



Veterinaarmeditsiini ja loomakasvatuse instituut
Institute of Veterinary Medicine and Animal Sciences

Eesti Maaülikool

Estonian University of Life Sciences

Re-visitation report

CORRECTION OF MAJOR DEFICIENCY

Institute of Veterinary Medicine and

Animal Sciences

Estonian University of Life Sciences

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Brief description of the compilation process:

The workgroup for the compilation of the self-evaluation report was formed in September 2018. During the year, the workgroup met twice a month.

The head of the Department of Academic Affairs - Ina Järve - and the Vice-Rector of Research – Ülle Jaakma - participated as needed and made comments on the content of the report. The compilation of the self-evaluation report was coordinated by Külli Kõrgesaar.

Layout editor:

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A full ESEVT Evaluation Team, comprising of

Prof Till Ruemenapf, Vienna, Austria (basic sciences),

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Dr Bertil Douw DVM, Cork, Ireland (Chair), (clinical sciences (practitioner)),

Prof Wim Kremer, Utrecht, Netherlands (animal production),

Prof Maria Fredriksson-Ahomaa, Helsinki, Finland (Food Safety),

Pim Polak, student member, Utrecht, Netherlands,

visited the Estonian University of Life Sciences on November 16-20 2015. The EAEVE coordinator was Dr John Williams, Leeds, United Kingdom. The visit was conducted under the aegis of the Budapest SOP 2012.

The recommendation to ECOVE of the Expert Team was that the status of the Institute of Veterinary Medicine and Animal Sciences of the Estonian University of Life Sciences in Tartu should be RE-APPROVED. However, the ECOVE committee decided that the observations in the field of biosecurity and biosafety could be classified as a 'major deficiency' and the status of the Institute of Veterinary Medicine and Animal Sciences was given the status of 'CONDITIONAL APPROVAL'.

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Correction of the major deficiency: inadequate biosecurity and biosafety procedures in several areas, including control of drug management, necropsy hall.

... But some staff seemed unaware of the importance of bio-security: in some laboratories, eyewashes for staff and students were missing or out of date, and emergency showers were absent in most laboratories; and the entrance into the necropsy hall for staff and students is not adequate to safeguard hygiene and prevent contamination. During our visit to the necropsy hall, staff did not insist on the necessary bio-security measures. The storage and documentation of all drugs – especially controlled drugs – should be improved immediately and be the explicit responsibility of one person. The isolation unit for production animals and equines is the only one in the country and should be upgraded as soon as possible. The Team recommends that the facilities for the care of wildlife should be improved, as this would offer an opportunity to enhance this unique service and the learning of specialist skills

The University has been working on remedying the deficiencies highlighted in the report. Our main activities have been as follows:

- The Institute has compiled and published the biosafety and biosecurity manual in Estonian and English, and made it available on the homepage of the Institute.
- We have introduced the staff and students to the manual and included the manual in the compulsory study materials of relevant courses.
- The Institute has reconstructed the necropsy hall to improve biosecurity measures.
- The University has reconstructed the large animal isolation unit.
- The Institute has reorganised the overall medicinal products management system in the clinics and has worked out and put into practice medications stewardship procedure.

The following tables will give an overview of our actions in the specified areas in chronological order.

1. Improving biosafety procedures

1.1. General steps taken to improve biosafety and biosecurity. Biosafety Manual

The whole staff of the chairs and departments of the Institute were involved in reviewing and developing biosafety procedures and compiling the Biosafety Manual. Different measures were introduced to raise biosafety awareness among the students and staff. In addition, external experts roped in the inventory of biosafety measures. The movement of staff and students in the clinics was studied and appropriate changes were made. The signage policy in the clinics was also revised.

At the University level a series of meetings were held with the University administration, the occupational health and safety specialist, the officials from the Department of Building and the Department of Property Management, as well as the Procurement Office to ensure funds for reconstructions.

Biosecurity and biosafety issues have been included in the content of a number of courses to raise students' awareness towards biosafety.

Autumn 2016	<ul style="list-style-type: none"> • An inventory of the biosecurity and biosafety measures was carried out. • Existing biosecurity and biosafety-related documents were collected and analysed by the biosecurity working group, comprising of the representatives of the administration, all three clinics and heads of chairs. • Long-term goal was set to hire a full-time biosafety officer to coordinate the activities and development in biosafety and biosecurity issues in the whole institute. The task of the biosafety officer is to ensure that biosafety issues are systematically analysed and the rules followed. Meanwhile, Elisabeth Dorbek-Kolin, a lecturer of infectious diseases, was appointed the head of the biosafety working group and the person responsible for compiling the biosafety manual. • Biosecurity issues based on SOP were discussed in all chairs, departments and clinics. • Two external experts - Katariina Thomson and Samuli Heiskanen - from the University of Helsinki paid a visit to the Institute, calling attention to biosafety-related deficiencies and weaknesses. Their recommendations formed a basis for the elaboration of the biosafety and biosecurity issues and their advice is sought on an ongoing basis multiple time whenever necessary.
Winter 2016–spring 2018	<ul style="list-style-type: none"> • A series of meetings with the heads of the clinics, the heads of the laboratories and pharmacy, the occupational health and safety specialist of the University, the Department of Building and the Department of Property Management of the University were held at the Institute and University level. • At the University level, the head of the biosafety working group joined the discussions with the Department of Building and the Department of Property Management.
Autumn 2017	<ul style="list-style-type: none"> • The movement of students and staff in the clinics was studied and the premises were divided into three zones: green, yellow and red. • Biosafety issues are gone over at in the first session of every practical course and clinical training course, where the students prove by signing that they have been introduced to and they understand the biosafety regulations. • An emergency line was worked out for events requiring immediate response, e.g. MRSA, MRSP patients. • Based on the information from the meetings, the draft of the Biosafety Manual was prepared and sent to the departments and clinics for amendments, comments and corrections. • To raise the biosafety awareness, first introduction to biosafety issues was included in the study plan of the course VL.0784 Introduction to veterinary studies (1 ECTS).

Autumn 2018	<ul style="list-style-type: none"> • Biosafety Manual was approved by the Council of the Institute and adopted by the order of the director of the Institute. The manual both in English and in Estonian is available at the webpage of the Institute. • The new members of staff are introduced to the Biosafety Manual and they sign a statement confirming that they are aware of the biosafety procedures. Systematic follow-up training for the staff in different formats is planned to take place once a year, supervised by the biosafety officer. • As agreed in spring 2018, the volume of the course VL.1268 Introduction to veterinary studies was increased to two ECTS to allow more time for biosafety issues. Introduction to the Biosafety Manual was included into the programme and the students take a multiple-choice test on biosecurity issues. Nevertheless, biosafety issues are gone over at the beginning of every practical and clinical training course. • Biosafety manual is included as compulsory reading in the study material of relevant courses.
Winter 2018	<ul style="list-style-type: none"> • Contact persons on biosafety issues were appointed in the Chairs/departments and officially confirmed by the director's order in 2019. • Doors in the clinics and labs were equipped with appropriate signs in Estonian and English. • Shelves for changing shoes were installed at barriers in the clinics and necropsy hall and barriers were equipped with boxes for shoe covers.
Spring 2019	<ul style="list-style-type: none"> • Kristi Praakle, a lecturer of microbiology, was appointed the person responsible for biosafety issues replacing E Dorbek-Kolin who went on a sabbatical leave. • On the initiative of clinical staff, a biosafety working group was summoned in the Small Animal Clinic so that biosafety issues would reach every member of staff and student body.
Summer 2019	<ul style="list-style-type: none"> • Additional emergency showers were installed where appropriate next to the laboratories. • The Institute published a call to hire a full-time biosafety officer in summer 2019. Unfortunately, there were no suitable candidates and the Institute extended the deadline for applications.

2. Biosafety-related changes in the infrastructure

Shortcomings

The entrance into the necropsy hall for staff and students is not adequate to safeguard hygiene and prevent contamination. During our visit to the necropsy hall, staff did not insist on the necessary bio-security measures. The isolation unit for production animals and equines is the only one in the country and should be upgraded as soon as possible. The Team recommends that the facilities for the care of wildlife should be improved, as this would offer an opportunity to enhance this unique service and the learning of specialist skills.

General

Making changes in infrastructure at the University is a long-term process, as the prospective changes have to be included in the Real Estate Plan and the Procurement Plan. Renovations of the surgery unit (anaesthesia induction and recovery room) and projects for rebuilding the animal clinics in Zoomedicum were included in the Procurement Plan of 2017. The allocations for the reconstruction of the large animal isolation unit, the construction of barriers in small animal clinic and the renovation of the room for computer tomography were featured in the Procurement Plan of 2018. The Procurement Plan of 2019 allocated funds for the reconstruction of the entrance to the large animal clinic and the reconstruction of food hygiene laboratories.

Autumn 2016	<ul style="list-style-type: none"> • Discussions and group work involving external experts on how to rectify the biosafety shortcomings with the representatives of the clinics and the lecturers of pathology and necropsy. • Ideas and suggestions for the alterations to the entrances to the small animal and large animal clinics, necropsy room, large animal isolation unit and wild animal section were collected from the staff of the respective units.
Winter 2016/2017	<ul style="list-style-type: none"> • Negotiations with the University administration, the Department of Building and the Department of Property Management.
Winter 2017	<ul style="list-style-type: none"> • The prospective alterations in the clinics were discussed at the University level and they were included in the Real Estate Plan, Procurement Plan and the budget of the University for 2017, 2018 and 2019, respectively.

2.1. Renovation of the necropsy facility

Autumn 2018	<p>The following alterations were made in the necropsy facility (See Figure 1)</p> <ul style="list-style-type: none"> • Changing rooms were reconstructed so that a barrier could be inserted between the dressing rooms and the necropsy hall. • The door (No. 3 in the figure) is locked and unauthorised persons have no access to the rest of the building or to the necropsy hall. • Ventilation and sewerage systems were upgraded.
Spring 2019	<ul style="list-style-type: none"> • The present cold store (storage room) is renovated. • Plans for the large animal euthanasia and cadaver storage rooms are being drawn up. The construction is planned for 2020.



Figure 1. Reconstruction of the necropsy facility. Red arrows show the movement of students.

2.2. Renovation of the large animal clinic

The biggest changes were made in the isolation unit in the large animal clinic and wild bird clinical facilities (Figure 2). Major changes are described in the following tables.

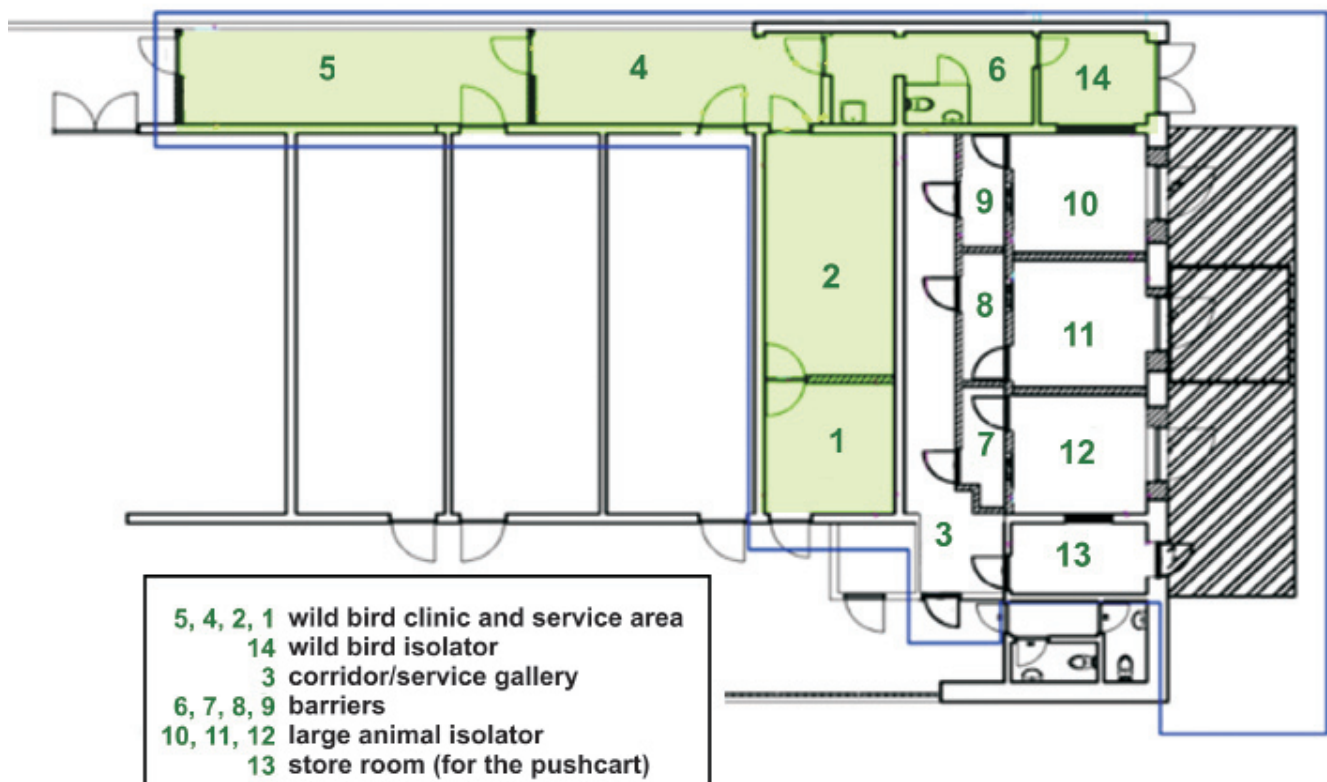


Figure 2. Reorganisation of the large animal isolator, wild bird isolator and wild bird clinic.

2.3. Large animal isolation unit

Spring 2017	<ul style="list-style-type: none"> Plans for the reconstruction of the large animal isolator were drawn up.
2018 (the whole year)	<p>Reorganisation of the large animal isolation unit (See Figure 2). The following work was carried out:</p> <ul style="list-style-type: none"> The existing isolator (10, 11, 12) was built into three large animal isolation boxes so that each box could be used separately. Barriers (7, 8, 9) were built to the corridor side of the isolation unit. The ventilation system was rebuilt. Surveillance monitors were installed in the isolation boxes. <p>The renovation of the isolation unit is finished and is now in compliance with all the regulations.</p>

2.4. Renovation of the entrance to the large animal clinic

2018 summer	<ul style="list-style-type: none"> Plans for the reconstruction of the entrance and barrier to the large animal clinic were drawn up and discussed with the staff. Blueprints were prepared. (Figure 3)
Spring 2019	<ul style="list-style-type: none"> Tender for the procurement of services and construction works was published.
Summer/autumn 2019	<ul style="list-style-type: none"> Construction should be finished by autumn 2019.

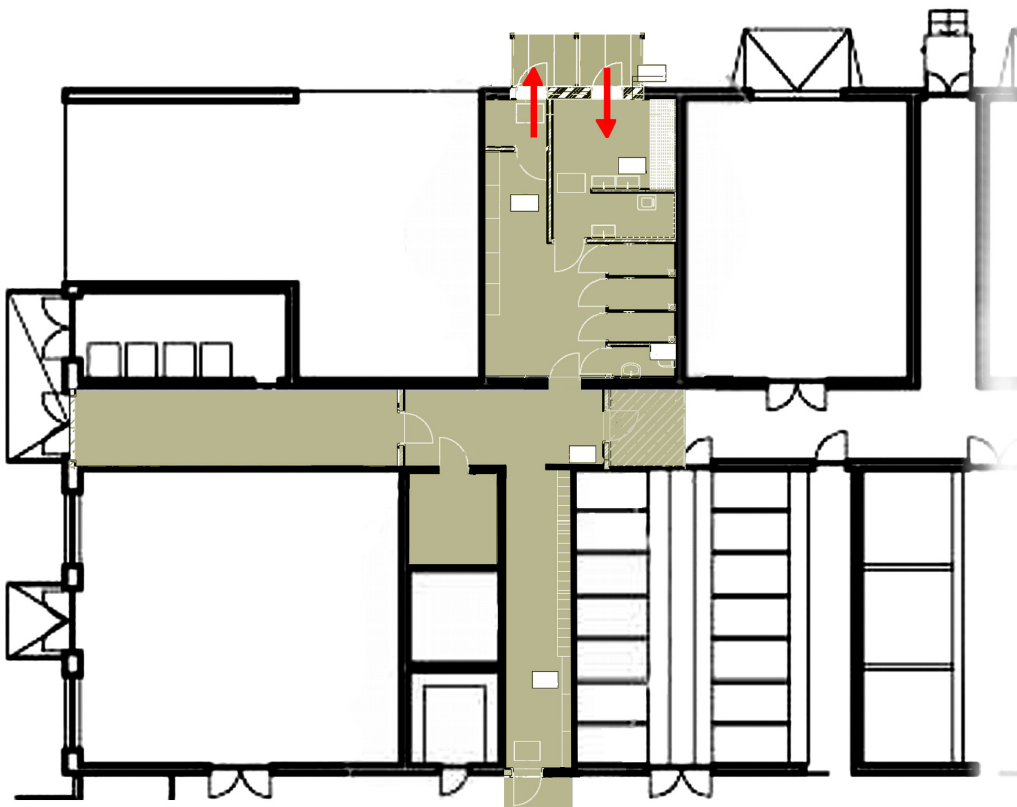


Figure 3. Reconstruction of the entrance and barrier to the large animal clinic.

2.5. Reconstruction of the wild bird clinical facilities

2018–2019	<p>Construction of wild bird clinical facilities:</p> <ul style="list-style-type: none"> • Reconstruction of the rooms for the wild bird isolation unit (14), wild bird clinic and the service area (5, 4, 2, 1) for wild bird clinic has been finished. (See Figure 2) Rooms are ready for refurbishing to make them operational. • The project is on hold at present and negotiations with the Environmental Board are currently under way to get funding to buy cages for the wild bird facility.
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2.6. Other biosafety-related changes in the clinics

Winter 2017	<ul style="list-style-type: none"> • The laboratory providing services for the Small Animal Clinic (SAC) and Large Animal Clinic (LAC) was moved out from the SAC and is at present located in the 'grey' zone between the clinics. • The laundry room was moved to the grey zone between the LAC and SAC. • The medications storage room in the clinics were refurbished and refurnished and it complies with the requirements of the national legislation. The room is equipped with a key card and a camera and access is granted to the appointed personnel only. • Glove and antiseptic dispensers are located on the walls in the corridor.
Spring 2017	<ul style="list-style-type: none"> • To ensure that the patients under intensive care are not moved through the whole clinic for different procedures, the ICU was reorganised and is now fully equipped. All the rooms have been equipped with metal glove and disinfectant dispensers.
Autumn 2017	<ul style="list-style-type: none"> • New air-conditioning equipment was installed in the clinic.
Winter–spring 2018	<ul style="list-style-type: none"> • Rooms of the dental clinic in the SAC were renovated.
September 2018	<ul style="list-style-type: none"> • Staff entrance to the Small Animal Clinic was rebuilt so that clinical staff and students do not need to pass the clinic in their outer garments, but get from the entrance to the 'restricted hospital area' through the barrier (Figure 4).
Winter 2018	<ul style="list-style-type: none"> • To create a 'restricted hospital area' in SAC, automatic doors were installed. The doors are card-operated from the outside and button-operated from the inside. Lay public cannot enter the 'restricted hospital area'.

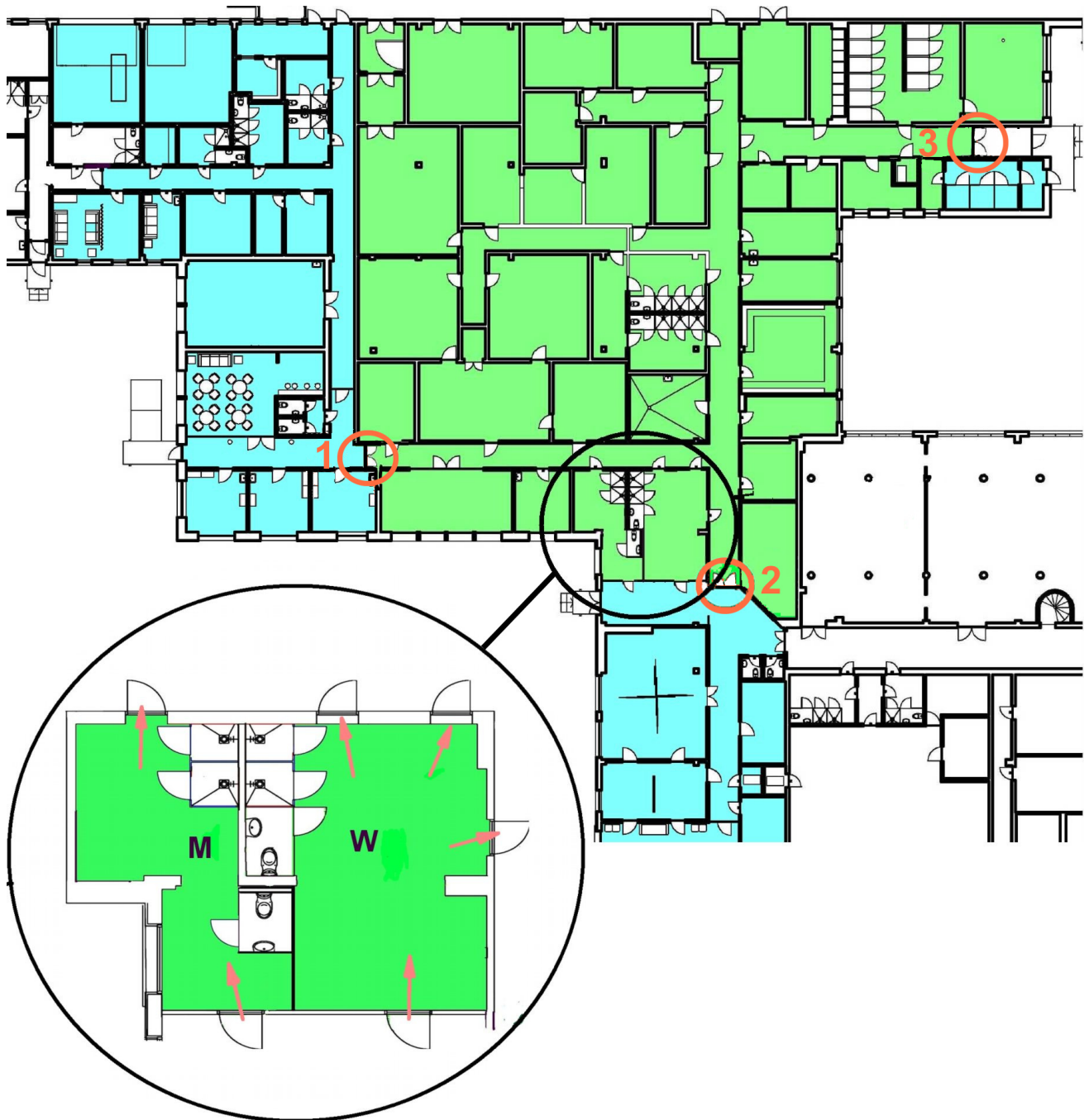


Figure 4. Closing the entrance to the SAC.

3. Storage and documentation of drugs

3.1. The storage and documentation of all drugs – especially controlled drugs – should be improved immediately and be the explicit responsibility of one person.

The medicinal products management system in the clinics was revised and is in full compliance with the following Estonian legislation regarding medicinal products: [Medicinal Products Act](#); [Conditions and procedure for storage and transportation of medicinal products](#) and [Veterinary Activities Organisation Act](#).

Summer 2015	<ul style="list-style-type: none"> • Cloud-based veterinary practice management software Provet Cloud was introduced in the clinics.
Autumn 2016	<ul style="list-style-type: none"> • The medications storage room in the clinics was refurbished and refurnished and the shelves were properly labelled. • Head of clinical operations was appointed as the responsible person for ensuring the compliance of drug-related procedures with regulatory acts.
2017	<p>The documentation of medications was reorganised as follows:</p> <ul style="list-style-type: none"> • Medications are secured from the pharmacy on electronic order and their use can be monitored electronically. • Stock of scheduled medications is taken regularly every month, inventory is made once every three months and full inventory is drawn up once a year. The audit conducted by the Veterinary and Food Board of Estonia shows that the storage of drugs is in full compliance with our national legislation. • The head veterinarians of the clinics ensure the proper drug management procedures as set by the regulatory acts in Estonia. • Only appointed veterinarians and veterinary nurses have access to the key (chip) and have the right to collect medications from the pharmacy or the medications storage room. According to a fixed schedule, the veterinary nurses ensure that the medications in the storage room are in good order. • In anaesthesia room and ICU, scheduled medications (opioids and anaesthetic agents) are handled and kept in the safe in the locked cupboard. Veterinary nurses are responsible for the medications in the storage room according to the pre-arranged schedule. • Prescription medications are kept in closed cupboards and are not accessible when entering the examination rooms in the clinics. The doors to examination rooms are fitted with glass windows, so that it can be seen what is going on in the examination rooms. • Students are not allowed to the medication storage room without supervision.
2018	<ul style="list-style-type: none"> • For improving the control over the movement of medicinal products further, work started on conforming the software applied in the pharmacy to the veterinary practice management software Provet Cloud. The work should be finished by 2020.
Winter 2019	<ul style="list-style-type: none"> • By the order of the director of the Institute, the head veterinarians of the clinic have been appointed as the responsible persons for the stewardship of narcotic and psychotropic substances. • The medications storage room in the clinics is equipped with a camera and the doors work with a chip with retrospective entrance record.

Conclusion

The activities listed above show that we have rectified the major criticism and created systematic and strategic measures that grant the sustainable implementation of biosafety and biosecurity procedures at the Institute.

4. Important changes concerning the University

Many changes have taken place at the University in 2015–2019. As the result of the structural reform launched in 2016, 20 chairs based on the 20 responsibility areas were formed, bringing together staff from different previous departments. This reorganisation has made it possible to take better account of the needs of the working groups, reduce the negative impact of project-based approach, place the responsibility in R&D activities and the management of research-based teaching on the chairs and related academic staff, and hold them liable for ensuring the status, competitiveness and consistency of the respective field.

In the [Development Plan](#) of the University, adopted in 2015, the University has defined its long-term goals, and the objectives necessary for achieving them in five strategic areas: research and development, teaching, members of the University community, society, and organization. To achieve the goals and objectives and monitor the implementation of the Development Plan, 27 key performance indicators were formulated that contribute to achieving the targets by 2020. In 2017/2018, based on the University Development Plan, the Institute and the Chairs worked out their [Development Plans](#), list of indicators and annual activity plans to achieve the set objectives.

In 2017, the regular evaluation of research and development activities was carried out in Estonia. All three research fields of EMÜ presented for evaluation, i.e. natural sciences, engineering and technology and agricultural and veterinary sciences, received a positive assessment (Directive No. 1.1-2/17/213 by the Minister of Education and Research, August 22 2017 in Estonian).

The University achieved a positive international regular evaluation of the PhD curriculum in Veterinary Medicine and Food Science in June 2018.

In February 2019, The University submitted its Self-Assessment Report to the Estonian Quality Agency for Higher and Vocational Education (EKKA) regarding institutional accreditation. The site visit took place on April 15–17 2019, and the assessment report will be available on the University website.

In addition, the University is also in the wake of major changes, as a new university management system, pursuant to the [Estonian University of Life Sciences Act](#) (in Estonian), adopted by the Parliament in March 2019, will be introduced in September 2019. The University leadership will be reorganised into a two-tier system. The Council, which shall be responsible for the long-term development of the University, shall become the highest decision-making body of the University, whereas some members shall be appointed to the Council by the Minister of Education and Research, thus involving public into the nomination of candidates. The majority of the members of the Council shall come from outside the University and will thus increase the link with the society.

5. Changes made in response to the minor suggestions made by the visitation team

1. Objectives

1.3. Clarity would be improved if the Mission statement were condensed into a more concise form, giving greater emphasis to the provision of veterinary undergraduate education.

At present, there are seven Chairs in the Institute (Chair of Animal Breeding and Biotechnology, Chair of Animal Nutrition, Chair of Aquaculture, Chair of Clinical Veterinary Medicine, Chair of Food Hygiene and Veterinary Public Health, Chair of Food Science and Technology, Chair of Veterinary Bio- and Population Medicine). The Chairs and Institute compiled their mission and vision statements and their development plans. The University Council approved the documents in March 2019. The mission of the Institute now states that **the Institute** creates and disseminates knowledge and practical skills in the area of veterinary medicine, animal husbandry, aquaculture, and food science for the betterment of animals and humans.

2. Organisation

No suggestions.

3. Financing

3.3. The Institute should review its fees for the clinical services it delivers and actively promote to veterinary practitioners its facilities for diagnostic testing, to provide further sources of income.

The Institute has revised its fees for the clinical services and devised a promotion plan. The clinic has opened its own Facebook page, strengthened cooperation with the Department of Marketing and Communication. The clinics organise promotion campaigns (e.g. castration, dental care, physiotherapy), tailor-made training sessions for practicing veterinarians, information sessions in different towns, etc. As a result, clinics have received a lot of media coverage in the past few years. In December 2018, the Estonian National Television released documentary series “Loomaarstid” (“Veterinarians”, 10 sequences) that gave an overview of the daily professional life of the teaching veterinarians in the University clinics. New promotion videos were also prepared for admission in 2019. Two of our students participate in the documentary series “Kandit” featured by YLE1 (Finland) from January 2019.

The management of the clinics has been thoroughly re-organised and there have been a number of changes in human resources, e.g. the clinics have a new manager. With the aim of improving the quality of teaching, the Institute has hired an anaesthesiologist (February 1 2018), a wildlife veterinarian (April 2018) and few other specialists. In addition, SAC has hired a full-time exotic animal veterinarian, which enables the clinic to offer a better service and thereby increase the number of exotic patients. The Institute has invested into renovating anaesthesiology section, ICU and the physiotherapy section in the clinic, aiming at quality services for customer satisfaction.

4. Curriculum

4.1.3.1. Given the importance of research in the Estonian university funding and the responsibility of veterinarians for animal welfare, it would be useful to include teaching in laboratory animal science. At least some of the hours of the elective should become compulsory.

Teaching of laboratory animals (**VL.0237 Medicine of laboratory animals (2 ECTS)**) was taught as an elective, but the Curriculum Development Committee (CDC) found the possibility to accommodate 6 hours of laboratory animal teaching into the course **VL.0180 Medicine of exotic animals (2 ECTS)**, which started from study year 2018/2019. The elective course will still be available for those more interested in the topic.

4.1.3.2. *Some other subjects taught as electives (wildlife, exotics) should have some basic teaching in the compulsory part of the study.*

VL.0180 Medicine of exotic animals (2 ECTS) is taught in the autumn semester of the 5th year as a compulsory subject. **VL.1207 Terrarium animals and their healthcare (2 ECTS)** is offered to the 3rd, 4th and 5th-year students as an elective. In addition, 5th-year students can choose the elective course **VL.0745 Zoo and wild animal medicine (2 ECTS)**. Cooperation with Tallinn Zoo has increased, which offers a good basis for practical training. Increasing number of guest lecturers have been called in. For example, Prof T. Szwaczkowski (Poznań University of Life Sciences) focused on animal breeding in zoological gardens, globalisation of animal breeding and the conservation of animal genetic resources.

4.1.3.2. *An elective in Food Hygiene and VPH could be reinstated to promote the Institute as a centre of excellence and attract investment.*

In the past few years, this module was rarely chosen by the students, and as the University puts a great emphasis on food hygiene and veterinary public health (VPH), the share of courses related to food hygiene and VPH in the curricula was increased. The students can still specialise in this field as they are offered a wide range of topics in the field of food hygiene and VPH for their graduation thesis. In addition, the students can suggest a topic of their own choice. To realise the full potential in the development of advanced zero waste/maximum utilisation and valorisation technologies related to the food value chain (and adjacent value chains using the by-products and derivatives of plant and animal origin), a new inter-unit entity **VALORTECH** – ERA Chair for Food (By)-Products Valorisation Technologies – was launched. VALORTECH brings together know-how and technological base from our Institute and the Institute of Agricultural and Environmental Sciences, and has a linkage to other structural units of the University. Knowledge obtained from VALORTECH activities is also used while teaching veterinary students in food technology, food safety and food science.

ERA Chair for Comparative Medicine (COMBIVET) of the Estonian University of Life Sciences (EMÜ) received funding from the EU Horizon 2020 research and innovation programme. COMBIVET ERA Chair will be formed as an interdisciplinary entity of the Institute and the Institute has published a want ad to find the Chair for the ERA Chair for Comparative Medicine.

4.2.3. *The expertise of visiting specialists (e.g. veterinary pharmacologist, virologists, bacteriologists) from other institutes should be used to raise knowledge and training in these fields for veterinary students, resident veterinarians and support staff.*

The Institute is trying to make a better use of the expertise of visiting specialists from abroad. In addition to local specialists, agreements for regular teaching and staff training have been signed with the following lecturers in the past year:

1. Antonella Puggioni, Dr Med Vet, CertVDI, DipECVDI, Assistant Professor in veterinary diagnostic imaging, European specialist in veterinary diagnostic imaging, Dublin University; VL.0905 Veterinary radiology; 2018/2019, 2019/2020;
2. Henna Laurila, DVM, PhD, Specialist in Small Animal Diseases, University of Helsinki; VL.1285 Small animal internal medicine; 2017/2018, 2018/2019;
3. Anu Lappalainen, DVM, PhD, Adjunct Professor, Department of Equine and Small Animal Medicine, University of Helsinki, CT teaching; 2017/2018;
4. Anna Mykkänen, DVM, PhD, Clinical teacher in equine internal medicine and anaesthesia, Department of Equine and Small Animal Medicine, University of Helsinki; equine internal medicine; 2017/2018, 2018/2019;
5. Filip A.M. Volckaert; Department of Biology, KU Leuven; evolutionary genomics and molecular ecology;
6. Aleksandrs Makarovs, DVM, PhD, Latvia University of Life Sciences and technologies; VL.0180 Medicine of exotic animals; 2017/2018;
7. Suvi Kosonen, DVM, PhD, University of Helsinki; 1285 Small animal internal medicine; Diseases of renal and urinary system; 2017/2018;
8. Jukka Houttu, Tampere Equine Clinic, Finland; lectures and consultations in equine joint arthroscopy;
9. Tomasz Szwaczkowski, Prof Dr hab., Poznań University of Life Sciences, Poland; animal breeding in zoological gardens, globalisation of animal breeding and the conservation of animal genetic resources. He also gave lectures on the genetic aspects of feed efficiency in poultry. 2017/2018;
10. Klaus Depner, Dr, Federal Research Institute for Animal health, FLI, Germany; lectures on veterinary practice and management (VL.0825 Veterinary practice and management); 2018/2019, 2019/2020;
11. Alessandro Cuomo, Dr, International Expert on Food quality and safety, certified NSF–KHC; lectures on the production of fermented meat products using traditional methods in accordance with HACCP principles (VL.0700 Hygiene and veterinary control in meat industry); 2017/2018;

12. Stephen Hall, Prof, Lincoln University; lectures on extensive beef farming and farm animal genetic resources management in the framework of courses VL.1144 World animal production and VL.0651 Animal welfare and protection; 2017/2018, 2018/2019;
13. Anthony Paterson, Prof, BE (Chem), PhD Camb. FIPENZ, Massey University of New Zealand delivered lectures on the stickiness of spray dried powders with sugars; 2017;
14. Marina Hitrova, DVM, PhD, Latvia University of Life Sciences; lectures in the course VL.1282 Obstetrics and gynaecology I; 2018/2019, 2019/2020;
15. Ard Nijhof, Prof, Georg von Samson-Himmelstjerna, Prof, Peter-Henning Clausen, Prof Dr Jürgen Krücken, Dr rer nat, Freie Universität Berlin, Germany; four lecturers within the course VL.0121 Parasitology and parasitic diseases; 2018/2019;
16. Hillar Klandorf, DVM, PhD, Professor of Physiology and Nutrition, College of Agriculture, Natural Resources and Design, West Virginia University; VL.1297 Animal physiology; 2017/2018, 2018/2019, 2019/2020.

In addition, 11 lecturers from Italy, Serbia, Jordan, Egypt, Ukraine, etc. visited the Institute in the framework of Erasmus+ and Erasmus Mundus projects in 2018. They gave lectures in anatomy, parasitology, virology, endocrinology, internal diseases, food safety, etc.

Furthermore, in the past few years the Institute cooperated with the Norwegian University of Life Sciences, University of Copenhagen, University of Manchester, University of Sheffield and University of Teramo in the framework of the Graduate School receiving multiple guest lecturers. Besides that, the Institute has welcomed a large number of guest lecturers making short-term visits to conduct lectures, but they are not listed here.

PhD students and staff members participated in workshops and seminars on academic writing, conference presentations, writing articles and technology transfer and patenting (University of Copenhagen, University of Sheffield). In addition, the staff of the Institute benefitted from the lectures on curriculum development (Prof Michelle Marshall, Director of Learning and Teaching in the Academic Unit of Medical Education of the Medical School in the University of Sheffield). Dr Christian Burvenich from Ghent University in Belgium gave a short course on "How to write a scientific paper and make my message clear to the others?" in spring 2019.

4.4.3.1. *Increasing cases from disciplines, which are not well distributed in the case log.*

The table below shows that the total number of cases is relatively stable. The number of cases in rabbits and exotics have almost doubled. Due to African swine fever epidemic in Estonia, the number of pigs is still small. However, the Institute has a collaboration agreement with a large pig farm for conducting practical training for the students in the 5th and 6th year.

Table 1. Number of animal patients in the clinics (including ambulatory clinic)

Species	2016	2017	2018
Dogs	5921	6506	5743
Cats	2092	2379	2398
Bovine	1519	1458	1623
Camelids	5	1	8
Equine	432	316	443
Swine	0	4	0
Rabbits	68	114	285
Small ruminants	33	7	14
Poultry	18	37	4
Rodents, exotic animals and cage birds	96	128	318
Wildlife	117	108	154
Other	6	36	0
Total	10343	11090	10833

4.4.3.2. *Increase the number of surgery cases in horses.*

The number of procedures performed in equine clinic has risen from 2593 in 2016 to 3326 in 2017 and as a result, the number of surgical procedures has grown by 47%. As to surgical procedures, arthroscopy was the prevailing one. More attention is paid to hands-on training. All students train on dead limbs and heads, brought to the clinic. In 2017, the Institute purchased an equine dummy, which is actively used in teaching. The hands on skills of students are assessed during the practical training. Among other things, the Institute has purchased new anaesthesia equipment and a new endoscope to improve the services offered.

4.4.3.2. *Creating an additional position of senior teacher in equine medicine could help the future developing of the horse clinic.*

We have a senior veterinarian, and the training of junior veterinarians is currently underway. One of them, Triin Rilanto who has been specialising in soft tissue surgery, is doing her internship at the University of Helsinki. Another veterinarian from the equine clinic specialises in foal mortality, and the clinic is planning to send her to do her internship abroad. We have a long-term agreement with Anna Mykkänen, (DVM, PhD) who is a clinical teacher in equine internal medicine and anaesthesia at the University of Helsinki. She works closely with our junior veterinarian Egne Kahro, trains her and supervises her work. Dr Mykkänen also acts as the resource person to be contacted in case of emergency. Reet Herm, the current head of EC, has started her doctoral studies and is expected to apply for the position of a senior lecturer after graduation. The Institute plans to take on one more PhD student specialising in equine medicine. The doctors are encouraged to pursue their interests – e.g. one of the doctors focuses on equine neonatal medicine, another is interested in equine dentistry. The EC also has close co-operation with practitioners and Estonian Equestrian Federation.

4.4.3.3. *The expertise of visiting specialists (e.g. veterinary pharmacist, radiologist, emergency and critical care specialist) from other Institutes should be utilised to raise knowledge and training in these fields for veterinary students, resident veterinarians and support staff.*

Four guest lecturers participated in delivering lectures in the courses **VL. 1172 Food production chain** (13 ECTS), **VL.1205 Basics of product development in food industry** (2 ECTS) and **VL.0251 Product development in food industry** (3 ECTS). Antonella Puggioni from University College Dublin and Anu Lappalainen, University of Helsinki were invited as guest lecturers to read the course **VL.0905 Veterinary radiology** (5 ECTS). In addition, also local practitioners from outside the University (e.g. Garri Tralman (DVM) from Billy Animal Clinic, Estonia) were involved in teaching this course. Two specialists in small animal diseases from the University of Helsinki, Suvi Kosonen and Henna Laurila, participated in **giving** the course **VL.1286 Small animal internal medicine** (4 ECTS). Dr Kosonen focused on the diseases of renal and urinary system whereas Dr Laurila on the diseases of respiratory tract. Aleksandrs Makarovs, a specialist in rodent medicine from the Latvia University of Life Sciences and Technologies gave lectures in the course **VL.1080 Medicine of exotic animals** (2 ECTS), etc.

4.4.3.4. *An anaesthesiology service should be available at all clinical departments that perform anaesthesia (e.g. the equine clinic, ophthalmology).*

The clinic hired a full-time anaesthesiologist and a permanent assistant, whose services are available to all the three clinics.

4.5.3.1. *More external lecturers could be used for specific seminars regarding food control, food processing and hygiene.*

The lectures by external top specialists are organized on a regular basis. The education competence centre Foundation INNOVE coordinates a project (PRÕM) that promotes practical training and entrepreneurship education. The project allows inviting practitioners from e.g. the Veterinary and Food Board, private veterinary clinics, slaughterhouses, etc. to give lectures that are more specific. Since 2017, for example, the main specialist from the Ministry of Rural Affairs has been lecturing for the 5th year veterinary students focusing on the principles of legislation in the EU and Estonia, covering also animal welfare related aspects. Four guest lecturers participated in delivering lectures in the courses **VL.1172 Food production chain** (13 ECTS), **VL.1205 Basics of product development in food industry** (2 ECTS) and **VL.0251 Product development in food industry** (3 ECTS). Dr Alessandro Cuomo, an international expert on food quality and safety, certified NSF-KHC focused in his presentation on the production of fermented meat products using traditional methods in accordance with HACCP principles – within the course **VL.0700 Hygiene and veterinary control in meat industry** (4 ECTS).

Veterinary students perform a two-week practical training in county veterinary centres together with veterinary officials. Students get a very good understanding of how the state food control is organized and performed. Different type of food business operators are visited within the state food control activities.

4.5.3.12. *The laboratory facilities should be improved.*

This year, the Institute upgraded the laboratory complex of the Chair of Food Science and Technology, where veterinary students are taught in both theoretical and practical aspects of food technology and processing. The extension of the laboratories (training hall for food hygiene and food safety) in the Chair of Food Hygiene and Veterinary Public Health is planned for 2019/2020. The laboratory room (additional to the current area) for food hygiene and food safety training for veterinary students is expected to be ready in September 2019. The area of the new food hygiene teaching laboratory hall is 95 m².

4.6.3.1. *Efforts should be made to increase the caseload in some species, esp. pigs, sheep, poultry, rabbits and exotic animals. Perhaps the Institute can buy some animals to be used for clinical teaching, research and pathological education.*

The Institute hired a full-time exotic animal veterinarian in 2018/2019, which increased the caseloads in exotic animals and rabbits (Table 1). Sheep and goats are mostly seen outside the clinic during herd health farm visits, which number has also increased. The Institute still has problems with practical cases and farm visits in swine medicine because of the continuing epidemic of African swine fever. However, a preliminary agreement has been reached with a large pig farm that has consented to be the practical training base for our students.

4.6.3.2. *A track in Food Hygiene and VPH could be reinstated, to enhance the Department of Food Hygiene as a centre of excellence.*

See 4.1.3.2.

5. Teaching and learning; quality and evaluation

5.1.3. *It is recommended to give more feedback to the students.*

Giving feedback to students has been under discussion at the CDC meetings, and the lecturers have been encouraged to give more feedback to students. Giving feedback in different formats (individual feedback, group interviews, surveys, group or individual feedback on tests, feedback in Moodle, briefing and de-briefing during clinical rotations, etc.) is on the rise. However, it still depends a lot on the lecturer. Feedback is discussed at the Chair, Institute and University level at least once a semester. Feedback to students has been discussed at different meeting with the representatives the Student Union and professional student organisations.

In addition, students collect feedback on their own initiative that they also communicate to the CDC, the Department of Academic Affairs and to the Vice-rector of Studies. At the students' suggestion, practical sessions in the clinics were reorganised so that every shift or day of training starts and ends with a team briefing and de-briefing session. The number of students (including exchange students) was so high that in the English group the cohort was divided into three groups, e.g. in surgery, health management of small ruminants, obstetrics and gynaecology, veterinary radiology, meat inspection, etc.

5.2.2.1. *Oral examinations are usually conducted by only one examiner. In certain circumstances, this could be an unsafe environment for the students. Additionally, objective judgement of student performance is not always guaranteed when the oral examination is conducted by only one examiner.*

The issue was discussed at the CDC meetings and has also been taken up at the University level. At present, the University Department of Academic Affairs has no ground to impose this requirement. However, at the Institute level, the Director of Studies is responsible for ensuring that two examiners are assigned if, at the end of the course, the students are graded based on the oral examination only. Having two examiners has been a requirement in the examinations conducted by the Chair of Clinical Veterinary Medicine for years.

5.2.2.2. *Most students take a final examination, rather than a thesis.*

Corresponding amendments have been introduced into the Study regulations and starting from admission 2016 all students are going to defend their graduation thesis (15 ECTS).

5.3.3.1. *It is recommended that the Institute provide a room where the students can eat their lunch and preferably also can buy some food. Besides the lunch facilities, the duration of the lunch breaks is experienced as too short and should be adjusted.*

The Institute has allocated rooms for students where they could have their lunch. A new café was opened in the building across

the road (five-minute walk from Zoomedicum), where the students can have lunch. In April 2018, a restaurant was opened in the gardening centre Gardest, which is located at a five-minute walk from the Institute and another café was opened at the Fair Grounds, a three-minute walk from the Institute. Zoomedicum will have a café when the third wing of the building will be erected. The representatives of veterinary students' organisations carried out a poll among the students, which showed that students were not especially keen on longer lunch breaks as extra lunch breaks would prolong their already long days even further. Still, whenever possible, the study advisor takes this suggestion into account when drawing up the timetable.

5.3.3.2. Cooperation between the Estonian and the international students should be encouraged and every effort should be made to enhance this.

This issue has been discussed with the management of the Institute and the student organisations. There are some events (Freshmen's party, Christmas party, Graduation party) that are organised for both Estonian and international students together. The freshmen from the Estonian and English group share the same tutor. In practical training sessions, students of different nationalities are paired off. Practically all events organized by the Student Union are aimed at both Estonian and foreign students. Still, both home and international students admit that the situation needs improvement. The Student Union and the professional student organisations (IVSA, IVSA Estonia and Suolet) are making efforts to remedy the situation. They have started with organising some lectures and discussions that are of interest to both language groups. On their own initiative, the students have started some professional clubs (e.g. surgery club) comprising students from the Estonian and English group.

5.3.3.1. Staff and students should be informed about what they should do if they become aware of a student experiencing personal problems or difficulties with their studies and students should be encouraged to consider volunteering for peer support. The Students' Union should also be encouraged to publicise and make use of these arrangements.

The University aims to offer the freshmen systematic assistance in the induction into their studies. Already in 2017, it was decided to increase the volume of credits awarded for the introductory course, and from 2018/2019 the content and the volume were revised to contribute to a better understanding of the content and requirements set by the curriculum. Among other things, the student counsellor, the psychologist, the representatives of the student organisations and the representative of the student career service make a presentation about their services and activities and the students have the opportunity to meet all of them in person. The number of credits given for the course VL.1268 Introduction to veterinary studies is two ECTS. The information on support services is also available on the University and Institute homepages. Buddy system is under development at the University. All tutors and buddies at the university pass specific tutor training, which also includes psychological aspects. Having discussed the problems with student organisations, the Institute is working on launching an academic mentorship programme for the freshmen. In addition, information on student support is also spread through social media channels (Facebook, Instagram). Students are encouraged to consult the study advisor and inform them about the students encountering a problem. In May 2018, a series of training sessions teaching the students and personnel how to manage stress during their studies and in veterinary profession took place. Stress and time management issues will be included in the programme of the course **VL.0825 Veterinary practice and management** (3 ECTS).

6. Facilities and equipment

6.1.2.1. Hygiene awareness should apply all over the Institute for both staff and students.

The students are first introduced to the concepts of biosafety and biosecurity in the framework of the course VL.1268 Introduction to veterinary studies (2 ECTS). Besides that, all practical training and laboratory courses start with revising the instructions and protocols regarding biosecurity. The students certify with their signature that they have passed the instruction.

The number of eye washers and glove dispensers was increased, especially in the clinic area. Access to the clinics has been restricted. The signage policy at the Institute was revised.

6.1.2.2. Provide an effective hygiene barrier for the necropsy hall. Take bio-security in the necropsy hall more seriously and provide students and staff with clear instructions and protocols regarding bio-security.

Please see the chapter on the correction of the major deficiency above.

6.1.2.3. *Make a clear protocol for storage and documentation of drugs, especially controlled drugs. Advocate a culture within the staff to apply these protocols, and keep all drugs, especially controlled drugs, locked away at all times. Make one person in the Institute responsible for the application of these protocols, e.g. the staff member responsible for pharmacotherapy or the pharmacist.*

A clear protocol for the storage and documentation of drugs has been drawn up and the Institute is working on the link between Provet and Axapta, which is an accountancy software that will allow keeping better track of the use of medications and drugs. The heads of the clinics ensure the adherence to the protocol.

6.1.2.4. *Provide adequate eyewashes and consider installing emergency shower(s) at relevant spots in laboratories where students and staffs do practical work. Ensure that posters with clear instructions on what to do in case of emergencies are displayed in all laboratories and clinics.*

The occupational health and safety specialist of the University made an inventory of the eyewashes and emergency showers, and made sure their sites and numbers meet the requirements of national regulations. Instructions on what to do in case of emergencies are on display in all laboratories and clinics. The contacts of persons responsible for maintenance, biosafety and fire safety can be found on the walls.

6.2.3.1. *The planned upgrade and improvement of the isolation unit for large animals and equines is strongly advised, especially since it is the only isolation unit in the whole country.*

Please see the chapter on the **correction of the major deficiency** above

6.2.3.2. *The facilities for the care of wildlife and birds should be improved, as it is an opportunity to enhance this service, which is unique in the region and contributes specialist skills to the Institute.*

Please see the chapter on the **correction of the major deficiency** above.

6.2.3.3. *There should be an improvement in the laboratory in the clinics, to simulate modern 1st line diagnostic practice equipment, which includes haematology.*

The laboratory in the clinics was moved into the location between the SAC and LAC, which allows better adherence to biosafety regulations. The laboratory is more spacious and allows more room for tests. The Institute has the 1st line diagnostic practice equipment and we are now developing advanced laboratory diagnostics. The new public procurement for a new veterinary haematology analyser was purchased in 2018.

Students' laboratory skills will be checked at the OSCE, which pilot examination is planned for 2019/2020.

6.2.3.4. *An effort should be made by the pathology department to acquire necropsies from the farms that are visited by the Institute, in order to teach students the follow-up of clinical cases.*

The link between the farms, the clinical unit and the pathology unit has been improved. The number of necropsies have been acquired from the University farm and farms visited by the University students and veterinarians.

7. Animals and teaching material of animal origin

7.3.1. *Try to increase the number of poultry flocks seen by students.*

The lecturer of poultry diseases is aware of the shortcoming and the number of flocks seen by the students has increased. As due to biosafety reasons students are not allowed to visit Tallegg – the largest poultry factory in Estonia, the Institute is actively seeking for opportunities to organise field trips to private poultry farms. Students generally visit two large flocks during their studies and make additional visits to some smaller private farms.

7.3.2. *Acquire a small number of rabbits, chickens and exotic animals.*

The number of cases in rabbits and exotic animals has increased. Please see Table 1 above.

8. Library and learning resources

8.3. *The ŌIS system should be better organised to make it more “student-friendly”.*

There have been several discussions with the Student Union and the Study Commission about ŌIS. Among other things, emphasis has been put on making the system more “student-friendly”. Several regulations concerning updating subject information, learning outcomes, assessment criteria etc. have already been made.

The University is expecting to adopt the upgraded ŌIS that is being developed by the University of Tartu in 2020. The new ŌIS will be more compact and has different additional possibilities for students.

9. Student admission and enrollment

No suggestions.

10. Academic and support staff

10.3.1. *Provide proper job descriptions for the teaching and clinical staff, and check that all teaching, clinical, and management related responsibilities are adequately covered.*

The career path for veterinarians (clinical staff) was developed. Job descriptions covering all the teaching, clinical and management related responsibilities have been drawn up for junior veterinarians, veterinarians and senior veterinarians. Veterinary assistants fall into two categories, which responsibilities are thoroughly described. Compliance with the set requirements of the academic and clinical staff is checked at [professional reviews](#) at regular intervals.

10.3.2. *Encourage and facilitate young staff members to apply for either an exchange or regular residency abroad thus increasing the number of European Board certified diplomates at the Institute.*

The Institute communicates information about different grants and scholarships and encourages young members of staff to apply for an exchange or residency.

In addition, the clinic has allocated some additional resources to facilitate the training of young staff members. In last year, from 15 applications received the clinic selected three applicants to support their training. The clinic would like to offer all clinical staff the opportunity to participate in an external advanced or refresher course at least once every year.

As to our lecturers, Dr Paul F. Mõtsküla passed the European specialisation college exam in cardiology in 2016 and is now the European Specialist in Small Animal Cardiology. Dr Svetlana Belova is the European Specialist in Veterinary Dermatology. Maarja Uri is going to take the examination in veterinary dermatology in 2020. In addition, Ranno Viitmaa has completed the European specialisation college course in neurology, but he has not taken the examination.

11. Continuing education

11.3.1. *The Institute might be able to offer some speciality courses if it develops some “areas of excellence” that might be of some international interest. Funds raised out of these CPE’s can be used to enhance services and/or research.*

Aiming to meet the needs of our professional sector, the Institute has offered some tailor-made specialty courses in dermatology, ophthalmology and other areas. The Institute has been organising experimental animal competence courses for doctoral students and science staff from the Baltic countries on a regular basis. Professional development courses have been offered to the veterinarians in the respective countries at the request of Georgian Dairy Association and Ukrainian Dairy Association. As to in-service training in Estonia, the Institute offers a variety of in-service training and refresher courses through the Open University. They include courses on food hygiene and food safety, on microbiological methods and food microbiology, the transport of farm animals and animal protection requirements, the prudent use of medicines in cattle, biosafety on farms, herd health and microbial resistance and food retention requirements. The Estonian Food Industry Association has ordered a number of tailor-made courses, e.g. ‘Food hygiene and food safety for beginners and at the intermediate level’, ‘Allergen self-check plan in food production industry’, ‘Design, application and auditing HACCP in agri-food companies’, ‘Food pathogen *Listeria monocytogenes*’, ‘Salmonella in bovine, poultry, swine and humans and their control’, and ‘Production

hygiene and sanitation'. Some courses have been organised at the request of professional organisations, e.g. 'Poultry slaughterhouse employee training', 'Farm animals slaughter operations competency training', 'Training for slaughterhouse surveillance officers', 'Training of slaughterhouse meat inspection officers', 'Food packaging, labelling and ensuring food safety' and 'Food safety and production hygiene of fish and fish products'.

11.3.2. Some courses given to the lay public could raise the profile of the Institute and might attract more investment.

The Institute is offering a number of re-training courses to official and authorised veterinarians, food hygiene and food safety related professionals, food handlers, and hunters. In total 38 different courses are held by the Institute through the Open University. In addition to professionals, Open University courses are targeted at lay public, e.g., Apiculture, Basic module for animal masseurs; Estonian traditional fermented drinks, Food hygiene and self-control for handling food at home, etc. In the framework of Family University, under the aegis of Open University, three courses were offered to the parents and children together. The courses were "Child and the dog", "Food hygiene – myth and reality", and "When the giraffe has a neck ache ..."

In addition, the Institute arranges a variety of information days, tailor-made seminars and workshops carried out for gymnasiums, school-leavers, journalists, career service specialists, kindergartens, professional organisations, etc. Our lecturers make presentations; act as experts or judges at different agricultural fairs or exhibitions (e.g. Pedigree Animal). At the largest agricultural fair "Maamess" in the Baltics (more than 45000 visitors), the principles of keeping animals, their welfare and health are promoted to all visitors. Student organisations or animal societies often ask for lectures on specific subjects. The Institute continues its cooperation with the Tallinn Zoo, Estonian Massage and Therapy School, schools and kindergartens and animal shelters.

12. Postgraduate education

12.3.1. An internship programme should be reintroduced and integrated as a pre-programme for junior veterinary clinician-teacher programmeposition and future residency programme in EMU and abroad. Internship is necessary for applying to residency programme in EBVS.

Continuing education programme for the junior veterinary clinician (internship) has been launched. In 2018, we accepted four veterinarians and two veterinarians in 2019.

12.3.2. The high percentage of withdrawals of PhD students calls for action; in the past 3 years, the same number of graduates and students withdrew from PhD programme (n=6).

The grants paid to doctoral students were increased and the University takes on PhD students as junior researchers to increase their salary. In 2017–2018, three PhD students in veterinary medicine interrupted their studies, whereas in 2018/2019 nobody interrupted their studies. The University plans to regulate the level of PhD students' engagement in teaching, clinical work and research so that it would not interfere with their progress in their studies. In 2019/2020, 4–5 PhD students are expected to defend their thesis. (Figure 5)

12.3.3. Specializations should be encouraged by cooperation and exchange with other faculties of Veterinary Medicine as, for such a small faculty, it is nearly impossible to do it onsite.

Taking into account the size of Estonia, the number of animals and veterinarians in Estonia and the limited resources available, the EMU and the Estonian Veterinary Association do not consider it cost-effective and economically sustainable to open postgraduate specialisation courses for veterinarians in Estonia. They accept the diplomas awarded through the EBVS postgraduate specialisation scheme (residency) and encourage veterinarians to apply for the specialisation college training programs. The Institute is actively seeking different options for our veterinarians.

There has been some discussion about cooperation to share postgraduate specialist training courses between the Universities teaching veterinary sciences in the Baltic-Nordic region, but so far, no decisions have been made.

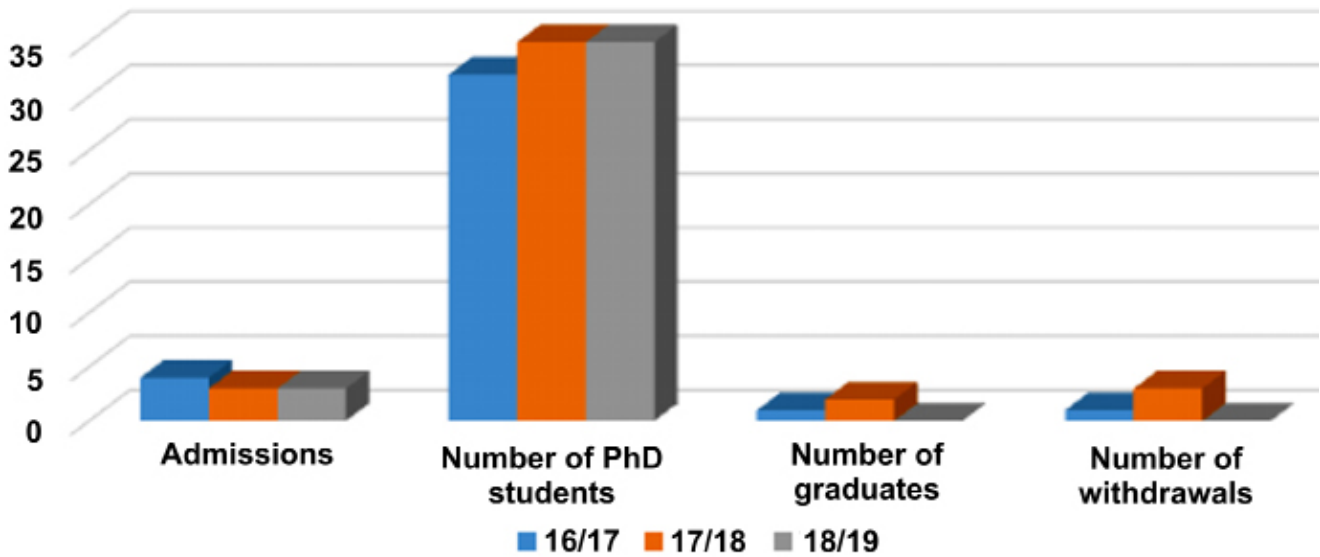


Figure 5. Doctoral studies in Veterinary Medicine and Food Science

13. Research

13.3. *A final thesis should be considered for all students provided that there is sufficient time for the preparation.*

From admission 2016, all students are going to finish their studies with a final thesis. The volume of the final thesis has been increased from 8 ECTS to 15 ECTS in order to allocate more time for writing the thesis.

6. List of indicators

	Raw data from the last 3 full academic years	2016	2017	2018	Mean
1	n° of FTE academic staff involved in veterinary training	73	73	75	73.7
2	n° of undergraduate students	325	338	328	330.3
3	n° of FTE veterinarians involved in veterinary training	60,8	60,8	62,1	61.2
4	n° of students graduating annually	40	56	43	46.3
5	n° of FTE support staff involved in veterinary training	51	51,8	50,3	51.0
6	n° of hours of practical (non-clinical) training	1334	1334	1334	1334.0
7	n° of hours of clinical training	1036	1036	1036	1036.0
8	n° of hours of FSQ & VPH training	1002	1002	1002	1002.0
9	n° of hours of extra-mural practical training in FSQ & VPH	104	104	104	104.0
10	n° of companion animal patients seen intra-murally	8013	8885	8141	8346.3
11	n° of ruminant and pig patients seen intra-murally	34	42	39	38.3
12	n° of equine patients seen intra-murally	330	240	336	302.0
13	n° of rabbit, rodent, bird and exotic patients seen intra-murally	169	285	611	355.0
14	n° of companion animal patients seen extra-murally	0	0	0	0.0
15	n° of individual ruminants and pig patients seen extra-murally	1485	1416	1584	1495.0
16	n° of equine patients seen extra-murally	102	76	107	95.0
17	n° of visits to ruminant and pig herds	143	139	167	149.7
18	n° of visits of poultry and farmed rabbit units	3	3	3	3.0
19	n° of companion animal necropsies	135	129	137	133.7
20	n° of ruminant and pig necropsies	133	122	112	122.3
21	n° of equine necropsies	25	28	23	25.3
22	n° of rabbit, rodent, bird and exotic pet necropsies	118	113	104	111.7
23	n° of FTE specialised veterinarians involved in veterinary training	2	2	2	2.0
24	n° of PhD graduating annually	3	1	2	2.0

Name of the Establishment:		Estonian University of Life Sciences			
Date of the form filling		22.08.2019			
Calculated Indicators from raw data		Establishment values	Median values¹	Minimal values²	Balance³
I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0.223	0.16	0.13	0.10
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	1.322	0.87	0.59	0.73
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1.101	0.94	0.57	0.53
I4	n° of hours of practical (non-clinical) training	1334.000	905.67	595.00	739.00
I5	n° of hours of clinical training	1036.000	932.92	670.00	366.00
I6	n° of hours of FSQ & VPH training	1002.000	287.00	174.40	827.60
I7	n° of hours of extra-mural practical training in FSQ & VPH	104.000	68.00	28.80	75.20
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	180.137	70.48	42.01	138.13
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	0.827	2.69	0.46	0.36
I10	n° of equine patients seen intra-murally / n° of students graduating annually	6.518	5.05	1.30	5.22
I11	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	7.662	3.35	1.55	6.12
I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	0.000	6.80	0.22	-0.22
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	32.266	15.95	6.29	25.97
I14	n° of equine patients seen extra-murally / n° of students graduating annually	2.050	2.11	0.60	1.46
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	3.230	1.33	0.55	2.68
I16	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0.065	0.12	0.04	0.02
I17	n° of companion animal necropsies / n° of students graduating annually	2.885	2.07	1.40	1.48
I18	n° of ruminant and pig necropsies / n° of students graduating annually	2.640	2.32	0.97	1.67
I19	n° of equine necropsies / n° of students graduating annually	0.547	0.30	0.09	0.45

Calculated Indicators from raw data		Establishment values	Median values¹	Minimal values²	Balance³
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	2.410	2.05	0.69	1.72
I21*	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0.043	0.20	0.06	-0.02
I22*	n° of PhD graduating annually / n° of students graduating annually	0.043	0.15	0.09	-0.04
1	Median values defined by data from Establishments with Approval status in April 2016				
2	Recommended minimal values calculated as the 20th percentile of data from Establishments with Approval status in April 2016				
3	A negative balance indicates that the Indicator is below the recommended minimal value				
*	Indicators used only for statistical purpose				