Freie Universität Berlin

Faculty of Veterinary Medicine
Freie Universität Berlin

Revisitation Self Evaluation Report for the European Association of Establishments for Veterinary Education | **Revisitation 15 – 17 July 2018**

CONTENTS

INTRODUCTION

The Veterinary Faculty of Freie Universität Berlin was assessed by the EAEVE Visitation Team in November 13 to 17, 2017. In addition to areas worthy of praise, insufficient numbers of hours of hands on clinical training under the supervision of academic staff in order to achieve Day One Competences for each individual student were identified as a major deficiency. In addition, the visitation team identified several minor deficiencies, including

- insufficient training on emergency cases for all students, especially in companion animals
- inadequate monitoring and evaluation of EPT
- insufficient signage for biosecurity and restricted areas
- inadequate isolation facilities in small animals
- insufficient number of necropsies in cattle and pigs
- sub-optimal use of the VTH companion animal patients for clinical training of undergraduate students
- insufficient specialised academic staff in some key clinical disciplines.

The faculty is extremely grateful to the evaluators for their valuable suggestions for improving the teaching process. Students and teachers consider the report as a very helpful resource for improving education in the sense of accepted ESVET standards.
The time following the visitation has been used for intense consultations according to the established PDCA cycles, which resulted in a set of measures to mitigate the identified deficiencies that will be explained and commented in the following report.

Main outcomes of the internal quality assurance processes are:

1. The criticism of inadequate clinical training has been addressed by a bundle of immediate measures; at the same time, the legal processes to adapt the curriculum and further increase the number of hours in clinical teaching in the near future were initiated.
2. All minor deficiencies identified by the visitation team were taken care of and the amended processes will be established during the summer and winter terms of 2018/2019.
3. Further improvements in teaching and learning processes that are intended for a mid-term implementation in accordance with students ‘and teachers' suggestions have been initiated of the legal framework. All processes in support of this aim are described in detail in this report.
4. The success of improved strategies in veterinary education in Berlin will take effect in the coming years and will include further successive optimization processes, which are briefly outlined here. They will be addressed in detail in future self-evaluation reports.

In summary, the faculty has dealt conscientiously and successfully with the implementation of measures that address the shortages indicated by the visitation team. We are confident that our processes now comply with the EAEVE requirements.

1. CORRECTION OF THE MAJOR DEFICIENCIES

1.1. Major Deficiency 1: Insufficient number of hours of hands on clinical training under the supervision of academic staff in order to achieve Day One Competences for each individual student

1.1.1. Factual information

The faculty has adopted the opinion of the experts to substantially increase the opportunity for clinical hands on learning, particularly in the clinics for small animals and for horses.

In order to address these issues, the faculty council early in 2018 implemented three working groups with participation of faculty members (mainly from the animal clinics), academic and technical staff as well as student representatives to develop recommendations. Results of these working groups were discussed in the Education Committee and the faculty council, which formally adopted the proposed measures.

The three working groups, together with the Deans Office, defined a **two-stage procedure and an improved evaluation of clinical learning in our students** with the following components:

1. **short-term measures** being compliant with the EAEVE standards within the legal framework,
2. **mid-term measures** requiring formal changes of the study and examination order, and
3. **a catalogue of competencies**, learning objectives, and a **clinical logbook** for our students.

- The short-term measures have been implemented within the existing legal framework so that the improvement of clinical teaching and formal compliance with EAEVE requirements are not delayed by formal constraints.
- The mid-term measures will change the structure of the curriculum, resulting in an optimized system of clinical education. They require a formal adaption of the study regulations, a process, which has been already approved by the faculty council.
- The catalogue of competences and objectives will support our students in meeting professional goals and in gaining the Day One Competences according to EAEVE standards.

The faculty, in addition, has decided to implement changes in the clinical courses, giving students more time for hands on training and improving the practical contents of the modules.

Accountable supervised clinical training for indicator 5

SER 2017: In the 2017 SER of the establishment, 1019 hrs of clinical training were listed for indicator 5. That figure included the hours in clinical extramural practical training (EPT). The visitation team in the final report decided to reduce that number from 1019 to 540.4 hrs of accountable supervised clinical training, thus below the minimum required value of 670 hrs.

Adaptation 2018:
As indicated in the establishment response to the draft C report of the 2017 visitation team, the accounting of hours in practical clinical training was wrong in the SER 2017. This was entirely our fault, for which we apologize. As a result, a substantial number of hours in practical clinical training was counted in different columns of SER 2017 tables 3.1.1. and 3.1.2.. This error has now been corrected, and updated numbers are presented in tables 1.1.1, 1.1.2 and 1.1.3 at the end of this chapter.

Practical clinical training is now implemented in a wider range of applied modules during the clinical phase of our curriculum. The content of most modules was revised and more **focussed towards practical clinical learning**. Additionally, two **new training modules** were implemented in December 2017 for students in 3rd year addressing selected subjects of general surgery and in February 2018 for students in 4th year addressing selected subjects of general anaesthesiology.

Details of the currently existing clinical training modules are presented in Table 1.1.1. Starting with with the upcoming winter semester 2018/2019, the already implemented module focusing on anaesthesiology in the 7th semester will be expanded by diagnostic procedures of internal medicine, such as ultrasonography of the abdomen and heart, abdomino-/cystocenthesis, blood pressure measurement and ECG reading and interpretation. A detailed description of the clinical training activities for each of the modules listed in Table 1.1.1 is presented in Appendix 1.1.1.a. Revised SER 2017 Tables 3.1.1 and 3.1.2 are presented in Tables 1.1.2 and 1.1.3 of this rSER for comparison purposes. We are confident that the number of hours in practical clinical training in combination with the newly developed modules, the thorough theoretical training and the hours spent in EPT is sufficient for students to fully reach EAEVE Day One Competencies.

Adjustments in the contents of supervised clinical training

a) Short-term measures: Working group 01

Key points of the established adjustments

- A formal commitment towards a clinical teaching / training institution was made to underline that teaching and learning activities have first priority in the animal clinics. This was agreed with the clinics and approved by the faculty council.
- Practical training modules have to use the existing pool of animal patients for student training as efficiently as possible, each patient is seen as a learning opportunity.
- Teaching content and approaches were adapted in the relevant training modules to ensure that all participating students are offered sufficient hands on clinical training.

Summary of established changes in the clinical work with students:

- **Clinic for small animals**: Strengthening clinical teaching is achieved by different measures, in addition to those being already implemented. The concept aims for a significant intensification of clinical teaching: full integration of students into everyday clinical routine during the clinical rotations, participation of students in weekend shifts, and intensive use of the skills lab. Students are encouraged to take responsibility for in-hospital patients (including at least twice daily general medical examinations, and actively participate in the diagnostic and therapeutic measures as werll as owner communication). Further measures are implementation of OSCE exams, use of voting systems to stimulate active participation of each student, and more practical exercises, including the skills lab. Participation in night shift is not felt to be necessary as the emergency cases seen during the weekend days are the same as during night.

- **Clinic for horses**: Stronger integration of students into hospital operations is established during the clinical rotation. Students are encouraged to take more responsibility for in-hospital patients in such a way that they are allocated to selected cases from which they take the medical history directly from the owner, perform a general medical examination in the morning and in the evening and follow all the diagnostic and therapeutic procedures of “their patients” during the day. In the morning rounds they give a brief report on their cases. In between, they are routinely involved in general and special clinical examination in outpatients and emergency cases (previously irregular).

Furthermore, the rotation students have the special task to look after in-hospital cases and to take part in the management of emergency cases during night shifts and weekend service. Selected courses during the rotation aim to teach practical skills such as to apply bandages, to identify important antomical structures, to read radiographs, to examine basic orthopedic structures by ultrasound, decision making in emergency situations etc.. Apart from the clinical rotation all students can subscribe to diagnostic and therapeutic exercises including internal medicine, surgery, orthopaedics, reproduction and neonatology, clinical radiology, physiotherapy, special ophthalmology and a course on tournament veterinary duties. Finally, all students have to submit a comprehensive case report on a common equine problem. For this purpose, they have to examine a case from the hospital, they are fully involved in diagnosing the condition, treatment and aftercare. Afterwards the case is presented to their peers.

- **Clinic for cattle/swine**: The **EAEVE evaluation was positive**. The teaching structure is strongly based on the philosophy of the "Utrecht Model". In short, 3rd year students have the opportunity to adopt a ruminant from the herd owned by the clinic for one year and care for the animal during this time. By this means, students interested in working with ruminants can get acquainted with animal handling procedures and routine zootechnical procedures (blood sampling, hoof trimming etc). In addition, 3rd and 4 th years students are invited to inscribe and take part in the daily clinical rounds of the ruminant clinic under the precondition that they contribute to the patient-related discussions under the supervision of the head of the clinic. The team of the ruminant clinic participates in the teaching unit focussing on selected topics in general surgery and anaesthesiology. During the clinical rotation - whenever possible - students have to examine newly arrived patients on their own (supervised by a clinical staff member). In addition, students actively participate in surgical and orthopaedic procedures intramurally and during field visits. Once during the clinical rotation students actively evaluate housing conditions and management on ruminant and pig farms including aspects of animal welfare. A complex schedule is established, which offers the students a multitude of possibilities for "Hands-on learning". The rotation process will be revised as part of the medium- term measures, as two days during the current rotation schedule are used for the poultry clinic rotation. Overall, the feedback of the students is rated as very positive.

- **Clinic for reproduction**: The **EAEVE evaluation was positive**. The teaching includes one obligatory farm excursion per student. Here, the students carry out active examinations of the stock animals under the guidance of the accompanying veterinarian. Two supervised appointments are hold in the SkillsNet. Students have to process a clinical case and have to present the case orally (examination simulation). Critical appraised topics (CATS) are done as innovative element with students, they have to develop cases independently and critically using literature. The rotation includes a communication course. Overall, the feedback of the students is rated as very positive also in this case. Addressing the valuable comments of the commission the clinic has implemented three specific items to further improve the clinical animal work:
  - Each student participates more intensively in the routine milking of all dairy cows to practice hands on udder health monitoring techniques and mastitis identification.
  - The new Small Animal Reproduction Service Facility went into operation in the summer of 2017. Because of the more professional and student centered atmosphere the patient load could be increased by 50% so far. This allows to provide considerably more clinical animal training to our students.
  - A 5-item online evaluation (voluntary and anonymous) was implemented for the clinical rotation. This will provide student’s perceptions about hands on training and learning issues in our clinical rotation and specific feedback. The data generated will be used to further improve our mission (“Teaching Comes First”).

- **Institute of poultry diseases**: The **EAEVE evaluation was positive**. The institute of poultry diseases is taking over a shorter phase in the current rotation compared to the other clinical units. The work differs fundamentally from the processes in the other clinics. A farm visit takes place during the rotation, and the students are also intensively involved in the diagnostic measures of the institute as well as in the treatment of pet birds. The assessment of the rotation by the students is positive.

The concepts presented by the clinics were intensely discussed and particularly welcomed by students and teachers. The faculty is convinced that the acute measures have fully adapted the learning programme to the EAEVE requirements. This forms an important pillar in the proposed two-stage system, so that all required formal improvements have already been established, supplemented by additional mid-term measures. For further details of the medium term measures, see b).

b) Mid-term measures: Working group 02

Currently, students in small groups complete a series of 2-week rotations through all animal clinics and diagnostic pathology (Appendix 1.1.1.b). During the 2-week rotations in each clinic, students are involved in patient work including emergency patient care and farm visits (Appendix 1.1.1.c).

- Working group 02 developed a new concept for the 5th (clinical) year of the curriculum which requires a formal change of the study regulation. Once approved by the university and implemented, all students will attend a two week hands on introduction to emergency medicine in all relevant species at the transition from 4th to 5th year (Appendix 1.1.1.e).
- This will prepare all students for both the intramural and the extramural training in 5th year. The subsequent intramural clinical training period will include a differentiation phase consisting of seven weeks training in either small animals, horses or production animals, one week in animal reproduction and one week in diagnostic pathology (Appendix 1.1.1.d), thus covering 9 weeks of hands on clinical training. Compared to the current situation, this will allow students to be more selective in their activities and to get more intensively involved and integrated into the clinical work flow.
- In order to extend the clinical rotation from 10 to 11 weeks when compared to the 2017 situation and to implement the earlier mentioned new clinical training modules in 5th and 7th semester (totalling one week), six semester-week hours (equalling 84 hrs) of theoretical instruction time in clinical topics in the 4th year will be converted into hands on practical training. This curricular change was accepted by the education commission and the faculty council in May 2018, and will be implemented stepwise until summer of 2020.
- The minimum time that students have to spent in extramural practical training in 5th year, as defined by the German state veterinary licensure regulations (TAppV), remains at 8 weeks (350 hrs.

c) Competencies and learning objectives: Working group 03

The group developed a detailed list of clinical competencies / learning objectives for all relevant species and assigned target competency levels to these objectives. This list contains 266 competencies in 15 categories, identifies the clinical training module(s) in which the activity is taught and the competency level (1, 2, 3) that should be reached. It also lists the species for which the activity / skill is relevant, whether it can be achieved using a model (Skills Net) and whether it is relevant for a student logbook. From that list a first version of a student logbook was developed (Appendix 2.1.1.a). The logbook as well as the related PDCA cycle are currently discussed in the working group, will be

forwarded to the education commission and the faculty council for approval and implemented at the beginning of the new academic year (October 2018).

Table 1.1.1. Intra- and extramural clinical training topics and hours offered in the clinical phase of the veterinary curriculum

Year	Sem	Subject	Format	hrs	Comment
3	5	Clinical propaedeutics - small animals	Exercise	24.5	
3	5	Clinical propaedeutics – horses	Exercise	24.5	
3	5	Clinical propaedeutics - ruminants and pigs	Exercise	24.5	
3	5	Clinical propaedeutics - animal reproduction	Exercise	24.5	
3	5	Practical module surgery & anaesthesiology	Exercise	14	since Dec. 17
3	6	Clinical case work - small animals	Exercise	14	
3	6	Clinical case work – horses	Exercise	28	
3	6	Clinical case work - ruminants and pigs	Exercise	14	
3	6	Clinical case work - animal reproduction	Exercise	28	
3	6	Clinical laboratory diagnostics course	Exercise	28	
4	7	Clinical case work - small animals	Exercise	14	
4	7	Clinical case work – horses	Exercise	28	
4	7	Clinical case work - ruminants and pigs	Exercise	14	
4	7	Clinical case work - animal reproduction	Exercise	28	
4	7	Practical module emergency medicine, anaesthesiology, internal medicine	Exercise	14	since Feb. 18
4	8	Clinical case work - avian species	Exercise	28	
5	9	Clinical rotation - small animal clinic	Exercise	77	
5	9	Clinical rotation - equine clinic	Exercise	82.6	
5	9	Clinical rotation - ruminant and swine clinic	Exercise	75.6	
5	9	Clinical rotations - Institute of poultry diseases	Exercise	11.2	
5	9	Clinical rotation - reproduction clinic	Exercise	75.6	
5	9	Clinical rotation - Institute of veterinary pathology	Exercise	64.4	
Total		Intramural clinical training		736	

Year	Sem	Subject	Format	Min	
3		Short extramural training in veterinary practice	EPT	150	
5		Long extramural training in veterinary practice*	EPT	350	
Total		Extramural clinical training (EPT)	EPT	500	

Total		Clinical training (intra- and extramural)	EPT	1236	

*at least 16 weeks of which at least 350 hrs must be spent in a veterinary practice or clinic

Table 1.1.2. Curriculum hours in each academic year taken by each student
(Revised Table 3.1.1 from Berlin SER 2017)

Study year	Lectures	Seminars	Supervised self-learning	Laboratory and desk-based	Non-clinical animal work	Clinical animal work	Others	Total
1	499.4	79.5	44.5	91.1	80.5	0.0	10.6	805.6
2	163.4	130.3	25.3	64.9	89.3	0.0	10.6	483.8
3	659.1	43.1	32.6	109.6	25.6	210.0	18.6	1098.4
4	669.6	18.6	18.6	116.6	60.6	140.0	18.6	1042.4
5	0.0	6.7	6.7	6.7	6.7	386.0	6.7	419.5
Total (rounded)	**1991**	**278**	**128**	**389**	**263**	**736**	**65**	**3850**

Table 1.1.3. Curriculum hours in EU-listed subjects taken by each student Subjects
(Revised Table 3.1.2 from Berlin SER 2017)

Subject	Lectures	Seminars	Supervised self learning	Laboratory and desk-based	Non-clinical animal work	Clinical animal work	Others	Total
A: Animal biology, zoology and cell biology; feed plant biology and toxic plants	112.0	0.0	0.0	0.0	0.0	0.0	0.0	112.0
A: Biomedical statistics	14.0	0.0	14.0	0.0	0.0	0.0	0.0	28.0
A: Chemistry (inorganic and organic sections)	56.0	24.5	0.0	24.5	0.0	0.0	0.0	105.0
A: Medical physics	28.0	0.0	0.0	28.0	0.0	0.0	0.0	56.0
B, C: Pharmacology, pharmacy and pharmacotherapy; Toxicology, Therapy in all common species	112.0	0.0	0.0	14.0	0.0	0.0	0.0	126.0
B: Anatomy, histology and embryology	70.0	52.5	0.0	42.0	150.5	0.0	0.0	315.0
B: Animal ethology; Animal welfare	70.0	28.0	0.0	0.0	0.0	0.0	0.0	98.0
B: Animal nutrition	42.0	28.0	0.0	28.0	0.0	0.0	0.0	98.0
B: Biochemistry	98.0	8.8	8.8	5.3	5.3	0.0	0.0	126.2
B: Epidemiology	42.0	0.0	0.0	0.0	0.0	0.0	0.0	42.0
B: General and molecular genetics	56.0	0.0	0.0	0.0	14.0	0.0	0.0	70.0
B: Immunology	28.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0
B: Microbiology	84.0	0.0	14.0	28.0	0.0	0.0	0.0	126.0
B: Parasitology	42.0	0.0	0.0	28.0	0.0	0.0	0.0	70.0
B: Pathology	76.3	24.5	0.0	7.0	49.0	0.0	0.0	156.8
B: Physiology	84.0	7.0	0.0	35.0	0.0	0.0	0.0	126.0
B: Professional ethics	28.0	7.0	7.0	0.0	0.0	0.0	0.0	42.0
C, F: Clinical practical training in all common domestic animal species; Veterinary certification and report writing	0.0	0.0	0.0	0.0	0.0	321.6	0.0	321.6
C, F: Veterinary legislation, forensic medicine and certification; Veterinary legislation	28.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0

C: Clinical practical training in all common domestic animal species	0.0	0.0	0.0	0.0	0.0	196.0	0.0	196.0
C: Diagnostic imaging	42.0	0.0	0.0	0.0	0.0	0.0	0.0	42.0
C: Diagnostic pathology	0.0	0.0	0.0	0.0	0.0	64.4	0.0	64.4
C: Medicine and surgery including anaesthesiology; Therapy in all common species	485.1	0.0	0.0	0.0	0.0	56.0	0.0	541.1
C: Obstetrics, reproduction and reproductive disorders	100.1	0.0	0.0	0.0	0.0	0.0	0.0	100.1
C: Propaedeutics of all common domestic animal species	0.0	0.0	0.0	0.0	0.0	98.0	0.0	98.0
D: Animal husbandry; Animal production & breeding	70.0	14.0	0.0	0.0	0.0	0.0	0.0	84.0
E: Food hygiene and food microbiology; Inspection and control of food and feed; Food technology including analytical chemistry	168.0	6.7	6.7	90.7	6.7	0.0	6.7	285.5
F: Professional knowledge	18.8	18.8	18.8	0.0	0.0	0.0	0.0	56.4
A, B, C, D, E: Electives	37.1	58.3	58.3	58.3	37.1	0.0	58.3	307.5
Total (rounded)	**1991**	**278**	**128**	**389**	**263**	**736**	**65**	**3,850**

Comments to tables 1.1.1. – 1.1.3.

- All students in addition to the internal courses have to attend 1,170 hours of extramural practical training (EPT), resulting in a total of 5,020 hours in veterinary training. For details on monitoring the quality of these EPT, see chapter 2.2 of this report.
- The already existing Veterinary Skills Net is constantly expanded with new models and learning stations[1] and the integration into hands on clinical teaching activities is emphasized and constantly growing. This enables us to further increase hands on teaching while at the same time limiting the use of live animals for teaching, which is mandated by animal welfare legislation.
- Within the "QuerVet" Blended Learning project, further inderdisciplinary clinical E-Learning modules are under development in which all students interactively work through clinical case / problem oriented learning.

1.1.2. Comments

As indicated above, the total number of hours in intramural clinical practical training is now 736 exceeding the minimum hours as required for indicator 5. Together with the mandatory clinical EPT in the 3rd and 5th year (minimum 500 and a maximum of 850 hours of hands on training under the supervision of experienced veterinary practitioners) we consider it fully compliant with the goal to achieve Day One Competences for each student.

Based on the recommendations made by the visitation team, a further increase of practical clinical teaching is planned as part of the mid-term changes by re-organising the clinical rotations and transferring 84 hours of theoretical instruction time (lectures) into practical training. This, however, requires a formal adaptation of the study and examination regulations and will come in force stepwise untilfall of 2020 in the cohort of students that then enters the 5th (clinical) year.

[1] An overview of new models and learning stations is provided in Appendix 1.1.1.f

CORRECTION OF THE MINOR DEFICIENCIES

2.1. Minor Deficiency 1: Insufficient training on emergency cases for all students, especially in companion animals

2.1.1. Factual information

Students mainly receive practical clinical training in emergency cases intramurally during clinical rotation in the 5th year, and extramurally during the clinical EPTs. The visitation team, however, felt that this was insufficiently documented and controlled.

Immediate changes designed by the clinical working group 01 include an internal reorganisation of the clinical rotations in the 5th year with mandatory involvement of all students in treating regular as well as emergency patients, inclusion of rotation students in the morning and afternoon rounds, and participation of students in evening and weekend shifts, whenever possible. In addition, a higher number of practical training stations has been established by the systematic integration of existing Skills Net models into the training routines. The development of additional Skills Net models such as a model for chest auscultation as well as intubation of dogs was approved by the Education Commission and the implementation is ongoing. Finally, the daily seminars during the clinical rotations have been thoroughly evaluated for their practical training content, and in the majority redesigned to explicitly focus on hands on emergency case training, such as CPR in small animals.

A draft version of a student logbook was developed (Appendix 2.1.1.a). The logbook as well as the related PDCA cycle (Figure 1) are currently discussed in the working group, will be forwarded to the education commission and the faculty council for approval and implemented at the beginning of the new academic year (October 2018). Both, students and teachers, must sign it and the outcome will be evaluated by the student´s office, and thus will become an integral element of the related PDCA cycle.

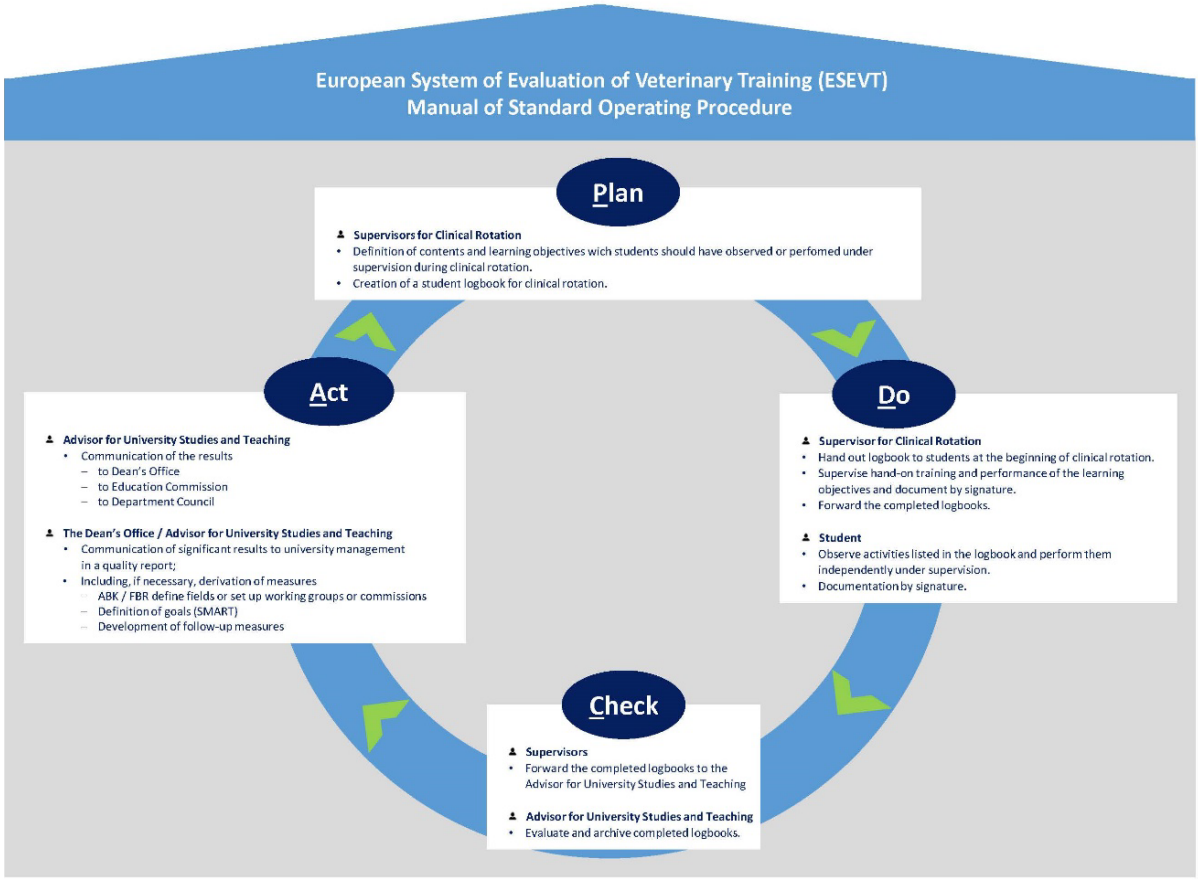


Figure 1 PDCA cycle Student logbook for Clinical Rotation

In working group 2 the implementation of a 2-weeks hands on emergency training module at the end of the 4th year as well as an intensified and longer clinical training within one of three clinics was proposed as a mid-term measure, and the legal process of changing the study regulation initiated. This will ensure that all students receive an initial emergency training for all species before entering the clinical rotation and clinical EPT, and that they will spend more time (7 instead of 2 weeks) in a specific clinic. This extended time in one clinic will substantially improve the level of involvement in all details of the clinic routine including emergency patient care.

2.1.2. Comments

The acute measures implemented in spring of 2018 will ensure that training of all students in emergency medicine is substantially intentified and documented to fully reach the EAEVE Day One Competencies. The changes in hours spent in clinical training including the 2-week module in emercency care will come in force in fall of 2020 in the cohort of students that then enters the 5th (clinical) year. Until then, respective training contents will be implemented and further developed within the framework of the existing clinical rotation modules.

The effect of the implemented measures will be assessed through evaluations, and further adaptations initiated when deemed necessary.

2.1.3. Suggestions of improvement

The faculty has filled the position of a companion animal clinics manager in spring 2018. It is our objective to assess all clinical processes and identify further areas of improvement in providing optimised training for all students including emergency care. To allow utilisation of a larger number of in patients for training of students during their rotation in the small animal clinic, measures are currently undertaken do reduce the case load during the emergency services, and consequently reduce the number of emergency cases taken to the station. This strategy will allow veterinary staff of the small animal clinic to spend more time on supervising student casework. In addition, the faculty has intensified activities and resources to further develop and use the Skills Net for clinical training. Due to the lack of available room capacity in the small animal clinic, small animal skills net modules will be established in rooms of the clinic for horses for the time being.

2.2. Minor Deficiency 2: Inadequate monitoring and evaluation of EPT

2.2.1. Factual information

2.2.1.1. Description of the established veterinary extramural training

As described in the 2017 SER and in compliance with German state veterinary licensure regulations (TAppV), all students have to complete 1170 hrs of extramural practical training in different institutions (Table 2.2.1).

Table 2.2.1. Curriculum days of External Practical Training (EPT) for each student

Subjects		Minimum duration (weeks)	Year of programme
pre-clinical	Agriculture (genetics, breeding, husbandry, milking techniques, etc.)	2 weeks (70 hours)*	In the 1st year (1st / 2nd semester)
clinical	Clinical training (private practice or clinic; companion animals or production animals)	4 weeks (150 hours)	After the 2nd year (5th /6th semester)
	Clinical training (private practice or clinic; companion animals or production animals)	16 weeks (700 hours)**	In the 5th year (9th / 10th semester)
FSQ & VPH	Veterinary inspection offices regarding all issues of Veterinary Public Health	2 weeks (75 hours)	In the 5th year (9th / 10th semester)
	Food hygiene (hygiene control, food monitoring, food examination)	2 weeks (75 hours)	In the 5th year (9th / 10th semester)
	Abattoir, ante and post mortem meat inspection	3 weeks (100 hours)	In the 5th year (9th / 10th semester)

*Two weeks (70 hours) if done on an official agricultural training and research institution; four weeks if done on a farm that is registered / certified to educate agricultural trainees (apprenticeship)
**at least half (350 hrs) has to be completed in a private veterinary practice or clinic in Germany, the remaining weeks can be spent also in veterinary clinical but also in research, diagnostic laboratory work or in veterinary administration.

The visitation team concluded that the supervision, monitoring and evaluation of all EPT by the faculty were insufficient, and that an efficient monitoring system for EPT must be established.

The faculty has established measures at various levels that will enable the complete monitoring of extramural internships in both, the agricultural and veterinary internships. Further details are given in the following sections.

2.2.1.2. *Agricultural extramural training*

Situation before revision of the procedures

The agricultural EPT takes place in the first year of study. Two weeks, equivalent to 70 hours, are mandatory, if done at an official agricultural training and research station; four weeks if done on a farm, that is registered / certified to train agricultural students (apprenticeship).

- Currently approx. 60% of our students attend structured 2-week training modules at one of four official agricultural internship farms, run under the supervision of the agricultural chambers. The content of the official training establishments is comprehensive, standardised, and includes hands on training with two different animal species. The quality is regularly monitored by the respective State agricultural chambers.
- The remaining students so far opted for a 4-week EPT on a privately operated agricultural farm. Here the Humboldt University regularly monitors the training programs and daily activity reports of the students. Students are required to submit an internship report, which is assessed individually by the supervisor at Humboldt University, and, if necessary, discussed with the students until the requirements are met. This ensured that the training fulfilled all requirements for training in agricultural practice. The internship reports are kept at Humboldt University. The official attendance certificates were sent directly from Humboldt University to the State Office for Health and Social Affairs (LaGeSo) that is responsible for the admission of students to the State Veterinary Examinations.

Adaptation 2018

The establishment has decided to amend the pertinent procedures to improve the quality control in agricultural training of veterinary students:

1. It is now mandatory that **evaluation sheets must be returned through the study office before the EPT´s are formally accepted for each student**. This ensures 100 % return rates.
2. The establishment is in the process of further improving and standardising the quality control measures. An important element is that we aim to ensure that as many students as possible complete their internships in quality-controlled agricultural training centres. We have established **new contractual agreements** with two additional official agricultural training centres (Köllitsch, Echem).
3. This as of 2019 enables **all students to complete their agricultural internships in quality controlled official training sites**.
4. Exceptions to this rule can only be approved upon application and written justification. Comparable quality control measures are mandatory. This ensures that all students go through a complete training program that is quality-assured and that in addition to the practical work in animal husbandry is accompanied by appropriate theoretical instruction. Concentrating on the official training farms allows a highly standardised transfer of basic agricultural knowledge to reach a high level for each student.
5. As already described in the self-evaluation report, the faculty does not possess its own teaching farm. This is a disadvantage in principle, but it is more than compensated by the contractual commitment of quality controlled extramural training centres. These education centres carry out structure training modules with the aim of teaching all course participants the basic skills and knowledge required in cattle and pig farming and to prepare future veterinarians for the diverse requirements of the agricultural profession. This topic was discussed and fully agreed together with the student´s representatives.
6. The faculty is responsible for the supervision of the extramural internships. For this purpose, the Dean's Office is responsible for all quality assurance procedures and ensures that quality control is implemented throughout all matters related to internships.

2.2.1.3. *Clinical, Food Science and VPH extramural training*

Situation before revision of the procedures
Students self-organise these EPT in compliance with the TAppV. In 2016, the Deans office developed an information brochure with paper-based and online evaluation forms for all extramural EPT. That brochure was made available to all students through the establishment website and the student information system (Blackboard), and students were requested to complete and return these evaluations to the establishment. This system was insufficiently enforced, and until the time of the fall 2017 visitation, only a low number of evaluations had been returned, thus making it impossible to provide comprehensive evaluation reports.

Adaptation 2018
The establishment in response to the deficiency revised the process of collecting and evaluating these EPT evaluations (Figure 2; Appendix 2.2.1.a):

1. The faculty council in May 2018 decided that **evaluations for all veterinary EPTs have to be submitted by all students** together with the official certificate of completion of the EPT signed by the EPT provider.
2. A better information strategy has been established: Students at relevant times, beginning 9 months before the time slot for the EPTs, will be repeatedly informed about the importance of these quality control processes and their role within it. All students receive regular email reminders requesting the submission of evaluations for completed EPT modules.
3. Returned evaluations are analysed twice a year by the study office, and results presented to the education committee, faculty council and faculty members responsible for the respective EPT.

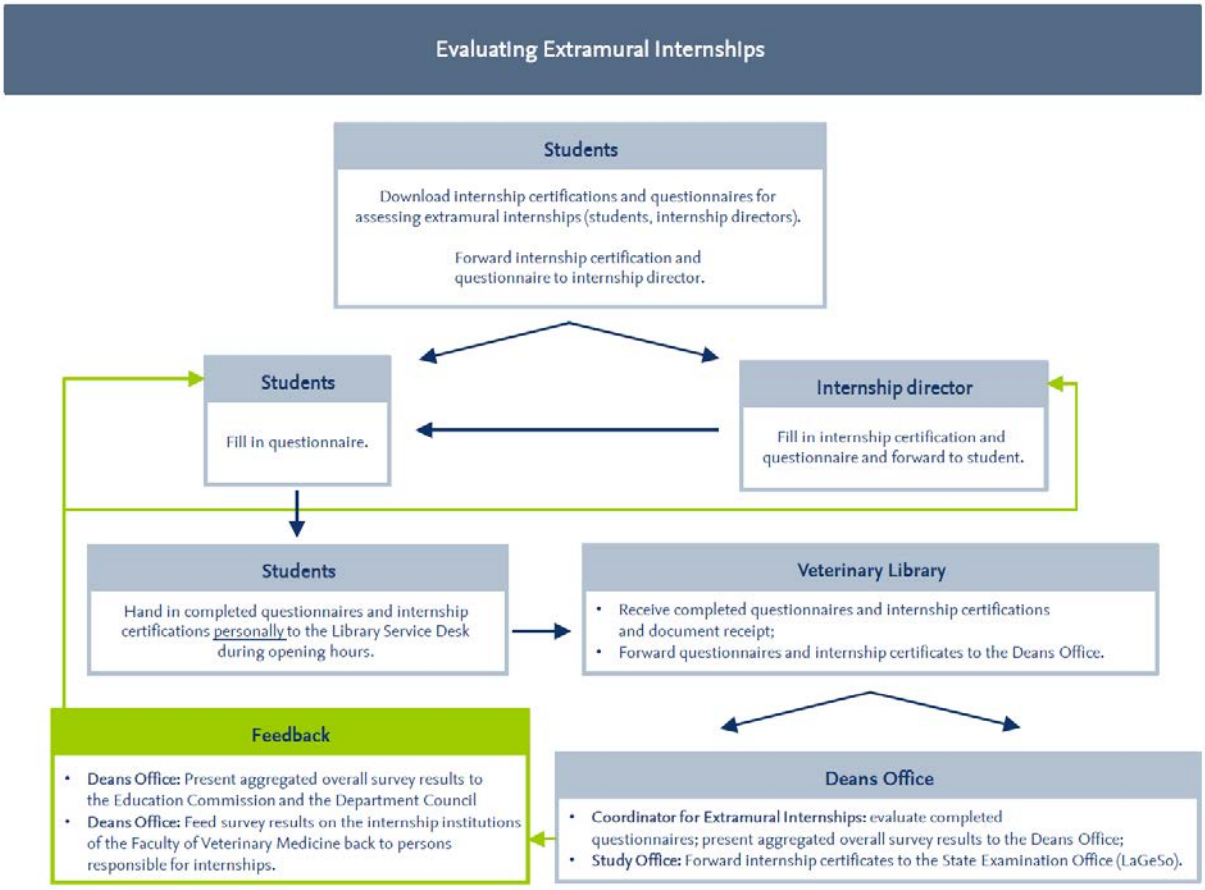


Figure 2 New EPT evaluation procedure

2.2.1.4. Further comments made in the evaluation report related to extramural training

Responses to additional comments related to the EPT are provided below.

Overview of the additional evaluators' comments:

1. The balance of species in the choice of students of EPT places is not assured.
2. EPT may also be undertaken in duties other than Clinical Animal Work (e.g. Pathology).
3. For about 50% of the students EPT clinical training takes place before clinical rotations.
4. Supervision of the quality of the training obtained during EPT is not structured.
5. Students are provided with a large volume of information that they are asked to fill in during their EPT (Extramurale Praktika im Studiengang Veterinärmedizin Vorbereitung / Durchführung / Evaluation), for their own control of the activities performed.
6. The related EPT evaluation forms should be returned to the Dean's office for assessment, again on a voluntary basis.

Points 4-6 have already been partly covered in the previous sections.

2.2.2. Comments

The effort to improve the quality of extramural placements at all levels and to control the educational standards and make them more profitable for our students is shared by all faculty members. Responses to the points listed under 2.2.1.3 are stated below:

Ad 1: The balance of species in the choice of students of EPT places is not assured.

Based on the German state veterinary licensure regulations (TAppV), the choice of extramural practices is within the responsibility of the students; the faculty can only make recommendations. This creates opportunities for students to focus EPTs to their own interests and preferences, and ensures a high number and broad spectrum of available training sites. The advantage of the established system is in fact that it is possible to select practices or clinics with a different degree of specialisation. Those students who already have good practical knowledge, for example through previous practical training, may select specialist practices or clinics allowing them to gain access to more advanced level training practices. Alternatively, it is also possible that students with less previous knowledge select a specific practical in which basic skills are taught. By constantly improving the monitoring and evaluation of extramural practicals (see point 6), transparency in this area will be guaranteed in the future.

In the EPT handbook of the faculty, students are advised to consider their specific interests but also to balance between the different species during the internships. Balance of species is taught without compromise in the basic university courses. The faculty ensures on the one hand a comprehensive general medical education; on the other hand, we would like to give the students sufficient freedom in the choice of certain internship positions. In this way, students' preferences can be specifically supported in addition to their general university education.

Ad 2: EPT may also be undertaken in duties other than Clinical Animal Work (e.g. Pathology)

It is correct that part of the 16-week extramural practical training in 5th year, i.e. at least 75 hours within two weeks and a maximum of 350 hours within eight weeks, may be completed in 1) an institute of a university specialized in natural sciences and medicine, 2) in a research institute of the federal and state governments with scientific and medical tasks, 3) in a veterinary diagnostic institute, 4) in a

veterinary administration office, 5) at a state animal health service, at an animal health office or at an insemination station, 6) in the pharmaceutical industry in the development, manufacture and testing of pharmaceuticals, in the food industry in the manufacture and testing of foodstuffs of animal origin or in the animal feed industry in the manufacture and testing of compound feedingstuffs, or 7) in scientifically managed zoological gardens. This is laid down in the TAppV (German federal legislation) and cannot be changed by the faculty. We, however, see this as a valuable opportunity for students to further explore the broad spectrum of veterinary activities in different fields; it assists them in finding suitable positions, often in a research environment with the opportunity to complete a dissertation there.

- The rules nevertheless ensure that **all students complete the majority of their extramural clinical internships in veterinary practices or clinics**.

Ad 3. For about 50% of the students EPT clinical training takes place before clinical rotations.

We agree that ideally the clinical EPT in 5th year should be completed after the intramural clinical rotations. However, we are unable to immediately change this under the legal framework of the TAppV as well as the current study and examination regulations. As already addressed in chapter 1.1.1, the faculty has made efforts to change the study and examination regulations so that in the future it will be ensured that all students attend a two-week emergency medicine module directly before entering the 5th year in which intramural clinical rotations and most of the extramural clinical training takes place.

Ad 4, 5 and 6

The establishment in 2016 had developed the PDCA cycle as well as a guidance booklet for completion of all EPT that includes administrative information, lists of leaning objectives for each individual EPT as well as standardized evaluation forms (available on paper and online) for all EPT. Designated faculty members have developed the respective learning objectives and act as EPT supervisors. As described in 2.2.1.3, the number of returned evaluations until the end of 2017 was too low to formally evaluate them. Therefore efforts have been implemented to substantially increase the number of evaluations received, to analyse these and to present that information to the Education Committee and the responsible faculty members for an in depth analysis and identification for areas of improvement. The respective PDCA cycle was updated (Figure 3, Appendix 2.2.1.b).

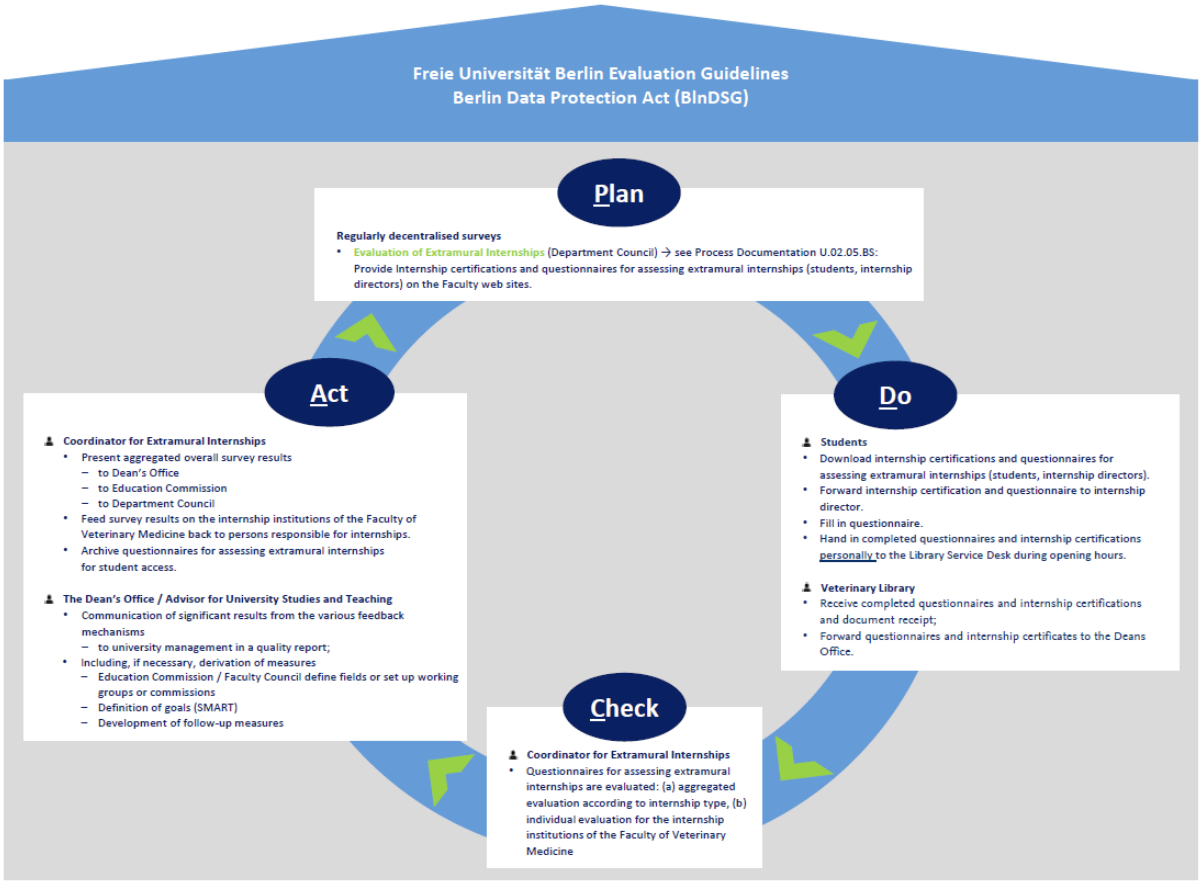


Figure 3 PDCA cycle EPT evaluation (new procedure)

2.2.3. Suggestions of improvement

The established processes are considered as prerequisite for an improved EPT monitoring. In addition, we have established a process for the harmonization of an evaluation system for extramural internships throughout all German veterinary faculties. Such a standardization is necessary; as otherwise, there could be different assessments with a risk of disadvantages for students from certain faculties. Discussions were initiated with the Federal Association of Practicing Veterinarians (BPT) in 2017 and are currently intensified. Fortunately, the BPT has signalled strong interest and an outstanding willingness to support this initiative on quality assurance together with the faculties. This was discussed at a meeting in February 2018 at a conference of the Federal Association with students, association representatives and the managing directors. Furthermore, the procedure was discussed at the Veterinary Medicine Faculty Day on 12th April 2018, in Berlin. It was agreed upon by all parties involved to establish such a uniform evaluation system for veterinary internships throughout Germany.

2.3. Minor Deficiency 3: Insufficient signage for biosecurity and restricted areas

2.3.1. Factual information

Initial situation

The following applies to all biosecurity areas except for the isolation units in the small animal clinic, which are covered under Minor Deficiency 4.

The management of biosecurity, regular risk assessments, protective measures and signage to alert visitors, students and staff before entering relevant areas are strictly governed by several national laws and regulations. Specific regulations apply for different risk sources, such as potential exposure to infectious animals or materials, genetically modified animals or pathogens, toxic substances, or radiation. For each of these risk factors, different (usually three or four) risk levels are clearly defined in the official, legally binding documents. For example, “Biosecurity level 2” means potential unintended exposure to less harmful pathogens, with a long list of pathogens in the appendix of that document. “Genetic safety level 2” regulates measures to protect from genetically engineered infectious organisms that could potentially survive and spread into the environment with only minor virulence to humans, animals or the environment.
Throughout the faculty, all relevant areas and units have been identified, and signeage and protection levels follow official laws and regulations. Wherever entrance is restricted to, e.g., staff, technical personnel, animal caretakers or other groups, this restricted entrance is clearly marked to protect from public or otherwise unwanted access. For each risk area or unit, a designated safety officer is responsible for the strict adherence to all official requirements. Safety officers are regularly trained and certified in their respective field of responsibility. Regulatory authorities of the State of Berlin revisit all units and areas on a regular basis and control and protocol our level of compliance, in the presence of safety officers and University representatives. The visits are documented and deposited with the safety officers in charge of each functional unit.

At all times, the faculty has fully adhered to the regulations with no significant complaints or restrictions by the legal authorities or University representatives. Of course, regular amendments, expansions and adjustments are realized where required, under strict coverage of the legal authorities in charge.

In addition, internal University audit visits are seen as an important tool within the framework of biosecurity, work safety, energy and environmental management. They are jointly conducted by members of the University occupational safety service, the sustainability & energy management unit, the occupational health physician supervisory team and by a member of the faculty hygiene commission and an employee representative. The team assesses the required documentation (up-to-date risk assessments, instruction protocols and safety signs), the maintenance schedules, protective equipment, fire prevention, waste disposal and hygiene plans. Action points for optimization are listed in an inspection report. The respective institutions address these points and the status is reported back to the audit team leader. Based on a 2017 faculty council decision, the time between future internal audit inspections in scientific institutions should not exceed two years.

The faculty hygiene commission develops draft documents for official hygiene regulation that are discussed and finally approved by the faculty council. The Dean's office is responsible for publishing these regulations and informing the members of the faculty. This also includes separate information events should major changes occur.

The regulations and responsible bodies are available on the faculty homepage.

Measures implemented

All biosafety units have been checked in terms of regular and correct visitation, signage and for compliance by safety officers. No significant violations were recorded. Examples of signages and labeling of entrances to the public, students or employees are given below.

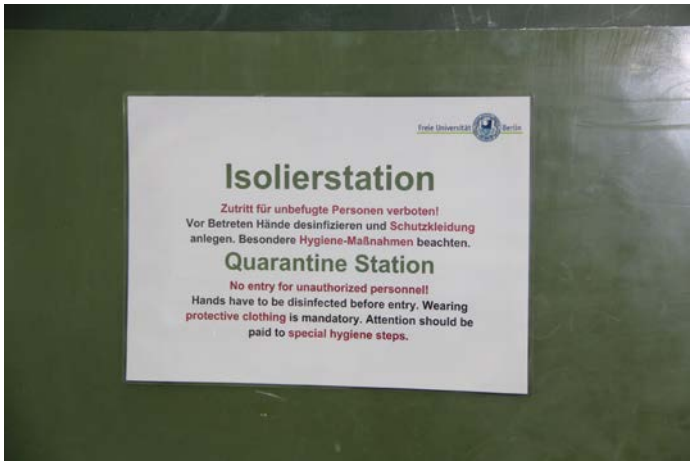


Figure 4: Example of an entrance to a quarantine station at the Small Animal Clinic

Figure 5: Example of an entrance to a laboratory unit covered by Biosafety level 2

Figure 6: Example of an entrance to a laboratory unit covered by Biosafety level 1 and genetically modified organisms level 1, at the same time equipped with a first aid kit (green cross) and a fire extinguisher. No smoking area.

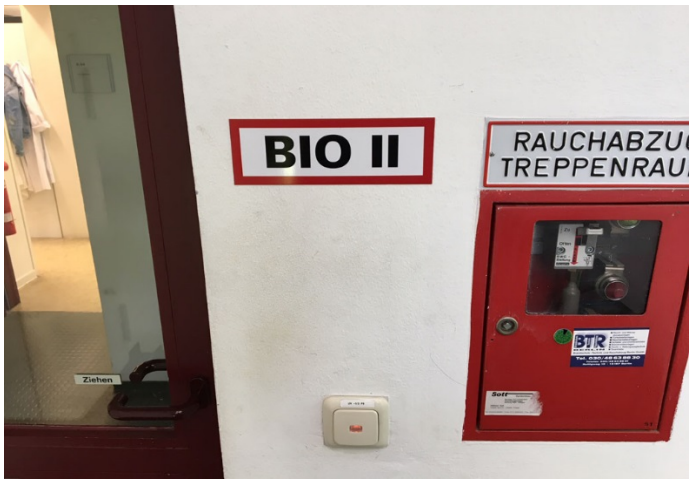


Figure 7: Example of an entrance to a laboratory unit covered by Biosafety level 2 (also applies to fire brigade in case of emergency)

Figure 8: Example of an entrance to a no food area

Figure 9: Example of an entrance to a non-smoking area

Figure 10: Example of an entrance to a no-pets-allowed area

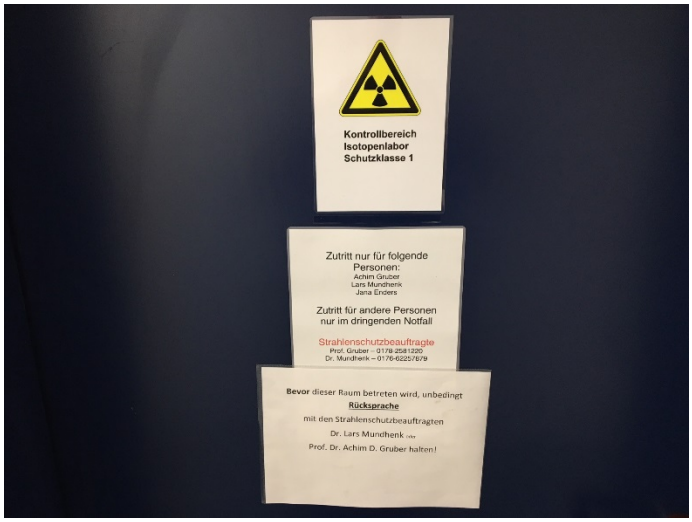


Figure 11: Example of an entrance to a radiation safety area level 1

Guiding signages that regulate and restrict access of vehicle traffic and people to the large animal clinic facilities were reviewed and amended where required. For example, movable barriers indicate restrictions for vehicle traffic and the traffic of suppliers to clinics and institutes is regulated. Campus area maps were installed at all entrances for a specific guiding system. Areas with risk of infection are indicated as such and restricted for students and visitors and specific safety instructions are given in these areas.

Figure 12: Example of an entrance to the campus prohibiting unauthorized access of persons and animals.

Figure 13: Example of a guide map, installed at each access to the campus.

Figure 14: Example of a barrier for restricting and steering vehicle traffic.

Figure 15: Example of a sign to inform suppliers about the reception of goods.

Figure 16: Examples of signs at entrances of animal stables of two different farm animal clinics indicating areas with risk of infections and informing students and visitors that access is only allowed with personal protective clothing.

Figure 17: Example of information at an entrance to an isolation stable for pigs. Access is only allowed for authorized personnel. Additional specific instructions are given (label at the door) about usage of personal protective clothing, specific disinfection measures, prohibited touching of animals and food consumption.

Planned measures

The current internal biosafety and hygiene regulation of 09.07.2015 is currently under review by the faculty hygiene commission, especially with regard to signage of restricted areas. The following is planned for the next months:

a) An electronic keyless access door opening system has already been implemented at the Ruminant Clinic and will be implemented on the entire South Campus Areas (South of Königsweg). This will allow to further restricting access to certain units.
b) The traffic of people and vehicles will be further restricted by infrastructure and construction measures for occasions of epidemics, e.g., a potential outbreak if African Swine Fever. At all entrances to the faculty areas, disinfection baths for vehicles and mats for unavoidable access of personnel can be installed shortly in case of epidemics.
c) An extended hygiene concept for the traffic of vehicles and people is under construction. Presently, visitors to the clinic area have to inscribe in a visitors' book at the secretariat. Technical personnel of the clinic control this process.
d) On a short-term basis, following the visitation of the EAEVE the ruminant clinic established a hygiene sluice. All students are fitted with overalls owned by the clinic, that are cleaned by the clinic personnel or - when visiting farms outside the clinic - additionally with one-way overalls, for the time they participate in the clinical rotations. An additional separate building is under construction (to be finished by the end of 2018) with additional extensive showers, lockers and bath room units for students and staff on the South Campus, designated “The Lavatorium“:

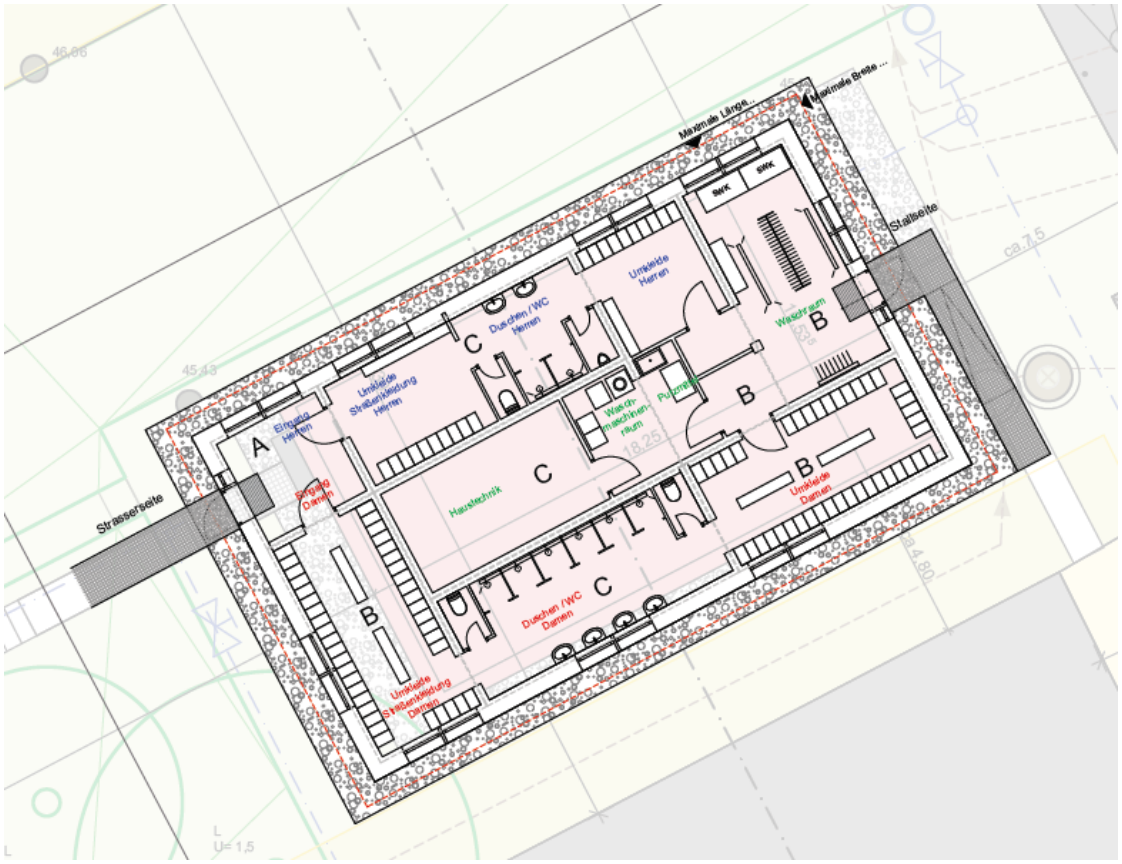


Figure 18: Construction plan of the Lavatorium

2.3.2. Comments

The Düppel Campus is at the same time restricted by laws and regulations governing the protection and maintenance of historical buildings, traffic ways and architectural arrangements. Any measures that would alter any of the currents settings would also have to comply with these regulations, in some instances making preferred solutions impossible, more cumbersome or more costly.

2.3.3. Suggestions of improvement

This is a continuing process and we will make sure to continue to meet all required standards, in full compliance with national laws and regulations, state legislations, University directives and EAEVE recommendations.

2.4. Minor Deficiency 4: Inadequate isolation facilities in small animals

2.4.1. Factual information

Initial situation

Since the opening of the Small Animal Clinic in 1979, structural adaptations were constantly made to the area of in-patient care. However, improved hygiene and infection control are a constant endeavour, which the Freie Universität is aware of.

Figure 19 (Appendix 2.4.1.a) details the current layout of the isolation facility. Currently, room No. 130 is used for animals infected with or suspicious of parvovirus infection. Other potential infectious patients are housed in the dog stables (room No. 132), the left side being occupied with waterfowl and rabbits with infectious diseases. Cats with signs of "cat flu" are kept in isolation in room No. 118.

Measures to be implemented in short time – Step 1

Necessary adaptations will be implemented in two steps:

- The first step includes mandatory structural measures that can be achieved within a short time period (see details below). This will also include organizational measures for limiting and supervising person traffic into restricted areas.
- The second step will include any additional measures to improve the overall quality of the facility to a modern standard.

Due to the suggestions for improvement and as an initial action, internal audit visits for the clinic were organised (see Minor Deficiency 3). All signage for biosecurity and restricted areas as wells as necessary changes have been recorded in detail.

The inspection's records for the small animal clinic were forwarded to the executive director and the necessary improvements will be implemented systematically. The records (in German) can be presented during the visitation.

Planned Measures

To meet the required level of hygiene/infection control, four isolation units for infectious animals will be established as soon as the planning process has been finalized (Figure 20; Appendix 2.4.1.b). Planning and concepts are guided by the necessity to implement any constructual measures with minimal impact on running services and in a timely manner. The expected time frame is 2018-2020.

Planned isolation facilities with functional sluices:

1. A common parvovirus-stable for dogs and cats (left corridor room No. 132)
2. A common stable for dogs and cats with unclear infections (right corridor room No. 132)
3. A stable for cats with "cat-flu" (room No. 118)
4. A room for potentially infectious waterfowl with a upstream one-space sluice and separately accessible and air conditioned cabin for infectious rabbits and other small wildlife (room No. 130)

Each of these isolation facilities will feature a separate one-space or two-space sluice and an area equipped with sufficient storage capacity for consumables including feed and bedding material. In the sluices, clothes / overalls and shoes are changed to exclude any possibility of pathogen spread. The isolation units include a treatment table and sufficient cupboards/shelves. A container for infectious waste as well as a sink with disinfection units is mandatory. Spare cages of various sizes according to the size of the patients will be provided.

Measure 1 & Measure 2:
Room No. 132 (dog stable 2) will be converted in two separate isolation facilities: the left side will house cats and dogs infected with parvovirus while the rights side will be converted into a space for potentially infectious dogs/cats. Both isolation facilities feature their own sluice room, which leads into a common sluice entrance/exit-area (two-space sluice).

Measure 3:
The additionally required „cat-flu"-station will be realized by dividing room No. 118. Though infected cats are already located there the room is currently also used for surgical teaching. By dividing the room, a new space will be created with a small one-space sluice. The isolation facility will be equipped with four cages in one row (max. eight cages stacked).
Separation of the room into one part being dedicated to the new isolation station for "cat-flu" and the other part being reserved to practical hands on training of surgical skill using cadavers, will ensure that cross contamination will be eliminated in the future. Having a dedicated, separated room for cadaver work will further improve the level of biosecurity in the clinic.

Measure 4:
Room No. 130 will be converted into a station for wild water birds. A reduction of the current working space will create enough space to install a one-space sluice. The sluice grants access to the waterfowl area, as well as the completely separated area for infectious rabbits and small wild mammals. As the latter need more arid conditions, a separate air conditioning is required.

Organisational measures

Clear **signs and operating instructions** do ensure that person traffic in the clinics is clearly regulated and unauthorised access to restrictive zones is avoided. This ensures that a high standard of hygiene in accordance with international standards is maintained right from the start.

Measures to be implemented on medium and long term – Step 2

While these first measures are estimated to be completed within a year, any medium term measures will require more extensive planning and involvement of higher authorities beyond the Freie Universität. These measures focus on the complete reconstruction of the in-patient area, which is felt to be the only way to reliably meet the standards required today. Unfortunately, that will take significantly longer and a definitive time point until this will be accomplished cannot be estimated now (see below).

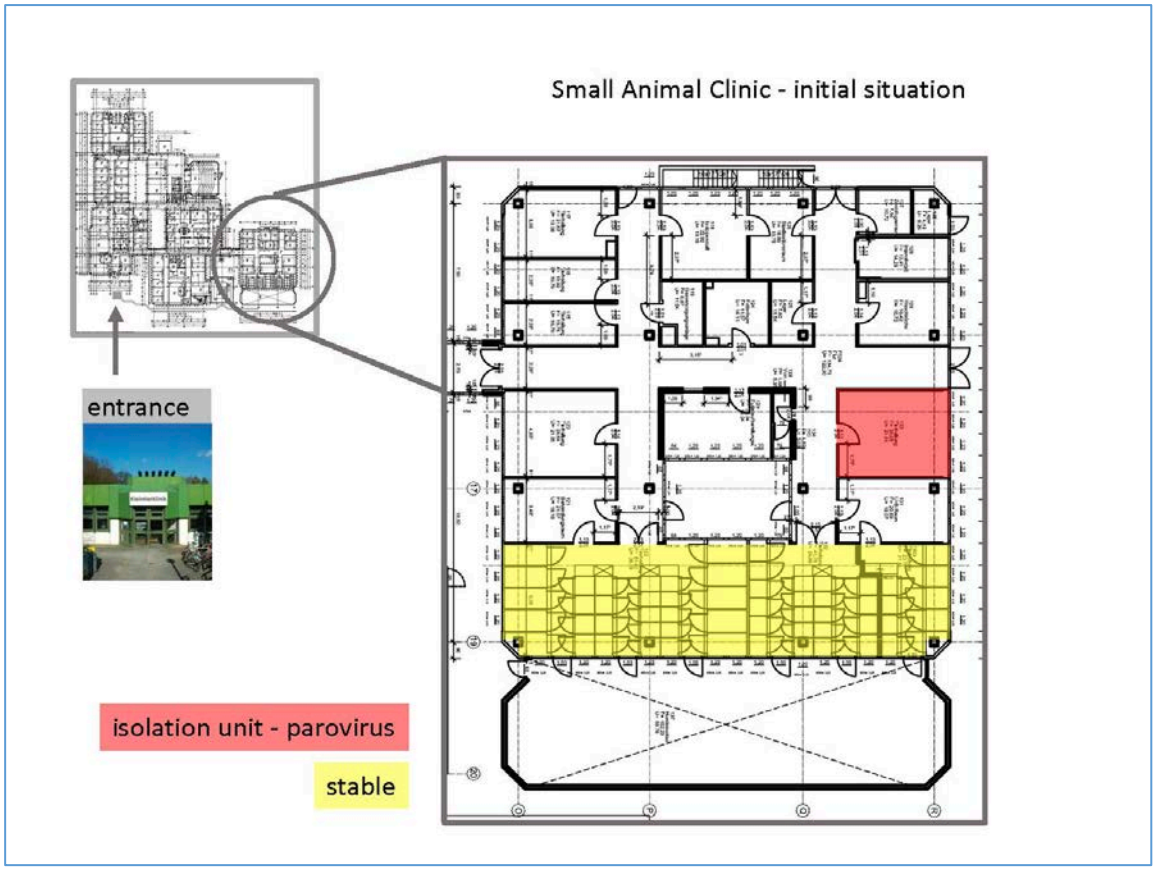


Figure 19: Initial situation in Small Animal Clinic

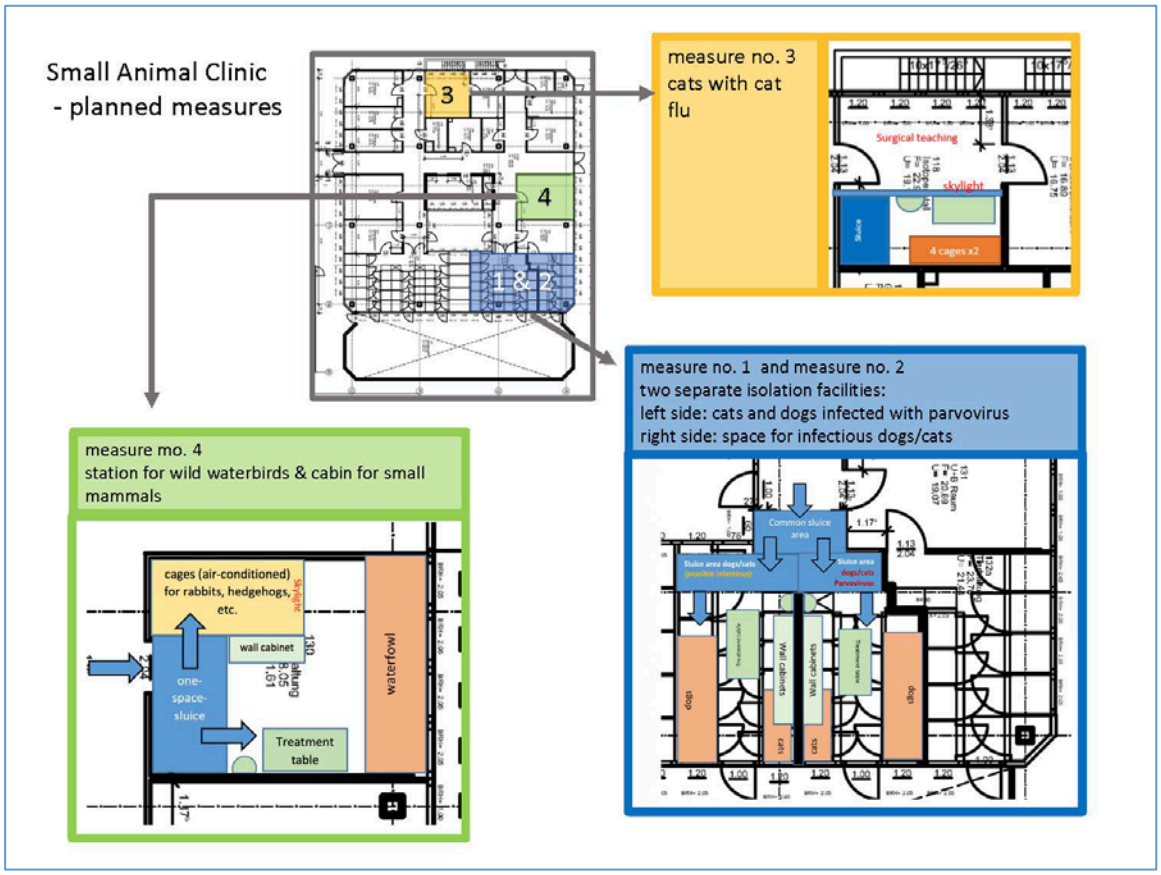


Figure 20: Planed measures in Small Animal Clinic

2.4.2. Comments

Overall, the proposed measures are achievable within a short to medium period, probably one year from now on. They will ensure hygienic appropriate isolation facilities within the small animal clinic.

The planned structural modifications as detailed above are currently under review by the Division for Engineering and Utilities of the Central University Administration regarding feasibility and estimated costs. Depending on the estimated costs, a Europe-wide tender might be required. The implementation of the measures is intended for the spring term 2019. Until then, temporary solutions and modified processes have been implemented to mitigate the risk of disease transmission.

2.4.3. Suggestions of improvement

As a first step for any long-term perspective, it will be necessary to discuss a conceptual replanning and remodeling of the small animal clinic with a special focus on the in-patient area and especially the isolation facilities.

2.5. Minor Deficiency 5: Insufficient number of necropsies in cattle and pigs

2.5.1. Factual information

Based on indicator I18, the number of necropsies in cattle and pigs were too low to meet EAEVE standards. In order to increase that number, the following actions were taken:

1. We engaged in ongoing discussions with the clinical professors for ruminant and swine diseases, Kerstin Müller and Karl Heinz Lahrmann, to increase the respective numbers of necropsies. Starting in December 2017, both have done their best to encourage their collaborating farm managers and farmers to send their necropsy cases to our Pathology Department. For many of these farmers we settled agreements to perform necropsies free of charge, irrespective of our official fees.
2. We reduced the official fees for farm animal necropsies (cattle: from 150,- to 80,- €; swine: from 80,- € to 30,- €; sheep and goats: from 80,- to 30,- €)
3. We negotiated with the State Veterinary Lab of Brandenburg to receive some of their caseload. This turned out futile, as they experience a similar drop and lack of necropsy cases to justify their own existing structures. Comments see below.
4. With the meat hygiene institute, Prof. Diana Meemken, we arranged a biweekly retrieval of typically diseased swine and cattle lungs, hearts, kidneys etc. from a local slaughterhouse where whole carcasses are obtained for our meat inspection course. We now collect approx. 30 fresh diseased organs for each rotation group to gain additional hands on experience in farm animal organ pathology.

Table 2.5.1 Minimal n° of ruminant and pig necropsies required according to SER 2017:

Calculated Indicators from raw data		**Minimal values EAEVE**	N° of students graduating annually according to SER 2017 (mean annual)	Minimal n° of ruminant and pig necropsies (mean annual)	Minimal no of ruminant and pig necropsies (average per month)
I18	n° of ruminant and pig necropsies / n° of students graduating annually	**0.97**	163	158.1	**13.2**

Table 2.5.2 Development of farm animal necropsies since Nov. 2017:

Species	**Previous figures according to SER 2017 (mean annual)**	**Previous figures according to SER 2017 (average per month)**	**Nov. 2017**	**Dec. 2017**	**Jan. 2018**	**Feb. 2018**	**Mar. 2018**	**Apr. 2018**	**Mean**
Cattle	31	2.5	5	2	7	4	8	10	
Swine	25	2.1	3	2	4	9	6	8	
Sheep, goats	45	3.7	0	1	0	3	5	4	
Total	**101**	**8.3**	**8**	**5**	**11**	**16**	**19**	**22**	**13.5**

2.5.2. Comments

Necropsy numbers for each relevant species have continued to increase after the Nov. 2017 visitation. Monthly numbers of cattle and swine necropsies have approximately quadrupled. There is a clear trend towards further increasing numbers, albeit less than wished for. It was harder than expected to increase the figures since farm managers keep being reluctant with a few exceptions. Only few of them, to which we keep close and supportive contact, agreed to send us carcasses for necropsies in the future. The others obviously, if at all, have their necropsies performed at the farm by veterinarians. All agreed that this is not in issue of costs or service quality but enclosure policies of their production lines. Our service was very much appreciated by the farm managers who do collaborate with us. However, farmers do not want their deceased animals to be seen and made public by students. Our clinical colleagues and we were unable to convince most of them to have their carcasses examined professionally at our Dept. in the presence of students. Somewhat similar scenarios apply for the State vet pathology labs. We considered other options; however, e.g., purchasing diseased or healthy animals for performing a necropsy for training purposes is strictly illegal. We therefore expect that further increases will be very difficult, cost intensive or even impossible. Our students very much appreciate the retrieval of typically diseased organs from the slaughterhouse, both to make up for numbers of whole carcass necropsies and to bridge to their training in meat hygiene / inspection.

2.5.3. Suggestions of improvement

We will continue our above-mentioned efforts to increase numbers of relevant farm animal necropsies. We will continue to work with our students on confidentiality issues, behavioural codex and communication policies (Dean´s Office). We will evaluate alternative training methods, e.g., necropsy movies or a specific macro slide collection of farm animal pathology lesions to support training in farm animal pathology.

2.6. Minor Deficiency 6: Sub-optimal use of the VTH companion animal patients for clinical training of undergraduate students

2.6.1. Factual information

Students mainly receive intramural hands on training on VTH companion animal patients during clinical rotation in 5th year. The equine and especially the small animal clinic have sizeable numbers of ambulatory as well as stationary patients that are treated each year. The visitation team indicated that that patient pool is not sufficiently utilized for student training.

Immediate changes proposed by the respective clinicians in working group 01 included an internal reorganisation of the clinical rotations with much stronger involvement of all students in treating regular as well as emergency patients. In addition, a clinical logbook will be introduced in October 2018 for students to record their clinical training activities during the 5th year of study.

Specific changes (depending on the respective clinic) include

- Now, students follow the same daily workflow, including morning and afternoon rounds, as the veterinary staff does.
- Students are assigned to one or more in patients, with all responsibilities and duties related to that patient. Under the supervision of the veterinarian officially in charge of the patient, the students have to take full responsibility for their patient, which also includes owner communication and record keeping.
- Increased participation of students in evening and weekend shifts
- Training of students for hands on animal work by using an continuously expanding number of Skills Net models
- Shorter but more interactive case presentations done by students (Equine clinic)
- Improved coordination of activities among the clinics participating in the clinical rotation
- Development of a species-based clinical learning objective catalogue from which the clinical logbook for students was derived, implemented in the clinical year, and used to monitor student hands on training. This will also be used to monitor the overall quality of clinical hands on training among the different units involved, allowing for early identification of persistent insufficiencies and to enforce further improvements

2.6.2. Comments

The changes coming in place in spring term 2018 resulted in substantial improvement of practical training in all clinics, with a higher number of companion animal patients seen by students. Adaptations are ongoing, and the proposed change of the study regulation to extend the clinical rotation will emphasize this process.

2.6.3. Suggestions of improvement

The establishment will continue to monitor the number of VTH companion animal patients in total as well as the proportion used for clinical training of undergraduate students. Efforts will be made to maximise the latter number.

2.7. Minor Deficiency 7: Insufficient specialised academic staff in some key clinical disciplines

2.7.1. Factual information

The visitation team has a) identified insufficient specialised academic staff in some key clinical disciplines and classified this as a minor deficiency, b) stated that establishment members should be more involved in the training and examination procedures within National Certificates of Veterinary Specialisation.

In our 2017 SER, we stated that

1. our high standards of veterinary medical training provide excellent career opportunities in relevant professional fields for our students,
2. we offer a wide range of postgraduate training, specialisation and continued education opportunities as well as academic career paths, and
3. veterinary specialisation is nationally regulated, and the faculty organises a wide spectrum of postgraduate trainings under the umbrella of the EBVS and the National Certificate System of Veterinary Specialisation.

Training of veterinary specialists in the national specialisation programme

In 2017, 46 academic staff members of the establishment, covering a broad spectrum of disciplines, held a registration as a National Veterinary Specialist[2]. Under their supervision, on average 68 veterinarians are trained to become National Veterinary Specialists (Table 2.7.1). Programmes have been established in anatomy, nutrition, microbiology, food safety, meat hygiene, animal and environmental hygiene, experimental animals, animal welfare, pathology, parasitology, pharmacology and toxicology, epidemiology, small animal medicine, and reproduction medicine.

Table 2.7.1: Numbers of veterinarians at the Establisment registered in German veterinary specialisation programmes (as table updated of 02.03.2018)

Qualification as National Veterinary Specialist ("Fachtierarzt")	2016/17	2015/16	2014/15	Mean
Anatomy	5	4	3	**4**
Nutrition	1	2	3	**2**
Microbiology	2	9	8	**6**
Food safety	3	3	3	**3**
Meat hygiene	1	1	1	**1**
Animal and environmental hygiene	3	3	2	**3**
Experimental animals	8	8	8	**8**
Animal welfare	5	2	2	**3**
Pathology	8	8	8	**8**
Parasitology	1	1	1	**1**
Pharmacology and toxicology	2	1	2	**2**
Physiology	1	0	0	**0**

[2] Members of the establishment registered in German veterinary specialisation programmes: http://www.vetmed.fu-berlin.de/weiterbildung/downloads/Uebersicht_Fachtieraerzte_2018-05-17.pdf

Epidemiology	1	2	0	**1**
Small Animal Medicine	16	19	7	**14**
Equine medicine	4	5	4	**4**
Bovine medicine	7	4	4	**5**
Porcine medicine	1	1	1	**1**
Reproduction medicine	3	4	3	**3**
Total	**72**	**77**	**60**	**70**

The national certified and quality controlled veterinary specialization system implemented since many decades in Germany is under control of the State Veterinary Chambers. The chambers consult the veterinary establishments, revise their programmes periodically and all information is available to the public. This process is currently revised with the aim of establishing uniform regulations for obtaining specialist recognition throughout Germany. The process is expected to be completed in 2018/19.

The current and future national qualification programs can be summarized as follows:

- Duration 4 or 5 years
- Certification is granted upon successful passing of a final examination
- Continuing education in the field is mandatory
- Failure to comply with continuing education rules leads to derecognition
- The faculty is factually involved in these programmes, almost all clinics and institutes are officially recognized as training centers
- Faculty members are regularly involved in the training and examination procedures (the latter organized by the State veterinary chambers)

Training of veterinary specialists in the EBVS specialisation programmes

As of fall 2017, 30 senior faculty members were recognized as Diplomates in a large number of specialization subjects according to the European Board of Veterinary Specialization (EBVS)[3]. They maintain residency training programmes in small animal and equine surgery, small animal and equine medicine, animal nutrition, pathology, microbiology, veterinary public health and other topics (Table 2.7.2).

Table 2.7.2. Numbers of veterinarians registered in postgraduate clinical training programmes

Clinical Interns	**2016/17***	**2015/16**	**2014/15**	**Mean**
Companion animals	14	18	n.a.	16
Equine	6	8	n.a.	7
Production animals	n.a.	n.a.	n.a.	n.a.
Total	**20**	**26**	**n.a.**	**23**

European College Residents	**2016/17***	**2015/16**	**2014/15**	**Mean**
ECVCN: Veterinary and Comparative Nutrition	2	1	1	1
ECVP: Veterinary Pathology	7	8	8	8

[3] Diplomates / Residents at the faculty: http://www.vetmed.fu-berlin.de/weiterbildung/downloads/Uebersicht_Diplomates_2018-03-15.pdf

EVPC: Veterinary Parasitology	1	1	1	1
ECVPT: Veterinary Pharmacology and Toxicology	1	1	1	1
ECVPH: Veterinary Public Health	5	5	5	5
ECVS: Large Animal Surgery (Equine / Ruminants)	3	5	5	4
ECEIM: Equine Internal Medicine	4	4	4	4
ECBHM: Bovine Health Management	3	3	3	3
ECAR: Animal Reproduction	4	4	4	4
ECVS: Small Animal Surgery	4	2	2	3
ECVIM: Veterinary Internal Medicine - Companion Animals	1	2	2	2
ECVO: Veterinary Ophthalmology	0	1	1	1
Total	**35**	**37**	**37**	**36**

* The last full academic year prior to the Visitation

The national specialisation degree and/or the diplomate status, whenever possible and appropriate, is a prerequisite in the appointment of leading faculty positions. This is also legally defined in the pertinent university law.

2.7.2. Comments

As can be seen from the available figures, the training of national specialists and residents is one of the most active elements in our postgraduate training program. In so far, we think we are more than compliant with the national and international requirements and standards.

Regarding the situation with hiring permanent academic specialists, we see a more complex picture. The university is in a competitive situation that has increasingly been characterized for several years by private employers and industry offering extremely attractive working conditions. As a result, a situation has developed over many areas in which it is becoming increasingly difficult for universities to recruit academic specialists. The faculty sees this and we are currently trying to actively counteract this development. Our actions include internal measures designed to make work at Freie Universität more attractive, as well as generalized measures in consultation with the other faculties. The German Faculty Council, which represents the academic association of all German veterinary faculties, started this discussion a few years ago and there is perfect agreement on that we must act together in this important field, which is essential for the future of veterinary education. The question of how to attract a sufficient number of academic specialists must be supported by greater flexibility. This means that young veterinarians shall be given the opportunity to work temporarily at other faculties to gain additional knowledge and experience.

Through an exchange program, there is a certain possibility that the faculties will be able to handle the extremely restrictive employment conditions laid down by law in Germany in a more compatible manner. The number of positions in the faculties in Germany is regulated by a capacity ordinance. The core of the regulation is that the number of employees is oriented in relation to the number of students. This means that the universities are not free to increase the number of employees without

increasing the numbers of students. Ultimately, the teaching capacity has to be taken into account here for all future planning processes. This is disadvantageous from the faculty's point of view, as for example a desired increase in the number of employees in the clinical area, especially in the clinic for small animals, in the clinic for horses and in other areas is made more difficult. The faculty has developed a concept to try to make this more effective in the future. One possibility is to establish positions that can be created through greater independence and the possibility of using the own income generated by clinical work. This must be compliant with the regulations and consequences for student capacity.

In general, however, the payment of appropriate specialists and the long-term commitment to the faculty must be ensured through a whole package of measures. This includes:

- Offering the creation of permanent specialist positions, financed through hospital income
- Embedding the specialists in an attractive environment, opportunity to advance one's own scientific career and to develop special disciplines here
- Cooperative systems that enable specialists to work more independently within the clinic
- A complex list of actions to improve our workplace attractivity for female specialized veterinarians and family parents in general. We realize that most specialists are female, most of which have different demands on their work environments than male colleagues used to have in the past.

2.7.3. Suggestions of improvement

The establishment of such a system requires preparations that were already initiated by the faculty in 2017. The aim is to achieve a balance between the needs of clinical training, the recruitment of highly qualified personnel and the interests of the faculty. This must take into account frames of teaching capacity and financial aspects. The process has been started in cooperation with the Freie Universität administrative bodies. For example, one clear objective is that the orientation of the Clinic for Small Animals and the Clinic for Horses in particular will be clearly changed towards the training of students, hands on learning and the involvement of appropriate specialists. Specifically, it is intended that the Clinic for Small Animals will be able to fill up to five academic positions with specialists in several fields; the positions will be designed in such a way that they will be employed on permanent contracts. Specifically, we examine critical areas for possible financing through hospital revenues and/or joint ventures.

An example of this is the field of veterinary diagnostic imaging. The faculty has faced major problems in filling a position in radiology for years. Despite intense efforts, it was unfortunately impossible to successfully complete an appointment procedure in 2018 to fill a junior professorship in radiology. The concept we are currently pursuing is to create a highly attractive job situation for several certified radiologists, so that a new business model will attempt to establish a powerful and efficient unit with up to five positions. Furthermore, the aim is to fill a professorship for radiology for intensive student education, which works in cooperation with the privately organized radiology unit. This model is currently in the planning stage and corresponding discussions have taken place with private interested parties. The concept is to be further focussed and coordinated in the near future, so that we assume that a fully functioning imaging unit will be created within the next two years, both as a service facility and for student training. The situation of potential candidates for a professorship in radiology is similarly critical for all faculties across Europe. We as a faculty would like to try to take a new path here within the next two years, which will enable us to establish an exemplary central imaging unit connected to the university.

Recalculation of Academic staff and specialised academic staff and staff in postgraduate programmes

Table 9.1.1.a Academic staff of the veterinary programme**

All academic staff included in this table is financed by budgetary resources and responsible for teaching and research tasks and has received a training to teach and to assess undergraduate students.

Type of contract	2017	2016	2015	Mean
Permanent (FTE)	51.6	53.8	55.5	53.6
Temporary (FTE)	84	77	69.8	76.9
Total (FTE)	**135.6**	**130.8**	**125.3**	**130.6**

Table 9.1.1.b Specialised academic staff and staff in postgraduate programmes

All academic staff (permanent + temporary) included in this table is financed by budgetary resources. Persons holding more than one degree or are registered in different programmes may be counted under more than one heading.

Type of contract: permanent + temporary	2017	2016	2015	Mean
Interns (FTE)	20.0	26.0	n.a.	23.0
Residents (FTE)	19.2	18.6	19.1	19.0
National Veterinary Specialist, in training (FTE)	33.8	14.6	14.6	21.0
PhD students (FTE)	6.5	4.3	2.5	4.4
Doctoral students (FTE)	23.5	26.0	23.9	24.5
Practitioners (FTE)	0.0	0.0	0.0	0.0
National Veterinary Specialist, holding a degree (FTE)	47.6	47.8	48.7	48.0
Diplomate (FTE)	27.5	29.0	28.8	28.4
Others (PhD, MSc, other qualification objectives) (FTE)	24.0	24.0	22.0	23.3
Total (FTE)*	**202.1**	**190.3**	**159.6**	**191,7**

* *Persons holding more than one degree or are registered in different programmes may be counted under more than one heading.*

Figures from table 9.1.1.b for calculation of Indicator I21

Total number of FTE specialised veterinarians (permanent + temporary) in veterinary training. The specialised veterinary status must be officially recognised by the relevant National Accreditation body for national specialisations and/or by the European and/or American Board of Veterinary Specialisation (EBVS/ABVS).

Type of contract	2017	2016	2015	Mean
Permanent + Temporary: National Veterinary Specialist, holding a degree (FTE)	47.6	47.8	48.7	48.0
Permanent + Temporary: Diplomate (FTE)	27.5	29.0	28.8	28.4
Total (FTE)	**75.1**	**76.8**	**77.5**	**76,5**

3. ESEVT INDICATORS

3.1. Factual information

Calculated indicators from raw data		Establishment values	Median values[4]	Minimal values[5]	Balance[6]
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0.12	0.16	0.13	0.00
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0.62	0.87	0.59	0.03
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1.40	0.94	0.57	0.84
I4	n° of hours of practical (non-clinical) training	651.00	905.67	595.00	56.00
I5	n° of hours of clinical training	708.00	932.92	670.00	38.00
I6	n° of hours of FSQ & VPH training	285.50	287.00	174.40	111.10
I7	n° of hours of extra-mural practical training in FSQ & VPH	250.00	68.00	28.80	221.20
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	61.24	70.48	42.01	19.23
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	4.25	2.69	0.46	3.78
I10	n° of equine patients seen intra-murally / n° of students graduating annually	15.82	5.05	1.30	14.52
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	27.73	3.35	1.55	26.19
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	-	-	0.22	-
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	51.41	15.95	6.29	45.12
I14	n° of equine patients seen extra-murally / n° of students graduating annually	-	-	0.60	-
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	2.17	1.33	0.55	1.63
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0.07	0.12	0.04	0.02
I17	n° of companion animal necropsies / n° of students graduating annually	1.99	2.07	1.40	0.59
I18	n° of ruminant and pig necropsies / n° of students graduating annually	0.63	2.32	0.97	-0.34

[4] Median values defined by data from establishments with Approval status in April 2016

[5] Recommended minimal values calculated as the 20th percentile of data from establishments with Approval status in April 2016

[6] A negative balance indicates that the Indicator is below the recommended minimal value

I19	n° of equine necropsies / n° of students graduating annually	0.38	0.30	0.09	0.29
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	4.42	2.05	0.69	3.73
I21*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0.47	0.20	0.06	0.41
I22*	n° of PhD graduating annually / n° of students graduating annually	0.61	0.15	0.09	0.53

3.2. Comments

I4: Excludes 250 h of extramural training in VPH / food safety / meat inspection / vet admin -> those are listed in I7

I5: The actual intramural clinical hours (**2018**) including the acute changes indicated in chapter 1 is **736**. In addition, students spend at least **500 hours of clinical training** in veterinary practices (EPT)

I18: The 3-year average does not yet fully reflect the efforts made in 2017/2018 to substantially increase these numbers (see chapter 2.5)

3.3. Suggestions of improvement

Indicator values will be assessed regularly, and efforts will be made to further raise the values especially in those indicators where the establishment is close to the minimum values required by EAEVE.

4. APPENDICES

Appendix 1.1.1.a – description of practical training modules

Attendance of the below described modules is mandatory for all students, and regular and successful attendance is a prerequisite for receiving the study credits.

Clinical propaedeutic - all clinics
98 hrs in 3rd year
All students are taught the most relevant practical basics of propaedeutic in all relevant species. They are able to carry out a full clinical general examination and simple special examinations of organ systems of horses, ruminants, pigs, small animals and pets, and interpret the findings. They know the special medical and reproductive examination techniques and procedures, can perform these examinations and interpret the findings. For the small group practical training, either live animals, organs from cadavers or models are used.

Practical module surgery and anaesthesiology I (with focus on surgery)
14 hrs in 3rd year (5th semester); newly introduced in December 2017
All students - in small groups - rotate through eight practical training stations. These include operative hygiene, knotting, suturing, bandages, instrument handling and surgical wound management. Depending on the topic, either skills-lab models or cadavers are used as training material. The theoretical background for each station has been taught during the main lectures preceding the surgical training days. Therefore, the whole time is dedicated to practical training. Testing of acquired practical skills are performed through OSCEs the day after the training. Each student has to execute two OSCE, without prior knowledge which of the various topics is tested. Results of these OSCE will be used to monitor student-learning performance and to further improve the module.

Clinical laboratory diagnostics course
28 hrs in 3rd year
During this course, the principles of the most important laboratory examinations of small and pet animals, birds, reptiles and horses and farm animals are presented and practiced in small groups. Students should know the possible sources of error in the identification and interpretation of laboratory parameters; know the most important laboratory methods and parameters of small and pet animals, birds, reptiles and horses and farm animals and be able to interpret the results (including laboratory preanalysis, complete blood count, differential cell count, coagulation testing, clinical chemistry, urinalysis, renal function evaluation, acid-base balance, cytology, tracheal wash, liquor analysis, analysis of body cavity effusions, ruminal fluid analysis, laboratory parameters in herd management). They can carry out simple laboratory methods independently (e.g. packed cell volume determination, WBC counting, blood smear evaluation, glucose and total solid measurement, urinalysis including specific gravity, dip stick, sediment analysis, cytology interpretation, handling of cage-side tests and laboratory analysers, ruminal fluid analysis, liver biopsy).

Clinical case work – all clinics
84 hrs in 3rd year
112 hrs in 4th year
Interactive presentations of clinical cases (all relevant species) and herd-health problems (farm animals) from the area of orthopaedics/surgery, internal medicine and reproductive medicine with general and specific examination approaches and subsequent discussion of diagnoses and treatment

options. All students are given specific clinical cases (patients) for which they have to present their findings on anamnesis and clinical examination, list of medical conditions, differential diagnoses, diagnostic plan, evaluation of the findings, creation of therapy plan and prognostic assessment. The have to write a case report that is assessed by a clinical instructor. During the presentation of cases to all students, voting tools and other approaches of active student participation are used to engage all attending students into the assessment of cases and related discussions.

Practical module emergency medicine, anaesthesiology, internal medicine
14 hrs in 4th year (7th semester); newly introduced in February 2018
All students - in small groups - rotate through eight practical training stations. These include intubation, monitoring, local anaesthesia, nerve blocks, calculating and preparing induction of anaesthesia, vascular access, checking and assembling an anaesthetic machine, immobilisation of wild animals; blood pressure measurement, abdominal and cardiac ultrasound, abdomino-/cystocentesis, recording of an electrocardiogram. Depending on the topic, either skills-lab models or cadavers are used as training material. The theoretical background for each station has been taught during the main lectures preceding the surgical training days. Therefore, the whole time is dedicated to practical training only. Testing of acquired practical skills is performed in the form of OSCEs the day after the training. Each student has to execute two OSCE, without prior knowledge which of the topics will be tested. Results of these OSCE will be used to monitor student-learning performance and to further improve the module.

Clinical rotations in all clinics and in clinical pathology
386 hrs in 5th year
All students - in groups of 8-9 students - are assigned to a 10-week clinical rotation module in 5th year where they circulate through 2-week modules in the small animal clinic, equine clinic, ruminant and swine clinic (including 2 days for poultry), animal reproduction clinic and clinical pathology.
In the companion animal clinics (small animals, horses), students are assigned cases with internal medical, dermatological, oncological, neurological, ophthalmological, surgical, orthopaedic or reproduction disorders on which they practice problem-oriented approaches including anamnesis and clinical examination, establishment of a diagnostic plan, taking biological samples, assessment of laboratory results and diagnostic images, compilation of medical conditions and differential diagnoses, creation and implementation of a therapy plan, prognostic assessment as well as communication with animal owners, emergency case management and practicing basic surgical procedures.
In farm animals, in addition to clinical casework, ambulatory trips to various farms are scheduled during which individual animal care as well as herd-health related diagnostic procedures, treatments and management of herd-level problems are practiced. Students in addition run through practicals on animal reproduction and more technical measures etc.
In diagnostic pathology, students practice autopsies on all species with a focus on section techniques, describing the findings by means of morphological diagnoses, discussion of possible differential diagnoses, including taking into account their respective possible aetiologies, clinical significance and pathogenesis.
All students have to sign in for after hour and weekend shifts to assist the veterinarians on call in treating ambulatory emergency and hospitalized patients.
During all modules, students have to record their activities and complete case or organ/section reports that are assessed by the lecturers. In addition, a student logbook will be introduced in October 2018 to monitor the completion of learning objectives during the clinical rotation.

Extramural practical training (EPT) in veterinary practice or clinic

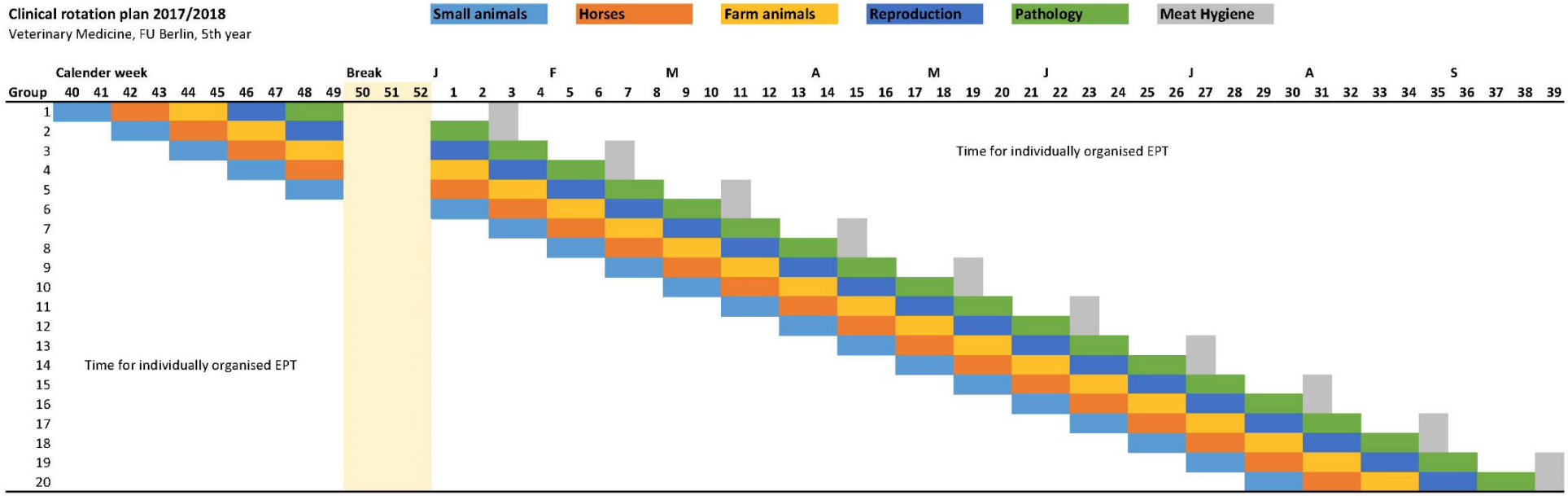
At least 150 hrs in 3rd year

At least 350 hrs in 5th year

All students have to arrange these EPT with experienced veterinary practitioners in the field that have at least two years of independent working experience in veterinary practice and are certified to maintain a veterinary pharmacy. Students during these EPT have to be involved in all tasks related to veterinary practice. They are provided with a list of learning objectives drafted by the establishment academic staff that should be achieved during these EPT, and, based on a decision of the faculty council, have to complete evaluation forms that have to be returned to the student office where these are analysed (see also section 2.2 of the rSER)

Appendix 1.1.1.b: Annual rotation schedule 2017/18 for all groups

Currently (academic year 2017/18), students at the beginning of the 3rd year are assigned to one of 20 rotation groups (with 8-9 students per group). At the beginning of the academic year (week 40) the first group starts with its clinical rotation in the small animal clinic, and then moves on through all clinics (different colours in table), the pathology and the meat hygiene. The other groups follow throughout the year. During non-rotation times, students self-organise the required EPT



Appendix 1.1.1.c - Student group-based schedule for the 4 clinical rotation modules (as of spring 2018)

Week	Clinic	Day	Time	Activity
1	Small Animals	M	a.m.	Registration, organizational issue, guided tour through clinic
			p.m.	Seminar/Skills Lab/Surgical training, consultations (incl. emergency service), operating room
			night	-
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		W	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		F	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		S		Emergency Service daytime (once during the 2 weeks for each student)
		S		Emergency Service daytime (once during the 2 weeks for each student)

Week	Clinic	Day	Time	Activity
2	Small Animals	M	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		W	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		F	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	-
		S		Emergency service daytime (once during the 2 weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)

Week	Clinic	Day	Time	Activity
3	Equine	M	a.m.	Registration, organizational issue, guided tour through clinic
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		W	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		F	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)

Week	Clinic	Day	Time	Activity
4	Equine	M	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		W	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		T	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		F	a.m.	Supervised management of in-patient (incl. paper work and owner communication); consultation (incl. emergency service), operating room, diagnostic imaging
			p.m.	Seminar/skills-lab/surgical training, consultations (incl. emergency service), operating room
			night	Evening service (twice during the two weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)

Week	Clinic	Day	Time	Activity
5	Farm animals	M	a.m.	Poltre: Ambulatory farm visits
			p.m.	Poultry: Necropsy
			night	-
		T	a.m.	Poultry: Laboratory diagnostic training
			p.m.	Poultry: Propaedeutics
			night	-
		W	a.m.	Registration, organizational issue, guided tour through clinic, selected topics (propaedeutics repetition, medical records)
			p.m.	Injection methods, assignment and examination of cases
			night	individual students available on call
		T	a.m.	Clinical rounds in pig and cattle clinic, work on patients (examination, treatment, surgery etc.)
			p.m.	Specific topics in pigs and cattle
			night	individual students available on call
		F	a.m.	Clinical rounds in pig and cattle clinic, work on patients (examination, treatment, surgery etc.)
			p.m.	Specific topics in pigs and cattle (herd health diagnostics)
			night	individual students available on call
		S		Emergency service daytime (once during the 2 weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)

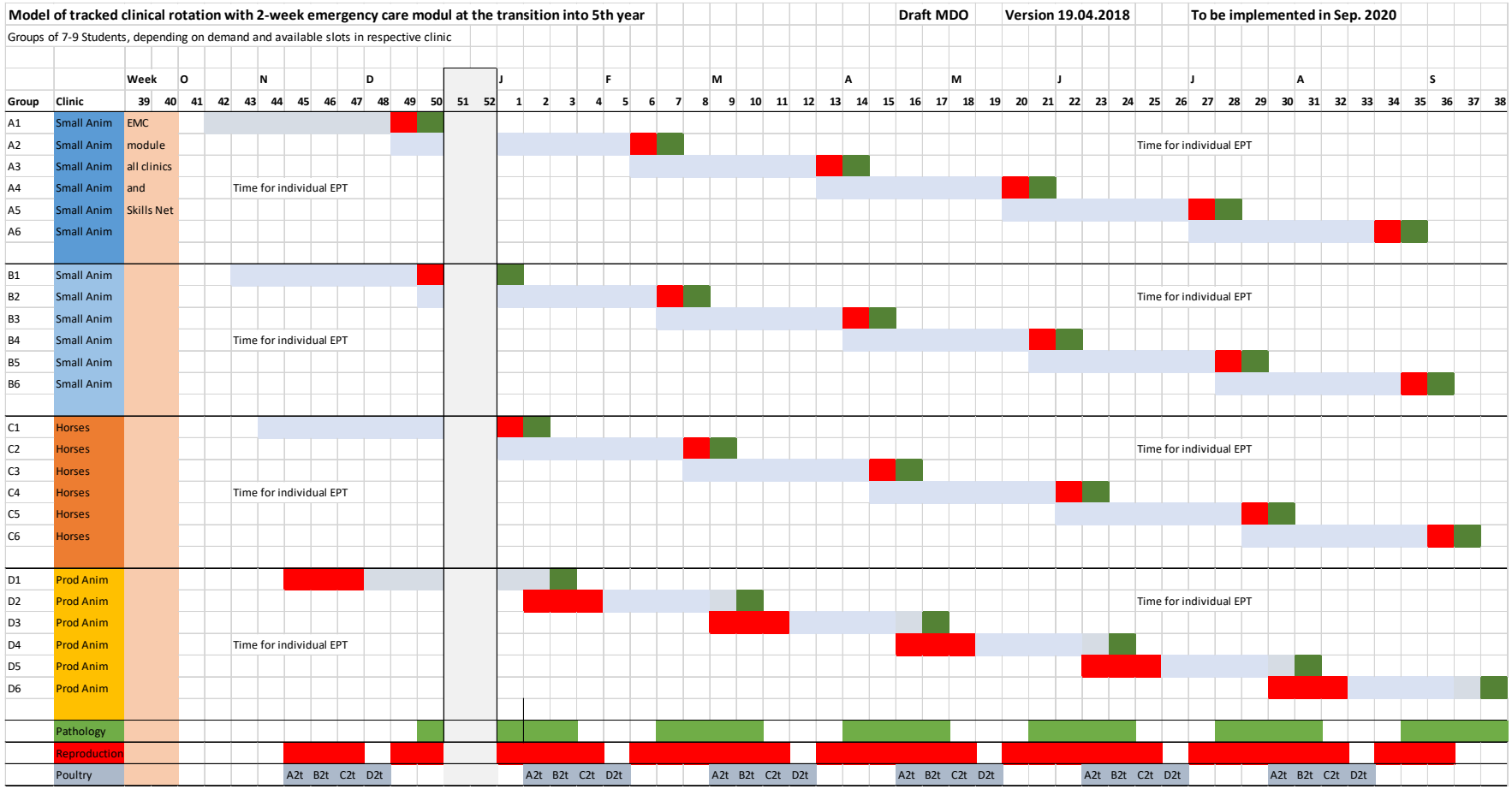
Week	Clinic	Day	Time	Activity
6	Farm animals	M	a.m.	Clinical rounds in pig and cattle clinic, work on patients
			p.m.	Specific topics in pigs and cattle
			night	individual students available on call
		T	a.m.	Clinical rounds in pig and cattle clinic, admission of new patients, surgical procedures
			p.m.	Introduction of farm-level diagnostics and consultation
			night	individual students available on call
		W	a.m.	Clinical rounds in pig and cattle clinic, work on patients
			p.m.	Herd health excursion to selected farm
			night	individual students available on call
		T	a.m.	Clinical rounds in pig and cattle clinic, work on patients
			p.m.	Specific topics in pigs and cattle
			night	individual students available on call
		F	a.m.	Clinical rounds in pig and cattle clinic, work on patients
			p.m.	Final discussion and presentations
			night	individual students available on call
		S		Emergency service daytime (once during the 2 weeks for each student)
		S		Emergency service daytime (once during the 2 weeks for each student)

Week	Clinic	Day	Time	Activity
7	Reproduction	M	a.m.	ward round, examinations and treatments of patients (large and small animals); All species: clinical gynecological findings in relation to sexual cycle
			p.m.	Ruminants: milking (practical training), transrectal examination of genital organs, vaginoscopy
			night	two students on call (are called if worthwile patients are presented, assist the veterinarians)
		T	a.m.	half of the group: farm visit, whole day: practical training of gynaecological and udder health examinations, eventually herd management
			p.m.	half of the group: visit of the equine reproduction unit: practical training of gynaecological, andrological and neonatal examinations of horses
			night	two students on call (s. above)
		W	a.m.	ward round, examinations and treatments of patients (large and small animals); All species: Examination and semen collection in varying animals, semen analysis
			p.m.	Introduction of the CAT project (practicing evidence-based decision making including clinical question, retrieving, appraisal and synthesis of information)
			night	two students on call (s. above)
		T	a.m.	ward round, examinations and treatments of patients (large and small animals); All species: heat detection and artificial insemination
			p.m.	All species: pregnancy diagnosis via ultrasound
			night	two students on call (s. above)
		F	a.m.	ward round, examinations and treatments of patients (large and small animals); Cattle: Examination of the udder and the milk
			p.m.	Rabbit reproduction: semen collection, pregnancy detection, sex determination
			night	two students on call (s. above)
		S		two students on call (s. above)
		S		two students on call (s. above)

Week	Clinic	Day	Time	Activity
8	Reproduction	M	a.m.	ward round, examinations and treatments of patients (large and small animals); All species: Normal parturition and its mechanisms, manipulative delivery of calves
			p.m.	Diagnostics of posture, position and presentation, how to correct, supporting instruments in action
			night	two students on call (s. above)
		T	a.m.	half of the group: farm visit, whole day: practical training of gynaecological and udder health examinations, eventually herd management
			p.m.	half of the group: visit of the equine reproduction unit: practical training of gynaecological, andrological and neonatal examinations of horses
			night	two students on call (s. above)
		W	a.m.	ward round, examinations and treatments of patients (large and small animals); Small animal gynaecology (vaginoscopy, vaginal cytology, ultrasound)
			p.m.	Small animal pregnancy diagnosis and obstetrics
			night	two students on call (s. above)
		T	a.m.	ward round, examinations and treatments of patients (large and small animals); C-Section in ruminants
			p.m.	All species: Neonatology (colostrum quality, drench, examinations, special care)
			night	two students on call (s. above)
		F	a.m.	ward round, examinations and treatments of patients (large and small animals); special topics such as fetotomy or udder surgery
			p.m.	Small animal neonatology, CAT project completion, wrap up and final quizzes, feed back
			night	two students on call (s. above)
		S		two students on call (s. above)
		S		two students on call (s. above)

Weeks 9 and 10 are used for a rotation in the pathology institute in which students participate in all activities related to arriving at pathological diagnoses.

Appendix 1.1.1.d - Proposed new clinical rotation scheme starting in fall of 2020



Under the new scheme (to be fully implemented in Fall 2020), all students will register for one of four rotation tracks, will be assigned to small groups (7-9 students) within the respective track, and subsequently run through a 9 week rotation within the selected track, followed by one week or reproduction (3 weeks in the farm animal track) and one week in diagnostic pathology. In addition, all students will have 1-2 days of poultry rotation. EPTs will be completed during non-rotation times.

Appendix 1.1.1.e - Proposed schedule for 2-week emergency care module (to be implemented in fall of 2020)

16 groups with 4 emergency care topics per clinic in each of the 4 clinics
First day for introduction and main topics (MTxx; interactive presentations)
For each topic sufficient documentation for guidance and self-study is provided

Clinic A	Week 1					Week 2				
Time	M	T	W	T	F	M	T	W	T	F
08:00-08:45	Intro	G01T1	G01T3	G05T1	G05T3	MT04	G09T1	G09T3	G13T1	G13T3
09:00-09:45	Intro	G02T1	G02T3	G06T1	G06T3		G10T1	G10T3	G14T1	G14T3
10:00-10:45	MT01	G03T1	G03T3	G07T1	G07T3	MT05	G11T1	G11T3	G15T1	G15T3
11:00-11:45		G04T1	G04T3	G08T1	G08T3		G12T1	G12T3	G16T1	G16T3
Pause										
13:00-13:45	MT02	G01T2	G01T4	G05T2	G05T4	MT06	G09T2	G09T4	G13T2	G13T4
14:00-14:45		G02T2	G02T4	G06T2	G06T4		G10T2	G10T4	G14T2	G14T4
15:00-15:45	MT03	G03T2	G03T4	G07T2	G07T4	MT07	G11T2	G11T4	G15T2	G15T4
16:00-16:45		G04T2	G04T4	G08T2	G08T4		G12T2	G12T4	G16T2	G16T4

Clinic B	Week 1					Week 2				
Time	M	T	W	T	F	M	T	W	T	F
08:00-08:45	Intro	G13T1	G13T3	G01T1	G01T3	MT04	G05T1	G05T3	G09T1	G09T3
09:00-09:45	Intro	G14T1	G14T3	G02T1	G02T3		G06T1	G06T3	G10T1	G10T3
10:00-10:45	MT01	G15T1	G15T3	G03T1	G03T3	MT05	G07T1	G07T3	G11T1	G11T3
11:00-11:45		G16T1	G16T3	G04T1	G04T3		G08T1	G08T3	G12T1	G12T3
Pause										
13:00-13:45	MT02	G13T2	G13T4	G01T2	G01T4	MT06	G05T2	G05T4	G09T2	G09T4
14:00-14:45		G14T2	G14T4	G02T2	G02T4		G06T2	G06T4	G10T2	G10T4
15:00-15:45	MT03	G15T2	G15T4	G03T2	G03T4	MT07	G07T2	G07T4	G11T2	G11T4
16:00-16:45		G16T2	G16T4	G04T2	G04T4		G08T2	G08T4	G12T2	G12T4

Clinic C	Week 1					Week 2				
Time	M	T	W	T	F	M	T	W	T	F
08:00-08:45	Intro	G09T1	G09T3	G13T1	G13T3	MT04	G01T1	G01T3	G05T1	G05T3
09:00-09:45	Intro	G10T1	G10T3	G14T1	G14T3		G02T1	G02T3	G06T1	G06T3
10:00-10:45	MT01	G11T1	G11T3	G15T1	G15T3	MT05	G03T1	G03T3	G07T1	G07T3
11:00-11:45		G12T1	G12T3	G16T1	G16T3		G04T1	G04T3	G08T1	G08T3
Pause										
13:00-13:45	MT02	G09T2	G09T4	G13T2	G13T4	MT06	G01T2	G01T4	G05T2	G05T4
14:00-14:45		G10T2	G10T4	G14T2	G14T4		G02T2	G02T4	G06T2	G06T4
15:00-15:45	MT03	G11T2	G11T4	G15T2	G15T4	MT07	G03T2	G03T4	G07T2	G07T4
16:00-16:45		G12T2	G12T4	G16T2	G16T4		G04T2	G04T4	G08T2	G08T4

Clinic D	Week 1					Week 2				
Time	M	T	W	T	F	M	T	W	T	F
08:00-08:45	Intro	G05T1	G05T3	G09T1	G09T3	MT04	G13T1	G13T3	G01T1	G01T3
09:00-09:45	Intro	G06T1	G06T3	G10T1	G10T3		G14T1	G14T3	G02T1	G02T3
10:00-10:45	MT01	G07T1	G07T3	G11T1	G11T3	MT05	G15T1	G15T3	G03T1	G03T3
11:00-11:45		G08T1	G08T3	G12T1	G12T3		G16T1	G16T3	G04T1	G04T3
Pause										
13:00-13:45	MT02	G05T2	G05T4	G09T2	G09T4	MT06	G13T2	G13T4	G01T2	G01T4
14:00-14:45		G06T2	G06T4	G10T2	G10T4		G14T2	G14T4	G02T2	G02T4
15:00-15:45	MT03	G07T2	G07T4	G11T2	G11T4	MT07	G15T2	G15T4	G03T2	G03T4
16:00-16:45		G08T2	G08T4	G12T2	G12T4		G16T2	G16T4	G04T2	G04T4

Appendix 1.1.1.f – Recently developed Skills Net training modules

New training stations

Teat surgery - cattle
Learning objective: proper diagnosis of teat injuries, non-surgical and surgical treatment, specific suture techniques and teat wound bandaging
Location: Clinic for Reproduction, Large Animal Skills Lab

IV injection / blood extraction - dogs
Learning objective: IV injection into and blood extraction from the V. cephalica in dogs
Location: Clinic for small animals

Auscultation - dogs
Learning objective: auscultation of physiological and pathological heart and respiratory sounds using a sound simulator
Location: Clinic for small animals

Application of bandages - dogs
Learning objective: application of different bandages such as the Valpeau or Elmer sling in in dogs
Location: Clinic for small animals

Colic simulator – Horses (just ordered)
Learning objective: rectal examination and diagnosis of different colic scenarios in horses
Location: Clinic for horses

IV injection / blood extraction – horses (just ordered)
Learning objective: IV injection into and blood extraction from the V. jugularis in horses
Location: Clinic for horses

IV injection / blood extraction – rats and mice (just ordered)
Learning objective: blood extraction from the tail vein of rats and mice
Location: Institute of Animal Welfare, Animal Behavior and Laboratory Animal Science

Skills Net teaching modules

The elective course „Student learning in the Farm Animal Skills Lab“ is now offered twice per semester, offering slots for 30 students.

The clinic for small animals is in the preparation to establish a Small Animal Skills Lab in rooms of the clinic for horses. Here, practical training elements for rotation students as well as free training times will be offered in the near future.

Appendix 2.1.1.a – Draft version of the clinical year logbook

Logbook Clinical Rotation

First and last **name** of student

Year and term of clinical rotation	○ Summer term 2018	○ Winter term 2018
	○ Summer term 2019	○ Winter term 2019
	○ Summer term 2020	○ Winter term 2020
	○ Summer term 2021	○ Winter term 2021

ROTATION PERIOD "CLINICS": CONTENTS AND AIMS

	Small Animal Clinic: Have observed it	Small Animal Clinic: Performed under supervision	Equine Clinic: Have observed it	Equine Clinic: Performed under supervision	Ruminant and Swine Clinic: Have observed it	Ruminant and Swine Clinic: Performed under supervision	Animal Repro-duction Clinic: Have observed it	Animal Repro-duction Clinic: Performed under super-vision
Signalment	○	○	○	○	○	○	○	○
Communicate with clients	○	○	○	○	○	○	○	○
Perform a complete clinical examination	○	○	○	○	○	○	○	○
Perform basic first aid (emergency patient)	○	○	○	○	○	○	○	○
Use X-ray	○	○	○	○	○	○	○	○
Use ultrasound	○	○	○	○	○	○	○	○
Laboratory diagnostics: Collecting samples	○	○	○	○	○	○	○	○
Laboratory diagnostics: Storage and transfer of samples	○	○	○	○	○	○	○	○
Laboratory diagnostics: Performing standard laboratory tests	○	○	○	○	○	○	○	○
Laboratory diagnostics: Performing urine analysis	○	○	○	○	○	○	○	○
Laboratory diagnostics: Interpretation of results	○	○	○	○	○	○	○	○
Application of drugs (p.o. / rectal / s.c. / i.m. / i.v. / i.mam. / indwelling catheter insertion)	○	○	○	○	○	○	○	○
Anaesthesia including ECG	○	○	○	○	○	○	○	○
Management of wounds including bandages	○	○	○	○	○	○	○	○
Tooth restorations	○	○	○	○	○	○	○	○
Abdominal surgery	○	○	○	○	○	○	○	○
Orthopedics	○	○	○	○	○	○	○	○
Soft tissue surgery	○	○	○	○	○	○	○	○
Performing diagnostic and treatment of urogenital tract including obstetrics	○	○	○	○	○	○	○	○
Ophthalmology	○	○	○	○	○	○	○	○
Zootechnical measures (dehorning of calves, castrations, tail docking)	○	○	○	○	○	○	○	○
Recognise when euthanasia is necessary and perform it humanely	○	○	○	○	○	○	○	○
Preparation of a case report	○	○	○	○	○	○	○	○
Food chain and food safety	○	○	○	○	○	○	○	○
Assessment of animal husbandry	○	○	○	○	○	○	○	○

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ROTATION PERIOD "PATHOLOGY": CONTENTS AND AIMS

Hygiene

	Have observed it	Performed under supervision
Correct usage of gloves, gumboots, aprons and specific workwear	○	○
Correct cleaning and disinfection after necropsies (hands, gumboots, aprons, instruments, knives etc.)	○	○
Proper disposal of animal carcasses, technical details, legal regulations	○	○

Health and safety regulations

	Have observed it	Performed under supervision
Behavior in case of accidents	○	○
Correct handling of knives, scalpels and other sharp devices	○	○
Cut protection	○	○

Sampling

	Have observed it	Performed under supervision
Collection, storage and transfer of samples to etiologic diagnostic labs (amongst others parasitological, bacteriological or virological)	○	○
Collection and transfer of BSE/TSE samples corresponding to the current legal regulations	○	○
Independent biopsy sampling	○	○
Collection, transfer, processing and shipping of histological and cytological specimens	○	○

Development of theoretical and practical skills and competences in veterinary pathology

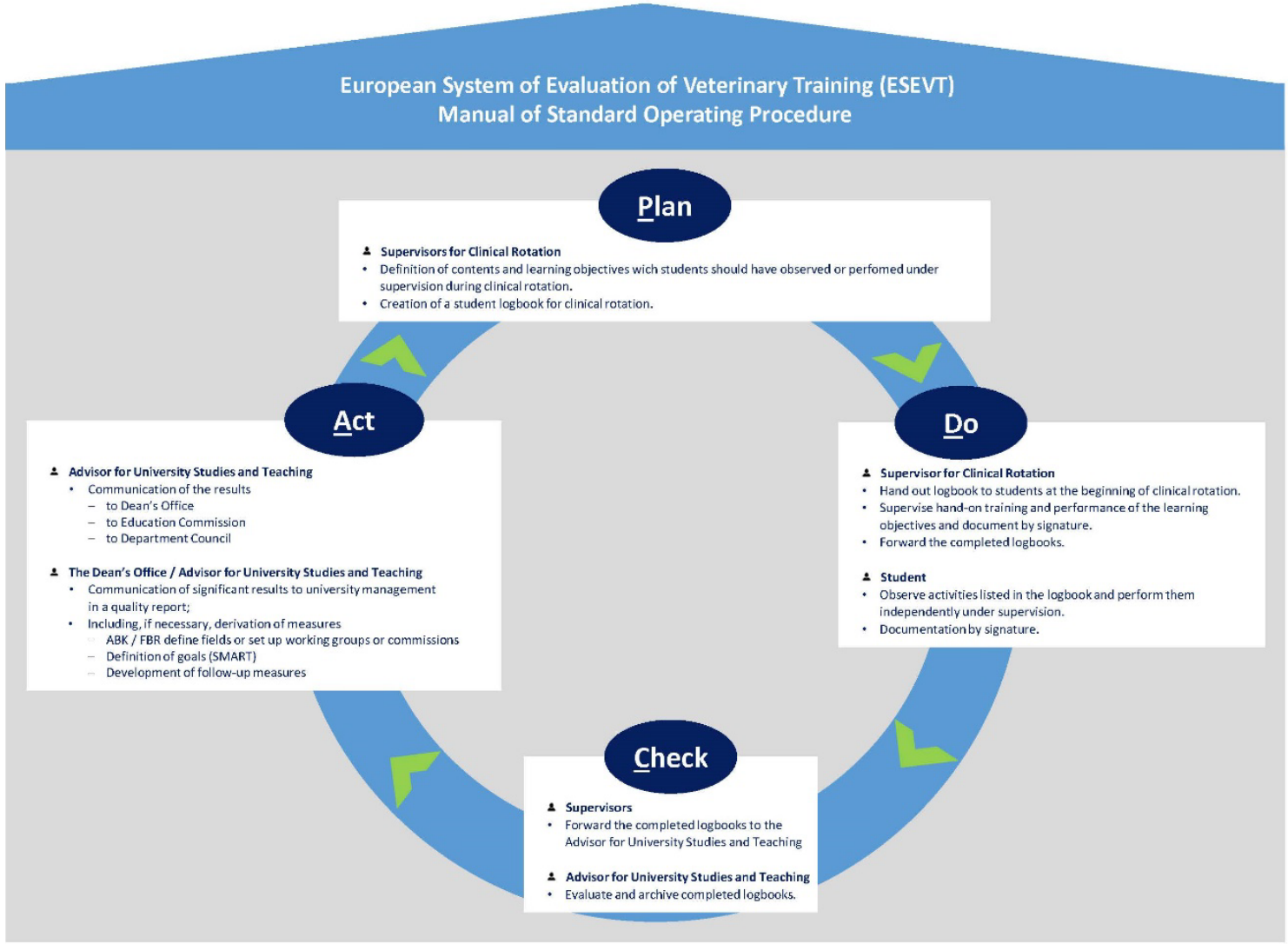
	Have observed it	Performed under supervision
Repetition and imparting of basic principles in general and special veterinary pathology	○	○
Description and interpretation of macroscopic lesions	○	○
Writing and interpretation of organ and post-mortem examination reports	○	○
Imparting of opportunities and chances of post mortal diagnostics	○	○
Veterinary pathology as a potential attractive work field for young veterinarians, including training structures and opportunities	○	○

COMMENTS OR RECOMMENDATIONS?

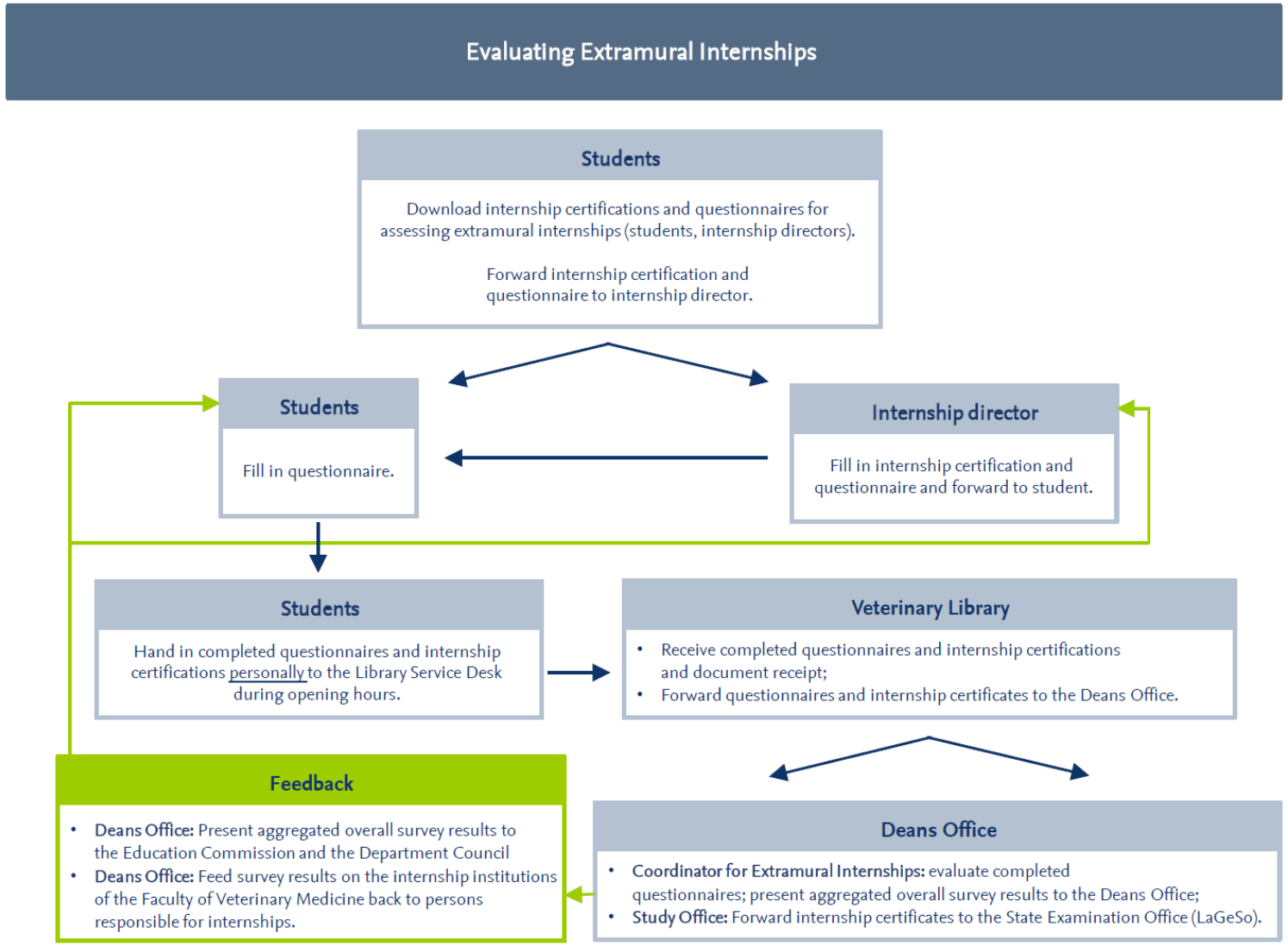
Please note here:

26240.2

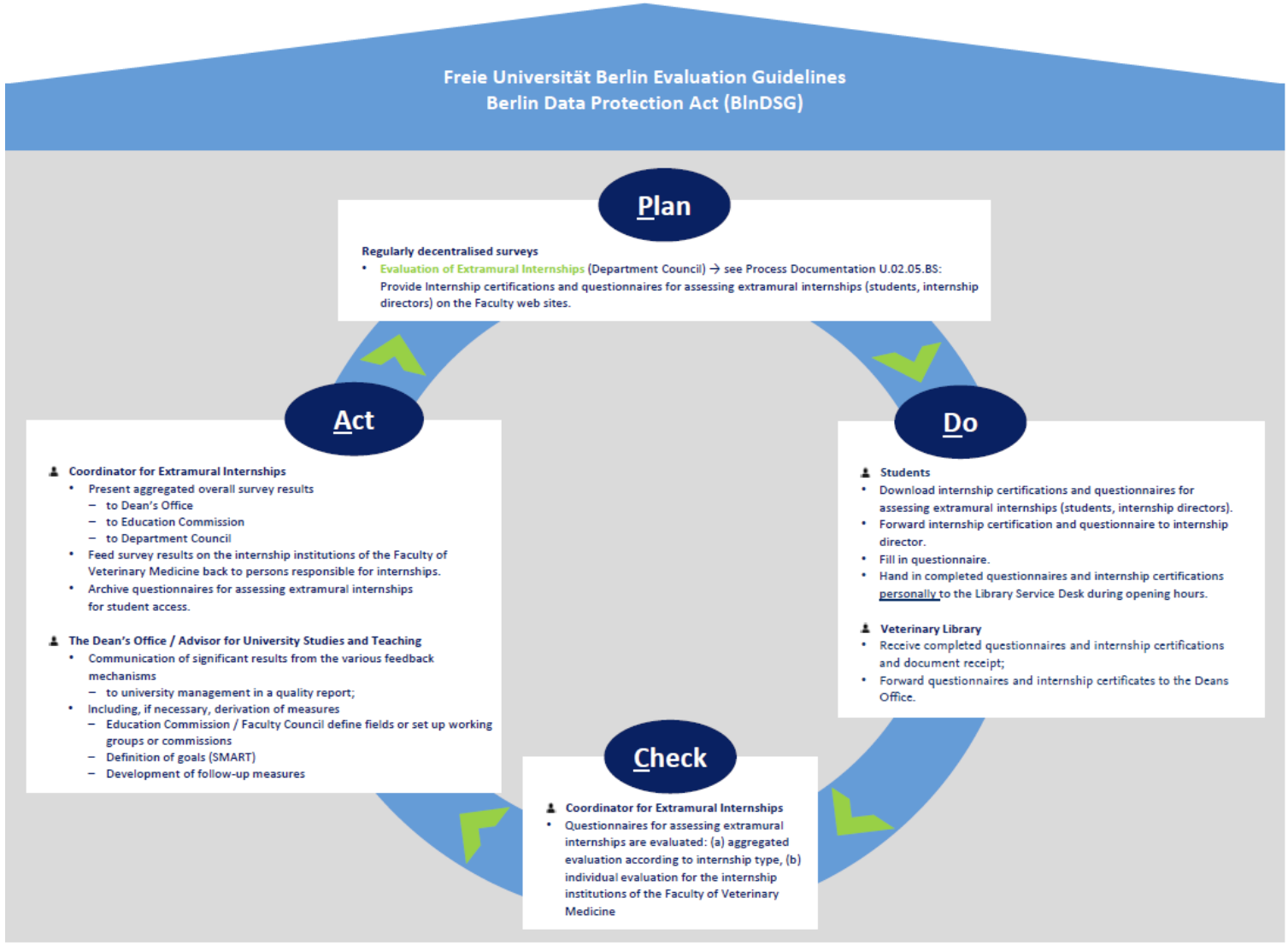
Appendix 2.1.1.b – PDCA cycle Student logbook for Clinical Rotation



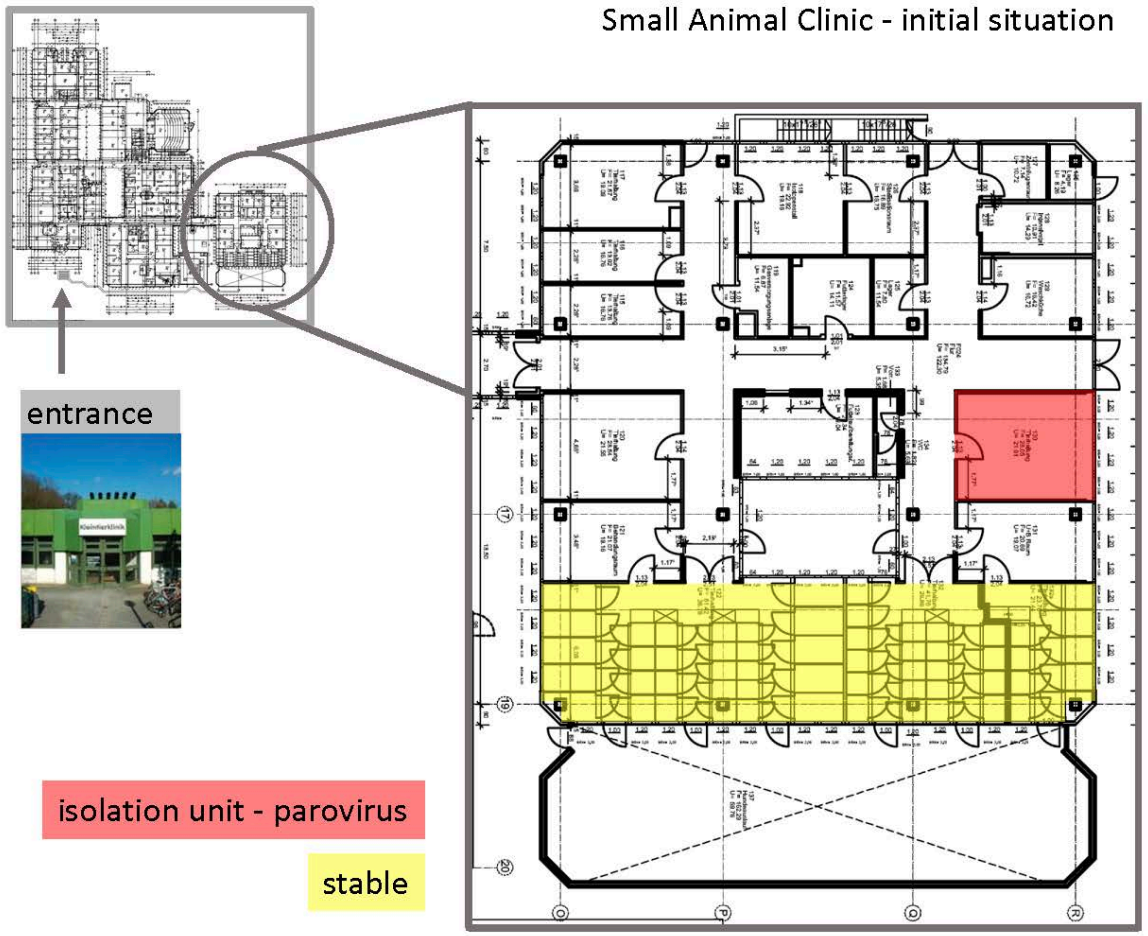
Appendix 2.2.1.a – New EPT evaluation procedure



Appendix 2.2.1.b – PDCA cycle new EPT evaluation procedure



Appendix 2.4.1.a – Initial situation in Small Animal Clinic



Appendix 2.4.1.b – Planed measures in Small Animal Clinic