



RSER

Revisitation Self Evaluation Report

ESEVT Evaluation
Faculty of Veterinary Medicine and Animal Science,
SLU, Uppsala, 2018

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This RSER was prepared according to the instructions in the ESEVT SOP-Uppsala 2016.

Introduction

The Faculty of Veterinary Medicine and Animal Science (VHF) was subject to an ESEVT Full Visitation on 25-29 September 2017.

Based on this visitation, ECOVE, who met on 28 November 2017, concluded that the following Major Deficiencies had been identified:

- The Establishment is not compliant with Standard 3 because of insufficient number of hours in practical training in Food Hygiene and Food Safety and absence of practical training in anaesthesiology.
- The Establishment is not compliant with Standard 4 because of inappropriate isolation facilities for companion and food-producing animals.
- The Establishment is not compliant with Standard 5 because of insufficient number of healthy and diseased companion animals and of cadavers in food-producing animals.

After considering the correction of data presented by the Establishment in an appeal letter, ECOVE, who met 30 May 2018, unanimously decided to reclassify the relevant part of the Major Deficiency as Minor Deficiency "The Establishment is partially compliant with Standard 3 because of insufficient number of hours in practical training in Food Hygiene and Food Safety."

Consequently, ECOVE decided that the status of VHF was still NON-ACCREDITATION due to three remaining Major Deficiencies (ECOVE Reg no 114/2018).

VHF realises that the remaining Major Deficiencies must be rectified in order for VHF to obtain the status of "Accreditation". Against this background and in accordance with the ESEVT SOP Uppsala 2016 Chapter 2.2., VHF requested to be subject to a Revisitation as soon as appropriate.

The Deficiencies identified and the suggestions for improvement made during the evaluation process are all essential contributions to the ongoing work on a new revised curriculum for veterinary education at our Establishment.

In this context - especially in view of what the students have a right to expect - it is, of course, imperative that our curriculum is fully compliant with the ESEVT Standards.

Our confidence in the ESEVT quality assurance system means that we look forward to continued future constructive collegial cooperation.

Hereby, the RSER is transmitted according to the instructions in the ESEVT SOP-Uppsala 2016. The RSER is the result of efforts by responsible teachers and relevant departments. It has been compiled in dialogue with the student organisation, VMF.

Should you require additional information, please do not hesitate to contact us.

Uppsala 10 September 2018

ghh (bet),,

Kristina Dahlbom
Dean



Anne-Marie Dalin
Associate Dean



1. Correction of the Major Deficiencies

1.1. Major Deficiency 1: The Establishment is not compliant with Standard 3 because of absence of practical training in anaesthesiology

EXTRACT FROM THE FINAL REPORT AS ISSUED BY ECOVE ON 28 NOVEMBER 2017, page 17-18

3.6.2. Comments

“..... No clinical training in anaesthesia is provided.”

3.6.3. Suggestions of improvement

“..... An anaesthesiologist should be available for teaching of the students and supervise the safety of anaesthetised patients.”

3.7. Decision

The Establishment is not compliant with Standard 3 because of ... absence of practical training in anaesthesiology.

1.1.1. Factual information

The description in the Final Report that the VHF veterinary education suffers from an *absence* (non-existence) of practical training in anaesthesiology is not accurate. A description of the total teaching within this area is presented here.

The concept of "anesthesiology" in this context includes both anaesthesia and analgesia. Consequently, we will present below the different methods that the students experience during their practical exercises both before and throughout the clinical rotation year. The description includes the practical exercises previously carried out as well as the changes and additions made after the ESEVT visitation in 2017.

Anaesthesiology in the Veterinary curriculum at SLU

Theoretical foundations are presented during the course VM0072 Introduction to clinical studies, which contains 2.5 ECTS on Anaesthesiology. According to the syllabus the educational goals are to “Describe the clinical aspects of sedation, analgesia, and various methods of euthanasia and local anaesthetic techniques in horses, dogs, cats, cattle and pigs, as well as the basic theory of general anaesthesia in horses, dogs, cats and pigs.”

The lectures include sedation, local anaesthesia, dissociative anaesthesia, intubation, equipment for inhalation anaesthesia, monitoring, safety regulations, premedication, induction, maintenance, pain assessment and management, euthanasia, perianaesthetic treatment including fluid therapy, and complications related to anaesthesia. At the end of the course, a written exam is held.

Immediately following the lecture series, all students participate in a one day exercise when they are introduced to equipment for inhalation anaesthesia, and train to perform intubation and emergency procedures (pleural drain, tracheostomy and thoracentesis) in horse, dog and cat cadavers.

During the clinical rotation year (Appendix 1), anaesthesiology is explicitly addressed in the syllabi of the courses VM0076 Small animal medicine and surgery, 15.0 credits (“- select and administer drugs for pre-medication, anaesthesia and pre- and post-operative analgesia,”) and VM0074 Equine Surgery and Medicine, 9.0 credits (“- carry out sedation of horses, apply principles of analgesia and describe common nerve blocks, - carry out pharmacological casting and anaesthesia using dissociative anaesthesia to be able to apply this technique in the field,”).

However, anaesthetic techniques are also used and trained whenever relevant during the courses at the Ambulatory Clinic (horses, ruminants, pigs), in Ruminant Medicine, and Pig Medicine.

Additional practical training of anaesthesiological procedures is included in the courses given during the spring term following the clinical rotation (Appendix 2).

Day One Competences

In our internal efforts to ensure DOC as listed in 2016 Uppsala SOP Annex 2, VHF has broken down the educational goal into a number of interim goals (Table 1). The goals as defined in 2016 Uppsala SOP, Annex 2, are;

- 1.30 Safely perform sedation, and general and regional anaesthesia; implement chemical methods of restraint.
- 1.31 Assess and manage pain.

Table 1. VHF interpretation and breakdowns of the objectives according to DOC 1.30 and 1.31. CA – Companion Animals, E – Equine, P – Porcine, B – Bovine; SRu – Small Ruminants

<p>Preanaesthetic preparations</p> <ul style="list-style-type: none"> Conduct a preoperative assessment of the patient and prepare the patient Choose appropriate anaesthesia protocol and calculate doses Choose appropriate perioperative analgesia and calculate doses Set up and check functions of anaesthesia and monitoring equipment
<p>Perform general anaesthesia (CA, E, P)</p> <ul style="list-style-type: none"> Insertion of peripheral (permanent) venous catheter Administer premedication Induce general/dissociative anaesthesia Perform endotracheal intubation (CA) Administer anaesthetic and fresh gases (CA, E) Maintain anaesthesia and monitor the patient during anaesthesia (CA, E, P) Monitor body temperature, blood pressure, heart rate, peripheral pulse, respiratory rate Evaluate the results of pulse oximetry, ECG, capnography and arterial blood gas samples Evaluate and adjust the anaesthesia depth Keep anaesthesia records Ensure pain relief of the patient during and after anaesthesia Plan, prepare, monitor and manage the patient during the recovery period Assess and treat post-operative pain
<p>Perform regional anaesthesia</p> <ul style="list-style-type: none"> Local infiltration (CA, E, P, B, SRu) Topical administration (CA, E) Nerve block for dehorning (B, calf) Local anaesthesia for castration (P, B/Calf/, SRu) Nerve block N. palpebralis, N. supraorbitalis, N. digitalis palmaris lat/med. (E) Nerve block N. digitalis communis (CA) Low epidural (B) High epidural (P, SRu) Paravertebral anaesthesia (B) Intravenous regional anaesthesia of hoof (B)
<p>Identify and handle anaesthetic complications</p> <ul style="list-style-type: none"> Perform CPR Treat anaesthetic complications Take arterial blood samples and interpret blood gas and acid-base results

Practical training

Using the breakdowns of objectives presented in Table 1, we have conducted an investigation of how the DOC goals are met for different species, see Table 2. All objectives are taught theoretically and the majority are practically trained in live animals by all students. Additional practical training is done in cadavers and in the KTC using dummies.

Table 2. Training objectives in anesthesiology divided into species.

CA-Companion animals; E-equine; P-porcine; B-Bovine; SRu-small ruminants

■ taught theoretically and practically trained

■ taught theoretically but not all students train practically in live animals

■ not applicable

	CA	E	P	B	SRu
Preanaesthetic preparations					
Conduct a preoperative assessment of the patient and prepare the patient	■	■	■	■	■
Choose appropriate anaesthesia protocol and calculate doses	■	■	■	■	■
Choose appropriate perioperative analgesia and calculate doses	■	■	■	■	■
Set up and check functions of anaesthesia and monitoring equipment	■	■	■	■	■
Perform general anaesthesia					
Insertion of peripheral (permanent) venous catheter	■	■	■	■	■
Administer premedication	■	■	■	■	■
Induce general/dissociative anaesthesia	■	■	■	■	■
Perform endotracheal intubation	■	■	■	■	■
Administer anaesthetic and fresh gases	■	■	■	■	■
Maintain anaesthesia and monitor the patient during anaesthesia	■	■	■	■	■
Monitor body temperature, BP, HR, RR and peripheral pulse	■	■	■	■	■
Evaluate the results of pulse oximetry, ECG, capnography and ABG samples	■	■	■	■	■
Evaluate and adjust the anaesthesia depth	■	■	■	■	■
Keep anaesthesia records	■	■	■	■	■
Ensure pain relief of the patient during and after anaesthesia	■	■	■	■	■
Plan, prepare, monitor and manage the patient during the recovery period	■	■	■	■	■
Assess and treat post-operative pain	■	■	■	■	■
Perform regional anaesthesia					
Local infiltration	■	■	■	■	■
Topical administration	■	■	■	■	■
Nerve block for dehorning	■	■	■	■	■
Local anaesthesia for castration	■	■	■	■	■
Nerve block N. palpebralis, N. supraorbitalis, N. digitalis palmaris lat/med.	■	■	■	■	■
Nerve block N. digitalis communis	■	■	■	■	■
Low epidural	■	■	■	■	■
High epidural	■	■	■	■	■
Paravertebral anaesthesia	■	■	■	■	■
Intravenous regional anaesthesia of hoof	■	■	■	■	■
Identify and handle anaesthetic complications					
Perform CPR	■	■	■	■	■
Treat anaesthetic complications	■	■	■	■	■
Take arterial blood samples and interpret blood gas and acid-base results	■	■	■	■	■

For practical reasons, the following remarks have been divided into animal species and also into the various methods that students either actively train or have demonstrated for them at the UDS Small animal, Large animal and Ambulatory clinics, during the Porcine medicine course, and at the VHC Ruminant clinic.

Several Species

Assessment and management of pain

Pain relief is discussed in all species mentioned and students calculate doses and administer the substance (iv, im, sc, and po). Training to assess “pain face” is made in relevant species.

Euthanasia in LA

Using dummies, all students train humane euthanasia of cattle, pigs and horses using a captive bolt gun at the Clinical Training Centre (KTC). Pharmacological euthanasia of pigs is used at farm visits.

During the slaughterhouse practice (see Section 2.2.1. below), students train to handle the captive bolt gun in cadaver heads. After completing training on cadavers, they can also, on a voluntary basis and under supervision, handle the captive bolt gun themselves for stunning cattle.

Small Animals (cats and dogs)

Table 3. *Excerpt from the SA Clinic students' logbook where active participation in the different obligatory exercises must be signed by the responsible teacher.*

1. Insert a peripheral (permanent) venous catheter
2. Take a blood sample
3. Place an IV drip
4. Attend SA euthanasia
.....
10. Participate at intubation prior to inhalation anaesthesia
11. Participate in patient monitoring during inhalation anaesthesia
.....
28. Take a preoperative status
29. Calculate and perform premedication as well as participate in induction and monitoring of anaesthesia
30. Postoperative monitoring

Sedation

- All students take part in sedation of dogs and cats, e.g. before radiographic or other diagnostic procedures.
- All students sedate cats before the induction of dissociative anaesthesia for castration.

Local anaesthesia

- During clinical rotation, students apply local anaesthesia in connection with minor surgery and wound treatment. During castration of male and female cats under general anaesthesia, students also perform intratesticular and subcutaneous injections of lidocaine.

Dissociative anaesthesia

- All students induce and monitor dissociative anaesthesia during cat castrations.

Inhalation anaesthesia

- All students participate in a dental/oral examination of a dog and in a male dog castration under general anaesthesia. They participate actively from the induction until the cessation of anaesthesia.

- All students attend the main SA surgical ward during at least 2 days. There they follow and may also participate in the perioperative work including the induction of inhalation anaesthesia.
- During on-call duty, the students take part in different kinds of anaesthesia of cats and dogs. The extent of the participation varies between students depending on the cases they see.

Horses

Sedation

- All students sedate horses before examinations at the clinic or on farms.

Local anaesthesia

- All students induce at least one nerve block in a horse, e.g. in connection with an ocular or lameness examination or before suturing of minor wounds.

Dissociative and inhalation anaesthesia

- All students come in contact with these methods during the clinical rotation period spent at the LA surgical ward.
- Students participate in inducing (dissociative) and monitor general anaesthesia (inhalation) until postoperative recovery.
- During on-call duty, students take part in different kinds of anaesthesia in horses. The extent can vary between students due to the cases they see.

Pigs

Sedation

- At farm visits, some students sedate pigs before minor surgery or before pharmacological euthanasia.

Local anaesthesia

- At farm visits, some students give local anaesthesia before castration of piglets.
- All students train the administration of high epidural anaesthesia in pig dummies.

Dissociative anaesthesia

- At farm visits, some students induce dissociative anaesthesia before castration or hernia surgery.

Ruminants

Sedation

- All students participate in sedating cattle and/or calves before examinations or minor surgery.

Local anaesthesia

- All students actively train local anaesthesia, primarily low epidural, and some also apply low epidural anaesthesia in patients. Paravertebral anaesthesia is demonstrated.
- All student administer nerve block before dehorning of calves.
- All students administer local anaesthesia before castration of calves.
- All students train surgery on udders (organs from slaughterhouses), including how to apply local anaesthesia.

Dissociative anaesthesia

- Students train dissociative anaesthesia in connection with surgical procedures in patients. The extent varies between students depending on which cases they see.

1.1.2. Comments

Teaching of anesthesiology would benefit if the theoretical and the practical parts were conducted as two separate and coordinated course blocks. While preparing the new curriculum, this will be taken into account as well as the need for additional practical training.

The lack of veterinary anaesthesiologists at the UDS clinics has undoubtedly resulted in the clinical training not having the desired quality. To counteract this, the professor of anaesthesiology (DVM, PhD, DipIECVA) is now employed part-time (50%) at UDS. In the fall of 2018, two Residents will be recruited, who will support students at the SA and LA clinics.

The students do get practical training in sedation, analgesia and local anaesthesia on patients at all clinics (small animal, horse, ruminant and ambulatory clinics). However, they need further practical training, especially in inhalation narcosis (e.g. inducing, intubation, inhalation, maintenance and equipment). The new situation, with access to veterinary expert support will significantly improve the quality and availability of competent guidance for the students.

In cooperation between the professor of anaesthesiology and the Ambulatory and Ruminant clinics, further exercises are now implemented, including anaesthesiology and analgesia.

At VHF, all practical and clinical exercises are mandatory with 100% attendance requirements. Teachers/UDS veterinarians are responsible for keeping records of the students' attendance and achievements. The records are compiled and reviewed by the course administration. Nevertheless, we will strengthen the documentation to certify at individual level that all students have completed all parts of the practical anesthesia education according to the DOC presented in Table 1. This will form an important part of the work on Quality Assurance procedures (e.g. logbooks) used to ascertain the achievement of each core practical/clinical activity and professional knowledge by each student.

As a result of these clarifications and improvements, we hope that VHF now meets the requirements of Standard 3 with regard to practical training in anaesthesiology.

1.2. Major Deficiency 2: The Establishment is not compliant with Standard 4 because of inappropriate isolation facilities for companion and food-producing animals

EXTRACT FROM THE FINAL REPORT AS ISSUED BY ECOVE ON 28 NOVEMBER 2017, page 21

4.2. Comments

“... the isolation unit in a wooden shed without washing & changing facilities is insufficient. The outside cages and dog-walking area for the SA isolation unit are not properly fenced off for the general public.“....

4.3 Suggestions for improvement

“....The housing for cattle at the facility should be improved and the isolation units in the teaching stables drastically improved, while the isolation unit for the SA should be properly fenced off.”

4.4. Decision

The Establishment is not compliant with Standard 4 because of inappropriate isolation facilities for companion and food-producing animals.

1.2.1. Factual information

The Small Animal (SA) isolation area is situated in the south-eastern corner of UDS (Building 6) and has a separate entrance (including air-lock passages to individual stalls from the inside of the building) and the outdoor area is surrounded by a high security fence.

The Large Animal (LA; equine, ruminant) isolation stables in UDS (Building 2) are divided into two sections with separate entrances from the outside and air-lock passages from the inside of the building to each of the eight individual stall spaces.

The SA isolation area is fenced off from the general public. The outdoor does not have double fences. In Sweden, double fences are only required for quarantine facilities, e.g. facilities for animals arriving from another country, which this is not. The nearest quarantine facilities are located at the National Veterinary Institute, 800 m away, and at Arlanda International Airport.

The wooden shed which, in the visitation report, is described as an isolation unit for ruminants, is not used for isolation purposes. Each September it is used for temporary housing of 20 sheep brought in for one week of hands-on training.

Students and staff always have to enter the clinical and stable areas via the washing and changing facilities in the basement of Building 3.

Animals suspected of having a highly contagious disease are not accepted at the Ruminant clinic.

In the (rare) event of a need to isolate small or large ruminants, the excellent isolation facilities at the LA (equine) clinic would be used.

In the Centre for Veterinary Medicine and Animal Science, zoning has been established according to requirements for infection risks, hygiene, room temperature, security, cleaning and expansion options (Figures 1 and 2).

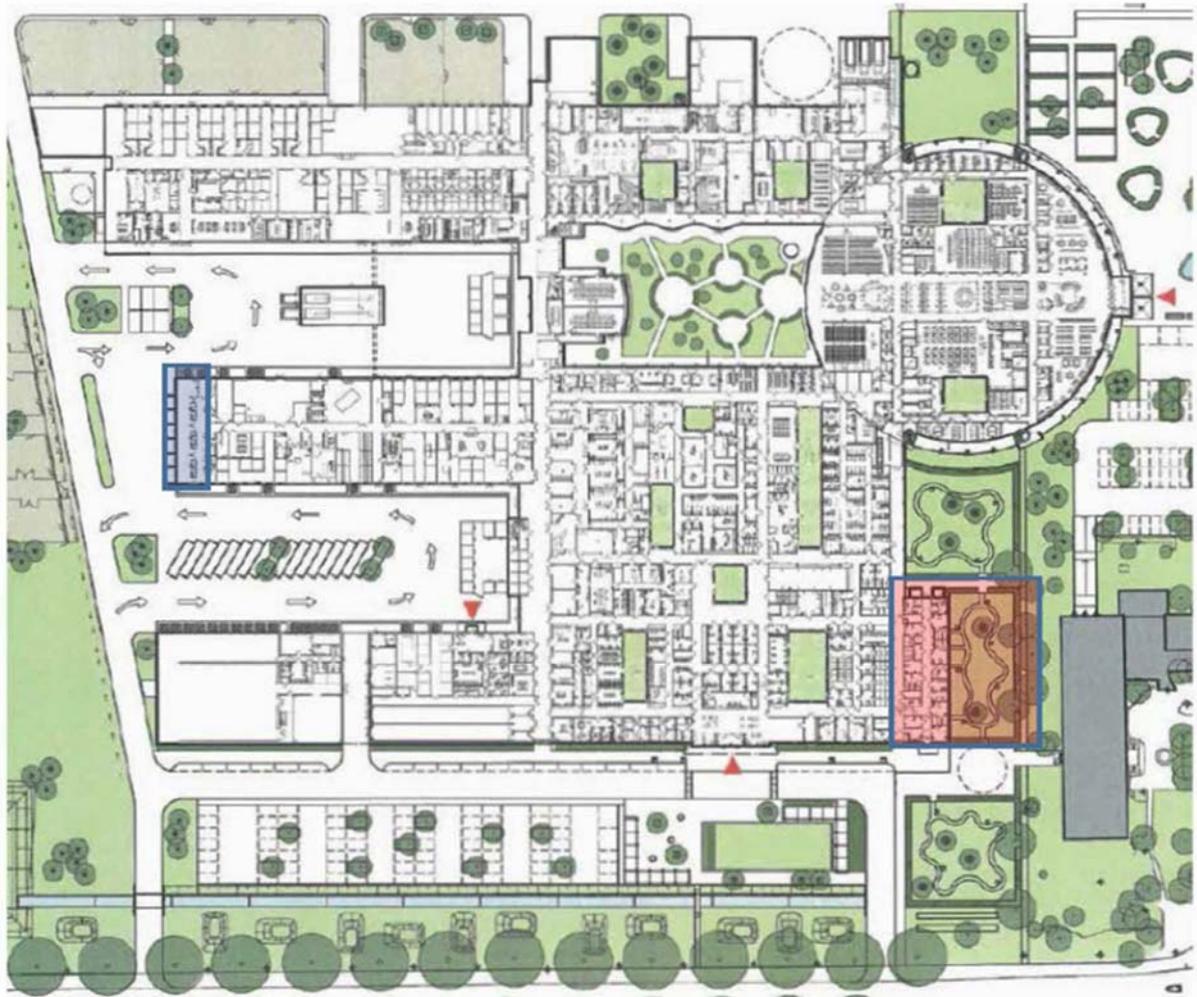


Figure 1. The primary isolation units for communicable disease control in small (red, right) and large (blue, left) animals are shown.



Figure 2. The Large Animal clinic with separate entrances to each of the eight isolation spaces, hygiene passage into the isolation unit and treatment area.

1.2.2. Comments

In page 19 of the Final Report as Issued by ECOVE it is stated; *“At the hospitals the isolation units for both the Small Animal Clinic and Equine Clinic are both well separated from the rest of the hospital with full biohazard controls. Only the outside cages and dog-walking area for the SA isolation unit are not properly fenced off for the general public.”*

VHF concludes that our biosecurity measures are clearly approved by ECOVE. As regards the SA isolation unit, VHF wishes to emphasise that dogs in the dog-walking area are leashed and handled by UDS staff. The surrounding fencing complies with the legal requirements as confirmed by the Competent Authority, i.e. the County Veterinarian (Regional CVO). See Appendix 3.

While VHF does share the opinion that the fencing of the two special outside cages at the SA isolation unit has been insufficient we have now equipped this part with doublefences.

In the case of the LA isolation unit, VHF regrets that we have been unclear so that this misunderstanding has arisen: the wooden shed has never been intended to be used for isolation purposes. As stated above, in the (rare) event of need to isolate small or large ruminants, the excellent isolation facilities at the Large Animal clinic would be used.

As a result of these clarifications and changes, we consider that VHF now meets the requirements of Standard 4 with regard to isolation facilities for companion and food-producing animals.

1.3. Major Deficiency 3: The Establishment is not compliant with Standard 5 because of insufficient number of healthy and diseased companion animals and of cadavers in food-producing animals

EXTRACT FROM THE FINAL REPORT AS ISSUED BY ECOVE ON 28
NOVEMBER 2017, page 26

5.2. Comments

“..... the ratio between the number of ruminant and pig necropsies and the number of students graduating annually is below the recommended minimal value and moreover there is a concern due to the fact that the necropsies of farm animals have been reducing in the last years.”

5.3. Suggestions for improvement

“The Visitation team suggests the establishment to increase the replacement of culled cows from the Livestock Research Centre. The post-mortem service to external stakeholders (farmers, practitioners) should be opened and extend all over the year. ...”

.....

5.4. Decision

The Establishment is not compliant with Standard 5 because of insufficient number of healthy and diseased companion animals and of cadavers in food-producing animals.

1.3.1. Factual information

Number of healthy companion animals

At the top of page 39 in the 2017SER, there is a description of the healthy companion animals kept for teaching purposes at the Centre for Veterinary Medicine and Animal Science (VHC). Today, there are 28 dogs (Beagles) and 15 horses kept for clinical propaedeutics and clinical courses. These animals are also used for practical exercises during the anatomy and physiology courses, and for handling of animals.

When the dogs and horses are not taking part in scheduled education, student groups have the opportunity to "book" them for non-invasive exercises on their own. For some exercises, students also bring their own dogs.

VHF considers that the number of healthy companion animals (dogs, horses) kept at VHC for teaching purposes meets all requirements that can reasonably be set.

Number of diseased companion animals

As far as we understand, the ECOVE assessment regarding the number of diseased companion animals depends on the relevant indicator (Indicator 8) resulting in a low value.

In the 2017 SER section 3.1.1. (pages 25-26), the ongoing work with a new curriculum is described. An *interim solution* for the clinical rotation year has been in place since the academic year 2016-2017, including additional time spent in the SA Clinics (Appendix 1 and 2). As a result, the number of companion animals that the students deal with directly during their clinical activities has now increased significantly. We have therefore conducted a careful calculation of the number of companion animals that the students have direct contact with during their stay at the small animal clinic. Most of these patients are representative cases selected to be individually examined and treated by students under staff supervision. A summary is presented in Table 3.

Table 3. Number of companion animals individually examined/treated by students at UDS (VTH), academic year 2017/18. (There are 12 student groups with 6-8 students per group).

	Days per group/stud	Patients seen per group	Total no of patients	Mean no patients/day
Medical outpatient clinic	10	54	648	5.4
Surgical outpatient clinic	10	54	648	5.4
Outpatient clinic surgery	5	34	408	3.4
Emergency clinic	5	50	600	5.0
ICU and Inpatient surgery	5	22	264	4.4
Inpatient ward	4	12	144	3.0
Rehabilitation clinic	½	6	72	2.0
On call duty	5	50	600	10.0
Auscultation UDS	-	25	300	-
	44½	307	3,684	5.08

The number of companion animal patients which are handled individually from intake to end of treatment by one or more students under staff supervision, including necessary feedback regarding the patient conducted in an educational manner, is now almost 3,700, i.e. 17-18% of the total number of UDS cases.

The mean number of students graduating annually in the last three academic years is 74. Thus, the interim solution for the clinical rotation in combination with additional measures has resulted in an important rise of the *Indicator 8 value*, which now is $3,684/74 = 49.78$ (minimal value 42.01).

Number of cadavers from food-producing animals

The number of cadavers from food producing animals decreased for a period after the relocation of the pathology premises to VHC in the summer of 2014 but has since increased. Thus, the Standard 5 requirements could not be met temporarily.

With the move of the Pathology Unit to VHC in mid-2014, some food animal cases normally coming to VHF were delivered elsewhere. This situation has now slowly but surely been corrected, and the number of cadavers from food-producing animals is increasing. We regret that this situation was not included in the SER, nor was it communicated to the Team during the visitation. The number of necropsies in the academic years 2012/13-2017/18 is presented in Figure 3.

In 2017/18 there were 85 cadavers from food-producing animals during the period when students were doing their practical necropsy training. Thus, the value of *Indicator 18* is now $85/74 = 1.15$ (minimal value 0.97).

1.3.2. Comments

Even though we now exceed the minimum Indicator 8 requirement, VHF acknowledges that the number of individual diseased companion animals for which students (under staff supervision) take full responsibility, from intake to end of treatment, including necessary feedback regarding the patient conducted in an educational manner, is still relatively low and should be increased. However, an increase in the number of cases may not be at the expense of the quality of teaching. VHF believes that this balance is extremely important in order to maintain goal fulfillment according to Standard 5 and must be taken into account during the process of developing the new curriculum.

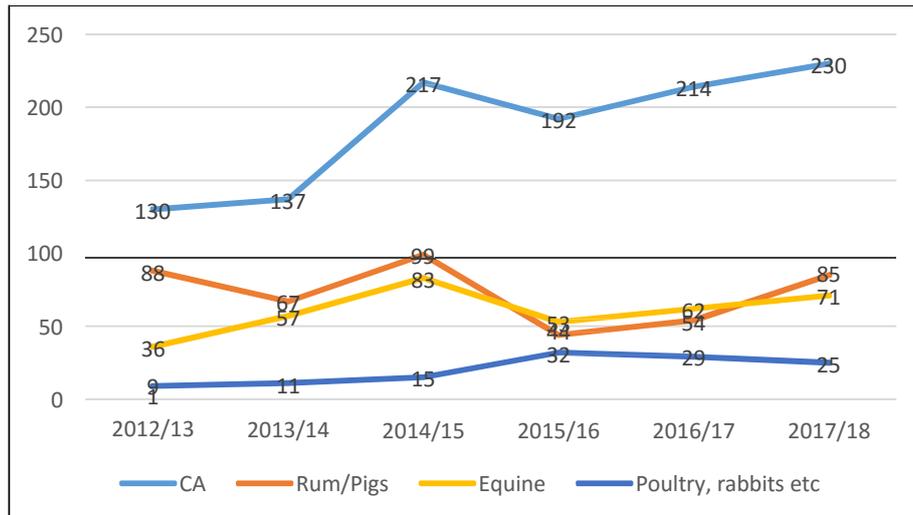


Fig. 3. Number of necropsies at VHF 2012/13 – 2017/18.

To ensure and also increase the supply of production animal necropsies, we are in contact with relevant external stakeholders. We will also ensure that more culled animals from the National Livestock Research Centre will be sent to VHF/pathology to increase the number of necropsy cases. As a researcher and a PhD student in poultry medicine will soon be recruited, we also expect the number of autopsies in that area to increase. In Sweden, a recent and growing interest in rabbit production may lead to an increased inflow of necropsy cases.

The average number of students who graduated during the last three-year period was relatively low. When a desired increase is achieved, it is important to ensure that the number of patients seen by the students and cadavers for necropsy increases to at least the same extent.

As a result of the described changes, we hope that VHF now meets the requirements of Standard 5 with regard to the number of healthy and diseased companion animals and of cadavers in food-producing animals.

2. Correction of the Minor Deficiencies

2.1. Minor Deficiency 1: Instructional integrity of the VTH resources does not take priority over financial self-sufficiency of clinical services operations (partial compliance with Standard 2)

EXTRACT FROM THE FINAL REPORT AS ISSUED BY ECOVE ON 28 NOVEMBER 2017, page 8

2.2. Comments

The separation between the functional parts of the VHF and the UDS creates financial problems. The centralized decision making process, disregarding the high costs for veterinary education, could lead to varied course remuneration levels. The lack of possibilities to transfer costs between the two segments financed publicly, from teaching to research, where the latter also benefits of grants, could further complicate the financial situation in certain years (ie, 2014, 2015 affected by the administrative changes and changes in location)."

2.3. Suggestions for improvement

Finances should be more transparent and the responsibility of one common decision-making body. It would be beneficial for cooperation and more efficient use of finances and resources.

A point in the strategic plan on possibilities to increase the income of the establishment/departments via services could be a way to help to cope with the increasing costs.

2.4. Decision

The Establishment is partly compliant with Standard 2 because the instructional integrity of clinical resources at the UDS does not take priority over financial self-sufficiency of clinical services operations. Clinics are not run as efficiently as possible from the educational point of view.

2.1.1. Factual information

The University Animal Hospital (UDS) was formed in January 2007 when, in a reorganisation, the clinical activities at the Department of Clinical Sciences (KV) were moved to a separate unit placed directly under the Vice-Chancellor. In 2016, an external commission assigned by the Vice-Chancellor evaluated the activities at UDS. This survey resulted in a series of recommendations, the foremost being that the formal description of the mission of UDS should be changed to explicitly specify the role of UDS in the University's veterinary medical education and research. They advocated, for example, a more cohesive academically controlled clinical activity in UDS, and gave a number of suggestions for how UDS should be governed and managed to allow for the main tasks of academic education and research. As a consequence of the observations submitted, the SLU Board decided in the autumn of 2017 to highlight and clarify the education and research tasks in the UDS instruction. The development process is further underway and a process manager appointed by the Vice-Chancellor started work during the autumn of 2017.

During 2018 most of the suggestions made by the survey have been addressed in order to create a more co-operative culture. Among them can be mentioned the establishment of the "Council for Animal Healthcare and Related Clinical Research and Education" (DKU Council), in the spring 2018 with two external representatives. Discussions in detail on different possibilities for further deepened cooperation in education and research are now conducted on regular basis. Within this developing and forward-looking framework can also be mentioned mutual plans for long-term competence needs within VHF and UDS, routines for managing the needs for the veterinary students as well as the veterinary nursing students. The need to identify mutual positions within key-areas has also been addressed. The goal is to create a co-operative culture where strategic decisions are decided in consensus, and where the academic positions are naturally divided

between UDS and VHF.

The university funding covers the costs for the new localities for the Animal Hospital as well as a sum that is supposed to cover the cost for the training of the students. The fees for clinical services are formally decided by the UDS Director and are at the same level as those charged by private animal hospitals.

2.1.2. Comments

VHF has taken the ECOVE decision on non-accreditation extremely seriously and we have therefore worked very actively to address the shortcomings encountered during the visit last autumn and documented in the Final report. In addition to the measures described under “Major Deficiencies”, VHF has taken a series of actions to improve our veterinary education.

The Final report as issued by ECOVE states that *“Clinics are not run as efficiently as possible from the educational point of view.”*

VHF pointed out in the Introduction to the 2017 SER; *“.... the cooperation between VHF and the, from the faculty independent, University Animal Hospital (UDS) needs to be improved.”* As described above, several steps have been taken to create a more co-operative culture, this would of course be for the benefit for teaching as well as for the research.

A new agreement between VHF and UDS is under discussion to ensure that students obtain the Day One Competences required in clinical subjects. The new agreement will enter into force on 1 January 2019. We also aim at establishing a more inclusive decision-making process which will be beneficial for the future VHF – UDS cooperation.

SLU shares the view expressed in the Final report; *“There should be a better cooperation between VHF and UDS, and academic veterinarians should be a natural part of the teaching at the hospital as well as being a part of the strategy of the hospital.”*

The active presence of “academic veterinarians” at the hospital is essential for the scientific and pedagogic quality of the clinical training. In addition to the KV staff presently supervising students’ clinical training, the professor of anaesthesiology is now located at the UDS on a part-time basis (50%). Furthermore, additional clinical professors (LA and SA Medicine and Surgery, respectively, Diagnostic Imaging and Clinical Pathology) will also have shared employment where their main task will be to ascertain that the students receive a practical clinical education according to the ESEVT Standards. The professors of production animal subjects will actively support the Ambulatory Clinic activities.

It is an asset to have a large number of patients to select from and the cases used in teaching contribute to an all-round and active hands-on training. In spite of this, there is a feeling among teachers that the case load at UDS could be even better used for clinical training of students.

There is an advantage that VHF now has better opportunities to influence the recruitment of veterinarians to UDS. Important teaching hospital tasks, such as supervision of students and research activities are now given appropriate attention in the recruitment process.

2.1.3. Suggestions for improvement

Important steps have been taken and are under way, see above.

In the long run, close cooperation between VHF and UDS must be ensured, although a merger is not a primary goal. VHF and UDS must be given reasonable financial conditions.

2.2. Minor Deficiency 2: The Establishment is partially compliant with Standard 3 because of insufficient number of hours in practical training in Food Hygiene and Food Safety

2.2.1. Factual information

After considering the information presented by the Establishment in the appeal letter, ECOVE decided to reclassify the relevant part of the Major Deficiency as Minor Deficiency “The Establishment is partially compliant with Standard 3 because of insufficient number of hours in practical training in Food Hygiene and Food Safety.” Below, the VHF provides a brief summary of the actions introduced in the new Curriculum in order to strengthen the practical FSQ training.

In the “old curriculum”, the basics of Food Hygiene and Food Safety (including meat inspection) have been taught during the third year in the 11 ECTS course VM0067 Food Safety.

The subsequent course VM0078 Food Safety, Meat Inspection in study years 4-5 (part of the Clinical Rotation year) includes most of the practical training in Food Hygiene and Food Safety. To be approved, the student is required to

- independently conduct inspection before and after slaughter, as well as assess and decide on the management of live animals and the use of meat and animal products in accordance with current regulations;
- perform simple inspection and review of slaughterhouses, in accordance with current legislation;
- work appropriately with regard to hygiene, infectious protection, occupational safety and animal welfare;
- attend and actively participate in the practical exercises at the slaughterhouse.

Learning outcomes are examined in practice at the end of the slaughterhouse week and by written examination at the end of the follow-up week.

During the course VM0078, groups of maximum 5 students spend one week full time (7/8 am – 4 pm) attending practical meat inspection exercises at the slaughterhouse. Full (100%) presence is required for the student to be approved. In addition, the students also attend separate training on inspection as a control method. The students train sampling for control of hygienic quality of carcasses by taking the samples themselves. They also train other aspects than ante- and post-mortem examination; namely inspection, meat cutting, handling of animal byproducts, sampling, HACCP (GMP, GHP, risk analysis) and auditing.

At the slaughterhouse, the students work alongside the Official Veterinarian (OV). When the students have finished their post-mortem examinations they report and discuss their findings with the supervising teacher. In addition, at the end of the week at the slaughterhouse, the students have one hour of concluding dialogue with the OV.

The training at the slaughterhouse, where a teacher is responsible for the supervision, ensures that all students receive the same quality of education. The former course layout, where students did their practical training at different slaughterhouses with OVs as supervisors (lacking pedagogical training) did not give a uniform outcome and very seldom provided a follow-up. The present system has received positive feedback from the National Food Agency. Everyone involved considers this approach to be more suitable and successful in comparison with the previous one.

During the second week of the course VM0078 Food Safety, Meat Inspection, students continue to work with animal products, HACCP and audit at the university campus. After the week at the slaughterhouse they also attend training on “cases” (approx. 6 hours). During the course, the

students visit a meat processing plant. They develop an understanding about the way the control is organised and the type of analyses needed.

The rest of the exercise is computer-based (specially designed) and includes the whole procedure *in silico* (Appendix 4). The students are expected to interpret the results according to relevant legislation and to give recommendation for appropriate corrective measures.

The Swedish poultry industry (slaughter houses and meat plants) is concentrated in a few regions, unfortunately too far from Uppsala to allow for students to attend practical training. We therefore try to compensate by providing video presentations, an approach that has been accepted in ESEVT evaluations of other Establishments.

2.2.2. Comments

During the spring term of the fifth academic year, all students now receive additional food safety education as parts of the clinical equine and food producing animal courses (Appendix 2).

The time for Food Safety and Quality is extended in the new curriculum that is now being developed, and the content of the courses is revised and strengthened. The course time will be increased and more hours will be assigned for practical aspects of FSQ. Study visits to more processing plants etc. are planned and include further practical training of inspection and audit.

2.2.3. Suggestions of improvement

See above.

2. ESEVT Indicators

Indicator 8

The mean number of students graduating annually in the last three academic years is 74. Thus, the interim solution for the clinical rotation in combination with additional measures has resulted in an important rise of the *Indicator 8 value*, which now is $3,684/74 = 49.78$ (minimal value 42.01).

Indicator 18

In 2017/18 there were 85 cadavers from food-producing animals during the period when students were doing their practical necropsy training. Thus, the value of *Indicator 18* is now $85/74 = 1.15$ (minimal value 0.97).

LIST OF ESEVT INDICATORS

Please note; with exception of Indicators 8 and 18, the indicators below are identical to those presented in the 2017 SER. For details, see Section 1.3. Major Deficiency3.

Staff and students

I1	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0.195
I2	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	0.960
I3	n° of FTE support staff involved in veterinary training / n° of students graduating annually	0.600

Types of training

I4	n° of hours of practical (non-clinical) training	1155
I5	n° of hours of clinical training (excl. electives)	821
I6	n° of hours of FSQ and VPH training	209
I7	n° of hours of extra-mural practical training in FSQ and VPH	35

Patients available for intra-mural clinical training

I8	n° of companion animal patients seen intra-murally / n° of students graduating annually 2017 SER	34.9
I8	n° of companion animal patients seen intra-murally / n° of students graduating annually	49.8
	COMMENT the minimal value is 42.01, i.e. the new balance is	+7.77
I9	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	0.77
I10	n° of equine patients seen intra-murally / n° of students graduating annually	7.93
I11	n° of rabbit, rodent, bird and exotic patients seen intra-murally / n° of students graduating annually	1.41

Animals/herds/units available for extra-mural clinical training

I12	n° of companion animal patients seen extra-murally / n° of students graduating annually	na
I13	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	13.04
I14	n° of equine patients seen extra-murally / n° of students graduating annually	14.15
I15	n° of visits to ruminant and pig herds / n° of students graduating annually	1.84
I16	n° of visits to poultry and farmed rabbit units / n° of students graduating annually	0.013

Necropsies available for clinical training

I17	n° of companion animal necropsies / n° of students graduating annually	2.427
I18	n° of ruminant and pig necropsies / n° of students graduating annually 2017 SER	0.933
I18	n° of ruminant and pig necropsies / n° of students graduating annually	1.149
	COMMENT the minimal indicator value is 0.97, i.e. the new balance is	+0.179
I19	n° of equine necropsies / n° of students graduating annually	0.853
I20	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	0.253

Indicators used only for statistical purposes

I21	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0.773
I22	n° of PhD-students graduating annually / n° of students graduating annually	0.400

GLOSSARY

Major Deficiency: a deficiency that significantly affects the quality of education and the Establishment's compliance with the ESEVT Standards.

Minor Deficiency: a deficiency that does not significantly affect the quality of education or the Establishment's compliance with the ESEVT Standards.

Abbreviations

EAEVE	– European Association of Establishments for Veterinary Education EBVS:
ECTS	– European Credit Transfer System
ESEVT	– European System of Evaluation of Veterinary Training
FSQ	– Food Safety and Quality
KTC	– Clinical Training Centre
KV	– Department of Clinical Sciences
QA	– Quality Assurance
SER	– Self Evaluation Report
SLU	– The Swedish University of Agricultural Sciences
SOP	– Standard Operating Procedure
UDS	– University Animal Hospital (e.g. VTH)
VHC	– The Centre for Veterinary Medicine and Animal Science
VHF	– The Faculty of Veterinary Medicine and Animal Science
VMF	– Veterinary and Veterinary Nurse's Student Union
VTH	– Veterinary Teaching Hospital

LIST OF APPENDICES

- Appendix 1.** Schedule of Clinical Rotation 2018
- Appendix 2.** Overview of the interim curriculum for the fifth academic year spring term 2018
- Appendix 3.** Letter from the County Veterinary Officer concerning the isolation facilities
- Appendix 4.** The VetBact Project

Appendix 1. Schedule of Clinical Rotation 2018

Vecka	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	Grupp
1	S	S	S	S	S	S	S	S	S	IM	IM	A	A	I	LS	B	R	R	R	R	H	H	H	H	H	H	G	P	P	P	A	A	LT	IM	IM	IM	I	IX	IX	1	
2	S	S	S	S	S	S	S	S	IM	IM	A	A	A	A	B	B	R	R	R	R	H	H	H	H	H	H	G	P	P	LS	I	LT	IM	IM	IM	I	IX	IX	2		
3	S	S	S	S	S	S	S	S	IM	IM	G	G	A	A	I	LS	R	R	R	R	H	H	H	H	H	B	LT	A	A	P	P	P	IM	IM	IM	I	IX	IX	3		
4	S	S	S	S	S	S	S	S	IM	IM	G	G	A	A	I	LS	R	R	R	R	H	H	H	H	H	B	LT	A	A	P	P	P	IM	IM	IM	I	IX	IX	4		
5	S	S	S	S	S	S	S	S	IM	IM	B	B	LS	A	H	H	H	H	H	R	R	R	R	R	R	I	P	P	P	A	A	A	IM	IM	IM	I	IX	IX	5		
6	A	A	LS	IM	A	IM	R	R	R	A	I	P	S	S	P	P	H	H	H	S	S	S	S	S	S	S	S	G	G	IM	IM	IM	LT	B	B	I	IX	IX	6		
7	P	P	P	IM	LS	IM	R	R	R	S	S	S	S	S	S	S	S	S	S	I	A	G	A	A	A	A	A	H	H	IM	IM	IM	LT	B	B	I	IX	IX	7		
8	P	P	P	I	IM	IM	R	R	R	S	S	S	S	S	S	S	S	S	S	LS	LT	H	H	H	H	H	H	H	H	IM	IM	IM	A	A	I	IX	IX	8			
9a	LS	G	G	IM	A	IM	R	R	R	S	S	S	S	S	S	S	S	S	S	I	M	A	A	A	A	A	A	H	H	IM	IM	IM	P	P	P	I	IX	IX	9a		
9b	LS	G	G	A	IM	IM	R	R	R	S	S	S	S	S	S	S	S	S	S	I	M	A	A	A	A	A	A	H	H	IM	IM	IM	P	P	P	I	IX	IX	9b		
10	A	A	A	I	IM	IM	B	B	LS	S	S	S	S	S	S	S	S	S	S	A	LT	R	R	R	R	R	G	H	H	IM	IM	IM	P	P	P	I	IX	IX	10		
11	H	H	H	A	H	H	IM	IM	A	S	S	S	S	S	S	S	S	S	S	G	R	R	R	R	R	LS	P	IM	IM	IM	B	B	A	A	I	IX	IX	11			
12	H	H	H	A	H	H	IM	IM	P	P	P	LS	G	G	A	I	A	A	A	LT	S	S	S	S	S	S	S	IM	IM	IM	B	B	R	R	R	I	IX	IX	12		
13	H	H	H	A	H	H	IM	IM	P	P	P	A	G	G	I	A	A	B	B	LT	S	S	S	S	S	S	S	IM	IM	IM	LS	LT	R	R	R	I	IX	IX	13		
14	H	H	H	A	H	H	IM	IM	G	G	A	P	P	P	A	A	LS	B	B	LT	S	S	S	S	S	S	S	IM	IM	IM	I	LT	R	R	R	I	IX	IX	14		
15	I	G	G	P	P	P	IM	IM	A	LS	B	B	A	A	H	H	H	H	H	G	R	R	R	R	R	R	R	IM	IM	IM	A	LT	R	R	R	I	IX	IX	15		
16	A	IM	IM	B	B	LS	H	H	H	H	H	IM	IM	IM	A	G	G	I	A	A	A	P	P	P	P	P	LT	R	R	R	S	S	S	S	S	S	I	IX	IX	16	
17	A	IM	IM	I	A	A	H	H	H	H	H	IM	IM	IM	P	P	P	G	G	A	B	B	B	B	LS	A	LT	R	R	R	S	S	S	S	S	S	I	IX	IX	17	
18	IM	A	IM	LS	I	A	H	H	H	H	H	IM	IM	IM	P	P	P	A	LT	B	B	B	B	A	G	G	R	R	R	S	S	S	S	S	S	S	I	IX	IX	18	
19	IM	LS	IM	B	B	A	H	H	H	H	H	IM	IM	IM	I	G	G	A	A	A	A	A	A	P	P	P	LT	R	R	R	S	S	S	S	S	S	S	I	IX	IX	19
20a	IM	I	IM	P	P	P	B	B	B	G	G	LS	IM	IM	IM	H	H	H	H	H	R	R	R	R	R	R	A	A	A	S	S	S	S	S	S	S	I	IX	IX	20a	
20b	I	IM	IM	P	P	P	B	B	B	G	G	LS	IM	IM	IM	H	H	H	H	H	R	R	R	R	R	R	A	A	A	S	S	S	S	S	S	S	I	IX	IX	20b	

A	VM0069 Ambulatory clinic, 7,5 ECTS
B	VM0073 Diagnostic imaging, 3 ECTS
G	VM0070 Pig diseases, 3 ECTS
H	VM0074 Equine surgery and medicine, 9 ECTS
IM	VM0071 Ruminant medicine, 9 ECTS
P	VM0077 Diagnostic pathology, 4,5 ECTS
LS	VM0078 Food safety, meat inspection (slaughterhouse), 1.5 ECTS
LT	VM0078 Food safety, meat inspection (theory and study visits), 1.5 ECTS
R	VM0075 Reproduction, 6 ECTS
S	VM0076 Small animal medicine and surgery, 15 ECTS
I	Time for individual studies
X	Examination
	Not scheduled

Overview of the interim curriculum for the fifth academic year spring term 2018

During the spring term following the clinical rotation year, students receive a follow-up and deepening in clinical subjects and food safety. Parts of the 23 ECTS-long course are elective.

With the exception of 2 ECTS Species Oriented Electives (Small Animals, Equine or Production Animals) and 6 ECTS Discipline Oriented Electives (Infectious Diseases, Medical Sciences or Surgical Sciences), all students undertake the remaining 15 ECTS courses.

"Sub-course"	Credits
Equine Clinical Science including Food Safety	4.0
Small Animal Clinical Science	5.0
Production Animal Clinical Science including Food Safety	4.0
Species Oriented Elective	2.0
Discipline Oriented Elective	6.0
Animal Welfare and Legislation	1.0
Professional Knowledge	1.0
	23.0

		Week															
Gro up		7	8	9	10	11	12	13		15	16	17	18	19	20	21	22
A		C	C	SA	SA	SA	EF	EF	E A S T E R	DO/SO	PF	PF	PF/EF	EXT/DO	EXT/DO	DO	SO/C
B		C	C	EF	EF	DO/SO	SA	SA		SA	EXT/DO	EXT/DO	DO	PF	PF	PF/EF	SO/C
C		C	C	EXT/DO	EXT/DO	DO/SO	PF	PF		PF/EF	EF	EF	DO	SA	SA	SA	SO/C
D		C	C	PF	PF	PF/EF	EXT/DO	EXT/DO		DO/SO	SA	SA	SA	EF	EF	DO	SO/C

- C - Common Course Time
- DO - Discipline Oriented Electives
- EF - Equine Clinical Science including Food Safety
- EXT - Clinical Auscultation (UDS or EPT)
- PF - Production Animal Clinical Science including Food Safety
- SA - Small Animal Clinical Science
- SO - Species Oriented Electives

Excerpt from the syllabus for the course;

Objectives

The course should provide advanced knowledge and practical skills to diagnose, treat and prevent common and important injuries, disturbances and diseases at the animal species dog, cat, horse and production animals for work with basic veterinary nursing with a certain specialisation concerning the animal species elected by the student.

On completion of the course, the student should be able to

- on a scientific basis discuss and synthesize veterinary science issues, review critically and analyze, assess and use relevant information concerning the animal species elected.
- describe and justify the handling investigation of common and important injuries disturbances and diseases for the in the course included animal species including assessment of prognosis.
- carrying out commonly occurring diagnostic investigations and treatments and independently interpret results of diagnostics.
- independently make an assessment of health state and fertility in ruminants and pig farms based on results of studies and herd data.
- evaluate different animal husbandry and production forms concerning impact on the animals' health and fertility.

Overview of the interim curriculum for the fifth academic year spring term

- discuss and carry out adequate pre-medication, anaesthesia and pre- and postoperative pain analgesia.
- explain and be familiar with common surgical procedures, including aftercare, and be able to carry out certain basic surgical procedures and take into consideration appropriate aseptic techniques.
- discuss and assess different management routines including vaccinations, deworming and feeding within preventive animal healthcare both on individual and breeding kennel/cattery level.
- evaluate different measures on individual and kennel/cattery level based on an economic, clinical and pharmacological (including drug resistance) perspective, and considering animal welfare.
- analyze and discuss food safety and ethical aspects around slaughter.
- analyze and apply hygiene procedures for maintaining disease control, animal welfare and worker safety in work with in the course included animal species.
- independent and in an adequate way account for measures, treatment plans and treatment results and document these according to current regulatory framework.
- identify and take position in ethical issues and in an objective way assess animal welfare and animal welfare in real situations and account for in the context relevant animal welfare legislation.
- supervise students in earlier school years and give personal feedback to fellow students in the same school year during clinical tasks and in groups discuss leadership and how the cooperation in the group has functioned.

Contents

The course consists of lectures, exercises, seminars, demonstrations, farm visits, clinical proficiency training and observing clinical activities. The teaching is mainly given during daytime but certain participation in 24-hour duty is included. Seminar assignments, exercises, herd assignment, clinical teaching and participation in 24-hour duty are compulsory components.

The student does a compulsory advanced in-depth assignment on the species elected.

The student practises describing, explaining and reflecting on, at an advanced level, problem identification, clinical findings, relevant diagnostic evaluation method, differential diagnosis, treatment strategy and prognosis for important and common injuries, diseases and disturbances in dogs, cats, horses and production animals. The student discusses and assesses different management routines within preventive animal healthcare. The student obtains training in documenting clinical work in a medically correct way, and to communicate with authorities, colleagues and animal owners. The student practises arguing for and against different treatment strategies based on ethical considerations and the situation of the animal and the animal owner.

The course also includes practice in describing and reflecting on different anaesthesia forms in relation to the animal's clinical status and to carry out certain surgical procedures under supervision. The student also obtains training in applying post-operative care and describing and analysing the reasons for complications in connection with surgical procedures.

The student will also analyse findings and farm statistics (concerning health and finances) and to make a synthesis of common problems. The student draws conclusions about and assesses group cooperation, and identifies and explains factors that have influenced the work of the group positively or created impediments to achieving the intended learning outcomes.

The course also teaches food safety, applied nutrition and applied animal welfare and legislation.

The course also includes implementation and follow-up of professional or vocational components (feedback, supervision etc).



LÄNSSTYRELSEN
UPPSALA LÄN

Lena Malm
County Veterinary Officer
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Letter

1(1)

2018-01-17

283-366-2018

To whom it may concern

Universitetsdjursjukhuset UDS
University Animal Hospital
Box 7040, 750 07 Uppsala

Concerning the isolation facilities at the small animal clinic at the University Animal Hospital at SLU

As the competent authority for control of veterinary personnel and veterinary establishments, Uppsala County Board certify that the small animal clinic at the University Animal Hospital (UDS) at SLU to our knowledge fulfills the requirements according to Swedish law concerning isolation facilities and hygiene plans, including the indoor and outdoor facilities. There is no detailed regulation on the physical design of isolation facilities at animal hospitals. However, measurements to avoid the spreading of communicable diseases must be included in the hygiene plan. The hygiene plan at the small animal clinic at UDS was reviewed 2017 without remarks (Dm 283-2138-2017).

It should be noted that the isolation facilities at the University Animal Hospital are not classified as a quarantine, for which there are other regulations applicable.

Uppsala 2018-01-17

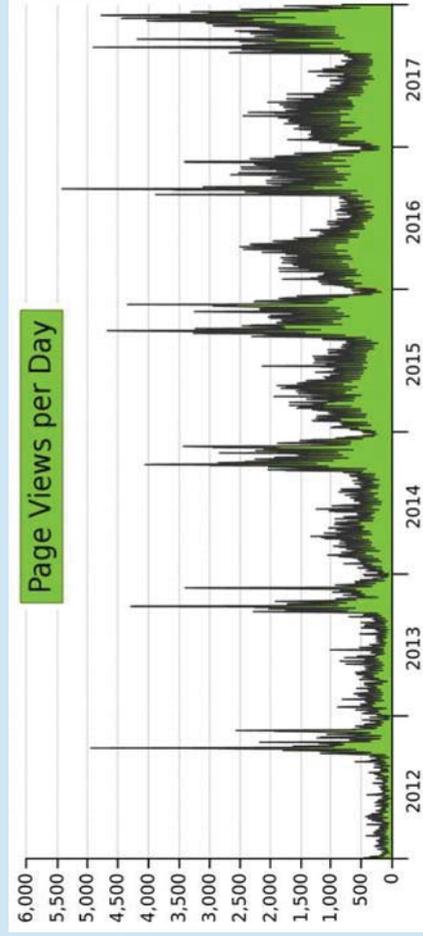
Lena Malm

County Veterinary Officer

Website Usage



The VetBact website receives visits from many countries. This snapshot shows the visits recorded during a 15-hour period on 1 June, 2015.



The number of visits to www.vetbact.org has increased over the years. The website receives the highest number of page views in September-October each year when the main courses in bacteriology for the Swedish veterinary students are taught. The distinct peaks correspond to certain stages in the courses such as analyses of spiked samples and exams.

Data, map and graph from StatCounter.

The VetBact Project

www.vetbact.org



The VetBact Project provides a non-commercial website and a database that contains information about approximately 250 bacteria that are of interest in veterinary medicine. The website was built using Free and Open Source Software (FOSS) and it offers information and learning tools for veterinary students, their teachers, veterinary practitioners and students attending other academic courses in bacteriology.



www.vetbact.org
contact@vetbact.org

VetBact
Veterinary bacteriology: information about important bacteria

Quick search:

Advanced search:

Recently updated:

- *Mycobacterium avium*
- *Salmonella enterica* subsp. *enterica*

Recent blog posts

- Lectures in Bacteriology (2014-12-01) Read post...
- Presentation of two theses related to bacteriology (2014-09-07) Read post...

Recent comments

- Comment on *Truquettella pyogenes* - new name of an earlier described bacterium by Vito Vignolo (2013-01-28) Read the comment...

This database contains information about 222 species (and subspecies) of importance in veterinary bacteriology. These species belong to 44 genera and you can click on Genus to select a genus from the alphabetical list. You can also use the search facility on the home page. The search facility will return the results in the order you want. You are a rolling list. There is no need to enter a complete word.

You can click on an arbitrary taxonomic level (Phylum, Class, Order, Family, Genus) on the blue bar to view the groups that are included in VetBact and you can then click on a specific category. For example, you can click on the phylum Proteobacteria to view a specific order such as Spirochaetales to list the categories at the level below, in this case families.

Course material
Bacteriology course

Phylum	Class	Order	Family	Genus	Species/Subspecies
Recently Described					Most Frequently Visited
• <i>Neisseria meningitidis</i>					1. <i>Staphylococcus epidermidis</i>
• <i>Acinetobacter baumannii</i>					2. <i>Pseudomonas aeruginosa</i>
• <i>Staphylococcus pseudintermedius</i>					3. <i>Escherichia coli</i>
• <i>Streptococcus pneumoniae</i>					None...
• <i>Propionis pasteurii</i>					
• <i>Alcaligenes faecalis</i>					

The website www.vetbact.org provides access to information and learning tools.

Species/Subspecies: **Escherichia coli**

Etymology: Genus name: named after the German pediatrician type species of the genus.
Species epithet: from the large intestine (colon).

Significance: **!** [Very important] **!**

Taxonomy:

Phylum	Class	Order
Proteobacteria	Gammaproteobacteria	Enterobacteriales

ATCC 11775 = CCUG 29300 = NCTC 9001.

Type Strain: Medium sized (3-6 mm in diameter), opaque, sticky give a narrow clear hemolysis zone on blood agar.

Macromorphology (smell): 

Micromorphology: Short motile rods (0.5 x 1-3 µm) with peritrichous flagella.

Gram +/Gram -:  G-

Detailed information about the bacteria in the database is at the very heart of VetBact. The information about each species comprises etymology, taxonomy, morphology, metabolism, biochemical reactions, host, disease, phylogeny etc.

There are about 600 images on the website and you are free to use them for non-commercial purposes provided that attribution is given (CC BY-NC-ND).

Learning Tools

VetBact is not just an encyclopedia, it also includes a number of learning tools under the **Course material** heading on the start page.

Most prominent is the **VetBactLab** virtual laboratory where students, and their teachers too, can carry out experiments in laboratory diagnostics. We currently provide a dozen virtual clinical cases where the student is asked to identify the bacterium causing a disease. In each case, a medical history and a virtual sample are provided. After some initial steps preparing the sample, the student is presented with a 'toolbox' comprising up to 30 methods that can be used. Applying a few of these methods at a time, the student will, step by step, narrow down the search until a correct diagnose can be reached.

The virtual laboratory also includes some examples of laboratory work methods in food microbiology.

In addition to the virtual laboratory, the website contains:

- Explanations of concepts and terms commonly used in bacteriology.
- Descriptions of growth media and biochemical tests.
- Quizzes.
- Links to video lectures in Swedish and in English.
- A blog.

An article describing the history of the project and the contents of the database, was published in 2014:

Johansson, K-E: **VetBact – culturing bacteriological knowledge for veterinarians**. Veterinary Record 2014 174: 162-164. doi: 10.1136/vr.g162



The virtual laboratory in VetBact prepares the students for their work in the physical laboratory.