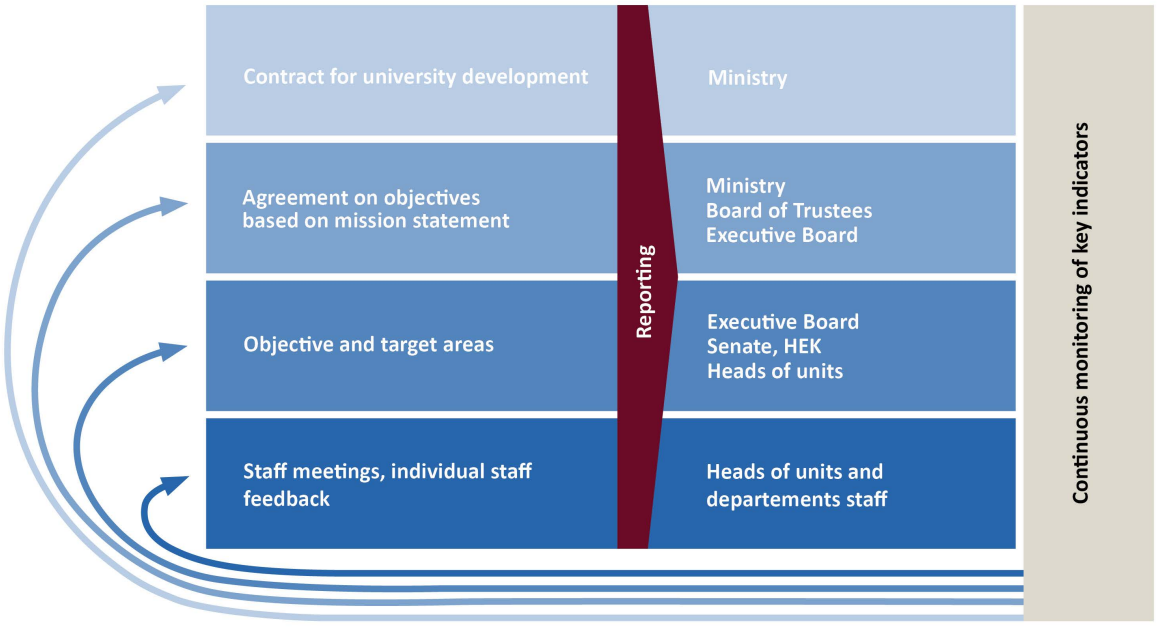

Fig. 1.1 Levels of objectives (HEK = University Development Committee)

1.1.2 Description of how the VEE ensures that the provided core curriculum enables all new graduates to perform as a veterinarian capable of entering all commonly recognised branches of the veterinary profession

The educational aims are described by the national "Ordinance concerning the Certification of Veterinary Surgeons" (TAppV) and the Federal Veterinary Regulation (BTÄO), which refer to and align with the minimum requirements for the training of veterinarians in Europe (Regulation 2005/36/EG, as amended by directive 2013/55/EU). The objective is to graduate scientifically and practically trained veterinarians capable of self-responsible and independent veterinary work and life-long learning. The educational aims lead to the general "approbation", which means that every graduate has the possibility to work in all veterinary fields in Germany. In the TAppV, a specialization is not intended during undergraduate study.

Standard 1.2: Organisation, Responsibilities

1.2.1 Details of the VEE, i.e. official name, address, phone number, E-Mail and website addresses, VEE's Head, official authority overseeing the VEE

University of Veterinary Medicine Hannover, Foundation	
Bünteweg 2 30559 Hannover, Germany Postfach 71 11 80 30545 Hannover, Germany	Tel.: +49 511 953-60 Fax: +49 511 953-8050 E-Mail: info@tiho-hannover.de Website: www.tiho-hannover.de
Head: President	Prof. Dr. Klaus Osterrieder (Veterinarian)
Telephone (Executive Board): +49 (0) 511 9 53-8001 E-Mail: praesident@tiho-hannover.de	
Other members of Executive Board: Vice-President for Administration Vice-President for Teaching Vice-President for Research	 Anna Mikolon (Economist) Prof. Dr. Andrea Tipold (Veterinarian) Prof. Dr. Michael Pees (Veterinarian)

1.2.2 Organisational chart (diagram) of the VEE with a brief description of the decision-making process

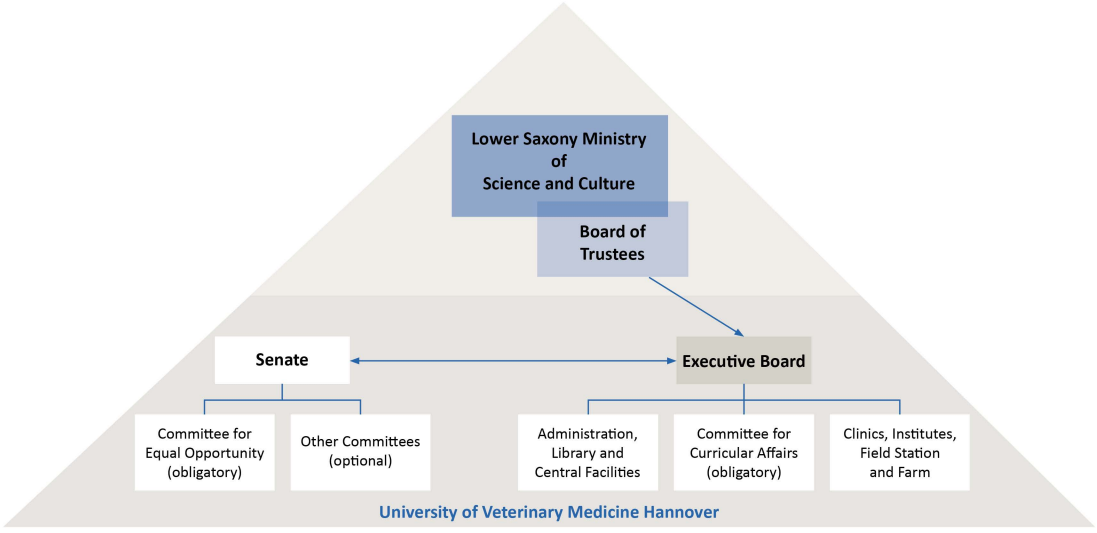

Fig. 1.2: Organisational chart

Details of the competent authority overseeing the establishment

The University of Veterinary Medicine Hannover, Foundation, (VEE) is a scientific institution of higher education of the state of Lower Saxony. The fundamental principles governing the organisation are anchored in the Lower Saxony University Law (NHG). VEE is an endowed university within a public foundation. The foundation is subject to legal supervision by the Lower Saxony Ministry of Science and Culture as set out in the University Bylaws. Appropriate measures for supervision are prepared and enforced by Board of Trustees as set out in the University Bylaws.

Address of Lower Saxony Ministry of Science and Culture (legal supervision)
Niedersächsisches Ministerium für Wissenschaft und Kultur
Leibnizufer 9 (Postfach 2 61), D-30002 Hannover, Germany

Supervision of the ordinance concerning the Certification of Veterinary Surgeons (TAppV) is the responsibility of the Lower Saxony Ministry of Nutrition, Agriculture and Consumer Protection. The ministry also appoints the members of examining committees for the preclinical and clinical examinations. In accordance with the TAppV, professors of the establishment serve as chair and substitute chair persons of the examining committees. Additional committee members are professors or instructors of the subjects being examined. The formal Veterinary Licensing Authority is the Chamber of Veterinarians of Lower Saxony (TÄK).

Address of Lower Saxony Ministry of Food, Agriculture and Consumer Protection (exam supervision):
Niedersächsisches Ministerium für Ernährung, Landwirtschaft und Verbraucherschutz
Calenberger Straße 2, D-30169 Hannover, Germany

1.2.3 List of departments/units/clinics with a very brief description of their composition and management (further information may be provided in the Appendices)

Tab. 1.2.1: List of units (clinics and institutes), more information in profiles (see Appendix chapter 3-6).

Preclinical	Clinical	Aetiology
Institute for Anatomy	Clinic for Horses	Institute for Microbiology (Dept. of Infectious Diseases)
Institute for Physiology and Cell Biology	Clinic for Small Animals	Institute for Parasitology (Dept. of Infectious Diseases) incl. Fish Pathology and Fish Farming
Institute for Genomics	Clinic for Small Mammals, Reptiles and Birds	Institute for Virology (Dept. of Infectious Diseases)
Institute for Zoology	Unit of Reproductive Medicine	Institute for Immunology
Institute for Animal Ecology	of the Clinics	Institute for Biometry, Epidemiology and Information Processing
Institute for General Radiology and Medical Physics	Clinic for Pigs, Small Ruminants and Forensic Medicine	Institute for Food Quality and Food Safety
Institute for Biochemistry	Clinic for Cattle	Institute for Animal Nutrition

	Clinic for Poultry	Institute for Pathology
		Institute for Pharmacology, Toxicology and Pharmacy
		Institute for Animal Hygiene, Animal Welfare and Behaviour
		Institute for Terrestrial and Aquatic Wildlife Research
	Field Station for Epidemiology in Bakum	
Teaching and Research Farm in Ruthe		

Clinical Complex Bünteweg Centre for Infectious Diseases
Livestock clinics

1.2.4 List of the councils/boards/committees with a very brief description of their composition/function/responsibilities and implication for staff, students and stakeholders (further information may be provided in the Appendices)

The strategic plan and the organisation of VEE are based on the mission statement drafted by the Committee for University Developmental (HEK) and approved by the Senate. Strategic goals are formulated in a university development plan in coordination with the committees. They are further specified and formalised in the Agreement on Objectives with the government (see 1.1.2). The agreement is reviewed every two years between officials of the Ministry of Science and Culture (MWK) and the Executive Board of the VEE, which must submit an annual progress report to the Ministry that serves as the basis for the allocation of funds.
Decisions by the Executive Board, the Senate and the committees follow the outlined goals listed in the development plan. VEE communicates the plans, decisions and developments in the areas of research, study and organisation widely using the various media: Public protocols of Senate and committee meetings, public annual reports (general, research, teaching), general assemblies of professors, staff, students, press releases by the public relations office, network meetings with cooperation partners, meetings with stakeholders in society and politics. These ways of communication allow several opportunities for discussion with all stakeholders, which can influence decision making concerning future plans.

Tab. 1.2.2 List of relevant committees for the study programme

Translation English	Name (German)	Composition	Function/responsibilities
Board of Trustees	Stiftungsrat	5 representatives of external stakeholders (society, business, industry, science, culture who are familiar with higher education), 1 representative of the government (MWK), 1 representative (professor) of VEE Senate Consulting member without voting right: members of Executive Board, equal opportunity officer, representative of the employee committee	Advises the establishment, makes decisions of fundamental importance to the university and monitors its activities and that of the Executive Board, appointment and dismissal of members of Executive Board, appointment of professors.
Executive Board	Präsidium	President and vice presidents (administration, teaching, research).	Conducts the routine business affairs of the university, prepares and implements resolutions for the Board

			of Trustees. Responsible for overall management of university, enacting legal regulations (unless senate is responsible).
Senate	Senat	7 professors, 2 representatives of scientific staff, 2 students, 2 representatives of support staff, several consulting members (without voting right).	Enacting legal regulations concerning all academic issues (if not excluded by law).
University Developmental Committee	Hochschulent-wicklungskom-mission (HEK)	1 representative of each of the 4 expert committees (professors), 1 representative of scientific staff, 1 student, 1 representative of support staff Consulting member without voting right: members of Executive Board, equal opportunity officer.	Consulting body for the development in all areas of the university.
Expert Committees Pre-clinical Clinical Aetiology Biology	Fachkommiss-ionen Vorklinik Klinik Ätiologie Biologie	For each special area (see 1.1.5 a): All professors, two representatives of scientific staff, two representatives of support staff, two students	Consulting concerning special areas in teaching (agreement on learning content, assessment), research, developing facilities
Committee for curricular affairs	Zentrale Studien-kommission (ZSK)	Vice President for Teaching (without voting right), 4 professors, 2 persons scientific staff, 10 students, 1 representative of support staff (without voting right)	Consulting concerning all areas of teaching, study curriculum, assessments
Admissions Committee	Zulassungs-kommission	3 professors, 2 representatives of scientific staff, 1 student, 1 representative of support staff	Consulting and decision concerning admission of students of veterinary medicine
Examination Committees	Prüfungs-kommissionen	1 head (professor selected by Senat), academic staff involved in assessment	Consulting and decision concerning assessment and recognition of potential former study performance
Scheduling Committee	Stundenplan-kommission	4 professors, 2 representatives of scientific staff, 1 student, 1 representative of support staff	Consulting concerning timetables
Committee for study quality funds	Kommission für Studienqualitäts-mittel (SQM)	4 professors, 2 representatives of scientific staff, 7 students, 1 representative of support staff	Consulting concerning application of study quality budget
PhD committees (one for each programme)	PhD-Kommissionen	For each PhD programme: 10 professors (incl. Vice President for Research), 1 representative of scientific staff, 1 doctoral candidate (student)	Consulting and decision concerning all areas of PhD programmes
Dr. med. vet. committee, Dr.rer.nat. committee	Promotions-kommission Dr. med. vet, Dr. rer. nat	5 professors (incl. Vice President for Research), 1 representative of scientific staff, 1 doctoral candidate (student)	Consulting and decision concerning teaching, study curriculum, assessments and admission of graduate programme Dr. med. vet. and Dr. rer. nat.
Animal welfare committee	Tierschutz-ausschuss	All animal welfare officers , 2 persons entrusted with the care of the animals, 2 scientific members or persons who conduct animal experiments	Monitoring and critical supervision of animal experiments, support of the welfare officers
Committee for scientific ethics	Kommission für Forschungsethik	8 professors incl. animal welfare officer and professor for Applied Ethics in Veterinary Medicine	Consulting in critical discourse on ethical issues in sciences, especially dual-use research of concern (DURC)
Search Committees for	Berufungs-komissionen	6/3 internal professors, 2 external professors, 2/1 representatives of scientific staff, 2/1 representative of	Selection process of professors

professorial appointments		students, 1 representative of support staff (without voting right)	

1.2.5 Description of the formal collaborations with other VEEs

VEE is a member of the "Association of Veterinary Faculties" (Veterinärmedizinischer Fakultätentag), which meets once per year. It is formed by the VEEs of Austria, Germany and Switzerland represented by the deans, vice deans, representatives of the professorial and non-professorial teaching staff and students. On invitation, other veterinary organizations and representatives of the Federal Government may participate. VEE was deeply involved in the development of proposed changes to the TAppV in Germany, which were submitted to the Federal Government for approval.
VEE is highly committed to the international development of veterinary sciences. The university maintains close ties and official partnerships with numerous foreign universities. These relationships and international exchange programmes enable a lively exchange of students and scientists as well as joint research projects.

1.2.6 Name and degrees of the person(s) responsible for the veterinary curriculum and for the professional, ethical, and academic affairs of the VTH

Vice-President for Teaching	Prof. Dr. Andrea Tipold (Veterinarian)
Vice-President for Research	Prof. Dr. Michael Pees (Veterinarian)
Animal Welfare	Prof. Dr. Bernhard Hiebl (Veterinarian)
Ethics	Prof. Dr. Peter Kunzmann (Philosopher)
Academic affairs of the Vet.	Prof. Holger Volk, PhD (Small Animals)
Teaching Hospitals (VTH)	Prof. Dr. Michael Pees (Small Mammals, Reptiles and Birds)
All Veterinarians	Prof. Dr. Karsten Feige (Horses)
	Prof. Dr. Martina Hoedemaker (Cattle, herd health management)
	Prof. Dr. Doris Höltig (Pigs, Small Ruminants and Forensic Medicine Ambulatory clinic)
	Prof. Dr. Silke Rautenschlein (Poultry)
	PD Dr. Verena Jung-Schroers (Fish)
Department for Student and Academic Affairs (DSAA)	Dr. Carina Olms (University and Science Manager MBA)

Standard 1.3: Strategic plan, SWOT analysis

1.3.1 Summary of the VEE's strategic plan with an updated SWOT analysis

Strategic and Development Plan of VEE
SWOT-Analysis:

Strengths	Opportunities
• Specialised university, focusing exclusively on veterinary medicine and biology • Independent university with guaranteed state funding and a high level of autonomy • Species-specific clinics provide rich and diverse clinical caseload • Specialized e-learning unit with highly productive research, which translates into implementation of innovative teaching and examination formats • Practical Year (PY) as a mandatory part of the curriculum	• Curriculum modifications and improvements in accordance with TAppV possible • Long-term agreements with the State of Lower Saxony allow for strategic planning and development • Independence and flexibility in decision-making processes including employment • Location in an area with highest density of food-producing animals in Germany • Collaboration with external research establishments in teaching and research

• Practical training opportunities at VEE-owned external field stations and teaching/research farm • Cross-disciplinary implementation of animal welfare into curriculum • Graduate School with 3 independent PhD programmes supporting our research focus • Virtual centres stimulate cooperation in undergraduate education and research	• New cooperative strategies with sister institutions in Hannover in entrepreneurship, outreach and technology transfer • Two large campuses with high potential for sustainable development • Use of data sciences and AI on rich clinical dataset • Create a learning platform tailored to the individual needs of the students
Weaknesses	**Threats**
• Low proportion of foreign nationals at the postgraduate and the staff level • A non-unified educational software solution for comprehensive study support • Preparation of students for academic careers can be improved • Translational research and technology transfer needs staff and building infrastructure • Legally prescribed selection process for and pre-determined number of students	• Societal and environmental threats, e.g., climate change and loss of biodiversity, as a threat for veterinary medicine • Legal framework on animal welfare, including teaching, currently under intense scrutiny • Changing legal framework on working hours creating shortages in central services, e.g., emergency services • Lack of qualified personnel on all levels and increasing competition resulting in recruitment and retention challenges

1.3.2 Summary of the VEE's Operating Plan with timeframe and indicators of achievement of its objectives

The Contract for University Development between the state of Lower Saxony and all state-funded universities guarantees financing for 5 years, currently until 2029 (signed in 2024). The contract provides a solid and reliable framework for planning of VEE development. The Agreement on Objectives between VEE and the state of Lower Saxony is a continuous process. It is based explicitly on the mission statement and the resulting strategic goals of VEE in teaching and research. In the agreement, the financial allocation of the state to the university is agreed upon and the university in return is committed to progress in teaching, research and service. Internal targets are agreed upon between university leadership and all organisational units (clinics and institutes). The individual goals of personal development and career planning for staff are set between line managers and staff. Fig. 1.1 gives a summary of different objectives.

Objectives	Operating plan	Indicators	Timeframe
Teaching			
Excellent training in veterinary medicine and animal biology	Improvement of study conditions and offers (e. g. learning environment, E-Learning offers, electives, Clinical Skills Lab) Implementation of suggestions from student's evaluations Improvement of didactic skills of teacher by special offers	Student evaluations, student statistics	annually
Low percentages of long-term students and attrition	Adaption of "Progress Test Veterinary Medicine" and electives (how to learn), student consulting (psychologically, study progress)	Student statistics	annually
Continuing education			
Fostering the next generation of scientists	Adaption of PhD programmes to research fields Support candidates to reach European Diplomate degrees and habilitation Support of grant applications	Student and graduate statistics	annually
High quality continuing education	Post-gradual master programme in VPH and Laboratory Animal Sciences – yearly evaluation	Accreditation 2020/2021	next accredit-dation 2029
Research			
Excellence in basic and applied research	Strengthening of regional, national and international networks	Statistics of research grants, publications (TiHo index)	annually
Performance as an excellent, competent, modern and motivated university rooted in both teaching and research	Modern and state-of-the-art infrastructure (laboratories, lecture halls, clinics) Focus areas in research and teaching to address relevant requirements of society and developments in veterinary medicine Recruitment of excellent scientists and professors to achieve these objectives	External evaluations, citation indices, external student evaluations (e.g., www.study-check.de)	annually
Performance-oriented allocation of funds	Third party funding stands at about 50% of government funding; information of announcements; performance-oriented payment of professors	Analysis of research performance	annually

Standard 1.4: Quality Assurance

1.4.1 Description of the global policy and strategy of the VEE for outcome assessment and Quality Assurance (QA)

The global strategy of VEE for outcome assessment and quality assurance is

- to integrate in future plans the periodical analysis of quantitative and qualitative indicators for achievement of objectives
- to create and maintain an environment conducive to excellent teaching and research
- to discuss all plans with the relevant committees
- to directly and accurately inform all staff, students and other stakeholders

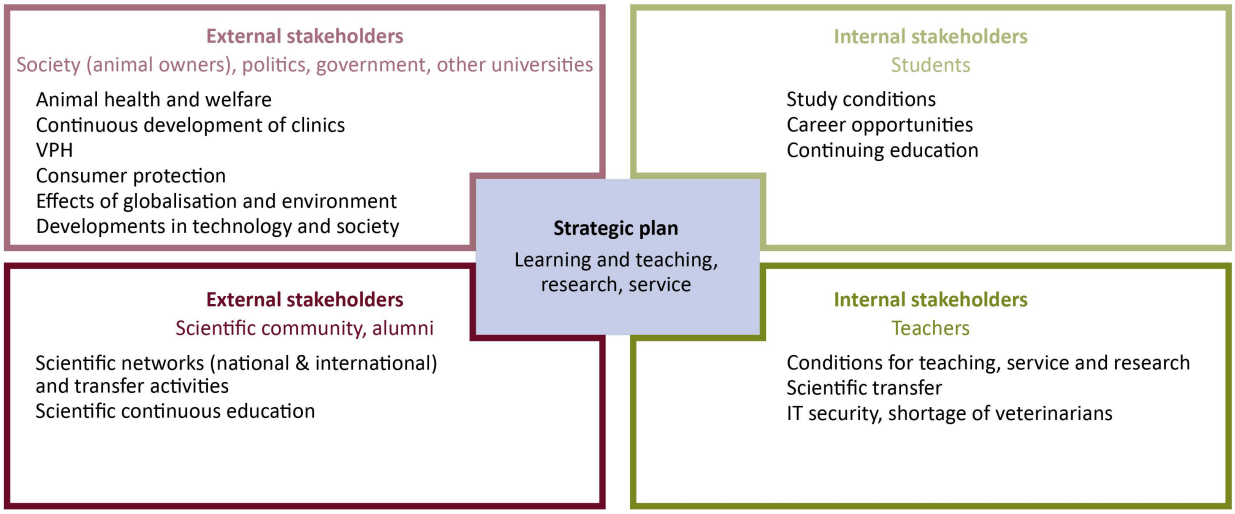

Fig. 1.4.1: Involvement of different stakeholders in strategic planning

All relevant external requirements, including legislation and ESG standards for external evaluations, are considered (Fig. 1.4.1, 1.4.2).

The following cyclical reports are created:
Timeframe of reports:

Reports	Cyclus	Target group
Annual report	annual	Board of Trustees, public
Research	annual	Senate, public
Teaching including students statistics and students evaluation	annual	Senate, public
Business /economics	annual	Board of Trustees, Government
Internal audit	annual	Executive Board
Achievement of objectives	annual	Government
External evaluation: SER EAEVE and others	every 7 years	Public
State report, University key figures	annual	Government
Research index of TiHo (Hochschulindex)	annual	Executive Board, Heads of institutes and clinics
Animal welfare, animal numbers for trials	annual	Government
Equal opportunity	annual	Executive Board, German Research Foundation (DFG), public

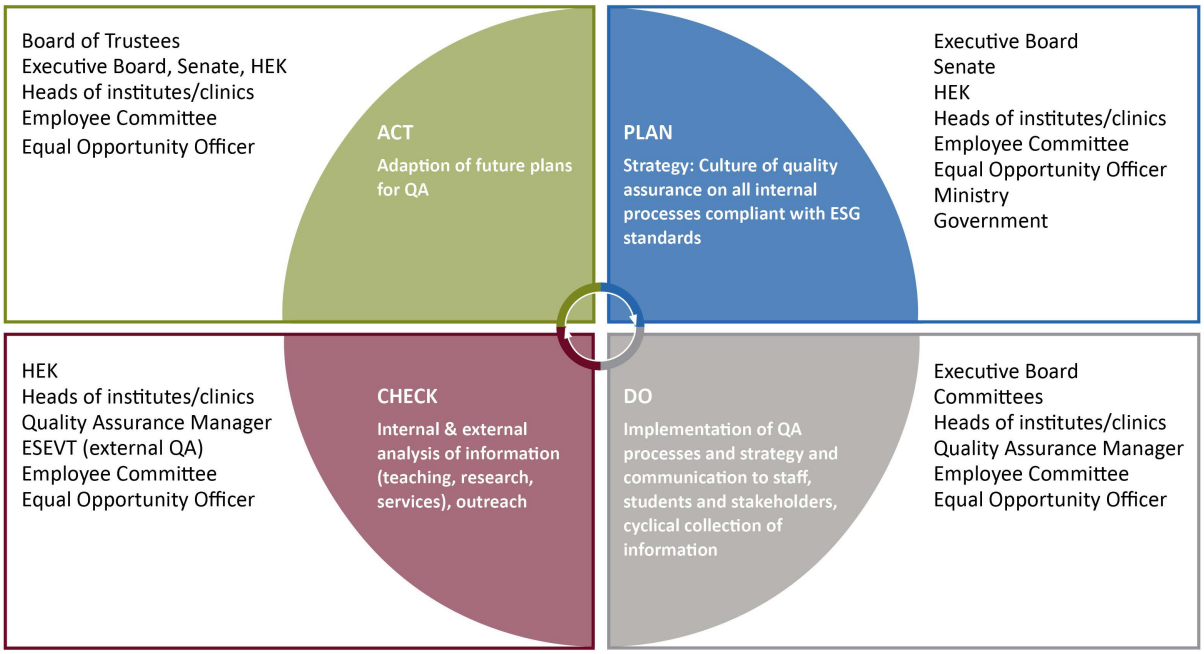

Fig. 1.4.2 PDCA cycle of quality assurance

The process map Fig. 1.4.3 below shows the entirety of processes at VEE and where their duties interface for achievement of the general objectives and improvements with regard to QA. For every task and issue, there is a special committee or working group in which the representatives of all status groups are involved. The group of students represents at least 50% of the members of a committee if the issue is relevant for students, for example the Committee for Curricular Affairs (ZSK) or the Committee on Study Quality Funds (SQM Committee).

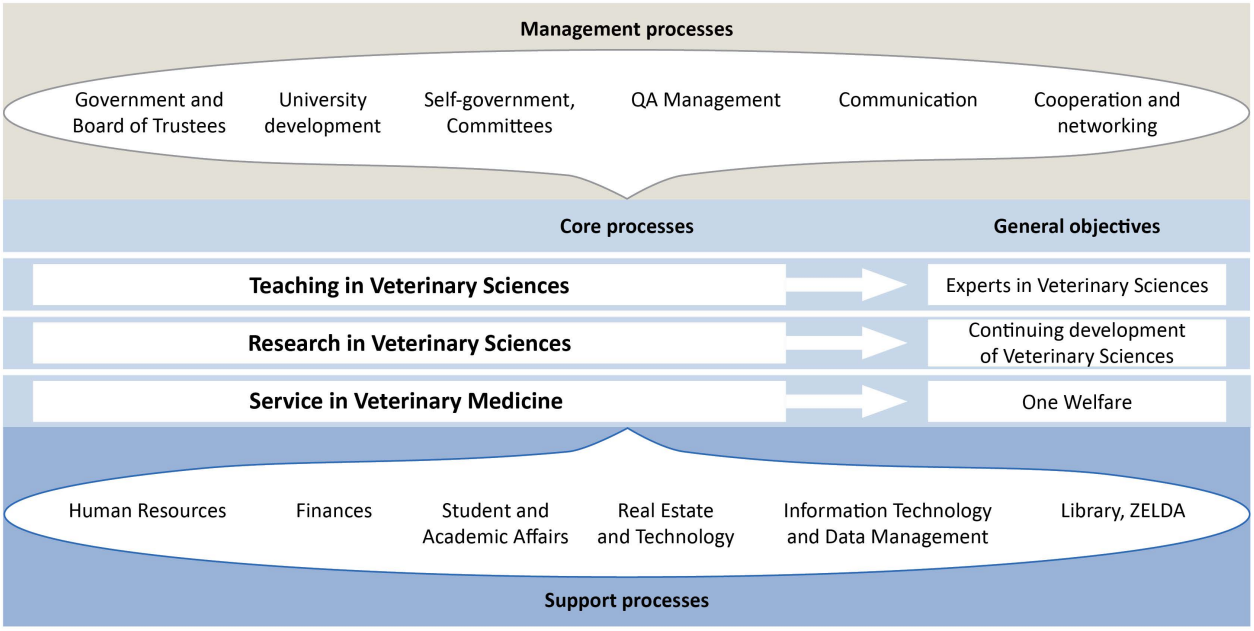

Fig. 1.4.3 Process map supporting outcome assessment and quality assurance

Standard 1.5: Public relations and Transparency

1.5.1 Description of how the VEE informs stakeholders and the public on its objectives, its education, research and teaching activities, employment destinations of past students, profile of the current student population

Formal basics for strategies, policies and procedures are published on external and internal websites:

- External legal regulations, especially legal frameworks like NHG, TAppV, admission procedure
- Vision and Mission statement of VEE
- Information, forms and letters concerning policies and procedures available on internal websites (only for staff and enrolled students)
- "TiHo-Anzeiger" – TiHo (VEE) journal, available for VEE employees, students and stakeholders
- Information on special awards:
  "Ökoprofit-Siegel": Environmental protection award of the city of Hannover
  "Total E-Quality Award" (equal opportunity award); Teaching award

a) Internet information

All regular publications on the educational programmes and awards are available on the VEE's website, especially:

- Relevant information about all study programmes at VEE (undergraduate, graduate, post-graduate, continuing education)
- ESEVT report of the expert group on the visit at VEE (last visit in 2018)
- Information for enrolled students and teaching staff available on the intranet platforms StudIS, DozIS, Moodle
- Teaching reports, including analysis of student evaluations
- Annual reports of Executive Board, research reports
- Lists of publications and research grants
- Information on prizes and honours awarded by VEE
- Social media platforms (e.g., Facebook, Instagram, YouTube)

b) Public meetings and protocols (e.g., public Senate meetings, university-wide Senate protocols, semester messages, newsletters, intranet, Student Committee (AStA) meetings)

c) General announcements, call for applications for student and research grants and prizes.

d) Communication using eMails (important news or newsletters such as E-Learning newsletter, IT newsletter)

VEE has a tool for quality assurance in research called "Hochschulindex". This index is a summary of quantitative measures and considers extramural research funds and publications per year for each institute and clinic. The result is a ranking of all units of VEE. The index is being reviewed annually and is the basis for decision-making by the Executive Board, the university developmental committee (HEK) and the Senate. Furthermore, it leads to internal performance-based allocation of investment funds.

The President and Vice-President for Teaching discuss actual problems with student representatives (AStA and Student Parliament) at least once per semester. Urgent matters can be brought directly to the respective committees for decision making. Annually, the employment status of past students in Germany are published by the German Veterinary Association ("Tierärztekammer") in a newsletter ("Deutsches Tierärzteblatt"). Needs and employment strategies are discussed with the chamber and other external stakeholders at the "Association of Veterinary Faculties (Fakultätentag)" introduced earlier.

1.5.2 Description of how to access the VEE's ESEVT status and the last ESEVT Self-Evaluation Report and Visitation Reports on the VEE's website

Reports on accreditation procedures are publicly available on the VEE website https://www.tiho-hannover.de/en/studium-lehre/fuer-studierende/quality-assurance-in-study-and-teaching.

Standard 1.6: Quality Assurance Guarantee

1.6.1 Description of how (procedures) and by whom (description of the committee structure) the strategic plan, the organisation, the activities and the QA policy are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

See 1.4.1

The Executive Board discusses the QA strategy with the Senate, which confirms it after review in the committees. The Executive Board is responsible for decisions on quality assurance. It discusses the QA strategy with the Senate, which reviews and discusses the reports from the committees and makes the final decsion. Another important committee in the QA cycle is the university developmental committee (HEK). The Executive Board receives the information needed for VEE QA strategy and decision-making from board position quality management in close cooperation with strategic controlling, where all information concerning QA is centralised. Key performance indicators and other data come from board position strategic development incl. controlling and internal audit and from the administrative units (finances, human resources, student and academic affairs, real estates and technology, information technology) and the organisation units of the VEE (clinics and institutes).
After a decision is made within QA processes, it is communicated to staff and students via committee reports, official journal/gazette, intra- and internet, newsletter and others. External stakeholders are informed by external accessible webpages, VEE's journal and press releases, as indicated.
The implementation, assessment and revision are performed by administration, relevant committees and ratified by the Senate and the Executive Board.

Standard 1.7: ESEVT Evaluations

Last visitation: January 2018 **Interim report: May 2021**

ECOVE identified no items of non-compliance (i.e. Major Deficiency).
As recommended by ECOVE, a central policy on biosecurity was revised and adopted for all clinics. Furthermore, formal training of staff in form of a 'Safety Week' was introduced during which central requirements as well as specific issues of the different facilities were addressed. A new Moodle elective course for biosecurity was established and validated. ECOVE also suggested that the curriculum should be more explicit in addressing training in scientific methods and research techniques relevant to evidence-based veterinary medicine (EBVM). To provide a more structured learning process, EBVM teaching starts in the first year of the course within the professional knowledge stream and is revisited throughout the curriculum up to and including the practical year (PY). Teaching sessions were implemented in the 2018/19 winter semester and have been offered since then. In addition, interested students can enrol in electives. To tightly embed EBVM in the longitudinal teaching process, a special advanced training session for VEE teachers is implemented in the certified "Professional Teaching" programme, a 1.5-year training programme. EBVM is also addressed within the newly implemented seminar series of internal training for all VEE teachers.

Comments on Area 1 - Objectives, Organisation and Quality Assurance Policies

The suggestions following the review of the strategic plan by external and internal stakeholders led to the following important developments:

- Extension of ZELDA and DSAA
- Accreditation of a future-oriented postgraduate master programme (BEST-VET)
- Accreditation of a new M.Sc. "Food Process and Product Engineering" (MSc FPPE)
- Continuous adaptions of the veterinary curriculum following student evaluations
- Strategy-oriented alignment of professorships
- Development of TAppV is on the home stretch but needs final approval from the federal government
- VEE obtained the label “Ökoprofit”, which states environmentally sound management of waste and energy (awarded by the city of Hannover) and Establishment of an Office for Sustainability

Suggestions for improvement in Area 1

Further formalization of the structures of quality assurance with regard to:

- Research Office to improve internal and external research networks
- Clinical Centre for Farm Animals
- Expansion of the International Office to foster recruitment of scholars
- Unified, student-based and study-accompanying administration system is currently being developed.

Area 2: Finances

Standard 2.1: Finances

2.1.1 Description of the global financial process of the Establishment

Main sources of revenues are funds allocated by the government of Lower Saxony as well as revenues from clinical services and research grants by third parties. Concerning government-allocated funds, VEE operates under a lump-sum budget, which permits a flexible utilization of funds.

2.1.2. Percentage (%) of margin paid as overhead to the official authority overseeing the VEE on revenues from services and research grants

All revenues from services, research grants and other sources (e.g., donations, inheritances) remain entirely within VEE. Income from third-party funds from industry, research, services or donations is charged with an overhead of 20%, which are administered centrally by the university. Overhead allowances of research grants are paid by EU, federal ministries and the German Research Foundation (DFG).

2.1.3. Annual tuition fee for national and international students

Students pay a registration fee of €391.22 per semester. The fee is identical for national and international students. Only a fraction of the fee (€75) can be used for administrative services provided by VEE. Part of the fee (€115) goes to the Hannover Student Services, the AStA (€11.40) and for use of the public transport authority of Lower Saxony (€189.82). These organisations and the state government set the fees. Students who are enrolled longer than 17 semesters (6 semesters more than the regular duration) have to pay €500 per semester (exceptions are students who are suspended for a semester and students who have to care for a family member or have children younger than 14 years of age).

Table 2.1.1. Annual expenditures during the last 3 academic years (in €)

Area of expenditure	2023	2022	2021	Mean
Personnel	82,038,708	77,527,031	74,850,832	78,138,857
Operating costs	16,014,962	16,196,329	15,100,242	15,770,511
Maintenance costs	19,250,559	16,995,256	16,804,527	17,683,447
Equipment	4,757,948	5,131,918	6,727,850	5,539,239
Total expenditure	122,062,177	115,850,534	113,483,451	117,132,054

Table 2.1.2. Annual revenues during the last 3 academic years (in €)

Revenues source	2023	2022	2021	Mean
Government funding	72,183,343	67,034,884	67,336,482	68,851,570
- New research building	0	0	0	0
- Budget for Study Quality	1,485,670	1,378,816	1,398,495	1,420,994
Tuition fee (standard students)	14,000	12,000	16,000	14,000
Tuition fee (full fee students)	-	-	-	-
Clinical services	24,206,731	21,730,660	20,206,553	22,047,981
Diagnostic services				
Other services				
Research grants	19,986,212	22,629,337	20,410,555	21,008,701
Continuing Education	483,345	403,586	282,463	389,798
Donations (incl. inheritance)	140,365	126,146	183,259	149,923
Other sources (sponsoring, administration fees of students, rental fees, interests)	3,705,725	2,765,652	2,450,691	2,974,023
Total revenues	122,205,391	116,081,081	112,284,498	116,856,990

Table 2.1.3 Annual balance between expenditures and revenues (in €)

Academic year	Total expenditures	Total revenues	Total revenue balance
2021	113,483,451	112,284,498	-1,198,953
2022	115,850,534	116,081,081	230,547
2023	122,062,177	122,205,391	143,214

*Total revenues minus total expenditures

2.1.4. Estimation of the utilities and other expenditures directly paid by the official authority and not included in the expenditure tables

All utilities and maintaining costs are covered by the lump-sum budget.

Standard 2.2: Clinical and Field Services

2.2.1 Description of the modus operandi for the financial management of the clinical and field services

Each clinic manages and controls their own budget. The clinical director is responsible for managing the budget, which is reviewed quarterly by internal audits and the vicepresident for administration. They also receive funding for research and teaching. The clinical income, less 20% overheads, remains at their disposal for investments and for financing clinical staff.

2.2.2. Degree of autonomy of the Establishment on the financial process

VEE is an endowed establishment and with the legal status of a foundation, which provides autonomy and flexibility whilst remaining under the auspices of the Government of Lower Saxony for its operation and finances. Although funding is still allocated by the MWK on the basis of the Agreement on Objectives, the state no longer exerts influence on the details, e.g., professorial hires. Furthermore, VEE can accumulate capital from income and private donations. By law, these revenues cannot be deducted from the funding provided by the state.

Standard 2.3: Resources Allocation

2.3.1 List of the ongoing and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding

In the annual allocation from the state of Lower Saxony, funds for buildings maintenance are included. All premises and facilities are improved continuously and maintained at a high technical level. Over the next 4 years, VEE will receive a total of around 10 million € in additional funding for energy-related upgrades of buildings. The specialized research facilities at VEE, such as the RIZ and CTS, are state-of-the-art facilities conducive to high-level research.

2.3.2 Prospected expenditures and revenues for the next 3 academic years

Prospected revenues:
VEE expects at least the same revenues in the coming three years as it has received recently. In February of 2024, the continuation of the Contract for University Development was signed between Government of Lower Saxony and all universities in the state. This agreement guarantees the funding for all universities including VEE for the next 5 years.
Prospected expenditures:
VEE plans to upgrade the facilities of several institutes. For new professorial appointments, there may also be restructuring measures, but no new buildings are planned at this time.

2.3.3 Description of how (procedures) and by whom (description of the committee structure) expenditures, investments and revenues are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The Executive Board is responsible for all financial decisions. Financial plans are discussed annually with the Senate. The supervision and fiscal control are carried out by the Board of Trustees on basis of annual reports as well as internal and external audits.
Basic lump-sum funding is paid monthly by government for basic staff, technical and teaching operations. For research activities, all institutes and clinics apply for research grants from research funders, e.g., DFG, ministries, and EU. Additional allocations by the state (federal or state government) can be obtained for special investments or new buildings following specific requests and applications.
Institutes and clinics obtain a lump-sum budget for teaching, research and basic investments, which is mainly based (80%) on the number of academic staff within the unit. The other part of these allocations (20%) depends on performance, primarily publications and amount of extramural funding (Hochschulindex).
The use of the Budget for Enhancing Study Quality (SQM) is discussed and decided by the Committee for Study Quality Budget together with Executive Board. This ringfenced budget is dedicated to be used for enhancing the quality of learning and teaching.

Comments in Area 2 - Finances

- Commitment by the State of Lower Saxony to maintain funding (University Development Plan, see Appendix 1.2)
- Continued funding of the SQM guaranteed
- Continued success in securing third-party funding for research in education (e.g., ZELDA – Clinical Skills Lab, E-Learning Service).

Suggestions for improvement in Area 2 – Finances

- The funding allocations by the state should be adjusted for inflation

Area 3: Curriculum

Standard 3.1: Ccurriculum

3.1.1 Description of the educational aims of the VEE and the general strategy for the design, resources and management of the curriculum

Educational aims

Based on the TAppV (see 1.1.2 and Appendix 1.3.1.1), the educational aim of VEE is to train scientifically and practically educated veterinarians who are capable of responsible and independent veterinary work and committed to lifelong learning. The study programme imparts the basic veterinary, scientific, interdisciplinary and methodological knowledge, practical skills as well as the intellectual and ethical foundations for a professional attitude committed to the welfare of animals, well-being of people and the environment. Therefore, the focus of the implemented curriculum is on core subjects (regulated by the TAppV), with both theoretical and practical components that each student has to master (see Study and Examination Regulations in Appendix 1.3.1.). The curriculum also features electives and the PY, which both give orientation but not prejudice specialization.

General strategy for the design, resources and management of the curriculum

The strategy of VEE in developing educational aims with regards to legal requirements orients itself along the basics for the general approbation and is followed by an additional orientation period.

In the curriculum (total duration of the programme: 5.5 years), as regulated by the TAppV, teaching and assessment are divided into two preclinical and one clinical section:

- First preclinical examination (Vorphysikum) – first year of the programme, covering physics, chemistry, zoology, ethics, and botany (food, poisonous and medical plants).
- Second preclinical examination (Physikum) – second year, covering basic subjects such as anatomy, histology and embryology, physiology, biochemistry, animal breeding and genetics, propaedeutics.
- Veterinary Clinical examination (Staatsexamen) – from the 3rd to the 6th year, covering propaedeutics, virology, bacteriology and mycology, parasitology, animal nutrition, animal hygiene and husbandry, clinical subjects (internal medicine, surgery, clinical radiology of the different species), diseases of poultry, pathology and histopathology, reproduction, pharmacology and toxicology, food science including food hygiene and legal knowledge of subjects such as food hygiene (meat, milk, other food of animal origin), animal welfare, public veterinary service, pharmaceutical legislation, legal foundations, e.g., regulated substances and infections animal diseases (see Examination Regulations in Appendix 1.3.1.2).

All subjects have to be taught as regulated by the TAppV. In the general subject “professional knowledge”, VEE has integrated various competences (such as professional studies, communication, artificial intelligence, economics, evidence-based veterinary medicine, etc.) in order to comply with ESEVT subjects and Day One Competences (D1C). In addition, communication is taught in the TAppV subject “propaedeutics” and in the PY.

The scientific-theoretical and clinical-practical part of the studies covers 3,850 hours total of obligatory lectures, seminars, courses, practicals and electives (460 hours of intramural clinical training (EPT) included). In addition, all students have in the core curriculum practical farm training of 70 hours in the VEE farm Ruthe, and 250 extramural hours (2 x 2 weeks, 1 x 3 weeks) in government or private institutes working on different aspects of food hygiene (including slaughterhouse hygiene) and consumer protection. Elective Practical Training (EPT): students have to complete obligatory EPT comprising a total of 850 extramural hours (1 x 4 weeks and 2 x 2 months) spent in private practice or in a clinic. All extramural work is reviewed by VEE. In the PY (5th year), students rotate between intramural training (practical

semester), extramural training in private practice and other professional establishments (selection of another turn of the intramural training as an alternative is possible) and food hygiene (including training in a slaughterhouse).
Following the PY, the final section of the clinical examinations takes place, leading to an average length of study of eleven semesters (5.5 years), a target met by most students.
Furthermore, the TAppV enables us to enrich our teaching portfolio by providing electives. These are lectures, seminars, practicals and clinical courses intended to enhance the students' knowledge and skills in specific fields, which they can choose according to their preferences. Students enrol for 308 compulsory hours of such electives. The electives are classified as basic subjects, research, food hygiene, aetiology, companion animals and farm animals to provide opportunities for career orientation.

3.1.2 Description of the legal constraints imposed on curriculum by national/regional legislations and the degree of autonomy that the VEE has to change the curriculum

- A defined national curriculum and specific legislation govern the studies at the VEE:
- The Ordinance concerning the Certification of Veterinary Surgeons (TAppV) is a national law governing the course of studies in veterinary medicine in Germany. The TAppV regulates the subjects to be taught, the number of hours to be taken by each student in each subject, and the list of examination subjects.
- The Teaching Obligation Regulation of Lower Saxony (LVVO) is a Lower Saxony state law. It specifies the number of hours to be taught per year by each faculty member. The sum of the individual teaching hours to be given results in the total teaching capacity of an establishment.
- The Teaching Capacity Regulation of Lower Saxony (KapVO) also is a state law, which, together with the LVVO, forms the basis for the number of students to be admitted each semester (see 7.3.3).

The TAppV allows variation of the number of hours taught in every subject by 20% provided the course consists of at least 28 hours (so-called trial clause). VEE made use of the trial clause in implementing the PY in 2004. For one semester in their final year, students have the possibility of intensifying their experience based on individual career decisions (six individual rotation options of internal practical training, see Tab. 3.1.3). Students can choose the clinic in which they wish to have a major part of their intramural practical training. One of the six clinical rotation options was created for non-clinical training (research, food hygiene) for students who are more interested in either a research or VPH career with reduced clinical training.
Following the introduction of the trial clause of the TAppV, VEE has decreased the course hours in botany, chemistry, zoology and has simultaneously increased course hours for clinical education and integration of professional and non-technical competences. VEE-specific interpretation of the TAppV is outlined in the Study Regulations (Appendix 1.3.1.3), published completely and as a summary version on the inter- and intranet.
VEE can decide on the introduction and form of the PY. However, permission from the Federal Ministry was required in order to introduce an orientation phase for allowing this orientation phase to occur not only in the clinics, but also in research and food hygiene subjects.
All decisions on curricular matters are discussed in the ZSK, and a recommendation is submitted to the Senate for approval; both bodies are defined in the Lower Saxony University Law (NHG). Course contents are determined by the institute or clinic responsible for teaching and are discussed and decided on in the Expert Committees (Fachkommissionen). Course contents are published on the intranet to facilitate arrangement between different institutes and clinics and to inform students accordingly (catalogue of learning objectives, see EAEVE internet page).

3.1.3 Description of how curricular overlaps, redundancies, omissions, and lack of consistency, transversality and/or integration of the curriculum are identified and corrected

Certain overlaps are intentionally incorporated. During numerous deliberations in the Expert Committees and the Committee for Curricular Affairs, both of which include the presence of the Vice President for Teaching, it was agreed that some degree of overlap and repetition, presented by different teachers, was beneficial. Student evaluations serve as a crucial tool for determining potential enhancements in areas relevant to students, such as study organisation, digital platforms, teaching methods, learning environment, class schedules, assessments, redundancies, and areas lacking in educational content. Additionally, consideration is given to the reviews of exam results and suggestions provided by teachers. ZELDA plays an instrumental role in supporting the introduction or enhancement of new and modified E-Learning materials, and assists in identifying optimal educational methodologies. Courses offered at CSL are tailored to accommodate the needs of the students.

3.1.4 As a complement to Tables 3.1.1 to 3.1.5, an undergraduate curriculum digest/diagram must be provided as an Appendix of the SER and must include theoretical, practical and clinical training for each academic year.

Important information (tables 3.1.1 and 3.1.2): In the national curriculum TAppV supervised self-study (C) is not described. According to EU regulations on BSc and MSc, 1,800 hours per year (contact hours and self-study) are mandatory. In diploma supplements provided by VEE and in the ECTS-system, rules exist for self-study as a preparation for classes and examinations. The curriculum digest can be reviewed in the Appendix 1.3.1.3 a) and further information is in the Study Regulations (Appendix 1.3.1.3b). Overview of hours is presented as an annex to the Study Regulations §11. Theoretical parts are displayed in the left columns, and practicals are listed in the right columns.

Table 3.1.1 Curriculum hours in each academic year taken by each student

Academic year	Lectures	Seminars	Super-vised self-learning	Labora-tory and desk-based work	Non-clinical animal work	Clinical animal work	EPT	Other: Electives	Total h (ECTS)
	A	B	C	D	E	F	J	H	J
1st	478	30	1,032	125	79	0		56	1,800 (60)
2nd	365	84	995	42	174	56		84	1,800 (60)
3rd	525	38	857	88	56	180		56	1,800 (60)
4th	456	42	898	108	66	160		70	1,800 (60)
5th	0	0	198	150	100	460	850	42	1,800 (60)
6th (exam)			900						900 (30)
Total	1,824	194	4,880	513	475	856	850	308	9,900 (330)
								Hours TAppV (without C)	5,020

Table 3.1.2 Curriculum hours in EU-listed subjects taken by each student

No.	Subject	Lectures	Seminars	Super-vised self-learning	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	Other: Electives (see no. 45)	Total h
		A	B	C	D	E	F	G	H
	1. Basic subjects								
1	Medical physics	43		64	8				115

2	Chemistry (inorganic, organic)	66	35	220					321
3	Animal biology, zoology and cell biology	28	8	60		20			116
4	Feed plant biology and toxic plants	54		62	2				118
5	Biomedical statistics	14	7	32					53
	1- Total number of hours	205	50	438	10	20	0	0	723
	2. Specific veterinary subjects								
	2.1 Basic sciences								
6	Anatomy, histology and embryology	119		415	56	140			730
7	Physiology	91	42	205	20	15			373
8	Biochemistry	77		200	28				305
9	General and molecular genetics	56		68		28			152
10	Pharmacology, pharmacy and pharmaco-therapy	98		130	14				242
11	Pathology	46	14	60					120
12	Toxicology	14		59					73
13	Parasitology	7		36	49				92
14	Microbiology	28		66	44				138
	Immunology	42		72	4				118
15	Virology	56		56	8				120
16	Epidemiology	14	11	39					64
17	Information literacy and data management	21	7	32					60

No.	Subject	Lectures	Seminars	Super-vised self-learning	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	Other: Electives (see no. 45)	Total h
		A	B	C	D	E	F	G	H
18	Professional ethics and communication	42	14	32					88
19	Animal health economics and practice management	28		28		35			91
20	Animal ethology	28		16					44
21	Animal welfare	56	14	64					134
22	Animal nutrition	46		82	52				180
	2- Total number of hours	869	102	1,660	275	218	0	0	3,124
	3. Clinical Sciences in companion animals (including equine and exotic pets)								
23	Obstetrics, reproduction and reproductive disorders	40		36			18		94
24	Diagnostic Pathology	44	7	96	14	19			180
25	Medicine	35		36	16				87
26	Surgery	7	7	28	4				46
27	Anaesthe-siology and analgesia	4		28	3				35
28	Clinical practical training in common companion animals			224			190		414
29	Infectious diseases	7		28					35
30	Preventive medicine	7	14	20					41
31	Diagnostic imaging	19		78	2				99
32	Therapy in common companion animals	86		190			199		475
	3- Total number of hours	249	28	764	39	19	407	0	1,506

No.	Subject	Lectures	Seminars	Super-vised self-learning	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	Other: Electives (see no. 45)	Total h
		A	B	C	D	E	F	G	H
	3. Clinical Sciences in food-producing animals (including Animal production and Herd Health Management)								
33	Obstetrics, reproduction and reproductive disorders	40		36			18		94
34	Diagnostic Pathology	44	7	126	14	19			210
35	Medicine	17		42	16				75
36	Surgery	7	7	28	4				46
37	Anaesthe-siology and analgesia	3		28	3				34
38	Clinical practical training in common food-producing animals			204			182		386
39	Infectious diseases	7		56					63
40	Preventive medicine	7		42					49
41	Diagnostic imaging	19		78	2				99
42	Therapy in common food-producing animals	100		196			239		535
43	Animal production, including breeding, husbandry and economics	28		52		35			115
44	Herd health management	12		54			10		76
	3- Total number of hours	284	14	942	39	54	449	0	1,782

No.	Subject	Lectures	Seminars	Super-vised self-learning	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	Other: Electives (see no. 45)	Total h
		A	B	C	D	E	F	G	H
4. Veterinary Public Health (including Food Safety and Quality)									
45	Veterinary legislation, forensic medicine and certification	56		42	75				173
46	Control of food, feed and animal by-products	56		28	28	100			212
47	Zoonoses and their prevention	28		32	14	8			82
48	Food hygiene and environ-mental health	35		28	19	28			110
49	Basic food technology	42		46	14	28			130
	4- Total number of hours	217	0	176	150	164	0	0	707
	Electives								396
	EPT (PY)							850	
	(distribution see Tab. 3.1.3)							308	
	Examination 11. Sem			900					900
	Total	1,824	194	4,880	513	475	856	1,158	9,900
						Hours TAppV (without C)			5,020

Table 3.1.3 Clinical rotations under academic staff supervision (excluding EPT, extra-mural)

Types	List of clinical rotations (Disciplines/Species)	Preparation Clinical Skills Training (hours of Training in Clinical Skills Lab (CSL) and hours of assessment)	Duration (weeks)	Year of programme
Intra-mural (VTH)	Choice from 6 individual clinical rotation options			
	1. Cattle (incl. ambulatory) or	1 day: 8 h CSL Training	1. 10 weeks (460 hours incl. 20 h ambulatory) or	5th (9th or 10th semester)
	2. Pigs and Small Ruminants (incl. ambulatory), Clinic for Poultry, Field Station for Epidemiology or	1.5 days: 6 h Training, 3 h E-OSCE	2. 10 weeks (460 hours incl. 20 h ambulatory) or	
	3. Small animals or	5 days: 31 h Training, 2.5 h E-OSCE	3. 11 weeks (460 hours) or	
	4. Small mammals, reptiles and birds or	5 days: 26,75 h Training, 3h E-OSCE	4. 10 weeks (460 hours) or	
	5. Horses	2.5 days: 16 h Training, 2.25 h E-OSCE	5. 10 weeks (460 hours) or	

	6. Instead of intra-mural VTH, Food Sciences or one paraclinical topic		6. 10 - 14 weeks (460 hours)	
	Reproduction		Integrated in all clinical disciplines	
Ambulatory clinics			22 hours (+ 20 h in case of VTH, see above)	3rd or 4th
Heard Health Management	On Teaching Farm Ruthe, in addition during ambulatory clinics, excursion with the clinic for poultry		3 weeks (70h)	In 2nd or 3rd year
FSQ & VPH*	Practical courses in meat inspections as well as dairy and food products inspection See also Tables 3.1.2 and 3.5.1		Intramural: (28 h) of meat inspection (28 h) inspection of dairy products (28 h) inspection of food products Extramural: 100 hours slaughterhouse 75 hours food security and hygiene 75 hours public veterinary service	3rd or 4th
Electives	See table 3.1.4			all semesters
*FSQ= Food Safety and Quality, VPH Veterinary Public Health				

Table 3.1.4 Curriculum hours taken as electives for each student*

Subject	Lectures	Seminars	Super-vised self-learning	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	Other: e-tutorials	Hours to be taken by each student per subject group (TappV)
	A	B	C	D	E	F	G	H
Basic subjects	*All students have to take 308 h of electives during the study programme according to their interests (TAppV). Therefore, it is not possible to assign the elective hours to the named subjects (see 3.1.7) VEE offers for all subjects about 1.5 times more elective hours than needed.						84	98 (freely chosen)
Basic sciences								
Clinical sciences							126	
Animal production								
Food hygiene/ Public health								
Professional knowledge								
Total	308 hours							

Table 3.1.5 Optional courses proposed to students (not compulsory)

Subjects	Lectures	Seminars	Super vised self-learni ng	Laboratory and desk-based work	Non-clinical animal work	Clinical animal work	other	Total
	A	B	C	D	E	F	G	H
Instruction scientific work		x	x					
IT, statistics			x	x				
Special clinical treatments						x		
Clinical topics			x		x			
Current research topics		x	x					
Special lab. methods		x		x				
E-Learning tutorials		x	x				x	

3.1.5. Description of the core clinical exercises/practicals/seminars prior to the start of the clinical rotations

The learning of clinical knowledge, skills and competences is considered during the whole study programme (Fig. 3.3):

- Starting from the 1st semester, students must complete a series of stations in the Clinical Skills Lab (Appendix 1.3.3.1 surgical logbook). Furthermore, they can deliberately learn and practice with a choice of a wide range of stations (see Appendix 1.6.1 list of learning stations CSL). Here theoretical and hands-on training using manikins and simulators is provided by tutors and peer tutors or available for self-study. Virtual patients can be examined in a safe environment to enhance clinical and diagnostic thinking. Furthermore, students can voluntarily join clinical rounds in the evening and during weekends or work as student assistants in all clinics.
- In 4th and 5th semester, propaedeutics with theoretical teaching and practical training on VEE-owned animals is provided in small groups using a blended learning approach. Students can only enter the 5th semester, when they have passed the exams and completed the first part of the surgical logbook. In the 5th semester, lectures and seminars start on internal medicine, reproduction and surgery, continuing into the 8th semester. Lectures are provided by each clinic and all species are considered (cattle, pigs, small ruminants, horses, small animals, exotics, poultry, fish, bees etc.).
- During the 6th, 7th and 8th semester, clinical cases provided by each clinic are discussed in smaller groups during "clinical training on patients" ("Klinische Ausbildung am Patienten", Quote). In each training unit, students have hands-on training in clinical examination that includes training in clinical reasoning, critical thinking, professional skills and EBVM. In each semester during this period, students examine patients directly for one day in the clinics and are taught examinations and diagnostic workup techniques (clinical workplace trainings on patients). Students are required to write clinical reports, which are supervised and discussed with 1-2 students per clinician. The surgical logbook in the CSL has to be completed until the end of the 8th semester (before the assessment of surgery on all animal species and before the PY).
- Logbook of patients: To monitor that students see and examine patients from all species and with different disease categories, the so-called Logbook of Patients "patient tracking documentation" was introduced (patient tracking documentation). Students fill an Excel spreadsheet with patients seen or examined including the tasks performed. The spreadsheet is uploaded via a Moodle course and monitored by the respective clinics (see list of logbooks on the provided website). This provides the student with an opportunity to reflect on their seen cases.
- VPH and FSQ see 3.1.7.

As shown in Fig. 3.1, students enhance their responsibilities for patients and clinical knowledge continuously over the study period.

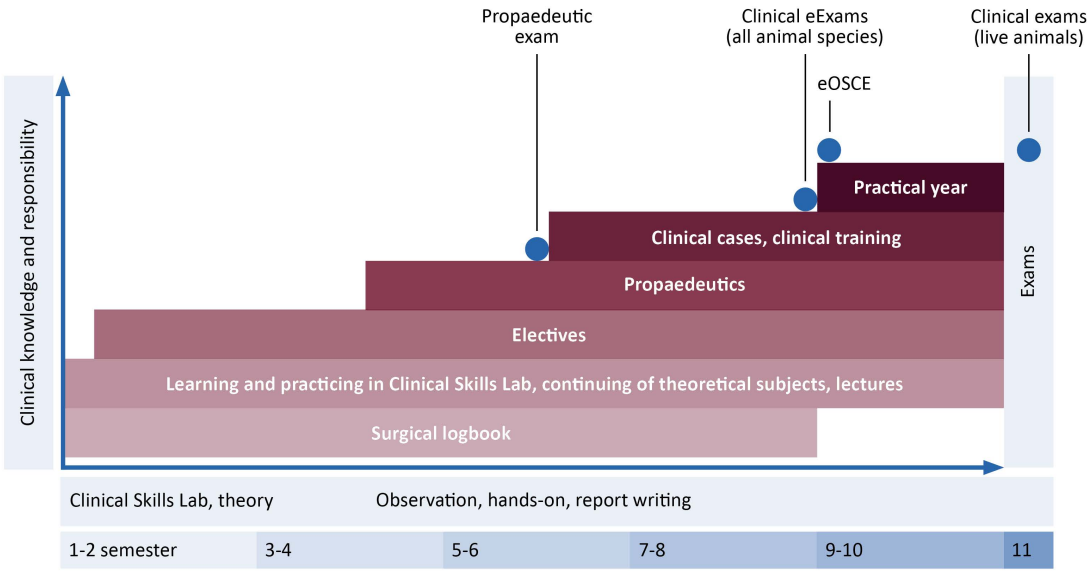

Fig. 3.1: Enhancement of knowledge and responsibilities

Additionally, the clinics assign patients to each student for preparing a report including history (retrieved from patients file), findings of clinical examination, interpretation of findings, detailed description of the problem, results of and plan for further diagnostic procedures, diagnosis, differential diagnosis including reasons or elimination of alternatives, treatment plan and prognosis. Each report is reviewed and rated by academic clinical staff. The student can amend and/or edit declined reports until acceptance.
Each student joins the group of clinical workplace training at least once per semester in a clinic of their choice. Further clinical training is provided during various electives and field trips. Students can also sign up for clinical evening rounds ("Abendbehandlung").
Veterinary professional training including, for example, ethical or communication training is provided during lectures, seminars and electives, and are highlighted within timetables for students. Students can only progress to their final exams, when all subjects are passed, and the surgical Logbook is completed.

3.1.6. Description (timing, group size per teacher, …) of the core clinical rotations and emergency services (both intra-mural VTH and ambulatory clinics) and the direct involvement of undergraduate students in it (responsibilities, hands-on versus observation, report writing)

The PY is well organised by the DSAA. Students can choose their individual rotations from five clinical and one paraclinical option (see Tab. 3.1.3). In each option, 6-20 students work together for 10-14 weeks. The groups are divided into small teams of 2-4 students per supervisor. Students are assigned to the different services for 1 to 2 weeks and become involved with e.g. the management and patient care of medical, surgical, intensive care, anaesthesia and emergency cases. The assignment includes client communication, medical history, clinical examination, clinical reasoning, EBVM and critical thinking, blood sampling, developing a diagnostic and a treatment plan, treatment and documentation. To ensure that each student on clinical rotation performs a minimum number of clinical procedures, they receive a clinical logbook with a syllabus of required procedures, which will be signed off by the clinician on duty after the student has performed this task. In the middle and at the end of each rotation, the logbooks have to be handed in and will be reviewed by the rotation coordinator who decides on the pass/fail of the rotation (list of logbooks).
As a more detailed example, students on PY rotation in the anaesthesia and intensive care services become involved in the daily management of elective and emergency procedures. During didactic rounds, the cases of the day and their possible problems and special

considerations are discussed with the students. Students are assigned to 1 or 3 cases per day and will take part in the case management, i.e., they are involved from premedication and anaesthesia induction to maintenance and monitoring, the recovery phase and planning of postoperative pain management and possibly intensive care measures, imaging procedures, surgery techniques, etc. On assigned cases, students will practice physical examinations, blood sampling, placement of catheters, endotracheal intubation, local and regional anaesthesia techniques, handling of an anaesthesia device, set-up of infusion sets and handling of infusion devices, and writing the patient record. Depending on the case load, students will be involved in euthanasia cases and the preceding decision making.
The rotation option in the Clinic for Pigs, Small Ruminants and Forensic Medicine (including Unit of Reproductive Medicine and the Field Station for Epidemiology) and in the Clinic for Poultry includes herd health visits, ambulatory service, daily short-term farm visits and specialized training in herd health management of pigs (herd visits, herd investigation, necropsies, diagnostic/laboratory tests).

3.1.7. Description (timing, group size per teacher, …) of the teaching in slaughterhouses and in premises for the production, processing, distribution/sale or consumption of food of animal origin

Food hygiene is taught by members of the Institute for Food Quality and Food Safety, taking place between the 5th and 8th semester. Mandatory core practical training (extra-mural) takes place in the PY.
The course involves co-ordinated lectures and practical classes in food inspection (particularly products of food of animal origin, carcass inspection, inspection of processed food of animal origin). Video instructions are made available, so students come prepared to practical sessions (Blended Learning). Furthermore, students complete an obligatory 100 hours of extramural core practical training in a slaughterhouse.
In addition, an interdisciplinary class in food hygiene is obligatory for students in the 7th and 8th semester ("Querschnitt"). In this class, students are taught by instructors from different disciplines to bring basic, paraclinical and clinical subjects and food hygiene into context in a problem-based learning approach. Further, students learn specific inspection techniques in electives.
An in-house facility for the training of students is available in the Institute for Food Quality and Food Safety. In order to obtain suitable material, VEE has access to three slaughterhouses in Lower Saxony, from which carcasses can be collected for student teaching. VEE has a small in-house food processing unit, which provides appropriate access for undergraduate students. A butcher is employed by the institute to provide professional instruction in the practical aspects of meat processing and sausage production. To obtain additional material for teaching, the institute maintains close contacts to several food-processing companies, which provide samples and permit visits by groups of undergraduate students on a regular basis.
The obligatory practical training in food hygiene at the VEE comprises a practical course organised by the Institute for Food Quality and Food Safety. Students receive 84 hours of practical training in food inspection (food of animal origin), food and meat technology, and in the context of the problem-oriented learning with clinicians with a focus on the food chain (from stable to table).
The obligatory practical training in meat hygiene and inspection occurs in a small inspection hall on the Bischofsholer Damm Campus, which also comprises a meat inspection course. Groups of approximately ten students each undergo training on carcasses and organs of pigs, cattle, sheep, goats and poultry (28 hours).
In addition to the intramural training, obligatory extramural training periods are supervised by the staff of the Institute for Food Quality and Food Safety. The lecturers of food hygiene subjects of all German VEEs have agreed with the slaughterhouses on the teaching content

during the practical training period. Pertinent documents are handed out to the students, and each student is involved in the mandatory evaluation of the extramural practical in accordance with the joint VEE guidelines.
Student evaluations undergoes a regular, detailed review process in which quality control is carried out concerning the tasks each student has completed in the respective practical location. The results obtained are used to update and adapt the checklist of tasks (logbooks), that have to be completed (see Appendix 1.3.4.2 to 1.3.4.9 and results of the evaluation).

3.1.8. Description of the selection procedures of the electives by the students and the degree of freedom in their choice (e.g. what happens when to many students select one specific track)

As part of our strategy to provide a cohesive framework for the future careers of students and to provide the orientation phase described above, electives are classified as "basic subjects", "research"," food hygiene", "aetiology", "companion animals" and "farm animals". Students can choose their preferred specialties and electives individually throughout their studies.
Electives are announced at the end of the previous semester. Students have to complete a total of 308 hours of electives. According to the TAppV, 84 hours must be taken in basic subjects and sciences, 126 hours in clinical sciences or food hygiene/VPH. The remaining 98 hours can be chosen by each individual student and are considered an orientation phase for their future professional direction. Electives are mostly taught on Wednesday and Friday afternoons to accommodate the dense schedules of our students. Students select electives online using a web-based program.
Group sizes depend on the amount of practical, clinical and/or laboratory work involved. The average group size is 20 to 30. In some instances, groups are smaller than 10 (clinical subjects) or larger than 30 (theoretical/online subjects). Most elective subjects provide problem-based learning and integrate basic with clinical sciences (catalogue of electives: summer and winter semester).
Our students can choose electives and prioritize them during a defined time period at the end of each semester. After the deadline, electives are allotted by the selection procedure described on the online learning platform. The selection algorithm considers the priority of the students for a specific elective, the number of hours the student has already completed for the specific assessment period, and the number of hours missed. There is no enforceable right to attend a specific elective, but we try as best to accommodate student preferences. Teachers offer more electives than needed for the number of students, try to expand popular courses, add E-Learning components and are looking for individual solutions. Students can also contact teachers directly to ask for placement in a special course. Pregnant students, students with children and students engaged in self-administration of the VEE (members of AStA, etc.) have priority status in the choice of electives concerning topics and timeslots.
In general, students can choose their favourite electives during their study years according to individual interests.

Veterinary training in Germany is regulated by the TAppV, which reflects the requirements of EU Directive 2005/36/EC and translates these into applicable German law. Thus, the conditions for EPT are the same for all veterinary establishments in Germany and are governed as follows:

Quality assurance of extramural traineeships in the framework of veterinary medicine training in Germany

Apart from the subjects listed, which are mandatory and must be implemented by all VEEs (faculties, university), the TAppV defines requirements for content and training places of 1,170 hours of obligatory extramural practical training. This practical training consists of the following four compulsory blocks:

- Practical training in agriculture, animal breeding and animal husbandry (70 h)
- Practical training in a veterinary practice or veterinary hospital (850 h, EPT)

- Practical training in hygiene control and control of foodstuffs and in the inspection of animals for slaughter and meat (175 h)
- Practical extramural training in the public veterinary service (75 h)

The VEE organises the practical work (agriculture) at our teaching and research farm in Ruthe. Other extramural work is organised by the students with help of the DSAA. The clinical training can be done with any veterinary surgeon fulfilling the requirements of Section 58 of the TAppV. To help students find a good place for their extramural education, we provide a list of positively evaluated qualified practioner, and teachers give advice to individual students.
The VEE has good cooperation to professional associations including the Federal Association of Practicing Veterinarians (BpT), and is in ongoing discussion concerning improving clinical training in private practice www.tieraerzteverband.de/bpt/Studenten/ausbildungspraxis/03-index.php. The extramural core rotation in a slaughterhouse must be performed in an EU-licensed establishment.
After having completed a section of their extramural training, students receive a certificate signed by the veterinary surgeon responsible for the training. Students and veterinary surgeons evaluate the practical work (evaluation of the practical work, of the teacher and of the student) and provide data on the training using a form with relevant training contents. The evaluation reports are analysed on a regular basis by ZELDA, DSAA and VP for teaching. Results are discussed in the ZSK.
Practitioners are signing an agreement before delivering any theoretical or practical training. To formalise teaching and recording procedures, a uniform web-based communication and service platform was introduced in collaboration of all five German VEEs (https://www.vmft.de/praktika/index.html). Veterinarians involved in extramural EPT are asked to take a 4-hour didactic course created by the E-Learning Service and to confirm the successful completion of the course.

3.1.9. Description of the procedures (e.g. logbooks) used to ascertain the achievement of each core practical/clinical activity (pre-clinical, clinical, ambulatory clinics, EPT) by each student

Surgical Logbook (preclinical): In the preclinical phase, students must successfully complete in the CSL six courses on general surgical skills (e.g., instrument knowledge, knotting and suturing techniques) within two years to be admitted to the next level of their studies. In the clinical section of the CSL surgical logbook course, students must complete seven courses on special surgical skills (e.g., anaesthesia management, intubation) and complete an advanced course on castration in small animals within two years as a prerequisite for participation in the PY and the electronic clinical exams. Successful participation is recorded in the surgical logbook, and after completion is certified online. Examinations of a variety of clinical patients from several species is controlled with the already described logbook of patients (patient tracking documentation).
Clinical Logbooks: Each clinic has a clinical logbook including competences (knowledge, skills and attitudes) related to Day One Competences. Exemplary clinical logbooks can be viewed in the list of logbooks.
All confirmations are collected in the student management system (HIS-in-One).

Procedures to ascertain achievement of learning objectives	
Pre-clinical, propaedeutic	• Blended Learning course: Students can only attend practicals with live animals after a mandatory Moodle course for preparation with a confirmation for successful completion (automatically created PDF form following MC test). Practicals are obligatory and attendance is confirmed by roll call of students. In addition, a seminar is offered to answer students' questions and deepen knowledge in propaedeutics. • Alternative training times are provided for missed hours. • Surgical logbook I (semesters 1-4) with stations in clinical skills lab (signature is required, completed logbook needs to be uploaded)
Clinical	• Daily attendance checks and individual call during clinical trainings (signature is required); clinical workplace training – online registration, upload in the student management system • Obligatory patient report prepared by each student (correction / feedback by scientific staff), in the clinics (at least 10 reports per student per study course). • Confirmation of completion of exercises and E-OSCE in the CSL, documentation of the interpretation of at least 40 x-rays, logbook for practical activities. • Alternative training times are provided for missed hours. • Surgical logbook II (semester 5-8) with stations in the CSL (signature is required after upload of completed logbook) • Logbook of patients (patient tracking documentation): students have to upload an Excel spreadsheet in Moodle and clinical supervisors check records.
Ambulatory clinics	• Attendance checks during farm visits with the ambulatory clinic • Analysis of herd health with presentation by students
Elective Practical Training	• Evaluation report by each student and by their supervisors (signatures required) • Official certificates of EPT • Training contract (Ausbildungsvertrag)

Standard 3.2: Learning Objectives

3.2.1 Description of how the VEE: -) ensures that the study programmes meet the objectives -) promotes a teaching environment conducive to learning -) encourages and prepares students for self-learning and lifelong learning.

Intended aims and learning outcomes of the study programme and individual courses are available for students and teachers online. Teachers have to check and update the course syllabi and list of learning objectives before each semester. The lists of learning objectives include competences (knowledge, skills and attitudes) in alignment with both national (TAppV) and international standards (EAEVE D1C). Assessment strategy including formative, progress and summative assessment is in alignment with teaching and learning objectives.
In addition to regular student evaluations, educational research is conducted by collecting comments and suggestions for improvement from students, teachers and graduates. Courses are discussed with lecturers and updated according to results of educational research (see publications of ZELDA).
The DSAA communicates before updating the schedule for each semester with each institution.
VEE provides didactic training for teachers and practitioners (see Tab. 9.2.5, also Area 6 and Area 9) to promote an adequate teaching and learning environment. Regular student evaluations result in curricular, organisational or infrastructural adaptations. Evaluations and implementations are published yearly.

Starting in the 1st semester in professional studies, students are taught learning strategies and relevance of lifelong learning. Additionally, electives such as “Learning to learn” or “CASUS Key Competences” provide further guidance.
The cycle of curriculum development is shown in Fig. 3.2.

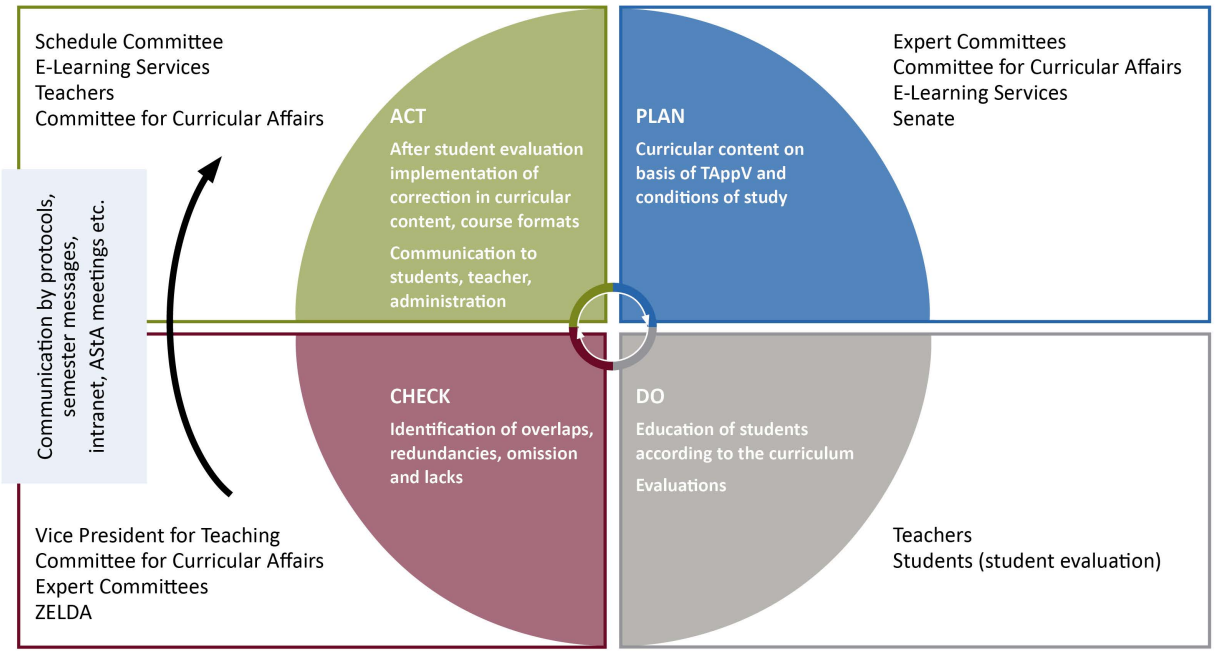

Fig. 3.2: PDCA cycle for curriculum development

Standard 3.3: Programme learning outcomes

3.3.1 Description of the educational aims and strategy in order to propose a cohesive framework and to achieve the learning outcomes

Learning outcomes are defined for every subject and published via the learning management system. Outcomes are assessed by formative and summative examinations as well as surgical and clinical logbooks provided by the VEE. In general, the development of curriculum follows Constructive Alignment (Fig. 3.3.)
To achieve the educational aims, our strategy includes a constant review and improvement of learning and teaching outcomes on the basis of student evaluations and assessment results. The deciding participants and committees are described in area 3.4.1.

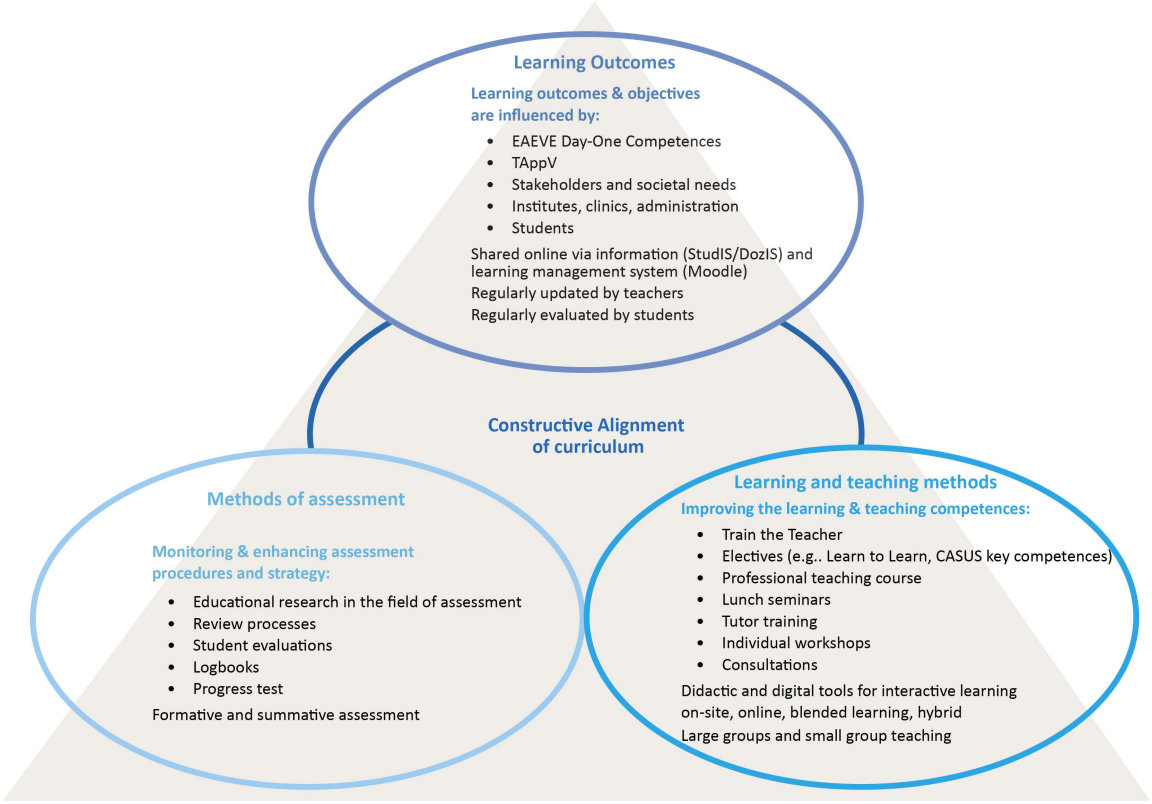

Fig. 3.3: Constructive alignment of curriculum

3.3.2 Description of how the VEE ensures that the learning outcomes fit with the ESEVT Day One Competences

The institutes and clinics are informed about EAEVE D1C and asked which competences they teach and/or assess (see Appendix 1.3.3 for details about how the veterinary curriculum contributes to the ESEVT Day One Competences). We also refer to the description in the previous sections and the curricular "Plan-Do-Check-Act" cycle (Fig. 3.2), which is designed to ensure a cohesive veterinary curriculum devoid of unintended redundancies etc. (section 3.1).

3.3.3 Description of how (procedures) and by whom (description of the committee structure) the learning outcomes are decided, communicated to staff, students and stakeholders, assessed and revised

The ratio of theoretical and practical teaching as well as the format and style (i.e., individual classes or blocks on certain subjects facilitating a problem-oriented approach or using interactive learning tools) is decided by the clinic or institute responsible for the subject, discussed in the Expert Committees and administered by DSAA. The VEE supports small group teaching by providing non-academic teaching staff (mostly peers) paid with Funds for Enhancing Study Quality (SQM).
As a didactical training for teaching staff, a lunch talk on "how to write learning outcomes" as well as guidelines are available within Moodle (#Lehre/ #Teaching). Learning objectives are defined and made available for students and teachers online on the intranet. Before the start of each semester, teachers are reminded to update their learning objectives and update the description of their teaching events accordingly. Student evaluations are performed regularly (see also 3.2.1, 3.7.2.)

Standard 3.4: Committee Structure for Curriculum Development

3.4.1 Description of how (procedures) and by whom (description of the committee structure) the core curriculum is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

As described in 3.1.2, the VEE must not change the national curriculum as mandated by law and bylaws, but has influence on the internal processes and the portfolio of electives. All decisions on curricular matters are discussed in the ZSK and a recommendation is submitted to the Senate for approval.
The allocation of hours to individual courses and lectures is outlined in the TAppV. The balance between theoretical and practical teaching is decided by the clinic or institute (see 3.3.3. committee structure). Fig. 3.4 shows the interaction with stakeholders and yearly meetings with the Association of Veterinary Faculties (Fakultätentag), the group of the German-speaking VEEs. Recently, suggestions to adapt the TAppV were made after discussions with all German VEEs and with stakeholders, and submitted by all five establishments to the decision makers in the Federal Government.

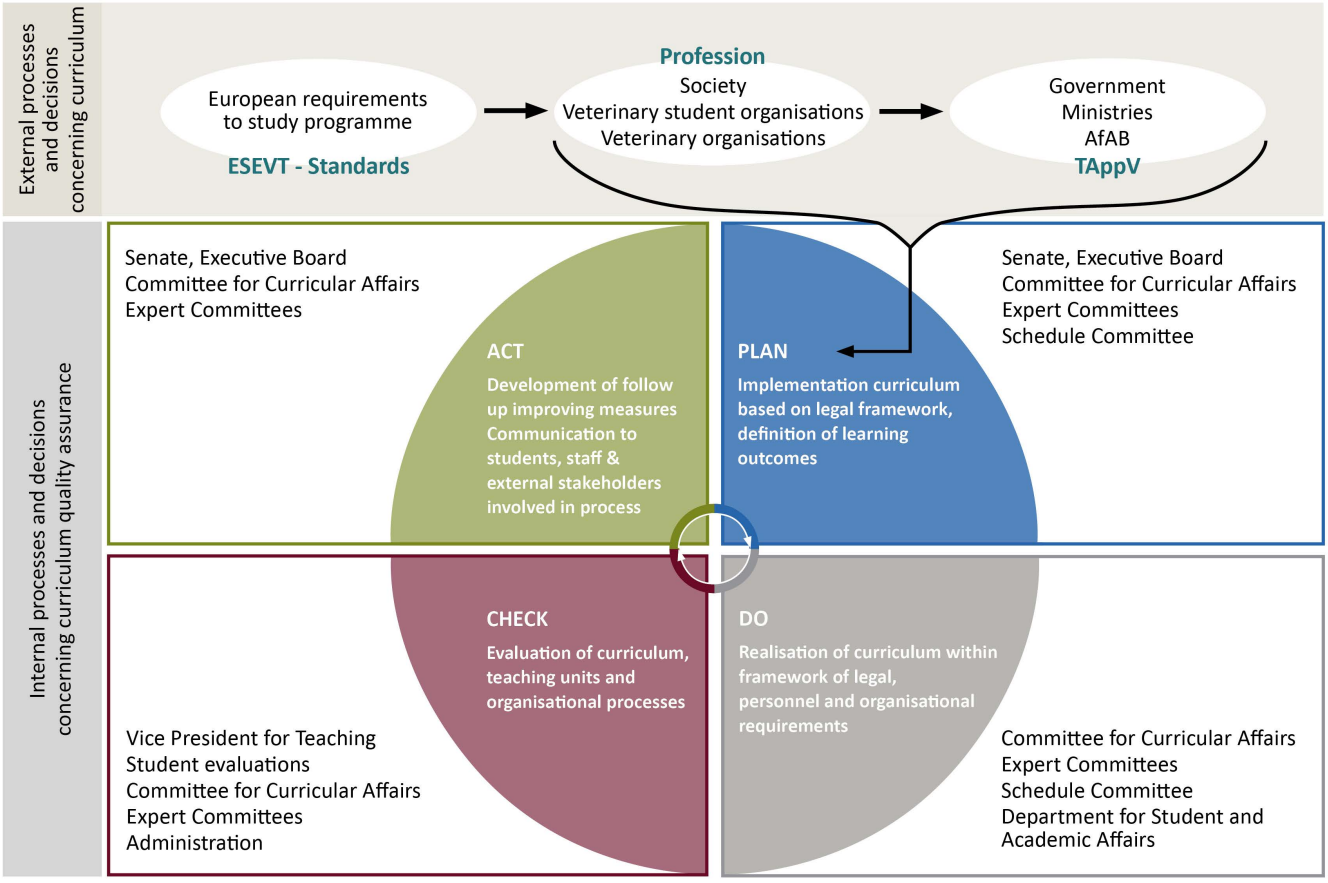

Fig. 3.4: PDCA cycle of curriculum development

Standard 3.5: Elective Practical Training (EPT)

3.5.1 Description of the organisation of the EPT and how it complements (but not replaces) the Core Clinical Training (CCT)

The compulsory EPT and extramural practical training are described in Table 3.5.1. All students enrol and submit evaluations, certificates, and logbooks. Evaluation forms are completed by students and supervisors, and are under constant review. Suggestions for improvement are considered from students, qualified teaching staff (intramural) as well as supervisors (extramural). Throughout the whole study programme, students can study and practice in the CSL. For booked stations, students also receive elective hour credits (please refer to 3.1.8 for allocation of elective subjects).

Table 3.5.1 Curriculum days of Core and Elective Practical Training (EPT) for each student

<table>
<tr><th colspan="2">Fields of Practice</th><th>Minimum duration (weeks)</th><th>Year of programme</th></tr>
<tr><td>Production animals (pre-clinical)</td><td>Internal practical training (core)</td><td>70 hours (3 weeks), 1.4 % of total study time on VEE teaching farm in Ruthe</td><td>after the 1st year</td></tr>
<tr><td>Companion animals (pre-clinical)*</td><td>No preclinical EPT</td><td></td><td></td></tr>
<tr><td>Production animals (clinical)</td><td rowspan="2">No differentiation in students' education in production and companion animals (extramural EPT)</td><td>150 hours (4 weeks), 3 % of total study time</td><td rowspan="2">after the 5th or 6th semester or later (after propaedeutics)
in the 5th year (PY)</td></tr>
<tr><td>Companion animals (clinical)*</td><td>700 hours (16 weeks), 14 % of total study time</td></tr>
<tr><td>FSQ and VPH</td><td>Food hygiene (core)</td><td>75 hours (3 weeks), 1.5 % of total study time</td><td>after the 3rd year (6th semester)</td></tr>
<tr><td rowspan="2"></td><td>Food hygiene (slaughterhouse)</td><td>100 hours (3 weeks), 2 % of total study time</td><td>in the 5th year (PY)</td></tr>
<tr><td>Food hygiene (core)</td><td>75 hours (2 weeks), 1.5 % of total study time</td><td>in the 5th year (PY)</td></tr>
</table>

Standard 3.6: Elective Practical Training (EPT) Providers

3.6.1 Description of how the EPT providers are linked to the VEE (a copy of one of the agreements to be provided in the Appendices), assess the students and provide feedback to the VEE

To support the EPT and extramural practical providers (provider) in meeting quality assurance requirements, the five VEEs in Germany have harmonised the formal elements and initiated suitable training courses. The forms provided are (1) the agreement between provider and VEE, (2) the definition of learning objectives and the documentation of the achievement of learning objectives (logbook), (3) quality monitoring through mutual evaluations and feedback options, and (4) a one-time training course for the veterinarians providing extramral training. The code of conduct as published by the chamber is accessible to providers via an intuitive online platform as is the Service Centre for Training Institutions (Association of Veterinary Faculties). In the Service Centre, providers can create as many accounts for students as necessary and are guided step-by-step through the elements of quality assurance (exemplary agreement).

Evaluation forms by students as well as supervisors are regularly reviewed and updated (e.g., Kleinsorgen et al. 2020), see also Appendix 1.3.1.5 translation and example on website).

3.6.2 Name of the teaching staff(s) responsible for the supervision of the extramural activities

There are assigned representatives in charge of PY students (representatives per clinic/institute) helping students to meet the obligations (see list on the provided website for the visitation). The DSAA is available for students and providers regarding agreements, evaluation or certification, logbooks and confirmation in the student management system.
To simplify communication and make documents available, a common online platform was established in collaboration with all German VEEs. In addition to the agreements and evaluation forms, information on didactical training courses are available in Area 9. The entire procedure is supervised by the VP for Teaching and the DSAA.

Standard 3.7: Students responsibility for their own learning during EPT

3.7.1 Description of the implications of students in the preparation, recording and assessment of their EPT

An information session is provided to all students prior to their selection of EPT. Another information session is available before students enter the PY (intra- and extramural). Students have to fulfil the legal requirements but can pick the EPT provider of their choice and have to plan and organize their schedules. For internal rotations, each clinic has a clinical logbook, which includes global and individual learning objectives. Furthermore, evaluation forms have to be submitted in order to complete a rotation or practical. Evaluation forms and logbooks from extramural EPTs are under regular review (see Appendix 1.3.4 and detailed results 1.3.5). Students are prepared by the Institute for Food Quality and Food Safety for extramural practicals in VPH.

3.7.2 Description of the complaint process in place concerning EPT

The complaint process concerning EPT and extramural praticals is a vital component of ensuring a positive, supporting and effective learning experience for students. This process includes clear guidelines for how complaints are made and a system for investigating and addressing any concerns that are raised. Students are encouraged to voice their feedback and concerns in a timely manner. There is assurance that their complaints will be handeled with in fairness and full transparency. Students are informed prior to their EPT that they please raise complaints internally before using public or social media. With the well-defined complaint process in place, we can continuously improve the quality of EPT training and ensure that students receive the best possible education and support. Results are analysed regularly as described in Fig. 3.3.and 3.4.

Current reports on analysis of the EPT and extramural VPH practicals in the PY of the years 2021/2022 and 2022/2023 are available in Appendix 1.3.5). In summary the clinical extramural EPT were primarily completed in small animal practices (43% of the students). Mixed practices account for 22% of EPT, followed by equine practices at 21%, while 11% of the students completed EPT in the livestock sector. A wide range of patients was seen. Over 90% of the students encountered patients with orthopaedic or gastrointestinal conditions, while over 80% dealt with gynaecological or dermatological cases. In addition, 75% of the students saw patients with cardiac or neoplastic conditions. The practicals were rated highly by the students: 96% generally rated the extramural EPT as ‘good’ or better. Furthermore, 94% stated that they were able to perform many practical tasks during the EPT period, and 97% rated the guidance provided by their supervising veterinarian as ‘good’ or better.

Practicals in the areas of hygiene control and control of food and in the inspection of animals for slaughter and meat were rated positively overall by both the students and the supervising

veterinarians. A total of 96% of all students described the on-site supervision after the slaughterhouse practical as ‘good’ or better. Most students (92%) felt that their prior theoretical knowledge was sufficient. The preparation provided by the university was also rated as high, with 83% agreeing or at least partially agreeing. Accordingly, 97% of the supervising veterinarians rated the students' knowledge as ‘good’, and 98% of the veterinarians also agreed with the statement that the students were very motivated. Most students (94%) rated the supervision in the food sector as good and 89% felt that their theoretical knowledge was fully or partially sufficient. On the part of the supervising veterinarians, 98% rated the students' theoretical (university-taught) knowledge as good, and 85% rated student motivation as high.

Comments on Area 3 – Curriculum

- In addition to the description of curriculum hours (Tab. 3.1.1), TAppV requires compulsory interdisciplinary teaching (“Querschnittsunterricht”) in clinical education and in food hygiene (196 hours). In these interdisciplinary subjects, contents of clinical subjects are implemented in combination (e.g., with subjects dealing with the effect of ionising radiation, environmental contamination as well as food, meat and milk hygiene)
- All stages of food production (examination of live animals, diseases of live animals and pathologies seen in carcasses) are integrated in this programme
- Problem-based teaching is provided in small groups
- All preclinical subjects are taught in an interdisciplinary fashion
- Blended-learning concepts are implemented (e.g., escape room for physics).
- Additional virtual patients and interactive online learning programmes in preclinical and clinical subjects have been introduced
- Preparatory courses for students with respect to extramural practicals

Suggestions of improvement in Area 3 – Curriculum

- Extension of ZELDA and DSAA
- The current TAppV is being modified during a working process with the respective authorities, stakeholders and the other four VEEs in Germany
- Transformation of individual patient tracking sheets into a uniform online system, using a database that allows statistics and automated feedback using AI methods (in the planning stage)

Area 4: Facilities and Equipment

Standard 4.1: Physical Facilities

4.1.1. Description of the location and organisation of the facilities used for the veterinary curriculum (maps to be provided as Appendices)

The VEE is located on two sites approximately 4 km apart. The Bischofsholer Damm Campus is situated 2 km from the town centre and is connected to the Bünteweg Campus by a tram line and a public road with a bicycle track (maps are provided in the Appendix, chapter 2).
The Clinical Complex at Bünteweg includes the Clinic for Small Animals, Clinic for Horses and Clinic for Small Mammals, Reptiles and Birds. The modern Clinical Complex provides state-of-the art facilities and equipment for teaching, research and clinical service provision.
The field station in Büsum, Schleswig-Holstein (approximately 300 km from Hannover on the North Sea coast) for research on marine mammals and biodiversity, is part of the Institute for Terrestrial and Aquatic Wildlife Research of VEE, which is headquartered at the Bischofsholer Damm Campus.
VEE maintains its Teaching and Research Farm in Ruthe (20 km south of the Bischofsholer Damm Campus) and the Field Station for Epidemiology in Bakum (approximately 200 km northwest of Hannover).
The Research Centre for Emerging Infections and Zoonoses (RIZ) on the Bünteweg Campus is a state-of-the-art research building with more than 4,000 square meters and includes facilities to perform large animal experimental research. The laboratories are operated at biosafety levels 2 and 3. RIZ houses interdisciplinary research groups from VEE and collaborating institutions, and performs research on food-borne, vector-borne, and emerging zoonoses as well as highly contagious infectious diseases. In addition, the Centre for Translational Studies (CTS) was added in 2022 to the Campus Bünteweg. The site is the nucleus for our commitment to technology transfer and VEE researchers work on development of therapeutics (e.g., use of bacteriophages) and vaccines, as well as the use of insects for food and feed production.

4.1.2. Description of the strategy and programme for maintaining and upgrading the current facilities and equipment and/or acquiring new ones.

As a customer-oriented service provider, the Department of Real Estate and Facilities supports VEE research, teaching, and service. The department is responsible for the maintenance and renovation buildings, conversions and extensions. The department establishes a list of priorities, which is regularly coordinated with the Executive Board and implemented. Projects are differentiated between short-term (1-2 years), medium-term (3-5 years) and long-term (> 5 years). Special projects relating to sustainability, e.g., climate adaptation and energy-efficient renovations, are also prioritised and confirmed by the Executive Board.

Standard 4.2: Teaching Facilities

4.2.1 Description of the equipment used for teaching purposes

All lecture halls feature modern technical equipment for teaching (projectors, communication systems and interactive smart boards, all computers are equipped for lecture recording, conference cameras). Small group teaching, practical work and supervised work in laboratory courses require a significant number of repeats and many smaller rooms in which group work can be performed. These rooms also are equipped with modern media tools.

Table 4.2.1: Description of the premises for lecture halls, group work, practical work, skills lab:

Bünteweg Campus (BW), Bischofsholer Damm Campus (BD)			
a) Lecture halls			
Campus	Size of lecture hall	No of rooms	Total seats
BD	More than 190 seats	3	887
BD	Less than 190 seats	14	1414
BW	More than 190 seats	2	524
BW	Less than 190 seats	9	810
	Total BD+BW	28	3635
b) Premises for group work (seminars, tutorials,...)			
Campus	Name of building	No of rooms	Total size in m²
BD	Clinical Skills Lab	3	108
BD	Several institutes at BD	10	550
BD	Mensa etc.	2	147
BW	Clinic Complex	10	35
BW	Several institutes at BW	6	317
BW	VEE-Tower	4	352
	Total BW+BD	34	1784
c) practical work (laboratories, rooms for clinical skills)			
Campus	Name of building	No of rooms	Total size in m²
BD	Clinics at BD	2	170
BD	Several Institutes at BD	18	1545
BW	Several Institute at BW	8	450
BW	Teaching Buildings	11	1050
BW	Clinic Complex	5	380
	Total BD + BW	57	3860
d) skills lab			
Campus	Name of building	No of rooms	Total size in m²
BD	Clinical Skills-Lab	13	265

Table 4.2.2: Description of the premises for study and self-learning:

Bünteweg Campus (BW), Bischofsholer Damm Campus (BD)			
a) Premises for study and self-study			
Campus	Name of Building	No of rooms	Total size in m²
BW	Library	1	53
BW	Computer-Teaching, 3rd Floor	2	171
BW	Teaching Building 3, Foyer Institute for Pathology and RIZ	3	310
BW	Canteen TiHo Tower	1	250
BW	Teaching Building 1, Pylorus	1	155
BD	Aula - old “Pylorus“	1	89
BD	CSL Self-study room	2	40
BD	Clinic for Cattle	3	52
BD	Institute for Anatomy	2	280
BD	Canteen “Caballus” outside lunchtime	1	262
b) Premises for catering			
Campus	Name of Building	Size in m²	
BW	Canteen TiHo Tower, from 8.10 am until 2.30 pm	250	
BD	Canteen “Caballus”, from 12 pm until 2 pm	262	
Ruthe	Teaching building, refectories	34 + 42	
c) Premises for locker rooms			
	Name of building	No. Room >10m2	Total size in m²

BD	Clinics at BD	10	150
BD	Institutes at BD	20	490
BD	Clinical Skills Lab	7	90
BW	Clinic Complex and Unit of Reproductive Medicine	13	246
BW	Institutes at BW	12	324
	Total BD + BW	62	1300
d) Premises for Accommodation for on call students			
BD	Institute for Physiology, Anatomy	2	25
BD	Clinics at BD	7	75
BW	Clinic Complex	12	110
	Total	22	210
e) Premises for leisure			
Veterinary students are entitled to use the main sports facilities of "Hochschulsport", some courses take place on campus. The parks and green areas are equipped with seating, the old riding arena at BD used for ball games.			
BW	Parent-Child-Room in TiHo Tower, 1st floor	12 m^2	
BD	Rooms for the Student committee	50 m^2	
BD	Parents-Child-Room "TiHo-Nest", one with PC working station, one with kitchen	56 m^2, 2 rooms, bathroom	

4.2.3 Brief description of the staff offices and research laboratories

Staff offices and research laboratories			
Bünteweg Campus (BW), Bischofsholer Damm Campus (BD)			
Campus	Name of Building	No of rooms	Total size in m^2
Staff offices			
BW	Staff offices for central administration (TiHo Tower)	110	2291
BW	Staff offices in institutes and clinics	351	5954
BD	Staff offices in institutes and clinics	297	5459
BW	Centre for Translational Studies	31	510
BW	Research Centre for Emerging Infections and Zoonoses (RIZ)	21	439
Research laboratories			
BW	Research Centre for Emerging Infections and Zoonoses (RIZ)	67	1940
BW	Centre for Translational Studies	52	1093
BW	Research laboratories in institutes and clinics	296	5461
BD	Research laboratories in institutes and clinics	228	5387

Standard 4.3: Livestock Facilities

4.3.1 Description of the premises for housing:

Table 4.3.1a: Description of the premises for housing:

Species	No. places	Size in m^2
a) Wards for Healthy animals		
Dogs	55	330
Cats	50	300
Small mammals	<2000 (laboratory animals)	<350
Reptiles (frogs)	20	15
Ornamental birds	29	15
Cattle	54	316
Horses	19	220
Pigs, Small ruminants, South American Camelids	43	480
Chicken, ducks, pigeons, turkeys	28	16

Fishes	2200	64
b) Wards for research animals		
Reptiles	18	9
Mice, rats	560 mice/220 rats	21
Dogs	20	53,1
Cats	359	305
Pigs, Small ruminants, South Amer. Camelids	479	689
Chicken, ducks, pigeons, turkeys	1397	314
Small mammals	961	361
Cattle	38	316
Fishes	2200 (are kept for research), 100 (in current experiments)	64
c) Wards for Hospitalised animals (day ward, intensive care units)		
Dogs	83	310
Cats	42	140
Small mammals, reptiles and birds	100	76
Cattle	93	930
Horses	50	600
Pigs, Small ruminants, South American Camelids	30	108
Fishes	20	10

Table 4.3.1b: Premises for farm animals (Ruthe)

Healthy farm animals for teaching are kept at the Teaching and Research Farm in Ruthe, which comprises 236 ha, incl. 41 ha of pasture.

Building	Species	No. places max.	Size in m²
Hen house	Laying hens	4,200	520
Piggery	Sows	85	628
Piggery	Boars	2	20
Piggery	Piglets	240	149
Sty for	Mini-Pigs	80	228
Cattle barn	Dairy cows	110	1,912
	Cattle	47	1,730
	Calves	33	
Poultry	Broilers	21,157	1,225
	Turkeys	4,716	1,227
	Broiler	9,399	566
	Peking ducks	3,300	574
Total		4,3597	7,165

4.3.2 Description of premises for clinical activities, diagnostic services, others.

Table 4.3.2: Premises clinical activites and others

a) Central clinical support services			
Species	Equipment	No of rooms	Total size in m²
Small animals	no. consulting rooms no. surgical suites	35 incl. special rooms (X-ray etc.) 10 + preparation rooms	630 incl. special rooms (X-ray etc.) 480 incl. preparation
Small mammals, reptiles and birds	no. consulting rooms no. surgical suites	16 incl. special rooms (X-ray etc.) 2 + preparation rooms	180 incl. special rooms (X-ray etc.) 77 incl. preparation
Equine	no. examination areas no. surgical suites	12 + special rooms (X-ray etc.) 5 +preparation rooms	670 incl. special rooms (X-ray etc) 350 incl. preparation

Cattle	no. examination areas no. surgical suites	8 5	260 incl. preparation 185
Small ruminants and pigs	no. examination areas no. surgical suites	3 incl. special rooms (X-tray etc.) 2 + preparation	70 incl. special rooms (X-ray etc.) 100 incl. preparation
Pigs (Bakum)	no. examination areas no. surgical suites	1-	67
Other	no. examination areas no. surgical suites	1 for fishes	15

b) Diagnostic services including necropsy

Routine clinical laboratory diagnostics are performed in clinics. In diagnostic laboratories of the clinics and institutes relevant teaching is held; students are taught the techniques and spectrum of methods of analysis in small groups. Facilities are designed to host small students groups for teaching purposes.

Unit	Equipment	No of rooms	Total size in m^2
Institute for Pathology	Necropsy	6	300
Bakum, Epidemiology	Necropsy	1	67
Others	Necropsy	2	30
	Total necropsy		400
Campus BD	Laboratories >25 m^2	77	3,000
Campus BW	Laboratories >25 m^2	100	5,000
Bakum, Epidemiology	Laboratories >25 m^2	5	100
Büsum ITAW	Laboratories >25 m^2	8	300
	Total diagnostic		8,400

4.3.3 Description of the equipment used for clinical services (diagnostic, treatment, prevention, surgery, anaesthesia, physiotherapy, ...)

The clinics and institutes feature state-of-the-art equipment for diagnostics and therapy (in house clinical laboratories, different imaging techniques such as a 3 Tesla MRI, spectral and a big-bore helical CT, C-Arm, multiple ultrasound and X-ray machines, various anaesthesia machines, various surgical equipment, water and land based physiotherapy as described in more detail in the appendix). All students have access to the equipment and are participating in all described clinical services.

4.3.4 Brief description of the premises (both intra-mural and extra-mural) used for the practical teaching of VPH (including FSQ) (slaughterhouses, foodstuff processing units, ...)

Slaughterhouse facilities

An in-house facility for the training of students is available in the Institute for Food Quality and Food Safety. In order to obtain suitable material, VEE has access to three slaughterhouses in Lower Saxony, from which carcasses can be collected for student teaching in our own facilities.

Foodstuff processing unit

VEE has a small in-house foodstuff processing unit with access for undergraduate students. A butcher is employed in the Institute for Food Quality and Food Safety to provide professional instruction in the practical aspect of meat processing and sausage production. To obtain additional material for teaching, the institute maintains close contacts to food processing companies, which regularly provide samples and host visits by undergraduate students.

c) FSQ & VPH (slaughterhouses, foodstuff processing units...)			
Unit	Equipment	No of rooms	Total size in m^2
Institute for Food Quality and Food Safety	Foodstuff processing unit for training and teaching	3	Total 75
Institute for Food Quality and Food Safety	Slaughterhouse Facilities for training and teaching	3	Total 200

Standard 4.4: Core Clinical Teaching Facilities

4.4.1 Description of the organisation and management of the VTH and consultations (opening hours and days, on-duty and on-call services, general consultations, list of specialised consultations, hospitalisations, emergencies and intensive care, ...)

All clinical establishments, except the Clinic for Poultry and the Fish Disease Research Unit, offer 52-week general consulting on 5 days per week from 8 am to 5 pm. Consultation service is complemented by emergency services at night (5. pm to 8 am) and 24 h on weekends. Hospitalisation, emergency and intensive care units are offered by all clinics (except Clinic for Poultry, the Fish Disease Research Unit and the ambulatory services).

Species/Clinic	Specialised consultations
Horses	Internal medicine (incl. cardiology), surgery (incl. orthopaedics, trauma surgery, anaesthesia), dermatology, neurology, diagnostic imaging, ophthalmology, dentistry, obstetrics and gynaecology, andrology
Small Animals	Internal medicine (incl. cardiology), surgery (incl. soft tissue, orthopaedics, trauma surgery), anaesthesia, dermatology, neurology and neurosurgery, oncology (chemo-, radiotherapy), physiotherapy, diagnostic imaging, ophthalmology, dentistry, emergency and intensive care, reproduction (gynaecology, andrology, obstetrics and neonatology)
Small mammals, reptiles, birds	Internal medicine and surgery, diagnostic imaging in small mammals, reptiles, ornamental birds
Cattle	Internal medicine, surgery, orthopaedics, obstetrics, gynaecology, andrology
Pigs, small ruminants	Internal medicine, surgery (incl. orthopaedics, trauma surgery, anaesthesia), dermatology, neurology, oncology, diagnostic imaging, dentistry, obstetrics and gynaecology, andrology in pigs, small ruminants (sheep, goats), South American camelids and enclosure game
Poultry	Commercial and backyard poultry, vaccination service for hobby farmers, mobile consultation (mandatory course for students) Consulting hours Monday 9 – 11 am, Thursday 2-4 pm
Ambulatory clinic	Mobile consultations (home visits) for cattle, pigs, small ruminants, horses in the region of Hannover (mandatory course for students) and Bakum
Fish Disease Research Unit	Internal medicine and surgery, diagnostic imaging; mobile consultations (home visits) for public aquaria and fish farms in lower Saxony and other parts of Germany. Consulting hours: Monday –Friday 9 am – 4 pm and in consultation

4.4.2 Description of how the VTH and ambulatory clinics are organised in order to maximise the hands-on training of all students

See 3.1.6., 5.1.1., 5.1.2, 5.3.2, 5.3.3.

The Veterinary Teaching Hospital (VTH) and ambulatory clinics at our institution are meticulously organised to ensure that all students receive maximum hands-on training. Our approach includes structured group assignments and a detailed scheduling system that enhances practical exposure and learning.

Group Assignments and Scheduling:

Students are divided into small groups to facilitate close personal attention and effective learning. This division is managed by the DSAA who ensures that each group is scheduled for clinical rotations and practical sessions in various facilities and clinics. Students and the relevant institutions will receive the information on the allocation of students via TiHoStudis or by E-Mail. To accommodate all students and optimise clinical exposure, parallel sessions are offered across different clinics and facilities. This strategy ensures that every student gains ample experience without overcrowding any single facility.

The first hands-on training with live small animals is in the 4th and 5th semester via propaedeutics (clinical examination skills and techniques) with a blended-learning approach consisting of online and onsite training. The students have 56 hours of practical sessions, where

they learn in small groups to examine all relevant animal species. In this context, and partly in a steeple chase manner, general physical and discipline-specific examination procedures are learned, as are restraining and injection techniques.
The students from the 6th semester onwards have an immersive learning experience in all clinics by shadowing students in the PY (workplace training), providing a platform for peer-to-peer learning and teaching. In addition, students gain practical experience in and after clinical training on patients in semesters 6 to 8. In the clinical training, cases (patients) are interactively discussed with lecturers and peers. Each student has to examine at least one patient per semester and per clinic and gets individual feedback on a written, structured report guiding them through the clinical reasoning process. To ensure that students examine different species and different diseases, the patient tracking system was created by the Expert Committee for Clinics and is controlled using a Moodle course. Furthermore, elective sessions, including evening treatments, examinations and diagnostic imaging sessions, are available to students providing additional practical opportunities every day from 4 pm and on weekends. Students can attend up to 56 hours per semester (elective hours).
During the 7th and 8th semester, students are assigned to the ambulatory clinics for practical field training. A training of 12 hours (2 x 6 hours) in ambulatory services is mandatory for each student. Prior to the start of the semester, students are divided into small groups for this training by the secretariat of the Ambulatory Clinic: six students per day (first 4 weeks), five students per day (weeks 5-9) and four students a day (weeks 10-14) are deputed to ambulatory training. This staggering provides enough space for alternative dates, if needed. During the hands-on training in ambulatory services, students are assigned in groups of maximal three students per senior veterinarian.
In the PY, students engage in hands-on training with multiple patients daily. This approach helps develop clinical reasoning, practical and professional skills. In this scenario, students are colleagues and have full access to our patient record system. One or two staff members analyse and oversee the clinical rotations (see 3.6.2.) and the pre-rotations in the CSL. Staff is available daily for any issues as they may arise. Per clinical rotation group, two students are elected as representatives and meet on a biweekly basis for fine-tuning of the learning experiences and coordination. Cases and skills are recorded by the students (see logbooks of the different clinics) and reviewed at the end of the rotation or in between if needed. Logbooks automatically show the progress, based on the minimum required practical activities in the respective clinic. In addition, student performance is assessed weekly by supervising staff. Based on these evaluations and an E-OSCE performed in the CSL rotation, students receive structured and individual feedback, verbally and written, at least twice during clinical rotations.
By structuring our clinical training programmes in this manner, we guarantee that all students receive extensive hands-on experience, thereby enhancing their practical skills and readiness for professional practice.
Hands-on training in the Clinic for Poultry: Students receive hands-on training in poultry the first time during their practical in Ruthe and are trained by participating in the extension service provided to poultry flocks. All students have one more farm visit during their clinical training on patients (7th Semester, herd health management). In addition, all students are trained in bird handling, clinical investigation of individual birds, sampling (6th semester) and application of vaccines and other medications (7th semester). Clinical cases will be discussed during clinical training on patients in association with necropsies. During their PY rotation, students have further farm visits, but also see clinical cases of backyard poultry including pigeons, see necropsy cases, and work on POL cases (problem oriented learning). Clinical work in poultry practice is supplemented by pathological and laboratory investigations.

4.4.3 Statement that the VEE meets the national Veterinary Practice Standards

Our VEE is fully compliant with the national Veterinary Practice Standards and applies the national fee schedule for veterinarians. The VTH and all facilities involved in the core curriculum adhere strictly to the ESEVT Standards. We are committed to maintaining a state-of-the-art clinical environment that not only matches but often exceeds the standards of the best clinics in the private sector, e.g., the Clinic for Small Animals has received the highest marks during its June 2024 assessment under the practice standards scheme of the "Bundesverband Praktizierender Tierärzte" (BPT). It received the Gold Award, the highest possible Good Veterinary Standard achievement under that scheme (GVP). More information can be found here https://www.tieraerzteverband.de/bpt/bpt-fuer-sie/Inhaber/gvp/index-gvp.php .

Beyond an external organisation evaluating GVP standards, we strive for the highest standards of GVP possible in the veterinary sector by regular audits, reflecting and improving through a strict internal quality assurance system that ensures we provide the highest quality of veterinary education and clinical services.

The Clinic for Small Animals has two dedicated members of staff (an academic and a technician) for overseeing GVP activities. In addition, a quality assurance group representing all areas of the hospital meets monthly to review and further develop GVP standards and culture. Another dedicated group meets monthly to discuss service delivery, communication and clinical efficiencies. The Clinic for Small Animals has also regular meetings of the "green team" overseeing sustainability, the infection and antibiotic stewardship group, a clinical skills education team and other administrative teams. These meetings are minuted and major action points are discussed with the leadership team before they are moulded into SOPs and checklists and communicated in one of the weekly general Wednesday morning meetings visited by students and staff alike. All non-sensitive minutes are published on an internal website, as is a handbook of all SOPs and checklists, available to all staff and students. A few further examples of our quality assurance system are: external feedback and review sources (owners will receive on the discharge a QR code to provide feedback about the services received; complaints are reviewed systematically by colleagues who were not involved in the management of the case. They provide a systematic error evaluation and a list of proposed action points, which will be then discussed and actioned, as necessary and appropriate, in one of the monthly meetings. Each complaint will also be reviewed by independent members of the leadership team of the clinic. Social media are reviewed regularly and handled as aforementioned).

VEE has an anonymous whistleblower system. Every staff member or student can post complaints, which are controlled and discussed by representatives of the administration and actions are provided by the Executive Board.

The Clinic for Small Animals has an anonymous critical incidence and near-miss reporting system. Incidences reported are evaluated and, depending on their nature, will then be discussed directly in the quality assurance group or in interdisciplinary Morbidity and Mortality (M&M) rounds. M&M rounds are prepared by clinicians independent of the case and then discussed with all colleagues involved in the case management. Students are invited to attend. The results of the meetings will then be discussed in the quality assurance group meeting, feedback is provided via the weekly staff and student meetings and/or the development of new or adapted SOPs and checklists.

In addition, the Clinic for Horses follows National Veterinary Practice Standards set by German language textbooks and the guidelines of the German Equine Veterinary Association (Deutsche Veterinaermedizinische Gesellschaft, DVG). As co-editors and co-authors of guidelines of the German Equine Veterinary Association, staff of the clinic are responsible for establishing the current National Veterinary Practice Standards. The theoretical and practical teaching takes the contents into account without exception, so that students are trained exactly in accordance with the standard.

Additionally, in the Clinic for Cattle and the Clinic for Swine and Small Ruminants & Ambulatory Clinic, surgery techniques are taught after training in the CSL (e.g., simulator of displacement of the abomasum or different, sometimes species-specific suture pads). The state-of-the-art standard exceeds those present in farm animal practice with the possibility of stationary and ambulatory service, providing stalls for downer cows, several tiltable surgery tables, claw trimming chutes, surgical theatres with the possibility of local and general anaesthesia as well as inhalation anaesthesia for small ruminants and pigs, in-house clinical and endocrinological laboratory, X-ray, ultrasound, endoscopy, pharmacy and utilisation of other laboratories of the VEE (e.g., microbiology). Members of the clinics are active in various working groups for the review, updating and re-establishment of national prophylaxis, monitoring and treatment recommendations (e.g., DVG working group on antimicrobial resistance and German Standing Veterinary Vaccination Committee, StIKo Vet), so relevant standard adaptations are directly integrated into teaching. Five clinic-owned vehicles (four vans and one car) are available for providing ambulatory and herd health service for farm animals as well as horses. A clinic-owned truck and a tow car with livestock trailers in two different sizes can transport patients from and to farms. Overall, the Clinics for Farm Animals are part of the VTH and meet the relevant national Veterinary Practice Standards.

Standard 4.5: Diagnostic and Therapeutic Facilities

4.5.1 Description of how all students can have access to all relevant facilities.

All students have electronic student cards to guarantee access to facilities for lectures, seminars and practical work etc. Laboratories for practical group work can be accessed after thorough biosecurity training. The same accounts for the clinics. The clinics are open for students until 4-6 pm (and after when electronic doors are available) and for practicals for students starting in their second year. For clinical workplace training, students register online and are called at the reception. For small group learning in the CSL, students of all study years register online and have access for their classes (e.g., surgery logbook). During the PY students have full access to the clinics and are handled as staff members. They also have full access to the patient-recording system. After graduation, students receive all certificates that allow them to perform X-rays. One prerequisite is the production of 40 X-rays, safety regulations and the use of equipment are taught in detail. An important point is the access to the in-house pharmacies of the clinics, which meet the regulations of the German Veterinary Pharmacy Act (regular external controls). During formal lectures, clinical rotations and during ambulatory visits, students are acquainted with the application of a pharmacy and the respective act. During the PY, students have access to follow deceased patients to pathological examination and are trained in evening seminars (e.g., neuropathology).
As part of CSL training, especially at the beginning of the PY before entering the clinics, students receive communication training with role play, which may include trained actors. Additionally, students can sign up for communication skills simulations with actors within elective seminars. More information about professional skills see also Area 8.1.2.

Standard 4.6: Isolation

4.6.1 Description of the premises for housing isolated animals and how these premises guarantee isolation and containment of infectious patients

Table 4.6.1: Premises for housing isolated animals

Species	No. places	Size in m^2
Isolation wards		
Dogs	14	100
Cats	8	75
Small mammals, reptiles, birds	9	27
Cattle	22	144

Horses	4	51
Pigs, Small ruminants, South American Camelids	9 – 30, depending on species (size), flocks, sex	240
Fishes	10	10

Standard 4.7: Ambulatory Clinic

4.7.1 Description of how and by whom field veterinary medicine and herd health management are taught to all students

As farm animals in Lower Saxony are kept in large units with highly regulated biosecurity measures, preventive herd health management and consultation is of great importance for teaching at VEE. One professor and veterinarians from farm animal clinics and the poultry clinic are specialised in this field. Training by experienced veterinarians in VEE's ambulatory service is mandatory for all students (attendance check, presentation by students). Please refer to 4.4.2, 3.1.9 and also 3.1.6, 5.1.1., 5.3.2., 5.3.3.

4.7.2: Description of the vehicles used for ambulatory clinic

Table 4.7.2. vehicles used for ambulatory clinic:

Use	Number	Size	Equipment	Clinic, institute
a) Ambulatory Service	6 vans, 2 trailers	Each van 7-9 places	Equipment for clinical treatments, trailers for claw trimming, scales for livestock animals	Clinic for Cattle, for Small Ruminants and Pigs

Standard 4.8: The transport of students, live animals, cadavers, materials from animal origin

4.8.1 Brief description (number, size, equipment, ...) of the vehicles used for:

	Number	Size	Equipment	Clinic, institute
b) Student transport	28 vans	7-9 places, occasional rent/lease of vans for excursions and field trips		Most of the clinics and institutes
c) Live animals transport	3 lorries, 6 vans, 3 trailers	1 for 2 horses, 2 for 2 cows, 6 for sows, piglets, goats, sheep, chicken	Equipment for animal transportation	Clinics, ambulatory services
d) Cadaver transport	2 vans, 3 trailers	2 vans for little species 3 trailers for cadavers up to size of a cow	Cool boxes	Institutes for Pathology, Food Sciences, Wildlife, Genomics, Clinic for Poultry; available to others on demand

Standard 4.9: Operational policies and procedures (including biosecurity, good laboratory practice and good clinical practice)

4.9.1. Description of how (procedures) and by whom (description of the committee structure) changes in facilities, equipment, biosecurity procedures (health & safety management for people and animals, including waste management) good laboratory practices and good clinical practices are decided, communicated to staff, students, stakeholders (and, if appropriate, to the public), implemented, assessed and revised

Changes and developing in facilities, equipment

The Executive Board is responsible for all decisions concerning changes in and development of facilities and equipment. The Executive Board discusses plans with the Senate, which has to ratify the outlined plans. The supervision of VEE generally, including budget issues, is in the hands of the Board of Trustees on the basis of annual reports as well as internal and external audits. The Executive Board gets the needed information for decision making from the Department for Real Estate and Facilities, where all information on facilities is centralised and which has an overview of necessary facility maintenance. In the case of changes in the facilities with work on Genetically Modified Organisms (GMO), changes are communicated and assessed with the official VEE Biosafety Officer that implements appropriate biosafety measures for handling GMOs together with the responsible project leader and the head of the institute. Regular annual inspections by the Biological Safety Officer are documented in a report to the president. The Research Centre for Emerging Infections and Zoonoses as the central service facility offers an annual Safety Week with optional and obligatory lectures or training covering various topics in biosafety and biosecurity. All institutes and clinics name a safety officer who regularly check and implement improvements for occupational health and safety. Online manuals and/or handbooks are designed by the institutes and clinics and adapted as described in 4.4.3. and examples are provided (see here).

Implementation Biosecurity (health & safety management for people and animals, including waste management)

VEE must consider many EU and national legal regulations, which are implemented by a top-down-process (see Fig. 4.1).

Safety training for students and staff

At the beginning of each semester, students and new staff are informed by the training supervisors about emergency escape routes. Safety rules in seminar rooms (allowed number of persons, behaviour in case of fire, etc.) are described and wall posters support oral instructions. Before working or assisting in laboratories, students receive a general introduction on PPE (lab coats, gloves etc.), risks (e.g., pregnancy), hazardous chemicals, general behaviour in the laboratory and hygienic regulations. Digital handouts of the safety instruction are provided via the "StudIs" online system to all students. Posters and other information about biosecurity are available at the facilities.

All hazardous or dangerous chemicals are registered and documented in the online DAMARIS system (Dangerous Materials Registry Information System). Students are informed about the online information system and access to the system with all information on risk assessment and disposal of chemicals.

Before farm visits, students are instructed on behaviour on farms, hygienic provisions and animal handling by accompanying and trained staff.

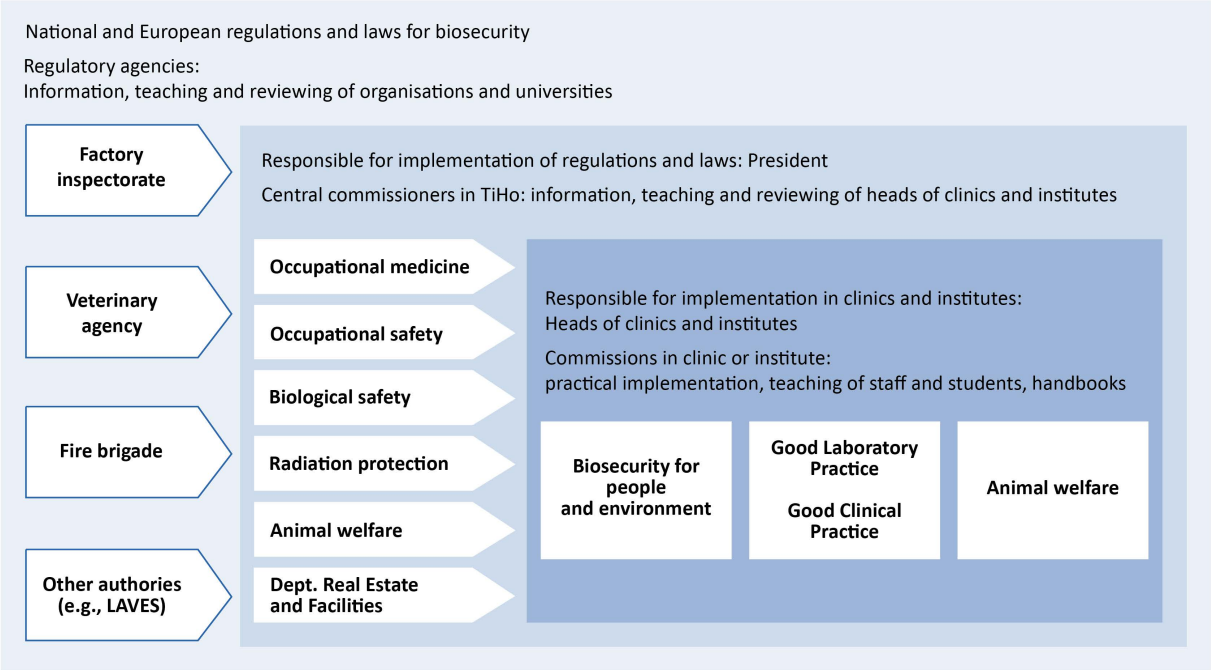

Fig. 4.9 Implementation of biosecurity

Biosecurity and biosafety measures are implemented based on German Technical Rules for Biological Agents (see: BA–A - Technical Rules - Technical Rules for Biological Agents (TRB–) - Federal Institute for Occupational Health and Safety) and under consideration of the respective biosafety levels (BSL).

For researchers, a Moodle course is available that summarises the basics in biosafety & biosecurity based on teaching videos, supporting information material and knowledge-checking questions. In the winter semester 2023/24, a new interactive elective course for students was implemented: “Occupational Safety in Veterinary Medicine”. The course was extended as a module-based online Moodle course for all students trained in laboratories and the clinics. It is open to all VEE members since the summer semester 2024. The course is obligatory and starts prior to the first practicals in biochemistry and propaedeutics. Furthermore, videos and presentations on safety are made available centrally for all VEE members for regular training (staff members) or need-based instruction (students).

Waste Management (without carcasses, organs and tissue samples, see 5.1.5)

Waste management is organised according to the different types of materials based on legal requirements. Hazardous waste (such as solvents, laboratory reagents) is collected separately in 5-10 litre containers in the laboratories and stored centrally until disposal according to national environmental regulations.

Household waste is classified either as recyclable or disposable. The materials are collected in separate containers and are removed either by the municipal waste management or by VEE employees. Disposable household waste also contains non-infectious waste from the institutes and clinics (e.g., autoclaved bacteriological material). Infectious material is autoclaved before being disposed of with household waste.

Non-infectious animal excretions such as urine and faeces are first collected with the straw bedding and placed in a container or on a muckheap. Muck and manure are shipped to a local biogas plant, as is milk from hospitalised cows.

Water used for cleaning the necropsy hall is collected in tanks for thermal decontamination. Discarded formalin in the Institute for Pathology is collected separately in an underground tank, which is cleared for final disposal by a specialist contractor.

Radioactive waste with a half-life of under 100 days is disposed of onsite with decay-ready storage facilities. Storage is timed until the specific activity has gone below the critical value for the given isotope. Once the decay period has expired, low-level radioactive waste is released from radiation protection legislation following a release procedure (State Trade Supervisory Office) and disposed of (incinerated) as conventional waste.

Comments on Area 4 - Facilities an Equipment

- A feasibility study for development of the Bischofsholer Damm Campus is being commissioned (integration of clinics (food production), translational centre, outreach centre, housing)
- Major renovations at teaching and research farm ongoing (layer and pig units)
- Installation of more than 20 conference cameras for recordings and hybrid teaching, some with additional equipment (e.g., microphone, tripod) to be used in lecture halls and smaller study/teaching rooms with third party funds
- Installation of a very high-quality camera was purchased for broadcasts
- To improve biosecurity education, a special mandatory course was created on the Moodle platform and started this summer term. It was evaluated and adapted in electives.

Suggestions of improvement on Area 4

- For improving the infrastructure for self-study, a learning centre in the old Clinic for Horses on the Bischofsholer Damm campus will be created (planning complete).
- Creation of additional staff positions for a lecture theatre technician – (IT service, hiring at the interview stage)
- Continuous adaptation of lecture theatre equipment to adapt to technical developments and student numbers (ongoing)
- Improvement of the technical equipment in the self-study rooms
- Standardised communication system to streamline internal communication and processes ("TiHo WiKi") has started

Area 5: Animal resources and teaching material of animal origin

Standard 5.1: The number and variety of healthy and diseased animals

5.1.1. Description of the global strategy of the VEE about the use of animals and material of animal origin for the acquisition by each student of Day One Competences (see Annex 2)

The use of animals for teaching purposes requires special animal welfare approval and must be coordinated with the regulatory authorities according to EU Directive 2010/63/EU.
All patients are used for undergraduate and graduate student teaching and research with informed consent of the owners. Student groups actively partake during clinical training in every consultation and in hospital rounds. Students are integrated in practical work in all clinics. The clinics are organised as species clinics.
Every student is taught propaedeutics in the 4th and 5th semester. From the 6th to the 8th semesters, all students are divided in groups and rotate within the clinics for learning on patients. Students choose a mandatory clinical day (workplace training). The clinics have first-opinion and referral cases. Specialists provide state-of-the-art education for day 1 competences and for specialist service. The food producing animals are particularly well represented due to the location of the University in Lower Saxony, the most important state for animal production in Germany. Therefore, herd health medicine is of paramount importance in the clinical services for farm animals.
Herd health visits cover all food-producing animals such as cattle, small ruminants, swine, fish and poultry. Because pigs and poultry, and to an increasing extent, cattle are kept in large units with increasing biosecurity measures, the preventive herd health management and consultation is of utmost importance for our teaching. Students accompany all herd health visits via the ambulatory service and the herd health service for small ruminants, via field visits during clinical rotations and in the PY in Bakum as well as during extramural EPT. To meet the increasing need for specialised large animal practitioners, we place emphasis on teaching in food animal herd health medicine and started a programme for interested students in the 1st year (excursions to livestock farms).
Additionally, for students focusing on pig medicine, diagnostic necropsies of pigs are taught in the Field Station for Epidemiology in Bakum in the context of herd health visits.

5.1.2. Description of the specific strategy of the VEE ensuring that each student receives the relevant core clinical training before graduation, e.g. numbers of patients examined/treated by each student, balance between species, balance between clinical disciplines, balance between first opinion and referral cases, balance between acute and chronic cases, balance between consultations (one-day clinic) and hospitalisations, balance between individual medicine and population medicine

The number of patients is balanced for delivering teaching and research in all clinics. The clinical services provide a well-balanced proportion of first opinion and more advanced referral cases. About two thirds of patients are referrals. With the number of first-opinion cases, the need for teaching such cases is satisfied. For control purposes, the internal auditing provides periodical information about the number of cases in the clinical units. VEE also purchases animals, especially cattle, small ruminants and pigs for particular practical exercises such as bovine caesarean sections, anatomy and specialized surgical techniques.
The volume (hours and content) of clinical education is based on TAppV and the Study Regulations of the VEE (Tab. 3.1.2). Prior to the PY, students have balanced access to all species covering clinical subjects, individual and herd health medicine, referrals and first-opinion cases. There is ample hands-on and theoretical training in small groups and electives (see also 4.4.2.). As described, a balanced education of different species and diseases is guaranteed using the patient tracking system. In a logbook, patients, skills and competences are recorded, the logbook is uploaded (Moodle course) and signed off by the responsible staff of

the clinics. The organisation of the PY depends on a rotation principle of small groups of about 20 students between the clinical units (dependent on the size of the clinics and interest of students). Within the clinical unit, the groups are divided down to two students per supervisor (see 5.1.6). A large proportion of compulsory hours and contents is taught during this year. All students in the PY are involved in regular and emergency consultations, including night and weekend shifts. In hospital rounds, students learn about treatment and special needs of hospitalised patients, communication with owners and organisational matters in a clinical setting.

5.1.3. Description of the procedures developed to ensure the welfare of animals used for educational and research activities

Institutions that house, breed and care animals for educational or scientific purposes must obtain permission from the relevant authority. In order to obtain the permit, the provisions of the Animal Welfare Act, the Regulation for the Protection of Animals Used for Experimental or Other Scientific Purposes (Animal Welfare Regulation Governing Experimental Animals – TierSchVersV) and Directive 2010/63/EU on the protection of animals used for scientific purposes must be met. Housing, breeding and care conditions are controlled regularly by the authority together with the animal welfare officers of the university. To support our animal welfare officers, VEE has appointed an animal welfare committee (members see 1.1.5).
Institutions/researchers/teachers who intend to use animals for scientific or educational purposes need to apply for a notification or authorization by the relevant authority (LAVES, Lower Saxony State Office for Consumer Protection and Food Safety). All applications are evaluated and approved by the animal welfare officers of the university before final submission to the authority. Animal welfare officers are appointed by VEE according to section 10 paragraph 1 of the Animal Welfare Act. Projects within the context of doctoral theses and master theses and all research projects including animal trials are registered by VEE and checked by the animal welfare officers to ensure that all relevant animal experiments are authorised. Members of the authority (LAVES) visit clinics and institutions to verify that animal housing conditions are commensurate with animal welfare requirements.
Staff responsible for housing, breeding, care and use of laboratory animals are trained accordingly before carrying out animal-related activities. Their expertise meets the requirements of Directive 2010/63/EU and German law (TierSchVersV). This includes 8 hours of continuing education per year in the field of animal welfare/experimental animal science.

5.1.4 Description of how the cadavers and material of animal origin for training in anatomy and pathology are obtained, stored and destroyed

Anatomy
All fixed specimens (anatomy and pathology) are rinsed with water until the fixative is removed and before the students come into contact with the samples.
Cadavers for training in anatomy are obtained from either VEE clinics or from external sources (e.g., veterinary clinics, veterinary practitioners, owners). All cadavers dissected by students are either fresh (shortly after euthanasia), cooled, frozen and thawed, or stored in a saline solution. Isolated organs used in dissection courses or for demonstration during anatomy and embryology lectures are stored in formalin or Peters' solution.
Pathology
All fixed specimens (anatomy and pathology) are rinsed several times with water until the fixative is removed before the students come into contact with the samples.
Cadavers for training of necropsies are obtained either from animals regularly submitted for diagnostic purposes or from animals submitted for non-hazardous disposal. This includes animals from VEE clinics and from external sources (e.g., veterinary clinics, veterinary practitioners, owners, slaughterhouses). Cadavers are either fresh (shortly after euthanasia or

death), cooled or frozen and thawed. After necropsies, organs and tissues are either cooled (for short-term use), frozen (for long-term storage) or fixed in 10% neutral buffered formalin or color-preserving JORES fixing solution (for long-term storage and multiple use). Furthermore, interesting biopsy samples, fixed in 10% neutral buffered formalin for diagnostic purposes, are preserved for teaching purposes.
Students are exposed to a variety of animals and diseases. They learn how to describe alterations, formulate diagnoses and distinguish pathological changes from post-mortem artefacts. Moreover, students learn to apply different terminologies for diagnosis, differential diagnoses, morphological and etiological diagnoses. The analysis of necropsy findings will provide a better understanding of disease mechanisms and pathogenesis. Furthermore, investigations of various species will foster comparative diagnostic skills in veterinary medicine in general.

Zoology

For courses in zoology, animals are obtained from commercial providers like fisheries, hunters (birds) or the Carolina Biological Supply (reptiles, amphibia). The latter company breeds animals for teaching purposes. Lab animals bred for research (rats) are obtained from Hannover Medical School (MHH). They are euthanized shortly before use (fish, rats) or are stored frozen at -20 C. After classes, cadavers are disposed at the Institute for Pathology.
Carcasses, organs and tissue samples of necropsied animals are stored separately in walk-in refrigerators until removed by local renderers. The material is separated into one of four different hazard and price categories and disposed of appropriately (once or twice a week):

- Necropsied and intact carcasses of large animals including horses, cattle, large zoo and wild animals are collected twice a week with individual registration of the species.
- Carcasses and internal organs of calves and small domestic ruminants and internal organs of necropsied large ruminants are removed once a week.
- Carcasses and organs of pigs, poultry, ponies, donkeys and foals are collected once a week.
- Carcasses of dogs, cats, small laboratory animals and small zoo and wild animals are collected once a week.

Table 5.1.1. Cadavers and material of animal origin used in practical anatomical training Notice: The constant values due to nearly constant number of students per year.

Species	2023	2022	2021	Mean
Cattle	4	4	2	3
Small ruminants	50	50	50	50
Pigs	47	47	47	47
Small Animals	60	60	60	60
Equine	6	4	2	4
Poultry & rabbits	180	150	150	160
Exotic pets	30	0	0	10
Others (specify) Reptiles	30	0	0	10

Table 5.1.2. Healthy live animals used for pre-clinical training (animal handling, physiology, animal production, propaedeutic)

Species	2023	2022	2021	Mean
Cattle	64	64	64	64
Small Animals	56	56	56	56
Equine	2	3	9	5
Fishes	100	40	40	60
Pigs	122	122	110	118
Small ruminants	57	87	60	68
Small mammals	16	9	8	11
Reptiles	16	10	3	10

Birds	46	57	61	55
Poultry (chicken)	30	30	30	30

Table 5.1.3. Number of patients* seen intramurally (in the VTH)

Species	2023	2022	2021	Mean
Cattle	731	830	738	766
Small ruminants	804	897	891	864
Pigs	303	342	393	346
Small Animals	28,040	27,687	27,629	27,785
Equine	2,914	3,432	3,631	3,326
Poultry	1,457	1547	1,514	1,506
Fishes	100	40	40	60
Small mammals, reptiles, birds, exotic	11,288	10,993	10,529	10,937
Pigeons	694	599	915	736

* Each patient must be officially recorded in the electronic patient recording system of the VEE and must be individually examined/treated by at least one student under the supervision of a staff member. Each live animal affected by one specific clinical episode is counted as one single patient, even if it has been examined/treated by several institutes/units/clinics

Table 5.1.4. Number of patients* seen extramurally (in the ambulatory clinics)

Species	2023	2022	2021	Mean
Cattle	3798	3589	4149	3.845
Small ruminants	10224	9657	9746	9.876
Pigs	2199	2726	2632	2.519
Small Animals**	0	0	0	0
Equine**	34	24	53	37
Poultry (backyard)	136	12	82	77
Rabbits	0	0	0	0
Exotic pets	0	0	0	0
Pigeons	0	0	6	2
Fishes	256	247	278	260

**extramural patients are seen mainly in EPT
Each patient must be officially recorded and must be individually examined/treated by at least one student under the supervision of a staff member. Each live animal affected by one specific clinical episode is counted as one single patient.

Table 5.1.5. Percentage (%) of first opinion patients used for clinical training (both in VTH and ambulatory clinics, i.e. tables 5.1.3 & 5.1.4)

Species	2023	2022	2021	Mean
Cattle (VTH) Cattle (ambulatory clinic)	50% 99%	50% 99%	50% 99%	50% 99%
Small ruminants	94%	79%	98%	90%
Pigs	58%	64%	98%	73%
Small Animals	38%	37%	33%	36%
Equine	0%	0%	0%	0%
Poultry	77%	65%	58%	67%
Pigeons*	60%	60%	60%	60%
Fishes	95%	95%	95%	95%
Small mammals, reptiles, birds, exotic pets*	60%	60%	60%	60%

*approximately one quarter of all animals are native wildlife patients brought to the clinic directly by the fire department or the animal emergency ambulance

Table 5.1.6. Cadavers used in necropsy
(see comments and Tab. 5.1.6.b, biopsies)

Species	2023	2022	2021	Mean
Small Animals	265	276	305	282
Cattle	125	155	149	143
Small ruminants	76	72	70	73
Pigs, Pathology	78	34	67	60
Pigs, Field station Bakum	676	796	855	776
Equine	98	96	104	99
Poultry, rabbits	98	101	130	110
Reptiles, amphibian	78	7	14	33
Aviary birds, wild birds	50	55	158	88
Insectivores, spiders		1		1
Mustelids	53	45	39	46
Rodents	79	79	86	81
Camelids	27	35	32	31
Cervids	10	10	13	11
Lagomorphs	61	76	91	76
Large Felids	2	3	2	2
Macropods	3	3	5	4
Marine Mammals	327	409	487	408
Primates	5	8	12	8
Wild canids	38	75	0	38
Wild ruminants	26	27	29	27
Fishes	982	1185	1054	1074
others	66	61	138	88
Total	2,242	2,424	2,786	2,485

Other Species:
The unit “Fish Pathology and Fish Farming” treats ornamental fish. The patient number is constantly increasing, particularly for koi carp. The unit possesses tanks with isolation capabilities. In addition, contracts exist between the unit and fish farms for fish herd health management courses. The pathological examinations are undertaken at the institute.
The Institute for Terrestrial and Aquatic Wildlife Research (ITAW) looks after various wildlife species in Lower Saxony in its teaching and research tasks.
VEE aims at continuously providing the best possible educational support by including in our teaching the appropriate number of animals and material of animal origin. We strive to present the variety to our students as a reflection of animals kept in agriculture and as pets in the community. The relative numbers of small animals and dissections has decreased slightly. Owners of small animals are increasingly reluctant to allow their animals to be dissected. To ensure that students receive appropriate training, organ samples and organ biopsies are also used for teaching purposes. Table 5.1.6.b shows that most biopsies are taken from small animals.

Table 5.1.6.b) Biopsy and organ samples

Species	2023	2022	2021	Mean
Cattle	38	67	40	48
Pigs	72	82	97	84
Small Animals	10,202	10,475	10,663	10,447
Equine	685	584	661	643
Rabbits	98	88	86	91
Rodents, ornamental birds	154	138	164	152
Reptiles, zoo/wild animals	26	34	62	41

Table 5.1.7. Number of visits in herds/flocks/units for training in Animal Production and Herd Health Management

Species	2023	2022	2021	Mean
Cattle (Ambulatory Clinic and Clinic for Cattle)	920	881	915	905
Small ruminants	262	211	290	254
Pigs	137	151	196	161
Poultry	47	23	5*	35
Fishes	24	22	22	23
Horses (teaching farm)	24	17	21	21

*restricted visits during COVID 19 pandemic

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

Important information:

The number of visits in slaughterhouses and related premises for training in FSQ are visits in the intramural elective courses at VEE. They are offered **in addition to the obligatory external practical training of at least 100 hours in slaughterhouses (see 3.1.6).**

Species	2023	2022	2021*	Mean
Ruminant's slaughterhouses	1	1	0	0.67
Pig's slaughterhouses	1	1	0	0.67
Poultry slaughterhouses	3	2	0	1.67
Dairy processing plants	1	1	0	0.67
Dairy farms	1	1	0	0.67
Food-processing plants with a special focus on dairy products	1	1	0	0.67

*restricted visits during COVID 19 pandemic

5.1.5 Description of how (procedures) and by whom (description of the committee structure) the number and variety of animals and material of animal origin for pre-clinical and clinical training, and the clinical services provided by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised.

The steps of decision making and communication concerning the number and range of animals and material of animal origin for pre-clinical and clinical training are shown in Fig. 5.1.

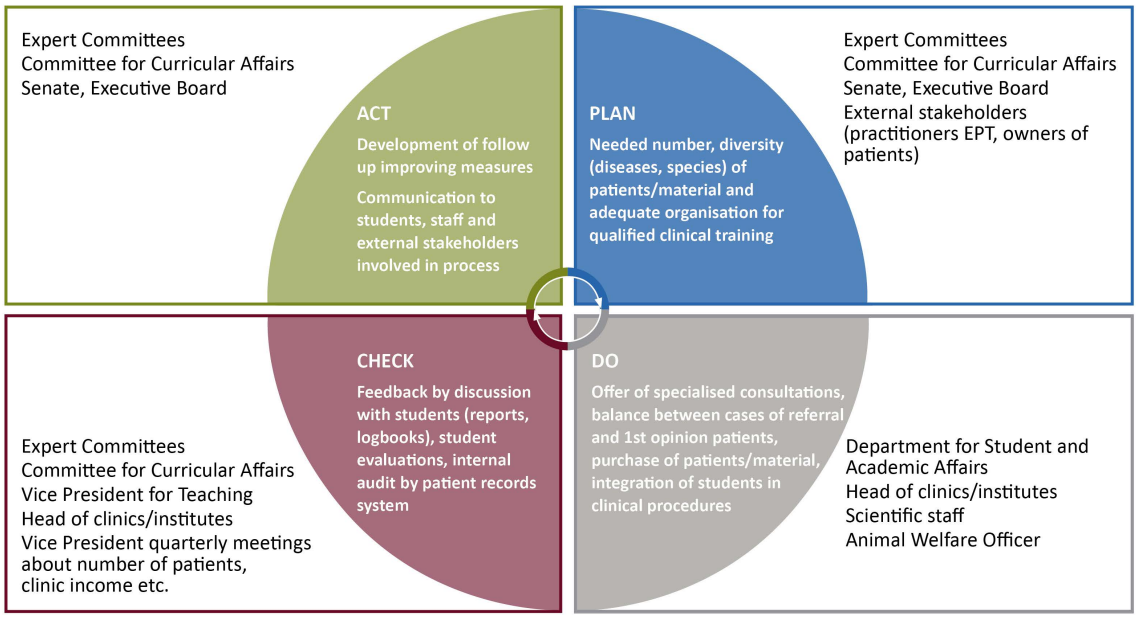

Fig. 5.1: PDCA cycle of processes concerning animals and material of animal origin for teaching

Standard 5.2: Practical Training at External Sites

5.2.1 Description of the organisation and management of the external sites (teaching farms) and the involvement of students in their running

Teaching farm (Ruthe)

VEE has a multifunctional Teaching and Research Farm covering an area of 236 ha in the community of Ruthe located about 20 km from VEE. About 175 ha are used for growing wheat, barley, oat, rye, sugar beet, maize, rapeseed and legumes by conventional agriculture. About 41 ha of pasture are used for producing grass, grass silage and hay. The current livestock stands at 85 dairy cows, 60 heifers, 20 calves and 8 beef cattle with their calves. We keep 80 breeding sows, weaned piglets are sold to fattening farms. The offspring of 80 Mini-Lewe Pigs is sold for research in human medicine. Furthermore, the farm has the capacities for 4,200 laying hens, 21,160 broilers, 4,700 turkeys and 3,300 ducks. All facilities are designed to be equivalent to those on contemporary commercial farms.

After the second semester, all students (about 260 per year) spend 70 hours (2 weeks) in a core practical course on the farm learning animal genetics and husbandry, housing techniques, animal health, animal welfare, animal feeding, animal hygiene, botany etc. Besides the practical training for all students in handling and management of food-producing animals (livestock farming in Ruthe), they are involved in routine work of care and handling of cows, pigs and different kinds of poultry. All students are also instructed in biosecurity in small groups.

The students receive instruction in veterinary measures necessary for evaluating and defining housing and feeding conditions (such as measuring air quality within barns, feed and feed quality; monitoring water supply techniques, prophylactic treatments such as vaccination, and

hygiene management). Finally, computer-based management systems for cows, sows, and poultry that are widely used in modern livestock production are demonstrated to the students. Interdisciplinary coordination takes place in the practical course at the farm.
All subjects related to animal production and food-producing animals are taught in a multidisciplinary approach. The aetiological disciplines work with clinicians (cattle, swine and poultry) to combine their knowledge and experience to optimise conditions for producing animal food products, including aspects of animal breeding, housing, feeding, animal welfare and risks to food safety such as bacterial contamination or antibiotic residues or resistance.
All animal facilities on the farm are used for research into topics of animal health and welfare, animal nutrition, breeding and animal hygiene. Finally, the farm is an internal supplier of farm animals to different institutes and clinics of the VEE.

Standard 5.3: Nursing Care Skills

5.3.1 Description of how and by whom the nursing care skills are implemented and taught to undergraduate students

Nursing care skills are mainly taught during the PY in the clinical rotations in all clinics. In the core curriculum, these skills are taught during clinical training and clinical workplace trainings. In all cases, veterinarians and support staff teach and students learn how to monitor and manage patients with different disease severities, from routine perioperative care to critically ill patients. This includes wound management including bandages and wound dressing management, care for recumbent patients (avoid decubitus), physiotherapy, enteral and parenteral nutrition of sick patients, catheter care, fluid therapy including blood products and blood transfusions, maintaining cardiovascular and respiratory functions and urinary bladder management. In large animals, the skills also include milking by hand or with the machine, physiotherapy of calves with orthopaedic problems, care of newborn calves (e.g., physical stimulation of breathing, colostrum supply), control of cast bandages and of large animals in support slings. The nursing and care of injured wild animal species that are brought to the clinics are also taught and skills are practically applied. “Tender loving care” (TLC) is part of the learning experience. Lectures and practical exercises in special animal nutrition include the development of nutritional recommendations and plans for individual species according to age, performance and health status. Dietary measures and dietetics are also an integral part of animal nutrition courses and cover the full range of possibilities for alleviating disease and infection through nutritional measures. Some of the nursing care skills are also taught in the CSL to prepare students for their work on live animals.

5.3.2 Description of the group size for the different types of clinical training (both intra-murally and extra-murally) to guarantee hands-on training of all students

Type of clinical training	Group size
The group size differs not only for the different types of clinical training, but also within training sessions in accordance with the Peyton's 4-step-approach, a widely used method of skill training: Demonstration (step 1) and deconstruction (step 2) take place in large groups, comprehension (step 3) and execution (step 4) take place in smaller groups.	
Intramural (see 3.1.4, curriculum)	
Clinical Skills Lab 1st – 11th semester	Practical training: 1-5 students
Clinical Skills Lab Surgical logbook 1st – 8th semester	Mandatory surgical courses: 1-4 students (general and special surgical skills), 1-24 students (advanced surgical skills)
Propaedeutics 4th – 8th semester	Groups of 5-10 students

Clinical trainings 6th – 8th semester	50-80 (observation and critical, active discussion), 1-2 students assist in every "teaching on patients" (hands on practice, in the lecture hall), in addition mandatory clinical workplace training in the clinic and stable with 3-5 students (outside the lecture hall in every clinic, groups for clinical rounds) Referred patients (examination and report writing): 1-2 students Field clinical training, herd health visits: 2-4 students
PY in clinics 9th – 10th semester	Rotation groups of 6-23 students for 10 -14 weeks, the groups are further divided to 1-4 students per patient
Electives	2-10 students (clinical subjects)
Extramural (TAppV sections 54 and 55)	All German VEEs created an online system for signing contracts and providing evaluation with and from practitioners (VMFT service) and an agreement with the Federal Association of Practicing Veterinarians (BpT) about conditions for practical training
Qualified practioner or clinic 1x4 weeks, 2x2 months (16 weeks)	In most cases: 1 student, in big clinics up to 4, depending on the organisation of clinics
Government or private institutes in food hygiene (including slaughterhouse hygiene) and consumer protection 1x2 weeks, 1x3 weeks	About 2-4 students, depending on the organisation of institutes
Public veterinary service, 1x2 weeks	About 1-2 students

5.3.3 Description of the hands-on involvement of students in clinical procedures in the different species, i.e. clinical examination, diagnostic tests, blood sampling, treatment, nursing and critical care, anaesthesia, routine surgery, euthanasia, necropsy, report writing, client communication, biosecurity procedures (both intra-mural and extra-mural)

Intramural

At the beginning of training in the clinics, students are familiarised with guidelines and instructions for conduct in clinical settings. They are informed about clothing and PPE, biosecurity procedures (in addition to the general Moodle course) and organisational issues. This information is also available on the internet platform StudIS and on billboards, posters. On farm visits and in the clinics or pathology, students are going through biosecurity procedures before they enter barns, bird rooms or necropsy halls.

After initial training in the CSL of communication and clinical skills (i.e., endotracheal intubation, intravenous catheterization, suturing techniques, blood sampling, set up of an anaesthetic machine, use of anaesthesia monitoring equipment, aseptic preparation, scrubbing in, etc.) , students will rotate through the specialty services of the different clinics and carry out all hands-on procedures. Students (groups of 2 to 4) are assigned to the different services for 1 to 2 weeks and become involved with the management of the daily medical, surgical, intensive care, anaesthesia, emergency cases and nursing of hospitalised patients. This includes client communication, medical history, case report writing, clinical examination, blood sampling, developing a diagnostic plan and a treatment plan, and documentation. Students are trained in reproductive and obstetrics treatments including caesarean sections and castration methods. Depending on the case load, students will be involved in euthanasia cases and the preceding decision making.

To ensure that each student on clinical rotation performs a minimum number of clinical procedures, they receive a logbook with a syllabus of required procedures, which will be signed off by the clinician on duty after the student has performed this task. At the end of each rotation, the logbooks are handed in and will be reviewed by the rotation coordinator to pass the rotation (logbooks PY).
In the ambulatory service and the Field Station for Epidemiology, students are involved in farm visits, herd health management and herd investigation including necropsies, diagnostic/laboratory tests. PY students will participate in at least two additional farm visits during the collaborative cycles of clinic for poultry and the Clinic for Pigs, Small Ruminants and Forensic Medicine, while students choosing a full PY cycle exclusively in the Clinic for Poultry, will have the chance to see farms on a weekly basis.

Each student has to write several case reports: During clinical trainings and in PY at least one per semester in every clinic and at least one in each clinical examination (over the whole study time a total of at least 10 reports), which are discussed with veterinarians and peers.

Extramural

For all extramural practical training, VEE offers guidelines and checklists (see Appendix, chapter 1.3.4) for the veterinary surgeons or animal clinics with all hands-on learning targets according to TAppV and the ESEVT. In a special mandatory course for practitioners, D1C are explained. The five VEEs in Germany agreed on an online platform to create contracts with practitioners and facilitate evaluation of the extramural EPT. These criteria are agreed with the Federal Association of Practicing Veterinarians (BpT), see 3.1.8, which awards a certificate for qualified veterinary surgeons. Therefore, students are assured they receive qualified extramural practical trainings. The period of EPT and core praticals are evaluated by students and supervisors (see Appendix, 1.3.4). In the logbook for extramural EPT, students record patients, examination and treatment techniques, communication with owners, nursing, etc. Students receive a certificate from the supervisor and, together with the independent evaluation questionnaires of supervisors and the students, constitutes an important feedback tool for VEE (see 3.1.8). See also Appendix 1.3.5 evaluation of extramural EPT.

5.3.4 Description of the procedures used to allow the students to spend extended periods in discussion, thinking and reading to deepen their understanding of the case and its management

Students deepen their critical thinking and understanding of case management in several problem-oriented learning courses during exercises in Clinical Skills Lab, clinical training, clinical lectures and in the PY. Special E-Learning tools (e.g., YouTube video instructions, virtual patients in CASUS and Moodle), interdisciplinary courses (with basic sciences case studies start already in the 1st year) and courses in communication skills complete the learning programme.

During clinical education, students work on cases and prepare a presentation of the case including diagnostic strategy, differential diagnosis, pathogenesis, prophylaxis and treatment. In addition, they receive histological and laboratory cases, which they will solve on their own and provide differential diagnosis, pathogenesis, prophylaxis and treatment during a discussion with a teacher. Also, they discuss their own reports with their peer group and with their supervisor, which fosters critical thinking (see also area 3.1.5 and 4.4). Blended Learning classes (e.g., laboratory medicine, virtual microscope etc.) support self-study.

All students have access to the relevant literature on special diseases, management, nutrition, and hygiene, either in the library at VEE or at the clinics. Students also take part in journal clubs in which current clinical topics are discussed.

Standard 5.4: Medical records for patients

5.4.1 Description of the patient record system, its completion, its availability to staff and students and how it is used to efficiently support the teaching, learning, research, and service programmes of the VEE

The patient record system utilised at VEE is EasyVet. Since 2010, it has been implemented in all clinics and contains all patient records, including DICOM pictures of X-ray, CT, MRI and ultrasound, photos and videos (endoscopy, treadmill, gait abnormalities, clinical and special examinations, surgery) and laboratory data in one system and is available on approximately 500 PCs and workstations. The wide availability of data supports internal communication, teaching, and owner communication. Standardised input ensures reliable documentation of patient data and retrospective statistical analyses for research and teaching. Additionally, financial data can be easily obtained. EasyVet also facilitates live transmissions of procedures in the operating theatres, which can be used for teaching.
EasyVet contains approximately 840,000 cases and adds 5-6 TB of image data annually. Students must access the data to prepare for case discussions or record writing and discussion of costs (economics). The system is an essential tool supporting clinical examinations.

Comments on Area 5 - Animal resources and teaching material of animal origin

- The Clinical Skills Lab was further integrated in mandatory practical training during the whole study period (surgery logbook, preparation of the practical year)
- In zoology, use of live animals in practicals was reduced significantly and replaced by simulators and digital learning material
- The Clinic for Small Animals has received the highest possible award for Good Veterinary Standard under that scheme (GVP, external visitation by BpT)
- TiHo won the Global Animal Welfare Awards 2021, presented by the World Veterinary Association in the category of veterinary training centres for its exemplary commitment to animal welfare

Suggestions for improvement on Area 5

- Continuous monitoring of specialised cases in clinics and pathology for necropsy are appropriate for the intended education as well as for the provision of sufficient numbers of small animals for education in pathology
- Continuous improvement of the electronic recording system for patients and development digital clinical data for interdisciplinary teaching and research

Area 6: Learning resources

Standard 6.1: State-of-the-art learning resources

Description of the general strategy of the VEE on learning resources

The university has devised a comprehensive strategy to ensure the accessibility and effectivity of learning resources for both students and staff. In the realm of digital learning, the university aims to provide seamless and user-friendly platforms for online courses and virtual learning experiences. Therefore, several options are in place to accompany and support teachers and student needs. The university's strategy for digital teaching resources is designed to establish ideal conditions for implementation, integration, and advancement.

Access to learning comprises both synchronous methods, such as the traditional face-to-face in presence or online lecture via MS Teams and asynchronous methods. In addition to analogue resources (e.g., books and journals in print or anatomical preparations), digital resources are integrated into various teaching formats, either as essential materials (e.g., blended-learning concepts, inverted classroom concepts) or as supplementary self-learning material.

The Clinical Skills Lab (CSL) is a training centre for teaching clinical-practical and communication skills in veterinary medicine. From the first semester, students learn first-day veterinary skills on models and simulators under guidance of tutors or through self-study. In a protected environment, students learn, practice and repeat clinical skills that allows routine transfer to live animals, which reduces the stress level for animals and improves animal welfare. The CSL comprises 90 learning stations (short list in appendix 1.6.1) with surgical and veterinary-specific content. Veterinary communication is taught in simulations with professional actors or peers. In addition to the creation of learning stations, the focus of the CSL also includes the development of models in an attached and dedicated workshop as well as the conception and implementation of new courses for students in different study phases. New simulators are evaluated in electives and adapted if needed (see publications educational research).

Students have access to various interactive digital formats, including virtual barn tours, laboratories, microscopes, image databases, and video materials as learning resources for practical skills training to support the ‘never the first time on a live animal’ concept. Traditional are balanced with electronic learning resources and support self-learning (e.g., *Anatomage Table* and repository of animal bones). Several new E-Learning concepts were created in clinics and institutes by receiving competitive grant money from the state. Considerations for data protection, copyright law and cybersecurity risks are prioritized during the creation of learning resources. Support is provided to both teachers and students to enhance information literacy and digital literacy skills, ensuring effective utilization of learning tools. The access to electronic books, journals and databases, which are not open access, is provided via institutional login on publisher platforms.

Some E-Learning resources are disseminated as Open Educational Resources (OER) through platforms like YouTube. The video instructions for CSL learning stations support practical skills training, while web-based resources housed on the premises offer password-protected access.

Furthermore, efforts are underway to accommodate students with special needs, facilitating their engagement in studies through features such as uploading and downloading study materials, accessing recorded lectures, and submitting reports via Moodle, thereby eliminating barriers to participation.

6.1.2 Description of how the procedures for access to and use of learning resources are taught to staff and students

At the beginning of each semester, the IT support staff introduce basic IT facilities for new students. They impart knowledge concerning the essentials for use of the IT infrastructure (e.g.,

E-Mail, file service, print service, password policies and awareness of IT-security issues, VEE-Card). IDS offers printed, e-tutorials and web-based information services for common software issues (for example: MS-Office, Mail-Service, Eduroam). Furthermore, the IT department (Department Information Technology and Data Processing, IDS) offers consulting for relevant IT topics. Regular newsletters from the IT service and E-Learning service ensure the continuing information about new technologies for students and staff.
An introduction to the E-Learning systems for 1st semester students is also part of the introductory events. Instructions, tutorials and in-depth courses in elective subjects are available. In addition, there is the option of individual consultations. Instructions, tutorials, workshops and online seminars are available for lecturers. The materials are mainly made available via Moodle, less frequently via TiHoStudIS/TiHoDozIS and the (internal) homepage, directly in CASUS, on YouTube "TiHoVideos" and on third-party funded project websites.
The introduction into the services of the **library** starts during the welcome week of the first year. It is accompanied by continuous personal support from the help desk at the library. An initial introduction to evidence-based veterinary medicine takes place as part of the "Professional Studies" lecture in the 1st semester and is combined with tips on literature searches.
“Searching for literature” is the title of introductory, facultative seminars for undergraduates and graduates. They are followed by the seminar “Information acquisition and utilisation” during the PY. The seminar “Effective searching and critical appraisal” is open to graduates and PhD students. These seminars teach the features of search engines, different kinds of field-specific databases, catalogues and discovery systems. Students elaborate effective search strategies and possibilities to access publications, followed by an introduction to criteria for critical evaluation of publications. Students also learn how to document and properly cite information from various sources.
Bibliographic database management is covered by workshops for undergraduates, graduates and PhD students. All active members of the university have access to the reference management tool EndNote. The workshops on the usage of EndNote teach how to manage bibliographic data effectively, including retrieval and display and changes in format to suit the requirements of journals publishers when submitting papers. Information on copyright issues and open access licences are also part of the seminars.
These seminars which take place in presence or online via MS Teams are supplemented by asynchronous self-study courses with interactive, case-based development of content from literature research and literature management.
Staff can attend all these seminars on request or arrange an individual exchange with the library members. New procedures or newly available learning resources are communicated by E-Mail to staff members and students.
Clinical Skills Lab (CSL)
The CSL presents itself as part of the introductory event for first-year students and provides insight into the possibilities for learning and practicing clinical skills. In this context, the VEE's learning offerings as well as the access options for students to prepare and follow up course exercises (Moodle, TiHoStudIS and TiHoVideos) are presented. All learning material (including instruction manuals for the exercises, further information material) for the learning stations are digitized and are provided online to students on the Moodle learning platform. In addition, first-semester students get to know the CSL in person as part of the campus tour and get a guided tour by tutors of the facility which provides an insight into the various learning stations and rooms for learning. Students are informed about new developments and current events of the CSL by email, via Moodle and the institution's Instagram channel.

6.1.3 Description of how (procedures) and by whom (description of the committee structure) the learning resources (books, periodicals, databases, E-Learning, new technologies, ..) provided by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

To facilitate the creation and exchange of learning resources ZELDA, the Centre for E-Learning, Didactics and Educational Research was founded. Staff from E-Learning Service, the CSL, the library, IDS, Executive Board and DSAA meet regularly and discuss student evaluations, development of learning resources and results from educational research. The discussion is brought by DSAA and VPL in the Committee for Curriculum Affairs.

Library

Books, periodicals and databases are bought or licensed by the VEE library. Selection criteria for the books are expected usage of newly available books as anticipated by library experts as well as recommendation and purchase requests from professors in annual questionnaires. The students are encouraged to express their requests by mail or in the student evaluations. Periodicals are purchased or licensed upon requests from faculty or as part of publisher packages within consortia negotiations. So-called *Big Deals* of journal packages or databases are licensed in collusion with the Executive Board. Applications for open-access funds were submitted by the Executive Board and the library. In detail, the library was in charge of the preparation, i.e. comparison of subscription versus publication costs on the basis of usage and publication statistics, and is managing the publication fund.

A library committee oversees the services of the library and advises on issues concerning co-operation between the library and clinics, departments and institutes, needs and wishes of students and scientists. The committee includes representatives from the groups of professors, scientific as well as technical staff and students. The head of the library reports regularly to this committee on new developments in the library and receives feedback.

Library staff make the purchased or licensed resources available, include them into the catalogue and the electronic journals library, and is responsible for the communication of access variables (IP ranges, Shibboleth) to journal publishers and to providers of databases.

Students and staff receive information on tests and purchases of new e-book packages, new e-journal packages or new databases via e-mail. The printed covers of new books are presented in the entrance of the library.

The library requests usage statistics from the publishers to gain insights into accesses and downloads of journal articles and e-book chapters. These usage statistics are the basis for subsequent subscription negotiations or for the cancellation of subscriptions.

E-Learning Service

New supplies of E-Learning tools, concepts and tutorials are discussed with staffs of the E-Learning Service and decided by the Executive Board or the Vice President for Teaching. Many new concepts are developed and evaluated within the framework of educational research projects. If this was carried out as part of doctoral theses, it ensures the participation and perspective of students and helps to create tutorials on the basis of student needs. The tutorials are available via Moodle, CASUS or in special electives online. After piloting, these are advertised via newsletters (students, teacher) or in weekly online seminars (See Fig. 3.4).

Networking between national and international VEEs was supported and further developed. Funds were raised and educational projects were completed or started leading to an increase of E-Learning materials by producing and sharing, focusing on more effective usage and evaluation of acceptance and effectiveness (see third-party funded projects). The aim of the joint project Souver@n, for example, is to promote sovereign digital teaching and learning. This project also identified the needs of students and lecturers for E-Learning tools.

Since the COVID-19 pandemic, acceptance of digital teaching and learning has increased even more. Our own studies and student evaluations suggest that students welcome the increased flexibility and that digital teaching should be used even more.

New information technologies

The assessment of the demand for emerging electronic data processing technologies is addressed through strategic planning within the IDS. Internally, demand may be catalysed by the introduction of innovative technologies and their market availability. Keeping abreast of pertinent developments in this domain entails maintaining extensive contacts with colleagues, engaging with professional organizations, and participating in specialized industry fairs and events. Moreover, the evolving needs of university departments stemming from their scientific or educational pursuits are carefully factored into the planning process.

The electronic campus management system is currently expanded. This concerns both student and performance management. An electronic course management system was introduced, which will soon make possible, among other things, to synchronise individual timetables for students and lecturers in personal calendar apps. In addition, electronic course planning is to be linked to the electronic learning management system. Further development is being led by the DSAA in close cooperation with colleagues from IDS. Following the functional enhancements, both departments will work together to provide information and training for students and staff.

Standard 6.2: Organisation of Library, Information Technology (IT) Unit, E-Learning platform

6.2.1 Brief description of the main library of the VEE:

The library provides printed and electronic books, journals, doctoral and PhD theses, proceedings, microforms, databases and further media for all students and employees. Furthermore, it hosts the core collection of literature in the fields of veterinary science and general parasitology funded by the German Research Foundation (DFG) between 1949 and 2014. The online discovery system *VetSearch* offers integrated access to relevant databases and catalogues. The number of loans of physical items is decreasing and amounted to 31,277 in 2023. E-book access is steadily increasing and currently stand at over 538.000 chapters used online per year (2023). Likewise, the number of subscriptions to printed journals has decreased during the last years, while the number of subscribed e-journals is increasing. A large number of electronic journals have been made available through consortia. Students and staff can access licensed items within the complete local IP-range or read licensed e-journals and e-books via remote access at home or at other working places.

The library is closely linked with the libraries of other universities in Hannover. All students and faculty members of all establishments of higher education have access to all libraries with a single admission pass. Students can receive a basic introduction to databases on a regular basis from library staff members. Further courses are mentioned under 6.1.2.

Staff (Full-time equivalent, FTE) and qualifications

The library has 14 FTE staff members. The head of the library has a background in veterinary medicine and library and information science (Prof. Dr. vet. med., Master in Library and Information Science (MA LIS)), the deputy librarian is an academic librarian, the open access officer has a background in biology (Dr. rer. nat.). Five graduate librarians, 4 library assistants and 2 further staff members are completing the team.

Opening hours and days

The learning space of the library is open to the public for 56 hours on 6 days a week.
Mond–y - Thursday 09:–0 - 19:00h, Friday and Saturday 09:–0 - 17:00h

Annual budget (excluding personnel, building maintenance)
2021**:** € 898.500, 2022: € 936.300, 2023: € 868.500
The budget includes third-party funds and study quality funds. Third-party funds were raised for the financing of open access publications and for book conservation measures. Study quality funds enable the purchases of textbooks and e-books and an adjustment of opening hours according to student and teacher requests.
Facilities: location in the campus, global space, number of rooms, number of seats
Campus Bünteweg: Bünteweg 2, Building 262,
Total space 1.765 sqm, thereof: 921 sqm freehand magazine and reading rooms with 110 workplaces, 348 sqm closed magazine space.
Equipment: number of computers, number of electrical connections for portable PC
W-LAN for mobile devices is available in the complete learning space of the library, which is used by most of the students. Eighty electrical outlets enable charging. Five computers in the library are available for students without mobile devices. Electronic resources of the library are available within all sites of the VEE (via IP range) including computer rooms for students and via Shibboleth or EzProxy for remote access.
Available software for bibliographical search
The VEE library has established the discovery system VetSearch (EDS from EBSCO Information Services). The unified index of this system includes databases and catalogues, works with modern search engine technology and presents a frontend with basic or advanced search options.
The searches are run in parallel in the K10plus catalogue and the databases CAB Abstracts, MEDLINE, Science Citation Index/Web of Science, AGRIS, DOAJ, BASE, SciELO as well as further databases from journal publishers and other institutions. Results can be refined, limited or expanded and may be saved or exported.
The library catalogue shows the local items and is part of the K10plus Union Catalogue, which covers over 78.8 million records of books, conference proceedings, periodicals, dissertations, microfilms and electronic resources of more than 1,000 member libraries with about 221.6 million items. Via Inter Library Loan (ILL) or subito document delivery service resources of all subito-supplying libraries and other German university libraries can be ordered online.
The software for bibliographic search and the underlying licensed content is accessible within the IP-range of the campus or via remote access (Shibboleth or EzProxy).
The VEE eLib is a repository (https://elib.tiho-hannover.de/content/index.xml) offering open-access publishing at no cost for the authors. Over 3,500 theses and over 3,200 recent articles from VEE authors can currently be searched and accessed via this repository. Open access consultation is part of the library service.

6.2.2. Brief description of the subsidiary libraries (if any)

Clinics, departments and institutes have small subsidiary libraries. Journals and books present in these libraries are not catalogued in the main library. Faculty members and students have access upon request and permission of the respective institute during working hours.

6.2.3 Brief description of the IT facilities and of the E-Learning platform (dedicated staff, hardware, software, available support for the development by staff and the use by students of instructional materials)

An IT infrastructure is readily available to bolster veterinary education, research, and services at our institution. Spearheading this effort is the IDS led by a team of 15 professionals, three of whom are skilled veterinarians, including the head, a veterinarian specializing in IT and documentation. IDS oversees IT administration through three specialized sub-teams, each staffed with professionals possessing advanced training or academic qualifications:
PC and User Support:

IDS provides comprehensive support to a community of 1,200 employees and 2,400 students, managing approximately 2,500 desktop PCs and laptops. We employ a centralized PC management system to efficiently administer the lifecycle of the devices. Additionally, our centralized identity management system ensures seamless management of human accounts, integrating data from both our campus management system (CMS) and human resource information system. Access to data, directories, email, and applications is facilitated through a standard directory service.

Campus Management System (CMS):

Our CMS streamlines student lifecycle processes, such as admissions, enrolment, and programme changes. We recently transitioned to the latest HIS Software (HIS In One) to optimize administrative workflows. Furthermore, adoption of the Moodle learning management system since 2017 has enriched educational experiences, with university-wide implementation since 2020. VEE students and staff automatically gain access to Moodle via their e-mail accounts.

Server and Storage:

Our robust infrastructure includes three server rooms equipped with high-speed Ethernet and Fibre Channel backbones. Our Storage Area Network facilitates efficient data management, while an eight-node Network Attached Storage cluster caters to unstructured data storage needs. (More see Appendix, Chapter 6.3).

Network:

We provide extensive LAN and W-LAN capacities to support data and voice services for both employees and students, ensuring seamless connectivity and communication.

Patient record system:

Our institution has two central systems granting access to patient records of clinical and laboratory data. Dedicated support and training for staff and students are provided by two qualified veterinarians specializing in IT and documentation.

6.2.4. Description of the accessibility for staff and students to electronic learning resources both on and off campus (Wi-Fi coverage in the VEE and access to resources through a hosted secured connection, e.g. Virtual Private Network (VPN))

With an extensive network comprising approximately 10,000 wired LAN ports, VEE ensures robust connectivity for both staff and students. The wireless network access options have seen significant expansion in recent years, with VEE now operating well over 1,000 access points on both campuses. Moreover, IDS, in collaboration with other universities and with funding from the state of Lower Saxony, has facilitated access to Eduroam beyond campus confines, extending connectivity to public areas in Hannover.

Authentication, authorization, and password management are seamlessly handled by a university-wide identity management and directory service. VEE actively participates in both the Eduroam and Shibboleth Federation initiatives, enabling seamless authentication for members of the academic community and providing streamlined access to external academic guests through a ticketing system.

In response to recent cybersecurity attacks affecting numerous German universities, VEE has placed emphasis on cybersecurity. Adopting a comprehensive approach, VEE is implementing a blend of technical advancements and organizational strategies aimed at raising awareness among students and staff to effectively identify and respond to potential cyberattacks. Stringent quality control measures are enforced to evaluate the efficacy of these awareness campaigns. Furthermore, VEE is increasing its resilience against cyberattacks through a comprehensive project supported by IDS, which involves creating training materials for VEE employees and students to raise awareness about security measures in the IT sector. Quality assurance measures have been implemented to assess the effectiveness of these training initiatives.

Moreover, there is a noticeable trend towards consolidating and federating IT services across Lower Saxony, driven by the objective of optimizing efficiency and service quality. This initiative has been made feasible through substantial funding and the successful execution of various projects focused on streamlining operations and enhancing the overall user experience.

Standard 6.3: Access to learning resources by the students

6.3.1 Brief description of:

Number of veterinary books and periodicals

The library stock contained over 247,800 units of print media at the end of 2023, most of which is veterinary content due to the purchase profile of our institution. Over 10,980 textbooks and over 53,580 dissertations are part of the print stock. VEE still holds subscriptions to of 329 journals in print format.

Number of veterinary e-books and e-periodicals

Commercial e-books are made available (by purchase or loan). E-books are accessible from the homepage of the library, via the local catalogue or via the discovery system. At the end of 2023, over 6,690 titles could be accessed simultaneously by an unlimited number of users (see also 6.1.3.). The number of non-commercial e-books include over 19,050 dissertations and 1,437 digitized historical books. Periodicals are mainly licenced in electronic form. Over 10,730 journals were licenced at the end of 2023.

Number of other (e)books and (e)periodicals

VEE members have access to over 13,600 medical journals, to over 5,770 biological journals and to over 3,660 agricultural journals, respectively, plus various numbers from further fields.

The available electronic information and E-Learning courses, and their role in supporting student learning and teaching in the core curriculum

Using library and bibliographic database management systems is essential for study and teaching, especially for writing case reports and running research projects. The seminars mentioned under 6.1.2. are complemented by self-study courses with interactive, case-based content covering topics on literature research, proper citations and literature management.

A campus license for the software EndNote enables students and staff to benefit from this reference management tool.

E-Learning Service

The E-Learning Service is networked nationally and internationally, also via funded projects, thus significantly improving and expanding the range of services for students and staff. Innovations are being introduced and the use of digital media in veterinary education and lifelong learning is being expanded.

The following tools and programmes are completing the curriculum:

- Learning management system Moodle includes around 1,000 courses. All VEE clinics as well as most institutes provide learning content for their courses on Moodle. Instructional materials for digital teaching and learning and learning technologies for staff and students are provided by ZELDA (#Lehre, #ZELDA).
- Videos and online tutorials on YouTube channel "TiHoVideos" (e.g., instructions, information on studying), skills lab stations, >240 videos are public, ca. 200 are non-public.
- Case-based learning and authoring tool CASUS® with around 80 cases being regularly active (long cases and key feature cases, restricted access for students and staff, training for staff by the E-Learning-consulting and online tutorials). From the pool of cases (approximately 700), inactive cases are either in creation, revision or transfer to Moodle.
- Materials that were created within collaborative projects are shared and reused: in general, online lectures, manuscripts podcasts, recordings, training programmes, instructions incl. online seminars from universities in Lower Saxony and other VEEs.

- Learning programmes for histology, heart sound library, virtual microscopes (cytology, histology, and microscopic anatomy; parasitology; histopathology; microbiology) and videos (e.g., food and hygiene -examinations for preparation of slaughterhouse practicals) are found in TiHoStudIS
- Game based learning (Actionbound)
- Open Educational Resources (twillo.de, Lower Saxony OER platform)
- Counselling and assistance with the use of audience response systems (hardware and web-based), e.g., Mentimeter licences, PowerVote
- Sample of electronic examination, support for the use of the e-examination platform (Moodle | StudIS)

The organisation and supervision of the skills labs

The development of new learning stations and learning opportunities is initially discussed by veterinarians and the head of the CSL. Student suggestions and evaluations and requests from clinics or institutes to create new models or simulators to teach students certain clinical skills are considered. To ensure that teaching in the CSL is in line with teaching of the clinics and other institutes of the university, there is close professional exchange. For quality assurance, all learning materials, videos as well as self-developed models and simulators are assessed as part of a professional review process by clinicians and specialist staff of other institutes (e.g., anatomy) before use. Existing learning materials are regularly revised by CSL's specialist staff in order to keep them up to date to latest evidence-based veterinary medicine and are professionally reviewed by clinicians. As part of regular evaluations of courses and evaluations in terms of thesis projects in educational research, students and experts from the clinics regularly provide feedback on new learning stations and newly developed simulators.

Comments on Area 6 – Learning resources

- To fulfil the special needs of veterinary education, the heads of the library, ZELDA and support staff of the patient record system are veterinarians
- Student needs for e-learning tools and CSL simulators are formulated in research projects
- Student use of e-learning courses and CSL visits is monitored as part of learning analytics
- During the COVID-19 pandemic, comprehensive studies were carried out to record the needs of both students and teachers and highly interactive digital learning resources were created
- Regular updates of virtual cases (CASUS) and other learning resources (e.g., video instructions) are monitored.
- Teaching staff is supported by provision of information resources and training on latest teaching tools and developments in the field
- VEE emphasises on the development and on adjustments of its resources, newly developed simulators in CSL are evaluated in projects
- The use of the H5P software is encouraged to develop interactive teaching materials

Suggestions for improvement on Area 6

- Innovative concepts, including virtual barn tours and virtual slaughterhouse practicals, will be refined to meet individual needs and to increase student motivation, interest and learning success
- Consolidation of different technical systems for e-learning and study organisation on a single platform with a universal sign-on
- Short AI-generated videos on information literacy and good scientific practice to complement the already existing course offerings
- Planned upgrade of IT infrastructure in the framework of HdN (Digital transformation of universities in Lower Saxony)

Area 7: Student admission, progression and welfare

Standard 7.1: Student admission progression and certification

Description of how the educational programmes, learning outcomes, admission procedures and requirements for national and foreign students, progression and certification, tuition fees, academic calendar, collaborations with other VEEs, etc. are advertised to prospective students

We advertise the study programme by:

- Detailed internet information on the study programme on www.tiho-hannover.de and further internet portals like www.studieren-in-niedersachsen.de or www.wissen-hannover.de, on the information platform "Hochschulstart", and on social media.
- Participation in the "HIT" (HochschulInformationsTage), an annual fair for prospective students, which informs on basic study programmes in the Hannover region.
- Participation in the "ABInsStudium" ("Off to study"), an annual exchange format where prospective students have can ask currently enrolled students about their study programmes.
- "Open Day" every two years: Interested people have the chance to see the facilities and to receive information on studying and working at VEE (e.g., in November 2023).
- Videos about studying at TiHo on the YouTube channel TiHoVideos (see list in Appendix, chapter 6, table 6.2.1).

Standard 7.2: Number of Students

Table 7.2.1 Number of new veterinary students admitted by the VEE

	2023	2022	2021	Mean
Standard students	280	260	260	265
Full fee students	Not relevant	Not relevant	Not relevant	Not relevant
Total	**280**	**260**	**260**	267

Table 7.2.2 Number of veterinary undergraduate students registered at the VEE

	2023	2022	2021	Mean
First year	279	268	266	271
Second year	256	263	261	260
Third year	262	260	260	261
Fourth year	248	254	258	253
Fifth year	255	253	253	254
Sixth ^{ye}ar =11th Sem.	252	250	253	252
>11 Sem.	112	109	116	112
Total	1,664	1,657	1,667	1,663

Table 7.2.3 Number of veterinary students graduating annually

	2023	2022	2021	Mean
Standard students	238	250	265	251
Full fee students	Not relevant	Not relevant	Not relevant	Not relevant
Total	238	250	265	**251**

Table 7.2.4 Average duration of veterinary studies

The total duration of the studies matches the minimum number of years of the programme

	5,5 years + 0 year	5,5 years + 1 year	5,5 years + 2 years	5,5 years + 3 years	5,5 years + > 3 years
% of the students	**86**	**8**	**4**	**1**	**1**

Table 7.2.5 Number of postgraduate students registered at the VEE

Programme	2023	2022	2021	Mean
Interns	not registered as students at VEE			
Residents*	not registered as students at VEE			
PhD students**	152	173	162	120

Dr. med. vet.	544	556	569	556
Dr. rer.nat.	28	27	27	27
Total	**724**	**756**	**758**	**703**

*See Tab. 10.3.1, not registered as students at VEE
** See Tab. 10.3.2

Standard 7.3: Selection and Progression Criteria

7.3.1 Description of the admission procedures for standard students:-) selection criteria-) policy for disabled and ill students -) composition and training of the selection committee -) appeal process -) advertisement of the criteria and transparency of the procedures

Selection criteria

Admission is generally regulated for all university study programmes in Germany. All issues related to "standard student" admission are laid down in a "Staatsvertrag" (state contract) between the 16 federal states and the federal government of Germany. "Standard student" is here defined as an applicant for first semester and coming from Germany or other EU countries including associate countries. All students apply to a central Foundation for University Admissions (www.hochschulstart.de). Students originating from non-EU countries have to send their application to Uni Assist (www.uni-assist.de). This is an association supported by approximately 170 German universities, which provides processing and evaluation for international student applications. All applicants for second and higher semesters send their application directly online to VEE.

Veterinary medicine is a so-called "numerus clausus (NC)" discipline; this means that the number of applicants is higher than the number of slots at universities. The selection of students takes place at the Foundation for University Admissions and is based on the final grade on the high school diploma, further qualifications and a test system.

Specific requirements concerning the NC and further selection criteria are published under http://www.tiho-hannover.de.

Prerequisites to enter veterinary education in Germany are a) the higher education entrance qualification, b) meeting the admission requirements of "Hochschulstart.de" or "Uni Assist" and c) those of the VEE. Basically, the percentages of all slots for veterinary study need to be distributed as follows:

a) advance quota:

- 5% for non-EU students
- 3% for students seeking a graduation in veterinary medicine as a second degree
- 2% for students suffering from extreme hardship
- 0.1% for admission to the veterinary officer service of the German Armed Forces

b) the remaining slots are assigned according to the following three categories:

- 30% according to grades obtained in the high school diploma
- 10% additional aptitude rating
- The criteria applied are a) results of a specialised test for all applicants of medical study programmes (TMS) and b) professional qualifications (e.g., completed apprenticeships or professional activity in a health profession of at least 12 months after completion of the training) and awards in scientific school competitions, such as "Jugend forscht".
- 60% admission according to specifications stipulated by VEE ("AdH: Auswahlverfahren der Hochschulen").

The criteria for the 60% admission quota are applied to candidates taken from a nationwide list. A list of applicants is created based on individual scores.

Depending on their performance, applicants can receive a maximum of 100 points:

- Grade of the university entrance qualification: max. 45 points
- Result of the described test system (TMS): max. 40 points

- Completed vocational training in a healthcare profession: max. 10 points
- Professional activity in a healthcare profession for at least 2 years after completion of training: max. 5 points.

Admission is according to the sum of points obtained in all categories. Thus, admission will be granted according to the individual score points until all slots are filled. Applicants may also give a ranking of their desired study location. Assignment of students tries to meet student preferences.

Students may be admitted without high school diploma (Abitur) but with special qualifications. Students from non-EU-countries send their application online to Uni Assist. The association checks the documents according to the criteria mentioned above and transmits the evaluation in a ranking list to VEE, on the basis of which the admissions committee decides on admission. Students applying for higher semesters send their applications directly online to VEE. The committee for admission decides on the basis of the ranking list prepared by the registrar´s office on the base of the average marks of former certificates. Furthermore, the Committee for Admission has to verify the equivalence of former study programmes. All procedures for these cases are described in the Regulation for Admission.

Policy for disabled and ill students

For disabled or ill applicants, two per cent of the places are reserved. The potential students are checked and decided upon by the Foundation for University Admissions.

Composition and training of the selection committee

The Committee for Admission (members elected by the Senate) and the Executive Board check the results of the internal selection process. All German VEEs have to use the described equal-opportunity selection process, the TMS is harmonised in the country and developed by specialists on behalf of the Ministers of Education and Cultural Affairs.

Appeal process

There is no appeal process due to Teaching Capacity Regulation of Lower Saxony (KapVO) (see 7.1.2). Only legal action against the calculated admission number of students is possible.

Advertisement of the criteria and transparency of the procedures

The criteria and the procedure for application are described on detail at

7.3.2 Description of the admission procedures for full fee students (if different from standard students)

VEE has no full fee students in the study course veterinary medicine.

7.3.3 Description of how the VEE adapts the number of admitted students to the available educational resources (facilities and equipment, staff, healthy and diseased animals, material of animal origin) and the biosecurity and welfare requirements

The number of students admitted each year is restricted. This number is calculated yearly on the basis of budgeted staff and is fixed in the agreement with the Ministry for Sciences and Culture (“Studienangebotszielvereinbarung”).

The Teaching Obligation Regulation of Lower Saxony (LVVO) is a state bylaw. It specifies the number of hours to be taught per year by each faculty member and teaching staff (see 9.3.1). The sum of the individual teaching hours to be given results in the total teaching capacity of an establishment.

The Teaching Capacity Regulation of Lower Saxony (KapVO) is a state bylaw, which, together with the LVVO, forms the basis for the number of students to be admitted each semester; the number is calculated by dividing the total teaching capacity by the so-called Curriculum Norm Value (CNW). This abstract value given in the KapVO is a measure for the hours of teaching required per student in a certain subject. The CNW for veterinary medicine is 7.6. Due to these regulations VEE has a teaching load of 1,949 hours (WS 2023/24) for the total budgeted

teaching staff. These hours together with the adjustment of a certain dwindling factor 1.02 (set-off for students withdrawing from university course of studies, those changing their place of study) divided by the CNW have resulted in 261 student places/year for VEE from this year (WS 2023/24). Due to the current shortage of veterinarians, the German VEEs have agreed on an overbooking and we admitted 280 students in the last year. The overbooking is adjusted each year according to societal needs and student welfare.

VEE has to adapt welfare, biosecurity and environment to the number of students. This adaption is only possibly by repetition of teaching hours gaining smaller student groups, if necessary, in respect to biosecurity and welfare.

7.3.4 Description of the prospective number of new students admitted by the VEE for the next 3 academic years

About 270 students p.a. are expected for the next years, due to legal regulations (see 7.3.3).

Standard 7.4: policies and procedures on how applicants with disabilities or illnesses are considered.

7.4.1 Description of the policies and procedures dedicated to applicants with disabilities

Students with disabilities or chronic illness have the opportunity, in consultation with the DSAA, the VEE physician, the representative for employees with disabilities and the teaching units of VEE, to agree on individual measures - depending on their respective impairment - to enable participation in the courses without loss of quality.
Compensation for disadvantages can be requested for participation in examinations, which is regulated in a separate paragraph of the Examination Regulations for the veterinary medicine degree program. If necessary, they can take examinations in alternative formats in accordance with the provisions of the TAppV.

Standard 7.5: Basis for Decisions on Progression

7.5.1 Description of

a) progression criteria and procedures for all students:

The requirements are regulated by the TAppV and by the specific Study Regulations of VEE. The examinations are divided into three parts (see Chapter 3). Passing one part is a prerequisite for entering the subsequent one. Students will only be admitted to examinations if they can show proof of regular and successful participation in courses defined by the study programme. Failed first or first repeat examinations can be repeated at the earliest three weeks after the unsuccessful examination. Second repeat examinations, which are conducted as final oral examinations, can only be taken for the last time after the end of the following semester.

b) remediation and support for students who do not perform adequately:

The progress made by students in their studies is generally good because students are highly motivated. The veterinary studies are fairly regulated, most students completing their studies in the regular study time of 5.5 years. Progress is verified through interactive teaching and by examinations (formative and summative). More than 80% of the students, admitted at the first year, graduate. Since 2013, the “Progress Test Tiermedizin” is offered to students. It is an optional offer to check the study progression and performance online-based by oneself. Test results are evaluated anonymously and discussed (see Fig. 3.2.).
In cases of failed examinations the students have the possibility to appeal against it in written form or orally at the head of the DSAA, the Executive Board or the liaison lecturers. These people also invite students with repetitively bad marks to a personal consultation. For students with obvious learning problems a contact to the psychological service is made. VEE also offers elective courses for methods of learning.

c) advertisement to students and transparency of these criteria/procedures

All procedures concerning learning progress, exclusion and appeal are published on bill-boards or e-boards. In the beginning of the programme the students are guided by tutors one week. When there are special individual problems, students receive help from staff in the DSAA.

7.5.2 Description of the rate and main causes of attrition

About 10-15% of the students, who started their study at VEE, leave before final exams. In most cases, they changed the university or the study programme in the first 2 years. Free places are refilled with students from other universities (admission for higher semester). Therefore, the average attrition is about 1-2% over all study years in 2024, the attrition quote was about 2%.

7.5.3 Description of how (procedures) and by whom (description of the committee structure) the admission procedures, the admission criteria, the number of admitted students and the services to students are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Description of admission procedures and criteria etc. see 7.3.1, structure for admission see 1.2.4. Information is provided yearly in the report of the Executive Board and in the teaching report. Reasons for attritions or conspicuous exam results are provided by the DSAA, discussed in the examinations committee and the ZSK. The report of the Executive Board is published on the website.

Standard 7.6: Mechanisms for Exclusion of Students

7.6.1 Description of the mechanisms for the exclusion of students

In accordance with the statutory provisions of the Lower Saxony Higher Education Act, de-registration takes place
a) if the student applies for it,
b) if the student has passed the final examination,
c) if the student has definitively failed an examination,
d) if the withdrawal of the notice of admission is incontestable or immediately enforceable, or
e) if the student does not re-register within the deadline after a reminder setting a deadline with the threat of de-registration or does not pay fees or charges due within the deadline.

7.6.2 Description of the appeal processes

Depending on the circumstances (see c) to e) above), students can appeal to the Examination Board or the Administrative Court of Hannover, and notifications contain instructions on the appeals process.

Standard 7.7: Support the physical, emotional and welfare needs of students

7.7.1 Description of the services available for students (i.e. registration, teaching administration, mentoring and tutoring, career advice, listening and counselling, assistance in case of illness, impairment and disability, clubs and organisations, ...)

In the main building of administration on Bünteweg Campus, students have access to the important services grouped together on the first floor:
Department of Student and Academic Affairs (DSAA):
All important affairs concerning registration, teaching administration, assistance in case of illness and disability, are concentrated here in this locality. Furthermore, the DSAA offers guidance to students with academic problems. In addition, students can consult the Vice-President for Teaching, or individual faculty members of their choice (for help with study problems, career development, job selection, personal problems). Disabled and ill students are

represented and consulted by the head of department within this unit with help of the VEEs physician. The offer is supplemented by the option of visiting one of the lecturers of confidence or an officer for disabled employees.

International Academic Office:

VEE provides an International Academic Office (IAO) which is part of the DSAA. The activities of the IAO are discussed and decided on in a Committee for International Affairs. Responsibilities of the IAO include providing information and assistance to students wishing to study abroad, and the organisation of exchange programmes such as ERASMUS/SOCRATES. Each visiting student from abroad is offered help should he/she encounter any kind of problem. The IAO tries to alleviate difficulties arising while the newcomer is adapting to his/her new surroundings. Assistance is also offered in dealing with the local authorities.

Diversity and equal opportunities office with two parent-child-rooms (at either campus):

Female students receive specific assistance from VEE's Equal Opportunity Office Representative with special emphasis on problems related to pregnancy and childcare. Here students with children find help and information concerning family affairs.

Medical consultation office:

Students are prepared for zoonoses in the subjects covering infection medicine. In case of an acute hazard (e.g., bird flu), VEE has a special emergency plan, also to protect students. In general protective clothes are obligatory and supplied by students or VEE.

Hannover Student Services ("Studierendenwerk Hannover"):

Students are informed of at weekly consulting hours of the special support offered by the services, where they can receive professional guidance free of charge, e.g., at the Psychological Outreach Clinic (easy-access service), the Welfare Help Desk and the Legal Advice Office.

Society of Friends of the University of Veterinary Medicine Hannover:

Students are supported, for example, to present their research results at conferences, to participate in special seminars not directely related to study content (language classes etc.) or to organize social events at VEE. In addition, members receive VEE-Anzeiger several times a year and are therefore well informed about all developments at VEE.

For all students' affairs, the Student Committee (AStA) supports all students in a wide variety of questions, is tutoring first year students and also mediates between administration, professors and students. AStA and the Student Parliament have regular meetings with the president and the vice-president for teaching and the head of DSAA, to give their feedback. The information or the requests are either directly handled, if possible, or given to the respective committees (PDCA cycles).

Students and employees of VEE can use the offer of Centre for University Sports (www.hochschulsport-hannover.de) for a wide range of sport activities. This is located at the university sport centre and is easily reached by tram. Furthermore, there is also a link to the two student parishes, i.e., the Protestant Student Parish and the Roman Catholic Student Parish, which are members of the circle of Hannover Institutions of Higher Education.

7.7.2 Description of the mechanisms for resolution of student grievances

Please see 7.8.1 and also 7.7.1 on the dealing with general complaints, 7.4.1 on how to deal with students with disabilities with regard to the organisation of studies and participation in examinations, and 7.6.2 on the legal possibilities of appeal in different circumstances. In the ZSK, with the majority of students from different years, a direct resolution or feeding of grievances into PDCA cycles takes place.

Standard 7.8: Mechanisms for student suggestions, comments, complaints, and needs

7.8.1 Description of the mechanisms allowing students to provide their needs, complaints, comments and suggestions to the VEE

VEE offers all employees and students the opportunity to report information or suspicions of serious violations of laws or regulations anonymously. In a protected environment and a regulated procedure, the whistleblower will report incidences and anonymity is guaranteed.
If students are aware of a violation of the law or regulations or have a reasonable suspicion that a violation has occurred, they should first contact the relevant teaching supervisor or the responsible committees, lecturer of confidence, and representatives.
The Equal Opportunities Officer is responsible for questions relating to equal opportunities and diversity.
Alleged breaches of data protection can be reported directly to the Data Protection Officer.
The Internal Auditor and Anti-Corruption Officer is also available as a direct point of contact.
The Waste Management and Environmental Protection staff unit is responsible for questions and information on waste, waste water, hazardous substances, bio-substances, hazardous goods, radiation protection, immission control and narcotics.
The Occupational Safety and Fire Protection staff unit is responsible for questions and information on occupational safety, health protection and fire protection.
The animal welfare officers are responsible for all animal welfare issues.
Students have the possibility to report their complaints to lecturers of confidence (selected by students and confirmed by the ZSK and the senat). It is the responsibility of the vice-president for teaching and finally the president to resolve students´grievances and to introduce problems in PDCA cycles for QA management.

Comments on Area 7 - Student admission, progression and welfare

- Due to the Teaching Capacity Regulation of Lower Saxony, TiHo has no direct influence on the number of study places.
- Additional state lines (faculty and teaching staff) results in higher numbers of undergraduate students.
- The overall attrition is low. Most students will reorient in the first two years.
- Some students apply to different universities for human and veterinary medicine in parallel and change shortly after enrolment.
- VEE offers easy access to specialist counselling services and mental health problems of students are reported anonymously allowing immediate action.
- Within our legal framework, TiHo is continuously expanding its Diversity, Equity, and Inclusion (DEI) activities

Suggestions for improvement on Area 7

- TiHo has had a tutor system for several years, but attendance was slipping. The tutoring services of the student association (AStA) is well-accepted and will receive increased central support.
- A new course on resilience is offered to 1st year students, which is currently being evaluated. Preliminary results suggest that this low-barrier course should be expanded.
- Structured community-building efforts at TiHo should be expanded.
- Maintain gender balance on the professorial level and gender pay equality.
- Expand opportunities for continuous training and development courses at various levels to support staff and students.

Area 8: Student assessment

Standard 8.1: Assessment Strategy

8.1.1 Description of the general student assessment strategy of the VEE

VEE has Examination Regulations (PO, Appendix 1.3.1.2) based on the TAppV, which regulates the state examination for German VEEs. Following suggestions from the VEE, examiners are appointed by the local Ministry of Nutrition, Agriculture and Consumer Protection. The planning behind all state exams is supervised by two Examination Committees (Preclinic and Clinic) established at VEE and represented by the two Examination Committee chairs. Students are made aware of the required conditions for assessments, are fairly treated by examiners and are objectively assessed. VEE offers all necessary support to students and examiners, such as information and guidance to develop sensible assessments in the framework of the legal regulations. Every institute/clinic has to provide information on the exam procedures to the DSAA and the aforementioned chairpersons (PO Sections 1 and 2), which are confirmed by Senate and published.
The examinations follow the lectures and courses (PO Section 3). There are 3 examination sections: the First Preclinical Examination (Vorphysikum), Second Preclinical Examination (Physikum) and the Veterinary Clinical Examination (Tierärztliche Prüfung, state exam). The examinations take place after each semester (2-9 examinations in the lecture-free period; 9 examinations only in the last semester). The final part of the examinations can only be taken after all courses and mandatory EPT are passed.
During the semester, students obtain accompanying certificates (PO Section 4), which are necessary to enter examination. The clinics and institutes provide regulations for practical training (Praktikumsordnung) about form and content controlled by the Committee for Curricular Affairs.
According to PO Sections 5 and 6, written (mostly electronic, Multiple Choice, MC, in addition to other question formats), oral (Structured Oral Examination, SOE) and practical (Objective Structured Long Examination Record, OSLER; Objective Structured Practical/Clinical Examination, OSPE, OSCE; Mini-Clinical Evaluation Exercise, MiniCEX) examinations are possible (more see 8.1.2. and 8.1.3). Examiners are introduced to these formats and are supported by digitally available materials and (online) seminars (E-Learning Service).

8.1.2 Description of the specific methodologies for assessing the acquisition of:

VEE uses two global categories of assessment methods in the study programme:

1. Formative assessment: To get information on improvement of knowledge, students can undertake progress tests (e.g., “Progress Test Tiermedizin (PTT)“, solve E-Learning cases (“virtual patients”) in CASUS, take part in modules with tests and quizzes in Moodle and test themselves with quizzes via audience response systems during lectures. In practicals, formative assessment is either performed before or after the class. (Electronic) Objective Structured Clinical Examinations (E-OSCE) during the PY will also test their knowledge, practical and communication skills. During the PY students receive formal feedback about their soft skills and performance in the clinics.
2. Summative assessment: Assessments covering all topics according to TAppV are performed during the lectures free periods and in the 11th semester (see Tab. 8.1).

Table 8.1: Methods of examination

Subject	Methods of examination (Most common format in brackets; Abbr.: MC = Multiple Choice, SOE= Structured Oral Examination, OSLER = Objective Structured Long Examination Record)
1st Preclinical examination	
Physics	Written, (MC)
Chemistry	Written, (MC)
Zoology	Written, (MC)
Botany	Written, (MC)
2nd Preclinical examination	
Anatomy	Oral and practical (80%/20%), (SOE)
Histology and Embryology	Written, (MC)
Physiology	Oral and practical (70%/30%), (SOE)
Biochemistry I, II	Written, (MC)
Animal Breeding, Genetics	Written | Oral and practical (60%|40%), (MC/SOE)
Veterinary Clinical Examination	
Radiology	Written, (MC)
Virology	Written, (MC)
Bacteriology and mycology	Written | Oral and practical (80%|20%), (MC/OSLER)
Parasitology	Written | Oral and practical (66%|34%), (MC/OSLER)
Animal Nutrition	Written/practical (100%), (MC)
Animal Husbandry/ Animal Hygiene	Written, (MC)
Pathology	Written | Oral and practical (70%|30%), (MC, OSLER, practical [necropsy, evaluation of 2 organs and 3 slides], written papers)
Internal Medicine	Written | Oral and practical (40%|60%), (MC, SOE including report writing)
Surgery and Anaesthesiology	Written | Oral and practical (40%|60%), (MC, SOE including report writing)
Reproductive Medicine	Written | Oral and practical (40%|60%), (MC, SOE)
Poultry diseases	Written, (MC)
Pharmacology and Toxicology	Written, (MC)
Animal Welfare	Written, (MC)
Animal Epidemics, Epidemiology and Preventive Medicine	Written, (MC)
Food Science and Food Hygiene	Written | Oral and practical (60%|40), (MC, SOE)
Milk Hygiene	Written | Oral and practical (60%|40), (MC, SOE)
Meat Hygiene	Written | Oral and practical (60%|40), (MC, SOE)
Pharmacy, drug and narcotics laws	Written | Oral and practical (60%|40), (MC, SOE)
Forensic Veterinary Medicine	Written, (MC)
Clinical Propaedeutics	Oral and practical (100%), (SOE)

Theoretical knowledge

Theoretical knowledge is usually assessed by Multiple Choice (MC) examinations, which are prepared and assessed by the institutes and clinics responsible for the subject. The MC exams are conducted using electronic input devices. Written assessments consider not only declarative but also procedural knowledge with the formats of question: Multiple Choice Question (MCQ) Typ A, Kprim, Picture mapping, Image Analysis, Key Feature, Grouping Questions (explanation see annex 2 of Examination Regulations). Structured oral exams for theoretical subjects are used by single institutes and clinics (see table 8.1).

Since 2008, VEE has used the electronic assessment system Q/Q-Exam® Institution of a private provider (company IQuL GmbH - Institut für Qualitätsmanagement in der universitären Lehre,

Bergisch-Gladbach). Usage is continuously increased and is now used in 26 subjects with more than 29 assessments (14.04.2008–12.12.2023: >900 assessments with >117,000 single assessments) are currently carried out. The examination questions are collected on a central exam question database used by teachers/examiners and reviewers. Questions are reviewed concerning formal and content-related criteria and the exam is composed after a successful multistage review process. Since 2017, the new examination management platform Q-Exam® Institution has been installed, whereby all the review steps take place online. Examiners of institutions or clinics define a blueprint with corresponding rules for each examination. After entering the questions, the multistage review process (formal review, content-related review, post review) is performed on the online platform. The IQuL company provides laptops for each student in the lecture hall and is responsible for the technical process of examination. The answers and results are analysed immediately after examination within the platform, and the quality of the examination and questions is assessed with different indices. After final approval by the examination coordinator, results are published online in StudIS for individual access by each student. Students have the possibility to review the exam in the Examination Office (Prüfungsamt/DSAA) and express concerns about items. Teachers reply accordingly online.

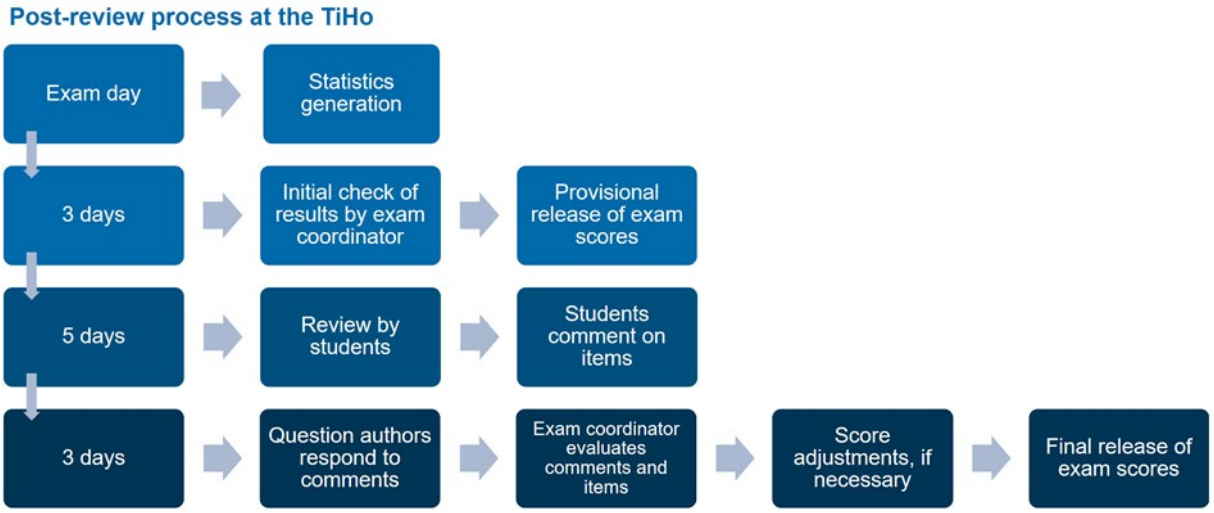

Fig. 8.1.2 Post-review process at VEE

Pre-clinical practical skills

To assess pre-clinical skills, written/MC (for most theoretical subjects) and oral exams are used. Furthermore, students have to complete CSL logbook stations. For oral state examinations students form groups of four or five, and examination dates at appropriate intervals according to PO Section 6 and TAppV are assigned to these groups by the DSAA.

Clinical practical skills

Clinical practical skills are assessed as formative procedures as E-OSCE in the CSL during the PY and as summative procedure as Structured Oral (-practical) Examination (SOE). Students in the PY absolve a practical training in clinical skills with an associated E-OSCE in the CSL, as part of their cycle in the respective VEE clinic preceding the work on living animals (see Tab. 3.1.3). The annex 3 of PO describes these formats (Appendix). In four summative examinations clinical skills are examined in propaedeutics, internal medicine, surgery and reproduction medicine.

Soft skills

Soft skills are partly assessed in summative exams. Communication skills (e.g., taking history), dealing with stress situations, time management, work ethics are assessed in the clinical examinations (SOE). During E-OSCEs in the CSL, communication skills, attitude, dealing with pressure and criticism are assessed and feedback is given directly after the exam. As part of the practical training for the PY students of the Clinic for Small Animals and the Clinic for Pets,

Reptiles and Birds, the students receive a theoretical introduction to the basics of veterinary communication and carry out conversation simulations with actors. In the subsequent E-OSCE, the communicative skills are tested in the context of the E-OSCE station “Pet Owner Communication” in which students have to conduct an anamnesis interview with an actor. Formative assessment of ethics is performed in the first year. Students have to write an essay and to answer MC questions.
Self-assessment of soft-skills for students with feedback is also provided, in E-Learning cases (“virtual patients”) in CASUS (e.g., "Key competences", “Tips and tricks for scientific work”, “Searching for literature“ and “Reference management“ and other communication courses) and as part of modules with tests and quizzes in Moodle (e.g., “Learning to learn”). During the PY, students receive formal feedback about their soft skills and performance in the clinics.

Standard 8.2: Assessment Tasks and Grading Criteria.

8.2.1 Description of the processes for ensuring the advertising and transparency of the assessment criteria/procedures

In addition to the availability of the PO on the homepage, the following measures ensure the transparency of assessment criteria: Examination Regulations with detailed definitions and description of examinations are available on inter- and intranet pages. In an elective course and tutorial on the YouTube channel “TiHoVideos“, students can learn about the procedure of electronic examinations at VEE. Examples of items are presented in lectures. Further, a demo exam, information about item formats is published in the intranet/TiHoMoodle. For teachers, workshop offers, online seminars as well as digitally available materials provide support for assessment criteria/procedures. Examination dates for first examinations and repeat examinations are announced by the Examinations Office at least 4 weeks before the examination section (pre-physical or physical examination) or the first examination following a clinical semester via a password-protected platform and on the notice board of the DSAA. Registration for an examination section (First Preclinical Examination, Second Preclinical Examination or the Veterinary Clinical Examination) is carried out by the student at the Examinations Office when the required proof of performance for the respective examination subject is available. The student must be summoned at least seven days before the examination date. Description of learning contents is published.

8.2.2 Description of the processes for awarding grades, including explicit requirements for barrier assessments

Following examination marks are used (PO section 12):

Grade	General definition	Binding assessment framework
‘very good’ (1)	An excellent performance	90% or more of all points
‘good’ (2)	Significantly above average requirements	80% to < 90% of all points
‘satisfactory’ (3)	Satisfies the average requirements in every respect	70% to < 80% of all points
‘adequate’ (4)	Meets the requirements despite its shortcomings	60% to < 70% of all points
‘not adequate’ (5)	Does not meet requirements due to significant shortcomings	< 60% of all points of the maximum achievable performance were attained

When assessment of a subject is composed of multiple exams, the final calculation of the grade is published in the PO (see Table 8.1).

8.2.3 Description of the processes for providing to students a feedback post-assessment and guidance for requested improvement

Progress Test

According to Assessment Regulation in accordance with TAppV (see 8.13), exams take place in the lecture-free period of each semester. However, VEE has made considerable effort to give students the possibility to check their competences before assessments at the end of a study year. One important tool is the Progress Test Tiermedizin (PTT), a tool for students to receive feedback on knowledge for their individual learning strategy. The PTT has been offered to students in Hannover since 2013 due to the common initiative of all German-speaking VEEs. The participation is voluntary, but between 500 to 700 students take part in each test.

The content of PTT is referring to D1C as defined in 2012 and consists of 136 multiple-choice questions covering 34 subjects in undergraduate education.

Students who take part several times get information about their improvement in relation to former participation. As part of the VetRepos project (2020-2023), students are also able to take part in trial tests with items for an item bank for linear and adaptive progress tests. After participating, they received feedback on their results.

Other measures or after assessment feedback

Other feedback measures are formative examinations, for example oral or written pre- and post-tests. Regular and successful participation forms a prerequisite for admission to the state examinations (PO section 4). Students also receive feedback after the E-OSCEs in the CSL or when working on E-Learning modules in CASUS or Moodle. Furthermore, discussions and reviews with lecturers, for example in the case of report writing, encourage students to reflect their learning strategy. After oral exams students receive immediate feedback from examiners, which is noticed in an examination protocol. After written exams, students have the possibility to access their evaluated examination documents and can complain and discuss it in the online platform. Feedback from teachers is documented in the platform.

8.2.4 Description of the appeal processes against assessment outcomes

Retakes of examination in case of failing

In general, a maximum of two retakes of an examination is allowed (PO Section 10, according to TAppV). For the second and final retake of undergraduate veterinary exams, the attendance of the chairperson of the respective Examination Committee or of the appointed representative is mandatory. On demand of students, these regulations can also apply for the first retake. Students have to pass the examinations within a certain time, which can be extended upon student request.

Appealing

According to PO Section 13(3) and Section 18(5), any student has the right to peruse the complete examination documents and to file a protest against the decision of examiners. The appropriate Examinations Committee handles the appeal and makes a final decision. An appeal to court in case of continuous disagreement is possible.

Standard 8.3: Process to review assessment outcomes

8.3.1 Description of how (procedures) and by whom (description of the committee structure) the students' assessment strategy is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Quality assurance of assessments is described in PO section 25.

The Examination Office in the DSAA shall compile an overview of the grade distribution in the individual examinations once per year for the Examination Committee. For written and practical examinations, item analyses, grade distributions and examination records may also be analysed in the context of quality management with the aim of improving future examinations.

Fig 8.3 shows the cycle of quality improvement of assessments. A detailed evaluation of the e-examinations is available.

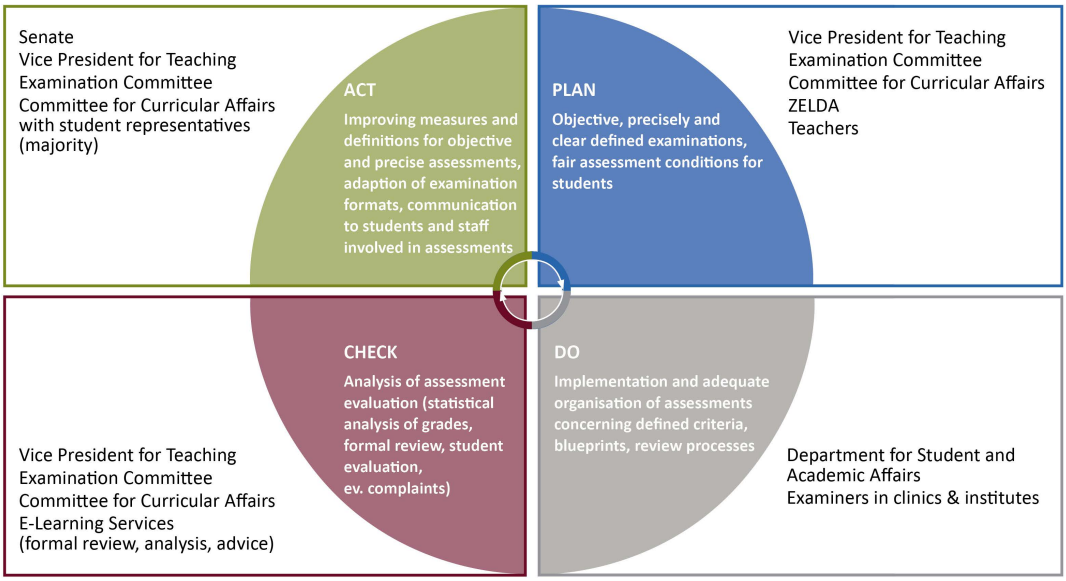

Fig. 8.3: PDCA cycle of quality assurance of assessments

8.3.2 Description of the link between learning outcomes and assessment design

Clinics and institutes define learning outcomes for all courses offered as part of the catalogue of learning objectives. In the TAppV, mandatory practical parts of examinations are laid out. Those responsible for the examinations determine the examination format that is considered appropriate for evaluating whether the learning objectives have been achieved. Blueprints and rules for oral, practical and written examinations ensure that the amount and intensity of the teaching content is reflected in the examinations. For written and electronic examinations, two-dimensional blueprints are created by the examination coordinators or by a group of examiners of the institution based on the specified learning outcomes determining the examination content. The procedure ensures that the exams cover all learning outcomes and the subject content and are structured comparably from year to year. For oral and practical examinations, the examiners prepare topics and corresponding assessment sheets and criteria. The process is shown in Fig. 8.3.

Standard 8.4: Assessment Strategies for Certifying

8.4.1 Description of the system to certify student achievement of learning outcomes in the different subjects, years of study, etc.

The results of written examinations are made available by the Examinations Office (in DSAA) within 21 days on a password-protected platform, which can be accessed individually by each student. Examination results of oral examinations are announced to the student directly after the examination. All examination results are recorded in a web-based campus management system (His-in-One) and can be viewed by students via the password-protected platform.
The Examinations Office checks whether all examinations to be taken for the next stage of study have been passed before the student is admitted to the following semester. It is explicitly described in the Study Regulations, which pre-requisites are necessary to pass a study year. This regulation is processed according to TAppV and the PDCA cycle (Fig. 8.3). During the whole study course, especially for practicals, pre- or post attestations, report-writing or homework are mandatory pre-requisites to enter state examinations.

8.4.2 Description of the strategy to encourage students to take an active part in the learning process

Students evaluate the courses every six months and thus actively provide feedback and identify topics with open questions. Students are actively involved in all committees, especially in the Committee for Curricular Affairs, and take part in curriculum development. Interactive and self-directed learning classes, report writing are in place as already described and students are involved as peer teachers in practicals, in the CSL or in workplace learning. Peers are trained in specific introductory courses and the train-the-teacher Moodle course. In addition, students are given the opportunity to work in a problem-oriented fashion on a specific subject or a patient in groups or individually, to prepare presentation and to join evidence-based discussions.

Standard 8.5: Methods of Assessment of Clinical Skills and Day One Competences (D1C)

8.5.1 Description of the assessment methodology to ensure that every graduate has achieved the minimum level of competence, as described in the ESEVT D1C (see Annex 2)

The general VEE assessment strategy is described in 8.1.1. The regulations ensure that students have to pass examinations before continuing a course of study. If examinations are not passed, the student has to repeat that particular examination in the following semester. Registrations for the Second Preclinical Examination have to be received at the latest 1.5 years after passing the First Preclinical Examination. Exceptions to the rule have to be submitted by the student to the respective Examination Committee. VEE has no influence on this procedure due to TAppV, but the rule ensures that only student with the required knowledge and competence will reach the next step in the study programme. Examination formats are adopted to ensure that ESEVT D1C are achieved. All required competences are taught and examined as outlined in the appendix, table 1.32.2.
All students have to perform surgical skills (surgical logbook) during the core curriculum in the CSL before entering the PY. In the preclinical phase, students must successfully complete six courses on general surgical skills (e.g., instrument knowledge, knotting and suturing techniques) within two years in order to be admitted to the state examinations. In the clinical section, students must complete seven courses on special surgical skills in the CSL (e.g., anesthesia management, intubation, castration, perineural anesthesia). Successful participation is then certified online. Every student has to keep the “patient tracking documentation” and upload it on a Moodle course for controls of the respective clinics to ensure they had access to a variety of patients (see logbooks).
Teachers have the obligation to formulate the learning goals of the topics in the catalogue of learning goals (“Lernzielkatalog”), which are integrated into assessments. The learning goals according to TAppV and EAEVE D1C are updated on a regular basis. All students have access to this catalogue published in the intranet (catalogue of learning objectives see download link).

Comments on Area 8 - Student assessment

- The electronic examinations introduced in 2008 were extensively evaluated including in a doctoral thesis, particularly regarding different QA indices for exams.
- We adjusted the number of items in electronic examinations at TiHo as a result of these analyses (see Appendix chapter 1.8., Tab. 1.8.1).
- Examination Coordinators are given individual advice regarding quality criteria and potential measures to enhance the quality of assessment.
- Examination Regulations are continuously adapted to the requirements of quality improvement in the examinations.
- A software change for the "Progress Test Veterinary Medicine" has been prepared and will take place in 2024.

- Regular training for teaching staff regarding high quality assessment methods is conducted by the E-Learning Service.

Suggestions for improvement on Area 8

- E-OSCEs were tested as formative assessment and are currently being evaluated for summative assessment (propaedeutics, decision of the expert committee clinics) for introduction into the PDCA process.
- The individual progress test evaluations for students will be improved with a software change.

Area 9: Teaching and support staff

Standard 9.1: Qualified staff, national and EU regulations and teacher training programme

9.1.1 Description of the global strategy in order to ensure that all requested competences for the veterinary programme are covered and that staff are properly qualified and prepared for their roles (e.g. good teaching and assessing practices, knowledge of up-to-date (e-)learning resources, biosecurity and QA procedures, …)

Staff selection follows a structured procedure: The appointment procedure of professors follows the Guideline for Appointment and is discussed in the University Developmental Committee. In this committee, teaching and research aspects are covered, student representatives are involved. After formulation of a profile paper for professorial positions, which considers the objective agreement with state government and the strategic plans of VEE, the requested competences in research, teaching and other requested areas of competence are published. The Search Committee, the Senate and the Executive Board select the most suitable person for the vacancy. The final and formal decision on appointment is taken by the Board of Trustees.
The appointment procedure for non-professorial staff is the task of the heads of institutes or clinics. They formulate the profile and are responsible for the advertisement and selection whilst paying attention to the necessary qualifications and experience of applicants. After selection, the Department Human Resources is responsible for the employment contracts. All the necessary steps from advertising until employment are described in the guideline selection and recruiting of Department Human Resources, which is communicated per intranet.
Teaching staff has to fulfill the requirements for didactic education (see 9.2.2.) and receives the necessary VEE-specific information, which prepares and accompanies staff.

Standard 9.2: Number, Qualifications and Skills of Staff

Table 9.2.1. Teaching staff involved with the core veterinary programme *

Type of contract	2023	2022	2021	Mean
Permanent (FTE, budgeted)	193	190	187	190
Temporary (FTE, non-budgeted, clinical income)	65	58	47	57
Temporary (FTE, non-budgeted, research grants)	165	173	164	167
PhD students (FTE, budgeted)	74	80	56	70
PhD students (FTE, non-budgeted)	63	73	77	71
Total (FTE budgeted)	267	270	243	260
Total (FTE, unbudgeted)	293	304	288	295
Interns (FTE) (see Tab. 10.3.1.)	26	24	22	24
Residents (see Tab. 10.3.1.)	66	59	52	59
Practitioners (FTE)	n.a.	n.a	n.a	n.a

* All staff included in this table must be contracted by the VEE and have received a training to teach and to assess undergraduate students. Qualified persons/practitioners involved with EPT are not included in this table.
An overview of the teaching staff (FTE) per unit is shown in Tab. 9.1 in the Appendix.

Table 9.2.2. Percentage (%) of veterinarians in academic staff

Type of contract	2023	2022	2021	Mean
Permanent (FTE, budgeted)	73	74	74	74
Temporary (FTE) (non-budgeted)	64	62	59	62
Total (FTE)	68	68	66	67

Table 9.2.3. Support staff of the veterinary programme

Type of contract	2023	2022	2021	Mean
Permanent (FTE, budgeted)	273	274	279	275
Temporary (FTE, non-budgeted)	107	97	84	96
Total (FTE)	379	371	363	371

Table 9.2.4. Research staff of the Establishment

Type of contract	2023	2022	2021	Mean
Permanent (FTE, budgeted)	There are no budget posts solely for research!			
Temporary (FTE, non-budgeted)				

9.2.1 Prospected number of FTE teaching and support staff of the veterinary programme for the next 3 academic years

In 2024, the latest version of the Contract for University Development was signed by the state government and all universities of Lower Saxony. This agreement ensures the financial resources for universities and their budget for staff until the end of the year 2029. Therefore, we expect the same FTE (budgeted posts) for academic and support staff in the next three years.

9.2.2 Description of the formal programme for the selection and recruitment of the teaching staff and their training to teach and assess students (including continuing education)

Selection, recruitment

The appointment procedure of professors is based on Lower Saxony University Law (NHG) and follows the VEE Guideline for Appointment. The selection and recruiting of scientific staff results from a mixture of the local activities of institutes or clinics and the central processing of administration, described in a guideline of Department Human Resources (see 9.1.1.)

Training to teach and assess students

Overall, courses are offered to fulfill the requirements and themes for didactic training in accordance with the current SOP. In addition, a course called “professional teaching” encompassing 200 hours is provided. It is essential for academic staff to receive training for at least 24 h in teaching and assessment of students, an overview is given:

Table 9.2.5 Overview: Teacher Training by VEE

Training measures	EPT providers (≥4 h)	support staff involved with teaching (≥4 h)	non-academic staff (≥16 h) [4 h to 24 h intern re-quirements]	academic staff (≥24 h)
Professional teaching course certificate (200 h, 1.5 years), specially for young or new academic teaching staff			x	x
Internal didactics training in Moodle for academic teaching staff			x	x
Didactics training in Moodle for veterinarians, incl. veterinarians/EPT providers for extramural training	x			
Internal didactics training in Moodle for support staff		x		
Internal didactics training in Moodle for veterinary students (non-academic staff, peers)			x	
Weekly VEE online lunchtime seminars			x	x
Education conferences			x	x
Didactics events for EPT providers at conferences (bpt, DVG)	x		x	x

Further education and training in the context of didactics (e.g., workshops, individual training courses)			x	X
Tutor training for students (physical or E-Learning)			x	
Electives, e.g., communication, learning to learn, E-Learning			x	
Introductory events for auxiliary staff e.g., in the CSL, clinics and institutes			x	
Inter-professional team communication for veterinary practice		x	x	
Inter-university continuing education (alliance of 20 universities in Lower Saxony)			x	X
Courses as part of third-party funded projects			x	X

If newly appointed staff have no or little experience, VEE offers a long-term in-house training "Professional Teaching", which is offered over three semesters (200 hours) with a certificate. The programme is made up of ten one-day seminar modules on the most important themes from the field of university didactics. Furthermore, the programme encourages the participants to apply what they have learned in their teaching practice. They are supported in this by regular and continuous coaching sessions under professional supervision.
After finishing the course, the participants meet four times per year (16 h) in so called "Expert Groups" led by professional coaches, for refreshing and exchanging their experiences with the newly acquired didactic skills.
The E-Learning Service offers various trainings to improve teaching skills and provides a service for teaching staff to provide certificates of qualification.

9.2.3 Description of the formal programme for the selection, recruitment and training to perform their specific duties (including continuing education) of the support staff

Selection and recruiting
Selection and recruiting of support staff is similar to that for scientific staff and described in guidelines of the Departement Human Resources (see 9.1.1.)
Training and continuing education
The heads of clinics/institutes formulate the necessary qualifications for the planned positions. The heads of clinics/institutes are tasked with reviewing the necessary skills for the different jobs. If missing skills are recognised, e.g., due to new technologies, institutes, clinics and the unit for personnel development (central administration) offer special training sessions or suitable seminars. Furthermore, staff in laboratories and animal care are instructed at regular intervals on important topics of biosecurity and animal handling. General seminars are offered by the central administration, such as seminars about First Aid, waste in laboratories or training in standard computer software, or English language classes. Furthermore, VEE is a member of a consortium for training and seminars, especially designed for university employees, and offers seminars on administration and management. A week of "biosecurity" is offered at the RIZ. Support staff involved in teaching needs to complete a basic didactic course of 4 hours, support staff involved in animal experiments is required to document continuing education.

9.2.4 Description of the formal rules governing outside work, including consultation and private practice, by staff working at the VEE

VEE employees may engage in outside business activities, which is regulated by law. Such activities (e.g., consulting, practice, etc.) is permitted for a defined time, unless there is a conflict of interest. Before starting any outside activity, academic and support staff have to formally notify in writing the President of VEE. In any case of a conflict of interest, VEE is entitled to prevent staff from carrying out outside activities.
For the heads of clinics, there is the possibility to enter into a special agreement (so-called "Chefarztvertrag"), which defines profit sharing for the professor.

Standard 9.3: Staff Development, Recognition of Didactic Expertise, Supportive Work Environment

Since 2022, VEE has awarded annually a teaching prize. The award winners are chosen by the students. With this award, VEE recognises the performance of lecturers for their outstanding commitment to teaching veterinary medicine. The prize money is invested in the design of new teaching programmes at the institute or clinic. Two VEE professors were being awarded the teacher of the year prize from UNICUM (a german society, students from the whole country propose their preferred lecturer, specialists select the winner).

9.3.1 Description of the peculiarities of the work contract for teaching staff (e.g. permanent versus temporary, balance between teaching, research and services, continuing education,...)

There are no staff positions solely for teaching or research. Instead, all budgeted academic staff are required to spend their working time for teaching and research. The Teaching Obligation Regulation of Lower Saxony (LVVO) requires a teaching load of 9 hours per semester week for professors, 10 hours for permanent scientific staff and 4 hours for temporary scientific staff. Seminars and group work are calculated at a 50% rate and 30% is deducted for service (medical care and diagnostics).
The semesters amount to 28 weeks of teaching per year (14 weeks in the winter semester and 14 in the summer semester). Academic staff funded by extramural grants are not considered in the capacity calculation.
Neither the Institute for Zoology nor the Institute for Animal Ecology and Cell Biology are listed here, since their teaching obligations are included under the Biology BSc programme.

Standard 9.4: Professional Growth and Development of Teaching and Support Staff

9.4.1 Description of the programmes dedicated to teaching and support staff for:-) their professional growth and development -) the appraisal and promotion procedures -) the mentoring and supporting procedures -) their implication in the decision-making processes

The general procedure of appraisal, development, supporting and mentoring of both academic and support staff is carried out on an individual basis within institues and clinics. The heads of institutes and clinics together with their staff are specialists in their working field with the necessary skills. In individual meetings, the current and future needs for each individual are defined and a course of action is agreed upon. Academic staff are especially encouraged and supported to obtain residency training of the European Colleges or training for the national board-certified veterinary specialists. Interns are supported by a tutor system.
The support of female scientists is important not only to the VEE but also enjoys broad political support. For female academic staff pursuing a career as professors, VEE offers possibilities for special training, e.g., mentoring, coaching or financial support to visit scientific meetings. Furthermore, female scientists who are in the final stage of their postgraduate training (Habilitation) can get relief from routine duties by hiring temporary replacements, which will free time to facilitate finishing a thesis or submitting publications.
VEE provides an annual budget to the Equal Opportunities Office and also follows the political goals of the “Dialog Initiative for Equal Opportunities and Quality Management” of the Government of Lower Saxony with all its constituent universities. The activities relating to equality and diversity are summarised’in VEE's Gender equality Plan.
Furthermore, there are specific internal and external networks, which offer specialised training and exchange of information (e. g. meetings of heads of administration units of all universities in Lower Saxony). The Employee committee also represents the employees. One of the most important tasks of the Employee committee is to monitor laws, staff recruitement, collective agreements, service agreements and other provisions that grant employees rights.

Standard 9.5: Assessment of Teaching and Teaching Staff

9.5.1 Description of the formal system in place for assessing the teachers by the students

The assessment of teaching quality by students follows the internal Regulation of Evaluation (see Appendix 1.3.1.4) according to the requirements given in the Lower Saxony University Law. In the VEE, two questionnaires are distributed to students via the intranet: one concerning the general teaching environment and the other concerning individual teachers and subjects. The questionnaires were designed by the Committee for Curricular Affairs, prepared by a small working group consisting mainly of students with the help of academic staff. The questionnaires were discussed and confirmed by the Senate and Executive Board. In order to enforce the process the students are obliged to evaluate at least 5 courses before they can register online for electives.
The teachers are informed personally about their individual results. After the Vice President for Teaching gets the individual and overall comments, correction measures are derived from the students` feedback. The results concerning the general teaching climate are published in the Report of the Executive Board and in the Teaching Report. Likewise, the measures and improvements, based on the evaluations, are presented. In addition an external evaluation systems of students is taken into account (see studycheck.de).

9.5.2 Description of how (procedures) and by whom (description of the committee structure) the strategy for allocating, recruiting, promoting, supporting and assessing teaching and support staff is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Once a year, the Board of Trustees decides on the staffing plan with the budgeted posts as part of the business plan. Approval of the Board of Trustees is required when changes to the staffing plan are made. Cost-neutral changes in posts in facilities can be made by the Executive Board during a current business year. The staffing plan contains an overview of the distribution of positions to individual institutes and clinics.
The allocation of staff reflects the teaching load and is relatively constant due to the predictability of teaching duties. Teaching staff are supported by students to enhance small group and peer teaching. The Executive Board can decide for additional posts in emergency cases such as illness or pregnancy. At all steps of decision and implementation in personnel matters, the Employee Committee and the Equal Opportunity Committee are involved.

Comments on Area 9 - Teaching and support staff

- The student/teacher ratio follows legal guidelines and is calculated by the Teaching Capacity Regulation of Lower Saxony KapVO onto which TiHo cannot exert influence
- Small group and peer teaching are supported by additional non-budgeted staff and peer mentors and are partly financed by our budget for enhancing study quality (SQM)
- Staff are employed for organisation and administration

Table 9.2.5 Student assistants (undergraduate)

Type of contract students assisstants (undergraduate)	2023	2022	2021	Mean
Temporary (FTE, budgeted),	25.1	26.21	20.34	23.88
Temporary (FTE, budget for enhancing study quality)	11.47	9.88	9.77	10.37
Temporary (FTE, non-budgeted research grants)	10.91	8.31	7.7	8.97
Temporary (FTE, non-budgeted, clinical income)	11.17	13.40	7.68	10.75
Total (FTE)	58.65	57.80	45.49	53.98

Table 9.2.6 Non-Academic assistants (graduate, with special tariff)

Type of contract research assistants (graduate)	2023	2022	2021	Mean
Temporary (FTE, budgeted),	2.81	3.61	6.08	4.17
Temporary (FTE, budget for enhancing study quality)	15.22	13.58	15.1	14.63
Temporary (FTE, non-budgeted research grants)	5.23	6.08	6.58	5.96
Temporary (FTE, non-budgeted, clinical income)	16.8	9.89	7.92	11.54
Total (FTE)	40.06	33.16	35.68	36.30

Suggestions for improvement on Area 9

- Our coaching system will be enhanced to help keep young talent interested in an academic career.
- Hiring of international faculty and postdocs should be facilitated and made possible by expansion of the International Office (see Area 1)
- VEE will expand its facilities for teaching and learning to provide comfortable learning environment for students and staff (see Area 1).
- Collaboration with other German VEEs on a joint didactic course for development of teaching and support staff.

Area 10: Research programmes, continuing and postgraduate education

Standard 10.1: Research Activities and Implication of Teaching Staff

10.1.1 Description of how the research activities of the VEE and the implication of most teaching staff in it contribute to research-based veterinary education

Based on published literature, undergraduate teaching is regularly updated, and results of external and VEE research are transferred into lectures, clinical trainings, electives and clinical rotations. The combined presentation and discussion of actual external and internal research topics ensures an up-to-date state of knowledge of our undergraduate students. Students are encouraged to take part in journal clubs, research student assistants are hired, and VEE is part of several international exchange research programmes. Highly motivated students with an interest in research are selected after their application to participate in these programmes with cooperating international Universities.
During the PY or elective period, students have opportunities to choose places where they will run their own small research project. The undergraduate students will be immersed in research activities featuring laboratory and/or desk-based science.
Table 10.1.1 shows the research activities of the teaching staff of VEE in 2023

Table 10.1.1. List of the major funded research programmes in 2023

Every year, VEE publishes the list of funded research projects with information about units, research topics, duration and amount of grants and funders. You can find this information on:
a) Funded research projects in 2023 (147 projects, in total 45 Mio EUR)
b) in the online database of research projects

Standard 10.2: Training in scientific methods and research techniques

10.2.1 Description of how (undergraduate) students: -) are made aware of the importance of evidence-based medicine, scientific research and lifelong learning; -) are initiated into bibliographic search, scientific methods and research techniques, and the writing of scientific papers

Evidence-based medicine, scientific research and lifelong learning
Students are made aware of EBVM, Good Scientific Practice (Guidelines to Safeguard Good Scientific Practice), professional and ethical topics by highlighting relevant clinical examples, but also during seminars as part of mandatory elective courses and Journal Clubs. A mandatory core subject is biostatistics. In seminars, undergraduate students are requested to catch up on current topics of relevant research by bibliographic search. Thus, the courses provide students with basic knowledge on scholarly methods and make them aware of important research questions.
In courses of institutes/clinics methods of EBVM are explained. For instance, quality schemes, narratives, systematic reviews, meta-analyses and pooled analyses; standard operating procedures (SOP); clinical and epidemiological studies; principles of meta-analyses are trained. Case descriptions are integrated in lectures in association with new publications in the field; POL (problem-orientated learning) cases for students in the PY and the possibility of access to current literature are provided. In preclinical subjects, such as botany, published case reports are discussed during lectures or seminars. In some first-year courses students learn and practice scientific thinking, which is also tested during exams.
The E-Learning Service offers the elective courses “Introduction to Open Educational Resources” and “Learning to Learn” in Moodle. Students are invited for seminars or events on educational research (example ZELDA Symposium 2023).
The duty to lifelong learning is visible for all students, since VEE offers many courses in continuous education, where students are invited to participate and are often involved in the organisation. In Germany, all veterinarians are legally obligated to lifelong learning and have

to complete at least 20 hours annually (Veterinary Medicine'Association's professional code of conduct of Lower Saxony, §7). Most of the graduated veterinarians, however, have higher ambition and will receive a doctorate, PhD, European Diplomate or a national specialist title.

Bibliographic search, scientific methods and research techniques, and the writing of scientific papers

Online tutorials (e.g., YouTube OPAC and VetSearch), elective seminars and self-learning units (CASUS) give an introduction to "where, how and what to search", teach the features of search engines, different kinds of databases, catalogues and discovery systems and the elaboration of effective search strategies. This is followed by the seminar "Information acquisition and utilisation" during the PY. A workshop on bibliographic database management teaches students the effective management of bibliographic data, the retrieval and display of data, and the requirements of publishers when submitting a paper. A seminar on research data management introduces into structured and sustainable handling of scientific data sets, into research data management and Open Science (see https://www.-hannover.de/en/university/library/library/courses).

In the veterinary medicine study programme, there is no graduate (Master's) thesis (see TAppV). Every student, however, prepares multiple case reports and in the PY they give a scientific report and/or presentation about an actual disease, health problem or clinical patient or on base of a literature project. Support service see https://www.tiho-hannover.de/en/university/library/library/writing-and-publishing/advice-and-contact-info

10.2.2 Description of how undergraduate students are offered to participate in research programmes on a non-compulsory or compulsory basis

In their last year of study, undergraduate students have the opportunity to perform a specific research practical of 10 -14 weeks duration (research traineeship during the PY). Students work on their own research project, which commonly is part of a larger scientific project. The obtained scientific results can be used as part of a doctoral thesis as postgraduate student. A doctoral thesis (Dr. med. vet. and/or PhD) is performed by about 75% of the graduates.

For many research programmes, there are announcements for undergraduate student research assistants. Such positions offer excellent possibilities to get first-hand experiences in research processes. Undergraduate students are invited to take part at scientific meetings and presentations of doctorate and PhD-students at VEE.

There is regular information on summer schools advertised by VEE or different universities at an international level (e.g., French-German Summer school, Boehringer Ingelheim Veterinary Scholarship Programme (BIVSP) and The Leadership Programme for Veterinary Students at Cornell University). Students with excellent grades apply for this programmes and are chosen by the Executive Board.

10.2.3 Description of the minimum requirements for the graduation thesis (Master dissertation), its supervision and its assessment

Not applicable in Germany for the degree programme Veterinary Medicine according to TAppV. However, a large proportion of students will make a doctoral thesis. To achieve the minimum requirements students have to write or present their small projects as described in the chapters 10.2.1 and 10.2.2 and VEE offers a variety of scientific training courses. For writing a doctoral thesis a supervision agreement including the project description has to be signed by the candidate and at least two supervisors, which is controlled by a doctoral committee. The written thesis is accepted, when two independent faculty members have assessed the thesis, submitted their reviews and an oral defence was positively evaluated.

Standard 10.3: Postgraduate Degree programmes

Table 10.3.1. Number of students registered at postgraduate clinical training

European Diplomate offered at VEE see

https://www.-hannover.de/en/studium-lehre/weiterbildung-in-der-tiermedizin/training-diplomate

Residents at VEE for the title of European Diplomates	2023	2022	2021	Mean
ECAR	2	3	4	3
ECBHM	0	0	0	0
ECPHM	1	1		1
ECPVS	0	0	0	0
ECSRHM	2	1	1	1
ECVP	17	19	13	16
ECVPH	0	1	1	1
ECVPT	1	1	1	1
ECZM WPH	1	0	0	0
ECEIM	4	3	3	3
ECVS	7	5	5	6
ECVAA	6	5	4	5
ECVDI (alternative programme)	4	2	2	3
ECVN	7	7	6	7
ECVIM-CA	4	3	3	3
ECVO	2	2	2	2
ECVD	2	1	1	1
ECVIM-SC	1			1
EVDC	1	1	1	1
ECVECC	1	1	1	1
ECVSMR	1	1	1	1
EVPC	0	0	1	0
ECAAH	2	2	2	2
ECZM	0	0	0	0
Total residents	66	59	52	59
Interns (FTE)	26	24	22	24
“Fachtierarzt” (in Ausbildung) National Specialist for (in training)	2023	2022	2021	Mean
Anatomy	2	1	1	1
Animal Hygiene	4	3	4	4
Animal Nutrition	4	7	8	6
Animal Welfare	3	3	5	4
Birds	5	5	5	5
Cattle	9	11	12	11
Veterinary herd management and quality assurance –on the farm - Cattle	3	2	1	2
Small Animals	20	18	17	18
Epidemiology	8	10	11	10
Equine	5	10	15	10
Equine Reproduction	0	0	0	0
Fish	4	4	4	4
Food Hygiene, Milk Hygiene	8	12	15	12
Information technology	1			1
Laboratory Animal Sciences	0	0	0	0
Laboratory Diagnostic	4	4	3	4
Microbiology	1	1	2	1
Microbiology	4	3	4	4
Parasitology	8	6	10	8
Molecular Genetics and Gene Technology		1	1	1
Pathology	1	1	1	1
Pharmacology and Toxicology	20	19	16	18
Porcine Reproduction	0	0	0	0
Poultry	3	3	3	3

Reptiles & Amphibians	1	1	1	
Reproduction	4	4	5	4
Small Animal Reproduction	3	5	3	4
Small mammals	9	8	8	8
Small Ruminants	5	4	4	4
Swine	5	5	5	5
Virology	3	4	4	4
Wildlife and Species Protection	10	10	9	10
Total	**155**	**164**	**176**	**165**

Table 10.3.2. Number of students registered at postgraduate research training

Programme	2023	2022	2021	Mean
PhD-Programme: Veterinary Research and Animal Biology	28	35	36	33
PhD-Programme: Systems Neurosciences	74	77	76	76
PhD-Programme Animal and Zoonotic Infections"	50	61	50	54
Dr. med. vet. (see chapter 7)	544	556	569	556
Dr. rer. nat.	28	27	27	27
Total	724	756	758	746

Table 10.3.3. Number of students registered at other postgraduate programmes (including any external/distance learning courses)

TiHo established in 2020 a new coordination centre for part-time training courses in veterinary medicine (BEST-VET). The target groups are working veterinarians, those re-entering the profession and veterinarians with family responsibilities. The offer should make possible a visible qualification via individual certificates or obtaining an M.Sc. degree in "Veterinary Public Health" or "Laboratory Animal Science". This programme was accredited in 2021.

Programme	2023	2022	2021	Mean
BestVet	43	44	51	46
Total	43	44	51	46

Table 10.3.4. Number of attendees to continuing education courses provided by the Establishment

Notice: The data are derived from the documentation of central event management, number of attendees are the mean of min. and max. of in advance estimated number of participants.

Unit	2023	2022	2021	Mean
Small Animal Clinic	500	500	500	500
Clinic for Horses	471	521	491	494
Clinic for Cattle	23	90	0	38
Clinic for Pigs, Small Ruminants and Forensic Medicine	135			135
Unit of Reproductive Medicine of the Clinics	281	54	41	125
Institute for General Radiology and Medical Physics	2	2	2	2
Institute for Biometry, Epidemiology and Information Processing	87	489	0	192
Institute for Biochemistry	40	15	15	23
Institute for Terrestrial and Aquatic Wildlife Research	30	30	30	30
Field Station for Epidemiology in Bakum	45		60	53
Institute for Animal Genomics	0	5	7	4
Institute for Animal Nutrition	0	0	68	23
E-Learning, Clinical Skills Lab	60			20
Library	129	166	150	148
Total	**1303**	**1372**	**864**	**1180**

10.3.1 Prospected number of students registered at post-graduate programmes for the next 3 academic years

VEE offers the following postgraduate doctoral programmes:

- Dr. med. vet.: about 75% of graduates in veterinary medicine continue their education in research with a doctoral thesis, which leads to the degree Dr. med.vet.
- Three PhD programmes ("Veterinary Research and Animal Biology", Animal and Zoonotic" Infections", Systems Neuroscience") are offered for graduates who see their future in science and research
- Dr. rer. nat.: this doctoral programme is offered for graduates in biology and other disciplines

VEE expects a prospective number of post-graduate students registered at the same or higher level (see Tab. 10.3.5). VEE is striving to increase the number of funds for PhD programmes and offers information, lectures and "Graduate School Days" to recruit students for the programmes. Professors also directly address highly motivated students for recruitment.

Table 10.3.5 Number of postgraduate students graduating annually

Programme	2023	2022	2021	Mean
PhD –programmes	29	32	34	32
Dr. med. vet.	100	111	121	111
Dr. rer.nat.	4	8	4	5
Total	**133**	**151**	**159**	**15**

10.3.2 Description of how the postgraduate clinical trainings of the VEE contribute to undergraduate veterinary education and how potential conflicts in relation to case management between post- and undergraduate students are avoided

A prerequisite for high-quality teaching of undergraduates is a well-educated academic staff. It is also imperative that the entire academic staff has a high degree of continuous education based on an active participation both in external (national and international congresses, workshops) and internal meetings (seminars, journal clubs, etc.).

Routine clinical work with patients, including patient admission, treatment, diagnostic procedures, as well as for example field case management at field stations for epidemiology and other subjects, are performed by the postgraduate staff, including residents, actively assisted by undergraduate students. Therefore, students during rotations through different specialist disciplines, have the opportunity to interact with owners and assume case responsibility.

The case load in all clinics is sufficiently high for post- and undergraduate training.

To ensure that the basic surgical skills can be acquired by undergraduate students, surgery wet labs are organised (e.g., dentistry), sometimes with purchased animals (e.g., caesarean section, rumenotomy), or continuously housed healthy animals (e.g., rectal palpation skills) and purchased tissues or organs (e.g., dental surgery, castration, orthopaedic surgery, dehorning).

Postgraduate students are invited to participate in all clinical cases attended to by undergraduate students. Vice versa, undergraduate students are invited to get an insight in the practical and experimental work of the postgraduate students. By such an approach, synergy of learning is achieved.

10.3.3 Description of how the continuing education programmes provided by the VEE are matched to the needs of the profession and the community

VEE places high emphasis on offering continuing education at the university. VEE is in constant exchange with practitioners and external experts and involves them as speakers and chairpersons in several continuing educations courses at VEE. VEE staff is also frequently invited to international conferences and seminars. Some of the continuing training takes place in cooperation with the Chamber of Veterinarians of Lower Saxony (TÄK) or with state institutes such as Lower Saxony State Office for Consumer Protection and Food Safety (LAVES) and the training is recognised by Academy for Veterinary Continuing Education (ATF). Furthermore, teachers of VEE are frequent guest speakers at externally organised

continuing professional education (CPE) programmes, e.g., the BpT congress and DVG (German Veterinary Society) meetings. The main areas of CPE involvement are: clinical subjects, veterinary public health, animal welfare, reproduction, infectious diseases. WHO symposium on veterinary public health, poultry specialist talks, current themes of animal welfare and the conference on swine diseases, many of which have been established for decades.
The VEE promotes high quality of continuing education, current themes with up-to-date scientific research findings are combined. The number of veterinarians who participate in further training events at VEE is large. In addition to conferences VEE also offers E-Learning and Blended Learning as continuing education. Several Open Educational Resources (OERs) are published.

Standard 10.4: QAS for Evaluation of Research Activities for Student Training and Staff Promotion

10.4.1 Description of the mechanism used by the VEE to ensure that its research activities contribute to research-based education

For detailed description See 10.1.1, PDCA cycles in area 3 (Fig. 3.4.) and 10.4.2. The vice-president for research as part of the Executive Board is involved in all committees regarding research activites and post-graduation programmes.

10.4.2 Description of how (procedures) and by whom (description of the committee structure) research, continuing and postgraduate education programmes organised by the VEE are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The PhD programmes are organised with the Hannover Graduate School for Neurosciences, Infection Medicine and Veterinary Sciences (HGNI). The objective of the HGNI is to provide outstanding national and international students and young scientists with a structured doctoral programme of guaranteed quality.
The HGNI consists of the following organisational units: General Assembly, Board of Directors, Speaker of the HGNI, Speakers of the three doctoral programmes, doctoral student representatives.
The structured PhD study programme and the doctoral degree as well as the procedures of the individual doctoral programmes are defined in respective guidelines, which are updated whenever necessary.
The programmes Dr. med. vet and Dr. rer. nat. are regularly reviewed by the doctoral committees and adapted to new developments. Students have to undertake obligatory courses (e.g., statistics, scientific writing). The tasks of the committees regulating “Dr. med. vet.” and “Dr. rer. nat.” programmes are the selection of applicants, verifying and controlling their projects (ethical issues, animal welfare, feasibility), supervision and assessment. On admission to the Graduate Programme, each doctoral candidate enters into a supervision agreement with his or her teams of supervisors in which the rights and duties are laid down.
All postgraduate programme committees include professors, academic staff and students from the respective programme as members, so that the interests of all groups are taken into account. Amendments to the doctoral regulations are prepared by the respective committees and approved by the Senate and published on the Internet.

Comments on Area 10 - Research programmes, continuing and postgraduate education

- The TAppV does not require a master’s thesis for our veterinary students. However, highly formalized research projects are performed in postgraduate studies (PhD, Dr. med. vet.).

- To improve the process of learning and developing critical thinking, we offer active participation in research projects to all students.
- Active engagement in learning of critical thinking is provided in numerous obligatory clinical training units.
- VEE supports the European Diplomate system and requires such qualification for new faculty hires.
- VEE offers comprehensive support to teaching staff for regularly attending continuing education course, including master programmes in (veterinary) medical education.

Suggestions for improvement on Area 10

- VEE will further encourage post-graduate students to join our PhD programme instead of Dr. med. vet. by providing stipends
- VEE will implement so-called research integration units (junior groups) to bridge between clinical and basic research
- VEE will offer substantial support to faculty and staff for research projects
- The next generation of teachers will be further encouraged to join VEE`s mentoring programmes that support individual career paths (e.g., encourage “Habilitation”, residencies, internships).

11. ESEVT Indicators

Calculated ESEVT indicators:

Name of the VEE:	University of Veterinary Medicine Hannover, Foundation				
Date of the form filling:	31 July 2024				
Calculated Indicators from raw data		**TiHo values**	**Median values[1]**	**Minimal values[2]**	**Balance[3]**
I1	n° of FTE teaching staff involved in veterinary training / n° of undergraduate students	0,148	0,15	0,13	0,022
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0,783	0,84	0,63	0,153
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1,097	0,88	0,54	0,557
I4	n° of hours of practical (non-clinical) training	1110,000	953,50	700,59	409,410
I5	n° of hours of Core Clinical Training (CCT)	1466,000	941,58	704,80	761,200
I6	n° of hours of VPH (including FSQ) training	287,000	293,50	191,80	95,200
I7	n° of hours of extra-mural practical training in VPH (including FSQ)	250,000	75,00	31,80	218,200
I8	n° of companion animal patients seen intra-murally and extra-murally / n° of students graduating an	110,699	67,37	44,01	66,689
I9	n° of individual ruminants and pig patients seen intra-murally and extra-murally / n° of students grac	69,522	18,75	9,74	59,782
I10	n° of equine patients seen intra-murally and extra-murally / n° of students graduating annually	13,397	5,96	2,15	11,247
I11	n° of rabbit, rodent, bird and exotic seen intra-murally and extra-murally/ n° of students graduating	43,572	3,11	1,16	42,412
I12	n° of visits to ruminant and pig herds / n° of students graduating annually	5,263	1,29	0,54	4,723
I13	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0,100	0,11	0,04	0,055
I14	n° of companion animal necropsies / n° of students graduating annually	1,363	2,11	1,40	-0,037
I15	n° of ruminant and pig necropsies / n° of students graduating annually	4,865	1,36	0,90	3,965
I16	n° of equine necropsies / n° of students graduating annually	0,412	0,18	0,10	0,312
I17	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	2,977	2,65	0,88	2,097
I18	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annual	0,339	0,27	0,06	0,279
I19	n° of PhD graduating annually / n° of students graduating annually	0,588	0,15	0,07	0,518
1	Median values defined by data from VEEs with Accreditation/Approval status in May 2019				
2	Recommended minimal values calculated as the 20th percentile of data from VEEs with Accreditation/Approval status in May 2019				
3	A negative balance indicates that the Indicator is below the recommended minimal value				
*	Indicators used only for statistical purpose				

Comments to indices

We are aware of the somewhat low index in necropsies of small animals (owners are more and more reluctant to donate their animals for necropsies). See Tab. 5.1.6b in the text. Students are taught pathology in addition with organ and biopsy samples to avoid any disadvantage. Such samples numbers are especially high in dogs and cats.

Raw Data for the indicators:

	Name of the VEE:	**University of Veterinary Medicine Hannover, Foundation**				
	Name & mail of the VEE's Head:	**Prof. Dr. Nikolaus Osterrieder, praesident@tiho-hannover.de**				
	Date of the form filling:	**31 July 2024**				
No.	**Raw data from the last 3 complete academic years**	**2023**	**2022**	**2021**	**Mean**	
1	n° of FTE teaching staff involved in veterinary training	258	248	233	246	Tab. 9.2.1, bud.+ clinic income
2	n° of undergraduate students	1.664	1.657	1.667	1.663	Tab. 7.2.2
3	n° of FTE veterinarians involved in veterinary training	207	199	184	197	Tab. 9.2.2
4	n° of students graduating annually	238	250	265	251	Tab. 7.2.3
5	n° of FTE support staff involved in veterinary training	273	274	279	275	Tab. 9.2.3
6	n° of hours of practical (non-clinical) training	1.110	1.110	1.110	1.110	Tab 3.1.1, D+E
7	n° of hours of Core Clinical Training (CCT)	1.466	1.466	1.466	1.466	Tab 3.1.1, F
8	n° of hours of VPH (including FSQ) training	287	287	287	287	Tab 3.1.2, without no 9
9	n° of hours of extra-mural practical training in VPH (including FSQ)	250	250	250	250	Tab 3.5.1
10	n° of companion animal patients seen intra-murally (dogs and cats)	28.040	27.687	27.629	27.785	Tab 5.1.3
11	n° of individual ruminant and pig patients seen intra-murally	1.107	1.239	1.284	1.210	Tab 5.1.3
12	n° of equine patients seen intra-murally	2.914	3.432	3.631	3.326	Tab 5.1.3
13	n° of rabbit, rodent, bird and exotic patients seen intra-murally	11.288	10.993	10.529	10.937	Tab 5.1.3
14	n° of companion animal patients seen extra-murally	0	0	0	0	Tab 5.1.4
15	n° of individual ruminants and pig patients seen extra-murally	16.221	15.972	16.527	16.240	Tab 5.1.4
16	n° of equine patients seen extra-murally	34	24	53	37	Tab 5.1.4
17	n° of rabbit, rodent, bird and exotic patients seen extra-murally	0	0	0	0	Tab 5.1.4
18	n° of visits to ruminant and pig herds	1.319	1.243	1.401	1.321	Tab. 5.1.7.
19	n° of visits to poultry and farmed rabbit units	47	23	5	25	Tab. 5.1.7.
20	n° of companion animal necropsies (dogs and cats)	325	336	365	342	Tab. 5.1.6
21	n° of ruminant and pig necropsies	1.119	1.230	1.314	1.221	Tab. 5.1.6
22	n° of equine necropsies	104	100	106	103	Tab. 5.1.6
23	n° of rabbit, rodent, bird and exotic pet necropsies	762	623	857	747	Tab. 5.1.6
24	n° of FTE specialised veterinarians involved in veterinary training	92	82	81	85	
25	n° of PhD graduating annually	133	151	159	148	Tab. 10.3.5
The boxes within the red frames must be filled in by the VEE (the other values will be automatically calculated)						

Appendix explaining the calculation of the Indicators

All values represent an annual average calculated from the last 3 complete academic years. All values (except I19) concern the training of undergraduate veterinary students.

1	Total number of full-time equivalent (FTE) teaching staff in veterinary training (e.g. 100 persons employed full-time (100%) + 50 persons employed half-time (50%) + 10 persons employed quarter-time (25%) = 127,5 FTEs). Post-graduate students who are registered for a specialised or doctoral degree (i.e. interns, residents, PhD students or equivalent postgraduate students) are not included in these figures unless they are paid and trained to regularly perform structured practical and/or clinical training (for a minimal of 10% and for a maximum of 50% of their annual workload) and are supervised by permanent teaching staff (e.g. 10 residents employed half-time (50%) for clinical training of undergraduate students + 8 PhD students employed quarter-time (25%) for practical training of undergraduate students = 7 FTEs). Researchers, invited speakers, unpaid lecturers and other persons who only occasionally contribute to the training of undergraduate students are not included in these figures but should be reported for information in the SER.
2	Total number of undergraduate veterinary students. These students must be officially registered in the database of the VEE.
3	Total number of FTE veterinarians (DVM or equivalent degree) in veterinary training.
4	Total number of graduate veterinary students. These students must be officially granted the veterinary degree (i.e. at least five years of full-time theoretical and practical study in agreement with the EU Directives) provided by the VEE being evaluated.
5	Total number of FTE support staff involved in veterinary training. Only support staff who are dedicated to administrative, teaching or research tasks related to students and to care of facilities, equipment or animals in the VEE are taken into account in the Indicators.
6*	Total number of hours of supervised practical (non-clinical) training. It includes inter alia laboratory experiments, microscopic examination of histological and pathological specimens, work on documents and idea-formulation without the handling of animals (e.g. assay work, clinical case studies, handling of herd-health monitoring programmes, risk assessment for VPH, computer-aided exercises), work on healthy animals (e.g. physiology, ante mortem inspection), work on cadavers, carcasses and organs (e.g. dissection, post mortem inspection, Food Safety and Quality).
7*	Total number of hours of Core Clinical Training (CCT) under the supervision of teaching staff (this does not include EPT). This training strictly focuses on hands-on procedures by students, which include the relevant diagnostic, preventive and therapeutic activities in the different species. It concerns individual patients, herds and production units and healthy animals in a clinical environment. Propaedeutics, diagnostic necropsies, therapeutic and surgical hands-on activities on cadavers, organs and animal dummies are also classified as clinical training but may not replace the hands-on training on live patients. Simply observing the teacher doing clinical tasks is not considered as clinical training.
8*	Total number of hours of theoretical and practical training in Veterinary Public Health (VPH) (including Food Safety and Quality (FSQ)).
9*	Total number of hours of extra-mural practical training in VPH (including FSQ) (e.g. slaughterhouses, meat inspections, VPH institutes).
10**	Total number of companion animal (dogs and cats) patients seen intra-murally (e.g. at the VTH). Each patient must be officially recorded in the electronic patient record system of the VEE and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
11**	Total number of individual ruminant and pig patients seen intra-murally (e.g. at the VTH). Each patient must be officially recorded in the electronic patient record system of the VEE and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
12**	Total number of equine patients seen intra-murally (e.g. at the VTH). Each patient must be officially recorded in the electronic patient record system of the VEE and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
13**	Total number of rabbit, rodent, bird and exotic pet patients seen intra-murally (e.g. at the VTH). Each patient must be officially recorded in the electronic patient record system of the VEE and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
14**	Total number of companion animal (dogs and cats) patients seen extra-murally (e.g. dispensaries). Each patient must be officially recorded in the electronic patient record system of the VEE and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
15**	Total number of individual ruminant and pig patients seen extra-murally (e.g. ambulatory clinics). Each patient must be officially recorded and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
16**	Total number of equine patients seen extra-murally (e.g. training centres). Each patient must be officially recorded and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
17**	Total number of rabbit, rodent, bird and exotic patients seen extra-murally (e.g. dispensaries). Each patient must be officially recorded and must be individually examined/treated by at least one student under the supervision of at least one member of staff. Patients seen during EPT are not taken into account in the Indicators.
18	Total number of visits to ruminant and pig herds under the close supervision of teaching staff.
19	Total number of visits to poultry and farmed rabbit units under the close supervision of teaching staff.
20	Total number of necropsies carried out on whole carcasses of companion animals (dogs and cats).
21	Total number of necropsies carried out on whole carcasses of ruminants and pigs.
22	Total number of necropsies carried out on whole carcasses of equines.
23	Total number of necropsies carried out on whole carcasses of rabbits, rodents, birds and exotic pets. Necropsies of other animals (e.g. sea mammals, wild animals) must be mentioned in the SER in Table 5.1.6. under 'Others'.
24	Total number of FTE specialised veterinarians in veterinary training. The specialised veterinary status must be officially recognised by the relevant National Accreditation body for national specialisations and/or by the European and/or American Board of Veterinary Specialisation (EBVS/ABVS).
25	Total number of graduate students who are officially granted a third cycle degree (PhD or equivalent doctoral degrees in agreement with the relevant EU directives).
*	The number of hours given in items 6 to 9 must apply to ALL undergraduate veterinary students, independently of electives/tracking. Specific data for each track (i.e. pre-specialisation) may be given in an annex.
**	Each live animal having received a healthcare procedure (e.g. vaccination, diagnostic imaging, surgery) or treated for one specific clinical episode during a year is counted as one single patient, even if it has been examined/treated by several departments/units/clinics (including revisions). Only other visits of the same animal with a different condition would be considered as a different patient in the given year.

12 Glossary and Abbreviations

German - English

German	English	Abbreviation
Abendbehandlung	Clinical evening rounds	
Allgemeine Wahlpflicht	General electives	
Allgemeiner Studierendenausschuss	Student committee	AStA
Ausbildungsvertrag mit Praktikumsgeber	Practical agreement for extramural EPT	
Berufskunde	Professional knowledge	
Berufsordnung der Tierärztekammer Niedersachsen	the Veterinary Medicine'Association's professional code of conduct of Lower Saxonie	
Berufsverband	Professional association	
Berufungskommission	Committee for appointment	
Berufungsleitfaden	Intern guideline for appointment	
Bibliothekskommission	Library committee	
Bundestierärztekammer	Federal German Chamber of Veterinaries	BTÄK
Bundesverband Praktischer Tierärzte	Federal Association of Practicing Veterinarians	BPT
Chirurgisches Logbook	Surgical Logbook	
Curricularnormwert	Curriculum Norm Value	CNW
Deutsche Forschungsgemeinschaft	German Research Foundation	DFG
Dezernat Finanzen	Department Finances	
Dezernat Informations- und Datenverarbeitungsservice	Department Information Technology and Data Processing	IDS
Dezernat Liegenschaften und Technik	Department Real Estates and Facilities	
Dezernat Personal	Department Human Resources	
Dezernat Studentische und Akademische Angelegenheiten	Department for Student and Academic Affairs	DSAA
Dritter Teil des Staatsexamens	Third section of the clinical examination	
Drittmittelstelle	Non-budgeted position	
E-Learning-Beratung	E-Learning Service	
Erprobungsklausel	Trial clause	
Erster Teil des Staatsexamens	First section of the clinical examination	
Fachkommissionen für	Expert Committees for…	
Fachtierarzt	National Board Certified Veterinary Specialist	FTA
Gleichstellungsbeauftragte	Equal Opportunity Officer	
Gleichstellungsbüro	Equal Opportunity Office	
Gremien	Committees	
Hochschule in der Trägerschaft einer rechtsfähigen Stiftung des öffentlichen Rechts	Endowed university within a legally autonomous public foundation	
Hochschulentwicklungskommission	University Developmental Committee	
Hochschulentwicklungsvertrag	Contract for University Development	
Kapazitätsverordnung	Teaching Capacity Regulation of Lower Saxony	KapVO
Klinikum	Clinic complex	

Kommission für Studienqualitätsmittel	Committee for Budget for Enhancing Study Quality	
Kosten-Leistungsrechnung	Cost and management accounting	
Krankenbericht	Case report	
Lehrverpflichtungsverordnung	Teaching Obligation Regulation of Lower Saxony	LVVO
Ministerium für Ernährung, Landwirtschaft und Verbraucherschutz	Ministry of Food, Agriculture and Consumer Protection	
Ministerium für Wissenschaft und Kultur	Ministry of Science and Culture	MWK
Mitlaufquote	Clinical workplace training (small groups, with supervisor)	
Niedersächsisches Gesetz- und Verordnungsblatt	Lower Saxony legislative record	
Niedersächsisches Hochschulgesetz	Lower Saxony University Law	NHG
Niedersächsisches Landesamt für Verbraucherschutz und Lebensmittelsicherheit	Lower Saxony State Office for Consumer Protection and Food Safety	LAVES
Orientierungsmöglichkeit im PJ, entspricht nicht Tracking oder einer Spezialisierung	Orientation phase in the PY, does not mean tracking or specialisation	
Patientennachverfolgung	patient tracking documentation	
Personalrat	Employee committee	
Physikum	Second preclinical examination	
Planstelle	Budgeted position	
Praktisches Jahr	Practical Year	PY
Promotionskommissionen	Doctoral committees	
Promotionsordnung	Rules for obtaining a doctorate	
Prüfungskommission	Examinations Committee	
Prüfungsordnung	Examination Regulations	PO
Querschnittsfächer	Interdisciplinary subjects	
Quote = Klinische Ausbildung am Patienten	Clinical training on patients	
Schwerbehindertenvertreung	Representative for disabled employees	
Spezielle Wahlpflicht	Special electives	
Stiftung für Hochschulzulassung, www.hochschulstart.de	Central allocation office for students (in Dortmund)	SfH
Stiftungsrat	Board of Trustees	
Studienordnung	Study Regulations	
Studienqualitätsmittel	Budget for Enhancing Study Quality	SQM
Studierendenwerk Hannover	Hannover Student Services	
Stundenplankommission	Scheduling Committee	
Tierärztekammer Niedersachsen	Chamber of Veterinaries of Lower Saxony	TÄK
Tierärztliche Approbationsordnung	Ordinance concerning the Certification of Veterinary Surgeons	TAppV
Tierärztliche Hochschule Hannover	University of Veterinary Medicine Hannover	TiHo/ VEE
Tierärztliche Prüfung	Veterinary Clinical Examination	
TiHoStudIS	VEE Students Information System	
Veterinärmedizinischer Fakultätentag	Association of Veterinary Faculties	
Visite	Clinical rounds	

Vizepräsident für Forschung	Vice President for Research	
Vizepräsidentin für Lehre	Vice President for Teaching	
Vorphysikum	First preclinical examination	
Wahlpflichtveranstaltungen	Elective subjects	
Zentrale Studienkommission	Committee for Curricular Affairs	ZSK
Zentrum für E-Learning, Didaktik und Ausbildungsforschung (ZELDA)	Centre for E-Learning, Didactics and Educational Research	ZELDA
Zielvereinbarung mit Land Niedersachsen	Agreement on Objectives	
Zulassungskommission	Committee for Admission	
Zweiter Teil des Staatsexamens	Second section of the clinical examination	

English - German

English	**German**	**Abbreviation**
Agreement on Objectives	Zielvereinbarung mit Land Niedersachsen	
Association of Veterinary Faculties	Veterinärmedizinischer Fakultätentag	
Board of Trustees	Stiftungsrat	
Budget for Enhancing Study Quality	Studienqualitätsmittel	SQM
Budgeted position	Planstelle	
Case report	Krankenbericht	
Central allocation office for students (in Dortmund)	Stiftung für Hochschulzulassung, www.hochschulstart.de	SfH
Centre for E-Learning, Didactics and Educational Research	Zentrum für E-Learning, Didaktik und Ausbildungsforschung (ZELDA)	ZELDA
Chamber of Veterinaries of Lower Saxony	Tierärztekammer Niedersachsen	TÄK
Clinic complex	Klinikum	
Clinical evening rounds	Abendbehandlung	
Clinical rounds	Visite	
Clinical training on patients	Quote = Klinische Ausbildung am Patienten	
Clinical workplace training (small groups, with supervisor)	Mitlaufquote	
Committee for Admission	Zulassungskommission	
Committee for appointment	Berufungskommission	
Committee for Budget for Enhancing Study Quality	Kommission für Studienqualitätsmittel	
Committee for Curricular Affairs	Zentrale Studienkommission	ZSK
Committees	Gremien	
Contract for University Development	Hochschulentwicklungsvertrag	
Cost and management accounting	Kosten-Leistungsrechnung	
Curriculum Norm Value	Curricularnormwert	CNW
Department Finances	Dezernat Finanzen	
Department for Student and Academic Affairs	Dezernat Studentische und Akademische Angelegenheiten	DSAA
Department Human Resources	Dezernat Personal	
Department Information Technology and Data Processing	Dezernat Informations- und Datenverarbeitungsservice	IDS
Department Real Estates and Facilities	Dezernat Liegenschaften und Technik	

Doctoral committees	Promotionskommissionen	
E-Learning Service	E-Learning-Beratung	
Elective subjects	Wahlpflichtveranstaltungen	
Employee committee	Personalrat	
Endowed university within a legally autonomous public foundation	Hochschule in der Trägerschaft einer rechtsfähigen Stiftung des öffentlichen Rechts	
Equal Opportunity Office	Gleichstellungsbüro	
Equal Opportunity Officer	Gleichstellungsbeauftragte	
Examination Regulations	Prüfungsordnung	PO
Examinations Committee	Prüfungskommission	
Expert Committees for…	Fachkommissionen für	
Federal Association of Practicing Veterinarians	Bundesverband Praktischer Tierärzte	BPT
Federal German Chamber of Veterinaries	Bundestierärztekammer	BTÄK
First preclinical examination	Vorphysikum	
First section of the clinical examination	Erster Teil des Staatsexamens	
General electives	Allgemeine Wahlpflicht	
German Research Foundation	Deutsche Forschungsgemeinschaft	DFG
Hannover Student Services	Studierendenwerk Hannover	
Interdisciplinary subjects	Querschnittsfächer	
Intern guideline for appointment	Berufungsleitfaden	
Library committee	Bibliothekskommission	
Lower Saxony legislative record	Niedersächsisches Gesetz- und Verordnungsblatt	
Lower Saxony State Office for Consumer Protection and Food Safety	Niedersächsisches Landesamt für Verbraucherschutz und Lebensmittelsicherheit	LAVES
Lower Saxony University Law	Niedersächsisches Hochschulgesetz	NHG
Ministry of Food, Agriculture and Consumer Protection	Ministerium für Ernährung, Landwirtschaft und Verbraucherschutz	
Ministry of Science and Culture	Ministerium für Wissenschaft und Kultur	MWK
National Board Certified Veterinary Specialist	Fachtierarzt	FTA
Non-budgeted position	Drittmittelstelle	
Ordinance concerning the Certification of Veterinary Surgeons	Tierärztliche Approbationsordnung	TAppV
Orientation phase in the PY, does not mean tracking or specialisation	Orientierungsmöglichkeit im PJ, entspricht nicht Tracking oder einer Spezialisierung	
Patient tracking documentation	Patientennachverfolgung	
Practical agreement for extramural EPT	Ausbildungsvertrag mit Praktikumsgeber	
Practical Year	Praktisches Jahr	PY
Professional association	Berufsverband	
Professional knowledge	Berufskunde	
Representative for disabled employees	Schwerbehindertenvertreung	
Rules for obtaining a doctorate	Promotionsordnung	
Scheduling Committee	Stundenplankommission	
Second preclinical examination	Physikum	
Second section of the clinical examination	Zweiter Teil des Staatsexamens	

Special electives	Spezielle Wahlpflicht	
Student committee	Allgemeiner Studierendenausschuss	AStA
Study Regulations	Studienordnung	
Surgical Logbook	Chirurgisches Logbook	
Teaching Capacity Regulation of Lower Saxony	Kapazitätsverordnung	KapVO
Teaching Obligation Regulation of Lower Saxony	Lehrverpflichtungsverordnung	LVVO
the Veterinary Medicine'Association's professional code of conduct of Lower Saxonie	Berufsordnung der Tierärztekammer Niedersachsen	
Third section of the clinical examination	Dritter Teil des Staatsexamens	
Trial clause	Erprobungsklausel	
University Developmental Committee	Hochschulentwicklungskommission	
University of Veterinary Medicine Hannover	Tierärztliche Hochschule Hannover	TiHo/ VEE
VEE Students Information System	TiHoStudIS	
Veterinary Clinical Examination	Tierärztliche Prüfung	
Vice President for Research	Vizepräsident für Forschung	
Vice President for Teaching	Vizepräsidentin für Lehre	

Abbreviations

Abbreviation	Explanation
CPE	Student committee
ATF	Academy for Veterinary Medical Further Training
CPE	Continuous Professional Education
CSL	Clinical Skills Lab
DFG	German Research Foundation
DSAA	Department for Student and Academic Affairs
EAEVE	European Association of Establishments for Veterinary Education
EBVS	European Board of Veterinary Specialisation
ECTS	European Credit Transfer System
EPT	Elective Practical Training (see SOP)
HEK	University Developmental Committee
KapVO	Teaching Capacity Regulation of Lower Saxony
LAVES	Lower Saxony State Office for Consumer Protection and Food Safety
LVVO	Teaching Obligation Regulation of Lower Saxony
MHH	Medical School Hannover
MWK	Ministry of Science and Culture
NHG	Lower Saxony university law
OER	Open Educational Resources
PY	Practical Year
SER	Self Evaluation Report
SOP	Standard Operating Procedure
TAppV	Ordinance concerning the Certification of Veterinary Surgeons
TiHo (here the VEE)	University of Veterinary Medicine Hannover
VEE	Veterinary Eucation Establishment
VPL	Vice President for Teaching
WHO	World Health Organisation
W-LAN	Wireless Local Area Network
ZELDA	Centre for E-Learning, Didactics and Educational Research
ZSN	Centre for Systems Neuroscience

Downloads and appendix:

General information for the visit and further documents are listed in:

The appendix can be found in the separate volume.