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UNIVERSITÄT
BERN



Universität
Zürich^{UZH}



Vetsuisse Faculty Universities Bern and Zurich

Self-Evaluation Report 2017

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Introduction

Brief history of the Establishment and of its previous ESEVT Visitations

History of the Vetsuisse Faculty

4 Before the creation of the Vetsuisse Faculty, Switzerland had two Veterinary Faculties in Bern and Zurich that were founded in 1900 and 1902, respectively. In early 2003, the Vetsuisse project was officially started, i.e. the merger of the two veterinary faculties of Bern and Zurich to a Vetsuisse Faculty Switzerland. So far, this is still the largest and most important cooperation project in the Swiss higher education system that serves quality assurance in research, teaching, service and the expansion of the international competitiveness of Switzerland in veterinary medicine. In March 2006, the parliaments of the cantons of Bern and Zurich adopted the Vetsuisse Concordat, which provides the legal basis for the Vetsuisse Faculty. The official creation of the Vetsuisse Faculty took place on the 1st September 2006.

Main features of the Establishment

The local level in Bern and Zurich

Both locations remain integral parts of their respective universities and have the same status as all other faculties. This means that they are directly supervised by the rectorate of their respective university, receive their budget from their university and are administrated by their respective university administration.

In Bern, there is a performance agreement between the rectorate and the Vetsuisse Faculty of Bern in which the budget and expected output in teaching, research and service is laid down for a period of 4 years.

In Zurich, a similar system is established, these items are planned according to a four year planning cycle (Mehrjahresplan).

The local governance structures are responsible for all business which is not covered by the Vetsuisse Faculty. In particular, students remain fully integrated in the system of their home university.

Previous ESEVT Visitations

Excerpts from the final report on the visit to the Vetsuisse Faculty (4-11 November) 2007

Suggestions: The only suggestion of the team is that the efforts made to facilitate clinical research be implemented and supported on a long-term basis.

Organization: The merger between the Bern and Zurich faculties started in 2001 and was officially completed by 2006. Reorganization has led to the induction of synergy effects. However, major original goals, i.e. the formation of a common department structure, have not been reached.

Basic subjects and sciences: Chemistry and physics (in Bern and Zurich), and to some extent also biochemistry and physiology (in Bern), are primarily taught by a professorial staff not being part of the veterinary faculty. The teaching of these subjects only in part meets the requirements for veterinary education. This issue should be addressed in order to make these important subjects more veterinary orientated.

In anatomy more emphasis should be given to practical studies and also practical examinations.

The balance is in favour of theoretical work; though still acceptable this should be reconsidered.

Animal production: This subject has a low visibility. It is not taught on its own but is covered as part of other subjects. Most areas are addressed properly. However, there is a lack of practical studies and exposure to hands on animal management and handling. The Bern students also lack exposure to adequate instructions in modern biotechnology of reproduction. The curriculum should be modified accordingly and access to modern farm facilities for teaching purposes with different housing systems for cattle and swine must be secured. This also accounts for poultry diseases. Exposure of students to handling of farm animals should be earlier in the curriculum.

Physical facilities and equipment: In general the physical facilities and equipment are considered as excellent in all areas.

The only three weaknesses are the horse clinic and the laboratory for anatomical work in Bern and the swine

facilities in Zurich. These three facilities must be adapted to modern standards meeting the legal requirements. Another weakness, particularly in Zurich, is the inadequate access to modern farm facilities.

Academic and support staff: Due to the high load of clinical teaching and services, a system to roster blocked time out of clinical duties for younger staff is required if Vetsuisse is to achieve its aims to further increase the output in clinical research.

The faculties should ensure that there are enough tenure track positions for the junior staff to maintain a high quality level of teaching and research.

Summarizing conclusion: Training to a veterinary surgeon at Vetsuisse is on a very high level and shows only few weak areas which should easily be eliminated. Teaching is research based. Research also includes clinical research and is on a very high, international level. There are no category one deficiencies.

Excerpts from the final report on the visit to the Vetsuisse Faculty (20-24 September) 2010

Executive Summary: Concerning all 10 points addressed in this report the visiting team is of the opinion that there are no category 1 or 2 deficiencies.

...

In conclusion unconditional accreditation is suggested by a unanimous vote of the visiting team.

Decision: ECOVE confirmed the suggestion of the experts unanimously and awards full accreditation of Vetsuisse.

Measures taken / projects realized since 2010 site visit

- Complete renovation of the Division of Veterinary Anatomy (laboratory for anatomical work being part of it) including dean's office and lecture hall from February 2010 to June 2011
- Complete reconstruction of Equine Clinic at Bern location: November 2013 to October 2015
- Renovation and extension of the swine facilities in Zurich
- Inauguration of the Agrovet campus for the training of students, education and research in farm animals

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

Night duty – emergency services: the Faculty had to enforce and to comply with the labor legislation in Switzerland. Importantly, this means that clinical personal must not exceed 50 working hours per week.

Consequence: The working schedule of all personnel had to be adapted to this new situation. The Zurich location has implemented changes in the working schedules. The Bern location will have to follow within the next year.

Night and emergency shifts in student training: the weekly working hours of students on mandatory night duty (as laid down in the Studienreglement) exceeded legal limits.

Measures taken: All night and emergency shifts were restructured so that students are not forced to go beyond the hours defined by the Studienreglement (1 ECTS = 30 working hours); for the time exceeding these limits, students are employed by the faculty to cover duties between midnight and morning; these employments are voluntary, and students receive appropriate salaries.

As one consequence, the obligatory time and hence training in night and emergency services is limited, and average exposure of students to these services is reduced.

Version and date of the ESEVT SOP which is valid for the Visitation: "Uppsala" May 2016

Where does Vetsuisse stand?

The Vetsuisse Faculty sees itself among the best veterinary medical and university competence centers in Europe. According to the latest ShanghaiRanking's, i.e. the Global Ranking of Academic Subjects 2017, the Vetsuisse Faculty was rated among the best institutions in Veterinary Sciences worldwide. Among about 4'000 tested institutions, Vetsuisse Zurich ranks number 7, and Vetsuisse Bern ranks number 16. The ranking included criteria such as 1) the number of papers authored by an institution in an academic subject; 2) the percentage of internationally collaborated papers authored by an institution in an academic subject; 3) the number of papers published in top journals in an academic subject; and 4) the total number of the staff on an institution winning a significant award in an academic subject (see <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/veterinary-sciences.html>).

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Objectives and Organisation



1. Objectives and Organisation

1.1. Factual information

1.1.1. Details of the Establishment, i.e. official name, address, phone number, Email and website addresses, Establishment's Head, name and degrees of the person(s) responsible for the professional, ethical, and academic affairs of the VTH, official authority overseeing the Establishment

6 Dean's office of the Vetsuisse Faculty Bern and Zurich

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Dean Prof. Dr. Andreas Zurbriggen

Assistant to the Dean Marlen Tschudin

<http://www.vetsuisse.ch/>

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Dean Prof. Dr. Brigitte von Rechenberg

Assistant to the Dean Silvia Kaufmann

<http://www.vet.uzh.ch/de.html>

Establishment's Head:

Vetsuisse dean Prof. Dr. Andreas Zurbriggen

Name and degrees of the person(s) responsible for the professional affairs:

Vetsuisse Faculty executive board

Ethical affairs :

Vetsuisse Faculty executive board

<http://www.ethik.uzh.ch/de/ethikkommission.html>

<http://www.tierschutz.uzh.ch/de.html>

Bern:

Prof. Dr. Claudia Spadavecchia and Prof. Dr. Heiko Nathues are representatives of the faculty in the commission for animal experiments of the Canton of Bern.

Zurich:

Prof. Dr. Regula Bettschart-Wolfensberger is member of the commission of the Canton of Zurich.

Academic affairs:

Vice dean teaching Zurich location:

Prof. Dr. Thomas A. Lutz (head of the local Zurich curriculum committee and member of the Vetsuisse curriculum committee)

Vice dean teaching Bern location:

Prof. Dr. David Spreng (head of the local Bern curriculum committee and head of the Vetsuisse curriculum committee)

The faculties in Bern and Zurich have student affairs offices that are responsible for the planning and coordination of all teaching related activities, including the detailed time tables for students, organization of examinations, and the information of veterinary students for all aspects of their university life.

Committees concerned with academic affairs:

(all three standing Vetsuisse committees with representatives of all hierarchical levels of the establishment including students)

curriculum committee

research committee

committee for business promotion

Authority overseeing the Establishment:

Vetsuisse council

1.1.2. Summary of the Establishment Strategic Plan with an updated SWOT analysis (Strengths, Weaknesses, Opportunities and Threats), the mission and the objectives

Strategic planning considers Vetsuisse Faculty's mission statement, its visions and objectives, the code of conduct and its teaching philosophy. Mission statement, objectives and the code of conduct have been elaborated by a group representing all categories of staff of both locations. The statement on teaching philosophy as part of the concept for the curriculum 2020 has been passed by the Vetsuisse Faculty assembly in January 2017.

The strategic plan for the coming years is three-fold:

- implementation of a curriculum of 12 semesters (Curriculum 2020) as designed by a task force of the curriculum committee and passed by the deciding bodies of the Vetsuisse Faculty.
- Improve mentoring and support of young academics
- Improve process of promotion and recruitment of academic personnel

Mission: Our Mandate

(http://www.vetsuisse.ch/wp-content/uploads/2011/02/Mission_statement_08_10_23_e1.pdf)

The Vetsuisse Faculty fosters the health and well-being of animals through application of excellent preventive and curative measures, as well as through innovative research and high-quality university instruction. The Vetsuisse Faculty advances quality and safety of products of animal origin in the interest of the health of humans and animals as well as protection of the environment. Furthermore the Vetsuisse Faculty fosters the development of animal models for human disease. Its tasks are:

- research with the goal of gaining scientific knowledge, as well as applying and distributing it
- fostering animal health and improving prevention, diagnosis and treatment of illness
- to prevent the spread of animal illnesses
- to advance the development and research of illness models on animals that are significant for human health
- to convey to students of veterinary medicine and persons in continuing education all necessary scientific fundamentals for the understanding of biological contexts and instruct them excellently in clinical veterinary medicine, in observance of the dignity of animals

In the implementation of these tasks, the existing University and Vetsuisse regulations, organizational and personnel development instruments as well as the Vetsuisse Code of Conduct are to be observed.

Objectives: What are we striving for?

The Vetsuisse Faculty sees itself among the best veterinary medical and university competence centers in Europe. The two locations Bern and Zurich collaborate in particular in teaching but also in research in accordance with the Code of Conduct. The Vetsuisse Faculty offers first-class primary and leading veterinary medical care for Switzerland under consideration of all stakeholders' needs. All preventive, curative as well as research and instruction related measures are carried out under the best possible use of resources and in the interests of those involved and affected. Employees are appreciated by their supervisors and colleagues, and outstanding achievements are recognized. Mutual respect, trust, dialogue and sense of responsibility as well as willingness to change are part of daily business. The Vetsuisse Faculty strives for a positive culture of error and thereby enables individual and organizational learning as well as optimization of performance, competency and quality.

Vetsuisse Code of Conduct: Our Value System (Annex: Introduction)

Join! – Mitmachen! as professionals and reinforce a mindset of cooperative, integrating and appreciative collaboration, means that every Vetsuisse employee recognizes being dependent on the cooperation of others, affirms this in principle and thereby expresses the common Vetsuisse mission. Relations between teaching staff and students are characterized by respect and fairness.

If intentions, actions and interactions improve a common endeavor and make it a worthwhile undertaking that can be conducted fairly, then the Vetsuisse vision can be seen as achieved and the Code of Conduct considered implemented.

Teaching Philosophy of the Vetsuisse Curriculum

(excerpt from the concept of the strategic plan, the future curriculum "Curriculum 2020")

1. Systematic and explicit attention is given to education in science and professional conduct.

Students develop scientific, social and personal competencies that are required to become and remain professional at a high level and acknowledge the importance of lifelong learning for maintaining professional competence.

2. The instructional design of the program promotes active processing of the substance

The curriculum is focussed on active learning, which teaches the student to give a meaning to content, to acquire insight, to make connections and to reach depth.

3. The education involves the relevant context for the profession

The curriculum is based on scientific knowledge, problems, questions, cases and activities that are common for the profession.

4. The student carries the primary responsibility for his or her professional development

Self-motivation and initiative are valued and stimulated. The programme offers the students opportunities to try, discover, experience, experiment and push their boundaries. The students learn which knowledge, skills, and attitude must be obtained to meet the day-one skills of the curriculum.

5. The educational climate leaves room for students to take initiative to explore areas of personal interest and research.

Guidance and feedback from teachers and fellow students, critical reflection and (self-) assessment are important elements.

6. Personal contact between teachers and students and among students is being promoted and an important aspect of the curriculum.

Teachers and students of higher semesters are aware of being a role model for their students and act correspondingly.

7. The curriculum corresponds to the principle of didactical consistency.

All parts of the programme (assessment, teaching methods) contribute to the declared learning outcome.

8. The information about the program is clear and understandable.

Students and faculty staff are familiar with the programme and aware of their expected contribution. Goals, structure, location and significance of separate parts are common knowledge.

9. The Vetsuisse Faculty promotes and supports instructional competence of staff in a sustainable way.

Academic staff is supported in its continuous strive to improve the concepts of the instructional design of the curriculum.

Major strategic goals of the Vetsuisse Faculty

1) Curriculum 2020

The concept of the Curriculum 2020 (Cu-2020) is based on the teaching philosophy of the Vetsuisse Faculty and is geared to the demands of the veterinary profession in Switzerland.

The Cu-2020 is divided into a bachelor (year 1 to 3) and a master (year 4 to 6) period. The master diploma entitles the successful candidate to sign up for the federal licensure examination.

The curriculum offers 6 different tracks to master students: farm animals, horse medicine, companion animal medicine, veterinary public health, pathobiology and biomedical research.

Aside from these tracks student shall be able to select from further electives based on defined professional profiles and thus conclude their education with a “consolidated” track.

Each year of study is divided up in different educational modules. In parallel, a selection of projects is offered to be worked on in small groups (problem oriented learning). These projects refer to the contents taught in the modules of the same semester.

The time outside of the lecture periods will be used for electives (lectures), elective practical training and independent study. Practical training, especially in the 6th and final year of study, will be organized in close collaboration with veterinarian-teachers in private clinics. A detailed schedule is to be elaborated by university teaching staff and veterinarian practitioners.

Students will be mentored by teaching staff, assistants and – to a certain amount – student tutors.

Evaluation is based on a dual system: summative assessment of the teaching modules after each semester or year and continuous formative assessment all along the educational process. The licensure examination is a summative examination at the end of the 6th year.

Deficiencies of the present curriculum will be corrected: Improvement of the ratio of theoretical to practical training.

An additional year allows expansion of clinical training and of the involvement of all veterinary students in research projects. The amount of non-clinical practical work in the bachelor- and master-periods will also be increased.

Self-initiative and ability to communicate is to be improved:

Aside from collaborative work in projects enhancing motivation and self-learning, students will document their learning progress keeping a portfolio. Formative assessment allows students to identify and compensate shortcomings.

2) Improvement of mentoring and support of young academics

Professional profiles of applicants for job vacancies often do not match the tasks and the requirements of the work space. Selection out of a large enough group of candidates for academic positions is limited because of the low number of suitable applicants, in particular those with a veterinary background.

In order to improve the choice of candidates for academic positions and the chances of young academics to find an appropriate position, improved support is essential. The Vetsuisse Faculty just adopted the strategy to declare improved recruitment and training of young academics as one of its main goals for the future.

3) Improve process of promotion and recruitment of academic personnel

Recruitment procedures last for an average of two years at present. For candidates applying to professor positions, this long process is hindering their personal career development and often means that suitable candidates decide to select other options. The same is valid for promotion within the institution. Hence, an important strategic goal of the Vetsuisse Faculty is to reduce the time for recruitment and promotion to, at most, one year from publication of a position to signing a contract with the successful candidate.

SWOT Analysis of the Vetsuisse Curriculum 2016/17

The present SWOT Analysis is used to show internal and external key issues of the Vetsuisse curriculum at both Vetsuisse locations to help in strategic decision-making and to identify important future steps for the faculty.

Strengths

- Very strong research background in veterinary related basic science
- Generally high standard clinical facilities
- Large patient population due to two teaching hospitals
- Wide clinical teaching expertise with 28 EBVS or ABVS accredited specialist college programs which is among the largest selection possibilities in Europe

- Extensive cooperation with and funding by federal agencies (Federal Food Safety and Veterinary Office FSVO, Federal Office for Agriculture FOAG, Federal Office of Public Health FOPH).
- Low student numbers with an excellent student/teacher ratio.
- Unique educational position with only one establishment for veterinary education in Switzerland

Weaknesses

- Ratio between theoretical and practical undergraduate training primarily in the bachelor part.
- Infrastructure for independent learning
- Veterinary education is less attractive than other undergraduate programs at Swiss universities
- Opportunities for academic careers that are based on educational competence
- Preparation of graduates for the passage into professional life
- Distribution of certain academic domains relevant to undergraduate education between the two locations.

Opportunities

- Increased practical teaching with the implementation of a new curriculum (Cu2020)
- Unique possibilities to better prepare students for their professional life with the introduction of trainee positions with specific profiles in private practice (Cu2020) but also improved exposure to research
- Changes in agricultural politics may lead to additional demands concerning the educational level of rural vets. Farm animal medicine will change its focus towards prevention, improvement of animal husbandry and automatization (precision farming).
- Opportunities for educational careers thanks to master programs in veterinary/medical education offered by the universities.
- Increasing number of junior scientist positions to have a broader basis for academic careers
- Cover the demand for young veterinarian professionals in all fields of the profession (Cu2020).
- An optimized curriculum leads to a higher attractiveness of the faculty as an employer

Threats

- Being placed in a high cost environment, the financial burden of a new curriculum could be prohibitive.
- Relying on external partners and clinics for practical training in a new curriculum can mean a loss of independence for the faculty.

- The relatively low social status of veterinary medicine in Switzerland could lead to downgrading veterinary educational needs by political and financial decision makers.
- Increasing time and effort for education could reduce the capacities of faculty staff for research, inevitably leading to a harsher competition between teaching and research.
- Insufficient staff to fulfill labor legislation while maintaining case load and keeping up with teaching responsibilities

1.1.3. Summary of the Establishment Operating Plan and Strategic Aims with timeframe and indicators of achievement of its objectives

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- **Implementation of the Curriculum 2020**
All legal and financial aspects for the future curriculum 2020 are expected to be clarified until early 2018.
A detailed plan for the curriculum will then be completed by 2019. We further expect that all legal grounds will be finalized by the deciding authorities (in particular the Vetsuisse council) by December 2019.
The start of the first cohort (i.e. begin of implementation of the Curriculum 2020) is planned for academic year 2020/2021.
The set timeframes correspond to the indicators of achievement.
Implementation will be evaluated corresponding to the Faculty's standard procedures.
- **Improvement of mentoring and support of young academics**
A task force will present a concept on how to improve academic career development, possibilities and options for young academics by January 2018. The Vetsuisse Faculty will then decide on measures proposed.
Improved employability of our young academics based on regular surveys and the number of suitable applicants for an open position will indicate the success of the measures implemented.
- **Improved processes of promotion and recruitment of academic personnel**
Streamlining of decision processes to promote and recruit academic personnel will be presented to the Vetsuisse council in 2018.

The time elapsed between publication of a position and initiation of employment at a maximum of one year will indicate the success of the goal pursued.

1.1.4. Organisational chart (diagram) of the Establishment

Integration into the home universities

Both locations remain integral parts of their respective universities and have the same status as all other faculties. This means that they are directly supervised by the rectorate of their respective university, receive their budget from their university and are administrated by their respective university administration.

In Bern, there is a performance agreement between the rectorate and the Vetsuisse Faculty of Bern in which the budget and expected output in teaching, research and service is laid down for a period of 4 years.

In Zurich, a similar system is established, these items are planned according to a four year planning cycle (Mehrjahresplan).

Local governance structures are responsible for all business of the two locations not covered by the Vetsuisse Faculty.

Figure 1a. Integration of the Vetsuisse Faculty at the University of Bern

Figure 1b. Integration of the Vetsuisse Faculty at the University of Zurich.

1.1.5. List of departments/units/clinics and councils/boards/committees with a very brief description of their composition/function/responsibilities (further information may be provided in the appendices)

At both locations of the Vetsuisse Faculty there are three similarly organizational bodies. While the three departments in Bern are organized as entities with respective administrative infrastructure, the Zurich departments are aggregations of independent divisions and sections of common interest:

Bern:

Departement of Infectious Diseases and Pathobiology (DIP)

The DIP includes the institutes of Veterinary Bacteriology, Parasitology, Animal Pathology, Fish and Wildlife Health, Virology and Immunology. The administration of the DIP (personnel and finances) is pooled in a com-

Figure 1a. Integration of the Vetsuisse-Faculty at the University of Bern

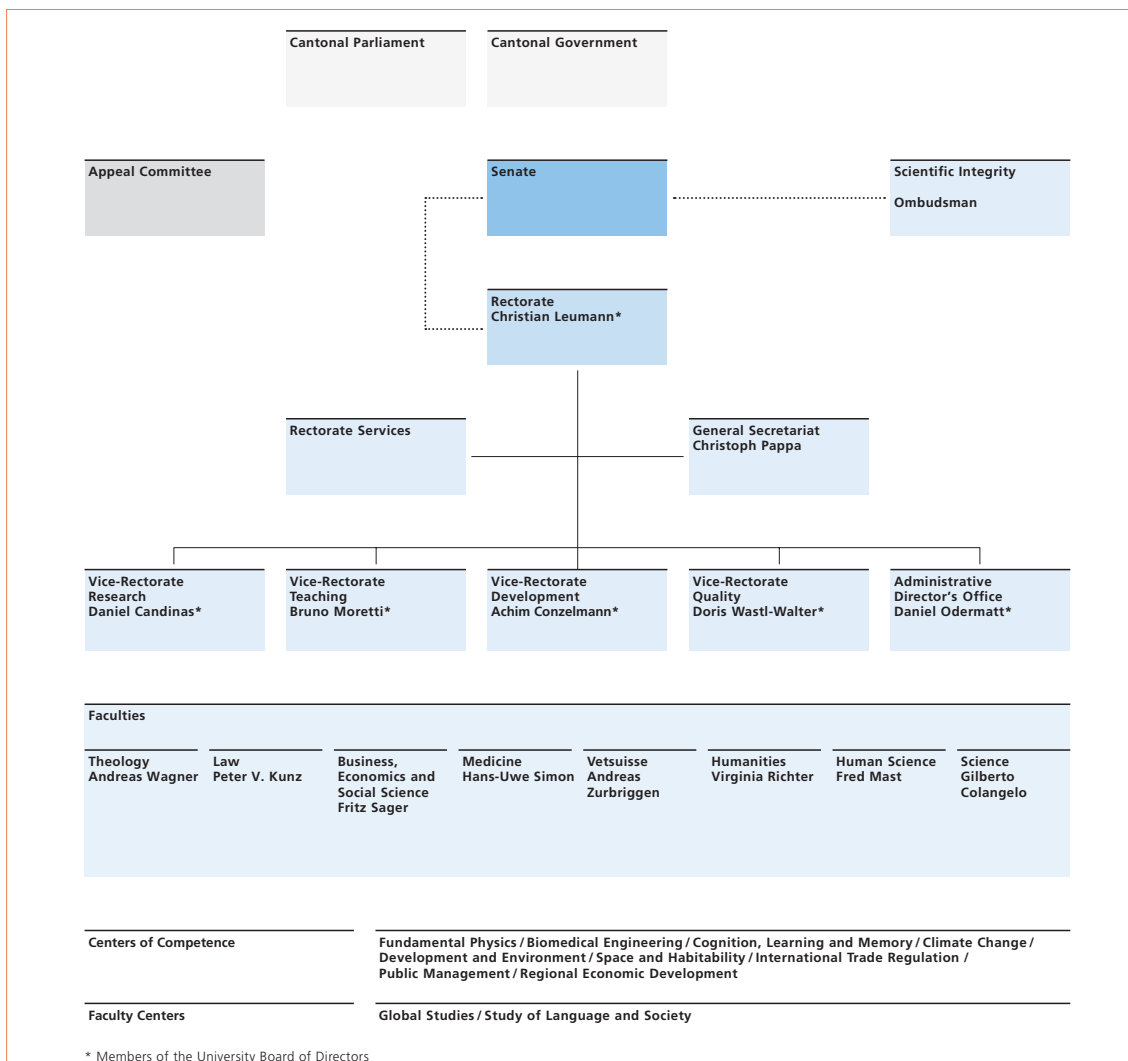
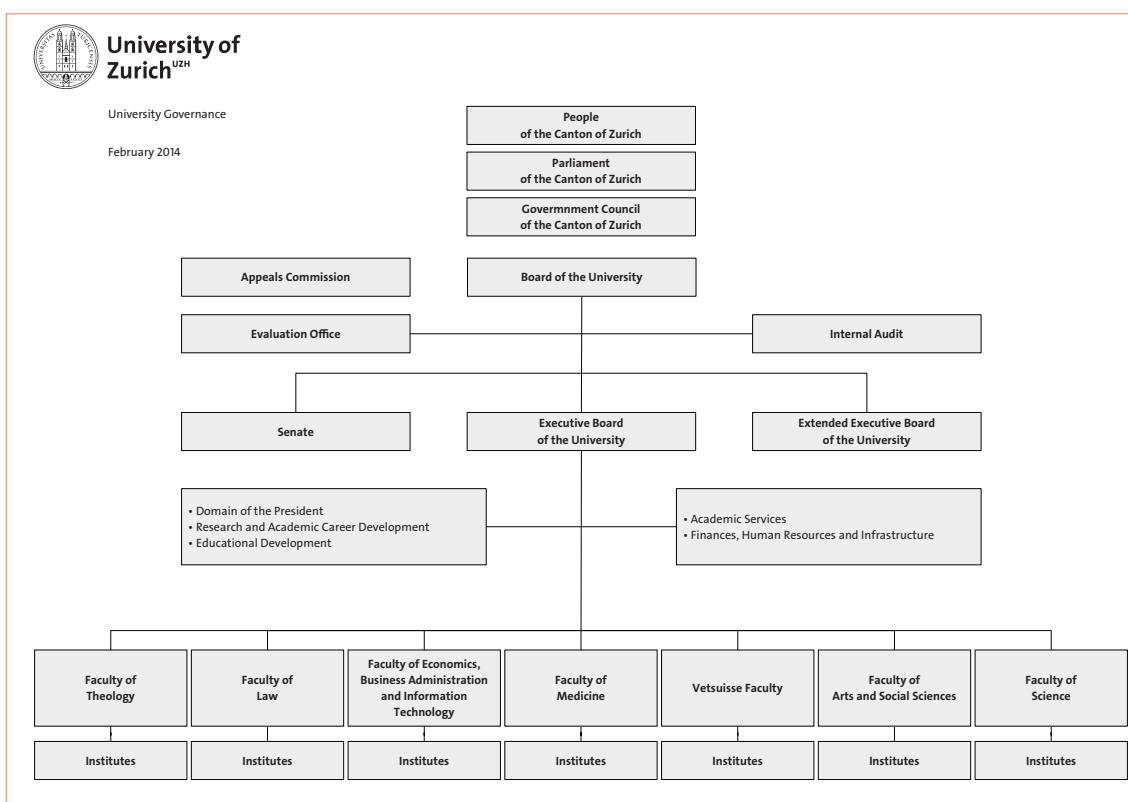


Figure 1b. Integration of the Vetsuisse-Faculty at the University of Zurich



mon secretariat. The board of directors (5 members) meets before the assemblies of the local extended faculty board to decide on common DIP-statements. The board of directors regularly consults teaching and research staff (extended board) of the DIP on current issues. The department with its own agenda was established in 2015.

Department of Clinical Research and Veterinary Public Health (DCR-VPH)

The DCR-VPH consists of the Divisions of Veterinary Anatomy, Veterinary Pharmacology and Toxicology, Veterinary Physiology, Experimental Clinical Research (included in the Division of Neurological Sciences) and the Institutes of Genetics, Veterinary Public Health (including the Animal Welfare Division) and the Institute of Bee Health. A board of directors consists of the responsible heads of the different divisions of the department. Positions on issues concerning either the DCR-VPH or the Bern Vetsuisse Faculty are discussed and decided by this board.

Department of Clinical Veterinary Medicine (DKV/DCVM/DCVM)

Three clinics (small animal, equine and farm animal) and the Discipline oriented Divisions (Anaesthesiology, Clinical Dermatology, Clinical Pathology, Clinical Radiology und Clinical Neurology) constitute the DKV/DCVM. It's organizational structure is the same as with the DIP.

It had been the local Bern faculty's long standing goal to integrate the formerly independent divisions into larger functional entities allowing synergies in research and administration. With the establishment of the DIP in 2015 this goal has been achieved.

Zurich:

The **Preclinical Institutes** consists of the Institute of Veterinary Anatomy, the Department of Molecular Mechanisms of Disease, including the Musculoskeletal Research Unit (MSRU) and the Competence Center for Applied Biotechnology and Molecular Medicine (CABMM), the Institute of Veterinary Physiology, the Institute of Veterinary Pharmacology and Toxicology and the Institute of Institute of Laboratory Animal Science. The institute directors meet on a regular basis for planning common endeavours, collaboration, teaching and infrastructure.

Pathobiology and Veterinary Public Health consists of the Institute of Food Safety and Hygiene, the Institute of Parasitology, the Institute of Veterinary Bacteriology, the

Institute of Veterinary Pathology, the Institute of Veterinary Virology and the Division of Veterinary Epidemiology, and the Institute of Animal Nutrition. The institutes are autonomous units. The institute directors meet on a regular basis for planning common endeavours, collaboration, teaching and infrastructure.

The **Veterinary Teaching Hospital (Tierspital)** consists of the following **Clinical Departments**:

The **Department for Small Animals** is divided into 5 clinics or sections (Clinic for Small Animal Internal Medicine, Clinic for Small Animal Surgery, Clinic for Zoo Animals, Exotic Pets and Wildlife, Clinic of Diagnostic Imaging and Division of Radiation Therapy and Oncology).

The **Department for Farm Animals** consists of 6 clinics or divisions (Clinic for Farm Animals, which also comprises Ruminant Surgery and Medicine, Clinic of Reproductive Medicine, which also includes the Division of Large Animal Reproduction, Andrology and Assisted Reproduction, Small Animal Reproduction, Animal Genetics and Bovine Health Service, Division of Ambulatory Service and Herd Health, Division of Pig Medicine, Clinical Laboratory and Agrovet).

The **Equine Department** is divided up into 5 sections (Clinic for Equine Surgery, Clinic for Equine Internal Medicine, Division of Anaesthesiology, Division of Ophthalmology and Division of Equine Performance Center).

Councils, boards and committees

The Vetsuisse Council (Vetsuisse Rat)

is the highest authority and is composed of the two rectors of the universities, two members of the highest ruling authorities (University of Bern and Zurich), two additional members of the University Boards (rectorate; University Bern and Zurich), and two representatives of the ministries of education of Bern and Zurich. The two local deans (Bern and Zurich) alternate every two years to also execute the position of the Vetsuisse dean. They are members without right to vote.

One of the two rectors heads the Vetsuisse council. The council is responsible for strategic planning and development of the Vetsuisse Faculty including financial planning. It exerts final approval of all regulations related to the Vetsuisse Faculty, the appointment of professors and the Vetsuisse dean.

Board of Deans (Geschäftsleitung)

The Deans of the two locations constitute the board of deans. The board of deans has the chief responsibility for

creating and executing the Vetsuisse strategic planning. It submits proposals and plans to the Vetsuisse Faculty assembly (Fakultätsversammlung) for discussion or to the Vetsuisse council (Vetsuisse-Rat) for decision.

The Vetsuisse Dean

Is the CEO of the Vetsuisse Faculty. He/She has the chief responsibility to plan and implement the development of the Vetsuisse Faculty. The local deans (Bern and Zurich) alternate every two years in this position. The head of the Vetsuisse council alternates at the same time so that both Universities are represented by either the head of the Vetsuisse council or the Vetsuisse dean, respectively.

The Vetsuisse dean appoints committees, recruited from the Vetsuisse Faculty assembly, to assist her/him with this task. He submits proposals and plans to the Vetsuisse Faculty assembly for discussion.

The Vetsuisse Faculty Assembly (Vetsuisse Fakultätsversammlung)

consists of deputies of the professors of both sites, and delegates of the junior faculty and the student body. Its temporary and standing committees assist the Vetsuisse dean in devising development plans and regulations of the Vetsuisse Faculty. The Vetsuisse Faculty assembly discusses the Vetsuisse dean's submissions. It convenes at least once per semester and approves of all Vetsuisse matters, of which some can be subject to final approval by the Vetsuisse council. It appoints the members of the Vetsuisse standing committees. It decides by two-thirds majority vote.

The two local faculty assemblies

(Bern: Fakultäts-Kollegium, Zurich: Fakultätsversammlung)

are composed of all professors, delegates of the junior faculty and students. They bear the final responsibility for all faculty business, and decide by majority vote. The Bern faculty assembly meets twice per semester, at the Zurich location at least three times per semester.

Faculty Board (Bern: Fakultäts-Ausschuss)

In Bern, the faculty board assists the dean. It is composed of the heads of departments and additional delegates from the departments, one junior faculty and one student. The faculty board deals with daily business, has final vote on all financial matters and prepares important matters related to curricular affairs, promotions, professorial positions to be decided by the faculty assembly. Finances are being prepared by the committee for finances and planning. The faculty board meets five

to six times per year. All decisions are taken by majority vote. In the event of a tie, the dean decides. The dean and the vice dean are elected by the faculty assembly for a period of 4 years (with the option to be elected for additional terms).

Dean's Executive Board (Zurich: Fakultätsleitung)

In Zurich, the dean's executive board is headed by the dean. The two vice deans (for research and teaching, respectively) and the heads of the administrative and maintenance offices constitute the executive board. The dean and the vice dean are elected by the faculty assembly for a period of 2 years (with the option to prolong for additional terms). The vice dean usually follows the dean in office. Starting in 2018, the Zurich location will introduce a third vice dean (for clinical and other services) as a strategy to improve the interaction between clinical services and the rest of the faculty.

Standing Vetsuisse Committees

There are three standing committees: curriculum committee, research committee and the committee for business promotion.

The curriculum committee maintains and coordinates curriculum development and surveys the implementation of change at both locations.

The research committee is in charge of developing the research strategy of the Vetsuisse Faculty and establishes quality assurance procedures. It organizes a common research day for young scientists alternatingly at the two locations.

The committee for business promotion is responsible for career promotions (Educator, Habilitation, Promotions Professorships).

The committees are appointed by the Vetsuisse Faculty assembly.

The local dean

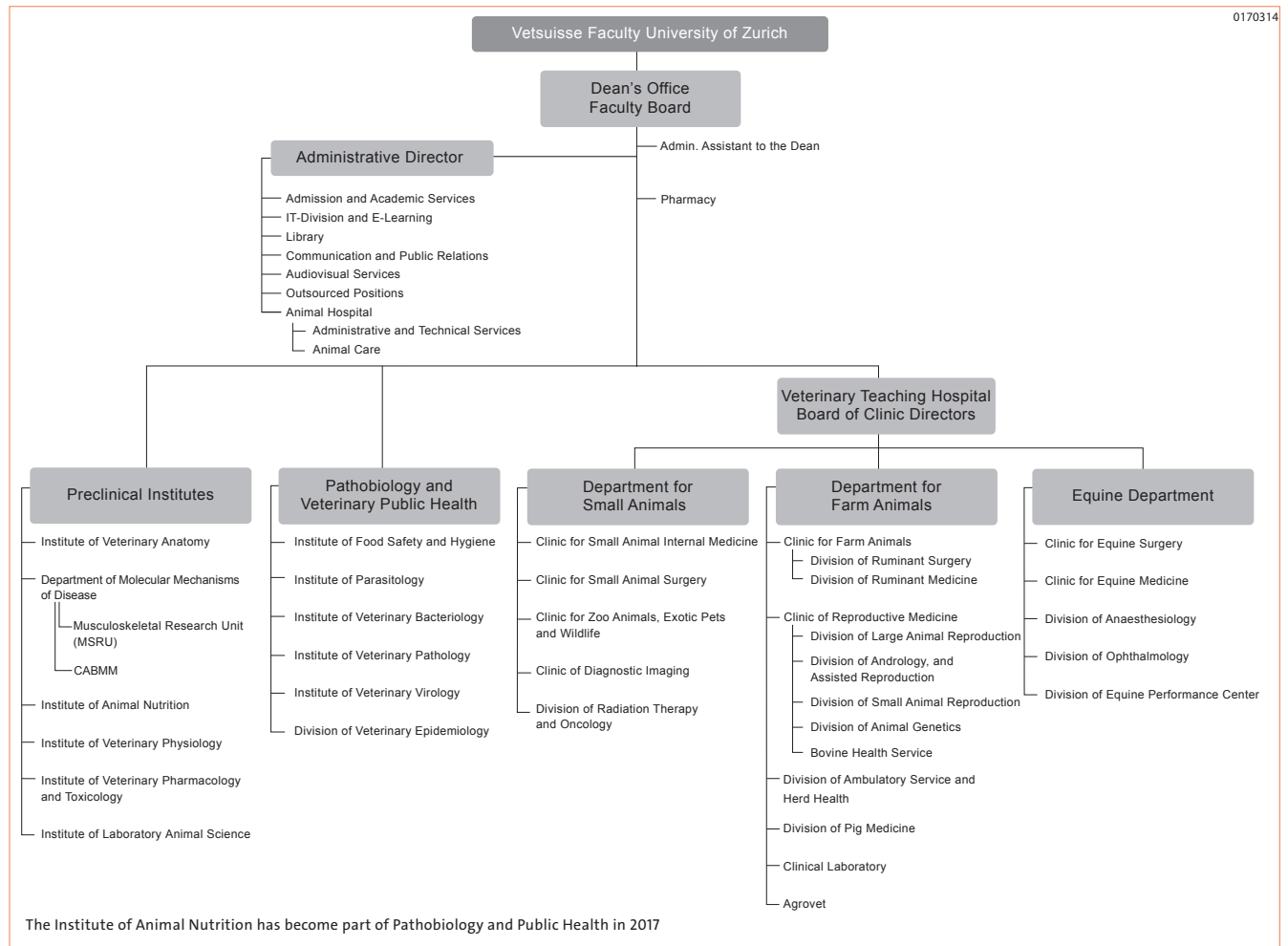
Presides over the faculty board (Bern) and the dean's executive board (Zurich).

In Bern, he/she is supported by the dean's office, the vice dean and the standing committees for planning and for finances.

In Zurich, the dean is assisted by two vice-deans in charge of research and of teaching, respectively.

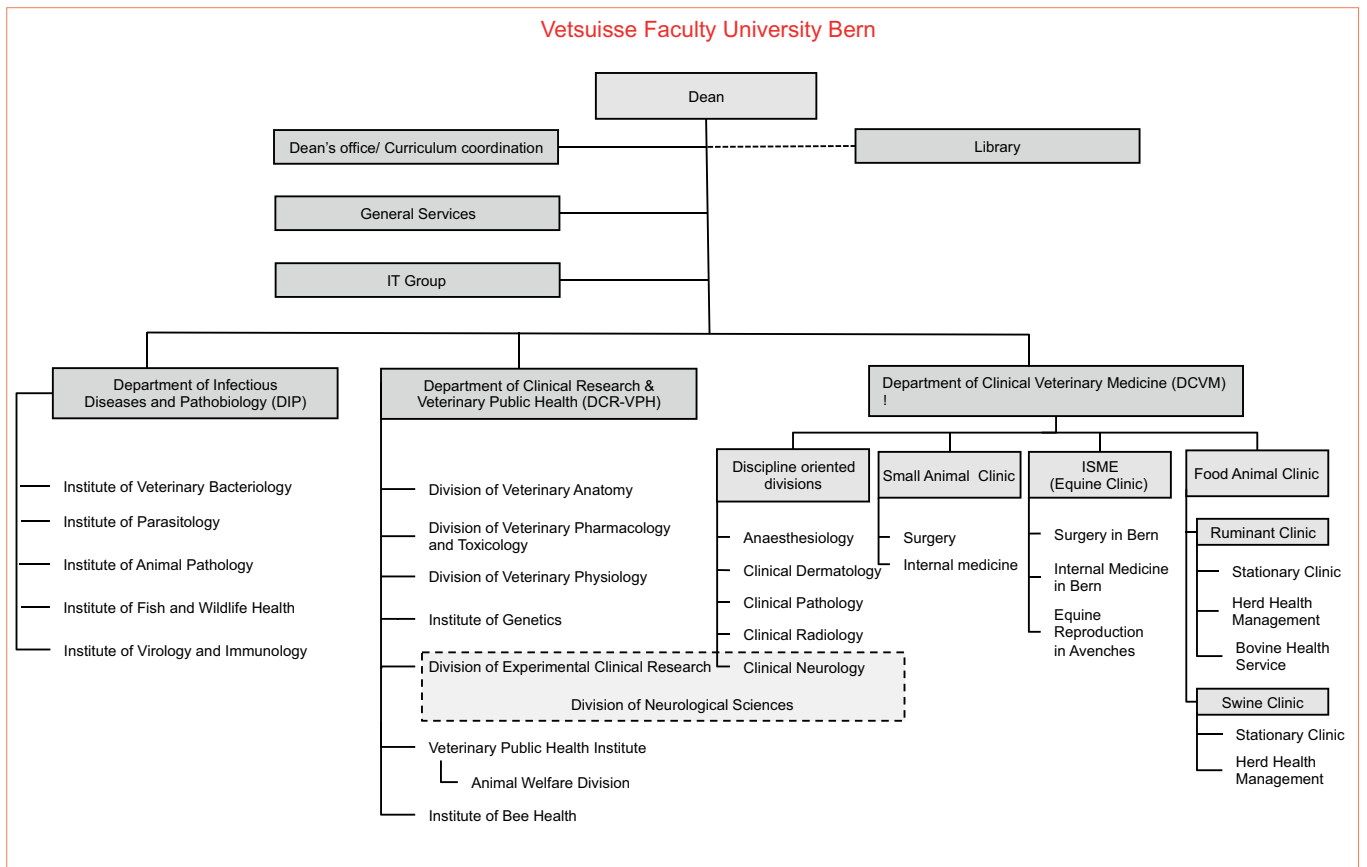
The dean runs the daily administrative business and is directly in charge of the central maintenance, learning and informatics resources. The dean represents the fa-

Figure 1c. Organization Vetsuisse-Faculty of the University of Zurich.



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Figure 1d. Organization Vetsuisse-Faculty of the University of Bern.



culty at the university level, the central university administration, the Vetsuisse dean (in case the Vetsuisse dean is located at the other university) and the Vetsuisse council. He/she is also ex officio member of all important committees. He/she prepares all matters to be decided in the faculty board/assembly or the dean's executive board/faculty assembly. He/she sets up temporary committees for specific tasks recruiting faculty members of his choice.

1.1.6. Description of how (procedures) and by whom (description of the committee structure) the strategic plan and the organisation of the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

1.1.6.1 How and by whom is the strategic plan being decided?

The first reformed curriculum starting in 1999 has been continuously changed and adapted. After the implementation of the present curriculum from 2003 to 2008 deficiencies have become issues of further changes. The ratio of practical work to lectures as stated in the EAEVE Experts report 2010 has remained a concern.

The evaluation of the curriculum was initiated by the Vetsuisse curriculum committee. In the surveys, former graduates of the Vetsuisse Faculty (2012, 4 years back) and employers (2013) showed an appreciation of theoretical knowledge but insufficient skills in graduates. These results confirmed the findings of a survey with graduates of the cohort of 2011 by the Swiss Federal Statistical Office.

Based on the evaluation of the existing curriculum (2012/2013), the Vetsuisse curriculum committee suggested an extension from 10 to 11 semesters including a period of 6 (instead of 3) months exclusively dedicated to the master thesis and an improvement of the ratio of theoretical to practical education. The Vetsuisse board of deans commissioned the curriculum committee to submit a concept to the Vetsuisse Faculty assembly and to the Vetsuisse council. The concept for a curriculum with 11 semesters was, however, not acceptable to this body. Instead, the Board of Deans (GL) decided to pursue a curricular concept with 12 semesters.

In 2014, the Vetsuisse curriculum committee took up the task to design a curriculum with 12 semesters (Cucu2020). Subsequently, commissioned by the Vetsuisse Faculty's board of deans, a concept was elaborated by a task force of the curriculum committee. This concept was accepted

by the Vetsuisse Faculty assembly and subsequently by the Vetsuisse council in December 2015. One of the core objectives is preparing the graduates for their professional life in real-life settings in private veterinary clinics and practices.

At present, hearings and consultations are taking place with the representatives of the educational departments of the two cantons Bern and Zurich and with the Swiss Veterinarians Society (Gesellschaft Schweizer Tierärztinnen und Tierärzte, GST) in order to secure finances to reimburse practitioners in charge of teaching 6th-year students and to define entrustable professional activities to be attained by students before entering their externships. Questions of liability are being clarified in this process.

1.1.6.2 Communication to staff, students and stakeholders

The strategic plan of the Vetsuisse Faculty has to be passed by faculty bodies representing all levels of staff and students. Representatives are asked to share the information on state and progress of implementation of the strategic plan to peers. Additionally, a faculty-intern periodical (Vetsuisse-News) is publishing news to all members of the Vetsuisse Faculty at both locations, as a non-official means of communication.

1.1.6.3 Implementation of the strategic plan

As soon as all points concerning finances are decided by the educational departments and the Universities including positive support of all faculty assemblies, the curriculum committee will decide on the detailed organizational structure for the implementation of the Curriculum 2020. A prime task will be the establishment of state of the art learning outcomes for the curriculum.

As in the past, details of the curricular reform tasks will be allocated to subcommittees consisting of representatives of the curriculum committee and teaching staff dealing with the specific teaching units. The Offices of Student Affairs will be in charge of administering and coordinating the overall process on behalf of the curriculum committee.

1.1.6.4 Assessment

Milestones will define the objectives that have to be achieved at a set time. Based on the indicators defined, the corresponding assessment strategies will be decided by the curriculum committee. The subcommittees in charge will report to the curriculum committee. The cur-

riculum committee will decide on the methods of evaluation of the teaching units.

The local Offices of Student Affairs are in charge of administering the implementation process and of coordinating the assessment procedures with the rules of their local universities.

1.1.6.5 Revision

The results of the evaluations will define the measures to be taken to achieve the defined objectives. This process is well established and common practice at the Vetsuisse Faculty.

1.2. Comments

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Concerning the curriculum, quality assurance and management are topics familiar to faculty and students. Processes of evaluation, planning and implementing measures to meet declared standards are experienced by teaching staff and students, starting from quality monitoring in teaching up to curriculum evaluation. All activities are closely coordinated with the local universities. Representatives of the different levels of academic hierarchy are in charge of informing their peers about the processes discussed in the curriculum committee.

Thus, students and faculty are aware of the quality assurance cycle in which they participate actively.

On an institutional level, adaptation to changing needs in general and of the curriculum in particular is integrated in the process of succession of heads of clinics and departments. Needs assessment and corresponding objectives and organizational profiles are developed in order to define the profile of the position to be succeeded. For each upcoming succession process a new committee in charge is elected, composed specifically for the position in question. In this process, aspects of teaching are being considered explicitly.

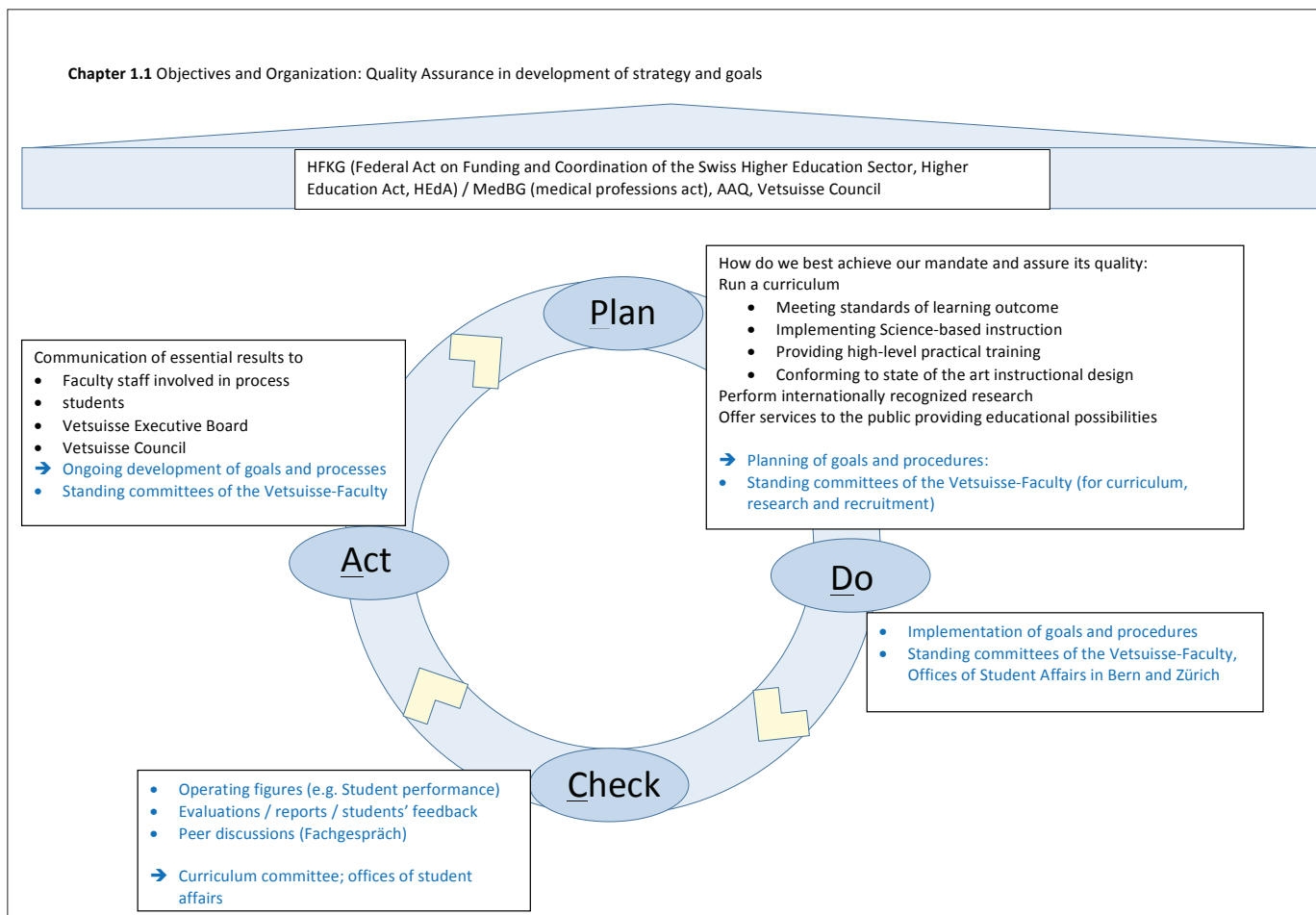
Should the financial support for the Curriculum 2020 by the political authorities fail, the strategic plan will be applied to a five year curriculum aiming at implementing the concepts of the strategic plan described above. This will be done based on the current curriculum with the aim to increase teaching efficiency in defined areas and subjects.

1.3. Suggestions for improvement

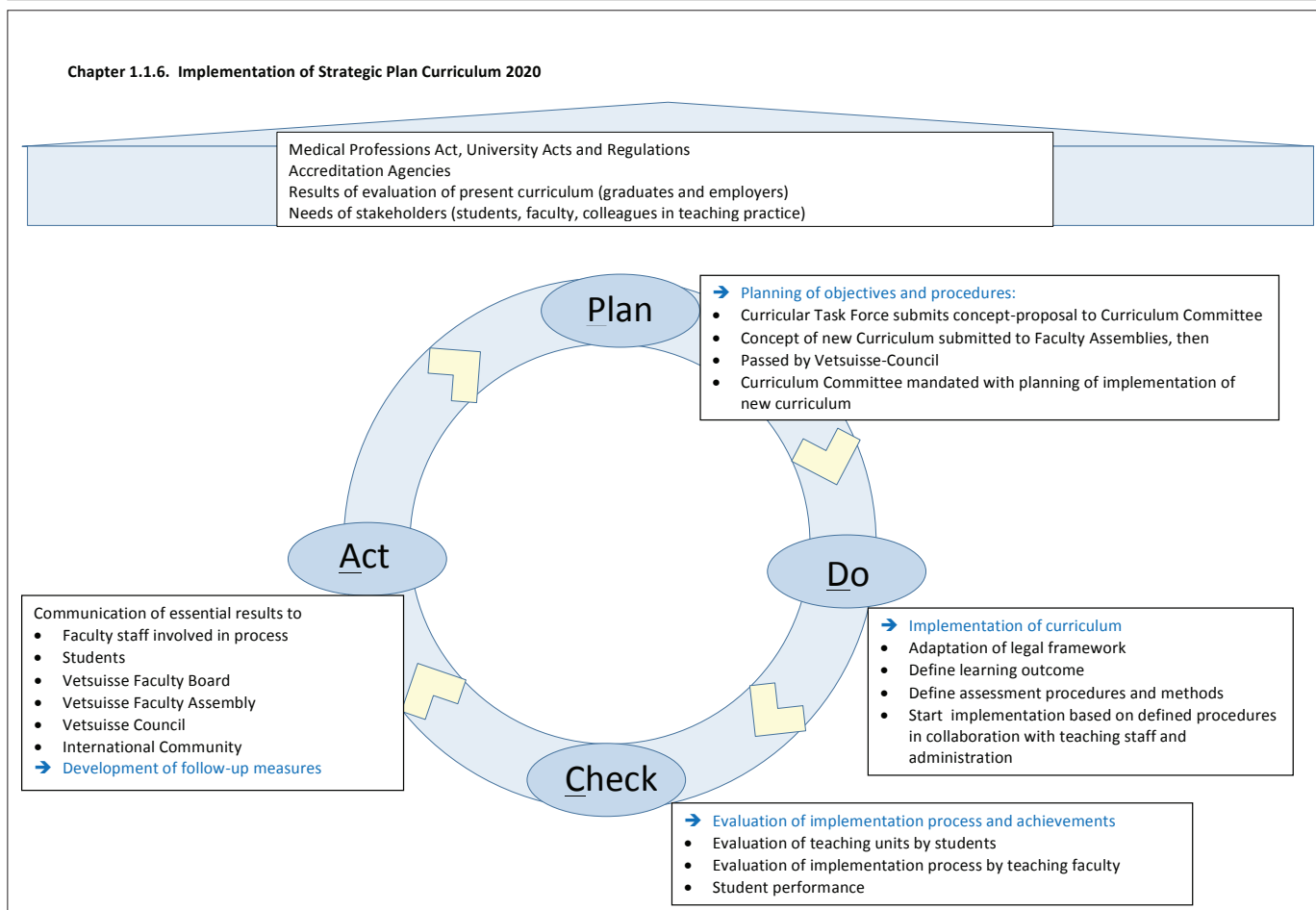
Faculty development focusing on the particular needs in preparation of and along the implementation of new instructional concepts will have to be initiated and established as the process of the coming curricular reform is realized. The two universities already provide a wide range of courses dedicated to teaching staff. Specific faculty development at the two locations will be planned together with each university's center for continuing education.

In general, as stated in one of the strategic aims, the Faculty tries to accelerate important decision processes which, in part, are rather slow at the present time. This may necessitate adaptations of the faculty rules.

Summary of the process of developing and deciding strategic planning



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2

Finances



2. Finances

Financially, both sites are bound to the rules of their local university and cross-financing is not possible due to political restrictions.

2.1. Factual Information

2.1.1. Description of the global financial process of the Establishment

18 Bern:

The University of Bern allocates an annual global budget to the Vetsuisse Faculty, which consists of personal points («Personalpunkte», PP, calculated as a defined number of points per position) and of monetary resources («Betriebskredit, BK» [running costs] and «Investitionskredit, IK» [acquisition of new and replacement of existing equipment]).

The local Vetsuisse Faculty is divided into three departments (DKV/DCVM, DIP and DCR-VPH) and into an administrative/supporting branch (dean's office (Dekanat), office of student affairs (Studienplanung), general technical services (Allgemeine Dienste) and a few other domains. Within DIP, Veterinary Virology and Immunology is outsourced to the BLV (Federal Food Safety and Veterinary Office FSVO) / IVI (Institute of Virology and Immunology) with a fixed annual sum / budget.

DKV/DCVM and DIP are functioning as service units, i.e. 95% of their service income is part of their budget, and the respective rules are documented in a contract between faculty and university, named «Zielvereinbarung Variante 4».

Within each organizational unit, the personal resources are defined in so-called «Strukturberichte». The annual financial budget is split and allocated to each unit («Klinik», «Institut» or «Abteilung») according to a plan elaborated by the faculty, and also based upon historical developments of the financial situation of each unit. The respective parameters are outlined in so-called decisions «Beschlüsse», corresponding to a contract between faculty and operative unit. DCR-VPH and the administrative/supporting branch all have a fixed annual allocation of personal and financial resources.

The annual budget of the faculty is primarily elaborated by the Chief-Financial-Officer (CFO) and the administrative Faculty-Manager (AFM), the plan is then approved by the «Finanz-Ausschuss» (finance committee) of the Faculty and finally by the «Fakultätsausschuss» (local Bern Faculty Board).

The annual «Investitionskredit» (IK) is used for «replacement of equipment» (RE) and «new equipment» (NE). For the long-term planning of RE, a list of all respective equipment is maintained by the AFM, and serves as basis to plan the annual IK (investment) expenditures. For the NE, the faculty anticipates to use approximately 30-50 % of the IK for respective purposes.

The process for the management of the IK is as follows: (a) initial call for RE and NE for the next annual period in November/December; (b) preparation of the IK-business by the CFO&AFM and subsequently the financial committee (Finanz-Ausschuss) in January of the planned year; (c) finalized decision and distribution of the IK in a faculty-retreat (Fakultäts-Klausurtagung) by end of February of the planned year.

Zurich:

The University of Zurich attributes an annual budget to the Vetsuisse Faculty Zurich, which is based on the financial plan (EFP). This plan is annually submitted to the university, is then discussed with the financial officers and the vice-rector in charge for the faculty and finalized for the coming year. The budget consists of personal resources (Personal), monetary resources (BK) for running costs and an investment credit (IK) for equipment. In addition, newly established professors receive a credit for start-up according to the negotiations (Einrichtungskredit, EK).

The dean and chief financial officer attribute the budget according to the initial negotiations for each professorship/ institute/ clinic. The budget can be re-allocated depending on changes within the structure of the various institutes/clinics/ divisions. Overall budget cuts by the university may request a new distribution of the overall budget.

Institutes and clinics involved in clinical and other services (Dienstleistung) have to allocate their revenues from services to their overall budget. All revenue from the hospital income through patient care is part of the overall budget of the VTH and is governed by the head of the administration and chief financial officer. The Dean and the chief financial officer discuss the allocated budgets of

the individual units annually with the heads of the various units in october/november for the following year.

The "Investitionskredit" for new resources is allocated annually through the university. The individual units can apply for new equipment and/or replacement of equipment each year (September). A priority list is then made through the Division of Infrastructure, the dean and the financial officer and funds are attributed accordingly. In emergency cases there is a special replacement fund by the university if equipment brakes down unexpectedly.

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

The Vetsuisse location in Bern has the autonomy to decide about distribution and use of the personal resources (PP) and the financial resources (BK and IK, see 2.1.1). The basis for the autonomous distribution and allocation are so-called reports on the structures (Strukturberichte), agreements on objectives (Zielvereinbarungen) and decisions (Beschlüsse).

The Zurich location has the autonomy to distribute finances according to the negotiations with the individual units (annual budget) and the investment credits.

2.1.3. % of overhead to be paid to the official authority overseeing the Establishment on revenues from services and research grants

Bern:

The overhead to be paid from service revenues (related to all units of the department of clinical veterinary medicine (DKV/DCVM) and the department of Infectious Diseases and Pathobiology (DIP) is 5% (the remaining 95% are part of the annual budgets of the units). From these 5%, 3% are delivered to the administrative head office of the university, the remaining 2% are withheld in a faculty account as a reserve to handle putative future, unforeseen financial problems that could arise within the new financial (Variante 4) system.

Zurich:

Basically all institutes, sections and departments are responsible for their own revenues. In cases, where revenues are administered through the clinic information system (Laboratory system, bacteriology) the administration of the VTH (Tierspital-Verwaltung) retains between 4-10% of net revenues for their work.

For research projects overhead can vary from 0% in research collaborations between academic partners, to 10% for clinical research projects and 20% for research projects with industrial partners.

2.1.4. Annual tuition fee for national and international students

Federal law limits medical studies on the tertiary level to Swiss citizens or to residents who have been living in Switzerland for the past five years. Both pay the same tuition fee.

The tuition fee of the University of Bern is 680.- Euros (CHF 750.-) per semester and 650.- Euros (CHF 720.-) at the University of Zurich.

2.1.5. Estimation of the utilities (e.g. water, electricity, gas, fuel) and other expenditures directly paid by the official authority and not included in the expenditure tables

See table 2.1.5 below

2.1.6. List of the on-going and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding

See table 2.1.6 below

Bern:

Planning of future investments follows the procedure described under 2.1.1 "Description of the global financial process of the Establishment". The investments mentioned above exceed the limits for the annual budgets (limit: CHF 30'000.-) and must therefore be submitted to the finance committee of the faculty for long term planning.

2.1.7. Prospected expenditures and revenues for the next 3 academic years

Bern:

The annual financial budget for the BK (running costs) of the Department of Clinical Research and Veterinary Public Health (DCR-VPH) is € 535'800.-, and for the administrative/ supporting branch € 535'800.-.

The annual budget allocated to outsourcing veterinary virology and immunology to the Federal Office of Agri-

culture (BLV)/ Institute of Virology and Immunology (IVI) is € 1'598'000.-.

The annual BK (running costs) allocated to the DKV/DCVM is € 1'222'000.-; the expected revenue is € 6'110'000.- (minus € 352'500.- overhead)

The annual BK (running costs) allocated to the DIP is € 817'800.- ; the expected revenue is € 940'000.- (minus € 47'000.- overhead)

The annual IK (investments) allocated to the faculty by the university is € 1'128'000.-. These data hold true for 2017. No major changes are expected for the forthcoming years 2018, 2019 and 2020.

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Zurich:

The Budget for the year 2016 was

Revenues	€	-17'197'300
Operating expenses	€	11'520'170
Personnel expenses	€	35'124'980

Salaries of professors are paid by the university (not by the faculty). Social costs and costs for infrastructure are also not included in the faculty budget, but are allocated to the university.

Annual budgets (i.e. 2017, 2018, 2019):

Funds are allocated in the annual process of budgeting for the coming year. **No major changes are expected for the forthcoming years 2018, 2019 and 2020.**

2.1.8. 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

Bern:

- a1) The allocation of the overall financial budget to the Vetsuisse Bern location is prepared in the preceding year by the university board, and final decision on the overall budget is taken by the university's financial committee (Vetsuisse committee member is the Chief-Financial-Officer, CFO).
- a2) The subsequent distribution of the individual budgets to the different units of the Vetsuisse Faculty of Bern is carried out by the AFM (administrative Faculty-Manager), fine-tuning of the individual budgets at the unit level is performed by the respective secretary under supervision/responsibility of the head of unit.

b1) Agreements on objectives (Zielvereinbarung) for the two servicing departments DKV/DCVM and DIP are commonly elaborated by the head of university administration, the dean of the faculty and the CFO of the faculty.

b2) Decisions (Beschlüsse) at the unit level for the two servicing units within DKV/DCVM and DIP are commonly elaborated by the head of the unit, the dean of the faculty and the CFO of the faculty.

c1) The procedures and responsible persons involved in the annual management of the investment credit (IK) is described under 2.1.1. (last paragraph).

Assessment of processes and decisions in relation to a) and b) concerning BKs take place within the faculty board (Fakultäts-Ausschuss).

Communication of decisions and financial structures and processes follows a top-down scheme: from CFO/Dean to head of Departments, from head of Departments to head of functional units, from head of functional units to staff of unit.

Students and Mittelbau (intermediate staff at various levels, i.e. collaborators of hierarchical levels from newly graduates to "ordinate" professors) are each represented by one member in the faculty finance committee (Finanzausschuss) and the Faculty Board (Fakultätsausschuss). These members are responsible for communication of decisions and facts to students and members of the «Mittelbau».

Communication to the outsourced unit at the IVI is via Head of DIP.

Revision of the financial management of the individual units is regularly performed by the governmental financial control (Kantonale Finanzkontrolle) of the Canton of Bern.

Zurich:

The allocation of the overall budget for the financial year is prepared by the university board and is then discussed at the annual budget meeting with the dean and the financial officer. The budget is finalized once the global budget of the university is accepted by the political authorities (executive council of the Canton of Zurich).

The budget is communicated through the university board to the dean and the chief financial officer, who then communicate it to the individual units of the faculty (see above).

Within the individual units (Institutes, Departments and clinics) the head of the unit communicates budget allocations to their functional subunits.

Tab 2.1.5 Expenditures by official authority (Universities of Bern and Zürich)
(exchange rate of 19.4.2017 1 CHF= 0.94 Euro)

	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Personnel	(available in August 2017)	493'362	444'938	469'150	1'718'585	1'676'527	1'646'338	1'680'483
Operating costs (energy, water)		1'772'412	1'600'116	1'686'264	2'240'603	2'146'622	2'118'411	2'168'545
Maintenance costs buildings		3'438'465	3'062'102	3'250'284	2'407'599	2'639'144	2'717'400	2'588'048
Total operating costs and maintenance		5'704'240	5'107'155	5'405'697	4'648'202	4'785'766	4'835'811	4'756'593

Tab 2.1.6. List of the on-going and planned major investments for developing, improving and/or refurbishing facilities and equipment, and origin of the funding (Euro)
(exchange rate of 19.4.2017 1CHF = 0.94 Euro)

Bern			
Costs covered by the faculty investment credits			
Organizational unit	equipment	amount	year
		Euro	
Department of Infectious Diseases and Pathobiology (DIP)	Flowzytometrie/Cell Sortier-Einrichtung	235.000	2021
Institute of Animal Pathology (DIP)	Leica ST5020 Multistainer	141.000	2019
Institute of Veterinary Bacteriology (DIP)	MALDI-TOF Microflex LT Bruker	206.800	2020
Institute of Genetics (DCR-VPH)	Sequenziermaschine	470.000	2020
Division of Veterinary Anatomy (DCR-VPH)	In Cell Analyser 2000	470.000	2020
Costs covered by deferred liability and appointment credits			
Organizational unit	equipment	amount	year
		Euro 0.94	
Clinical Radiology (DCVM)	MRI	1.410.000	2019
Clinical Radiology (DCVM)	CT	752.000	2018
Zurich			
Costs covered by the faculty investment credits			
Organizational unit	equipment	amount	year
		Euro	
Total VSF - Organisation	Various devices	195.388	2017
Virology Institute	Single cell and Biomarker analysis	275.420	2017
Animal Hospital	Hospital information system	299.860	2017
Animal Hospital	Scintigraphy devices	545.200	2018
Animal Hospital	animals transporter	498.200	2019
Animal Hospital	anaesthesia equipment	498.200	2020
Animal Hospital	replacement car services facility	545.200	2021
Animal Hospital, small animals	Replacement Linac	940.000	2021
Animal Hospital, Clinical Laboratory	Replacement Sysmex XT 2000iv hematology analyzer	>100.000	2018
Faculty budget	Electron microscope,	592.200	2018
Faculty budget	IVIS imaging system	564.000	2019
Faculty budget	IVIS imaging system		2020
Faculty budget	Magnetic Resonance Imaging Scanner	592.200	2021
Costs covered by deferred liability and appointment credits			
Organizational unit	equipment	amount	year
		Euro	
Total VSF - Organisation	Not yet specified investments related to appointments of professors = financial commitment	4.286.400	

Auditing and revision of the financial management of the faculty is regularly performed by the Government.

The budget of the Vetsuisse Faculty as planned and agreed on by the managements of the local Universities must be strictly followed. Public funding guarantees for the expenditures and costs of the two locations. Thus, revenues and expenditures are a priori balanced.

Funds from research grants that are competitively acquired are being managed by the corresponding unit. They are not being considered as revenues for the institution.

Table 2.1.1. Annual expenditures during the last 3 academic years (in Euros)
(exchange rate of 19.4.2017 1 CHF= 0.94 Euro)

Area of expenditure	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Personnel	28'680'366	28'634'884	27'909'033	28'408'095	52'062'068	51'226'827	50'004'632	51'097'842
Operating costs	5'634'009	5'877'086	6'069'672	5'860'256	14'211'828	13'645'072	12'987'362	13'614'754
Maintenance costs	64'014	64'014	64'014	64'014	91'283	98'109	37'663	75'685
Equipment	1'981'637	2'333'879	1'291'861	1'869'126	2'506'923	4'072'316	2'594'295	3'057'845
Total expenditure	36'360'027	36'909'863	35'334'580	36'201'490	68'872'102	69'042'325	65'623'952	67'846'126

Table 2.1.2. Annual revenues during the last 3 academic years (in Euros)
(exchange rate of 19.4.2017 1 CHF= 0.94 Euro)

revenues source	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Public authorities	28'791'607	29'478'459	28'222'699	28'830'922	49'245'045	49'639'109	45'172'390	48'018'848
Tuition fee (standard students)	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	
Tuition fee (full fee students)	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	
Clinical services	6'466'685	6'355'068	6'140'832	6'320'862	19'008'586	18'785'044	19'786'124	19'193'251
Diagnostic services (ZH: included in Clinical services)	1'101'735	1'076'336	971'049	1'049'707	0	0	0	0
Other services*				-	618'470	618'172	665'438	634'027
Total revenues	36'360'027	36'909'863	35'334'580	36'201'490	68'872'101	69'042'325	65'623'952	67'846'126
n.a. not applicable								

Other services *(ZH): Revenues from research and teaching, other revenues, Investitionsbeitrag 2015

The following positions are not part of the institution's budget since they are allotted to either the successful grant applicants or to the units.

	Bern				Zurich			
	2016				2015			
	2016	2015	2014	mean	2016	2015	2014	mean
Research grants	1'808'5425*	17'405'760	16'294'472	16'850'116	9784'965*	9'972'493	6'291'667	8'132'080
Continuing Education	79'430	90'710	81'780	83'973	861'076	545'107	707'532	704'572
Donations	0	0	0	0	450'678	-78'877	1'634'217	668'673
HeadMRI Horse Clinic	0	0	329'000	109'667				
Paul Friedrich Schwab Animal welfare 2PhD	0	0	364'720	121'573				
Vinetum (Bee disease)	470'000	470'000	470'000	470'000				
Other sources (please specify)	-	-	-		5682150*	5'106'615	6'274'299	5'690'457
Services / contract research					301778*	488'712	1'873'577	1'181'144
Other Income								

* These amounts include competitive, non-competitive and federal grants

Table 2.1.3. Annual balance between expenditures and revenues (in Euros)
(exchange rate of 19.4.2017 1 CHF= 0.94 Euro)

Academic year	Bern			Zurich		
	Total expenditures	Total revenues	Balance	Total expenditures	Total revenues	Balance
2014	35'334'580	35'334'580	0	65'623'952	65'623'952	0
2015	36'909'863	36'909'863	0	69'042'325	69'042'325	0
2016	36'360'028	36'360'028	0	68'872'101	68'872'101	0

3

Curriculum



3. Curriculum

3.1. Factual information

3.1.1. Description of the educational aims and strategy in order to propose a cohesive framework and to achieve the learning outcome

24 General educational aims for all medical professions trained at university level and specifically for each of these professions are defined in the Act on Medical Professions in Switzerland (MedPA, Medizinalberufegesetz, MedBG). The catalogue of learning outcomes for the veterinary profession as published on the website of the federal office of public health (Bundesamt für Gesundheit BAG) refers to this legal framework.

Catalogue of learning outcomes

<https://www.vet.uzh.ch/dam/jcr:fffff-9766-23fe-ffff-ffffab0ad0d9/LZK%20Vetsuisse%20Schlussprfg%20MedBG.pdf>

Medical Professions Act in Switzerland (MedBG, German/ Italian/French):

<https://www.admin.ch/opc/de/classified-compilation/20040265/index.html>

The present catalogue of learning outcomes was developed in the course of the implementation of the present curriculum. The learning outcomes reflect a cohesive framework of goals and objectives as defined by the Vetsuisse Faculty. The criteria of the examination protocols of the licensure examination refer to this catalogue.

The results of the evaluation of the curriculum by graduates (2012) and employers (2013) indicate achievement of learning outcomes considered from an external professional view.

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

The present law on the university medical professions was enforced in 2010. The paradigm shift from formerly defining contents by a list of prescribed examinations to an accreditation system has allowed all establishments

for education of the medical professions to design and implement state of the art curricula of their choice. The licensure examination is the only examination defined by federal legislation.

The degree of autonomy in an accreditation system is high: the establishment decides on concepts for a new curriculum, its implementation, assessment and management of its quality. University guidelines must be considered – they mean no constraint. Public funding of the establishment by the universities may limit the endeavours of the establishment. The licensure examination is supervised by the MEBEKO (Federal Office of Public Health, FOPH) of which one member is a delegate of the Vetsuisse Faculty.

A federal committee in charge of organizing the licensure examination is constituted of Vetsuisse Faculty members. This examination committee can propose examination formats which are to be defined in the corresponding federal ordinance. An adaptation of the licensure examination can thus be realized in correspondence with changed curricular concepts.

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.

All organ-centered interdisciplinary modules are being formally evaluated (questionnaire) by students according to university standards.

Faculty staff in charge of a module ask students for oral feedback at the end of the module after presenting the results of the formal evaluation. Based on student feedback overlaps, redundancies and omissions are discussed within the group of teaching faculty of the module concerned. Overlaps and redundancies may be desired considering examination results. Omissions have to be compensated by adapting the content presented in lectures since the number of lectures is strictly limited.

Content structure (the red thread) is being discussed before scheduling the module. Changes from year to year tend to be discrete.

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

Bern:

Propaedeutics are instructed at the beginning of the second year of study. At the same time students are introduced to animal handling. Procedures of physical exa-

mination are instructed in practical exercises along the organ-centred interdisciplinary modules. Students are encouraged to practice physical examination individually in the different clinics.

From year 2 to 4 night duties are mandatory. These duties provide possibilities to enhance their skills in physical examination.

The newly established skills-lab at the Bern location allows students of the entire Vetsuisse Faculty to practice a set of essential skills before entering clinical rotations in the 5th year. At the Bern location students' skills are assessed in an OSCE which is part of the tracking period in the spring-semester of year 4. The OSCE is a summative assessment, students failing have to present the skill within two months.

Zurich:

As in Bern, propedeutics are instructed at the beginning of the second year of study. The students visit the clinics individually during spring semester in order to get to know the clinics and the clinical work, i.e. animal handling and medical caring of the patients.

The students are fully instructed to animal handling at the beginning of the third year. Procedures of physical examination are instructed in practical exercises along the organ-centred interdisciplinary modules and again towards the end of the third academic year in special propedeutical courses.

From year 3 to 4 night duties are mandatory. These duties provide possibilities to enhance their skills in physical examination. It is optional for the students of the third year of study to visit the skills-lab at the Bern location.

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

Applying theoretical knowledge in the professional setting is the principal objective of the clinical rotations in the last (5th) year of study in the present curriculum. Students participate in two types of rotations: 3 core rotations of approximately 4 weeks each and 1 track rotation of approximately 12 weeks.

At the beginning of each rotation students are informed about their duties and rights and the organization of the block-period, i.e. which disciplines they are going to work at for what period of time. Assessment tools are

presented and students are encouraged to indicate organizational deficiencies to the person in charge of the organization of the rotation.

In Bern, 6 to a maximum of 10 students pass through the rotations as a group. Together with their choice of a track (farm animals, horses, companion animals, pathobiology, veterinary public health) at the beginning of the master period they decide on the composition of the groups (organization of the 5th year rotation see attachment). Often these groups function as learning "units" up to their licensure examinations. In Zurich, each student follows his/her individual program.

Emergency service is an integral part of the clinical rotations. Final year students are obliged to do night duties dealing exclusively with emergencies. 5th year students are joined by junior students in these duties, supervised by staff of the clinics.

During day duty block students are requested to take in owners with animal patients and take a case history and perform a physical examination. They will discuss their findings with staff and - depending on their engagement and enthusiasm - present them to the animal owner. On daily ward rounds questions are discussed with responsible staff. Depending on the discipline/unit time for observation varies.

Student must keep record in the clinics (clinical information system "polypoint") but there is no formal obligation to report-writing.

3.1.6. 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

At the bachelor level, meat production (slaughtering technology (eg beef and pork), slaughtering hygiene aspects, official aspects of the slaughter animal and meat examination, BSE topic) is developed as lecture, self-study tasks and a field trip to a large abattoir (Schlachthof Basel). The field trip takes place in two subgroups. The groups are halved once again for the abattoir tour.

At the master level (9 weeks of VPH track in spring semester of the 4th year course), a further two and a half weeks are devoted to meat production (focus: EU legislation, Swiss legislation, practical meat control, evaluation of modified organs of slaughter animals, animal byproducts, practical slaughter monitoring). The content is developed through seminars, self-study, practical

exercises and field trips. The examination will be carried out within the framework of replying to written essay questions at the end of this module. The group size is from 10 to max. 12 students, for the practical exercises the group is halved.

The entire food chain (production, slaughtering, cutting, processing) is developed using the poultry meat chain as an example. These contents are developed within the framework of seminars, self-study, and a one-day field trip.

The topics of milk, egg, fish and honey (one day each) is also processed in the same way.

Each student also completes a slaughterhouse internship of 10 to 21 days (in the VPH track in the fifth year).

26 3.1.7. Description of the selection procedures of the Electives by the students and the degree of freedom in their choice (e.g. what happens when too many students select one specific track)

At the end of the bachelor period students are presented with the structure and goals of the track and professional possibilities after licensure. In a symposium as part of professionalism students learn about professional possibilities outside of strictly clinical work.

Entering their master period they are asked to decide on their track out of a selection of companion animals, farm animals, horses, veterinary public health, pathobiology and biomedical research (Zurich only). There is a limit of participants for each track which up to now never had been exceeded in any of the tracks. Measures for rerouting students have been discussed, there has fortunately never been a need for enforcing a selection procedure.

Electives value 2 ECTS and have to be acquired during the master course. Theoretically, any course at a Swiss university open to students from outside of the discipline may be attended. However, students will profit from many elective courses offered at their own Vetsuisse-location, since scheduling guarantees participation without missing other courses.

3.1.8. Description of the organisation, selection procedures and supervision of the EPT

Initially, the Vetsuisse Faculty asked for the self-declaration of the infrastructure of “teaching”-practices listed officially. Practitioners willing to accept students for an externship were listed as official teaching practices or clinics. Precondition was that they were running a primary health care full-time practice.

Students could either select their externship-practices from this list or suggest a practice of their choice which would have to be registered in the official list of the Vetsuisse Faculty.

This concept was abandoned since assessing the declared criteria was not possible due to resources.

Students now select practices providing basic veterinary services for their four week core and track externships on their own.

Student and “teaching” practitioner assess each other at the end of the externship. The “teacher” practitioner is asked to decide whether a student has passed the externship based on the criteria of the assessment-questionnaire while the student assesses the practitioner as a teacher/mentor.

Instructional support (faculty development) for the “teaching” practitioners has been discussed but not been put in place. It is one of the goals of the future curriculum to set up a system of mentoring teaching practitioners in collaboration with the professional organization of Swiss veterinarians.

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

In the bachelor period, procedures to ascertain students' achievements differ slightly between the two Vetsuisse locations: students' skills as learnt and practiced in the local skills lab are only being assessed at the Bern location. All other procedures are comparable.

All students must pass a practical examination in two core pre-clinical areas at the end of the bachelor period: practical anatomy and propaedeutics. The two examinations amount to one grade, mutual compensation is possible.

In anatomy, the examination is tripartite: applied anatomical radiology (Bern), gross anatomy with plastinates or live animals and histology with slides are equivalent in assessing the students' performance.

In propaedeutics, students are allotted to one out of eight possible positions to perform a physical examination: a twenty minute exam with a short feedback at the end.

At the Bern location, an OSCE has successfully been tested in a pilot run at the end of the 4th year (1st year of master) in June 2016. In 10 out of 14 stations of the newly set up skills-lab at the Bern location students were as-

essed with checklists according to state of the art procedures. In June 2017 the OSCE has taken place for the entire cohort for the first time.

During their clinical rotations students get oral feedback from their supervisors as they present the cases they work on. At the end of a rotation, students are assessed based on a standard online-evaluation sheet. In a final meeting with the persons in charge of the rotation they are informed about their performance as a group. In return, they give oral feedback about their experiences in the block. The same is valid in the ambulatory setting. In Zurich, each student's performance is assessed individually.

External core practical training: a list of skills performed or activities observed signed by the practitioner must be handed in by the students to the students' office in order to get the ECTS for the rotation.

At the Bern location, introduction of an online logbook in order to change from the present summative to a more formative assessment is planned for the year 2017/2018.

3.1.10. 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

The process of designing and implementing a curriculum is described in Chapter 1.1.6.

The present curriculum is based on the concept developed in 1999 by a group of Zurich and Bern faculty members. It was first implemented at the Bern location as a pilot to the common, Vetsuisse-version starting in 2003. The fundamental concept of organ-centred blocks in year 2 and 3, tracking from year 4 to the end of training, rotations in the clinics and paraclinical (pathology, infectious diseases) institutes in the last year of study has been maintained all along. Feedback from students (evaluation of the teaching units) and teaching staff are being brought up in the curriculum committee. The committee agrees to suggested changes or develops alternate propositions which are implemented in collaboration between responsible teaching staff and the local students' offices. Development of the curriculum and changes are communicated to the local faculty assemblies or to the Vetsuisse Faculty council.

The curriculum committee consists of 9 members per location, representing all levels of academic hierarchy. Student representatives are highly respected and play an important role.

Assessment is a permanent process following university rules and regulations. Organ-centred blocks and individual teaching are evaluated accordingly. Substantial are oral student feedback and faculty concern. The local student councils suggest improvements within single teaching units or across a semester or year of study via student representation in the curriculum committee. The faculty brings up concerns via their representatives in the curriculum committee.

Minor revisions often happen in the aftermath of organ-centred blocks. Staff responsible for the block revise alignment and organization with all teaching staff concerned. Changes are communicated to students via the offices of student affairs.

Major changes as a fundamental reform of the curriculum are based on the evaluation of the curriculum. For that purpose, newly graduated veterinarians and employers were surveyed in 2012 and 2013. In addition, goals of the concept of the present curriculum that were missed are closely considered designing the present strategic plan.

Electives are offered within the different tracks in spring-semester of year 4 of the curriculum. Electives with a minimum of 2 ECTS must be acquired. Most electives amount to these exact 2 ECTS, so that students can choose one single elective in order to reach the ECTS required. Basically, students are free to select from a wide range of lectures and seminars offered at other faculties, too – the intention was to promote “widening one's horizon”. As it turned out, our students prefer to profit from the electives offered at the Vetsuisse Faculty (see table 3.1.6). Most students take more than one of the electives, preferably one them of distinctly practical character (orthopedics in horses, hoof care in cattle).

Chapter 3.1 Curriculum: Continuing development of the curriculum

Task description of Curriculum Committee:
 submits curricular changes based on feedback from students, teaching staff, graduates and employers,
 external experts
 considers evaluations, reports, changes in needs of professional environment and society, and the
 requirements of local universities

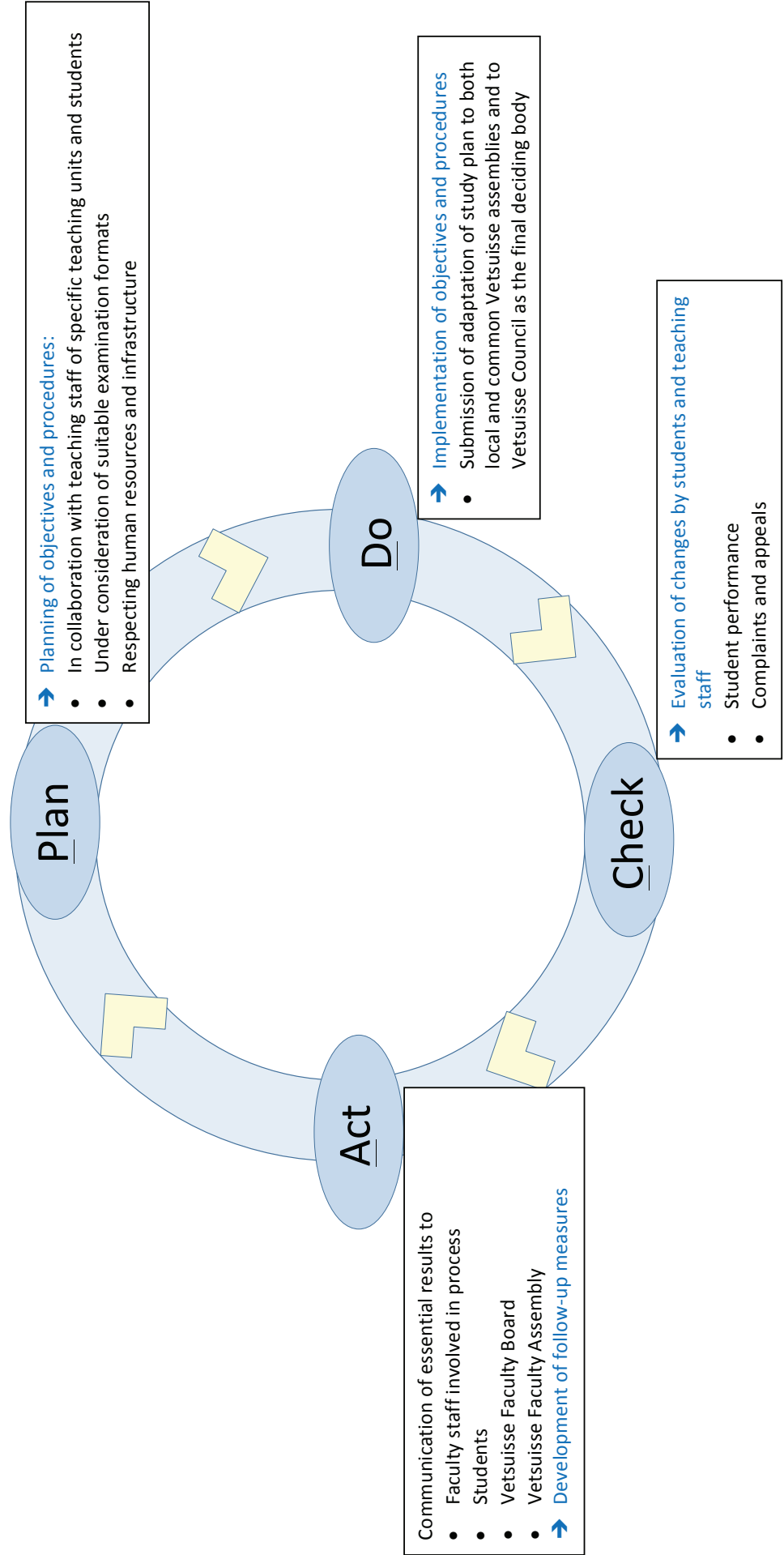


Table 3.1.1 Curriculum hours in each academic year taken by each student

Bern

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

Academic years*		Core/Track	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Year 1	fall sem	Core	283	2			62		7	354
	spring sem		136	1	24		66	9	6	242
Year 2	fall sem		343	13	14	5	14	21	2	411
	spring sem		251	14	4		29	4		301
Year 3	fall sem		218	30	20		34	12	12	326
	spring sem		286	9			36	29	8	367
Year 4	fall sem	Horse	219	18	88	15	11	18	5	374
	spring sem		12	148	71		6	39	11	287
	fall sem	Small animals	219	18	88	15	11	18	5	374
	spring sem		20	138	68			65		291
	fall sem	Farm animals	219	18	88	15	11	42	5	398
	spring sem		28	170	117		3	42	26	386
	fall sem	VPH	219	18	88	15	11	18	5	374
	spring sem			135	248		90			473
Year 5	fall sem	Pathobiology	219	18	88	15	11	18	5	374
	spring sem			45	122		306			473
	fall sem	Horse		19	18		147	1088		1272
	spring sem			19	18		147	1130		1314
	fall sem	Small animals		19	18		147	1120		1304
	spring sem			19	18		467	640		1144
	fall sem	Pathobiology		19	18		467	640		1144
	spring sem		1748	254	239	20	404	1219	50	3934
Total	1 - 5	Horse	1756	244	236	20	398	1287	39	3980
		Small animals	1764	276	285	20	401	1278	65	4089
	fall sem	Farm animals	1736	241	416	20	808	732	39	3992
	spring sem		1736	151	290	20	1024	732	39	3992

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

Zurich

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

H: total

Academic years*	Core/Track	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Year 1	Core	262	15	5	30	67		3	382
	spring sem	231	7	24		43			305
Year 2	fall sem	365	12	4		57	23	1	462
	spring sem	218	3			58	17		296
Year 3	fall sem	258	15	6		63	24	0	366
	spring sem	261		5		46	64		376
Year 4	Horse	227	40	45		6	60	2	380
	spring sem	141	81	84	2	6	222	6	542
	Small animals	227	40	45		6	60	2	380
	spring sem	146	88	84		10	161	6	495
	Farm animals	227	40	45		6	60	2	380
	spring sem	140	82	84		2	219	6	533
	VPH	227	40	45		6	60	2	380
	spring sem	53	171	138	36	56	142		596
	Pathobiology	227	40	45		6	60	2	380
	spring sem	26	153	144	104	114	134		675
Year 5	Biomedicine/ Research	227	40	45		6	60	2	380
	spring sem	28	87	154	200	62	134	8	673
	Horse					200	1040		1240
	Small animals					200	1120		1320
	Farm animals					280	1080		1360
	VPH				120	326	560		1006
	Pathobiology	26		54	121	300	660		1161
	Biomedicine/ Research		80		220	200	560		1060
Total	Horse	1963	173	173	32	546	1450	12	4349
	Small animals	1968	180	173	30	550	1469	12	4382
	Farm animals	1962	174	173	30	622	1487	12	4460
	VPH	1875	263	227	186	722	890	6	4169
	Pathobiology	1874	245	287	255	754	982	6	4403
	Biomedicine/ Research	1850	259	243	450	602	882	14	4300

Table 3.1.2

Track Horse Bern								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	151	2			38		12	203
Medical physics	70				20			90
Chemistry (inorganic and organic sections)	42							42
Animal biology, zoology and cell biology	31				18			49
Feed plant biology and toxic plants								
Biomedical statistics	8	2					12	22
Basic Sciences	881	33	29	15	184	4		1146
Anatomy, histology and embryology	180	1	12		176	2		371
Animal ethology	31	2				2		35
Animal nutrition	34				4			38
Animal welfare	35	3						38
Bacteriology	61	1	1	15				78
Biochemistry	49							49
Epidemiology	41							41
General and molecular genetics	46							46
Immunology	37	10	4					51
Microbiology	8							8
Parasitology	68				4			72
Pathology	48							48
Pharmacology, pharmacy and pharmacotherapy	24	2						26
Physiology	155							155
Professional communication								
Professional ethics								
Toxicology	38							38
Virology	26	14	12					52
Clinical Sciences	653	210	210	5	183	1215	11	2486
Obstetrics, reproduction and reproductive disorders	60	17			1	6	2	86
Diagnostic pathology	69	7	14	2	169	2		262
Medicine and surgery including anaesthesiology, therapy	413	156	126	3	13	19	8	738
Clinical practical training in all common domestic animal species		21	17			1153	1	1192
Preventive medicine	1							1
Diagnostic imaging	40	5	32			12		89
State veterinary services and public health	41		21					62
Veterinary legislation, forensic medicine and certification	6					2		8
Propaedeutics of all common domestic animal species	24	4				21		49
Animal Production	25	8						33
Animal breeding and animal production	14	2						16
Economics		2						2
Animal husbandry	10	4						14
Herd health management	1							1
Food Safety and Quality	32						8	40
Inspection and control of food and feed	32						8	40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	6	1					19	26
Professional ethics & behaviour								
Veterinary legislation	3							3
Veterinary certification and report writing								
Communication skills								
Practice management & business	3	1					12	16
Information literacy & data management							7	7
Total	1748	254	239	20	404	1219	50	3934

Track Small Animals BE								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	151	2			38		12	203
Medical physics	70				20			90
Chemistry (inorganic and organic sections)	42							42
Animal biology, zoology and cell biology	31				18			49
Feed plant biology and toxic plants								
Biomedical statistics	8	2					12	22
Basic Sciences	877	28	29	15	180	2		1131
Anatomy, histology and embryology	180	1	12		176	2		371
Animal ethology	31							31
Animal nutrition	30							30
Animal welfare	35							35
Bacteriology	61	1	1	15				78
Biochemistry	49							49
Epidemiology	41							41
General and molecular genetics	46							46
Immunology	37	10	4					51
Microbiology	8							8
Parasitology	68				4			72
Pathology	48							48
Pharmacology, pharmacy and pharmacotherapy	24	2						26
Physiology	155							155
Professional communication								
Professional ethics								
Toxicology	38							38
Virology	26	14	12					52
Clinical Sciences	665	213	207	5	181	1281		2551
Obstetrics, reproduction and reproductive disorders	72	2			1	6		81
Diagnostic pathology	69	7	14	2	169	2		262
Medicine and surgery including anaesthesiology, therapy	413	165	123	3	11	131		846
Clinical practical training in all common domestic animal species		21	17			1047		1085
Preventive medicine	1							1
Diagnostic imaging	40	14	32			74		160
State veterinary services and public health	41		21					62
Veterinary legislation, forensic medicine and certification	6							6
Propaedeutics of all common domestic animal species	24	4				21		49
Animal Production	25					4		29
Animal breeding and animal production	14					4		18
Economics								
Animal husbandry	10							10
Herd health management	1							1
Food Safety and Quality	32						8	40
Inspection and control of food and feed	32						8	40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	6	1					19	26
Professional ethics & behaviour								
Veterinary legislation	3							3
Veterinary certification and report writing								
Communication skills								
Practice management & business	3	1					12	16
Information literacy & data management							7	7
Total	1756	244	236	20	398	1287	39	3980

Track Farm Animals BE								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	151	2				38	12	203
Medical physics	70					20		90
Chemistry (inorganic and organic sections)	42							42
Animal biology, zoology and cell biology	31					18		49
Feed plant biology and toxic plants								
Biomedical statistics	8	2					12	22
Basic Sciences	883	37	34	15	2	183	10	1164
Anatomy, histology and embryology	180	1	12		2	176		371
Animal ethology	31							31
Animal nutrition	36	4						40
Animal welfare	35						10	45
Bacteriology	61	1	1	15				78
Biochemistry	49							49
Epidemiology	41	2	1					44
General and molecular genetics	46							46
Immunology	37	10	4					51
Microbiology	8							8
Parasitology	68					4		72
Pathology	48							48
Pharmacology, pharmacy and pharmacotherapy	24	5	4					33
Physiology	155							155
Professional communication						3		3
Professional ethics								
Toxicology	38							38
Virology	26	14	12					52
Clinical Sciences	664	195	245	5	1276	181	16	2581
Obstetrics, reproduction and reproductive disorders	73	12	8			1	8	102
Diagnostic pathology	69	7	14	2	2	169		262
Medicine and surgery including anaesthesiology, therapy	410	148	153	3	14	11	8	747
Clinical practical training in all common domestic animal species		21	17		1235			1273
Preventive medicine	1							1
Diagnostic imaging	40	3	32		4			79
State veterinary services and public health	41	0	21					62
Veterinary legislation, forensic medicine and certification	6							6
Propaedeutics of all common domestic animal species	24	4			21			49
Animal Production	27	7	6					40
Animal breeding and animal production	14							14
Economics		2						2
Animal husbandry	10							10
Herd health management	3	5	6					14
Food Safety and Quality	32						8	40
Inspection and control of food and feed	32						8	40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	8	35					19	62
Professional ethics & behaviour								
Veterinary legislation	5	26						31
Veterinary certification and report writing								
Communication skills								
Practice management & business	3	9					12	24
Information literacy & data management							7	7
Total	1764	276	285	20	1278	401	65	4089

Track VPH BE								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	151	2			38		12	203
Medical physics	70				20			90
Chemistry (inorganic and organic sections)	42							42
Animal biology, zoology and cell biology	31				18			49
Feed plant biology and toxic plants								
Biomedical statistics	8	2					12	22
Basic Sciences	877	28	29	15	180	2		1131
Anatomy, histology and embryology	180	1	12		176	2		371
Animal ethology	31							31
Animal nutrition	30							30
Animal welfare	35							35
Bacteriology	61	1	1	15				78
Biochemistry	49							49
Epidemiology	41							41
General and molecular genetics	46							46
Immunology	37	10	4					51
Microbiology	8							8
Parasitology	68				4			72
Pathology	48							48
Pharmacology, pharmacy and pharmacotherapy	24	2						26
Physiology	155							155
Professional communication								
Professional ethics								
Toxicology	38							38
Virology	26	14	12					52
Clinical Sciences	645	120	207	5	181	730		1887
Obstetrics, reproduction and reproductive disorders	60	2			1			63
Diagnostic pathology	69	7	14	2	169	2		262
Medicine and surgery including anaesthesiology, therapy	405	83	123	3	11	14		639
Clinical practical training in all common domestic animal species		21	17			689		727
Preventive medicine	1							1
Diagnostic imaging	40	3	32			4		79
State veterinary services and public health	41		21					62
Veterinary legislation, forensic medicine and certification	6							6
Propaedeutics of all common domestic animal species	24	4				21		49
Animal Production	25							25
Animal breeding and animal production	14							14
Economics								
Animal husbandry	10							10
Herd health management	1							1
Food Safety and Quality	32	90	180		410		8	720
Inspection and control of food and feed	32				80		8	120
Food hygiene and food microbiology		90	180		80			350
Practical work in places for slaughtering and food processing plants					250			250
Food technology including analytical chemistry								
Professional Knowledge	6	1					19	26
Professional ethics & behaviour								
Veterinary legislation	3							3
Veterinary certification and report writing								
Communication skills								
Practice management & business	3	1					12	16
Information literacy & data management							7	7
Total	1736	241	416	20	808	732	39	3992

Track Pathobiology BE								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	151	2			38		12	203
Medical physics	70				20			90
Chemistry (inorganic and organic sections)	42							42
Animal biology, zoology and cell biology	31				18			49
Feed plant biology and toxic plants								
Biomedical statistics	8	2					12	22
Basic Sciences	877	28	29	15	180	2		1131
Anatomy, histology and embryology	180	1	12		176	2		371
Animal ethology	31							31
Animal nutrition	30							30
Animal welfare	35							35
Bacteriology	61	1	1	15				78
Biochemistry	49							49
Epidemiology	41							41
General and molecular genetics	46							46
Immunology	37	10	4					51
Microbiology	8							8
Parasitology	68				4			72
Pathology	48							48
Pharmacology, pharmacy and pharmacotherapy	24	2						26
Physiology	155							155
Professional communication								
Professional ethics								
Toxicology	38							38
Virology	26	14	12					52
Clinical Sciences	645	120	261	5	807	730		2567
Obstetrics, reproduction and reproductive disorders	60	2			1			63
Diagnostic pathology	69	7	14	2	795	2		888
Medicine and surgery including anaesthesiology, therapy	405	83	123	3	11	14		639
Clinical practical training in all common domestic animal species		21	71			689		781
Preventive medicine	1							1
Diagnostic imaging	40	3	32			4		79
State veterinary services and public health	41	0	21					62
Veterinary legislation, forensic medicine and certification	6							6
Propaedeutics of all common domestic animal species	24	4				21		49
Animal Production	25							25
Animal breeding and animal production	14							14
Economics								
Animal husbandry	10							10
Herd health management	1							1
Food Safety and Quality	32						8	40
Inspection and control of food and feed	32						8	40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	6	1					19	26
Professional ethics & behaviour								
Veterinary legislation	3							3
Veterinary certification and report writing								
Communication skills								
Practice management & business	3	1					12	16
Information literacy & data management							7	7
Total	1736	151	290	20	1024	732	39	3992

Track Horse ZH								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	187	15	5	30	12			249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
Basic Sciences	957	38	32	2	460	10	6	1505
Anatomy, histology and embryology	163	1	10		148	8	4	334
Animal ethology	37							37
Animal nutrition	58				16	2		76
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	104	2			4			110
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	1	4	4				1	10
Parasitology	33	4	4	2	39			82
Pathology	94		2		208			304
Pharmacology, pharmacy and pharmacotherapy	66	1					1	68
Physiology	171				34			205
Professional communication								
Professional ethics								
Toxicology	8							
Virology	56	12	4		2			74
Clinical Sciences	741	115	136		60	1436	6	2494
Obstetrics, reproduction and reproductive disorders	81	12	13		6	120		232
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	485	83	91		4	728	6	1397
Clinical practical training in all common domestic animal species	5		6		3	500		514
Preventive medicine	2							2
Diagnostic imaging	41	8	14		5	40		108
State veterinary services and public health	70	12	12			8		102
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
								0
Animal Production	29							29
Animal breeding and animal production								
Economics								
Animal husbandry	28							28
Herd health management	1							1
Food Safety and Quality	26	4			10			40
Inspection and control of food and feed	26	4			10			40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	23	1			4	4		32
Professional ethics & behaviour	6							6
Veterinary legislation								
Veterinary certification and report writing								
Communication skills						4		4
Practice management & business	8	1			4			13
Information literacy & data management	9							9
Total	1963	173	173	32	546	1450	12	4349

Track Small Animals ZH								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	187	15	5	30	12			249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
Basic Sciences	963	38	32		464	4	6	1507
Anatomy, histology and embryology	163	1	10		148		4	326
Animal ethology	37							37
Animal nutrition	60				14	4		78
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	104	2			4			110
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	1	4	4				1	10
Parasitology	34	4	4		43			85
Pathology	94		2		208			304
Pharmacology, pharmacy and pharmacotherapy	65	1					1	67
Physiology	175				34			209
Professional communication								
Professional ethics								
Toxicology	8				2			10
Virology	56	12	4		2			74
Clinical Sciences	740	122	136		58	1461	6	2523
Obstetrics, reproduction and reproductive disorders	87	12	13		6	73		191
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	497	90	91		4	843	6	1531
Clinical practical training in all common domestic animal species	5		6		3	461		475
Preventive medicine								
Diagnostic imaging	40	8	14		3	44		109
State veterinary services and public health	54	12	12					78
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
Animal Production	29				2			31
Animal breeding and animal production								
Economics								
Animal husbandry	28				2			30
Herd health management	1							1
Food Safety and Quality	26	4			10			40
Inspection and control of food and feed	26	4			10			40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	23	1			4	4		32
Professional ethics & behaviour	6							6
Veterinary legislation								
Veterinary certification and report writing								
Communication skills					4	4		8
Practice management & business	8	1						9
Information literacy & data management	9							9
Total	1968	180	173	30	550	1469	12	4382

Track Farm Animal ZH								
2015/2016	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Basic subjects	187	15	5	30	12	0	0	249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
								0
Basic Sciences	972	38	32		458	16	6	1522
Anatomy, histology and embryology	163	1	10		148		4	326
Animal ethology	37							37
Animal nutrition	70				14	16		100
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	104	2			4			110
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	1	4	4				1	10
Parasitology	40	4	4		39			87
Pathology	94		2		208			304
Pharmacology, pharmacy and pharmacotherapy	63	1					1	65
Physiology	170				34			204
Professional communication								
Professional ethics								
Toxicology	8							8
Virology	56	12	4		2			74
Clinical Sciences	709	116	136		138	1400	6	2505
Obstetrics, reproduction and reproductive disorders	98	12	13		6	123		252
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	440	84	91		4	725	6	1350
Clinical practical training in all common domestic animal species	5		6		3	464		478
Preventive medicine								0
Diagnostic imaging	39	8	14		3	40		104
State veterinary services and public health	70	12	12		80	8		182
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
								0
Animal Production	45					60		105
Animal breeding and animal production								0
Economics								0
Animal husbandry	28					4		32
Herd health management	17					56		73
								0
Food Safety and Quality	26	4			10	7		47
Inspection and control of food and feed	26	4			10	7		47
Food hygiene and food microbiology								0
Practical work in places for slaughtering and food processing plants								0
Food technology including analytical chemistry								0
								0
Professional Knowledge	23	1			4	4		32
Professional ethics & behaviour	6							6
Veterinary legislation								0
Veterinary certification and report writing								0
Communication skills						4		4
Practice management & business	8	1			4			13
Information literacy & data management	9							9
Total	1962	174	173	30	622	1487	12	4460

Track Biomedicine/Research ZH								
	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
2015/2016								
Basic subjects	187	15	5	30	12			249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
Basic Sciences	962	124	102	420	518		14	2140
Anatomy, histology and embryology	163	1	10		148		4	326
Animal ethology	37							37
Animal nutrition	54				14			68
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	118	88	70	420	64		8	768
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	1	4	4		1		1	11
Parasitology	32	4	4		39			79
Pathology	94		2		207			303
Pharmacology, pharmacy and pharmacotherapy	63	1					1	65
Physiology	170				34			204
Professional communication								
Professional ethics								
Toxicology	8							8
Virology	56	12	4		2			74
Clinical Sciences	629	115	136		58	878		1816
Obstetrics, reproduction and reproductive disorders	72	12	13		6	27		130
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	402	83	91		4	363		943
Clinical practical training in all common domestic animal species	5		6		3	448		462
Preventive medicine								
Diagnostic imaging	39	8	14		3			64
State veterinary services and public health	54	12	12					78
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
Animal Production	29							29
Animal breeding and animal production								
Economics								
Animal husbandry	28							28
Herd health management	1							1
Food Safety and Quality	26	4			10			40
Inspection and control of food and feed	26	4			10			40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	17	1			4	4		26
Professional ethics & behaviour								0
Veterinary legislation								0
Veterinary certification and report writing								0
Communication skills						4		4
Practice management & business	8	1			4			13
Information literacy & data management	9							9
Total	1850	259	243	450	602	882	14	4300

Track Pathobiology ZH								
	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
2015/2016								
Basic subjects	187	15	5	30	12	0	0	249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
Basic Sciences	986	110	146	225	670	100	6	2243
Anatomy, histology and embryology	163	1	10		148		4	326
Animal ethology	37							37
Animal nutrition	54				14			68
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	104	2			4			110
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	20	58	76	89	134	50	1	428
Parasitology	32	4	4		39			79
Pathology	113	18	44	136	286	50		647
Pharmacology, pharmacy and pharmacotherapy	63	1					1	65
Physiology	170				34			204
Professional communication								
Professional ethics								
Toxicology	8							8
Virology	56	12	4		2			74
Clinical Sciences	629	115	136		58	878		1816
Obstetrics, reproduction and reproductive disorders	72	12	13		6	27		130
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	402	83	91		4	363		943
Clinical practical training in all common domestic animal species	5		6		3	448		462
Preventive medicine								
Diagnostic imaging	39	8	14		3			64
State veterinary services and public health	54	12	12					78
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
Animal Production	29							29
Animal breeding and animal production								
Economics								
Animal husbandry	28							28
Herd health management	1							1
Food Safety and Quality	26	4			10			40
Inspection and control of food and feed	26	4			10			40
Food hygiene and food microbiology								
Practical work in places for slaughtering and food processing plants								
Food technology including analytical chemistry								
Professional Knowledge	17	1			4	4		26
Professional ethics & behaviour								
Veterinary legislation								
Veterinary certification and report writing								
Communication skills						4		4
Practice management & business	8	1			4			13
Information literacy & data management	9							9
Total	1874	245	287	255	754	982	6	4403

Track VPH ZH								
	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
2015/2016								
Basic subjects	187	15	5	30	12			249
Medical physics	44	15	5	15				79
Chemistry (inorganic and organic sections)	70			15				85
Animal biology, zoology and cell biology	48							48
Feed plant biology and toxic plants								
Biomedical statistics	25				12			37
Basic Sciences	953	38	32		458		6	1487
Anatomy, histology and embryology	163	1	10		148		4	326
Animal ethology	37							37
Animal nutrition	54				14			68
Animal welfare	24							24
Bacteriology	68	4	4					76
Biochemistry	104	2			4			110
Epidemiology	18				9			27
General and molecular genetics	20							20
Immunology	36	10	4					50
Microbiology	6	4	4				1	15
Parasitology	32	4	4		39			79
Pathology	94		2		208			304
Pharmacology, pharmacy and pharmacotherapy	63	1					1	65
Physiology	170				34			204
Professional communication								
Professional ethics								
Toxicology	8							8
Virology	56	12	4		2			74
Clinical Sciences	645	115	136		58	886		1840
Obstetrics, reproduction and reproductive disorders	72	12	13		6	27		130
Diagnostic pathology	23				42	4		69
Medicine and surgery including anaesthesiology, therapy	402	83	91		4	363		943
Clinical practical training in all common domestic animal species	5		6		3	448		462
Preventive medicine								
Diagnostic imaging	39	8	14		3			64
State veterinary services and public health	70	12	12			8		102
Veterinary legislation, forensic medicine and certification	16							16
Propaedeutics of all common domestic animal species	18					36		54
Animal Production	29							29
Animal breeding and animal production								
Economics								
Animal husbandry	28							28
Herd health management	1							1
Food Safety and Quality	44	94	54	156	190			538
Inspection and control of food and feed	26	4	0					30
Food hygiene and food microbiology	18	90	54	156	190			508
Practical work in places for slaughtering and food processing plants								0
Food technology including analytical chemistry								0
Professional Knowledge	17	1	0	0	4	4	0	26
Professional ethics & behaviour								0
Veterinary legislation								0
Veterinary certification and report writing								0
Communication skills						4		4
Practice management & business	8	1			4			13
Information literacy & data management	9							9
Total	1875	263	227	186	722	890	6	4169

3.2. Comments

The present curriculum is well established, undergoing permanent development in order to eliminate or appease deficiencies and achieve improvements. Evaluation processes are known to stakeholders within the faculty at both locations. The strategic plan implies changes considering deficiencies of the present state such as earlier integration of the students in clinical work, promotion of independent learning and formative assessment all along the curriculum.

3.3. Suggestions of improvement

Although curricular development is managed at both locations by measures proposed by the common curriculum committee specific local needs are difficult to get integrated in the process of revision or development. Initiatives of one location may not correspond to the needs of the other location which leads to solutions not fully compatible with the curricular regulations of the Vetsuisse Faculty.

It would be desirable to define a framework of regulations (Studienplan) allowing more flexibility in adapting the curriculum to the specific local needs.

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Table 3.1.4: Curriculum days as External practical training

Bern and Zurich		
Subjects	Minimum duration (weeks)	Year of programme
Farm animals (pre-clinical)	depending on the track, see below	
Companion animals (pre-clinical)		
Production animals (clinical)		
Companion animals (clinical)		
FSQ & VPH		
Others (specify)		
Core \$	4	5
Track *	4	5

\$ privat practice clinic (production or companion animals or a mixed practice)

** depending of the chosen track students have to make a external practical training in their track (privat practice, abroad practice, university or industry)"

Table: 3.1.5: Clinical rotations under academic staff supervision

Zurich		Core		Track	
Types	List of clinical rotations (Disciplines/Species)	Duration (weeks)	Year of programme	Duration (weeks)	Year of programme
Intra-mural (VTH)	Small animal clinic	6	5	12	5
	Internal medicine	2		1	
	surgery and orthopaedics	1		2	
	Medical imaging			1	
	Anaesthesiology				
	Intensive care				
	Neurology				
	Dermatology			1	
	Cardiology			1	
	Ophtalmology			1	
	Laboratory medicine	1			
	Emergency	2			
	Reproduction			1	
	Zoo Animals			3	
	Oncology			1	
		Horse clinic	3	5	12
	internal medicine	1,5		4	
	Surgery and orthopaedics	1,5		3	
	Reproduction			1	
	Anaesthesiology			2	
	Medical imaging			2	
	Ruminant clinic + Swine clinic	5	5	13	5
	Internal medicine	1		2	
	Reproduction and Herd Health medicine			2	
	Ambulatory clinics	1		3	
	Surgery	1		2	
	swine clinic			1	
	Emergency	2			
	Anaesthesiology			2	
	Medical imaging			1	
	pathology	4	5	16	5
	biomedical research			16	
FSQ & VPH				16	

Table: 3.1.5: Clinical rotations under academic staff supervision

Bern		Core		Track	
Types	List of clinical rotations (Disciplines/Species)	Duration (weeks)	Year of programme	Duration (weeks)	Year of programme
Intra-mural (VTH)	Small animal clinic	4	5	12	5
	Internal medicine	1,5		3	
	surgery and orthopaedics	1,5		3	
	Medical imaging	0,5		1	
	Anaesthesiology	0,5		1	
	Intensive care			1	
	Neurology			1	
	Dermatology			1	
	Ophthalmology			1	
	Horse clinic	4	5	12	5
	internal medicine	2		6	
	Surgery and orthopaedics	2		5	
	Reproduction			1	
	Ruminant clinic + Swine clinic	4	5	12	5
	Internal medicine	1		3	
	Reproduction and Herd Health medicine	1		3	
	Ambulatory clinics	1		2	
	Surgery			2	
	swine clinic	1		2	
	pathology	4	5	12	5
FSQ & VPH				12	5

Table 3.1.6 Optional courses proposed to students

Bern								
subjects	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Biology and Pathobiology of bees		5	5			35		45
Claw trimming course		3				18		21
Complementary medicine		9				9		18
Farm animals congress	18							18
Fish diseases and immunology		6				18		24
Intensive care of small animals		24						24
One Health / Preventive medicine	16	8	8					32
Orthopaedics in horses		6				18		24
Pathology of clinical cases		24			24			48
Research externship in veterinary molecular genetics		5		65				70
Training of gynaecological skills		8				16		24
Ultrasound course		6				18		24
Zoo animals, exotic pets course		5	5			30		40
Total	34	109	18	65	24	162		412

Table 3.1.6 Optional courses proposed to students

Zurich								
subjects	lectures	seminars	supervised self learning	laboratory and desk based work	non-clinical animal work	clinical animal work	others	total
Foundation of developmental psychology	28	28						56
Foundation of general psychology	28	28						56
Basic academic writing skills: Natural sciences and engineering	28							28
Biology of the honeybee and apiculture, seminar and practical	20				12			32
Case Discussions of Clinical Emergencies		14						14
Chinese I A1.1	28							28
Corso di base A1 (Italian)	28							28
Course in Zoo Animal Biology for Veterinary Students	18		4			13		35
Evidence Based Complementary Medicine	14					14		28
Exotics Club		14				28		42
Field diagnostics - Knowledge transfer		14				14		28
First Aid Course for Sport Teaching	6					8		14
Functional Foot Trimming in Cattle	7					16		23
Grammatica in contesto comunicativo A2-B1 (Italian)	7	14			7			28
Improvisation in Theatre in German as a foreign language	28							28
Introduction into Veterinary Practice Management		8						8
Introduction to Homoeopathy	28							28
Introduction to Statistics	7				7			14
German language; B2	28							28
One Health	14	14						28
Seminar aus dem Gebiet der Nutztiere und der Reproduktionsmedizin		28						28
Small Animal Anaesthesia: Stand by Duty						30		30
Swedish I A1	28							28
Understand and Apply Dialect in Swiss German; B2-C1	28							28
Vetsuisse Farm Animal Evening		28						28
Small Animal Reproduction: Hands On						28		28
Writing your master's thesis: Natural science and engineering C1-C2 (English)	28							28
Zoo Health Management						120		120
Total	401	190	4		26	271		892

4

Facilities and equipment



4. Facilities and equipment

4.1. Factual information

4.1.1. Description of the location and organisation of the facilities used for the veterinary curriculum (surface area, distance from the main campus for extramural facilities, ..) (maps to be provided as appendices)

Both faculties have their own campus, i.e. all facilities dedicated to teaching, public services and research (official denomination: Tierspital) are gathered on an area of 67000m² at the Zurich and 38900 m² at the Bern location.

The Bern Vetsuisse campus is located to the West of the Old City, a 5 minutes' bus ride from the main railroad station. One of the city-exits of the Swiss national highway N1 to Bern is a two minutes' drive to the northwest of the campus. The campus is on the western end of the "university blocks", in close vicinity to other faculties of the Bern University.

The Zurich main campus of the Vetsuisse Faculty is located at the Eastern boundary of Zurich City, in close vicinity to the Irchel campus of the university, where, among others, the faculty of natural sciences resides. The campus can be reached by public transportation (tram lines 7 and 9) within 15 minutes from Zurich main railway station and 20 minutes from the airport. Also, it is located only a few minutes to the South-East from the exit of the Swiss national highway N1 (map 1).

Informations to chapters 4.1.2. to 4.1.5. please see following pages.

4.1.2. Description (number, size, equipment, ..) of the premises for:

- lecturing
- group work (seminars, tutorials, ..)
- practical work (laboratories, rooms for clinical skills room on dummies, ..)

4.1.3. Description (number, size, species, ..) of the premises for housing:

- healthy animals
- hospitalised animals
- isolated animals

4.1.4. Description (number, size, equipment, species, disciplines, ..) of the premises for:

- clinical activities
- diagnostic services including necropsy
- FSQ & VPH (slaughterhouses, foodstuff processing units, ..)
- others (specify)

4.1.5. Description (number of rooms and places, ..) of the premises for:

- study and self-learning
- catering
- locker rooms
- accommodation for on call students
- leisure

4.1.6. Description (number, size, equipment, ..) of the vehicles used for:

- students transportation (e.g. to extramural facilities)
- ambulatory clinics
- live animals transportation
- cadavers transportation

At both locations, number and composition of the vehicle pool meet the needs of the institutions.

Bern:

7 cars available to students attending extramural activities and teaching staff.

3 cars are allocated to the ambulatory clinic equipped for rural feed animal practice.

1 delivery van and 1 trailer serve animal transportation (horses, farm animals)

2 vehicles are dedicated to the transport of material of animal origin

Special gear serves the technical services of the animal hospital

Cadavers are collected by a specialised enterprise at specific premises next to the autopsy hall of the institute of pathology

Zurich:

4 cars are allocated to the ambulatory clinic equipped for rural feed animal practice.

2 delivery vans serve for animal transportation (horses, farm animals)

1 van (9 seats each) for the transportation of staff and students

1 van dedicated to the transport of material of animal origin

1 van dedicated to laboratory purposes

3 vehicles for maintenance and technical purposes

1 large and 1 small tractor, 3 forklifts

4.1.1 Description of the location and organisation of the facilities used for the veterinary curriculum (surface area, distance from the main campus for extramural facilities, ..) (maps to be provided as appendices)		Bern	Zurich
1st year lecture halls	Chemistry and physics lectures and the subjects taught by institutes of the medical faculty take place in lecture halls of the natural science and medical faculties. All other lectures for the large first-year cohorts (110 students) are held at the large auditorium (seating 134).		The students of the 1st academic year have most of the lectures on the neighbouring Irchel Campus (3 minutes' walk from the Vetsuisse Campus), as Vetsuisse doesn't have enough lecture halls.
Simultaneous lecturing at both locations (Tele-teaching)	Large auditorium on premises of Vetsuisse-faculty of Bern (Neues Lehrgebäude)		The lectures transmitted by teleteaching take place in the Irchel. The lecture hall with the technical apparatus is there (Y35-F-51).
Practicals concerning large animals (cow and horse)	premises of feed animal clinic. Rectal palpation at farms according to separate contracts. The farms are located at 30 minutes driving distance. Equine practicals are offered either at the clinic or at the Avenches location of the Swiss Institute of Equine Medicine		Most of the practicals with cows and horses take place in Oberengstringen on the Stigenhof. This location will be abandoned and the animals will be transferred to Strickhof Agrovet Lindau (at 30 minutes' distance by public transportation and 15 minutes by car). The propaedeutic practicals with cows and horses will be held in Lindau starting in the fall semester 2017. The Equine Department has an agreement with Alp Führen and with the Circus Knie, allowing Master students to attend specific courses, i.e. teeth rasping.
slaughterhouse	no local slaughterhouse available. Visits of slaughterhouse (Basel) within FSQ-teaching 3rd year.		The slaughterhouse is in Zürich, where the courses in reproduction take place
lecture halls	5 lecture halls ranging from 60 to 110 seats 1 lecture hall equipped with microscopes (60 seats)		4 lecture halls ranging from 64 to 127 seats, one of them equipped with microscopes.
rooms for seminars and small group sessions	11 rooms, managed by students' office: 2 rooms seating 20, 9 rooms seating 6 to 10 people. Standard infrastructure with large screen / projection and PC.		6 rooms (size varies from 10 to 36 people) for group work and seminars (http://vetdek-elk.uzh.ch/mrbs/web/). The reservation system is in the responsibility of the Vetsuisse faculty and simple. During terms, the teaching has priority for room reservations.
Skills-Lab / wet-lab	dual-use infrastructure in skills-lab: presently 12 stations for skills-training or use as wet-lab for practicals in bacteriology and parasitology		Practicals: for laboratory work a diagnostic cytology lab with a multi-headed microscope (9 seats) is used for teaching students, postgraduate students, and technicians (TFA 10.22). There are no permanent rooms for clinical skills lab or teaching laboratories. The dummies must be moved there when needed.

	Bern	Zurich
necropsy	post mortem room of institute of pathology 2 multihed microscopes: 8 seats in students room next to necropsy hall, 10 in institute of pathology.	Post mortem room suite (2 rooms) for diagnostic necropsies. Dedicated room with microscopes, computers and data projection for clinical rotation students (TBA 00.11), «Diagnosics room» with multi-headed microscope (10 seats) with data projector for histology rounds with undergraduate and postgraduate students (TDI 10.01).
anatomy	anatomy preparation room at institute of animal anatomy	The institute of veterinary anatomy has the Präpariersaal, where all the training in anatomy is done.
clinical practical training	rooms for clinical training on live animals in each clinic	Official clinical examination rooms are used for the clinical training of students.
independent study	64 places within premises of faculty-library. The 11 rooms for small group sessions are open for independent study if not used for teaching (room capacity ranging from 8-20 persons). Further study places in 2 more libraries of phil-hist. and phil-hum. faculties at 4 minute walking distance each.	The library TFA 01.51 in the main building is accessible 7/24 (room for 41 students, 33 with desk, 8 armchairs). Seminar rooms above the library (TFA 00.50 and TFA 00.52) if not in use otherwise. Further study places in the hall of the main building on the top level (tables and chairs).
recreation	small area for recreation within library. Outdoor space with tables around building of library/anatomy/Dean's Office (Länggassstr. 120).	waiting room of former small animal clinic for recreation room (80m2), eating (micro-waves), learning and leisure (access only for students). There are also a few places to eat or learn in the TDI building.
sport and leisure	gym halls and sports infrastructure of phil-humanistic (psychology and sports-)faculty at 5 minutes walking distance from VTH accessible to all students	Also nearby is the Irchel sports area and the cantonal Irchel park where sports and leisure are possible (5 minutes walking distance).
Catering	Dining area with mowcrowaves for students (approx. 60m2) in building of library/anatomy/Dean's Office. 2 University-Canteens at 4 minute walking distance or self-catering at faculty dining area	The canteen (mensa) of the Vetsuisse is the central meeting place for meals and for leisure. Further university cafeterias (one big mensa, two smaller ones) at Irchel Campus (5 minutes walking distance)
accomodation for students on call	each clinic is providing 4 beds for students on call during night-duties, in all 12 beds.	In TPE there are rooms for on call students, all in all 16 beds. Right now, we are very well of with the accommodation for on call students.
Locker rooms	separate locker room with 330 lockers. Managed and maintained by faculty technical services (janitor).	The students of the 1st academic year can rent lockers at the Irchel. There are enough locker rooms for the students from the 2nd to the 5th academic year (343 lockers). The Fachverein allots the lockers at the beginning of the academic year.

4.1.2. Description (number, size, equipment, ..) of the premises for:		
	Bern	Zurich
Lecturing		
auditoria allowing realtime lecturing at both locations (Tele-Teaching)	Neues Lehrgebäude, Länggassstr. 124c (145 seats)	auditorium (175 seats) on the Irchel campus of the University of Zurich (4 minutes' walk from VTH)
Lecture hall equipped with microscopes	Mikroskopierhösraum, Länggassstr. 120 (63 seats)	Mikroskopierhösraum TDI 10.129 (84 seats) equipped with 84 microscopes
Lecture hall without specific equipment (number of seats)	Hösraum Anatomie. Länggassstr. 120 (60), Hösraum Länggasse, Länggassstr. 124 (62), Hösraum Paraklinik, Länggassstr. 122 (110), Hösraum Bremgartenstr. 109 (70)	Anatomiehösraum TAT 00.07 (64 seats), Grosser Hösraum TFA 00.44 (90 seats), Klinikdemonstrationshösraum TDE 00.04 (127 seats)
Group work (seminars, tutorials)		
group rooms	11 (learning center, seating 8 to 20). The Office of Student Affairs is in charge of the reservation system. Lectures have priority for room reservations. Rooms for clinical student rounds in all clinics	6 (seating 10 to 36) for group work and seminars (http://vetdek-elk.uzh.ch/mrbs/web/). The reservation system lies in the responsibility of the Vetsuisse faculty. Lectures have priority for room reservations.
seminar rooms	Pathology (seating 16), Horse Clinic (20) and Farm Animal Clinic (16). Small Animal experimental surgery room (40).	4 (seating 12-40) for seminars
video conferencing	seminar room seating 10 people	seminar room seating 10 people
practical work	Division of Veterinary Anatomy: anatomy wet lab (Präpariersaal) with 50 places.	The institute of veterinary anatomy has its own wet lab (Präpariersaal) where all training in anatomy takes place.
	Dual purpose wet lab: a) Skills Lab with 12 stations, b) wet lab for practical courses (Bacteriology, Parasitology)	no permanent rooms for clinical skills lab or teaching laboratories
	room for independent study adjacent to post mortem hall: diagnostic room with a multi-headed microscope (9 seats) for 5th year students in their pathology rotation.	1 diagnostic cytology lab with a multi-headed microscope (9 seats) is used for teaching students, post-graduate students, and technicians (TFA 10.22). 1 diagnostic room with a multi-headed microscope (6 seats) within premises of post mortem hall.
	Post mortem hall: necropsies	Post mortem hall: necropsies

4.1.3. Description (number, size, species, ...) of the premises for housing healthy, hospitalised and isolated animals		Bern	Zurich
healthy animals			
Small animals	No separate facilities for healthy animals except external cages for staff owned dogs and a bird/small animal cage for clinical training of students and technicians		1 room for 15 cats
Ruminants	Three barns of about 60 healthy cows each (about 180 cows in total). Two of the farms produce under conventional conditions (agricultural school Inforama Rütli, Zollikofen; agricultural school of Grange-neuve); the third one is an organic farm (Ferme-Ecole de Sorens). The facilities are located at 8 to 53 kilometers from the campus. Gynaecological examinations can be practised at these facilities in the course of herd health management practises. However, it is not the primary purpose of these farms to serve as teaching farms for veterinary students. So, a real «teaching & research» facility is missing. The organic farm is of special value, as it allows to show the students the management under these specific conditions. Organic farming is of steadily increasing importance in the Swiss agriculture. 5 to 6 healthy sheep and 1 healthy cow are kept on the campus of the Vetsuisse-Faculty.		Barn for 24 healthy cows, 6 horses, 10 sheep and 10 goats (Stigenhof, Oberemb-rach). A variety of procedures are practised by students at this facility, including gynaecological examinations, blood and urine collection and udder and milk evaluation. The farm is 22 kilometres from campus. Starting in April 2017, these procedures will be carried out at a new facility built by Agrovet and located on the premises of the Strickhof Agricultural School. This new facility will house 60 cows, which will be used for the above-mentioned procedures as well as for obstetrical instructions. Two bulls also will be housed at this facility for reproductive and semen evaluations. This new facility is approximately 15 kilometres from campus.
Pigs	There is no barn dedicated to the accommodation of healthy pigs for the purpose of teaching students in pig farming, routine treatments and measures, etc.		15 sows housed in 6 farrowing crates and 10 gestation crates for up to two sows each; 2 crates for up to three finishing pigs each; three crates for up to 24 weaning pigs each (Area „Alter Strickhof“, 5 min. walking distance from VTH)
Horses	The Equine Clinic at the Bern location is composed of two clinical sections (Equine internal medicine and Equine surgery), with the following equine animal housing: A total of 50 boxes, for ambulatory patients as well as stationary patients (46 inside for intensive patients, 4 outside with little paddock; one of them with bigger paddock), one covered lunging arena, two little pasture for the daily free movement of healthy and convalescent patients, one horse walker for the daily movement of healthy and convalescent patients. ISME Avenches (partner institution at Swiss National Stud) Premises are provided by the associated Swiss National Stud/ Agroscope: A total of 46 boxes for ambulatory patients as well as stationary patients (14 with outdoor paddock), 1 group housing stable for 12 mares for research and students training, 8 sand paddocks for the daily free movement of healthy and convalescent patients, 3 big gras fields for the daily free movement of healthy and convalescent patients, one covered horse walker for the daily movement of healthy and convalescent patients		The Equine department is composed of five clinical sections (Equine internal medicine, Equine sports medicine, Equine surgery, Anaesthesia and Ophthalmology for large and small animals), with the following equine animal housing: A total of 40 boxes, for ambulatory patients as well as stationary patients (21 inside for intensive patients, 19 outside) One paddock for the daily free movement of healthy and convalescent patients One horse walker for the daily movement of healthy and convalescent patients
hospitalised animals			
Small animals	Total of 81 boxes and cages. 21 boxes for intensive care patients, 24 boxes for dogs (surgery, internal medicine, neurology), 20 boxes for cats, 8 places for physiotherapy (underwater treadmill), 6 boxes post-operative awakening, 2 boxes for radioiodide-treatment, 4 boxes for small wild animals (birds, hedgehog), 4 cages for dogs (Hundestall)		Total of 65 boxes and cages. 56 boxes of small, medium and large size for cats and dogs, 1 wake up room for cats and dogs, 1 room for physiotherapy (underwater treadmill).
Ruminants	Total of 36 animals: 21 tie stall places for cows and heifers; 3 box stalls for cows; 4 calf places; 8 individual boxes for sheep, goats and new world camelids (former BVD stall)		Total of 55 animals: 24 cows in tie stalls, 5 heifers in tie stalls, 6 cows in box stalls, approximately 10 sheep/goats/New world camelids in box stalls and approximately 10 calves in box stalls.

	Bern	Zurich
hospitalised animals		
Pigs	Total of 21 pens in a single barn, equipped with 8 pens for suckling pigs, 11 pens for weaners and/or fattening pigs, and 2 pens for sows (partly allowing free farrowing in these pens). Any separation of different age- and/or production groups is not possible	One room with three crates for suckling piglets or weaned pigs up to 20kg and one crate appropriate for up to five weaned pigs; one room with 5 crates for three to five finishing pigs each Alter Strickhof: The pig-facilities at the "Alter Strickhof" are 500 m away from the campus and consist of 22 boxes for housing dams and weaned pigs or fattening pigs. These facilities are used for keeping pigs for research purposes and for the student's training. There is also an office and a preparation room, where minor surgery can be performed, as well as a meeting room for students to discuss clinical cases. Agrovet: For student's education we are authorized to access the pig plant of Agrovet Strickhof Lindau (built in 2005), 17 km away from the campus. The nucleus herd consists of 80 dams, 300 weaning pigs and 250 fattening pigs.
Horses	The present equine clinic (opened after complete reconstruction in September 2015) provides the following infrastructure (only new building): a total of 32 boxes for ambulatory and stationary patients, incl. one padded box with a hoist for neurologic patients, 2 normal boxes with possibility to put the horse in the a sling (hoist), 4 boxes for ponies and one additional isolation box ISME Avenches (partner institution at Swiss National Stud): A total of 46 boxes, for ambulatory patients as well as stationary patients (14 with outdoor paddock), 8 sand paddocks for the daily free movement of healthy and convalescent patients, 3 big gras fields for the daily free movement of healthy and convalescent patients, one covered horse walker for the daily movement of healthy and convalescent patients	40 boxes, for ambulatory and stationary patients (21 inside, 19 outside) 1 paddock for the daily free movement of healthy and convalescent patients 1 horse walker for the daily movement of healthy and convalescent patients
isolation barns		
Small animals	6 cages for classical infectious diseases and 5 boxes (1 hospitalisation ward that can be dedicated for the treatment of multiresistant bact. infections)	14 boxes for both cats and dogs
Ruminants	Only 5 individual isolation boxes (2 for cows/heifers and 3 for calves/sheep/goats/new world camelids); the former BVD stall allows for separation but does not allow for efficient isolation of animals and is, therefore, nowadays mainly used for sheep, goats and new world camelids	Total of 20 animals. 2 wards for isolation of cattle, sheep and goats a) Cattle with enteritis are isolated in one of two wards with space for a total of 7 cattle (2 tie stalls in one ward and 6 tie stalls and a calving pen in the other). In addition, there are 4 box stalls for calves. b) BVD ward: Cattle suspected of having bovine virus diarrhoea virus infection or being persistently infected with BVD virus are housed in this ward, which has space for 6 cows and includes several box stalls for calves.
Pigs	1 room with 2 pens for sucking pigs and 1 pen for weaners or mini pigs. 1 room with a flexible pen accommodating a single pig up to 300 kg. The isolation unit is equipped with a separate entrance and separate air inlets and outlets, but does not facilitate BSL2 or higher	One room with two crates for up to three finishing pigs and one crate for up to 6 finishing pigs
Horses	Old building adjacent to farm animals barn: 7 boxes for allergy-patients («lung» barn), 4 boxes for scintigraphy (scintigraphy not in use anymore), 4 outdoor boxes with adjacent paddock. ISME Avenches (partner institution at Swiss National Stud): 8 boxes for isolation in case of infectious disease management	Two isolation boxes for animals with suspected communicable diseases, with a separate entrance, properly constructed and maintained

4.1.4. Description (number, size, equipment, species, disciplines, ...) of the premises:		Bern
	premises clinical and diagnostic activities	equipment
Diagnostic imaging		
Computed Tomography	1 room for large animal CT 1 room for small animal CT	Medtronic O-Arm cone beam CT Philips Brilliance 16 slice Philips HFO Panorama 1T
magnetic resonance imaging	1 room for MRT	Opera Swing Fluoroscopy and DR Siemens (ceiling mounted); Fujifilm CR (FCR 5000), Gierth mobile x-ray unit, Fuji DR Siemens x-ray unit, Fuji CR profect one, Opera Swing DR GE SB, GE E9, Aloka alpha7 PACS (AGFA Impax EE), Campus licence including student access and teaching archive.
Fluoroscopy		
Digital x-ray units	1 room large animal x-ray 2 rooms for small animal x-ray	
Ultrasonography	1 one for large animal ultrasonography 2 rooms for small animal ultrasonography 3 rooms for film reading	
Small animal surgery	1 surgical suite with 2 tables for general surgery and orthopaedics, 1 surgical suite for orthopaedics and small invasive surgery, 1 surgical suite for ophthalmology and microsurgery, 1 surgical suite (outside of the OR Block) for septic surgeries and emergency surgery, 1 room for dentistry and wound therapy	Laparoscopy tower, Arthroscopy tower, ligasure, cutting and sealing devices for endoscopic surgery, C-Arm, Force plate, exercise tower for Arthroscopy, 2 Operating microscopes, CUSHA, Full range of operating instruments, orthopaedic sets, minimal invasive Sets for Arthroscopy and Laparo/Thoracoscopy, State of the Art Anesthetic and Monitoring Equipment treatment table, desk with computer, washing facility and equipment for clinical exams. Ultrasound for echocardiography, EMG
Small animal medicine	8 Consultation rooms including cardiology, neurology and ophthalmology, used by all sections of the small animal clinic Emergency and Trauma Room Intensive Care 24/7, Emergency clinical Lab including a blood bank fully equipped to perform emergency life saving interventions classical ICU treatment including ventilatory treatment 1 Endoscopy Room, 1 Dialysis Room, 1 Treatment Room, 1 Physiotherapy Room	US for FAST Exams, Monitoring and Anesthesia Equipment Classical ICU Equipment, O2 cages, Fluid Pumps, Monitoring Blood gases, ER chemistry, Cytology, Blood Bank
Farm animal clinic		
Ruminants	premises clinical and diagnostic activities 2 large rooms for the examination and medical and surgical treatment of cattle, sheep, goats and new world camelids. For clinical teaching, the examination/surgery rooms and the main barn are being used. For the students during their clinical rotations, a meeting room is available. The latter is equipped with computers and a diagnostic imaging working station. Furthermore, a small lab room is available in the barn. No separate examination/triage rooms for incoming patients available.	equipment An emergency laboratory is available at the clinic for 24/7 use. Otherwise, the central lab is available during working hours. Samples for the various microbiological analyses are being processed at the labs of the respective institutes, located on the campus. Some samples may be processed at the IVI in Mittelhäusern (reference lab for highly contagious diseases, BL3) or at Vetsuisse Zürich. Endoscopic and ultrasonographic examinations are being performed at the clinic for ruminants with the equipment of the clinic. Radiographic examinations are being performed either at the central diagnostic imaging unit or, in case of non-ambulatory animals, with a portable equipment in the clinic. Postmortem examinations are done at the Institute of Veterinary Pathology, Vetsuisse Faculty, Bern. Special equipment for examination of the eye are provided by the ophthalmology section of the clinical department. Available at the farm animal clinic are: Complete AO-set for internal fracture fixation; Complete endoscopy tower for the relevant minimal invasive surgical procedures including laparoscopic abomasoscopy, arthroscopy and theoscopy; anaesthesia equipment and respective monitoring instruments; endoscopy/ultrasonography; performed by the clinic staff Available equipment includes 3 ultrasound machines (2-5.8 MHz) incl. echocardiography probe and ECG; equipment to handle downer animals (lift, water bath)
Pigs	1 large room for the examination and medical and surgical treatment owned by the ruminant clinic can be used on purpose for clinical teaching, examination and/or surgery in pigs.	The same equipment for diagnostic activities as for the ruminants can be used for (mini) pigs, too.
Slaughterhouse	Former slaughterhouse now available for stunning and bleeding of ruminants that will then be transported to an outside slaughterhouse	
Horse clinic	premises clinical and diagnostic activities horse clinic at Vetsuisse faculty Bern location 2 large examination and treatment rooms (one for patients of equine internal medicine / Ophthalmology and one for patients of equine surgery). In the examinations and treatment room of the Equine surgery possibility for standing surgeries in the stock. Two surgery rooms (septic and aseptic) with adjacent recovery stalls each. In the preoperative room (preparation of the patient), removable stock for standing laparoscopic surgeries. Dental room in barn 1 1 straight trotting facility, 1 covered lounging circle, 1 hard circle trotting facility 1 farrier shop premises clinical and diagnostic activities ISME Avenches (partner institution at Swiss National Stud) 2 examination and treatment rooms (one for orthopaedics and one for internal medicine and research) 1 laboratory 1 EU accredited Reproduction Centre with a) semen collection hall and preparation room, b) semen laboratory, c) 2 semen storage rooms, d) mares examination and insemination hall, e) ET, OPU and CSI laboratory	equipment horse clinic at Vetsuisse faculty Bern location Two mobile surgery tables Stock and all the equipment for dental examinations and treatment, which is used for all kinds of dental treatment gas oven and 2 anvils, 1 forge equipment ISME Avenches (partner institution at Swiss National Stud) including 1 fully equipped horse ambulance, mobile digital X-ray system and ultrasound, 2 endoscopes (incl. for gastric exam); including IDEXX blood laboratory, microscopes, centrifuges, standard equipment for basic laboratory work including quarantine for EU accreditation and all equipment for natural mating, semen collection (on dummy or standing), semen handling for cooling and freezing procedures, gynecology (6 stands, 3 ultrasounds, 1 hysteroscope, etc.) semen transport and storage, embryo transfer (fresh/ frozen ET), ovum pick-up OPU, intracytoplasmatic sperm injection (CSI etc.); built in 1996 and since several times renovated

	1 Fitness and Rehabilitation centre with a) examination and treatment hall, b) water treadmill room Facilities for lameness examination (partially in associated Swiss National Stud SNS/ Agroscope); 1 indoor lounging circle, 1 outdoor lounging circle (SNS), several straight trotting lines, 1 riding hall 20 x 45 m (SNS) Facilities for exercise physiology (partially in neighbored IENA): 1 indoor high-speed treadmill "Kagra Mustang"; 2 allweather training sand tracks 1500 and 1750 m (IENA)	including water treadmill, 2 stands, solarium, shock wave machine etc., 1 horse walker, 1 treadmill; built in 2012
Pathology	premises clinical and diagnostic activities post mortem suite including 2 separate rooms for infectious disease necropsies and sawing procedures, refrigerator room, 2 cloak rooms for female and male personell and students histology laboratory formalin material storage room immunohistochemistry, cell and molecular biology laboratories	equipment crane for animals up to 1.5 t, elektrical saws, 10 necropsy tables, necropsy tools e.g. knives, scissors etc., cleaning and disinfection tools, personal protective devices for students and personell fully equipped with automated embedding and staining equipment
Clinical Pathology	The clinical pathology laboratory provides laboratory testing of animal specimens in the areas of hematology, clinical chemistry, urinalysis, diagnostic cytology, electrophoresis, coagulation, blood gas analyses, and crossmatching. The clinical pathology unit comprises a reception, a hematology lab with separate areas for blood gas and urinalysis, a chemistry lab with separate areas for electrophoresis and coagulation testing, a diagnostic cytology room, storage rooms, offices and a breakroom for laboratory technicians. In addition, satellite laboratories are maintained within the small and large animal hospital for out-of-hours emergency clinical pathology testing (see 4.1.7).	fully equipped with diagnostic and research equipment Equipment within the clinical pathology laboratory include standard, high throughput laboratory clinical chemistry, hematology (with multispecies software), blood gas, semi-automated agarose gel electrophoresis, and coagulation analyzers, single- and dual-view microscopes, a microscope equipped with a digital camera and projector, as well as standard laboratory equipment (including centrifuges, a laminar-flow cabinet, refrigerators and freezers). The satellite laboratories are equipped with practice-sized hematology, clinical chemistry, blood gas and coagulation analyzers, and microscopes (see 4.1.7).
Bacteriology	Diagnostics laboratory, including serology laboratory to diagnose bacteria and fungi. The diagnostic lab hosts several reference laboratories for diverse pathogens that are zoonotic or of veterinary importance as well as reference functions for monitoring of antimicrobial resistance in diverse pathogens	Standard equipment for culturing bacteria and fungi such as biosafety hoods, different incubators, centrifuges, GRAM-staining devices, MALDI-TOF, sensitive inoculators, Real time and standard PCR machines, microscopes, autoclaves, gel documentation, lab management software. Standard equipment for serological lab such as 96 well plate reader and 96 well plate washer.
Parasitology	Serological, parasitological and molecular diagnostics of parasitic diseases	Standard equipment for parasitology (coproscopy, in vitro cultivation, artificial digestion), serology as well as molecular biology (PCR and sequencing)
Veterinary and medical parasitology diagnostics		
Virology	Serological and virological/molecular diagnosis of livestock viral diseases and of rabies	Standard equipment for laboratory diagnosis and serology of viral infections
4.1.4. Description (number, size, equipment, species, disciplines, ...) of the premises:		
Zurich		
Diagnostic imaging	premises clinical and diagnostic activities	equipment
Computed Tomography	1 room for large animal CT 1 room for small animal CT	Siemens Somatom Sensation Open – sliding gantry; Philips Brilliance 16
Fluoroscopy	1 room for biplanar fluoroscopy	Biplanar Fluoroscopy, Philips Allura Clarity
magnetic resonance imaging	1 room for MRT	
Digital x-ray units	1 room for large animal x-ray	x-ray systems, Siemens (ceiling mounted), Fujifilm CR (Profect / Capsula CS), Philips Bucky Diagnost, Philips Cosmos (OP-Trakt), Siemens Mobilet (mobile system)
Ultrasonography	2 rooms for small animal x-ray 1 room for large animal ultrasonography 2 rooms for small animal ultrasonography 1 room with Philips IU22	Ultrasonography, Aloka alpha-10, Aloka alpha-7 Philips IU22
Film reading	3 rooms for film reading available	Picture Archiving and Communication System (PACS), Fujifilm Synapse, Osirix / DCMACHEE, Radiology Information System (RIS); Dighurst eRIS, Aloka alpha-7, Philips IU22
Small animal surgery	1 operating theatre, 1 ICU 1 room for dentistry, 1 room for neurology consultation, 1 physiotherapy room	Laprascopy tower, Arthroscopy tower, Ligasure, 2 cutting and sealing devices also for endoscopic surgery, Biplanar Fluoroscopy, mobilier C-Bogen, Force plate, Exercise Tower for Athroscopy, EMG, Underwater treadmill, 1 Treadmill, 2 Berner magnetic mats, 1 mobile anaesthesia machine (dentistry), Oxygen Boxes
Small animal medicine	4 consultation rooms 1 emergency consultation room 9 treatment rooms: emergency consultation, endocrinology, general internal medicine, nephrology/urology, 2 dermatology, 2 cardiology 1 rounds room 1 rounds room	treatment table, desk with computer, washing facility, balance and equipment for physical examination, sample collection and basic treatments additional equipment: ultrasound machine (Esaoe VM Lab Five Vet), Oxygen box, blood pressure measurement device (Dinamap V100), infusion equipment ready to use, first aid equipment and medications and refrigerator treatment tables, ultrasound machine (Logiq 7), desk with two computers, washing facility, refrigerator with special equipment (dermatology, endocrinology, ultrasound, endoscopy, ECG/pace maker) wall screen and 4 desks with computers

Farm animal clinic	premise clinical and diagnostic activities	equipment
Ruminants	5 rooms for the examination and medical and surgical treatment of cattle, sheep, goats and New World camelids.	Blood analysis: All blood analyses are done at the Clinical Laboratory, Vetsuisse Faculty, Zurich. Bacteriological and virology analyses are done at the corresponding institute. Radiographic and computed tomographic examinations are mainly done at the local Institute of Diagnostic Imaging. Cattle with limb disorders are usually radiographed at the Farm Animal Surgery Division using a portable x-ray unit. Downer cattle are radiographed in their stalls using a stronger portable x-ray unit. Radiographic and endoscopic images are retrievable via special monitors in the surgical theatre and via computer. Endoscopic examinations: Some endoscopic examinations are done in the Equine Clinic, but an increasing number are carried out using the Endoscopy Tower system of the Farm Animal Clinic. Ultrasonographic examinations: The vast majority of ultrasonographic examinations are done by the veterinarians in the Farm Animal Clinic because of their extensive experience in this field (over 100 scientific publications). Postmortem examinations are done at the Institute of Veterinary Pathology, Vetsuisse Faculty, Zurich. Pig medicine is not a high-technology medicine. Instruments as well as diagnostics and surgical equipments of the Clinic for Ruminants and other institutes can be used by the division of swine medicine at all times.
Pigs	Separate slaughter facilities for healthy and ill cattle. (24 hours a day, 7 days a week, year round), cattle are slaughtered in a separate room at the Vetsuisse Faculty	
Slaughterhouse	2 large examination and treatment rooms (one for patients of Equine internal medicine and one for patients of Equine surgery and Ophthalmology)	
Horse clinic	The Equine sport medicine laboratory (1991) Two surgery rooms (septic and aseptic) with a adjacent recovery stalls each and one recovery pool 1 dental room 3 facilities for lameness examination: 1 covered lounging circle, 1 covered straight trotting facility, 1 straight soft ground trotting facility 1 radiology room (digital X-ray system) 1 Computed Tomography room with a helical Computed Tomography with a 40-slice scanner (Somatom Sensation Open, Siemens Medical Solutions) 1 MRI room with recovery box, with an MRI for examinations of distal limbs of horses in general anaesthesia, inaugurated in 2009 (Siemens, Medical Solutions) high-speed treadmill with a built-in system to determine the vertical impact forces of all four feet while the horse is working. This additional system was developed in house and represents the only such system worldwide. 1 Computed Tomography room with a helical Computed Tomography with a 40-slice scanner (Somatom Sensation Open, Siemens Medical Solutions, Zurich, Switzerland) 1 MRI room with recovery box, with an MRI for examinations of distal limbs of horses in general anaesthesia, inaugurated in 2009 (Siemens, Medical Solutions, Henkestrasse 127, 81052 Erlangen, Germany) high-speed treadmill with a built-in system to determine the vertical impact forces of all four feet while the horse is working. This additional system was developed in house and represents the only such system worldwide. slaughterhouse animal hospital Zurich ; excursions, different slaughterhouses (pig, cattle, sheep and poultry)	The septic surgery room renovated in 1995 with movable surgery table (Halco) and one recovery stall stand and all the equipment for dental examinations and treatment, which is used for all kinds of dental treatment as well as for standing surgeries like laparoscopies and surgeries of the upper airway
FSQ & VPH	The IVPZ is fully equipped, both regarding the building infrastructure and the necessary tools, for diagnostic post mortem examinations including subsequent additional examinations, like histology and immunohistology. The diagnostic work is accredited under ISO 17025 and regular audits are performed by the Swiss Accreditation Agency (SAS). a post mortem suite including two air-conditioned post mortem rooms fully equipped to undertake necropsies on large animals (host for animals with a weight of up to 1 ton) to very small animals (binoculars) including two large refrigerator rooms (4°C, each one for carcasses and disposal containers), one freezer room (-20°C), autoclave, band saw and diamond saw.	Foodstuff processing as part of excursions to farms (meat, milk, fish)
Pathology	laboratories for the trimming of histological specimens a specially ventilated storage room for formalin fixed samples histology/immunohistology and molecular biology laboratories that are combined with the research labs and serve to process diagnostic, teaching and research material one combined lecture room/laboratory (90 seats/work places) with microscopes and low magnification binoculars	premises and equipment serve teaching and diagnostic services equally
Bacteriology	Diagnostics laboratory, serology laboratory	Standard equipment for cultural bacteriology, serology as well as microbiological bacteriology. Poultry section: virology included.
Bacteriology section	Serology laboratory, molecular biology laboratory	
Poultry section		
Parasitology	In the "Diagnostic Centre for Parasitology" animal samples from domestic, wild and zoo animals as well as human samples are analysed (around 35'000 tests per year). Immunological, parasitological and molecular methods are applied. Room for appropriate mass storage of parasitological samples.	Standard equipment for parasitology (coproscopy, in vitro cultivation, artificial digestion), immunology as well as molecular biology.
Veterinary and medical parasitology		Isolated parasite stages, histological sections as well as preserved organs (formalin-fixed and frozen) are systematically collected for teaching and practical exercises.
Teaching sample collection		Standard equipment. Standard and specialized tests for a wide range of different viruses; electron microscope; FACS Gallios
Virology	1 room for Virology diagnostics. 1 room for Flow cytometry. 1 Electron microscope laboratory.	

4.1.5. Description (number of rooms and places, ..) of the premises for study and self-learning, catering, locker rooms, accommodation for on call students, leisure		Bern	Zurich
study and self learning	Study booths for individual learning are available at the local library. In the near vicinities there are several libraries providing further possibilities for self-study: within a 3 Minute walking distance at the phil-hum-faculty (Fabrikstrasse 8) and at the phil-hist faculty (Länggassstrasse 49), the library at the University main building (law-faculty, Länggassstr 4). All premises are WLAN-equipped. The library at the Bern location (Länggassstr. 120) provides 50 booths for individual learning. There is a small lounge to relax next to the study hall. A reference library in the study hall provides recommended textbooks. 11 group rooms of various sizes (seating 8 to 24 people) are greatly appreciated learning premises, especially in the times before exams.	On the Irchel Campus (i.e. Forschungsbibliothek Irchel Y15) and the Learning Center Stickhof Y63 there are many possibilities to study in the near vicinity of the Zürich campus of the Vetsuisse Faculty. The library TFA 01.51 in the main building can be used all year around, day and night for study and self-learning (room for 41 students, 33 with desk, 8 armchairs). Students are allowed to learn in the seminar rooms above the library (TFA 00.50 and TFA 00.52) when they are not used for other purposes. There are learning facilities in the hall of the main building on the top level, where there are tables and chairs for their use. There are also a few places to eat or learn in the TDI building. On the Irchel Campus (i.e. Forschungsbibliothek Irchel Y15) and the Learning Center Stickhof Y63 there are many possibilities to study in near vicinity. The mensa of the Vetsuisse is the central meeting place for meals and for leisure. On Irchel Campus there are a few eating possibilities (one big mensa, two smaller ones). 343 lockers are in four different locations on the Vetsuisse campus (building TAT, TDI, TAS and TKK). The Students' Association allot the lockers at the beginning of the academic year in self-administration. Access to the building by student card only. The students of the 1st year of study can rent lockers at the Irchel campus of the Zurich University.	
catering	A series of microwaves serves students at any time in the student cafeteria of the Bern location of the Vetsuisse-Faculty. Canteens for lunchtime meals at the phil-hum and the phil-hist faculties (same location as study and self learning facilities) are within walking distance.		
locker rooms	356 lockers are in a dedicated room located in the basement underneath the large animal skills lab. There is no shower, the room is co-ed. Access is only possible by student card (individual).		
accommodation for on call students	Each clinic provides a room with several beds for students on call.	In TPE there are rooms for on call students, all in all 16 beds. Presently, the accommodation situation for on call students is comfortable.	
leisure	The student cafeteria is meeting point for students of all semesters. It is accessible around the clock to students (University student card). Vending machines offer beverages and snacks. Refrigerators are reserved for students. The Bern University's sports center offering a wide variety of activities is located at 3 minutes walking distance from the premises of the faculty.	The latest addition is the waiting room of the former small animal clinic, where the students have a recreation room (80m2) for eating (with microwave), learning and leisure (access only for students). Also nearby is the Irchel sports area and the cantonal Irchel park where sports and leisure are possible (5 minutes to go).	

4.1.7. Description of the equipment used for

- teaching purposes
- clinical services (diagnostic, treatment, prevention, surgery, anaesthesia, physiotherapy)

Small Animal Clinics (Bern and Zurich):

Most of the equipment available in the small animal hospital has a dual purpose, as it is used for both teaching and clinical services. The veterinary students spend their rotation time in the different sections of the clinic (surgery, medicine, neurology, dermatology, diagnostic imaging etc.) and participate in the clinical activities. Therefore, they use rooms and tables for examination of animals, operating theaters and instruments for surgical procedures. The clinics are well-equipped with standard equipment for routine examination and surgery, as commonly performed in general practice, in addition to state-of-the art laparoscopy and arthroscopy equipment and several implant systems for fracture fixation. This equipment is routinely used for teaching as the students participate and assist in multiple surgical procedures. Operating room cameras are available for projecting real-time surgery during a lecture.

Horse Clinic (ISME Bern and Avenches), Equine Department (Zurich) and Farm animal clinics (Bern and Zurich)

All equipment of the clinics is available for teaching purposes (surgical instruments, dental equipment, surgical rooms and all the treating halls).

Practical examinations are performed in all of the listed rooms with students in groups (2nd to 4th year) and individually (5th year). All students have access to a broad range of diagnostic and therapeutic facilities in all the disciplines of the clinics (diagnostic imaging, anesthesia, surgery, ophthalmology, intensive care, etc.).

The equipment available in the Vetsuisse clinics is of state of the art technology and can be classified as excellent, providing modern diagnostic, therapeutic and laboratory services.

Detailed lists of the equipment of the different clinics see Annex Chapter 4.1.7.

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

Bern:

Annual investments for facilities and equipment is a three step procedure. The faculty with its 3 Departments has a rolling investment planning for maintaining its standard equipment.

Additionally, there are yearly allocated funds from the university for new investments.

In a first step the 3 Departments define every spring which items of the rolling investments have to be replaced and which new investments should be planned. This list is prioritized within the Departments. The financial committee of the faculty (Dean, vice dean, CFO, chief of planning and Department representatives) works out and proposes a list of replacements and new funding items to the faculty (Fakultätsausschuss) considering the funding available for the university and considering the financial strategic planning. The «Fakultätsausschuss» (local Bern Faculty Board) decides and allocates the funding to the different departments i.e. to the institutes, clinics and sections.

Zurich:

The processes as described by the Equine Department at the Zurich location of the Vetsuisse Faculty are representative for all facilities of the Zurich Vetsuisse Faculty.

Equine Department:

The current equipment is being maintained through meticulous care of all the instruments and devices by staff of clinicians and nurses. Through regular inspection and cleaning, any damage or defect is immediately detected and either corrected at once or sent away for repair. All damage is reported immediately to the clinic director.

Instruments and tools which are no longer suitable are replaced with new ones. Supplementary instruments are formally requested at the end of the year to the university and are ordered at the beginning of the following year after acceptance. Moreover, being the Equine clinic of latest technical development, some structures are upgraded on a regular basis (e.g. arthroscopic instruments, instruments for osteosynthesis). Funding for new or replacement equipment can be requested on an annual basis via the Investitionskredit (IK).

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

Bern:

Changes in facilities:

Major projects such as the replacement of buildings follow the same procedures as refurbishing or improvement of present building infrastructure: proposals for

4.1.8. Description of the strategy and programme for maintaining and upgrading the current facilities and equipment and/or acquiring new ones in selected units/disciplines

	Bern	Zurich
Diagnostic Imaging	<p>Annual investments for facilities and equipment is a three step procedure. The faculty with its 3 Departments has a rolling investment planning for maintaining its standard equipment. Additionally, there are yearly allocated funds from the university for new investments.</p> <p>In a first step the 3 Departments define every spring which items of the rolling investments have to be replaced and which new investments should be planned. This list is prioritized within the Departments. The financial committee of the faculty (Dean, vice dean, CFO, chief of planning and Department representatives) works out and proposes a list of replacements and new funding items to the faculty (Fakultätsausschuss) considering the funding available for the university and considering the financial strategic planning.</p> <p>The «Fakultätsausschuss» decides and allocates the funding to the different departments i.e. to the institutes, clinics and sections. (see Chapter 2 Finances).</p>	All equipment run under payback period rules. Eg. The MRT system is calculated for 8-9 years, which is slightly longer as calculated in the human field. The replacement of the equipment will be requested via the investment credit period of the University and are also displayed in a long run investment chart, known by the University administration.
Small Animal Surgery		Annual funding is available for purchasing and for upgrading the equipment used in the veterinary teaching hospital. In addition, the clinic has an available funding, which can be used for teaching purpose and for small equipment purchase.
Small Animal Internal Medicine		Maintaining current equipment: One senior clinician and two technicians are responsible for the checking and maintenance, including reparation of equipment. This is done continuously throughout the year. Upgrading and acquiring new equipment: Once a year the necessity of new equipment is discussed with the senior physicians responsible for the subspecialities such as general internal medicine, gastroenterology, nephrology/urology, endocrinology, infectious disease, cardiology and dermatology and a list of priorities is generated. The lists of all clinics are merged and in a yearly meeting overall priorities are determined. The equipment of the Clinic for Small Animal Internal Medicine is well maintained and is state of the art.
Farm animals Ruminants		The following improvements should be realized by 2017: Agrovet: The cows at the Stigenhof will be moved to the newly-built barn (Agrovet) on the premises of the Strickhof Agricultural School. This new barn will house approximately 120 milking cows, 80 heifers, 40 suckler cows, 2 bulls and 8 mares for teaching and research purposes. Isolation: The Vetsuisse Faculty has planned the construction of a new isolation unit for ruminants and horses with infectious diseases. Planning is in the advanced stages but was put on hold because of financial constraints. An upgrade of the present isolation procedures is critical.
Farm animals Pigs		The facilities at the "Alten Strickhof" are about 60 years old and only partially suitable for animal experiments. An upgrade of the present facilities is not reasonable. The premises at the animal hospital well meet the requirements for hospitalized pigs. Therefore only the bare essentials should be invested to maintain the infrastructure. Planning of new facilities, incl. facilities to carry out infectious animal trials including zoonotic pathogens (biosecurity level 2) or producing specific pathogen free (SPF-) pigs is essential and has been tackled urgently in the next future. Due to the very valuable genetics in Strickhof Lindau, the piggery is not suitable for animal experiments, working with low pathogens is not allowed.
Equine department		The current facilities are maintained through meticulous care of all the instruments and devices by our staff of clinicians and nurses. Through regular inspection and cleaning, any damage or defect is immediately detected and either corrected immediately or sent for repair. All damage is reported immediately to the clinic director. Instruments and tools which are no longer suitable are replaced with new ones. Supplementary instruments are formally requested at the end of the year to the University and are ordered at the beginning of the following year after acceptance. Moreover, being the Equine clinic of latest technical development, some structures are upgraded on a regular basis (for example Arthroscopic instruments, instruments for osteosynthesis)
Pathology		Maintenance and replacement of equipment is ensured by an internal UZH replacement system (replacement of essential equipment upon request, financed by UZH). New equipment and amendment to facilities are either financed as part of an investment package for new Professors (for example, a new floor and amended entrance area were financed as part of the package for the new Head of Institute, A. Kipar) or are financed by the UZH after consideration of a written proposal/request.
Clinical and non-clinical institutes		As a consequence of the limited budget provided by the Faculty and the University, the maintenance and upgrade of the existing facility and equipment is only possible with extramural funding. Therefore, the Institute is highly dependent on successful research programs at the forefront of biomedical research. Similarly, the very high quality standards provided by the Institutes in the teaching is promoted by excellent research outputs.
Anatomy	Plastinates of all organ systems of domestic animals are currently produced according to the needs in the gross anatomical teaching. These new specimen are used for organ demonstrations at the bachelor level, final anatomy examination after the third year and lifelong learning purposes and are on request also available for all institutes and clinics of the Vetsuisse Faculty. Older histological sets of specimens are continuously replaced by new ones and selected new sets are produced according to the wishes/needs of the responsible teachers.	

substantial construction projects such as reconstruction of the small animal (2012) and horse (2015) clinics are submitted by the local Vetsuisse Faculty to the university administration which will pass the commented proposal up to the administration of the educational department of the Canton of Bern. In the process of financing the parliament of the Canton has to approve the proposals, which then will be realized under the auspices of the responsible building department of the Canton.

Changes in equipment:

The process of changes in equipment is described in the previous chapter 4.1.8.

Biosafety:

At the Bern location of the Vetsuisse Faculty each institution concerned with biosafety-issues has its own procedures and regulations. Common ground is national legislation and guidelines by professional organizations (links see below).

A biosafety officer has just been elected by the local faculty.

Students in final year rotations are informed about health risks and biosafety measures at the beginning of the respective rotation.

Zurich:

Changes in facilities and equipment:

The processes of changes in facilities and equipment are described in the previous chapter 4.1.8.

Biosafety:

The Zurich location of the Vetsuisse Faculty is closely collaborating with the branch of "Sicherheit und Umwelt" of the University of Zurich which has elaborated specific documents for the Vetsuisse Faculty. (<http://www.su.uzh.ch/de/activities/arbeitsmedizin/doku.html>).

These documents deal with labor and health safety measures during veterinary studies.

At the beginning of their studies students are made aware of the health hazards during pregnancy. Before clinical work they are informed about the dangers of cat and dog bites and the importance of vaccinations (personal responsibility).

National legislation (german): <https://www.bag.admin.ch/bag/de/home/service/gesetzgebung/gesetzgebung-mensch-gesundheit/gesetzgebung-biosafety.html>

Swiss association for labor safety (guidelines for veterinary medicine) <http://www.arbeitssicherheitschweiz.ch/de/angebote/branchenloesung/veterinaere>

4.2. Comments

Bern:

Comments concerning the Farm Animal Clinic

- In the barns of the Ruminant clinic, the number of isolation boxes is too low to ensure enforcement of adequate biosecurity measures at all times. The lack of sufficient isolation boxes sometimes precludes the admission of patients at the teaching hospital.
- A triage room for first examination of incoming cases is not available.
- A training program for students focusing on farm animals in animal husbandry and management (agricultural practical, Landwirtschaftspraktikum) will be set in place starting in the fall semester of 2017.
- Access to teaching and research farms with ruminants is available. As they are not driven and managed by the faculty, the farm animal clinic has guest status, but is not involved in decision making and management of these farms.
- The barn of the Swine Clinic does not offer appropriate separation of different age- and production-groups. Moreover, the space for rearing pigs is limited and does not allow group housing.

Comments concerning the Small Animal Clinic

- A clinical section for exotic animals/birds for clinical teaching is missing and might be considered in long term planning.
- The number of first opinion cases is low and will be addressed with the planned new curriculum 2020 with increased external rotations.

Comments concerning the collaboration of the Bern equine clinic and Agroscope/Avenches (Swiss National Stud)

- Due to federal budget cuts there is currently some uncertainty regarding the continuation of the ISME Avenches, i.e. the cooperation between the University of Bern and Agroscope. The loss of this field station ISME Avenches at the location of the Swiss National Stud and the racetrack IENA would imply an important loss of teaching and training possibilities for veterinarian students, valuable competences for reproduction and rehabilitation as well as significant research resources (horses, genetic bio-archive of semen and blood samples, infrastructures).

4.1.9. Description of how (procedures) and by who (description of the committee structure) changes in facilities, equipment and biosecurity procedures (health & safety management for people and animals, including waste management) are decided, communicated to staff, students and stakeholders, implemented, assessed and revised		Bern	Zurich
bio-safety procedures			
Department of Infectious Disease and Pathobiology (Bern)	DIP: all diagnostic laboratories (pathology, bacteriology, virology, parasitology) are accredited according to STS 0175. One staff member of each of the institutes of the DIP is in charge of bio-safety. Documents define the rules and regulations concerning waste management, decontamination, hygiene rules. Staff members and students are instructed as they first deal with infrastructure and material. Regular internal and external audits assess processes and define measures to be taken.		Staff members of each Institute / Unit are in charge of biosafety. Documents define the rules and regulations concerning waste management, decontamination, hygiene rules. Staff members and students are instructed as they first deal with infrastructure and material. Regular internal and external audits assess processes and define measures to be taken.
Department of Clinical Research and Veterinary Public Health (DCR-VPH)	A biosafety coordinator and the biosafety deputy are in charge of the biosafety of the entire department (DCR-VPH). One staff member of each institution of the department is responsible to instruct new personnel including master students. Based on the requirements of the university, each institution identifies new issues in the areas personal safety, waste management, decontamination where improvements appear appropriate. We follow the biosafety rules given by the Federal Office for the Environment (FOEN).		
animal welfare / VPH (Bern)	A biosafety officer is in charge of the two institutions. Internal biosafety SOPs are developed and implemented for the animal facility by the head of the Animal Welfare Division. These SOPs must be followed by all personnel accessing the facility. New staff is being trained by a responsible team member. The outcome of the SOPs are assessed by regular external monitoring (Microbios) of the hygiene status of the animals. Dead animals are packed in designated containers and stowed away in freezers for either post-mortem examination or to be disposed of. There is no further waste.		
small animal clinic	The hygiene committee of the small animal hospital meets at monthly intervals. This interdisciplinary committee includes clinicians, bacteriologists, technical staff and representatives of the clinic administration. Tasks of this committee are to update and implement current hospital hygiene strategies, to organise staff and student education in the area of hygiene and prudent antibiotic use, to compile and review data with regards to MDR bacteria and to assure appropriate management of patients with infections caused by MDR bacteria.		A hygiene committee is responsible for all aspects of the clinic hygiene. This committee is composed of several members of different departments from the clinic and para-clinic meeting four times a year. A comprehensive hygiene concept has been developed and implemented. In a detailed hygiene manual all aspects of hygiene, disinfection, isolation of potentially infectious patients and MDR patients are defined and made available in written form to all employees. The efficacy of this concept is continuously reviewed and adapted. Regular internal continuing education is performed for veterinarians and technicians. All students attend a special lecture about hygiene before they start their clinical rotation. All MDR results of the patients are centrally collected, semi-annually analyzed and presented to the employees. For many different infectious diseases additional documents (SOPs) defining the management of these specific patients are available. In cases with a zoonotic potential we are working in a close collaboration with the branch of «Sicherheit und Umwelt» of the UZH and the university hospital (USZ).
farm animal clinic	At the farm animal clinic the managing directors are in charge of biosafety measures. Specific documents define quarantine and disinfection measures, person protection measures for all collaborators of the farm animal clinic and students. Updates and implementations measures are communicated as needed at the weekly staff meetings for academic personnel and at monthly staff meetings with the technical and nurse staff, more often if necessary. Changes are presented in theory and demonstrated in practice. Application of the rules is surveyed at suitable occasions. A master thesis deals with a salmonella outbreak of fall 2016. Measures will be adapted according to the conclusions provided by the mentioned Masters thesis and in accordance with the Biosafety Competence Center.		3rd year students who have signed up for night duties are introduced to general aspects of hygiene. 5th year students get another general instruction concerning hygiene aspects in the clinics before starting their clinical rotations. See also details from Small Animal Clinic.

	Bern	Zurich
biosafety procedures		
Clinical Laboratory & Center for Clinical Studies	<p>Diagnostic laboratories (bacteriology, virology, parasitology, clinical pathology) follow SOPs of their accreditation (STS 0175). The three clinics apply their own, specific regulations adapted to their needs. Regular internal and external audits assess processes and define measures to be taken.</p>	<p>The Clinical Laboratory and the Center for Clinical Studies are labs for routine diagnostics, research and teaching purposes. As we might be exposed to clinical samples infected with pathogens of the biosafety level 3 the activities of these labs have been categorized Biosafety level 2, this applies also for student practical courses. The institute has a own biosafety officer. Biosafety concept and risk assessment are summarized in a safety concept (SOPs). This documentation defines the rules and regulations concerning waste management, decontamination and hygiene rules. New staff members and students are instructed and regularly continuously educated in biosafety matters.</p>
Equine Division (ZH) Equine Clinic (ISME Bern)	<p>In the ISME equine clinics, biosafety measures including criteria and procedures for isolation of at-risk horses are set by the clinic director and are communicated and made available in written form to all employees (as attached). The efficacy of these measures is continuously reviewed and adapted as needed. For specific resistant bacterial strains (e.g. MRSA) extensive testing of equine patients and of employees in contact with horses is performed in collaboration with the university hospital and the institute of veterinary bacteriology.</p>	<p>See also small and farm animal clinic.</p>
Institute of Pathology	<p>see DIP (above)</p>	<p>The Institute for Veterinary Pathology at the Zürich location (IPVZ) infrastructure for students and personnel is built and organised according to biosafety and laboratory safety standards. Infrastructure and laboratory equipment are in accordance with ISO 17025 standards since 2001. Regular audits performed by the Swiss National Office of Standards (METAS) according to ISO 17025 include the laboratory procedures in the area of post mortem investigation, histopathology, immunohistochemistry, cytology and electron microscopy which are available as written SOP (standard operational procedures).</p>

Zurich:**Comments concerning the Equine Department**

- Being the equine clinic of latest technical development, providing many Diplomates of all the European colleges, some parts of the building are old and should be replaced by a modern one. Plans have been made and after acceptance by the government, the detailplaning can start.

Comments concerning the Farm Animal Clinic

- A modern isolation unit for farm animals is necessary and needed.

Comments concerning the Teaching and Learning infrastructure

- There are no permanent rooms for clinical skills labs (since fall semester in 2016 students could visit the skills lab in Bern) or teaching laboratories.
- Missing is a more spacious surface for practical work with larger groups where instruments and apparatus for e.g. physiology practical can be left for a longer period of time.
- Most important: there are no appropriate lecture halls where written or electronical exams can be performed. Date and time of the written examinations must be coordinated with Vetsuisse Bern (identical questions). Currently, Vetsuisse Zurich has a good understanding with the Science Faculty on Irchel Campus.
- The technical infrastructure of the lecture hall with microscopes (TDI 10.129) is outdated. Unfortunately, the technique will not be upgraded in the next few years.

4.3. Suggestions for improvement

Bern:**Curriculum**

Increasing the seating capacity of one of the existing lecture halls from presently 60 (including chests bearing microscopes) to a capacity of 110 seats (planned for 2018). Due to an increase in student numbers at the local medical faculty some of the presently common med- and vetmed-lectures (cytology, cell physiology and histology) will have to be separated. Veterinary students are apt to be taught at the premises of the local Vetsuisse Faculty. Thus, there will be a need for one more lecture hall capable of holding the entire first year cohort (approximately 110 students). A proposal has been submitted.

Student recreation is a long term topic: the present cafeteria seats a maximum of 70 students. The student council periodically asks for more space. The small suite in the library does not meet the needs of the students, either. Space for student recreation has been a topic discussed several times in the past. Demands for space for other faculty organizations has had higher priority.

Enlarge and improve infrastructure for student independent studies and e-learning: in addition to the present places for independent studying a structured environment offering access to anatomical and other specimen should be established.

Farm animal clinic**Pigs:**

Enable appropriate separation of age- and production groups of pigs in order to teach a consistent concept of hygiene and modern husbandry

Build up (rent/buy) a teaching and research farm stocked with a medium size population of important farm animals that is close to Bern and is driven and managed by faculty staff. This would enable a better practical education in population medicine.

Ruminants:

Visions and strategies for the future development of the Farm Animal clinic will be discussed in an international advisory board involving experts and representatives from various fields such as agriculture, industry, veterinary practice, government and politics. The aim is to suggest solutions (i) to compensate for the current structural deficits (insufficient number of isolation barns available, no triage room available, insufficient access of students to first line cases [no ambulatory clinic] and lack of involvement in the management of a teaching and research farm) and (ii) for the further development of practical teaching and research in farm animals.

Zurich:**Horse clinic:**

A new equine diagnostic center is very important in order to guarantee the high level of the Equine clinic. In particular a scintigraphy and a standing MRI would be necessary. Detailed planning was initiated recently. The housing facilities are old, and often difficult to clean and disinfect. Moreover, more isolations boxes would be warranted to prevent a possible epidemic spread.

5

Animal resources and teaching material of animal origin



5. Animal resources and teaching material of animal origin

5.1. Factual information

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

The Establishment does not follow an explicit global strategy about the use of animals and animal material. Lists of clinical activities in the different clinics reflect the objectives to be achieved in the last year of study during the rotations in the VTH. Animals and animal material reflects the diversity of animal patients treated in the clinics and examined in pathology.

5.1.2. Description of the specific strategy of the Establishment in order to ensure 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

As with a global strategy for the use of animals the balances mentioned are not explicitly declared by the Establishment. Depending on the clinic, skills and activities to be achieved by the students at the end of training are defined and assessed in the course of the rotations in the final year. Additionally, some clinics offer mock exams corresponding to the federal licensure examination.

5.1.3. Description of the organisation and management of the teaching farm(s) and the involvement of students in its running (e.g. births, milking, feeding, ..)

Bern:

Farm animal clinic:

The students are involved in the handling, feeding and births of the 5-6 sheep and the clinic cow kept on the campus and on the nightly care taking (removal of litter; feeding) of the hospitalized animals. They are not invol-

ved in the management of the cows on the 3 farms of the agricultural schools (Inforama Rütli; IAG; IAG Sorens). The organization of an obligatory 3-week practical on-farm training for students with focus on farm animals in animal handling, keeping, feeding and milking is currently in progress. This training should be a prerequisite to enter the farm animal track and be completed before the end of the 3rd year.

Zurich:

The new Agrovet-Strickhof facility includes several state-of-the-art cattle housing systems and is used for student training since March 2017: The students conduct gynecological and other examinations as before and in addition receive practical training in animal husbandry, animal nutrition and milking techniques. Furthermore, students learn about novel techniques in 'Precision Dairy Farming'. Practical training in theriogenology include birth monitoring, obstetrical interventions and assisted reproductive technologies (semen collection in bulls, embryo recovery and transfer, and ovum aspiration).

The students get the opportunity to conduct breeding soundness examinations in clinic-owned mares under the supervision of interns.

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

Please see table below.

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

Please see table below.

5.1.2. Description of the specific strategy of the Establishment in order to ensure 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	
General	As with a global strategy for the use of animals the balances mentioned are not explicitly declared by the Establishment. Depending on the clinic, skills and activities to be achieved by the students at the end of training are defined and assessed in the course of the rotations in the final year. Additionally, some clinics offer mock exams corresponding to the federal licensure examination.
Small Animal Clinic	<p style="text-align: center;">Bern</p> <p>The small animal clinic (with medicine and surgery as main sections) sees approx 5000 cases per year. With 30% cats and 60% dogs. Around 40-50% of the patients enter through the emergency service and are then treated by the different sections. The majority (>70%) of cases are based on referrals.</p> <p>Students of the 5th year are fully integrated in the services, take histories, perform clinical exams and help with the treatment of hospitalized patients. All students are evaluated by the members of the clinical sections and have the opportunity to give feedback during their rotations. During their rotations all students will directly perform anesthetics and at least one spay/castration. They will assist in surgery. Students with small animal track are additionally involved in practical surgical labs including a dentistry course. Usually clinical rounds are offered by the different sections on a daily basis. Students are heavily involved in the emergency service including elective ICU training. They are confronted with internal medicine, surgery, neurology, dermatology, ophthalmology and cardiology cases, orthopaedics, soft tissue surgery, ICU and emergency care. Small animal reproduction cases are seen by internal medicine.</p> <p>There is a good mix between chronic and acute diseases. Hospitalisations are common.</p> <p>Students are confronted with classical first opinion medicine in their outrotations in private practice.</p> <p>Students in the 5th year are 1 month in the small animal clinic in the core curriculum. Small animal track students spend a total of 3 months in the Small Animal Clinic. One to two students are usually supervised by one resident or intern and follow hsi/her cases. Increased practical training including first opinion cases, exotic pets and zoo cases are part of the planned new CU 2020.</p>
Farm Animal Clinic	<p>The number of hospitalized referral cases of the clinic amounts for about 1000 ruminants per year. Cattle make up about 90% of the caseload and the remaining 10% consist of small ruminants and new world camelids. The distribution of acute versus chronic cases is about 50-50. A booklet is given to each student at the beginning of her/his clinical rotation, listing a balanced variety of first day skills. Each time a student successfully performs a clinical item, it is ticked as completed by the student and signed by the respective resident. During the herd health visits, students are offered access to an ample number of on farm routine repro checks and cases (>1000 cases/year). Students with focus on farm animals are additionally offered to participate in problem herd visits with the bovine health service (RGD) and the herd health section. Access to first line clinical cases cannot be offered to the students by the clinic, but is rather offered by practitioners during the students' external clinical rotations. Routine supervision of the practitioners during their teaching activities is currently not installed. This problem might be tackled by acquisition of an ambulatory clinic.</p>
Swine Clinic	<p>From the second to the final (fifth) year of the curriculum, all students attend a structured clinical training in the Swine Clinic, where approx 150 patients per year get examined, and either hospitalized and treated accordingly or submitted to pathology for further diagnostics. The ratio of first opinion vs. referral cases is approx. 1:1 and the ration of acute vs. chronic diseases approx. 1:2.</p> <p>The second pillar of the clinical training in porcine health management is the on-farm training in pig herd (1 vs. 2 weeks intensive training during clinical rotations). Thus every student in the fifth year is trained in herd examination including analysis of management and environment, and attends at least one structured examination of a pig herd with acute or chronic problems (current number of cases per year: approx. 70). Unfortunately, routine examination of healthy herds and routine veterinary tasks (e.g. >1200 castrations of suckling pigs) can only be offered to students that take the «farm animal track» in the fifth year. Training of all students in these skills would require access to a faculty owned teaching farm.</p>

Equine Clinic (BE)	<p>Clinical training begins in the 2nd year, with demonstrations and practical exercises in small groups (handling of horses, clinical examinations, principals of the orthopaedic examination, etc.). Between the 2nd and the 4th year, case-based practical training and guided group activities are increasing.</p> <p>The main goal of the teaching activities, of the purely clinical rotations, during the 5th year is centred on training in the most relevant practical skills and the work-up of practical cases. In the 5th years, each student rotates through the different departments and is in the Equine clinic (Equine surgery, Equine internal medicine, Ophthalmology and Anaesthesia) between 5 and 13 weeks, depending on the choice of the focus discipline of the student. In the 4th and 5th year, students also have the opportunity to do rotations in the ISME Avenches (field station with emphasis on reproduction and sports medicine), this complements the disciplines that are offered in Berne (internal medicine and surgery, incl. the specialist services of anaesthesia, radiology, ophthalmology, dermatology, neurology).</p> <p>During the rotation, students take care of hospitalized patients together with the teaching staff, participate at clinical examinations of new cases (for example orthopaedic examinations, examination of ophthalmologic patients, examination of patients presented with colics...), including workup of physical diagnosis and diagnostic problem oriented decision making. They scrub in the surgery room, help to perform anaesthesia and assist the recovery of the horses. Due to the high number of our patients during the course of the year, each student has the possibility to examine and discuss cases in all topics and has a very broad range of clinical training in all disciplines. The patient population in the equine clinic includes ambulatory horses presented for a one-day consultation as well as patients with complicated problems requiring hospitalization. First opinion and referral cases as well as acute and chronic cases are routinely presented to our clinic, so that the students have the possibility to receive the relevant core clinical training before graduation.</p> <p>Moreover, considering that the Equine department has a 24-hours emergency service with a high caseload, all the students have the opportunity to help during emergency cases and emergency surgeries.</p>
Small Animal Internal Medicine	<p style="text-align: center;">Zurich</p> <p>The clinic has a caseload of a little more than 8000 cases per year. Approximately 40% are primary cases and medical emergencies with the whole spectrum of diseases seen in private practice. 60% of cases are referred to the subspecialties such as endocrinology, gastroenterology, nephrology/urology, infectious diseases, cardiology and dermatology. Students are involved in wok-up and treatment of primary cases and in particular emergencies, and also rotate through the subspecialties. Students are equally involved in one-day clinic and the medical care of hospitalized patients. Due to the sufficiently high caseload, the clinic can ensure a good balance between dogs and cats as well as between cases with acute and chronic diseases.</p>
Small Animal Surgery	<p>Prior to the clinical rotation students receive written information on the working schedule of the clinic along with detailed repetition on how to take a history, work up cases according to the problem-based approach and how to write a SOAP (for the medical record).</p> <p>Based on the concept of day one competence a comprehensive checklist of procedures and clinical problems and diseases has been created and is reviewed once a year by the clinical instructors and the clinic director. Students are encouraged to add procedures to the checklist according to their own interest and in areas in which they assume to have deficits. Students are supervised throughout the day by residents and interns (usually 2 students per resident/intern). The responsible resident/intern has to make sure that each student has fulfilled all items on the checklist at the end of the rotation. The clinic has SOPs for the most common problems/diseases. Cases are worked-up and treated according to those SOPs, which guarantees consistency in the training of students (and residents/interns). The final review of the student's checklist and achievements is done by a senior clinician at the end of the rotation.</p> <p>A list of Core Competencies for students was initially defined by a group of experts in teaching small animal surgery. A checklist was established to guide each individual student during clinical rotations. The checklist included several tasks that the student had to perform under the supervision of the clinician, such as 1) performing orthopedic and neurologic exams, 2) performing specific surgical procedures, 3) writing medical records, 4) presenting a clinical case with review of current literature, among others. In order to pass the clinical rotation each "task", representing a core competency, had to be fulfilled and reviewed by the supervising clinician.</p>
Clinic for Zoo Animals, Exotic Pets and Wildlife	<p>The Clinic for Zoo Animals, Exotic Pets and Wildlife follows the practice of using animals according to the animal experiment regulations (experimental animal license from the cantonal veterinary office, Animal Care and Use Committee). We keep our own tortoises and bearded dragons, and have an established network of contacts where we can borrow live quail, corn snakes, rabbits and guinea pigs as well as selected patients (exotic pets and wildlife) for student education.</p> <p>All students in the small animal track receive a three-week rotation at the Clinic for Zoo Animals, Exotic Pets and Wildlife. They are working under the supervision of residents. The Clinic for Zoo Animals, Exotic Pets and Wildlife is accredited for the residency programs from the European College of Zoological Medicine (Avian) and the American College of Zoological Medicine. As part of the residency programs, caseloads are continuously compiled and evaluated on a 3-month basis by the College, and in this process, the balance of species, clinical disciplines, first opinion and referral cases, acute and chronic cases, consultations and hospitalisations, individual and population cases are supervised (and, if found wanting, we receive a note and actively acquire the cases necessary to balance the caseload on an ad hoc basis). This process aimed at residents also ensures a balanced caseload for the students.</p> <p>Additionally, our clinic has a documentation system that includes not only a detailed 16-page description of the daily clinic routine and expected conduct during the rotation at our clinic (Rotationsbeschreibung), but also a series of 27 SOPs for typical clinical activities at the clinic (e.g., on the performance of clinical rounds, on history writing in the patient information system documented about these SOPs, ultrasound examination of avian patients, reporting of critical situations for humans and animals (CIRS), surgical interventions, or euthanasia). The students are informed about these SOPs and instructed to study (and consult) these as part of their rotation. Furthermore, our clinic has 25 SOPs for the animal care team, detailing the way different species have to be housed at our clinic and the equipment setup for routine surgery (e.g., endoscopic castration of male tortoises, placement of an oesophageal feeding tube for tortoises etc.). The students are also instructed to study (and consult) these as part of their rotation.</p> <p>Finally, our clinic offers several web-based learning modules, which students are actively encouraged to use.</p>

Department for Farm Animals	<p>Final-year veterinary students are enrolled in various clinical rotations where they have the opportunity to examine and treat patients referred to the Department for Farm Animals. Each student examines 3 to 6 patients per day.</p> <p>Cattle make up about 90% of the caseload and the remaining 10% consist of small ruminants and camelids. Additionally, the caseload of the Theriogenology Section consists of about 70 brood mares each year.</p> <p>There is a good balance between patients that are examined and treated for a variety of clinical problems (gynaecology, udder diseases, neonatal diseases, internal medicine, and orthopaedic and soft tissue surgery). Referral cases constitute 95% of the caseload.</p> <p>Animals with chronic disorders make up about 60% of the caseload and the remaining cases are acute.</p> <p>Most cases are hospitalised except for ruminant patients referred for caesarean section, which are almost always one-day cases. In addition, severe chronic cases, like septic arthritis or claw diseases, are referred to slaughter when treatment is not economically or surgically feasible.</p> <p>Individual cases make up 80 % of the caseload and the remaining 20 % are population medicine cases.</p>
Division of Pig Medicine	<p>Final-year veterinary students are enrolled in various clinical rotations. Every Tuesday afternoon case-loads are discussed with the students, castrations or vaccinations / treatments performed or farms being visited. In order to assess the influence of housing conditions, feeding and management on the health status, an “external pig intensive week” is organized to develop a farm specific strength-weakness profile on problem farms by the students.</p> <p>For the 4th-year students a 3-day course of “the prudent use of antibiotic” is performed. In the 5th year the students perform mass administration of antibiotics either in calves, pigs, poultry dairy or cows.</p>
Equine Department (ZH)	<p>Clinical training begins in the 2nd year, with demonstrations and practical exercises in small groups (handling of horses, clinical examinations, principals of the orthopaedic examination, etc.). Between the 2nd and the 4th year, case-based practical training and guided group activities are increasing, and in the 4th year a strong emphasis is put on population medicine including basic epidemiological knowhow and an introduction into routine herd health monitoring and work-up of herd-health problems.</p> <p>The main goal of the teaching activities, of the purely clinical rotations, during the 5th year is centred on training in the most relevant practical skills and the work-up of practical cases.</p> <p>In the 5th years, each student rotates through the different departments and is in the Equine clinic (Equine surgery, Equine internal medicine, Ophthalmology and Anaesthesia) between 5 and 13 weeks, depending on the choice of the focus discipline of the student. During the rotation, students take care of hospitalized patients together with the teaching staff, participate at clinical examinations of new cases (for example orthopaedic examinations, examination of ophthalmologic patients, examination of patients presented with colics,...), including workup of physical diagnosis and diagnostic problem oriented decision making. They scrub in in the surgery room, help to perform anaesthesia and assist the recovery of the horses. Due to the high number of our patients during the course of the year, each student has the possibility to examine and discuss cases in all topics (lameness examinations, dentistry, colic, respiratory diseases, surgery, etc.) and has a very broad spectrum of clinical training in all disciplines. The patient population in the equine clinic includes ambulatory horses presented for a one-day consultation as well as patients with complicated problems requiring hospitalization. First opinion and referral cases as well as acute and chronic cases are routinely presented to our clinic, so that the students have the possibility to receive the relevant core clinical training before graduation.</p> <p>Moreover, considering that the Equine department has a 24-hours emergency service with a high caseload, all the students have the opportunity to help during emergency cases and emergency surgeries.</p>

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

	Bern	Zurich
Farm animals	<p>The stationary farm animal clinic is a second opinion referral clinic and open 24/7 for ruminants and pigs. Emergency hours are from 5pm till 8 am on working days and all day on weekends. During daytime, there are most frequently several ECBHM, 1 ECVS, 1 ACVIM, 1 ECAR diplomates on site. During emergency hours, 1 resident and one senior clinician is on call. All relevant emergency treatment and interventions (soft tissue and orthopedic) are offered at any time. The herd health management crew performs herd visits of +/- 45 herds at 2-week intervals during the breeding season and at lower frequency, depending on the needs of the respective farm, in summer. The bovine herd health service (RGD) is accessible during working hours. In emergency cases, herd visits may also be performed during emergency hours.</p>	<p>The farm animal hospital is mainly a second opinion referral centre for ruminants and new world camelids. It is open 24/7 with the main caseload arriving between 9:00 a.m. and 11:00 p.m. Emergency hours are from 11:00 p.m. until 7:30 a.m. The caseload is approximately 7-800 cases in Internal Medicine Section, 350 first line cases and additional referred 350 surgeries for Farm Animal Surgery Section, and 6-700 cases for Gynaecology Section. During daytime, there are 2 medicine DVMs, 2 surgery DVMs and 1 Gynecology DVM responsible for treatment of stationary cases, for examination and treatment of new cases, and for student education. They are backed up by 1-2 Bovine Internal Medicine ACVS Diplomates, 1-2 Bovine Surgery Diplomat/Resident and 1-2 Bovine Reproduction (ECBHM, ECAR) Diplomates. All relevant emergency treatment and interventions (soft tissue and orthopaedics) are offered and necessary for the clients at any time of the day. Main emergencies are caesarean section, abdominal medicine, surgery and orthopaedic surgery. Many animal owners that are referred to the hospital have insurance for their cattle and expectations are at a high level. CT, Endoscopy, bowel resection and anastomosis, downer cow and fracture treatment are among the usual case features. Requirements for the management and handling of farm animals are high (technicians and barn personnel).</p>
Small Animal Internal Medicine	<p>The SA Clinic receives patients on regular office hours from 08:00-17:00 Mo-Fr. Weeknights and weekends are covered by a Emergency service staffed by in house Interns and Residents (at least 1 per shift, weekends 2 per shift) and a back-up specialist on call. Service from Internal medicine, surgery, radiology, anaesthesiology covering all year all days. An 24 ICU unit run by technicians is heavily used. Receiving is dependent on the clinical load of the hospital, in general there is 1-2 receiving team for medicine, 1-2 receiving team for surgery, 1-2 operating team, one receiving team for ophthalmology, cardiology and dermatology available per day. Every service is supervised by European/American specialists in their fields</p>	<p>The small animal surgical service receives appointments and perform surgical procedures during regular hospital hours between 8 am and 17 pm. Each surgical team includes a board certified specialist (ECVS and/or ACVS), a resident, 3 to 4 interns and a student. The two surgical teams receive appointments or perform surgical operations (alternating days). During the emergency hours a surgeon is on call 24 hours 7 days a week. An intensive care unit is functioning 24 hours-7 days a week.</p>
Small Animal Surgery	<p>Every service is supervised by European/American specialists in their fields</p>	<p>The clinic participates in the 365/7/24 emergency service of the Small Animal Hospital. During nights and weekends a senior physician (covering internal medicine and cardiology) is on-call. During regular hours the clinic offers the following services: General internal medicine, urgent referrals and primary emergencies, endocrinology, gastroenterology, nephrology/urology, infections dx (including hospital hygiene), cardiology, dermatology. Number of consultations is approximately 8000 per year. Approximately 50% of the animal patients are hospitalized, the mean duration of hospitalization is 3-4 days.</p>
Equine Department	<p>The ISME Equine Clinic in Bern provides a service for ambulatory patients and receiving for stationary patients from Monday to Friday, from 8.00 am to 6.00 pm. General consultations as well as specialised consultations are offered, with the purpose of a broad range of cases for our students and veterinary staff. The students in the 5th year, who are rotating in the Equine clinic, have the opportunity to visit the patients with the teaching staff and discuss diagnosis and therapy. Selected cases are discussed in detail and are presented during a conference to other students and veterinarians. The emergency services are active 24 hours/day and accept all medical, surgical, reproductive and ophthalmologic emergencies. A clinician is always present at the Clinic during the Emergency service and, if necessary, a second clinician and a Diplomat surgeon (which are on-call) or internist will consult in case of an emergency surgery or demanding internal problem. Students help during the emergency service, looking after critical patients, giving medications and scrubbing in in the surgery room in case of surgery. We provide a 24-hours intensive care service for foals, sick animals and post operative patients. The ISME center in Avenches complements these activities by offering another range of activities. Namely, specialized services in reproduction (incl. insemination, pregnancy checks, embryo transfer etc.) and sports medicine (incl. imaging diagnostics and specialised modalities like regular and water treadmill exercise and diagnostic possibilities).</p>	<p>The Equine Department provides a service for ambulatory patients from Monday to Friday, from 8.00 am to 5.00 pm, where all the ambulatory patients are visited and all elective surgeries are performed. General consultations as well as specialised consultations are offered, with the purpose of a broad case spectrum for our students and veterinary staff. The students in the 5th year, who are rotating in the Equine clinic, have the opportunity to visit the patients with the teaching staff and discuss diagnosis and therapy. Selected cases are discussed in detail and are presented during a conference to other students and veterinarians. The emergency services are active 24 hours/day and accept all kinds of medical, surgical, reproductive and ophthalmologic emergencies. A clinician is always present at the Clinic during the Emergency service and, if necessary, a second clinician and a Diplomat surgeon or internist (which are on-call) will come in case of an emergency surgery or demanding internal problem. Students do help during the emergency service, looking after critical patients, giving medications and scrubbing in in the surgery room in case of surgery. We provide a 24-hours intensive care service for foals, sick animals and post surgery animals. During the foal season, additional service is provided.</p>

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

	Bern	Zurich
Anatomy	<p>Animal bodies used for dissections have been provided by Novartis, by farmers and by owners through the clinics. Occasionally, whole cadavers were obtained at the end of experimental studies. Organ systems were collected at the slaughterhouse.</p> <p>The material is kept at -20°C until use. For dissection labs, cadavers are preserved in a mixture of ethanol, nitrite pickling salt and glycerol and kept at 4°C.</p> <p>Besides, the students are provided with a complete set of macerated or plastinated specimens to be studied during the practicals and on demand. A number of more specific specimens are stored in ethanol.</p> <p>After use, carcasses are brought to the public rendering plant.</p>	<p>Animals used in anatomical teaching are bought from local livestock traders and farmers. Some very old horses, which have to be euthanized because of their age are donations of owners. Cadavers or organ systems of small ruminants are donations of the Musculoskeletal Research Unit (MSRU) of the UZH, which have to be euthanized after animal experiments. Cadavers of companion animals are collected from local veterinarians with the consent of the owners. Organs are also bought from the local slaughterhouse.</p> <p>Cadavers and materials of animal origin are stored at -20°C deep freezers or a deep freezing room and in formaldehyde solution before being plastinated.</p> <p>For dissection labs, materials are preserved in nitrite pickling salt.</p> <p>The material is destroyed after use at the Animal Flour Factory Bazenhaid (TMF Ex-traktionswerk AG, Zwizachstrasse 24, 9602 Bazenhaid).</p>
Pathology	<p>Cadavers for pathology teaching are recruited through the diagnostic service and originate from the teaching hospitals and external clients (private clinics and practices). If needed (for example for practical final year examinations) additional cadavers are collected from private veterinary practices in the vicinity of the vet school. For specific training sessions (eg. large animal pathology) organs are collected from the abattoir in Langnau.</p> <p>Short-time storing (max. 2 days) of cadavers and organs is at 4°C; there is no longer term storing of carcasses for teaching purposes. Specific organ samples are stored in Klotz solution and kept at 4°C up to 2 weeks until demonstration. Any fixative is removed by thorough washing in water prior to demonstration to the students.</p> <p>Biological waste material (cadavers, organs/tissues, fixed tissues) is collected in a sealed container, picked up one or twice weekly by the carcass disposal service of the Canton of Bern (Centravo AG, Lyss).</p>	<p>Cadavers for pathology teaching are almost exclusively recruited through the diagnostic service and originate from the teaching hospitals and external clients (private clinics and practices). If needed (for example for practical final year examinations) cadavers are collected from an official local carcass disposal service site in Zurich (Hagenholz). For specific training sessions (eg. large animal pathology) organs are collected from the local abattoir in Zurich.</p> <p>Short-time storing (max. 2 days) of cadavers and organs is at 4°C; longer term storing is in a freezer at appr. 8°C. Specific samples are stored in Klotz solution before demonstration. Any fixative is removed by thorough washing in water prior to demonstration to the students.</p> <p>The material (cadavers, fresh organs/tissues, fixed tissues) is destroyed at a local incinerator (knackery) after its transportation according to the legal requirements.</p>

5.1.6. Description of the group size for the different types of clinical training (both intra-murally and extra-murally)

Bachelor (Bern and Zurich)

Group size in preclinical practical courses vary between 10 (anatomy, physiology,) and 50 students (half-classes in anatomy).

In clinical courses group size does not exceed 12 students.

Master Zurich:

In the 1st year of the master program there are 11 clinical stations (with groups of 5-6 students each).

In pathobiology there are 12 groups with 4-5 students each.

In some courses in Zoo Animals, Exotic Pets and Wildlife a group size of max. 20 students is common.

In the 2nd year of the Master program (clinical rotations) at the Zurich location the rotation programs are individually set up along the capacity of the clinics. This mostly means 1-2 students per week, sometimes 3-5 students each week per clinic/institute. In pathology the group size is 6 students each week.

Master Bern:

Group size in the first year of the master program averages 15 students.

Bern follows a different concept for the organization of the rotations: the class is divided up in groups per track (farm animal, horse, small animal, VPH, biopathology).

Group size varies between 6 and 10 students.

5.1.7. 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-murally and extra-murally)

Please see table below.

5.1.8. 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

A maximum number of 700 hours of classroom teaching per year, group sessions and practicals was defined when implementing the present curriculum. A weekly

volume of 25 hours lecturing should not be passed. This leaves students time for independent learning – besides the time which is scheduled as dedicated to independent study.

The interdisciplinary modules of year 2 and 3 (Bachelor) each have a set number of lectures and practicals which must not be exceeded.

If there is an increased demand for lectures in a specific subject the additional lecturing hours have to be compensated by some other area within the module.

The concept also defined mornings as classroom time and afternoons as time for practicals and group sessions. Scheduling strives to follow this concept.

In the Bachelor period lectures and corresponding practical courses or group sessions are planned with some days in between, time supposedly dedicated to the preparation of the practicals / group sessions.

The introduction to clinical work in the 3rd year is arranged the same way. First, theory is presented in the propaedeutics lectures, the students then have the practical course where they apply the theory under guidance of clinicians. Afterwards, students have an extended self-learning course with all the information needed in the small animal clinic.

At the Zurich location, students are allotted time during the semester for self-study. A few days after this self-study time one lecture and one demonstration serve to answer questions. Students then start with the clinical work.

In 1st academic year of the Master period, modules include extended periods of time for independent learning: in both fall and spring semester in the module “Chief complaint”, during the track period in the spring semester (9 weeks). The module Veterinary Public Health II (transmissible diseases and legislation) offers extended periods for discussions and self-study, too.

In the 2nd academic year of the Master, students discuss cases with their supervisors on a daily basis in their rotations.

The Clinic for Zoo Animals, Exotic Pets and Wildlife is a typical model:

There are two periods of daily clinical rounds (at 7.30 a.m. and 1.15 p.m.) where the cases are discussed in the group of students, residents and senior clinicians. Students present (history, examination, differential diagnoses based on SOAP system) the cases they have been advised, and propose a treatment following a documented SOP for clinical rounds. The clinician on duty talks

5.1.7. 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-murally and extra-murally)	
	Zurich
Necropsy	<p>The hands-on involvement of the students starts in year 2 and continues through years 3 to 5. In year 2 to 4, each student attends one necropsy per year supervised by 5th year students during their pathology rotation (see below). 5 students perform a supervised necropsy on 1-2 animals to become familiar with anatomy, anatomic pathology of organ systems, macroscopic descriptive techniques for pathology reports and the complexity of a diagnostic approach. In year 5, hands-on pathology training is provided in the 4-week clinical rotation in pathology. Students (groups of 6-10) join the diagnostic team and participate in the necropsy diagnostics (with the aim to undertake full necropsies on a range of species, including companion and food animals and exotics), write post mortem reports on their cases (total of 5 animals and exotics), write post mortem reports on their cases (total of 5 reports per student) and participate in the case-associated histological examinations. Students are also introduced to the biopsy/organ histology diagnostics, i.e. they are introduced to sample work-up and subsequently participate in the histological examinations, allowing them to work up individual cases from macroscopic description over trimming and processing to the histological assessment. Cytology training is included and delivered as a theoretical and practical introductory seminar (e-learning supported; Cytoscope) and a blended e-learning course (Cytoscope) with 10 cases from the diagnostic material.</p>
Small animal surgery	<p>Students participate in clinical activities in multiple ways. First, students are assigned to a clinical case and meet the owner to take history. Then, they perform a general, orthopedic, and neurologic examination under the supervision of a board certified surgeon or neurologist. After reporting the results of the examination, they present a list of problems and a diagnostic plan for the case. In addition, students prepare and give a short presentation of a case during the rotation; they aseptically prepare a patient; explore an abdomen; close subcutis and skin; evaluate wounds and place bandages. In addition, students participate in several hands-on laboratories to teach them practical skills. The practical courses include 1) lameness examination, 2) bandaging technique, 3) basic surgical procedures, 4) orthopedic and neurologic examination, 5) suturing technique, 6) basic gastrointestinal surgery, 7) wound management and closure, 8) stifle arthroscopy, 9) management of luxation and fractures, 10) dental laboratory.</p>
Small animal internal medicine	<p>During clinical rotation in the final year, students are involved in taking in new cases as well as in the work-up and treatment of hospitalized patients. They are assigned to new cases and are responsible for taking the history and performing a physical examination. Thereafter they discuss the problem list, main differential diagnosis and diagnostic/therapeutic plan with the resident/intern. In case the patient is hospitalized, they remain responsible for it. They take blood and urine samples and FNA/biopsies under close supervision and accompany their patients to radiology, ultrasound, CT or MRI. They interpret results of diagnostic tests and suggest treatment procedures (oral, sc, im, iv application of drugs, CRI). Treatment is also performed by the students under the supervision of technicians or residents/interns, depending on how challenging the procedure is. Students are responsible to fill in the medical record thoroughly and to write a SOAP. The latter are checked by the resident/intern responsible for the respective student and discussed on a daily basis. Students participate in all seminars and trainings of the clinic (e.g. Journal Club, cytology rounds, radiology rounds, cases discussions by residents, progress report of research projects). Student rounds are held daily from Monday through Friday by a resident. Regular case discussions in the 4th year prepare the students for the requirements of the 5th year.</p>

<p>Farm Animals</p>	<p>The following procedures are being performed under the supervision of residents by the students on their own: clinical examination, list of problems and definition of indicated further investigations, evaluation of results (e.g. bloodwork, radiographs), assistance and practice of ultrasonography (abdomen, udder, umbilical structures, soft tissue swellings, orthopedics), design of therapeutic plans/blood sampling and treatments (injections, bandage changes, passive milk drainage, intramammary treatments). Repro cases: Vaginal and rectal examinations are being performed by students under the guidance of an experienced clinician at the clinic as well as in the field (herd health management). Surgery: Students assist with routine operations. When they assist with laparotomy, they have the opportunity to explore the abdomen and carry out part of the opening and closure of the abdominal wall. Critical care: Students monitor and treat critical-care patients under supervision of residents and faculty. Euthanasia: Students assist with euthanasia of animals and on occasion have the opportunity to euthanize an animal on their own. Anesthesia: Students assist with anesthesia under the supervision of an anaesthetist; they monitor general anesthesia induced by the anaesthesiologist provided that the animal is stable. Client communication: Students are present when clinicians communicate with clients. Report-writing: At the end of each rotation, students write the daily reports of the clinical cases under the supervision of residents, which is edited by the responsible clinician and discussed with the respective student.</p>	<p>Students conduct clinical examinations, blood sampling and treatments (injections, bandages, intramammary treatments) on their own under the supervision of interns. Surgery: Students assist with routine and specialised surgeries (scrub-in). They are thought hands-on diagnostic procedures and treatment of orthopaedic cases (bandages and local anaesthetic techniques). When they assist with laparotomy, they have the opportunity to explore the abdomen and carry out part of the closure of the abdominal wall. Critical care: Students monitor and treat critical-care patients. Euthanasia: Students assist with euthanasia of animals and on occasion have the opportunity to euthanize an animal on their own under supervision of a licensed veterinarian. Anesthesia: Students assist with anesthesia; they monitor general anesthesia induced by the anaesthesiologist provided that the animal is stable. Client communication: Students are present when clinicians communicate with clients. Report-writing: Case presentation by students in the leading-symptoms course includes writing a medical report. After editing by a clinician, the report is made available via email to fellow students.</p>
<p>Equine Department</p>	<p>ISME Bern functions as in Zurich, complemented by the activities possible in ISME Avenches (namely specialised reproduction and sports medicine).</p>	<p>From the 2nd year, students begin the clinical formation with exercises in small groups, firstly about handling of the horses, then about clinical examination, examination of the oral cavity, lameness examination, examination of the colic patient and neurologic examination. During these exercises, all the practical skills are shown and each student has the opportunity to practice it under the supervision of a clinician. During the following years, the clinical activity increases, and in the 4th year students have weekly "practical cases", where they examine a case and elaborate a diagnostic as well as a therapeutic plan in small groups. Moreover, practical exercises like surgeries on equine limbs, on eyes, diagnostic anaesthesia, tooth rasping, hoof examinations are carried out. During the 5th year, students are in the Equine clinic (Equine surgery, Equine internal medicine, Ophthalmology and Anaesthesia) between 5 and 13 weeks and follow the clinicians in their work. They are responsible for the clinical examination of the stationary patients, the application of medicaments and help during the daily treatments such as bandage changing. They perform diagnostic tests and blood sampling under supervision of the clinicians. Moreover, they help during the examination of ambulatory patients and participate at surgeries, giving instruments and assisting the surgeon. They write reports on their examinations and obtain client information from the treating veterinarian. In horses that have to be euthanized, they place the intravenous catheter and prepare all the medications. At the end of the rotations, each student works on a clinical case and presents it in front of the department. Moreover, each student performs an additional practical work outside the University, in a private clinic, in order to experience different aspects of the profession outside of the University</p>
<p>Clinic for Zoo Animals, Exotic Pets and Wildlife</p>		<p>All students doing rotations (3 weeks as described in section 5.1.2.) at the Clinic for Zoo Animals, Exotic Pets and Wildlife are involved in history taking, clinical examination, blood sampling, in-house haematology, cytology, bacteriology, parasitology, x-ray and ultrasound evaluation, report writing (into the VTHs patient system), hospitalisation (incl. cage furnishing, surveillance, feeding, medication application). Every rotation includes a student performance meeting with the senior clinical veterinarian. The assessment for is submitted to the registrar of the curriculum.</p>

students through the procedures both in preparation for a patient, in parallel to performing the procedures, and in retrospect. Students are expected to deepen their understanding after working hours.

5.1.9. Description of the patient record system and how it is used to efficiently support the teaching, research, and service programmes of the Establishment

Bern:

All clinics including pathology use an electronical clinical record system „Polypoint“. The system has been adapted from human medicine and includes patient recording, appointments as well as billing procedures. Students have access to the system with their own login in the 5th year from each computer in the Department of Clinical Veterinary Medicine (DKV/DCVM). They use the system heavily to write reports, SOAPS and to retrieve clinical data including lab results, all diagnostic reports and also consult diagnostic imaging data and reports. The system is also used for staff planning. During rounds in the different services, Polypoint is available on large screens if deemed necessary by the clinicians. Surgical/Anesthesia planning is also done in the SA Clinic with this tool.

Zurich:

All students starting their practical studies on clinics are in possession of a personal account and trained how to use the clinical information system (Oblon®). A new information system (Vetera®) will be introduced soon. Record keeping by students following examinations is welcomed and the data entered is verified by clinicians and discussed with the students. Wherever suitable, students are encouraged to work with the system in the same way as clinicians do to get them used to proper electronical record keeping. Clinical records of all patients are fully accessible to the students to follow the cases during their hospitalization. Laboratory and other data can be printed anonymized at any time to support learning and teaching activities. Overall, the system is helping our students and teachers to follow, understand, and explain the clinical workup done in our patients.

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

see table 5.1.10 below

5.1.11. 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 Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The Vetsuisse Faculty does not define number and variety of animals or animal material for pre-clinical and clinical training. The catalogue of learning objectives and the day-one-skills on one hand and the caseload available on the other predetermine animals and animal material made available for student training in the different clinics and institutes.

In pre-clinical training the local institutes of Veterinary Anatomy rely on their collection of specimen (plastinates etc.), live animals (e.g. dogs) are recruited from students' pets.

All practicals dealing with propedeutics in the bachelor period use healthy animals either owned by the specific clinic or provided by students.

In clinical and in pathology training, the caseload defines variety and number of animal.

Since no matrix of animals and animal material is decided by the Establishment there is no faculty-based system of implementation, assessment and revision. Measures taken by the individual clinics are listed below:

Number of visits in slaughterhouses and related premises for training in FSQ

Each student gets to visit a slaughterhouse during the food-safety module in the 3rd year of study. The full-day excursion is being arranged by the head of the Vetsuisse Institute of Food Safety and Hygiene at the Zurich location who teaches the subject at both locations.

(Information of table 5.1.8)

5.1.10. Description of the procedures developed to ensure the welfare of animals used for educational and research activities	
Bern	
Animal Welfare Division	The Division of Animal Welfare uses mostly laboratory rodents (mice and rats) and poultry (laying hens, broilers, broiler breeders), but also dogs for research and educational purposes. Laboratory rodents are housed in a licensed laboratory animal facility on the Vetsuisse campus Bern, all poultry are housed externally in the licensed poultry facility at the Aviforum in Zollikofen. All dogs used in education and research are privately owned pet dogs specifically recruited for educational or research purposes. All use of animals is formally licensed by the Canton of Bern. Unless required by study design, all animals are generally housed above the minimal standards required by law, and refined methods for handling and euthanasia of laboratory rodents and poultry have been implemented. Continuing education of all personnel in 3Rs practices is explicitly supported.
Small Animal Clinic	Resident and senior clinicians supervise all routine procedures in order to guarantee animal welfare in dogs and cats treated by students. Owner consent is obtained in all cases. The small animal clinic in Bern does not have live teaching animals. Handling and care of the patients follows routine procedures and is under constant supervision of the senior clinicians as well as of the staff responsible within the hospital management.
Farm Animal Clinic	Animal-friendly husbandry is strictly enforced in the clinic as well as in the teaching farms. During the summer period, all the animals have daily access to pasture, weather permitting. During winter, the animals have access to an outdoor exercise pen according to Swiss law for animal protection.
Equine Clinic	Animal-friendly husbandry according to Swiss law for animal protection. is strictly enforced in ISME Bern and Avenches, both for the clinic owned horses (ISME Bern) as well as for all of the patient animals. All the clinic owned horses have daily access to controlled exercise (horse walker), paddock or pasture. Most of the horses used for educational activities are patients of the clinics in Bern or Avenches. Clinicians and teaching staff are responsible for the patients and must ensure, besides teaching students, safe of the art examination of the patient and, in critical cases, a rapid therapy. However, in the majority of the cases the students have the possibility to visit the patient and participate at diagnostic as well as therapeutic procedures.
Institute of Laboratory Animal Science	Zurich The use of animals in educational and research activities is tightly regulated by law. Animal husbandry conditions are defined in the animal welfare ordinance and followed strictly. Animal husbandry is further regulated by a Minimal Standard Policy of the University of Zurich. Experiments involving animals and maintenance breeding procedures during teaching are subject to a thorough application process including checks by the animal welfare officer, the cantonal veterinarian and the cantonal animal welfare commission. Killing of animals even for donation of organ samples is allowed on a specific applied-for permit. Within educational courses a high teacher to student ratio of maximally 1:4 ensures best animal welfare conditions during training sessions. Only person having successfully attended LTK Modul 1 (FELESA/EU functions A, C, D and modules 10, 20, 21) are allowed to undertake animal experiments. LTK Modul 2 (FELESA/EU Core modules A, B, C, and D, 1,2,4,5 Function B modules 9,10, 11, modules 20, 21, 51) certifies for study directorship. Every experimenter or study director has to attend 1 day of further education per year. The University of Zurich maintains an information portal for animal welfare (www.tierschutz.uzh.ch) and the Institute of Laboratory Animal Science provides SOPs for animal-related procedures on its website (www.ltk.uzh.ch) and runs a website dedicated to the 3R (replace, reduce, refine) with governmental support (www.swiss3Rnetwork.org).
Small animal surgery	The only live animals in the small animal surgical department used for teaching purpose are dogs owned by the students or staff. These animals are used for the orthopedic examination laboratory. The supervising faculty is responsible for adequate handling and care of these animals during the laboratory.
Small animal medicine	Resident and senior clinicians supervise all routine procedures so that animal welfare in dogs and cats treated by students is ensured. All procedures concerning clinical studies are approved by the Cantonal Veterinary Office of Zurich and are conducted in accordance with the guidelines established by the Animal Welfare Act of Switzerland. Owner consent is obtained in all cases.
Clinic for Zoo Animals, Exotic Pets and Wildlife	The clinic has a professional animal care team (3 persons) dedicated to exotic pets that participates regularly in continuous education of the VTH as well as specialised courses. Animals of different species are cared for by the species-specific standards. The husbandry are documented in SOPs that give detailed instructions on how patients of the different species must be housed/fed/treated that is available on the clinic server and also as printouts in the respective rooms designated for hospitalized mammalian, reptilian and avian patients. All use of animals for education or research is under licence of the cantonal veterinary office (Animal Care and Use Committee), which guarantees that animal welfare is granted according to the Swiss Animal Protection legislation.
Farm Animal Clinic	Animal-friendly husbandry is strictly enforced at the Stigenhof teaching farm. During the summer, all the animals have daily access to pasture, weather permitting. During winter, the animals have access to an outdoor exercise yard for 5 hours on 3 days of the week.
Equine Department	Most of the horses used for educational activities are patients of the equine clinics, presented either as ambulatory patients, routine examinations or emergencies. Clinicians and teaching staff are responsible for the patients and must ensure, besides teaching students, safe of the art examination of the patient and, in critical cases, a rapid therapy. However, in the majority of the cases the students have the possibility to visit the patient and participate at diagnostic as well as therapeutic procedures.

5.1.11. 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 Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Small animal surgery Zurich	Availability of cadavers for teaching purpose is limited. Therefore, if the owner agrees to the use of the animal for teaching purpose after euthanasia or death, the animal is stored. Depending on the number of courses and the participating students the smallest number of cadavers possible is thawed and used multiple times. The cadaver storage is managed by a person working in the clinic, who collaborates with each course supervisor for the preparation of the course. These facts are communicated by the person responsible for the course at the beginning of the course.
Small animal surgery Bern	same as small animal surgery in Zurich, forms for owner informed consent are used within the clinic
Small animal medicine Zurich	All procedures and practical courses which are taught to the students between the 2nd and 4th year are dictated by the curriculum and run in parallel to theoretical instructions (frontal lectures). Invasive procedures (e.g. blood and urine sampling) are taught by using healthy beagle dogs owned by the Vetsuisse faculty. For other practical courses (e.g. physical examination, in-depth examination of the cardiorespiratory system, gastrointestinal tract and other organ systems) healthy animals (owned by students and employees) and diseased animals (owned by clients) are used simultaneously to illustrate differences between health and disease. For the course «Case discussions» client-owned dogs and cats with relevant clinical signs and common diseases are used. All courses are held by senior clinicians/clinical instructors (Dipl ECVIM-CA, Dipl ECVIM-CA(cardiology), DiplACVIM). Courses are revised once a year by the director of the clinic and the clinical instructor, responsible for organizing the practical trainings. Changes are made according to the feedback from the teaching staff and the technicians. Clinical rotations in the 5th year are structured according to checklists, which are based on the «Lernziele» of the Vetsuisse faculty. Following the checklists ensures that all students acquire identical practical skills and have exposure to a similar variety of cases. Training and supervision of the students is done by residents and technicians, the residents are supervised by senior clinicians/clinical instructors (all Dipl ECVIM-CA or ACVIM). The work schedule is known to the students prior to the start of the clinical rotation. Assignment of cases to the students is done on a daily basis to ensure that the requirements of the checklists are met. Work-up of cases is done according to Standard Operating Procedures, composed by the specialists and revised by the team and the director of the clinic once a year.
Small Animal Medicine Bern	The small animal service sees patients and uses them for practical and applied theoretical teaching. The clinical service is oriented towards undergraduate and postgraduate education. A system of senior staff/residents/interns/students is applied. Usually students receive cases with case responsibility of residents and interns and final decision at the level of senior staff. This system is well known by all stakeholders and is regularly communicated to clients.
Clinic for Zoo Animals, Exotic Pets and Wildlife Zurich	Procedures and number as well as variety of animals of the clinical service are dictated by the curriculum and the two residency programs, for which the Clinic for Zoo Animals, Exotic Pets and Wildlife is approved (European College of Zoological Medicine – Avian, and American College of Zoological Medicine). Revisions are made by the clinic director and the monthly clinical meeting which is attended by all clinicians, the head of research and one of the technicians. Processes are documented as SOPs (e.g., rules for emergency treatment, for entry of patient histories into the patient record system etc.), which are updated whenever the necessity is felt by any member of the team. All such changes are assessed by the clinic director and the senior veterinarian.
Farm Animal Clinic Zurich	All teaching activities and research projects that involve live animals are approved by the veterinary authorities of the Canton of Zurich. Overuse of animals is strictly avoided. A senior veterinarian keeps a record of all procedures performed on animals and thus ensures appropriate use of the animals for research and/or teaching purposes. In addition to the approval by the veterinary authorities, each use of an animal is approved by the senior veterinarian. Simultaneous enrolment of animals in multiple procedures is not allowed when considered stressful by the senior veterinarian. In case of a dispute, the section head and another senior veterinarian of the Farm Service Clinic/Herd Health Medicine are involved in the decision-making process.
Farm Animal Clinic Bern	All cases referred to the farm animal clinic and all reproduction cases examined by the herd health section for ruminants are used for clinical training of students during their Master's semesters (always under the supervision of a resident or senior clinician). The same applies to cases examined on-farm by the swine clinic. The depth of involvement of the students mainly depends on the type and severity of each individual case. For animals that do not represent clinical cases, meaning that they are only used for students' training purposes, approval by the animal experimentation committee of the canton of Bern is obtained. Overuse of animals is strictly avoided. A senior clinician keeps a record of all procedures performed on teaching animals and thus ensures appropriate use of the animals according to permission by the authorities.
Equine department Zurich	For the students in the 2nd, 3rd and 4th year, the weekly plan will provide all the information regarding the pre-clinical and clinical training. According to the plan (Curriculum), the teaching staff organize the courses with either equine patients or specimens (e.g. distal limbs), and the number of animals/specimens will be decided according to the number of students.
Equine Clinic Bern	For the students the activities are organised in accordance with the curriculum. All cases at the ISME Bern and Avenches are available for teaching. For the clinic-owned horses approval by the animal experimentation committee of the canton of Bern is obtained.

Table 5.1.1. Cadavers and material of animal origin used in practical anatomical training

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	7	7	7	7	6	7	6	6
Internal organs	257	257	257	257	49	49	49	49
plastinated specimen	complete set				complete set			
Small ruminants	2	4	3	3	31	31	30	31
Internal organs	22	22	22	22	44	44	44	44
plastinated specimen	complete set				complete set			
Pigs	1	1	1	1	1	0	0	0
Internal organs	107	107	107	107	59	59	59	59
plastinated specimen	internal organs				0			
Companion animals (incl. Small animal clinic)	28	28	28	28	39	34	24	32
plastinated specimen	complete set				complete set			
Equine (including equine clinic)	15	15	15	15	8	8	8	8
Internal organs	9	9	9	9				
plastinated specimen	complete set				complete set			
Poultry & rabbits	0	0	0	0	4	4	4	4
Exotic pets	0	0	0	0	0	0	0	0

* The last full academic year prior the visitation

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

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle								
Medicine	1	1	1	1	65	65	65	65
Surgery	1	1	1	1	1	1	1	1
Reproduction	410	410	410	410	795	761	807	788
Small ruminants	0	0	0	0				
Reproduction					7	7	7	7
Pigs	0	0	0	0				
Companion animals	22	22	22	22	91	88	88	89
Equine	5	5	5	5				
Medicine					96	96	96	96
Reproduction					162	162	96	140
Poultry & rabbits	0	0	0	0	0	0	0	0
Exotic pets	0	0	0	0	30	30	30	30
Others (specify)								
Mice and rats	0	0	0	0	n.a.	32	66	
minipigs	0	0	0	0	0	3	0	1

* The last full academic year prior the visitation

Table 5.1.3. Number of patients seen intra-murally (in the VTH)**

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	1133	1250	1287	1223	1444	1267	1497	1403
Small ruminants	138	139	142	140	191	215	217	208
Pigs	144	262	187	198	145	182	124	150
total farm animals	1415	1651	1616	1561	1780	1664	1838	1761
Companion animals								
Medicine	3401	3520	3444	3455	8080	7898	7928	7968
Surgery	3993	3522	3445	3653	2750	2746	3311	2936
total companion animals	7394	7042	6889	7108	10830	10644	11239	10904
Equine	1553	1795	1591	1646	1494	1441	1579	1504
Poultry & rabbits	-	-	-	-				
Exotic pets Zoo Animals Wild-life	-	-	-	-	4100	4200	3800	4033
New World Cameldis	53	72	68					

* The last full academic year prior the visitation

** Each patient has to be officially recorded in the electronic patient record system of the Establishment and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Each live animal affected by one specific clinical episode is counted as 1 single patient, even if it has been examined/treated by several departments/units/clinics.

Table 5.1.4. Number of patients seen extra-murally (in the ambulatory clinics)**

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	1224	1311	1255	1263	1444	1267	1497	1403
Small ruminants	48	65	50	54	191	215	217	208
Pigs	17400	12300	8100	12600	145	182	124	150
Total farm animals	18672	13676	9405	13918	1635	1482	1714	1611
Companion animals	-	-	-	-	2799	2897	2940	2879
Equine	-	-	-	-	996	961	1052	1003
Poultry & rabbits	-	-	-	-	-	-	-	-
Exotic pets	-	-	-	-	-	-	-	-
Others (specify)	-	-	-	-	-	-	-	-

* The last full academic year prior the visitation

** Each patient has to be officially recorded and has to be individually examined/treated by at least 1 student under the supervision of at least 1 member of staff. Each live animal affected by one specific clinical episode is counted as 1 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	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	0	0	0	0	10	10	10	10
Small ruminants	0	0	0	0	15	15	15	15
Pigs	20	20	20	20	10	10	10	10
Companion animals med								
Medicine	25	25	25	25	40	44	35	40
Surgery	25	25	25	25	60	45	35	47
Equine	10	10	10	10	5	5	5	5
Poultry & rabbits	-	-	-	-				
Exotic pets	-	-	-	-	50	60	65	58
Others (specify)	-	-	-	-				

* The last full academic year prior the visitation

Table 5.1.6. Cadavers used in necropsy

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	275	293	227	265	351	354	331	345
Camelids (Bern)	25	20	12	19				
Small ruminants	108	107	91	102	206	168	119	164
Pigs	188	156	154	166	328	394	268	330
Total farm animals	596	576	484	552	885	916	718	840
Companion animals	213	226	323	285	532	495	450	492
Equine	65	83	56	68	145	130	144	140
Poultry & rabbits	210	213	170	198	0	0	0	0
Exotic pets	63	64	71	66	82	74	39	65
Others: Zoo/wild-animals (excl. birds)	113	90	92	98	173	256	111	180
Cage birds	BE: included in poultry and zoo-/wild animals				134	123	0	86
Total Poultry&rabbits, exotc pets, zoo/wild-animals and cage birds	386	367	333	362	2738	1541	792	1690

* The last full academic year prior the visitation

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

Species	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Cattle	44	44	43					
Small ruminants	-	-	-					
Pigs	58	41	27		45	53	37	45
Poultry	-	-	-		-	-	-	
Rabbits	-	-	-		-	-	-	
Others (specify)	-	-	-		-	-	-	
Equine	-	-	-		4	4	4	4

* The last full academic year prior the visitation

5.2. Comments

Bern:

Farm animal clinic

The number of first line cases offered to the students in the ruminant clinic is low (except repro cases), as currently the clinic has no ambulatory clinic. The close collaboration with the Swiss Bovine Health Service allows to see many herd cases, but no additional individual cases.

The number of first line and second line cases in the Swine Clinic is sufficient, because of an intensive cooperation between the Swine Clinic and the Swine Health Service, which is accommodated in the same building. The latter fact also routinely enables meetings of vets from both institutions, common use of data and equipment, as well as joint efforts of continuous professional development.

Small animal clinic

The number of first opinion cases is low and will be addressed with the planned new curriculum 2020 with increased external rotations.

Zurich:

Farm Animal Clinic

The number of first line cases offered to the students in the ruminant clinic is low but still offers an abundant amount of cases for learning clinical examination, application of ultrasound, standard gynaecological and surgical interventions as well as lameness examination and treatment.

5.3. Suggestions for improvement

The availability of live animals for clinical training at the VTH can hardly be increased. As mentioned above, the aim to increase practical work with veterinarians in private practice is an important feature of the strategic plan of the Vetsuisse Faculty: students will pass substantial time in private practice and clinics in their 5th and 6th year of training.

Acquisition of an ambulatory farm animal clinic in Bern and a teaching and research farm will be discussed with the international advisory board of the farm animal clinic. Implementation might be proposed to the faculty in the near future. Because of an envisaged shortage of farm animal practitioners in the near future in Switzerland, the basis should be worked out to allow for an increase of the number of students in the farm animal track.

6

Learning resources



6. Learning resources

6. Factual information

6.1.1. Description of the main library of the Establishment

Bern:

The in house main library is located in the building of the Division of Veterinary Anatomy and the Dean's Office.

A library committee, headed by a professor of the faculty, manages the in house library.

68 Students and staff have full access to a nearby large university library (Bühlstrasse) which covers all relevant bio-medical disciplines and is within 5 to 10 minute walking distance from the Vetsuisse campus, as well as to the main university library (at 10 minute walking distance) and its e-journals.

Zurich:

Since 2006, the Vetsuisse library Zurich has been declared by the Association of Swiss University (swissuniversities) as the main library in Switzerland for veterinary medicine and for archiving veterinary medical literature. As a consequence, we are obliged to archive systematically journals in print and books related to veterinary medicine.

Students, researchers and all faculty members have also full access to the nearby large university library HBZ (Irchel Campus), which covers all relevant bio-medical disciplines and is reachable within a 10-minutes walking distance.

For the general access at the main university library server for e-journals we have to contribute to the Consortium of Swiss Libraries with a certain amount.

6.1.2. Description of the subsidiary libraries

Bern:

There are 11 small clinic libraries within institutes or clinics within the Vetsuisse Faculty Bern. Students and staff can use the books on place or make photocopies.

Zurich:

There are approx. 7 small institutional libraries within the Vetsuisse Faculty Zurich, where the students can use the books on place – no lending and without working stations, but with possibilities to make photocopies.

6.1.3. 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)

Bern:

ILIAS is the learning environment at the University of Bern. A team of 7 IT-professionals is in charge of user support and development of the tool as needed by its users (http://www.unibe.ch/university/organization/executive_board_and_central_administration/vice_rectorate_teaching/ilub_support_center/index_eng.html).

At the Bern location, its features (learning documents, chatrooms, communication with teaching staff, self assessment, use of video in learning and teaching) are mainly used in Anatomy and Anaesthesiology.

SWITCH is providing storage space for podcasts, ILUB supports users as with ILIAS.

Radiology and Hematology (clinical pathology) use their specific software which is being supported by a veterinarian-IT professional at the Clinical Radiology division.

At the Bern location a repository for learning material has been in use for the past decade. A dedicated software for scheduling, student inscription for night duties and use of the skills lab has shortly been introduced. The faculty-specific software has been developed by the same free-lance IT-professional (and medical surgeon) in collaboration with the Bern office of student affairs. Support and further development are provided by this same professional.

Zurich:

An open source learning management system (OLAT), developed by the University of Zurich, is used as the main e-learning platform to provide online courses for veterinary students. The functionalities of OLAT are supplemented by several online-based resources for e.g. case-based learning (CASUS), video-sharing and lecture-recording (SWITCHtube and SWITCHcast), and digital imaging collections and microscopic magnifications (e.g. Scanscope, Swiss Virtual Pathology).

Deployment, further development and support of OLAT are provided by the University of Zurich. Additional online resources and tools (e.g. SWITCH, CASUS) are provided with contractual user support.

For the coordination of e-learning products and to answer questions regarding e-learning form students and lecturers, a veterinarian with specialisation in online learning (MSc in Digital Education) works in a team with IT professionals.

SWITCH: <https://www.switch.ch/about/foundation/>

6.1.1 Description of the main library of the Establishment

	Bern	Zurich
Staff	1	2,75
FTE	60%	110%
Qualifications		
- Person of charge	MA in History / MAS ALIS (Master of Advanced Studies in Archival, Library and Informations Science)	A: Formation in publishing, B: formation in commerce and professional education in librarianship C: Degree courses in biology and professional education in librarianship
-Opening hours and days		
Students and members of the faculty	24 hours/7 days a week access to the library	24 hours/7 days a week access to the library
Public	9 hours/5 days a week access to the library	12 hours/5 days a week access to the library
-Annual budget		
Budget 2016	Euro 75>200	Euro 146>170
-Facilities		
Global space	409 square meters	214 square meters
Number of seats in total	50	80
-Equipment		
Number of computer	4	43
Number of electrical connections to portable	W-Fi/50	Wi-Fi/80
Software for bibliographic research	43 databases licensed	22 databases licensed and OA
Number of veterinary books	5151	11252
Number of veterinary periodicals (closed and running)	135	9876
Number of veterinary periodicals (running)	30	153
Number of veterinary e-learning films	13	365
Number of veterinary e-books	480	162
Number of veterinary e-periodicals	83	476 (http://vetbiblio.uzh.ch)

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6.1.2. Description of the subsidiary libraries (if any)

Subsidiary libraries Bern		Subsidiary libraries Zurich	
	Items		Items
Archive of the Library of the Vetsuisse-Faculty	4114	Archive of the Library of the Vetsuisse-Faculty	1474
Department of Clinical Veterinary Science	634	Institut of the Veterinary Anatomy	301
Equine Clinic	516	Institute of Animal Nutrition	1462
Small Animal Clinic	95	Institute of Veterinary Bacteriology	693
Other	23	Institute of Veterinary Pathology	768
Division of Veterinary Anatomy	481	Institute for Food Safety and Hygiene	390
		Department for Farm Animals	586
		Clinic for Zoo Animals, Exotic Pets and Wildlife	308

6.1.3. E-learning platform							
E-learning platform	Bern	Zurich	Used as...	Software	Staff	Support for content development	Student support
OLAT		X	Learning Management System	OLAT 10.4.9. OSI certified open source software developed by the University of Zurich	Software development by OLAT staff, organization of online courses by e-learning coordinator of the VSF Zurich	Support by the OLAT team (daily per telephone, mail and in person) and by the e-learning coordinator of the VSF Zurich	FAQs, demonstration videos and user manual for general usage of OLAT by students, support by the OLAT team and by the e-learning coordinator of the VSF Zurich for specific problems
ILIAS	X		Learning Management System	ILIAS	ILUB Team http://www.unibe.ch/university/organization/executive_board_and_central_administration/vice_rectorate_teaching/ilub_support_center/index_eng.html	Support by the ILUB team at university level.	Support by the ILUB team at university level except for specific learning programs (see anatomy below)
CASUS	X	X	Case-based multimedia learning and authoring system	CASUS developed by Instruct AG, Munich, Germany	Administration and support by Instruct AG and in parts by e-learning coordinator of the VSF Zurich	Content is developed by lecturers with the help of Instruct AG and the e-learning coordinator of the VSF Zurich	User manual, FAQs and direct help of Instruct AG support students' learning experiences
SWITCHtube	X	X	Web based video sharing platform	Video portal developed by SWITCH, Zurich and hosted on Swiss academic network	SWITCH team for development and support	Video tutorials, quick guide, FAQs, user manual and direct support by SWITCH for content development and upload of videos	Quick guide, FAQs, user manual, e-mail support by SWITCH
SWITCHcast	X	X	Video and audio content development platform	Several software solutions e.g. SWITCHcast recorder, video editor, LMS plug-ins	SWITCH team for development and support	On-site instructions by SWITCH team, help browser with video tutorials, user's guides and direct support by SWITCH, technical help for dual recording by local IT support	SWITCHcast videos are embedded into OLAT and viewed there, support by problems via OLAT support or e-learning coordination VSF Zurich
E-hoof	X	X	Web based content site for veterinary students, farriers and veterinary professionals for (continuing) education of the horse and the hoof	Web-based database developed by Equine Department, VSF Zurich, Swiss Metal Union, European Federation of Farrier Associations	Equine Department, VSF Zurich	Content development exclusively by the Equine Department, VSF Zurich	Online help and e-mail support by Equine Department, VSF Zurich
RadioSurfVet	X	X	Web based content site for veterinary students.	Database developed at the medical faculty Bern	Clinical Radiology Division (Bern): IT-Veterinarian and Institute for Learning in Medicine Bern	Content development by staff of Divisions of Radiology and Veterinary Anatomy at Bern location	Bern Radiology Division
EquiSurf	x		Web based content site for veterinary students.	Database developed at the medical faculty Bern	Equine Clinic (Bern): IT-Veterinarian and Institute for Learning in Medicine Bern	Content development by staff of Equine Clinic (Bern)	Bern Equine Clinic
Digital atlas of bovine radiology			DVD and online open access	comprehensive learning tool for students	Clinic for Ruminants	Clinic for Ruminants	Clinic for Ruminants

Swiss Virtual Animal Pathology		X	Web based content site for Swiss veterinary students and veterinary professionals for (continuing) education of veterinary pathology	Web-based database developed by Arpage AG and VSF Zurich	Institute of Veterinary Pathology, VSF Zurich	Content development exclusively by the Institute of Veterinary Pathology, VSF Zurich	E-mail support by Institute of Veterinary Pathology, VSF Zurich
Scanscope		X	Web based digital imaging database of microscopic slides	Digital imaging solution provided by TRIBVN, France	Institute of Veterinary Pathology, VSF Zurich Institute of Veterinary Anatomy	Content development exclusively by the Institute of Veterinary Pathology, VSF Zurich	Institute of Veterinary Pathology, VSF Zurich Institute of Veterinary Anatomy
Veterinary anatomy		X	Web based digital imaging database of annotated anatomical preparations	Developed by IT team, VSF Zurich	Institute of Veterinary Anatomy, VSF Zurich	Content development exclusively by the Institute of Veterinary Anatomy, VSF Zurich	Online user's guide and e-mail support by Institute of Veterinary Anatomy, VSF Zurich
Veterinary Anatomy		X	Collection of digitized learning tools and videos made available on the ILIAS learning platform or on the faculty's server for teaching resources	ILIAS and various software tools	Division of Veterinary Anatomy	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy
Forum and live voting		X	Online discussion forum; live voting questions	ILIAS	Division of Veterinary Anatomy	Division of Veterinary Anatomy	Division of Veterinary Anatomy
Self-assessment tests		X	Self-assessment regarding anatomy matters being taught in the first year	ILIAS	Division of Veterinary Anatomy	Division of Veterinary Anatomy	Division of Veterinary Anatomy
Collibio		X	Comprehensive, web-based collection of fully digitized histological slides	Collibio, University of Geneva	Division of Veterinary Anatomy and University of Geneva	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy
PetAnat		X	Comprehensive web portal dealing with the Anatomy of the rabbit and of the guinea pig	Institute of Medical Education, University of Bern	Division of Veterinary Anatomy	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy
VetAnat		X	Comprehensive web portal dealing with the CNS of the dog with special reference to neuronal pathways	Website, 3D studio Max, DWF-Viewer from Autodesk, Division of Veterinary Anatomy	Division of Veterinary Anatomy	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy
VetAnat		X	Comprehensive web portal dealing with the petrosal bone, the labyrinth and the corresponding cranial nerves	Website, 3D studio Max, DWF-Viewer from Autodesk, Division of Veterinary Anatomy	Division of Veterinary Anatomy	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy
Embryology.ch		X	The web portal on human embryology has been comprehensively complemented with the specific aspects regarding the embryonic development of domestic mammals and birds	Website, Swiss Virtual Campus	Division of Veterinary Anatomy	Content development by Division of Veterinary Anatomy	Division of Veterinary Anatomy

6.1.4. Description of the available electronic information and e-learning courses, and their role in supporting student learning and teaching in the core curriculum

At both locations, e-learning tools are integrated in teaching. The tools are being presented to the students by teaching staff and accessed via a specific database (Zurich, see below) or by links integrated in the learning material (Bern).

Podcasts are being produced and used at both sites.

Bern:

Production of podcasts has been introduced in 2015. All lectures are systematically being taped (presentation and voice of the lecturer) and made available to the students shortly after the lecture. In each class a student is responsible for filming and (little) post-producing the lecture. All teaching staff is free to decline from having the podcast being produced. Generally, lecturers agree to podcasting. Before the beginning of a new academic year all podcasts are being deleted unless requested otherwise. Students appreciate podcasts as important tool to prepare exams.

Anatomy

http://www.ita.vetsuisse.unibe.ch/studium/ausbildung/makroanatomie/systematische_anatomie/index_ger.html#e284346

Zurich:

A link to the website of the learning software at the Zurich location is provided by the e-learning coordination. E-learning tools are offered through a database allowing search criteria such as title, author, key words, module, animal species.

Podcasts are being produced specifically by teaching staff (e.g. skills demonstrations) and made accessible by the same database.

Link: <http://www.e-vetsuisse.uzh.ch/de/dienstleistungen.html>

6.1.5. Description of the accessibility for staff and students to electronic learning resources both on and off campus (Wi-Fi coverage in the Establishment and access to Virtual Private Network (VPN))

At both locations Wi-Fi coverage is complete on the campus of the faculties. All rooms for teaching and learning-areas are equipped correspondingly. Off campus students access learning material via internet.

VPN is available for staff of the two local faculties only. Both locations offer eduroam coverage.

6.1.6. Description of how the procedures for access to and use of learning resources are taught to students.

Bern:

At the beginning of the academic year students are introduced into the use of the library (information literacy) by the librarian:

- 2nd year students: Use of the library catalogue (2 lessons)
- 4th year students: Basics in EBVM / Use of PubMed Database (4 lessons)

There are call in sessions available for students, clinicians and PhD students during the year. The aim of these sessions is to assist the clients individually and teach them face to face.

Zurich:

Twice a year the library staff teaches the students information literacy

- 1st year students: use of the library catalogue (1 lesson)
- 4th year students: Information literacy (research techniques), use of VetMed Resource Database (2 lessons).

There are call-in sessions available to students, researchers, clinicians and all faculty members during the year. In bilateral sessions and based upon a concrete topic the client gets the needed support and in long run for capacity building.

6.1.7. Description of how (procedures) and by who (description of the committee structure) the learning resources (books, periodicals, databases, e-learning, new technologies, ..) provided by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

Bern:

The selection of media in the library is geared first and foremost to the needs of students and researchers of veterinary medicine. The librarian collects new publications and sends an email to the head clinicians approximately every three to four months. The heads distribute the lists among their staff and decide which books they would like to buy for the library. Additionally, the librarian evaluates purchase proposals made by clinicians or students during the year. Due to the fact that the budget has not been enlarged over the last years purchasing

journals is not as easy as purchasing books. Even though clinicians can make proposals such as which new journals they would like to acquire the librarian is in charge of the budget.

Databases

The Databases are licenced directly via the university's library. The Vetsuisse Faculty does not take any part in this.

Zurich:

A professor of the faculty heads the library. The library collection focuses on the curriculum, the research objectives and the archiving task. The primary goal is to include all relevant journals, databases, books both in print and e-media covering all areas of veterinary medicine. The concrete decisions on the acquisition and the maintenance lie in the competence of the operational library management in cooperation with the experts of the different institutes of the faculty and the clinics. Twice a year the Office of Student Affairs submits a list of the required study books. Information about new acquisitions is provided regularly to all students, researchers and stakeholders and is published on the website www.vetbiblio.uzh.ch by using a direct link to the library database.

A veterinary specific database is licensed directly via the Vetsuisse Faculty. The main university's library does not take any part in this.

Since January 2017 students have 24 hours 7 days a week access to the library.

In 2006 the Vetsuisse library Zurich has been declared the main library in Switzerland for archiving veterinary medical literature by the Association of Swiss University (swissuniversities). Consequently, the library is obliged to archive journals and books related to veterinary medicine.

At both locations it is up to the teaching staff to provide e-learning material to students. Access to e-learning to students is organized as described under Chapter 6.12.4.

6.2. Comments

Bern and Zurich:

The Vetsuisse library is accessible 24h/7days a week for vet students and clinicians and is very frequently used by its customers. Students appreciate to access their library whenever they please.

Since 2011 master students at the Bern location have been taught in database research and the basics of Evidence Based Veterinary Medicine. These courses are part of the curriculum and are highly appreciated. Call in sessions which are offered by the Head of Library to support the students while writing their master thesis are well established. Last not least the library offers document delivery for teaching staff and students. This service is extremely well used.

6.3. Suggestions for improvement

Concerning libraries, collaboration is in progress. This cooperation aims at improving the online access to journals and databases. However, this cooperation is limited by existing contracts between the Universities of Zurich and Bern and the different publishers. In some cases, joint ventures will lower the costs and improve online access for particular journals of databases. In 2016 the two libraries tried to license one database together. At the end, however, the deal did not come to pass.

IT Collaboration between the Vetsuisse Faculty Bern and Zurich is established. Several areas such as diagnostic imaging, immunology, biostatistics provide full exchange of all their electronic teaching materials.

At the Bern location, an IT-professional responsible for instructional material as in Zurich, would be desirable.

6.1.4. Available electronic information and e-learning courses

Bern	Zurich			
Each organizational unit offers its e-learning modules separately. Links are communicated to students within the corresponding lectures (podcasts of lectures not included).	Information regarding e-learning and e-learning courses can be found by students at the e-learning homepage of the Vetsuisse-Faculty (http://www.e-vetsuisse.uzh.ch/de.html).			
Subject	E-learning course	Year of study	Bern	Zurich
Anatomy and physiology - basics	Functional brain anatomy	1	x	x
Anatomy and physiology - basics	Anatomy of the digestive and cardio-respiratory system of the horse	1		x
Biochemistry I	General molecular biology	1		x
Biochemistry I	Enzymes	1		x
Biochemistry I	Lipids, polysaccharides and membranes	1		x
Biology I	Cell biology	1		x
Epidemiology and statistics	Epidemiology and statistics	1	x	x
General Histology	ScanScope	1		x
General Histology	e-Microscope	1 - 4	x	
Radiophysics and general radiology	RadioSurfVet	1 - 4	x	x
Animal feed science	e-Feed	2		x
Biochemistry II	Specific molecular biology	2		x
Digestive system	Swiss Virtual Animal Pathology	2		x
Digestive system	Digestive anatomy of the horse	2		x
Digestive system	Examination of the equine digestive system	2		x
Internal medicine of the horse	equisurf_vet	2,3	x	
Digestive system	eVet Inspect	2		x
Digestive system	Exploratory celiotomy in a female dog	2		x
Digestive system	Pathology of the digestive system in animals	2		x
General pathology	Swiss Virtual Animal Pathology	2		x
General pathology	Online cases	2,3		x
General surgery	Anaesthesiology - equipment and surveillance	2		x
General surgery	Anaesthesiology - pain and analgesia	2		x
General surgery	Surgical instruments - soft tissues	2		x
General surgery	Surgical instruments - orthopaedics	2		x
General surgery	Sutures and suture material	2		x
General surgery	Skills Lab suturing station	2 - 4	x	
Musculoskeletal system	Fracture treatment - hind limb	2		x
Musculoskeletal system	Fracture treatment - fore limb	2		x
Musculoskeletal system	Surgical dressings	2		x
Musculoskeletal system	e-Hoof	2	x	x
Musculoskeletal system	eVet Inspect	2		x
Musculoskeletal system	Radiology of the musculoskeletal system	2		x
Musculoskeletal system	Principles of claw trimming in cattle	2		x
Parasitology	Coproscopy	2		x
Parasitology	Arachnoentomology	2		x
Propaedeutics	examination procedures	2 - 4	x	
Cardio respiratory system	EQUAD - interactive educational programme on upper airway diseases in horses	3		x
Cardio respiratory system	eVet Respi	3		x
Cardio respiratory system	Cardiopulmonary anatomy of the horse	3		x
Cardio respiratory system	Cardiac murmurs and arrhythmias in the horse	3		x
Central nervous system and sensory organs	Functional brain anatomy	3		x
Central nervous system and sensory organs	Cross sections of the equine brain	3	x	x
Central nervous system and sensory organs	Histopathology of the eye	3	x	x
Central nervous system and sensory organs	Dynamic spine stabilization	3		x
Central nervous system and sensory organs	Sacrococcygeal luxation in the cat	3		x
Central nervous system and sensory organs	Thoracolumbal disc protrusion in the dog	3		x
Central nervous system and sensory organs	Neurological examination of the dog	3		x
Epidemiology and statistics	eStats - Introduction	3	x	x

Subject	E-learning course	Year of study	Bern	Zurich
Epidemiology and statistics	Epidemiology	3	x	x
Propaedeutics	Examination of exotic pets	3,4	x	x
Reproductive system	Pregnancy and birth in small animals	3		x
Reproductive system	Pregnancy and birth in cattle	3		x
Virology	Virus portraits	3		x
Anaesthesiology	Anaesthesiological cases	4	x	x
Anaesthesiology	General anaesthesiology	4	x	x
Anaesthesiology	Anaesthesiology - equipment and surveillance	4	x	x
Anaesthesiology	Anaesthesiology - pain and analgesia	4	x	x
Farm animals	Principles of claw trimming in cattle	4		x
Farm animals	Diseases of bovine teats and skin	4		x
Farm animals	Diagnostics and surgery of bovine teats	4		x
Farm animals	General health management	4		x
Horse	Radiology of the musculoskeletal system - cases	4		x
Horse	e-Hoof	4	x	x
Horse	eVet First Aid	4		x
Horse	eVet Cases Equine Medicine	4		x
Horse	eVet Cases Equine Surgery	4		x
Horse	Equine hospital	4		x
Laboratory Medicine	Cases - Laboratory Medicine	4		x
Obstetrics and neonatology	Equine reproduction	4		x
Obstetrics and neonatology	Sectio Caesarea in cows	4		x
Obstetrics and neonatology	Obstetrics	4		x
Obstetrics and neonatology	Paediatrics in small animals	4		x
Path biology	Swiss Virtual Animal Pathology	4		x
Path biology	Vet: Histology	4		x
Path biology	Online Microscopy	4		x
Path biology	ScanScope	4	x	x
Small animal medicine	Small animal medicine	4		x
Small animals	Radiology of the musculoskeletal system - cases	4		x
Small animals	Paediatrics in small animals	4		x
Small animals	eVet Small animal medicine	4		x
Small animals	Radiology urinary tract - cases	4		x
Small animals	Cases - Emergency Medicine and Surgery	4		x
Zoo animals, exotic pets, wild animals and fishes	Wild animals - examination, diagnostics and therapy	4	x	x
Zoo animals, exotic pets, wild animals and fishes	eVet Cases Exotics	4	x	x
Zoo animals, exotic pets, wild animals and fishes	Examination of exotic pets	4	x	x
Veterinary public health	Post-mortem inspection	4	x	x
Emergency medicine	Introduction to the night duties of the small animal clinic	5	x	x
Emergency medicine	Emergency medicine - small animals	5		x
Horse medicine and surgery	Equine hospital	5		x
Horse medicine and surgery	eVet Cases Equine Medicine and Surgery	5		x
Horse medicine and surgery	Online case presentations	5		x
Pathology	Vet: Pathology (including microscopic anatomy and histology)	1-3, 5		x
Pathology	Vet: Histology	5		x
Pathology	Vet Path Trainer	5		x
Small animal anaesthesiology	Anaesthesiology - equipment and surveillance	5		x
Small animal anaesthesiology	Anaesthesiology - pain and analgesia	5		x
Small animal anaesthesiology	Anaesthesiology - cases	5		x
General and special pathology	Case collection	2-5		x

7

Student admission, progression and welfare



7. Student admission, progression and welfare

7.1. Factual information

7.1.1. Description of how the educational programme proposed by the Establishment is advertised to prospective students

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High school students are offered information days in the first week of December on the career options in the veterinary profession and on the veterinary teaching curriculum. This is organized at the university level. These information days usually last for 2 days

http://www.unibe.ch/studies/prospective_students/holders_of_swiss_matura/open_days/bachelor_s_open_days/index_eng.html (Bern)

<http://www.studieninformationstage.uzh.ch/en.html> (Zurich)

The aim of these days is extensive information of future students about the possibilities and requirements during veterinary studies at the faculty. It is important for us to educate future students about the career options of the veterinary profession. Students and alumni present their view of the curriculum and the reasons for choosing the veterinary profession.

The «Erstsemestrigentag», i.e. the first day of the students at the university, offers a brief summary of what the students are going to experience during the 5 year curriculum. This also includes general information about the life as a student. Senior undergraduate students assist the incoming students to get acquainted with the campus and to give them a warm welcome.

Bern:

http://www.unibe.ch/studies/degree_programs/masters/open_days/orientation_day/index_eng.html

Zurich:

<http://www.uzh.ch/de/studies/infoadvice/information/firstsemesterdays.html>

Portraits of a large variety of veterinary professions are accessible on the websites of the two locations as well as on the site of the Swiss Veterinary Association (<http://www.gstsvs.ch/>).

7.1.2. Description of the admission procedures for standard students:

- selection criteria
- policy for disable and ill students
- composition and training of the selection committee
- appeal process
- advertisement of the criteria and transparency of the procedures

Due to the high number of applications of students who want to study veterinary medicine, the Universities of Bern and Zurich enforce a numerus clausus system which allows only a predefined number of students to initiate their studies. These numbers have been set to 80 new students in the first year of the curriculum in Zurich and 70 in Bern, respectively. Considering our experience with the number of students who fail the 1st year exams, an average number of 76 students in Zurich (75 in Bern) will then enter their 2nd year of studies. This corresponds to the capacity for high quality clinical training of our institutions at the Vetsuisse Faculty.

All students who want to study veterinary medicine have to sit an entry examination (aptitude test) organized by swissuniversities (<https://www.swissuniversities.ch/en/services/applying-to-medical-school/>). In order to be admitted to the aptitude test, students must comply with the standards for general admission to university in Switzerland, i.e. have obtained the

- federally recognized «Maturität» (diploma of higher secondary education, Gymnasium)
- federal professional «Maturität» in combination with an additional federal exam («Passerelle»)
- Bachelor, master or equivalent diploma of a Swiss university
- Bachelor of a Swiss university of applied sciences or a Swiss university of teacher education

Admission to veterinary medicine (and medicine & dentists) is defined in the regulations for admittance to medical education at university level of the two Cantons

(for the Canton of Bern see <https://www.belex.sites.be.ch/frontend/versions/670?locale=de>, Canton of Zurich: http://www.zh.ch/internet/de/rechtliche_grundlagen/gesetze/erlass.html?Open&Ordnr=415.432).

The aptitude test is not a knowledge test. It tests the applicants' capacity to acquire new knowledge. The test is

offered at 9 different locations in all language regions of the country on one single day. In 2016, a total of 408 students participated in the test in order to be assigned one of 150 study places in veterinary medicine (80 in Zurich, 70 in Bern). Although the successful candidates may indicate their favored university of study, it is swissuniversities which decide about the allocation of the students to the two universities.

Criteria for the assurance of the quality of the test are published in an annual report. The rate of successfully passing the first year of study is highly correlated to test results. It has been demonstrated that the students' performance (with respect to the first year) clearly correlates with the result of the aptitude-test. (<https://www.unifr.ch/ztd/ems/doc/Statistischer%20Bericht%20EMS%202016.pdf>).

Measures taking into account needs of disabled and ill students are decided and implemented individually by the Office of student affairs.

Admission to education in medical professions on university level is regulated by the local universities (Bern: <https://www.belex.sites.be.ch/frontend/versions/1107?locale=de>).

There is no selection committee, since the aptitude-test is developed and organized by a university Institute (University of Fribourg) mandated by Swissuniversities (Organization of all Swiss universities).

Results can be appealed at the Federal court of Administration. All information about criteria and procedures are published on the the site of Swissuniversities. <https://www.swissuniversities.ch/de/services/anmeldung-zum-medizinstudium/eignungstest/>

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

By February 15 every year students must sign in for the aptitude test at the Swissuniversities-website. The test is offered in German, French and Italian in the different regions of Switzerland. It takes place at the beginning of July. In August, successful candidates are guaranteed a place to study at the university to which they have been assigned. Schedules and information about teaching and learning at the two locations are sent off in late August. Fall semester starts mid-September.

7.1.4. Description of how the Establishment 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 study places had been decided as the aptitude test was introduced in 1999. 80 (Zurich) and 70 (Bern) places correspond to the capacities and resources of the two locations.

7.1.5. Description of:

- Progression criteria and procedures for all students

Progression criteria are defined by the study plan of the Vetsuisse Faculty (attachment 7.1.5). Basically, all examinations of the year of study have to be passed in order to move on to the next year. Examinations of year 1 can be repeated once, the following years all allow for three trials to pass exams.

Remediation and support for students who do not perform adequately

Apart from personal mentoring by the office of student affairs professional advice is offered by the Counselling Centre Universities of Bern (http://www.bst.unibe.ch/index_eng.html).

The faculty relies on students expressing their need for support. There are no surveys inquiring the state of exhaustion or attrition of our students.

- Exclusion and appeal procedures

The only reason for exclusion from studying at the Vetsuisse Faculty are examination failures. After failing the maximum allowed number of trials, a student is excluded from further studying at the Vetsuisse Faculty at all levels, including doctoral studies. The unsuccessful student can appeal the decision of the university at the appeal committee of the University of Bern. As an internal administrative justice authority it is independent from the other university bodies and is not bound by their directives.

The appeal committee deals uniquely with procedural questions.

- Advertisement to students and transparency of these criteria/procedures

Criteria and procedures are communicated to students at the beginning of each year of study and documented on the respective repositories.

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

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At the Zurich location, three employees (200% effort) guarantee a year-round service, at the Bern faculty 230% employment (two part-time (80% each) veterinarians and a 50% staff person) are allocated to the position. Students can always contact the Offices at their location. Typically, students are contacted by the official e-mailing lists; this is the official information channel. Students are encouraged to contact the Office via their representatives (one student per class). Study guides, information about block courses and all other information is distributed via multiple channels.

The Offices for student affairs of the Vetsuisse Faculty are connected to the Student Counselling Systems provided by the respective universities

UZH: <http://www.lehre.uzh.ch/studienfachberatung.html>,

UniBE: http://www.bst.unibe.ch/counselling_services/index_eng.html).

Besides, students are well supported by the local vet-students (Bern: <http://www.fachschaftvetmedBern.ch/Startseite/EN-Startseite/index.php/>, Zurich <https://www.fvvetmed.com/>)

and the respective university's student association.

7.1.7. Prospected number of new students admitted by the Establishment for the next 3 academic years

The number of new students admitted to the two locations will remain unchanged for the next years (80 for Zurich, 70 for Bern)

7.1.8. Description of how (procedures) and by who (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

Admission procedures are defined by federal regulations (see above). Criteria are defined by the mandated test agency (<https://www.unifr.ch/ztd/>) in concordance with the other medical professions at university level (human medicine, dentistry, chiropractic care).

As mentioned above, the number of admitted students complies with the resources of the Vetsuisse Faculty at the two locations. Admission procedures are available at the websites of the two universities, the Federal Office of Public Health and swissuniversities.

See tables on the following pages.

7.2. Comments

To compensate the lack of farm animal practitioners in Switzerland, measures have to be discussed and implemented. Similarly, only few students are willing to select the VPH track or get involved in basic research. Presently, selection criteria to adapt the aptitude test for veterinary students are being discussed. The goal should be to allow a number of students to enter the studies of the Vetsuisse Faculty that is adequate to satisfy the needs of the veterinary market in Switzerland.

7.3. Suggestions for improvement

The number of students interested in becoming veterinarians has been constantly increasing over the past decade. However, many of the students are not aware of the challenges of the veterinary profession. In order to attract students knowing what the veterinary profession offers and demands measures should be envisaged to reach that goal. Introduction of a mandatory practical with practitioners before applying to veterinary school has been discussed. Since this does not comply with Swiss legislation for the general access to Swiss Universities, a different mode should be found.

Table 7.1.2. Number of veterinary undergraduate students registered at the Establishment

Year of programme	Bern				Zurich			
	2015/16	2014/15	2013/14	mean	2015/16	2014/15	2013/14	mean
First year	96	107	101	101	123	123	119	122
Second year	83	70	71	75	83	71	73	76
Third year	69	63	69	67	70	71	79	73
Fourth year	59	62	53	58	55	65	63	61
Fifth year	60	52	48	53	66	61	50	59
Total	367	354	342	354	397	391	384	391

Table 7.1.3.a Number of veterinary students graduating annually (Master of Veterinary Medicine)

Type of students	2015/16	2014/15	2013/14	mean
Standard students Zurich	64	58	46	56
Standard students Bern	60	52	48	53
Total Vetsuisse-Faculty	124	110	94	109

Table 7.1.3.b Number of veterinary students graduating annually (Federal Licensure examination)

Type of students	2015/16	2014/15	2013/14	mean
Graduates Fed. Examination Zurich	65	58	48	57
Graduates Fed. Examination Bern	56	48	48	51
Total Vetsuisse-Faculty	121	106	96	108

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Table 7.1.4. Average duration of veterinary studies

total graduating 2016	Bern	Zurich
Duration	% of the students who graduated in 2016	% of the students who graduated in 2016
+ 0**	57,9	57,8
+ 1 year	40,4	31,3
+ 2 years	1,8	7,8
+ 3 years or more	0	3,1

** The total duration of the studies matches the minimum number of years of the programme (e.g. 5 or 6 years)

Table 7.1.5. Number of postgraduate students registered at the Establishment

Programmes	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Interns	17	18	16	17	17	17,5	19	18
Residents	24	25	24	24	33	31	28	31
PhD students	59	56	51	53	85	77	74	79
Others (Dr. med. vet. dissertation)	ca. 150	ca. 150	ca. 150	ca. 150	ca. 200	ca. 200	ca. 200	ca. 200

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Student assessment



8. Student assessment

8.1. Factual information

8.1.1. Description of the global student's assessment strategy of the Establishment

Students are assessed regularly according to the Bologna based ECTS system (Studies regulations (http://www.unibe.ch/unibe/portal/content/e152701/e154048/e191232/e205433/e463716/vetsuisse_rsl_ba_ma_final_ger.pdf)).

80 The criteria of assessment are published; all written examinations are organized by the local Offices of Students Affairs. Detailed blueprints underlie the examinations. Hence, the contribution of individual disciplines to a specific teaching module is closely mirrored in the respective examination. Examination criteria are published at the beginning of every academic year; criteria are published online, in the study guide (Zurich) and in the respective guidelines for the different instructional units (organ-centered modules).

Further, all students are specifically informed about upcoming examinations at the beginning of each academic year. In addition, the students are informed about the program objectives of the curriculum, including the pre-defined day 1 competences. Day-1-skills were defined according to EAEVE-specifications. They are the principal basis for the final federal examination (see catalogue with overall aims of the curriculum; «Schweizerischer Lernzielkatalog in Veterinärmedizin» <https://www.bag.admin.ch/bag/de/home/themen/berufe-im-gesundheitswesen/medizinalberufe/eidgenoessische-pruefungen-universitaerer-medizinalberufe/eidgenoessische-pruefung-in-veterinaermedizin.html>).

Examinations during the Bachelor and Master course are under the guidance of the Vetsuisse Faculty and the Universities of Bern and Zurich. Vetsuisse Faculty Zurich created an examination committee that supervises all examinations and serves as mentoring board for students. The committee is headed by a local veterinary practitioner, the two other members are the Vice dean of teaching of Vetsuisse Faculty Zurich and another professor, usually from one of the clinical disciplines. At Vetsuisse Bern location the tasks are being fulfilled by the student's office in close collaboration with the local representatives of the Vetsuisse curriculum committee.

Results of assessment are being documented in databases of the local universities (UZH: SAP Campus <https://www.id.uzh.ch/cl/zinfo/zinfo0015/live/katprojekt/sap.html> ; UniBE: KSL <https://www.ksl.unibe.ch/KSL/veranstaltungen>) . Students are informed online and are provided annually with official certificates testifying their results. The two local offices of student affairs are in close contact with the administrative staff of their home universities that is responsible for the databases mentioned.

8.1.2. Description of the specific methodologies for assessing:

- theoretical knowledge;
- pre-clinical practical skills;
- clinical practical skills

Theoretical knowledge:

In 2015 an online computer-based examination database was introduced at the Vetsuisse Faculty replacing the former one. Different from the previous situation, the database maintained by IQuL (<http://www.q-exam.net/>) not only allows the electronic storage of all examination question but it is also the basis for the online examination tool. In other words, all previous written examinations are now performed online and computer-based. Further, the new platform also allows additional formats of examination questions, in addition to the classical multiple choice or short answer questions. These new question formats are currently being introduced.

The IUqL platform meets quality standards according to Swiss legislation (registered at the datacollections database of the Canton of Bern: http://www.jgk.be.ch/jgk/de/index/aufsicht/datenschutz/register_der_datensammlungen.html).

All processes are based on internationally acknowledged examination standards.

All teachers submit their examination questions to a formal and scientific review process before being accepted to be used in an examination. Review criteria have been defined by the Vetsuisse curriculum committee. Questions of experts of both locations and in both a German and French version are managed in the database. The awareness of quality of examination questions has increased considerably since the introduction of this database - as well as examination collaboration between experts at the two locations.

Quality criteria, such as parameters for discrimination and degree of difficulty of all questions are available and

are important criteria for the continued use of these questions for further examinations.

For the examination session, the questions are available on laptop computers; the order of questions and the order of individual responses within questions are randomized to guarantee a fair examination process.

The platform also allows students' comments on questions and post-exam review criteria to be used; together with the respective teacher, suggestions about revision or elimination of a question are done prior to the final grading of individual examinations.

Pre-clinical practical skills:

Bern:

Examination skills are being examined at the end of the 3rd year of study. It is a practical examination where students are asked to examine a live animal, the species being decided by lot.

Zurich:

Pre-clinical practical skills are examined at the end of the 3rd year of study. The examination is a practical and oral examination that covers teaching modules of the 2nd and 3rd year of studies (propedeutics of the organ blocks, and specific module Propedeutic II).

Clinical practical skills:

At the Bern location a skillslab has been opened in spring 2015. Clinical skills stations provide opportunities to acquire the different skills. In 2016 a pilot-OSCE was run with volunteers of the 1st year of master students. Starting in 2017 the OSCE is a mandatory examination, part of the track module. The OSCE must be passed in order to start rotations in the last year of study. Students from Zurich are invited to visit the skillslab in Bern but an OSCE-based examination is not yet part of the examination system in Zurich.

In Bern and in Zurich, practical skills are assessed in a formative way during the rotations of the 5th year of study (2nd year of the Master course). At the end of the rotations students are being assessed online producing a written feedback (summative).

8.1.3. Description of the assessment methodology to ensure that every graduate has achieved the minimum level of competence, as prescribed in the ESEVT Day One Competences

The award of the Diploma as veterinarian is controlled by the Swiss Medical Professions Act (MPAct, *Medizinberufegesetz, MedBG*). The MPAct sets the rules for the Federal examination in veterinary medicine. This examination is a requirement for graduates from the Vetsuisse Faculty to practice veterinary medicine (licensure examination). It is based on the official catalogue of learning objectives as published on the site of the Federal Office of Public Health (FOPH) and the Vetsuisse Faculty (<http://www.vetsuisse.ch/wp-content/uploads/2011/02/LZK-Vetsuisse-Schlussprfg-MedBG.pdf>). Graduates from the Vetsuisse Faculty are entitled to sit the federal examination once they successfully completed their studies leading to the degree of Master of Veterinary Medicine; hence, the degree of Master of Veterinary Medicine is not yet the legal qualification to practice veterinary medicine, the degree certifies the successful completion of the veterinary curriculum that allows application to sit the federal examination.

The Federal examination consists of four practical and oral examinations in small animals, farm animals, horses and pathology, and it is the same examination for all students, irrespective of the chosen track in the Master course.

Mandated by the FOPH, the examination is being evaluated by the Institute of Medical Education (IML, Medical Faculty, University of Bern). Standardized examination protocols are established and frequently reviewed in close collaboration between the Vetsuisse Faculty and the IML.

The federal examination is controlled by an examination committee that consists of representatives of the Vetsuisse Faculty Bern and Zurich and that is headed by an expert from outside of the faculty. Successful candidates of the federal examination are entitled to work in all areas of veterinary medicine in Switzerland and Liechtenstein. According to the bilateral treaties between Switzerland and the EU, the degree is also acknowledged in the EU. Successful candidates are obliged to pursue continuing education, i.e. life long learning is required by law.

8.1.4. Description of the processes for:

- Ensuring advertising and transparency of the assessment criteria/procedures;

Assessment criteria and procedures were discussed within the Vetsuisse curriculum committee as the new examination database (IQuL) was being implemented. Standards that were used previously were maintained and corresponding processes integrated into the present database. The same standards, established by the Institute of Medical Education (IML), are being applied in all written medical examinations in Switzerland. The criteria and examination procedures are communicated via the Vetsuisse Faculty webpages and also to all students at the beginning of each academic year. All criteria are also communicated to the examination committees.

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- Awarding grades, including explicit requirements for barrier assessments

The standards mentioned above serve to determine grades achieved by the examinees.

Grades are transmitted to the individual student via the local student administration platform (Zurich: SAP campus, Bern: KSL). There are no explicit requirements for barrier assessments. However, as mentioned in previous chapters, applications for the veterinary curriculum have to sit an aptitude test. Nonetheless, the first year of studies is communicated as being an assessment year with a selective assessment examination at year end. On average, of the 150 new students admitted to veterinary training each year (70 in Bern, 80 in Zurich) only about 80% will successfully pass the first year examination.

- Providing post-assessment feedback to students and guidance for requested improvement

Students may ask for post-assessment feedback (“Prüfungseinsicht”) and guidance for requested improvement individually at the local Office of Student Affairs. No systematic procedures are established for post-assessment feedback to students after summative exams.

- Appealing (see 7.1.5)

Students are informed about appealing procedures in oral presentations at the beginning of each semester, written information is available in the repositories for learning material of the local faculties. If students are not satisfied with the post-assessment procedure, they are also entitled to start an appealing process, as for oral ex-

aminations. Appeal procedures are done according to the guidelines of the Universities of Bern and Zurich, respectively.

8.1.5. Description of how (procedures) and by whom (description of the committee structure) the student’s assessment strategy is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The plan of study (Studienreglement, http://www.unibe.ch/unibe/portal/content/e152701/e154048/e191232/e205433/e463716/vetsuisse_rsl_ba_ma_final_ger.pdf) is the legal framework of the Vetsuisse curriculum which also defines the assessment strategy and procedures. Elaborated in 2007 it had been passed by the Vetsuisse curriculum committee, the Vetsuisse Faculty assembly (i.e. communicated to staff and students) and finally by the Vetsuisse council – as all changes since. The plan of study is regularly reviewed as changes in the curriculum are initiated by the Vetsuisse curriculum committee. The current version has been approved by the Vetsuisse council on Dec 11, 2015.

8.2. Comments

Student assessment by summative examinations is well established. Teaching staff is well aware of a high quality of written and oral examinations and became acquainted with the procedures and recognition of the importance of year-round authoring of examination questions at the level defined by the set standards as part of their teaching obligation. The local Offices of Student Affairs support staff closely.

Assessment of students during rotations in the last year of study relies on criteria which are more difficult to define and harmonize due to the heterogeneity of the clinical disciplines participating in the rotations. Originally planned as formative, this assessment was converted to a summative format following administrative instruction.

8.3. Suggestions for improvement

Assessment in the last year should be changed to a formative assessment with well-defined criteria. Different ways of assessment are being discussed, at the Bern location a pilot run with online portfolios (as at the Utrecht Faculty) is planned and will be realized shortly.

Possibilities for self-evaluation for students after the different teaching modules should be better established and promoted further. A progress-test had been conducted in collaboration with the Establishments of Veterinary Education in the German-speaking countries (KEL-DAT) between 2014 and 2017. It is planned to re-introduce this self-assessment as part of the strategic plan (curriculum 2020).

Permanent faculty development aiming at improving teaching staff's understanding of state of the art formative examinations should be established.

9

Academic and support staff



9. Academic and support staff

9.1. Factual information

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)

84 Teaching staff are aware of the catalogue of learning objectives of veterinary education in Switzerland. According to guidelines set by the Vetsuisse curriculum committee it is their responsibility to define the learning contents according to these objectives. Contents are periodically discussed in the review process of all teaching modules based on formal evaluation, in particular in the organ-centered blocks of year 2 and 3 and in the course of developing and adapting teaching.

At the Bern location, prospective lecturers must follow a training in instructional design at the Center for Continuing Education of the University of Bern .

Students at the Bern location elect a “teacher of the year” annually. Since evaluation criteria are not clear it turns out to be a mix of good teaching, quality of dealing with students and general popularity.

Students (years 1-4) in Zurich also vote for the “teacher of the year” in a two-step process organized by the office of student affairs. Further, the 5th year students vote for the “Best coach award” and the “Best animal caretaker” award. This award has been set up on the students’ initiative, is funded by a private company and is supported by the faculty’s office of student affairs.

At the Zurich location, only teaching staff holding an official authorization of teaching will be included in the official lecture list (<http://www.vorlesungen.uzh.ch/HS10/lehrangebot.html>).

New teaching staff needs a recommendation from the director of the respective Institute or Clinic in order to receive an official teaching assignment. The letter of recommendation together with the CV and a list of publications are to be submitted to the Vice-dean of teaching. The respective committees have to approve the assign-

ment. The publication list needs to be handed in every year in order to prolong the teaching assignment. Only staff who published regularly in peer-reviewed journals receives this prolongation. This is to assure high quality research-based teaching.

Didactic and pedagogic training is provided by the “Arbeitsstelle für Hochschuldidaktik” at the University of Zurich (<http://www.hochschuldidaktik.uzh.ch/de.html>) and by the Center for Continuing Education of the University of Bern. (http://www.zuw.unibe.ch/index_ger.html). New teaching staff is encouraged to take part in teaching courses held there; the habilitation procedure (leading to the title “Privatdozent”) requires formal training in education for applicants according to the Vetsuisse Habilitationsreglement.

Continuous evaluation by the students during the first four semesters of teaching is compulsory for new teaching staff. The questionnaire includes both questions about structure, learning objectives and documents of the lecture. Besides, there are questions about teaching qualities, interaction with students, interestingness and relevance, difficulty and extensiveness of the contents lectured (examples of the evaluation forms see appendix 4. Written assessment procedures). Results of the evaluation are communicated to the staff member and to the Vice Dean of Teaching (Zurich) or the Office of Student Affairs (Bern). If results are considered conspicuous the latter inform the responsible superiors of the teaching staff.

9.1.2. Description of the formal programme for the selection, recruitment and training to teach and assess students (including continuing education) of the academic staff

Quality in teaching is being monitored by a standardized procedure at both universities. All teaching staff has to be evaluated at least in a four-year cycle (for specific rules applying to new teachers «Lehrbeauftragte», please see above for their evaluation process). Students must be informed about their feedback.

While the Zurich deans’ office is in charge of the evaluation of the teaching, the Office of Student Affairs is responsible at the Bern location. The centers for continuing education of the universities Bern and Zurich support teacher evaluation, especially by means of attending lessons and giving feedback.

Besides evaluating individual teachers, teaching modules are being evaluated as well. Organ-centered modules are being evaluated routinely by the students at the end of each module. Evaluation criteria consider educational objectives, topics chosen, amount and relevance of content, integration of the various subjects, adequacy of difficulty, link to prior knowledge and redundancies.

Data is systematically collected with paper questionnaires.

The results of the individual lecturers' evaluations are treated confidentially and are conveyed only to the evaluated lecturer and the Vice Dean of teaching (Zurich) and to the Office of Student Affairs (Bern). However, evaluation results are required as a criterion for promotion (see Habilitation Regulations of the Vetsuisse Faculty of the Universities of Bern and Zurich; http://www.vetsuisse.ch/wp-content/uploads/2011/02/VSF_Habilitation-Regulations_EN.pdf).

Staff with non-acceptable teaching quality are asked to participate in didactic courses offered by the center for continuing education at university level (Bern: http://www.zuw.unibe.ch/index_ger.html, Zurich: <http://www.hochschuldidaktik.uzh.ch/de/hsd-vet.html>) or have themselves monitored externally over a certain period of time.

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

The Vetsuisse Faculty has a sufficient number of administrative and technical staff in all Institutes and Clinics to guarantee proper functioning of the faculty and the Institutes' and Clinics' duties. According to the guidelines of the ECOVE (joint committee of the European Association of Establishments for Veterinary Education (EAEVE) and the Federation of Veterinarians of Europe (FVE)), both locations of the Vetsuisse Faculty have a high number of administrative and technical staff.

9.1.4. Description of the formal programme for the appraisal, development, promotion criteria and procedures, supporting and mentoring of both academic and support staff

The Vetsuisse Faculty has a promotions committee (committee for appointments) consisting of senior faculty members from various departments as well as 2 student

representatives all together equally representing Bern and Zurich. The committee plays a pivotal role for the academic career of junior faculty members. A junior faculty member who seeks "habilitation" has to submit a request in a standardized format to the promotions committee with a letter of intent, his/her CV including publication list and a research plan for the habilitation thesis. These documents are scrutinized by the members of the promotions committee and each case is discussed at one of the regular meetings of the committee. Based on these discussions, the president of the committee prepares a written assessment of the candidate with recommendations for the dean of the faculty and the university administration. The president of the promotions committee reveals the assessment, the case is discussed and acceptance is decided by majority vote. The same procedure is used for promotions to lecturer (Dozent I or II) or clinical educator, both of which entail the license for teaching and tenure. Here, the assessment and the decision are carried out by a subcommittee consisting of the local faculty members and one member (usually the main responsible) of the subcommittee from the other location. Qualifications for a «wissenschaftlicher Mitarbeiter» (senior scientist, tenured) are exclusively evaluated by the local committee members. Rules and procedures of the evaluation committee are laid down in the Vetsuisse habilitation regulation (http://www.vetsuisse.ch/wp-content/uploads/2011/02/VSF_Habilitation-Regulations_EN.pdf) and the Vetsuisse promotion guidelines (http://www.vetsuisse.ch/wp-content/uploads/2011/02/Befo%CC%88rderungsrichtlinien_VSF.pdf).

For support staff, no formal criteria have been decided. These processes are the responsibility of the respective head of institute and clinic, respectively.

9.1.5. Description of the formal rules governing outside work, including consultation and private practice, by staff working at the Establishment

Outside work is defined according to Bern and Zurich university regulations (Nebenbeschäftigung) http://www.unibe.ch/unibe/portal/content/e152701/e322683/e325053/e323203/ul_rl_aufgaben_anstellung_prof_ger.pdf or http://www.rd.uzh.ch/dam/jcr:fffffbb5c-839f-ffff-ffffeb21d299/Reglement_Nebenbesch.pdf

9.1.6. Description of the formal programme of the Establishment for the assessment of teachers by students and its outcome

As mentioned under Chapter 9.1.2 quality in teaching is being monitored by standardized procedures at both universities:

- All teaching staff has to be evaluated by students in a four-year cycle
- The Dean's Office (Zurich) and the Office of Student Affairs (Bern) are responsible for planning and initiating the evaluations.
- Results of the single evaluations are communicated to the evaluated teacher and Vice Dean of teaching (Zurich) and, in addition, to the Office of Student affairs (Bern)
- A defined set of indicators has to be reported back to the students by the teacher.
- Insufficient performance results in individual monitoring by the centers of continuing education at university level and is reported to the head of the unit
- Technicalities of the process are provided at university level (Bern: Vice-rectorate of Quality assurance).

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The University of Zurich is about to set up a new evaluation system and the Vetsuisse Faculty Zurich is the first faculty who will use and test the system. Briefly, at least once yearly, the Vice Dean of Teaching meets with peer groups of students to discuss pre-defined topics; the peers have to represent students of all years of the teaching course. The topics to be discussed may cover specific problems that the students are faced with or also new teaching strategies. A detailed protocol will be produced about the topics that were discussed, suggestions for solution of specific problems and milestones for improvement. These protocols will be handed over to the University of Zurich and be the major part of the faculty's teaching report. This new system was tested for the first time at the end of the spring term 2017. The results of these evaluations will be presented during the site visit.

9.1.7. Prospected number of FTE academic and support staff of the veterinary programme for the next 3 academic year

Resources in personnel are not planned to be increased significantly at the Bern location.

Due to the strict implementation of the regulations in labor legislation, a maximum workload of 50 hours of work per week for clinical assistants has to be enforced

at the Zurich location since 2017. All stakeholders are aware of the fact that this will lead to an additional demand for clinical staff. Currently, possibilities for improvement the work situation are in discussion with the university's administration and results (e.g., number of additional positions for the clinics) are expected in summer 2017. It is important to note that the supervision of students during the clinical rotations did not suffer shortcuts due to the introduction of the 50h/week work-schedule.

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

Allocation of academic and support staff is defined by the institutions management of personal resources within a fixed budget. Additional positions, in particular in research, are financed by competitively acquired grants.

Open positions are published on the universities' websites and by any other mean chosen by the head of the individual Institute of Clinic. Recruitment of academic and support staff is decided by each location individually.

Academic staff is assessed in terms of teaching as described above. Research performance is being assessed as part of career planning by the individual Institute and Clinics, in Bern by the evaluation committee and in Zurich during the discussion of the academic records with the Dean. In Zurich, a regular evaluation of the faculty's research performance is organized at the university level. The next evaluation will take place in June 2018.

All processes are published on the Vetsuisse website (<http://www.vetsuisse.ch/en/documents/>) or the Universities' websites, and communicated to staff concerned and students (their representatives being members of the corresponding committees) by the Deans' offices.

Table 9.1.1. Academic staff

Type of contract	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Permanent (FTE)	69	66	70	68	100	100	107	102
Temporary:	33	33	33	33	10	10	10	10
Interns (FTE)	16	15	15	15	14	17	17	16
Residents (FTE)	47	45	45	46	36	34	31	34
PhD students (FTE)	25	28	19	24	36	31	25	31
Practitioners (FTE)	0	0	0	0	2	2	2	2
OAs Junior staff (Clinical instructors with teaching responsibilities and dedicated re- search time) (FTE)	10	5	9	8	33	32	23	29
Total (FTE)	200	192	182	191	231	226	215	224

* The last full academic year prior the Visitation

** All staff included in this table must have received a training to teach and to assess undergraduate students.
Practitioners involved with EPT are not included in this table.

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Table 9.1.2. Percentage (%) of veterinarians in academic staff

Type of contract	Bern				Zurich			
	2016*	2015	2014	mean	2016*	2015	2014	mean
Permanent (FTE)	70	70	70	70	85	84	85	85
Temporary (FTE)	80	78	84	81	91	92	90	91

* The last full academic year prior to the visitation

Table 9.1.3. Support staff of the veterinary programme

Type of contract	Bern				Zurich			
	2016*	2015	2014	mean	2016*	2015	2014	mean
Permanent (FTE)	95	86	84	88	82	88	82	84
Temporary (FTE)	9	7	7	8	24	19	18	20
Total	104	93	91	96	106	107	100	104

Table 9.1.4. Research staff of the Establishment

Type of contract	Bern				Zurich			
	2016	2015	2014	mean	2016	2015	2014	mean
Permanent (FTE)	32	40	39	37	92	89	82	88
Temporary (FTE)	32	36	36	35	91	91	84	89
Total	64	76	75	72	183	180	166	177

9.2. Comments

Time constraints make it sometimes difficult for teachers to free enough capacity to attend continuing training courses in didactics.

The Vetsuisse Faculty has taken measures to meet the lack of young academics with a veterinary background. A mentoring program for female staff aspiring to an academic career is being financially supported until 2018. A permanent committee in charge of the promotion of young academics and gender equality (Kommission akademischer Nachwuchs und Gleichstellung (KANG)) has been established in 2015 with the financial support of the University of Bern. The aim of all endeavours is attracting young (women) scientists to academia.

88 A specific mentoring and support program has been established in Zurich ("Kids and Career"; <http://www.vet.uzh.ch/de/Studium/kidsandcareers.html>). A mentoring system starting with a selection of 3rd year students is part of this program (<https://www.vet.uzh.ch/de/Studium/kidsandcareers/Talentedatenbank-und-Mentoring.html>).

9.3. Suggestions for improvement

In order to enforce a 50-hour-week additional staff (clinical and technical) is needed.

Negotiations between the faculties and their respective university's administrations promise a clear improvement of the working at the two VTHs.

10

Research programmes, continuing and postgraduate education



10. Research programmes, continuing and postgraduate education

10.1. Factual information

10.1.1. Description of how the research activities of the Establishment and the implication of most academic staff in it contribute to research-based undergraduate veterinary education

90 All academic staff has a defined research portfolio. The definition of the portfolio and the research programs are done by the head of the respective Institute or Clinic. The head is also responsible to guarantee integration of new research into the veterinary education program. In all Clinics and Institutes, procedures for the discussion of state of the art research (seminars, journal clubs etc.) are established; the faculties therefore ensure the integration of current knowledge into lectures at all levels of the curriculum. The tracking system during the master period of the teaching program allows further in-depth presentation and student involvement with research. All students have to write a Master thesis which is supervised by the Institutes' and Clinics' academic staff.

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

Senior teaching staff (specialists) are training students and supporting interns and residents. Residents, interns and students both are striving to profit from the learning potential as much as possible: often they become competitors when patients are allotted. It is the responsibility of the heads of Clinics and Institutes and of senior staff to ensure that teaching cases are provided in sufficient numbers at all levels of teaching. Obviously, the more cases are dealt with by interns the less there are left for students. This is one reason for the fact that the teaching hospitals have to attract a large number of cases to ensure proper teaching at all levels; this may seem to create a conflict with the staff's obligation to thrive in research as well, but without a sufficient case load in the clinics (and the time necessary to deal with it), clinical teaching cannot be performed at the highest level.

Hence, the clinic managements have to ensure that the different groups of interest are being considered adequately with the goal to maintain working hours for postgraduates complying to labor legislation and to leave students enough free space.

10.1.3. Description of how undergraduate students are

- made aware of the importance of evidence-based medicine, scientific research and life long learning;
- initiated to bibliographic search, scientific methods and research techniques, and writing of scientific papers (e.g. through a graduation thesis);
- offered to participate to research programmes on a non-compulsory basis

Students are introduced to evidence-based medicine in their 3rd year in dedicated lectures (as part of epidemiology). Teachers are encouraged to make the students aware of the importance of scientific research within all lectures.

Research as a professional field of veterinary medicine is presented to the students as they are being informed about the different tracks (small animal, farm animal, horse, pathobiology, VPH, research) by the staff members in charge of the tracks.

Bibliographic search, scientific methods and research techniques become essential to students when writing their master thesis in the master period. Mentors of the master thesis introduce their students to writing scientific papers.

Many students also participate in research programmes on a non-compulsory basis because many clinics and institutes offer paid positions (usually on an hourly basis).

10.1.4. Description of how the continuing education programmes provided by the Establishment are matched to the needs of the profession and the community

Both local faculties are running nationally and internationally accredited continuing education programs (Swiss Veterinarians Association, European and American Colleges of different specializations). Together, the Vetsuisse Faculty offers more than 25 European or American residency programs. Residents and graduates of these

colleges give public talks and are well-respected speakers at congresses. The Vetsuisse Faculty is in close contact with the Swiss Veterinary Association (GST; www.gstsvs.ch) to supervise the need of specialists in specific fields; a member of the GST board is also member of the Vetsuisse Faculty curriculum committee. The GST also recently performed a survey among recently graduated and established veterinarians to define the needs of the field. The survey is currently being analyzed.

10.1.5. Prospected number of students registered at postgraduate programmes for the next 3 academic years

The Vetsuisse Faculty does not expect major changes in the number of students in postgraduate programs.

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

Bern:

Research priority foci are defined by the Faculty in Bern allowing concentrated efforts in research. Clinical and non-clinical units are included. Independent research projects that do not fit in the research priority foci are also possible, but will receive a lower priority during the distribution of resources for new hardware («Investitionskredit»).

Postgraduate education: Internship and Residency programs are implemented according to the respective guidelines of the colleges. The number of residents and interns employed depends on the case load. Vetsuisse Bern has a Resident Affairs Board „Spezialisierungskommission SPEZKO“ who oversees all programs and controls the quality by yearly evaluations of the programs. Program supervisors are regularly informed.

Zurich:

Individual institutes and clinics decide if and what kind of postgraduate education programs are being established, and they also decide who should be offered or supported for these programs. Support of individuals participating in these programs are also in the responsibility of the Institute and Clinics. In Zurich, the Graduate Campus is established to support needs of postgraduates. The program is university-wide and not specific for veterinary graduates (<http://www.grc.uzh.ch/en.html>).

All programs available and open positions are publicly advertised on the Vetsuisse Faculty or university webpages.

Continuing education:

Regular CE meetings are organized by the clinical structures in Bern and Zurich.

Stakeholders are informed about changes and news via the respective webpages, mails and the CE meetings offered by the staff of the clinics.

PhD programmes:

Bern: Graduate school of the University of Bern (www.gcb.unibe.ch)

Zurich: Life Science Zurich graduate school (www.lszgs.uzh.ch)

Table 10.1.5. List of the major funded research programmes in the Establishment which were on-going during the last full academic year prior the Visitation
Please see Appendix Chapter 6

10.2. Comments

The Vetsuisse Faculty offers almost all available European or American residence programs, and members of the Vetsuisse Faculty are active in many European or American colleges. This situation is an important quality factor but it is at the same time a burden and challenge to maintain this drive. The programs bind significant resources. A further challenge is that these programs are not recognized sufficiently at the university levels because they do not form part of “classical” postgraduate training and continuing education possibilities (e.g., the University of Zurich lists large numbers of Master/Certificate/Diploma of advanced studies [MAS; CAS; DAS, respectively] in the various faculties); the Vetsuisse programs are not listed as corresponding programs because the specific situation in veterinary medicine is not appropriately recognized.

10.3. Suggestions for improvement

The Vetsuisse Faculty should introduce an internal control system to evaluate if all postgraduate training programs are beneficial and necessary for the development of the Vetsuisse Faculty.

Table 10.1.1. Number of students registered at postgraduate clinical training

Training:	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
Interns:								
Companion animals	12	12	10	11	11	12	13	12
Equine (Zurich: incl. Anaesthesiology)	5	6	6	6	2	2	2	2
Farm animals (Bern: residents only)	0	0	0	0	4	4	4	4
Diagnostic imaging	0	0	0	0	0	0	0	0
Total	17	18	16	17	17	18	19	17
Residents:								
ECVIM-CA, int med	0	0	0	0	5	5	3	4
ECVIM-CA, cardio	0	0	0	0	3	3	3	3
ECVS	5	5	5	5	8	7	7	7
ECBHM	4	4	4	4	0	1	1	1
ECAR	0	0	0	0	1	2	2	2
ACVIM	3	3	3	3	2	1	0	1
ECPHM	2	2	2	2	2	1	0	1
ECVDI	3	3	3	3	5	4	3	4
ECEIM	2	2	1	2	1	1	3	2
ECVO	0	0	0	0	2	2	3	2
ECVAA	3	3	3	3	5	5	5	5
ACVSMR	0	0	0	0	2	2	1	2
ECVN	2	2	2	2	2	2	2	2
ECVD	0	1	1	1	0	0	0	0
ACZM	0	0	0	0	2	2	2	2
ACVR	0	0	0	0	2	2	1	2
ECVCP	0	0	0	0	2	2	0	1
Total	24	25	24	24	44	42	36	44

* The last full academic year prior the visitation

Table 10.1.2. Number of students registered at postgraduate research training

Training:	Bern				Zurich			
	2016*	2015	2014	Mean	2016*	2015	2014	Mean
PhD	59	56	51	53	85	77	74	79
others (Dr. med. vet)	ca. 150	ca. 150	ca. 150	ca. 150	ca. 200	ca.200	ca. 200	ca.200
Total	59	56	51	53	85	77	74	79

Table 10.1.3. Number of students registered at other postgraduate programmes (including any external/distance learning courses)

Program	2016		2015		2014		mean	
	BE	ZH	BE	ZH	BE	ZH	BE	ZH
Royal College, Cert. Cardio	0	1	0	1	0	1	0	1
Total	0	1	0	1	0	1	0	1

* The last full academic year prior the Visitation

Table 10.1.4. Number of attendees to continuing education courses provided by the Establishment

Programmes	2016		2015		2014		Mean	
	BE	ZH	BE	ZH	BE	ZH	BE	ZH
Farm Animals	1033	493	1159	378	799	481	997	451
Equine Clinic	220	311	176	335	239	493	212	380
Companion animals	223	297	247	130	221	167	230	198
Others								
Clinical Laboratory		81		60		60		67
Laboratory Animal Science		1443		1544		1476		1488
Zoo-/Exotic and Wildlife Animals		52		145		58		85
Animal Nutrition		45		60		50		52
Biomedical Research		560		280		280		373
Total	1476	3282	1582	2932	1259	3065	1439	3093

11

Outcome Assessment and Quality Assurance



11. Outcome Assessment and Quality Assurance

11.1. Factual information

11.1.1. Description of the global strategy of the Establishment for outcome assessment and Quality Assurance (QA), in order to demonstrate that the Establishment:

- has a culture of QA and continued enhancement of quality;
- operates ad hoc, cyclical, sustainable and transparent outcome assessment, QA and quality enhancement mechanisms;
- collects, analyses and uses relevant information from internal and external sources for the effective management of their programmes and activities (teaching, research, services);
- informs regularly staff, students and stakeholders and involves them in the QA processes;
- closes the loop of the QA Plan-Do-Check-Act (PDCA) cycle;
- is compliant with ESG Standards. (EU Directives and the Standards and Guidelines for Quality Assurance in the European Higher Education Area)

Quality assurance of the Vetsuisse Faculty complies with the local universities' concepts for quality assurance; for teaching, the universities' policies are defined here:

http://www.unibe.ch/university/portrait/self_image/quality/quality_in_teaching/lehrveranstaltungen/index_eng.html

and

<http://www.sae.uzh.ch/de/qeprojekte.html>.

The Vetsuisse Faculty has a culture of QA and continued enhancement of quality.

All staff – academic as well as technical – are aware of the concepts of QA in Teaching:

QA is the prime topic in running the curriculum. All teaching staff is involved in the different levels of quality assurance, most obvious in the evaluation of teaching and the review of examination questions. Furthermore, the implementation of initiatives of teaching staff and students to adjust the curriculum to new needs are continuously discussed in the curriculum committee and communicated to the faculty assemblies. The present

strategic project of the Vetsuisse Faculty is proof of a lively perception of quality assurance.

At the university level, regular meetings with peer groups of students (“Qualitätsgespräche Lehre”) have recently been introduced in Zurich. The Vetsuisse Faculty is the first faculty to use this new system for the identification of problems, the definition of solutions and the agreement of a time schedule for improvement.

Research:

An external evaluation of the quality of research is conducted periodically. The last evaluations in Bern and Zurich took place in 2013 and 2009, respectively. The next evaluation round will be conducted in 2018 at both locations.

Diagnostic services:

Reference laboratories at the two locations maintain set standards and are accredited by the Swiss Accreditation Service SAS, except for the Clinical Laboratory at the Zurich location which is accredited by the European College of Veterinary Clinical Pathology.

Facilities and infrastructure:

The quality of facilities and equipment is surveyed by the local technical services of the faculty including the veterinary teaching hospitals. Committees in charge of planning facility development (representing the different divisions of the local faculty) meet periodically and inform the faculty assemblies about upcoming changes. Funds for larger investments can be requested annually (Investitionskredit) at the level of Institutes or Clinics, or at the Faculty level; these funds can be used to replace existing but outdated equipment or to acquire new equipment.

The Vetsuisse Faculty operates ad hoc, cyclical, sustainable and transparent outcome assessment, QA and quality enhancement mechanisms.

Teaching:

The faculty regularly analyses the outcome of all written and oral examinations. This also involves an extensive outcome assessment, i.e. assessment of the candidates in the licensure examinations, which is monitored by the Institute for Medical Education (IML, Bern medical faculty) on behalf of the Federal Office of Public Health (FOPH). Results of the assessment of examination quality is being communicated by the IML to examiners at the two sites.

Improvement of the examination protocols in order to better monitor the quality of examination has been in

permanent discussion over the past years – and is still going on.

On a curricular level, outcome has been assessed in the two surveys of 2012 and 2013 addressed to graduates on one and to employers of the graduates on the other hand. Results of the two surveys were integrated into the needs assessment for the planned new curriculum 2020 (the strategic plan of the Vetsuisse Faculty).

Outside assessments in Teaching:

The Federal Office of Statistics regularly performs outcome studies which also includes university graduates. These surveys are supplemented by specific questions from the Universities.

The Vetsuisse Faculty closely collaborates with the Swiss Veterinary Association (www.gstsvs.ch) in a survey on the optimization of veterinary training and the working situation for veterinary practitioners in Switzerland. Analysis of the survey is ongoing.

In research, outcome is being assessed in the process of external evaluation. At the Bern location, it takes place every 5 years. It was planned for this summer but was postponed to 2018 because of the coming accreditation of the Faculty. Research evaluations are prepared by the local research committee, external experts for the site visit appointed by the local Vetsuisse Faculty.

Zurich:

The Vetsuisse Faculty collects, analyses and uses relevant information from internal and external sources for the effective management of their programmes and activities (teaching, research, services);

Student feedback based on the written and oral evaluation results of teaching units are prime means to monitor quality of the latter. Inputs of student representatives and teaching staff in the local and Vetsuisse curriculum committees result in regular measures of improvement of the program.

External sources of relevant information are survey conducted by the Federal statistical office. (<https://www.bfs.admin.ch/bfs/en/home.html>), dealing e.g. with the employment situation of veterinarians in Switzerland.

The Vetsuisse Faculty collects information about research output of individual Institutes and Clinics by means of the yearly academic reports

The Vetsuisse Faculty informs regularly staff, students and stakeholders and involves them in the QA processes;

Teaching staff is informed about quality assurance processes at the faculty assemblies.

Student representatives are members of the faculty assemblies and all standing committees of the Vetsuisse Faculty and convey information to the student body.

Technical staff are regularly informed about and trained in quality processes by their divisions.

The Vetsuisse Faculty closes the loop of the QA Plan-Do-Check-Act (PDCA) cycle;

As described above, planning based on inputs of the faculty's staff and students is at the beginning of the QA-cycle. All input is discussed in the different committees of the Vetsuisse Faculty, where measures to be implemented are discussed. Depending on the topic and the organizational or financial impact the plan has to be submitted to the faculty assemblies. Curricular changes are evaluated by the curriculum committee and adapted if proven insufficient. Often, students are questioned informally and communicate their appreciation of changes through their representatives in the curriculum committee.

The Vetsuisse Faculty is compliant with ESG Standards. (EU Directives and the Standards and Guidelines for Quality Assurance in the European Higher Education Area)

The Vetsuisse Faculty and its home Universities are part of swissuniversities and hence compliant with the ESG standards.

11.1.2. Description of the form by which the strategy, policy and procedures are made formal and are publicly available (website, paper documents, ..).

The strategy of the Vetsuisse Faculty is published on <http://www.vetsuisse.ch/wp-content/uploads/2011/02/Was-ist-die-Vetsuisse-Strategie.pdf>. Procedures are made formal and publicly available in the respective rules and regulations of the local universities and the Vetsuisse Faculty (<http://www.vetsuisse.ch/en/documents/>).

11.1.3. Description of the regular publication of up to date, impartial and objective information, both quantitative and qualitative, about the educational programmes and awards the Establishment is offering.

Information about the educational programme is made available to the public via the websites of the local faculties (Bern: http://www.vetsuisse.unibe.ch/studies/index_eng.html, Zurich <http://www.vet.uzh.ch/en/Studium/studiengang.html>).

Quantitative and qualitative information concerning the curriculum is spread with the protocols of the faculty assemblies, both local and Vetsuisse. If needed, this information can always be asked for at the Deans' Offices. All students are regularly informed at the beginning of each academic year about the examination schedule and major changes in the curriculum. Information is updated throughout the academic year.

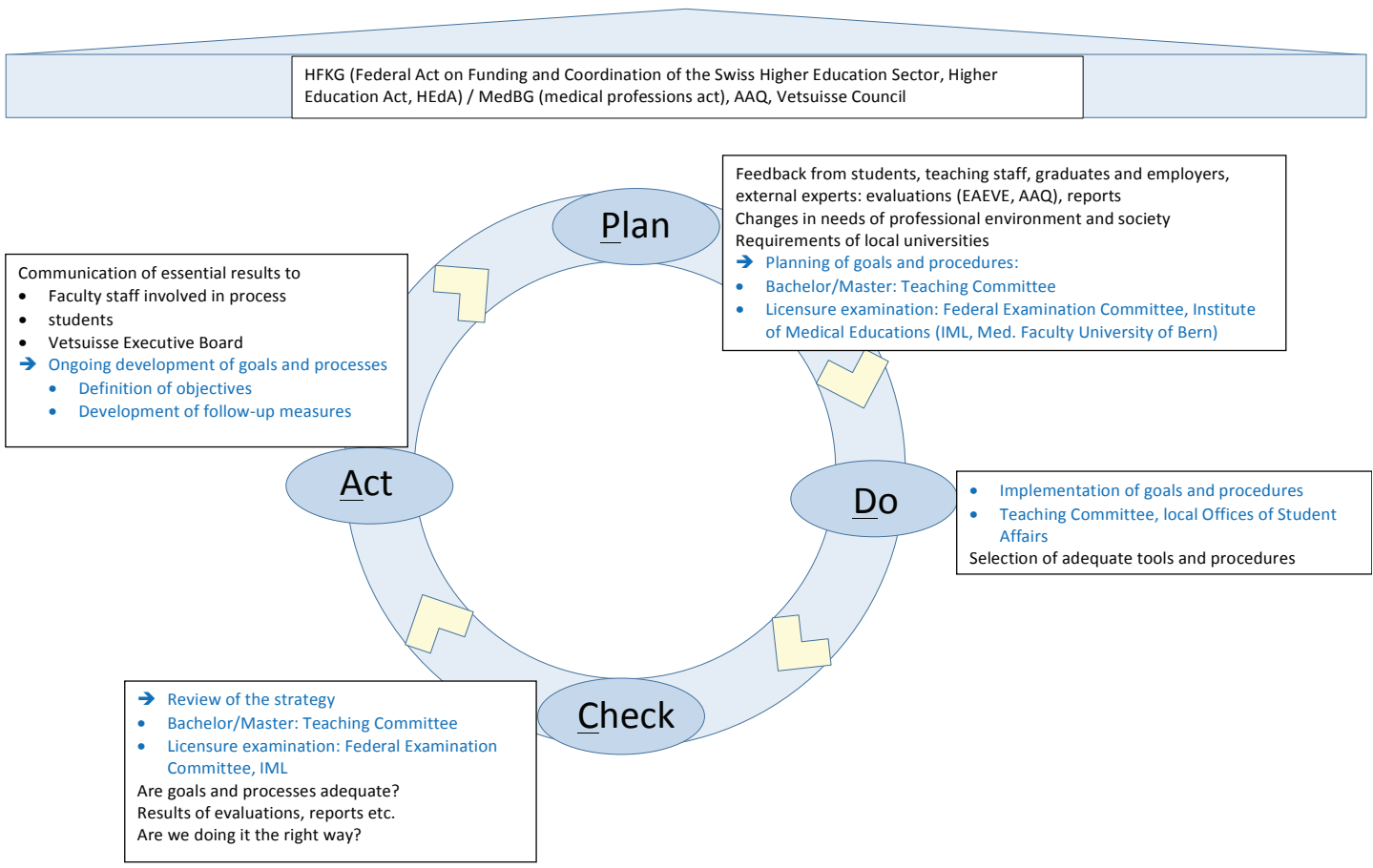
11.1.4. Description of the QA processes not yet described in the other 10 Standards (with information on how (procedures), when (periodicity) and by who (committee structure) they are completed

All major QA processes of the Vetsuisse Faculty have been described.

11.1.5. Description of how (procedures) and by whom (description of the committee structure) the QA strategy of the Establishment is decided, communicated to staff, students and stakeholders, implemented, assessed and revised

QA strategy is defined at the level of the home Universities. The local faculties are in charge of adapting the university's strategy to their level. As mentioned above, the University of Zurich recently introduced a new system for quality assurance in teaching by a formal process of regular discussions with peer groups of students; at these meetings, problems are identified, potential changes are discussed, and if necessary a time frame for necessary changes is agreed on and documented. At the Bern location an overall strategy has not been defined yet.

Chapter 1.11 Description of the global strategy of the establishment for outcome assessment and QA



11.2. Comments

The Vetsuisse curriculum committee is in charge of quality assurance of the processes in curricular development and teaching. Although these processes are known and being followed they have not been formalized yet.

11.3. Suggestions for improvement

the QA-processes regarding curricular development as described in Chapter 1 under strategic planning should be documented and agreed to formally by the responsible curriculum committee and the Vetsuisse Faculty assembly.

12

ESEVT Indicators



12. ESEVT Indicators

12.1. Factual information

	List of Indicators	Bern			Zurich		
		A	B	ratio	A	B	ratio
	Staff and Students (Tab 9.1.1 / 7.1.2 and 7.1.3b)						
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	195	354	0,5	224	391	0,6
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	150	51	2,9	198	57	3,5
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	96	51	1,9	104	57	1,8
	Types of training						
I4	n° of hours of practical (non-clinical) training						
	Small animal track	677			677		
	Horse track	685			685		
	Farm animal track	680			680		
	VPH track	767			767		
	Pathobiology track	1303			1303		
	Biomedicine / research track (Zurich only)				1303		
I5	n° of hours of clinical training						
	Small animal track	405			405		
	Horse track	425			425		
	Farm animal track	425			425		
	VPH track	260			260		
	Pathobiology track	260			260		
	Biomedicine / research track (Zurich only)				260		
I6	n° of hours of FSQ and VPH training						
	Core	143			143		
	VPH track (in addition to core)	320			320		
I7	n° of hours of extra-mural practical training in FSQ and VPH (VPH track only)	160			160		
	Patients available for intra-mural clinical training (Tab 5.1.3 / 7.1.3b)						
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	7108	51	139	10904	57	191
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually (mean Federal Licen- sure Examination)	1561	51	31	1761	57	31
I10	n° of equine patients seen intra-murally / n° of students graduating annually (Licensure)	1646	51	32	1504	57	26
I11	n° of rabbit, rodent, bird and exotic patients seen intra- murally / n° of students graduating annually (Liensure)	n.a.	n.a.	n.a.	4033	57	71

	Animals/herds/units available for extra-mural clinical training (Tab 5.1.4 / 7.1.3b)						
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	n.a.	n.a.	n.a.	2879	57	51
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	13918	51	273	11021	57	28
I14	n° of equine patients seen extra-murally / n° of students graduating annually	n.a.	n.a.	n.a.	1003	57	18
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	109	51	2,2	1611	57	
I16	n° of visits to poultry and farmed rabbit units / n° of students graduating annually	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	Necropsies available for clinical training (Tab 5.1.6 / 7.1.3b)						
I17	n° of companion animal necropsies / n° of students graduating annually	285	51	5,6	492	57	8,6
I18	n° of ruminant and pig necropsies / n° of students graduating annually	552	51	10,8	840	57	14,7
I19	n° of equine necropsies / n° of students graduating annually	68	51	1,3	140	57	2,5
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	362	51	7,1	1690	57	30
	Indicators used only for statistical purposes (Tab 9.1. / 7.1.3b) not included in the final Visitation Report and not published on the websites						
I21	I21: n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	150	51	3	198	57	3,5
I22	I22: n° of PhD-students graduating annually / n° of students graduating annually	12	51	7,1	2	57	0,0

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12.2. Comments

No comments to the Indicators.

12.3. Suggestions for improvement

No suggestions for improvement.

Glossary

In the present SER the abbreviations and standardized terminology according to the SOP of May 2016 were used.