

**Faculty of Veterinary medicine - FVMSZ**

**Trakia University**

**Stara Zagora**

**Bulgaria**

**Revisitation Self Evaluation Report** for the European Association of  
Establishments for Veterinary Education | **Revisitation 4 – 6 April 2022**

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## INTRODUCTION

The final report of the Visitation Team related to the official visit of the FVMSZ, 13-17 May 2019, has identified 5 major and 3 minor deficiencies. Consequently to these, a final decision of ECOVE for „NON-ACCREDITATION“ was issued on 23 January 2020. The following 5 Major deficiencies were listed in the decision: **1) Non-compliance with Substandard 3.5 because there is no acknowledgement of Day One Competences in all groups of subjects; 2) Non-compliance with Substandard 4.6 because of insufficient adherence to biosecurity, safety and animal welfare legislation in some facilities; 3) Non-compliance with Substandard 4.8 because the VTH does not provide 24/7 emergency services for companion animals and equines; 4) Non-compliance with Substandard 5.2 because of insufficient clinical training in several species; 5) Non-compliance with Substandard 8.9 because of absence of knowledge of Day One Competences affecting the overall process of assessment.**

Minor deficiencies were not listed in the decision, yet they were included in the Visitation Team report, namely: **1) Partial compliance with Substandard 3.8 because standardised evaluation by the EPT providers of the performance of the students is insufficient and no formal mechanism to provide feedback to the Establishment on the EPT programme is in place; 2) Partial compliance with Substandard 4.7 because best husbandry, welfare and management practices are not fully promoted in the Biobase facility; 3) Partial compliance with Substandard 5.6 because insufficiently completed medical records do not fully allow an effective retrieval system to efficiently support the teaching, research, and service of the Establishment.**

In December 2019, a new Dean of the FVMSZ was elected. Immediately after acquaintance with the ECOVE decision in January 2020, a FVMSZ working group of the faculty was established, with the participation of external experts from Bulgaria and abroad. The working group accepts the comments as reasonable and important. PDCA cycles establishing actions on correction of deficiencies listed in the Visitation Team Report were developed. Regardless of the 5 major deficiencies and 3 minor deficiencies, a total of 19 suggestions for improvement of FVMSZ operations were made. As a result of discussions and analyses, an action plan was developed, discussed with the Faculty Council of the FVMSZ in February 2020 and several actions were undertaken to correct the deficiencies. A SWOT analysis and operating plan, incl. financial analysis for redirecting resources to the different parts of the operational plan and action plan were elaborated. The COVID-19 pandemic emergence in March 2020 led to changes in deadlines and delay in the fulfillment of specific measures associated with external contractors and producers. Action was undertaken with regard to all deficiencies; they are explained in this Revisitation Self Evaluation Report.

The FVMSZ at the Trakia University – Stara Zagora, is accredited by the National Evaluation and Accreditation Agency (NEAA) in Bulgaria on 14 May 2020 for 6 years (until 2026) with a grade of 9.48 (from a maximum of 10.00), with capacity for training of 1200 students. The accreditation is for training in the regulated profession specialty 6.4. Veterinary Medicine, in line with the criteria of NEAA, in accordance with Directive 2005/36/EC and the state criteria for the regulated profession from 2016.

## 1. Correction of the Major Deficiencies

### 1. CORRECTION OF THE MAJOR DEFICIENCIES

#### 1.1. Major Deficiency 1: Non-compliance with Substandard 3.5 because there is no acknowledgement of Day One Competences in all groups of subjects

##### 1.1.1. Factual information

The visitation team concluded that there was no acknowledgement of Day One Competences in all groups of subjects. The curriculum must include the subjects (input) listed in Annex V of Directive 2005/36/EC and must allow the acquisition of the Day One Competences (output) (see Annex 2). This must concern all groups of subjects, i.e. Basic Sciences, Clinical Sciences, Animal Production, Food Safety and Quality, and Professional Knowledge.

##### **FVMSZ Adaptation 2020-2022**

The faculty has established measures at various levels to provide clear evidence for the association of Day One Competences in all subjects included in the curriculum. The establishment has decided to apply a PDCA cycle for amendment of curriculum learning outcomes related to the development of Day One Competences Logbook (Fig. 1). In order to address these issues, in February 2020 the Faculty Council has appointed working groups with participation of faculty members, academic and technical staff as well as student representatives to develop recommendations. A draft of Day One Competences Logbook was designed to present the association with every subject (either mandatory or elective). All competences were discussed at the department level, Clinical Committee level, Dean's Office level, Faculty Council level. A decision was made to update and revise the Curriculum Book, containing description of subjects and their learning outcomes – skills, competences, knowledge. The curriculum and ECTS credits were revised in line with Directive 2005/36/EC, the national legislation as per 2016 and ECTS provisions (ECTS Users' Guide, 2015). The results of these working groups were discussed in the Education Committee and by the Faculty Council, which formally approved the proposed measures. *For training of students, a smooth transition from laboratory work, work with Skills lab models, slaughterhouse materials, cadavers from the morgue towards work with live animals and real clinical patients is performed. The acquired competences and skills from the training in basic, preclinical and clinical subjects are used in real-time work and training with live animals.* The proposals of all taught subjects in the creation of an individual student logbook have been collected and implemented in a Day One Competences Logbook at the FVMSZ (Appendix 1). The logbook was discussed at a meeting of the Clinical Committee with representatives of undergraduate and PhD students and employers and approved by Protocol 22/13 December 2021 of the Faculty Council. The working groups, together with the Dean's Office, emphasized the need from informing the students and all stakeholders for the implementation of the logbook in the FVMSZ activities since year 2022.

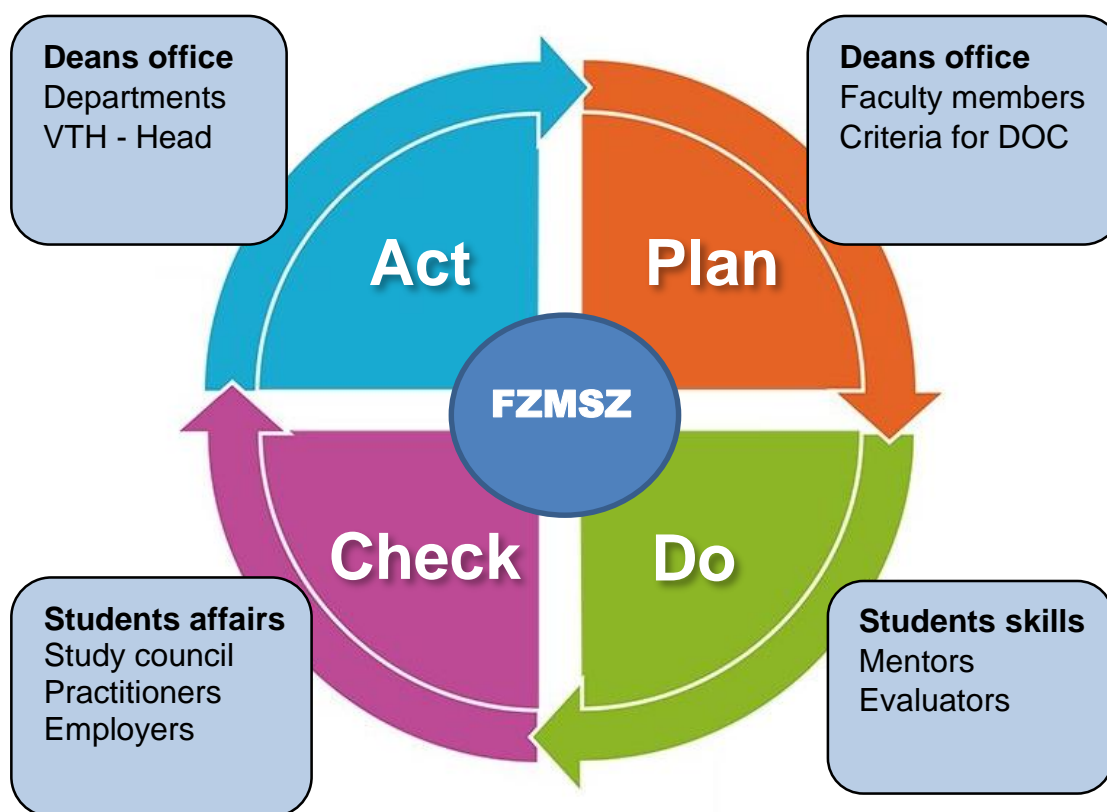
The curriculum of veterinary medicine includes basic, preclinical, clinical and food safety and quality subjects. The entity of taught courses allows acquiring the necessary Day One Competences. The FVMSZ at the Trakia University is responsible for the achievement of necessary Day One Competences by its students and guarantees that at the time of graduation, the students are prepared to fulfill their roles in all groups of taught subjects.

The student Day One Competences Logbook evidences the acquired specific knowledge and skills of FVMSZ students during the entire period of training. Its correct filling, and authentication by instructors is based on student's achievements and performance during theoretical and practical training, duties, summer practical training, in-class and extramural training.

## 1. Correction of the Major Deficiencies

The methods for authentication and grading are reliable and include different approaches – evidence for taught material and observed student performance under the supervision of the instructor. The quality control of student logbooks ensures that all clinical procedures, the theoretical and practical training included in the curriculum, were 100% completed by every student.

**Fig 1. PDCA cycle applied for students Log book Day One Competence in FMVSZ:**



**General rules for filling in the student Day One Competences Logbook during the veterinary medicine training course are created.**

The content and distribution of theoretical and practical training among the different subject groups is balanced and coordinated in a way to guarantee that newly graduated veterinarians are able to fulfill all their duties in the different fields of the profession.

The logbook contains a list of 287 competences grouped into 27 categories by subjects identifying the courses taught from the beginning to the end of training. Also, training modules where the respective activity is taught and competence level that should be achieved are also considered. The codes of respective subjects and associated skills and competences permit to identify the time, stage, way and site of their acquisition. These codes are the most direct pathway reflecting the mutual relationship between the curriculum, the study plan, the subjects and skills/competences acquired by students. The revised Curriculum book is also available after Faculty council approve (Appendix 2). The Academic Affairs Unit of the Dean's Office and the instructors are responsible for the quality control of logbooks keeping. This guarantees that all clinical procedures and practical training included in the curriculum are 100% completed by every student.

## **1. Correction of the Major Deficiencies**

### 1.1.2. Comments

The commented Student Logbook DOC is a new for us and probably, it will be improved and updated in the future. We will work towards its complete digitalization of its contents and forms.

The necessary Day One Competences have been discussed at the Round Table "Problems of Veterinary Medicine" held in November 2021 with the following participating organisations: employers from the Bulgarian Food Safety Agency, Risk Assessment Center on the Food Chain, Ministry of Agriculture and Food, Bulgarian Veterinary Union, Union of Veterinary Surgeons in Bulgaria, students and teachers. Veterinary practitioners promised to make suggestions for improving the logbook once it is approved by the FVMSZ in 2022.

Related to food quality and safety training (FSQ), materials for students were developed, including individual slaughterhouse checklists for post mortem carcass inspection and HACCP checklists for individual work. The developed materials are available in the e-learning Moodle platform to all fifth-year students. The checklists filled by students will be collected from 2022 in the Department of Food Quality and Safety and Veterinary Legislation for ongoing assessment of student skills and knowledge and archived.

### **1.2. Major Deficiency 2: Non-compliance with Substandard 4.6 because of insufficient adherence to biosecurity, safety and animal welfare legislation in some facilities.**

#### 1.2.1. Factual information

The visitation team concluded that there is insufficient adherence to biosecurity, safety and animal welfare legislation in some facilities. Facilities must comply with all relevant legislation including health, safety, biosecurity and EU animal welfare and care standards.

#### **FVMSZ Adaptation 2020-2022**

The faculty has established measures to identify deficiencies and to attain a high level of practical implementation of legislation and advances in biosecurity, safety and animal welfare legislation in all FVMSZ facilities. A Central Biosafety and Work Safety Committee comprising 7 people was appointed, as well as a Central Animal Welfare Committee, also with 7 people. Several deficiencies in academic and support staff training, in systems and facilities, lack of biosecurity signage and laboratory safety levels signage and lacking documentation and operating protocols in some units with live animals were determined.

An investigation on codes of good practices in VEE in Europe and Germany was conducted (February-May 2020). A photo album with repair plan for introduction of effective biosecurity systems and formal rules for working with animals was made (May 2020). After detailed financial analysis, some of 2021 budget funds were directed to ensure a high biosecurity and animal welfare level by repair work and reconstruction in facilities and premises for live animals, including the morgue and necropsy room. A new guide for "Biosafety of FVMSZ" were developed including specific Biosecurity signage and identification of Restricted area (Appendix 3). In 2020, the trailer for transportation of live animals has undergone an overhaul: new construction; the floor, walls, and board were equipped with additional safety systems. Three new PPE biofilters (entrance rooms for Personal Protective equipment) were built for students, teachers and employees entering the facilities with live animals. All drivers and facility workers were included in Animal welfare training programs (in 2020 and 2021). All newly appointed assistant professors were also trained in the same way (in 2020).

In facilities for live animals, action was undertaken for establishing microclimatic indicators, living area in square meters per animal, dietary regimen, working protocol with animals with the participation of students and staff. New yards for cows, sheep and goats were built (July 2021). A new outdoor electric fencing solution for ruminants is planned (its building

## 1. Correction of the Major Deficiencies

was delayed because part of the territory is currently used for the new construction of the Aquaponics recirculation system. The construction of 80 m<sup>2</sup> outdoor self-play yard for dogs is planned (deadline July 2022). The horse riding area was supplied with automatic water system in 2020, including an emergency water supply of the horses and donkeys' sector and of the entire Biobase. The contract for delivery and storage of hay, straw, fodder, as well as dietary norms for the different animal species were updated. In 2020, an English-speaking manager of the live animal base (Biobase) was appointed. The study programme after the second year includes a formal mandatory schedule for daily duties of students in the Biobase. The students, together with the manager, check the microclimatic parameters in all the premises, safety and biosecurity measures, the condition and feeding of animals, cleaning and housing conditions.

In 2021, web based video monitoring by 32 cameras was installed on the Biobase and VTH sites, including the morgue. In 2020, automatic barriers were installed on the route leading to the Biobase and the route to the morgue (Appendix 4). In 2021, the construction of a new room for healthy cats was completed, equipped with all necessary items and welfare systems. Farms and equipment companies were consulted to provide a modern facility for laying hens in line with the latest EU requirements of 2021 for welfare at farming. Reconstructions are planned for 2022-2023 for modernisation of demonstration premises for broilers and pigs over 40-110 kg, including ventilation, fodder and water supply systems.

The building of new constructions with two disinfection tunnels for vehicles transporting live animals and animal carcasses is planned for the beginning of 2022. Until the end of 2022, a new 14 m<sup>2</sup> (-20°C) freezer chamber is planned to be placed in the new closed sandwich panels hall (80 m<sup>2</sup>) external structure to close the connection between the current refrigerator chamber (16m<sup>2</sup> at +4°C), the new freezer chamber (14 m<sup>2</sup> at -20°C), the available necropsy room for students and the entrance row for incinerator cars (Appendix 5). This restricted area will cover all the necessary biosafety rules. Manuals with instructions and guides were developed presenting working rules with biological material, microorganisms and live animals for every FVMSZ unit (departments, VTH, the Biobase).

In 2021, all written rules pertaining to each subject were revised, and in addition to the safe work and protective clothing instructions, new instructions for biosafety for work with biological material, microorganisms and live animals (laboratory, productive, pets, etc.) were developed (Appendix 4). These rules were harmonized with the current EC and national legislations and as from 2022, new biosafety and bioprotection protocols were developed. Rules for performing briefings with the staff and the students are implemented. New workplace first aid kits, eye wash solutions and eye washing units were purchased. The entire body of information on biosafety, good laboratory and clinical practices is printed and posted in prominent places and animal facilities in Bulgarian and English. Work clothing and special personal protective equipment are provided in each department, clinic, morgue and the Biobase. Contact of personal clothing with animals is not allowed. A personal protective clothing design is currently developed for students working on farms during the extramural training, as the design-project is from Germany.

Currently, the chemistry, biochemistry, microbiology labs are re-equipped. Deficiencies and insufficiencies in the storage of chemicals (alkaline, acids and other chemicals) were eliminated. Instructions for work and storage of chemicals and working reagents were elaborated. Work is underway to improve the premises, the ventilation and construction of storage rooms. Import of food and drinks in laboratories or refrigerators for storage of reagents, samples, etc. is not allowed. All laboratory glassware and containers are labelled; the access to them is limited. In 2020, contracts for the disposal of hazardous chemical and biological substances were signed - one contract for chemical substances with the "ECOMA" company and another for biological samples and carcasses with "Ekarisazh Shumen - Bramas-95 AD" company. The contracts are renewed every year.

## 1. Correction of the Major Deficiencies

The storage of medicines (drugs) already obeys new rules, all are stored in special cabinets and storage rooms (pharmacy) with limited access. The web based software "VetManager" of VTH is with monitoring functionality of the expiration date of all purchased drugs. All drugs are labelled. A pharmacist has been appointed in the summer of 2021. Fire extinguishers are installed in all laboratories and other fire-hazardous zones. New fire safety equipment was installed in the animal facilities and feed storage sectors. A new smoke and fire alarm system was installed in 6 floors study Building Nr.7.

In 2021 the FVMSZ applied for and received a permit for registration of vaccinated animals in the national system of the BFSA, with passwords and user profiles. Five instructors from the Department of Infectious and Parasitic Diseases were trained.

### 1.2.2. Comments

In 2022, a rulebook "Biosafety and safe work in FVMSZ units" will be published – it will comprise about 250 pages with illustrations of all pictograms and biosafety levels and symbols.

In 2022, a book with rules for animal welfare, incl. laboratory and experimental animals in the FVMSZ bases" and implementation of these rules in the activities of VTH will be published.

FVMSZ is the leading establishment in Bulgaria with proven competence, which is eligible to perform training for animal husbandry welfare, transportation of animals for slaughter and humane slaughter of all species of animals. The major part of these trainings in Bulgaria were conducted through the FVMSZ.

## 1.3. Major Deficiency 3: Non-compliance with Substandard 4.8 because the VTH does not provide 24/7 emergency services for companion animals and equines.

### 1.3.1. Factual information

The visitation team concluded that VTH did not provide 24/7 emergency services for companion animals and equines. Core clinical teaching facilities must be provided in a VTH with 24/7 emergency services at least for companion animals and equines, where the Establishment can unequivocally demonstrate that standard of education and clinical research are compliant with all ESEVT Standards, e.g. research-based and evidence-based clinical training supervised by academic staff trained to teach and to assess, availability for staff and students of facilities and patients for performing clinical research and relevant QA procedures. For ruminants and pigs, on-call service must be available if emergency services do not exist for those species in a VTH. The Establishment must ensure state-of-the-art standards of teaching clinics which remain comparable with the best available in the private sector.

#### **FVMSZ Adaptation 2020-2022**

The faculty has established a new structure of the 24/7 VTH. Before 2020, the three main clinics of the FVMSZ were within the structure of University Clinical Diagnostic Unit (UCDU). From the beginning of 2020, the FVMSZ Action Plan has developed a strategy for a 24/7 operating VTH to the Establishment. By decision of the Academic Council of the Trakia University – Stara Zagora, the new structure of the Veterinary Teaching Hospital was created in line with art. 26, (1), p. 4 of the Veterinary Law in the Republic of Bulgaria (Protocol 12/25 November 2020). In February 2021 the Statute for VTH operating 24/7 activities was approved and it came into force from 1 March 2021 (Appendix 6). In the BFSA register, the new VTH was registered at 28 April 2021. Apart the existing academic staff members and VTH personnel, another 8 veterinarians were appointed. A new working schedule was created for 24/7 working schedule in compliance with labour legislation.



## 1. Correction of the Major Deficiencies

The new structure of the Veterinary Teaching Hospital with Clinics includes main and auxiliary units. The main units are: Small Animal Clinic with Hospital; Farm Animal Clinic with Hospital; Equine Clinic with Hospital. The auxiliary units are: Registration, Laboratory and Diagnostic Centre (including clinical laboratory, microbiology and virology laboratory, histopathology and cytopathology laboratory, infectious and parasitic diseases laboratory, X-ray unit with computed tomography, infectious and parasitic diseases unit with isolation premises by species; animal reproduction and reproduction health control unit, rehabilitation center with physiotherapy unit, morgue with necropsy room, veterinary pharmacy, Biobase - animal reference center, animal mobile service unit, VetsiM educational Skills lab center with telemedicine, transport, repair, and support unit.

Since March 2021, the management body of the VTH consists of a manager, who rules together with the Board of Directors (3 people) and Clinical Board (17 people). The FVMSZ budget specifies the funds for operation of each of the substructures for training the students through evidence-based and research-based medicine.

Before the establishment of the VTH, the analyses made by the FVMSZ authorities showed the need for investment and elimination of gaps in student training and the lack of electronic archiving of patient files, including lack of available and promising data for financial analysis.

Renovation and additional equipment in operating rooms, operating rooms, X-ray and computed tomography unit, rooms for ultrasound and laboratory tests were planned: they already have a new vision.

There was an imbalance in the 2020 Report on VTH patients by species, extramural equine and dog patients were absent, and others were insufficient for the number of students in their last study years (study year 3, 4 and 5).

The decision of the Dean's Office and VTH management is to develop and implement legal opportunities for participation of external farms in the training of students through contracts. The aim is to provide extramural treatment to equine and small animal patients or for birds (poultry and laying hens) and pigs. The contracts for medical activity induce worries and rivalry between the VTH units and the practicing veterinarians, on the territory of which trainings and therapy are carried out from VTH clinics.

To support the decision about increased number of extramural patients outside the faculty structure, talks with various farms were held in 2020. In 2021, new contract forms were adopted with layer and VTH service contracts were signed with: Stara Zagora Zoo, Aytos Zoo, Official dog breed Kennel of the Ministry of Interior in Stara Zagora, Shelter for stray dogs/cats to the municipality of Plovdiv, NIESA Horse base - Ihtiman, Stable Bonev Horse base - Stara Zagora, Green Balkans Wildlife Rescue Center in Stara Zagora. A contract is in the process to be signed with the dog/cat Shelter of the Stara Zagora municipality.

With 24/7 VTH start, a new software "Vet Manager" was introduced for patient registration and training of undergraduate and postgraduate students through patient records. The software was developed by a Bulgarian IT company in 2020 for the needs of the FVMSZ. At the VTH Registration office (patient reception office), each patient is entered into the database, and by means of individual chip-cards each veterinarian enters the diagnosis, manipulations, tests, drugs, etc. (Appendix 7). Each patient receives a detailed printout of the performed activities, tests and spent medications from the hospital with their price. Students are trained through real data from patient records or during manipulations together with veterinarians and academic staff.

By decision of the Faculty Council, an formal mandatory rotation schedule was introduced for 24-hour duties at the VTH with 5- and 4-year students from September 2021. The schedule is for daytime training and nighttime shifts training of all students, and is mandatory. For the night hours, the main laboratory activity is carried out in a mini-lab (blood and urine) on the territory of the Small Animal Clinic.

## 1. Correction of the Major Deficiencies

Necessary care for hospitalized patients for therapy and rehabilitation is provided by appointed veterinarians and students. Students on duty are trained in line with prescribed treatment methods, drugs and drug dosages.

Two new units are included in the VTH activities: Animal mobile service unit and VetsiM educational simulation center with telemedicine services. In 2021, additional vehicles were purchased - minibuses 8+1 seats, so that students and veterinarians can go on site to see the patient (Appendix 8). External diagnostics, treatment and service activities are performed in different regions located at a distance from 100 to 250 km with two mini-bus 4+1 cars with two attending veterinarians. Contracts for mobile services were signed with farmers and cattle and sheep farms. An average of 350 animals/monthly are served by veterinarians and students within the framework of the Animal mobile service unit. The mobile service is consulted by EBVS from Germany. A partnership agreement for the exchange of students, teaching staff and experience in good practices was signed.

### 1.3.2. Comments

The main flow of patients needing care and service is at the Small Animal Clinic. For productive animals, the flow is mainly outside the VTH site. In the case of horses, operations and manipulations are performed at the VHT, and in the case of service contracts - mainly out of the hospital or patients are post operatively hospitalized in VTH facilities. There is increased interest among veterinary medicine students to VTH training with dogs and cats and declining interest in horses and productive animals.

The basic training of students takes place during the day. Taking into account the numerous staff members, multiple working units and opportunities to perform the most complex veterinary interventions and diagnostic tests, the resulting product – acquired knowledge and skills, is of the best quality. The night shift poses a burden on the FVMSZ budget. Rooms for night-shift undergraduate students, a mini lab and conditions for field work were created. Emergency medicine and critical care are further developed. Links were established with an EBVS diplomate in New Zealand in the area of emergency medicine. For the library, veterinary literature is to be purchased. The night shifts is of use first of all for the society, the animal owners and the animals themselves.

## 1.4. Major Deficiency 4: Non-compliance with Substandard 5.2 because of insufficient clinical training in several species.

### 1.4.1. Factual information

The visitation team concluded that there is insufficient clinical training in several species. It is essential that a diverse and sufficient number of surgical and medical cases in all common domestic animals and exotic pets be available for the students' clinical educational experience and hands-on training.

#### **FVMSZ Adaptation 2020-2022**

The faculty has established several measures at different levels to increase the number of animal patients for hands-on training. It should be noted that not all animal patients were entered in the previous registration system operating before 2021. These deficiencies were corrected as from March 2021 parallelly with establishment of the new structure (University Veterinary Hospital with Clinics) and the new software “Vet manager” and video control with 32 cameras.

As a result from the policy of the Trakia University – Stara Zagora to reduce costs and especially the lack of modernization in the University Horse Base in the period 2015-2019, the interest of outer farms and individuals to work in partnership with the University VTH has decreased and hence, fewer patients had come on site to the FVMSZ. For the most part, the

## 1. Correction of the Major Deficiencies

animals were examined and vet. serviced outside of the faculty clinics, but without being entered in the patient registry system, due to lack of appropriate software and VTH operating 24/7.

The new policy of the Trakia University is to restore the partnership with the business through modernization of the Study Farm (140 000 m<sup>2</sup>), restoration and modernization of the Horse Base (240 000 m<sup>2</sup>). A project "Intelligent Animal Husbandry" funded with 4 500 000 BGN has been signed to serve as a training site of the University. In 2020 and 2021, 120 dairy Simmental cows as well as 94 Galloway beef were purchased from Germany, as well as 300 sheep. From 2022, a decision to build a partner base named "Rehabilitation center for horses" in the University Horse Base and at the site of a business partner with 120 sport horses and 30 horses for amateur riding and walking, was taken.

The FVMSZ authorities understand the importance of communication and practical working skills of students with different animal species, therefore the establishment allocates significant resources for research, analysis and negotiation to increase VTH patients from different animal species and extramural patients from partner bases available for training students with the participation of instructors from the VTH. The entire cycle of student training was analyzed to introduce a variety of preclinical, clinical and hands-on training with different animal species. At the same time, restrictive measures to limit the number of animals used for training students, including students of veterinary medicine, are increasingly approved. This shifts the focus from real live animals and patients to 3D models, organs, virtual simulators, digital technologies and case study reports. It was basically developed in support study at Covid 19 pandemic situations.

In 2020, the FVMSZ has purchased Virtual Reality (VR) equipment from Karlsruhe, Germany, which will be installed in 2022 and put into operation for the training of students on renovated territory in halls with a total area of 2000 m<sup>2</sup>. Access to a web-based software application for "3D dog anatomy" for teachers and students has been purchased in 2021. The plans for 2022 include also user accounted access to the software application "Diagnostic Imaging Atlas"® for all animal species in the Skills lab simulation center of FVMSZ and "Visio Care Services"® software for students in the VTH patient examination room.

Undergraduate FVMSZ students have the opportunity to acquire new knowledge and skills through direct work and manipulations with different species of animals both on the FVMSZ site and in partner organizations outside it. Thus, the FVMSZ authorities undertake decisive steps to increase the number of animals examined by students.

During the preparation of the 2019 SER, some elements and details providing evidence about the direct work and training of students with ruminants, small animals and horses were omitted. The lack of clinical rotation typical for many universities during the ninth and tenth semesters is compensated by learning, work and practical training, whose thematic focus along with the commitment of students provide adequate opportunity to acquire the necessary knowledge and Day One Competence.

*The training of students is outlined with a smooth transition from lower to upper years, increased work with models, dummies, slaughterhouse materials and organs, carcasses from the morgue, demonstration of skills and handiness, and only then - work with live animals and real patients. The acquired competencies and skills in the basic, preclinical and clinical subjects are implemented in the real work and training with live animals.*

**FVMSZ Skills lab center.** On May 11, 2021 was established the first in Bulgaria veterinary medicine simulation center "VetsiM". It is equipped with dummies, simulators, clinical equipment, devices, instruments and consumables (Appendix 9). The center is located on a territory of 150 m<sup>2</sup> in a separate building. In line with animal welfare principles and for simulation of clinical work environment at the greatest extent, students are trained to perform

## 1. Correction of the Major Deficiencies

basic clinical skills, train to cases with the “Vet manager” software or to work and practice various techniques without causing pain and suffering. It is equipped with 8 workstations and is constantly expanding, developing and updating. Books for Skills lab center have been purchased.

The veterinary Skills lab center „VetsiM” conducts hands-on training in the following fields: surgery, anaesthesiology, ultrasonography, manipulations, laboratory analyses, training on venous access, for urinary bladder catheterisation ([www.openmedis.pl](http://www.openmedis.pl) ; [www.erler-zimmer.de](http://www.erler-zimmer.de)). It is managed by a veterinarian with specialisations in the field of management and personal development; on 6 October 2021, a second English-speaking veterinary, responsible for the development of the center and the Telemedicine module, was appointed. Every week, the center announces a “Topic of the Week” on its [Facebook page](#) which is presented in details in specific hours of weekdays to a group of students (group training). If a student desires to exercise on another topic, he/she may choose an independent form of training with or without instructor, who in this case act as a coach and gives advices in case of questions (coaching). Registration of a hour for training in the Center is done at least 2 days in advance through an [online form](#) available in Bulgarian and English in the Facebook page.

New makets of horses, cows and dogs were purchased and are available on the territory of the individual clinics; they are used for training in obstetrics, performing diagnostic tests and operations. All students willing to practice different activities, work in groups on a preliminary schedule. In 2021, a 3D printer was purchased for the Department of Anatomy. The technology for making artificial organs, details, parts, tools and other aids used in veterinary practice is currently being develop by connecting a new Siemens computed tomograph (CT after tender in 2021) to the 3D printer (since 2021) available in dep. of Anatomy.

*The work with slaughterhouse preparations and dummies is performed mainly in association with training in anatomy, animal reproduction, general and operative surgery. The different departments and clinics receive slaughterhouse materials for training of the students – internal organs, horns, hooves etc. Table 1 presents the number of hours spent in practical training with slaughterhouse preparations, makets and cadavers.*

The training of students with the different animal species is done in the Small animal Clinic, Equine Clinic, Farm Animal Clinic, with patients or animals owned by the Trakia University or the FVMSZ Biobase.

The main activities of the clinics with participation of students are in several areas: first, diagnosis, outpatient and inpatient treatment of sick animals. This is closely related to providing farm animal patients for conducting clinical training classes on FVMSZ site. Within the framework of their activity, the instructors, specialists and the staff assist in the organisation and implementation of scientific projects, seminars and trainings carried out in the FVMSZ. They provide vet. services and expert advice on issues related to animal husbandry in the field outside the establishment.

## 1. Correction of the Major Deficiencies

*Table 1. Hours of practical training with dummies, slaughterhouse preparations, patients and animals from the Biobase and Experimental farm*

Subject	Hours of practical training	
	Work with dummies or slaughterhouse preparations	Work with animals and patients (species)
Animal reproduction	-	22 (cows, sheep)
Obstetrics	10	18 (cows, small ruminants)
Radiology – obstetrics	-	4 (all species)
Farm animal obstetrics	-	28 (cows, small ruminants)
Equine obstetrics	-	6 (horses, donkeys)
Small animal obstetrics	-	20 (small animals)
Mobile clinic – obstetrics	-	16 (cows, small ruminants)
Propaedeutics with clinical laboratory	-	60 (all species)
Radiology – internal diseases	-	2 (small animals)
Internal non-infectious diseases (general)	-	60 (all species)
Clinical toxicology	-	30 (all species)
Farm Animal Internal non-infectious diseases	-	30 (cows, sheep, goats, poultry)
Equine Internal non-infectious diseases	-	10 (horses, donkeys)
Small animal internal non-infectious diseases	-	15 (small animals)
Mobile clinic - internal non-infectious diseases	-	12 (cows)
General surgery	2	18 (all species)
Operative surgery	5	10 (all species)
Radiology	6	4 (all species)
Anaesthesiology and critical care medicine	-	8 (all species)
Physical therapy	-	8 (all species)
Veterinary dentistry	4	4 (all species)
Ophthalmic surgery	1	7 (all species)
Farm animal surgery	5	10 (cows, small ruminants)
Equine surgery	7	8 (horses, donkeys)
Small animal surgery	-	30 (small animals)
Exotic animal surgery	-	8 (different species)
Mobile clinic - surgery	-	16 (cows, pigs)

*On-site work with patients and animals in the clinics is carried out in the following subjects: animal reproduction, general and operative surgery, propaedeutics, anaesthesiology and critical care medicine, non-infectious diseases of farm animals, horses, small animals. Usually, animals of different species kept on the Biobase or the Experimental farm are used for this purpose. Tables 2 and 3 show the number of practical training hours with patients and animals from the Biobase and the Experimental farm.*

## 1. Correction of the Major Deficiencies

*Table 2. Annual number of animals housed in the FVMSZ Biobase*

<b>Annual number of animal species (in 2021 in the Biobase)</b>	<b>Number</b>
cows	44
sheep	50
goats	43
dogs	14
cats	6
pigs	11
poultry	172
horses	37
donkeys	7

*Table 3. Number of animals in the Study Farm of the Trakia University.*

<b>Animal species (annual report for 2021)</b>	<b>Number</b>
Cows (annual calves)	214 (175)
Sheep (annual lambs)	320 (420)

Since 2021, a contract with the "Ko-Ko" laying hens farm in Stara Zagora was signed for the provision of laying hens for students training. The farm has a capacity of 7,258 laying hens. Due to the emergency situation in Bulgaria with Highly pathogenic avian influenza, from 2020 visitors are not allowed. Under the contract with the farm, a minimum of 100 birds per year will be provided on the FVMSZ Biobase for training of 3<sup>rd</sup> to 5<sup>th</sup> year students, for examination and manipulations at the Biobase.

The Faculty of Veterinary Medicine maintains partnerships with several farms, and with some of them, contracts were signed. The performance of treatment and prophylactic activities are among the prerequisites for admission in the farms. They are conducted together with the students and allows direct contact of students with a large number and variety of patients on farms (Table 4 shows the number of animals in individual farms).

## 1. Correction of the Major Deficiencies

*Table 4. Number of animals in the partner farms for training of students, diagnostics and treatment.*

<b>Farm (with or without contract), city/settlement</b>	<b>Number and animal species</b>
Cattle farm POPOVITSA "Elite 95"	Cattle - 3000 dairy cows
Cattle farm in the village of Zagore	Cattle - 190 dairy cows
Cattle farm in the village of Gita	Cattle - 170 dairy cows
Cattle farm in the village of Bozduganovo	Cattle - 100 dairy cows
Cattle farm in the village of Byalo Pole	Cattle - 90 dairy cows
Cattle farm Maglizh - cooperative	Cattle - 80 dairy cows
Cattle farm Maglizh - private Tatiana	Cattle - 50 dairy cows
Cattle farm in the town of Kran	Cattle - 200 dairy cows
Cattle farm UOS - Stara Zagora	Cattle - 100 dairy cows
Cattle farm in the village of Yasenovo	Cattle - 50 dairy cows
Cattle farm in the village of Zagortsi	Cattle - 100 dairy cows
Cattle farm in the village of Yazdach	Cattle - 250 dairy cows
Cattle farm in the village of Dyadovo	Cattle - 350 dairy cows
Cattle farm in the village of Spasovo	Cattle - 300 dairy cows
Sheep farm Maglizh	Sheep - 200 sheep
Sheep farm in the village of Byalo Pole	Sheep - 300 sheep
Sheep farm UOS - Stara Zagora	Sheep - 500 sheep
Sheep farm in the village of Vasil Levski	Sheep - 200 sheep
Sheep farm in the village of Zagortsi	Sheep - 1050 sheep
Sheep farm in the village of Yagoda	Sheep - 150 sheep
Sheep farm in the village of Dabovo	Sheep - 200 sheep
Pig Farm – Stara Zagora “Evrovarhat”	Pigs - 60 pcs. - educational
Horse base “Niessa”	A total of 3000 pcs.
Horse base “Stable Bonev”	Horses 70 pcs.

In 2020 and 2021, contracts were signed with farms rearing different animal species, shelters for dogs and cats, as well as with zoos (see chapter Major Deficiency 3). Periodically, students pay visits to the specified sites under the supervision of an instructor. Together with the hosts, they perform examinations, specialised examinations, including ultrasound, various medical and diagnostic treatments, pregnancy detection, collection of blood and faecal samples

## 1. Correction of the Major Deficiencies

for etiological diagnosis. At the same time, the skills related to conducting a physical examination, approach, actions, services, manipulations with animals and handling, essential for all future veterinary specialists, are improved. Students also participate in operations, mostly skin surgery and castrations.

The performed training at farms is of several types.

1. **Practical training with 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year students.** At farms, students perform practical training in “Genetics and Breeding“, „Animal Breeding“, „Animal Hygiene and Technologies“, „Epidemiology and Preventive Medicine“. Students are transported by a university bus to the farm and are brought back after the classes. One instructor supervises a study group of 7-10 students.

The specifics of the activities and the work with some animal species in most cases does not allow to bring patients from farms to the Farm Animal Clinic. Generally, veterinary activities, treatment, diagnostics and related training in farm animals are carried out on extramural farms that provide the largest possible number of patients for students to work with.

That is why, the Farm Animal Clinic, together with responsible staff from the clinical departments, organizes the extramural training in Farm Animal Diseases, Mobile Clinic, and Herd Health Management (9<sup>th</sup> and 10<sup>th</sup> semester). During the last year of study, approximately 150 visits to farms are performed for training in obstetrics, internal diseases, surgery, parasitic and infectious diseases .

2. **Practical training in non-infectious diseases of farm animals** – obstetrics, internal diseases, and surgery. A total of 5 visits to farms, each with duration of 6 academic hours, are performed. Three to four student groups are transported to farms, with rotation among the different subjects. One instructor is in charge of 7-10 students. During their work with patients, the students take notes in diaries and consequently, help with registration of patients in the electronic system.

3. **Practical training in “Mobile Clinic” and “Herd Health Management” is carried out in partner external farms from years.**

During the 5<sup>th</sup> year of studies, students visit farms and work with animals within the frame of Mobile Clinic - obstetrics, internal diseases, surgery, infectious and parasitic diseases. The training duration is 4 academic hours. One instructor is in charge of 7-10 students.

The practical training in "Herd Health Management" is carried out in large and modern cattle farms. During the classes, students are acquainted on the spot with rearing technology, nutrition, relevant diseases, care for animals, and other management and technical issues. This subject unites and summarizes knowledge in all clinical areas. Students conduct two practical trainings of 4 academic hours during the 10<sup>th</sup> semester.

The skills in herd health management and analysis are constantly improving. Future veterinarians are prepared to practice at farms with productive animals, managed at the herd level where the health of the individual is only a part of general herd health. In this regard, there is an interaction between the subjects epidemiology, infectious diseases, internal diseases, reproduction and obstetrics, surgery. Arrangements for visiting different farms, including the University farm, provide students with the opportunity to acquire skills for a general view on herd health, analysis of individual parameters reflecting the productivity, health status, prevention, and analysis.



## 1. Correction of the Major Deficiencies

Students are given the chance to communicate with owners, animal farmers, thus obtaining an excellent idea about the real conditions and problems in the practice.

The subject Herd Health Management is taught by the end of the 10<sup>th</sup> semester. This subject gives a general framework of all the knowledge gained so far from a number of other previous study subjects. The herd aspect of working knowledge and skills is not accumulated only from the "Herd Health Management" subject. The suitable example is the Mobile Clinic, as students travel to farms (with own university transport vehicle), and for the most part the thematic units allow acquisition of skills and hands-on training within: diagnostics, treatment and prevention at the herd level. Information on this is given in Table 5.

**Table 5. Practical training at farms allowing the students to acquire diagnostic, therapeutic and prevention skills at the herd level**

<b>Themes - subject</b>	<b>Часове</b>
<b>Obstetrics, reproduction and reproductive disorders - mobile clinic</b>	<b>16</b>
Survey of udder diseases prevalence at cattle farms	4
Clinical methods for diagnosis of pregnancy in cows and sheep	4
Diagnosis and treatment of uterine diseases in cows	4
Diagnosis and treatment of ovarian diseases in cows	4
<b>Internal non-infectious diseases - mobile clinic</b>	<b>12</b>
Prophylaxis of the traumatic diseases of the pre-stomach in large ruminants.	4
Prevention of diseases of the respiratory system in adolescent calves.	4
Prevention of diseases of the digestive system in adolescent calves	4
<b>Veterinary surgery - Mobile clinic</b>	<b>2</b>
Diagnostics and treatment of locomotor disorders in cattle	2
<b>Parasitic diseases - Mobile clinic</b>	<b>12</b>
Preparation, organization and performance of prophylactic and curative dehelminthisation against trematodes of flocks of sheep or goats. Preventive studies of sheep dogs.	4
Preparation, organization and performance of prophylactic and curative dehelminthisations against nematodes in flocks of sheep or goats. Prophylactic dehelminthisation of sheep dogs.	4
Preparation, organization and execution of curative and preventive measures against ectoparasites in cattle-breeding farms.	4
<b>Infectious diseases - Mobile clinic</b>	<b>12</b>
Allergic test for bovine tuberculosis	4
Biosecurity programs in industrial animal husbandry	4
Border veterinary control.	4
<b>Herd Health Management</b>	<b>8</b>
Practical application of "Veterinary herd control system" farm surveys – feeding and breeding technologies, contagious diseases, parasitic diseases.	4
Practical application of "Veterinary system for control of the herd" farm survey – obstetrics, internal diseases, surgery	4

## 1. Correction of the Major Deficiencies

Working with animals, communicating with the vets and staff on the farms, students get acquainted with management decisions and economic indicators related to the farm animal health. It is especially important that they are aware of their role and significance in the human food industry.

The manipulations and treatment performed by the students during the visits to the farms are free of charge. This is done in order to ensure their training. In fact, they understand very well the role of the veterinarian in protecting the health of productive animals, in decision taking to justify the value of what is done to future customers.

During the 10<sup>th</sup> semester, the study plan includes practical training in equine medicine. The distribution of study hours is as followed: 6 hours obstetrics, 10 hours internal non-infectious diseases, 15 hours surgery and 10 hours infectious diseases. During the 8<sup>th</sup> and the 9<sup>th</sup> semester, students are trained also in parasitology.

During the 8<sup>th</sup> and 9<sup>th</sup> semester there are shifts in the Clinic “Productive Animals”, Clinic Horses” and the Department of Infectious and Parasitic Diseases which are obligatory and are carried out according to a schedule set in formal schedule time sheet set by the Dean’s office. The duty of every student in each department is for 2 days.

In 2021, contracts were signed with two horse breeding farms. Together with a lecturer from the FVMSZ, the students periodically visits these sites and perform extramural practical manipulations related to the examination and treatment of horses.

The development of the Clinic “Horses” in the VTH structure was performed in several management strategies for increase the patient number (intramural and extramural) for students:

1. The range of patients’ diagnoses at the Horse Clinic is constantly expanding. Those with parasitological and infectious diseases are also included. In addition, animals are regularly brought for diagnostic tests, for example - diagnosis of pregnancy.

2. Some of equines (11 horses and 7 donkeys) are housed on the territory of the FVMSZ Biobase, and they are included in the list of patients examined by students – preventive and diagnostic tests.

3. Signing of contracts for cooperation with horse breeding bases and farms and private practitioners with commitments for conducting student internships and joint vet. services cooperation.

The number of pets, including exotic animals referred to the Small Animal Clinic is the greatest. Students spend a significant number of hours not only during the classes, but also during summer practical training and specializations. The Registration office of the VTH is at the territory of this clinic, as well as night duty veterinarians.

*Mobile services. From April 2021, the structure of the University Veterinary Hospital includes a Animal Mobile Service Unit with 3 cars and places for students. Every week the mobile service employees work on farms in different regions of Bulgaria. Currently 4 sites are serviced and there is a serious interest from more farmers. Every month the Mobile Service Unit registers 350 animal patients through "Vet manager". Re-signing of contracts with farmers and offering more extensive services from the FVMSZ is forthcoming. The Mobile Service Unit consists of a veterinarian, a zoo engineer and a laboratory assistant, who, on the basis of contracts with farms, perform on-site hoof trimming and care in large ruminants, and collect*

## 1. Correction of the Major Deficiencies

*blood samples for assay at the FVMSZ. The veterinarian was on a 3-month specialisation in modern veterinary care of large ruminants at farms at the Faculty in Leipzig (Germany).*

*Mobile teams were created with together with students visit farms for different species and categories of animals. The idea is further developed. The work must be strictly in accordance with the Veterinary Act to avoid serious conflicts with local veterinarians. The FVMSZ owns the ambulance minibus newly purchased from Germany! In the beginning, it worked on call – for parturitions and other urgent problems.*

The development of the FVMSZ in the last two years is in accordance with the operating plan for short-term impact, derived from the SWOT analysis (Appendix 10). An annual monitoring plan has been developed in the PDCA cycle for VTH development with a strategy for building an education-science-business link. On site are operating a new modern ultrasound devices; a new computed tomograph; digital x-ray machines; apparatuses for biochemical analysis, blood gas analysis; hormonal analysis apparatus; semen analysis system; cell culture development system and apparatus; LC-MS; analysis microscopes; PCR equipment.

### 1.4.2. Comments

Over the last decade, the number of farm animals and horses in Bulgaria has decreased substantially on the account of increased number of companion animals (dogs, and cats).

The work of students with animal patients is guaranteed. The additional contracts with horse farms and dog shelters ensure an additional increase in extramural patients from these species, that has been at number 0 so far, and in the last 3 months of 2021 we have 87 horses and 10 companion animals in the extramural training. The opportunity for our students to visit productive animal farms is a unique advantage for the FVMSZ. During the classes, students have the opportunity to work directly with several animals. We hope that the links with farms and the Ministry of Agriculture and Food, established over the years, will be maintained in the future.

The provision of pigs and poultry is particularly difficult. Visits to poultry and pig farms at this stage are suspended due to existing biosecurity measures against the spread of African swine fever and highly pathogenic avian influenza. The state policy and the measures of the Ministry of Agriculture and Food in connection with African swine fever and highly pathogenic avian influenza in 2019-2021 have dramatically limited the access of students to pig and poultry farms in the region around FVMSZ and in Bulgaria. The additional restrictions related to the COVID-19 pandemic have totally isolated students and faculty staff from risky sites with more than 10 staff members, thus causing a breakdown in the system of provision of pig and poultry patients from industrial farms. In 2020, the Ministry of Agriculture and Food send to the FVMSZ teams (teachers and students) complement note for their help with practical work, training or on-site biosecurity measures on farms in eradicating of diseases outbreaks in 2020 in poultry, pigs, sheep and cattle farms.

Due to transnational restrictions, the pigs and poultry problems will not be solved easily. A short term decision in this situation is the periodic purchase (at least once per year), delivery and housing of poultry (at least n=100) (incl. laying hens; ducks) and pigs (at least n=80) in the Biobase at FVMSZ or at Trakia University Study Farm.

## 1. Correction of the Major Deficiencies

### 1.5. Major Deficiency 5: Non-compliance with Substandard 8.9 because of absence of knowledge of Day One Competences affecting the overall process of assessment.

#### 1.5.1. Factual information

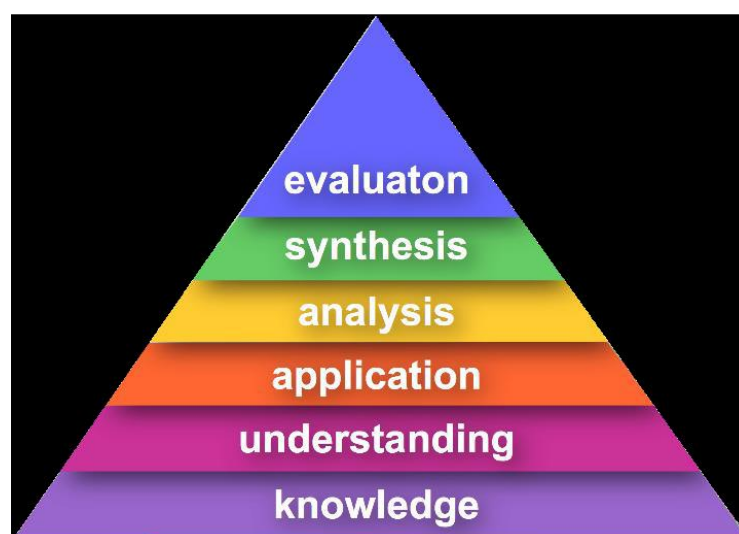
The visitation team concluded that there is absence of knowledge of Day One Competences affecting the overall process of assessment. Methods of formative and summative assessment must be valid and reliable and comprise a variety of approaches. Direct assessment of clinical skills and Day One Competences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

#### **FVMSZ Adaptation 2020-2022**

The FVMSZ has established several measures for individual control of each student and assessment of his/her level of knowledge, skills, competence, communication and critical thinking. By introduction of Day One Competences Logbook, the assessment of skills will be increasingly strengthened by applying the didactic approach dependent on learning outcomes. The assessment of student individual development takes into account the acquired knowledge and skills from the performance included in the current topics according to each subject listed in Directive 36/2005/EC. The update of the national higher education framework (2023-2030) includes additional soft skills, digitalization and communication skills, including in interdisciplinary areas. According to the information presented by EAEVE in Turin, Italy, the criteria for personal development are linked in a knowledge pyramid, which is implemented in FVMSZ (Fig. 2). The skills for performing basic manipulations are in direct connection with the skills for interpreting results and critical clinical thinking, the skills for forming conclusions and decision-making, announcing decisions and communication in a related veterinary society, including through with digital instruments and media.

The Day One Competences Logbook of FVMSZ which was approved in December 2021, covers all skills from the studied subjects. In February-March 2022, an amendment will be introduced in Syllabus of mandatory and elective subjects from the FVMSZ curriculum, as to be really on Day One Competences Logbook. The updates of the curricula and the assessment of students in each subject will include mandatory demonstration of knowledge and skills associated with Day One Competences.

**Fig. 2.** Application of knowledge pyramid in veterinary medicine at the FVMSZ.



## 1. Correction of the Major Deficiencies

FVMSZ participated in a working meeting organized by the Legal spark network team in October 2021, to amend Directive 36/2005/EC, considering the inclusion of materials from modern veterinary medicine, based on research data or data necessary for the development of society, incl. digitalization etc.

The contemporary concepts of the Dean's team creates conditions for the implementation of modern interactive forms of training, which are included or used abroad. Such forms of training communicate with the One Health concept, Animal welfare, Artificial intelligence and image diagnostic tools, 3D printing, computed tomography, virtual reality and skills labs, telemedicine in veterinary medicine. Accounting for the significant advances in technology, since 2020 joint meetings were held with EBVS to achieve a high level of shared knowledge and specializations in the FVMSZ. Examples are the working online meetings in February 2020 with EBVS with prof. Zoe Polizopoulou and a subsequent lecture on development issues in the specializations of teachers and practitioners; workshops in October 2021 with EFSA for a hybrid training system in the Master's program in FSQ and risk assessment; working meetings with the Deans of the faculties in Leipzig and Giessen for internationalization and joint cooperation; working correspondence with the University of Vienna for sharing good practices for Skills lab centers. In the context of international communications and development, incentives for Day One Competence are of strategic importance for building leadership and skills aimed at seeking novel and more modern knowledge and methods in the field of veterinary medicine training, science and services, including the dynamics of lifelong learning and postgraduate education.

Trakia University and FVMSZ are accredited by the National Evaluation and Accreditation Agency to educate students in Veterinary Medicine. In 2021 was published Ordinance Nr.6 issued in 11 February 2021 of the Ministry of Agriculture and Food and the Ministry of Education and Science, whose Art. 3 (1) listed accredited universities as strategic institutions responsible for development and conducting postgraduate studies and specializations, including in new technologies and methods in eradication of infectious diseases. In Bulgarian Veterinary Law (amended in 2020), art. 26, (1), item 4, the University Veterinary Hospital with clinics was defined as part of the necessary educational structure of Bulgarian veterinary medicine.

During the last years, measures were taken to improve methods for control of student achievements. In 2021, a student logbook was developed with a detailed list of competencies and clinical skills in all groups of subjects acquired by students during their study. The Academic Affairs office in the Dean's Office, as well as the individual lecturers are charged with quality control on the students' Day One Competence logbooks and its improvement. This guarantees that all planned procedures and practical training in the curriculum will be completed by each student. Its accurate completion, authentication by lecturers it is based on what has been achieved during theoretical and practical classes, daily and night shifts, internships, auditorial and extrauditorial forms of education.

The methods for authentication and assessment are reliable and include different approaches - proof of taught and observed, as well as performed by the student under the supervision of an vet. staff or lecturers. The quality control of student logbooks ensures that all clinical procedures, theoretical and practical training planned in the curriculum will be carried or demonstrated by each student. Emphasis is placed on the possibility for direct assessment of clinical skills and knowledge listed in Day One Competences. They are expected to be an important component of the overall evaluation process.

### 1.5.2. Comments

The logbook on acquired knowledge, skills and competences in the course of veterinary medicine training is an additional contribution to a better individual approach. The authentication of Day One Competences affects the entire assessment process, including practical, theoretical exams, test examinations, collection of ECTS credits etc.

## **2. Correction of the Minor Deficiencies**

### **2. CORRECTION OF THE MINOR DEFICIENCIES**

**2.1. Minor Deficiency 1: Partial compliance with Substandard 3.8 because standardised evaluation by the EPT providers of the performance of the students is insufficient and no formal mechanism to provide feedback to the Establishment on the EPT programme is in place.**

#### **2.1.1. Factual information**

The visitation team concluded that standardised evaluation by the EPT providers of the performance of the students is insufficient and no formal mechanism to provide feedback to the Establishment on the EPT programme is in place. The EPT providers must have an agreement with the Establishment and the student (in order to fix their respective rights and duties, including insurance matters), provide a standardised evaluation of the performance of the student during their EPT and be allowed to provide feedback to the Establishment on the EPT programme.

#### **FVMSZ Adaptation 2020-2022**

According to the national legal requirements of 2016, the 720 EPT hours are divided into three parts: after the 6<sup>th</sup> semester (80 hours), after the 8<sup>th</sup> semester (160 hours) and pre-graduation training (internship) after the 10<sup>th</sup> semester (480 hours). Students are divided into 28 regions into small groups of 4-8 students and acquire specific skills under the supervision of experienced veterinarians. The FVMSZ has set several measures to increase the feedback from EPT providers. Internships are mandatory, and after the internship each student submits an individual report according to the model and criteria provided by the Dean's Office. We have 100% feedback, including the filled EPT provider feedback forms. An electronic survey form for feedback and evaluation of the internship criteria was prepared for EPT providers, and suggestions for changes in the criteria (on the FVMSZ website). The reports are evaluated by a committee and a discussion is made with each student for defense of his/her EPT performance and the individual cover of the criteria of the EPT program - after the 3<sup>rd</sup> year, after the 4<sup>th</sup> year and after the 5<sup>th</sup> year. The successful EPT report based on the criteria given in the instructions of the FVMSZ and successful defense in commission is a guarantee for the students in passing in an upper course or admission to the state exams. All parts of the EPT are controlled by the FMVMSZ Quality Assurance System. The PDCA cycle is observed for each change of the criteria in the EPT guidelines, ending with feedback from students and employers (Fig. 3). Every year, the Dean's Office makes an analysis of the feedback and proposes adaptation of the criteria or elaboration of new criteria (guidelines) according to the individual needs of the students and the labour market.

The EPT after the 6<sup>th</sup> semester is associated with animal husbandry and is coordinated with the State Veterinary Service at the Bulgarian Food Safety Agency (BFSA). From 2020, a change requested by the BFSA was introduced, consisting in distribution of students to the regions where they were born or where their parents live, enrolling them for 80 hours of training (two weeks) to the 252 veterinarians available in regional productive animal farms. There, students perform tasks under the control of the state veterinarians. The changes in the regions were introduced with a decision of the Faculty Council from 2020, in order to avoid the selection of farms in which the EPT is to be performed by subject decision of the students. New guidelines and rules for EPT and their correct individual reporting were introduced in 2020.

The EPT after the 4<sup>th</sup> year performed for 160 hours in a small animal practice is without change. The FVMSZ makes lists of students to distribute them in all 28 regions, they are coordinated with the BFSA which, in the respective region, controls the compliance of the practice to state requirements. The state BFSA informs the regional structure RFSA for the

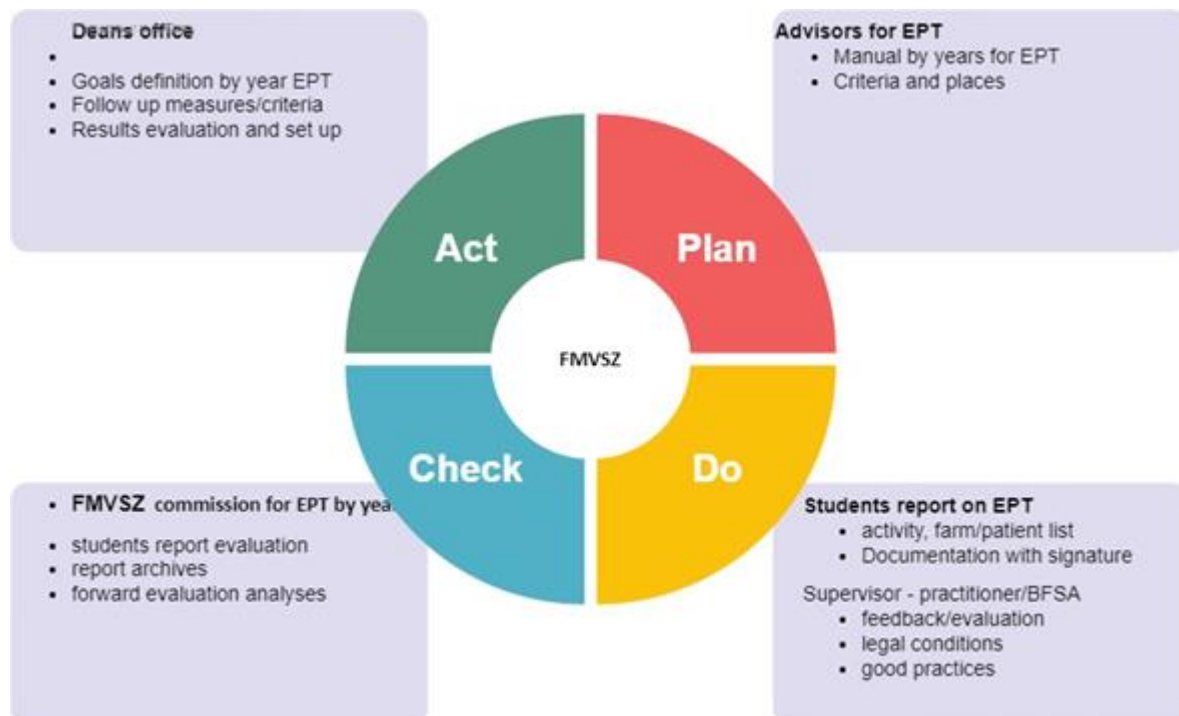
## 2. Correction of the Minor Deficiencies

presence of undergraduate students on the respective territory (clinics) and for the rules for clinical EPT after the 4<sup>th</sup> year. No changes were made here in the criteria of FVMSZ.

As the last EPT after the 5<sup>th</sup> year was concerned, discussions were held in November 2021 to introduce some changes. The Bulgarian Veterinary Union (BVU) has shown a great desire to assist in providing EPT to students in quality farms with a high rating and without violations of veterinary legislation. It is necessary to introduce a change with prior notification of the regional 28 BVU chairmen on the number of students for pregraduation EPT in a clinics and on a productive animal or horse farms. So far, the EPT has been administratively regulated by the BFSA, but its interest was mainly in administering the part related to food safety and control whereas the interest in veterinary practice in productive farms or animal clinics was low. On the contrary, the BVU has a significant interest to good veterinary practices with a high number of patients, and a low interest in Food Quality and Safety.

In recent years, the interest and the number of students wishing to spend 2 months of their EPT abroad and the Food Safety module in Bulgaria, has increased. Currently our plan is to create a register, including correct veterinary practices/clinics in all the 28 regions, that can accept a certain number of students; The same for a register of companies/clinics in abroad. From 2020 new rules with improved Dean's office instructions for report writing the pregraduation EPT are in force for students. It is formal and mandatory assessment of the student's skills by the vet as EPT provider. Since 2020, the FMVSZ has introduced an internal paper report, by each student for clinics and farms used in the EPT, as the report is during defense, in which each student reports the number of patients he/she has seen. They are entered in an Excel table. The FVMSZ authorities are about to decide whether to introduce a unified register, from which the students have to choose an eligible place for their pregraduation EPT.

**Fig 3. PDCA cycle for EPT in the FVMSZ:**



The Faculty of Veterinary Medicine maintains contact with clinics, farms and services, where students conduct their EPT each year. We receive feedback on the students' work, skills, activities and information on any problems that arose during the training period. At the

## 2. Correction of the Minor Deficiencies

beginning of each summer we inform the BFSA management about the distribution of our students by regions. The BFSA management and its regional services perform the necessary arrangements to meet the students and direct them to sites, farms, clinics, state services. From 2019, 2020 and 2021, the veterinarians who supervise the students' EPT prepare a paper-based evaluation (characteristic), which is sent to the FVMSZ authorities as feedback. In addition, the FVMSZ authorities performs periodic meetings with veterinary practitioners and state administrations to discuss the EPT of students.

EPT after the 3<sup>rd</sup> year acquaints students with activities related to livestock production systems, animal nutrition and dietetics, veterinary sanitary control on feeds, hygiene practices in animal rearing facilities, breeding and specific breeds in the region. The clinical EPT after the 4<sup>th</sup> year and the pregraduation EPT after the 5<sup>th</sup> are still conducted according to the approved programmes in BFSA regional units, private veterinary clinics and in productive animals and horse practices in the country. In this regard, the FVMSZ coordinates its activities with the BFSA and the Bulgarian Veterinary Union (BVU).

From 2020, contracts are signed under the "Student Internships - Phase 2" national project BG05M2OR001 - 2.013-0001 for additional 240 hours of practical training co-funded by the European Social Fund under the Human Resources Development (HRD) operational programme. Under this project, 402 students of FVMSZ from 1<sup>st</sup> to 5<sup>th</sup> study years have applied to conduct internships during the semester in their free time, after prior agreement of private clinics and farms' owners. There are 36 registered companies with contracts for the goals of the project, and the number of vet students approved for such an internship was 368 in total. Out of the total number of registered veterinary students, 272 students already completed their internships, and another 96 students continue in their training. Due to the COVID pandemic, no exchange of students with other universities took place during the reporting period.

### 2.1.2. Comments

The described coordination and interaction with stakeholders and employers for training and future realization of students is according to the actual real situation in our country. organizations.

### 2.1.3. Suggestions of improvement

For the next period (2022 to 2025), our plans are to organize in-person a student-university-employer-stakeholder workshop in every year. The first work meeting was held in February 2020, with the participation of 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year students. COVID pandemic postponed the implementation of this plan in 2021. We arrange to prepare a list of quality-approved clinics and farms in which students may apply for EPT, approved by the FMVSZ, professional nonprofit organization (Bulgarian Veterinary Union) and the BFSA. This will facilitate the feedback from employers, will distribute students more evenly and ensure a better control from our Deans offices.



## **2. Correction of the Minor Deficiencies**

### **2.2. Minor Deficiency 2: Partial compliance with Substandard 4.7 because best husbandry, welfare and management practices are not fully promoted in the Biobase facility.**

#### 2.2.1. Factual information

The visitation team concluded that best husbandry, welfare and management practices are not fully promoted in the Biobase facility. Facilities must comply with all relevant legislation including health, safety, biosecurity and EU animal welfare and care standards.

#### **FVMSZ Adaptation 2020-2022**

The faculty has established several measures to introduce new rules for monitoring and control on biosecurity and welfare of animals, housed on the establishment site. Since 2020, the norms were determined of every premise for animal housing (specific to animal species) in terms of m<sup>2</sup> area, ambient temperature, ventilation, air humidity, feed, walks etc. Projects for modern facilities for pigs, poultry and cats were developed. Dog boxes were improved with individual yards and a new diets. The number of sheep and goats was optimized according to the norms. The number of places for walking was increased. Written rules for monitoring and control were introduced. New contracts for the supply of fodder and a new organization for the purchase of additional equipment and food supplements were signed. The head of the Biobase went through the National and European legislative requirements.

The FVMSZ has appointed an Animal Welfare Committee (5 people), charged with the control, surveillance, and assurance of the welfare principles during the work with animals involved in the training process, research experiments, patients etc.

The importance of the Biobase and VTH hospitals as structural units is great. In order to improve the structure and its management, a position was opened and an English-speaking manager of the Biobase was appointed. All staff and general workers used in animal care passed short education in animal welfare.

The major of the animals used in training for 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> year students in a number of clinical subjects, research experiments as well as for laboratories at the faculty, are housed in the Biobase (healthy animals) and VTH hospitals (patients of clinics). This requires not only the maintenance of premises, buildings (hospitals and clinics), the fodder base, but also the daily care for animals, transportation, restraint when performing the necessary manipulations, etc. The Biobase of FVMSZ has the status of an independent livestock farm, with a number and registration in the BFSA. The order it have been changed: organisation of work, registration, breeding, accommodation, feeding and cleaning of animals in the Biobase. A new model of work and control of activities was created; video control and internet connection are provided. A particular attention is paid to avoid excessive workload of animals involved in the learning process.

A strict register of conducted treatment and prevention measures at the Biobase - vaccinations, antiparasitic treatments etc. is kept. There is a strong focus on disease prevention and control in all production systems, through appropriate vaccination and disease monitoring programmes.

The teaching staff from the Department of Animal Husbandry, Nutrition, dietetics and feed veterinary assays, and the Animal Hygiene unit turned to be very useful in the monitoring of housing conditions, maintenance of microclimate, ventilation, nutrition standards for individual species and age categories of animals. Together with students, during practical classes and shifts, they take an active part in the design and implementation of the planned construction and repair activities, as well as in the scientific composition of the rations of individual species grown at the Biobase, discussion of breeding standards for ensuring of animal welfare.

The experience of clinics and faculties in Germany, summarized in a photo album entitled "Good Practices with Biosafety from Germany" (Appendix 3) - ready solutions for

## 2. Correction of the Minor Deficiencies

implementation in the FVMSZ - 2020 was used in the work for improving the conditions under which animals are housed.

Repair works made at the Biobase were in the following areas:

- The walls of animal boxes were covered with tiles that could be more easily and effectively cleaned and disinfected;
- The animal yards, fences, flooring were reconstructed;
- A room for free housing of 8-14 cats was designed and equipped with the necessary tools - climbing posts, beds, etc.
- The premises for animals, including sheep, were improved, the hygiene and the distribution of animals in separate premises were also improved.

The staff, animals care workers and the drivers have passed an animal welfare training course. Reconstruction of the animal trailer was completed. Premises for students and staff were provided in the clinics and in the hospitals. They were repaired and renovated.

### 2.2.2. Comments

The Bulgarian national legislation is harmonized with EU legislation. Accordingly, EU regulations and directives are mandatory for livestock farms, housing either healthy or sick animals. The Biobase and the animal hospitals have the status of FMVSZ livestock farm and meet the national requirements. The maintenance and provision of the required animal welfare conditions for kept animals is carried out in compliance with the legal norms for humane breeding. A new system for visualization of the norms by animal species, was introduced in each of these sites.

### 2.2.3. Suggestions of improvement

Further improvement of the animal husbandry base is forthcoming. The construction of new sites with modern technological solutions must take into account the fact that most of the animals are patients e.g. are not in good health.

## **2.3. Minor Deficiency 3: Partial compliance with Substandard 5.6 because insufficiently completed medical records do not fully allow an effective retrieval system to efficiently support the teaching, research, and service programmes of the Establishment.**

### 2.3.1. Factual information

The visitation team concluded that insufficiently completed medical records do not fully allow an effective retrieval system to efficiently support the teaching, research, and service programmes of the Establishment. Medical records must be comprehensive and maintained in an effective retrieval system (preferably an electronic patient record system) to efficiently support the teaching, research, and service programmes of the Establishment.

#### **FVMSZ Adaptation 2020-2022**

As of March 2021, the new “Vet Manager” electronic patient record system is introduced. More than 20 chip-card-reader’s workstations were created with chip access, decoders, an internal server and computers connected to the Internet and a printer. The new software allows entering patients in the FVMSZ registry, detailed description, attachment of photo files, record keeping and prescribed drugs, interaction between units. The software is DICOM compliant and stores DR X-Ray and CT images (see Appendix 8). The detailed and precise recording of each case, along with of strict financial report is now possible. The programming, development and preparation for the implementation of the new “Vet Manager” software took almost 14 months. The software is cloud based and allows access from any computer, phone or tablet. Departments and students have access to it. A demo version is installed for training in the

## **2. Correction of the Minor Deficiencies**

“VetsiM” Skills lab center. An important stage in this process was the updating of the price list of all clinics, that took place at the end of 2021. The electronic system is not only a tracking system for financial income, but is also a source that gives detailed information intended for student training, as well as for research publications, and exchange of experience with colleagues from other universities.

### **2.3.2. Comments**

The Vet Manager software has completely replaced the previous VTH software. It is modern and allows real digital control, storage and management of a wide range of data and different ways of storing and retrieving information - photos, files, etc. The wider use of all the features of the software is forthcoming.

### **2.3.3. Suggestions of improvement**

In the period 2022-2025, this software for electronic data storage could be part of the introduction of artificial intelligence in training through CT images, conducting clinical activities and full digitalization of FVMSZ activities.

### 3. ESEVT INDICATORS

#### 3. ESEVT INDICATORS

##### 3.1.1. Factual information

ESEVT Indicators are close related with the achievements according to the SOP in Upsala standards. The visiting team in 2019 presented various suggestion, as opportunities for improvement in FVMSZ. These suggestions are included in the 2020 FVMSZ “Action Plan” (Appendix 11) and whereas the interactions in 2020-2021 results in better values in some of the faculty indicators, even under Covid-19 restrictions.

**Indicators of the FMVSZ (2019, 2020 and 2021) as per SOP Upsala 2016 and median values.**

<b>3.1. Factual information Calculated indicators from raw data</b>		<b>Establishment values</b>	<b>Median values<sup>4</sup></b>	<b>Minimal values<sup>5</sup></b>	<b>Balance<sup>6</sup></b>
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0,133	0,16	0,13	0,007
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	1,190	0,87	0,59	0,600
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1,100	0,94	0,57	0,534
I4	n° of hours of practical (non-clinical) training	851	905,67	595	256
I5	n° of hours of clinical training	712	932,92	670	42
I6	n° of hours of FSQ & VPH training	223	287,00	174,40	48,60
I7	n° of hours of extra-mural practical training in FSQ & VPH	36	68,00	28,80	7,20
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	66,387	70,48	42,01	24,377
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	2,929	2,69	0,46	2,466
I10	n° of equine patients seen intra-murally / n° of students graduating annually	1,186	5,05	1,30	-0,112
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	2,457	3,35	1,55	0,912

### 3. ESEVT INDICATORS

I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	0,461	6,80	0,22	0,238
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	47,141	15,95	6,29	40,847
I14	n° of equine patients seen extra-murally / n° of students graduating annually	0,550	2,11	0,60	-0,045
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	2,472	1,33	0,55	1,925
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0,052	0,12	0,04	0,007
I17	n° of companion animal necropsies / n° of students graduating annually	1,468	2,07	1,40	0,068
I18	n° of ruminant and pig necropsies / n° of students graduating annually	1,033	2,32	0,97	0,063
I19	n° of equine necropsies / n° of students graduating annually	0,097	0,30	0,09	0,004
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	2,134	2,05	0,69	1,441
I21*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0,050	0,20	0,06	-0,013
I22*	n° of PhD graduating annually / n° of students graduating annually	0,048	0,15	0,09	-0,040

Legend:

<sup>4</sup> Median values defined by data from establishments with Approval status in April 2016

<sup>5</sup> Recommended minimal values calculated as the 20th percentile of data from establishments with Approval status in April 2016

<sup>6</sup> A negative balance indicates that the Indicator is below the recommended minimal value

3.1.2. Comments

3.1.3. Suggestions of improvement

## 4. APPENDICES

### 4. APPENDICES

All appendices are placed on the FVMSZ website, under EAEVE status:

[Appendix 1 - from page 3 - link to the logbook "\*Day one competence\*"](#)

[Appendix 2 - from page 4 - link to the "\*Curriculum\*" book](#)

[Appendix 3 - from page 5 - link to the booklet "\*Rules for Biosecurity of FVMSZ\*"](#)

[Appendix 4 - from page 6 - link to photos "\*Restricted area\*"](#)

[Appendix 5 - from page 6 – draw land design "\*Plan of the morgue\*"](#)

[Appendix 6 - from page 7 - link to the VTH regulations](#)

[Appendix 7 - from page 8 – link to print screen from "\*Vet manager\*" software](#)

[Appendix 8 - from page 9 - link to the "\*Mobile Service\*" of VTH](#)

[Appendix 9 - from page 10 - link to the "\*Skills lab VetsiM\*" of FVMSZ](#)

[Appendix 10 - from page 18 - link to the "\*SWOT analysis of FVMSZ\*"](#)

[Appendix 11 – from page 27 - link to the "\*Action Plan of FVMSZ\*" for ECOVE deficiencies and suggestions for improvements](#)