5. Animal resources and teaching material of animal origin

5.1. Factual information

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

As mentioned previously, the Veterinary Degree must be verified (EX-ante) and accredited (EX-post) by the ANECA. Motivated by the commitment of the Faculty Veterinary Medicine to provide the best possible *curriculum*, the EAEVE list of Day-One Competences was introduced in the design of the *curriculum*. More concretely, the list of learning outcomes to be achieved in every subject was defined in order to guarantee the EAEVE Day-One Competences. Also, the subject 'Final Degree Project' includes as a requisite the final assessment of competences, as defined in the corresponding law (Order ECI/333/2008). For this purpose, a portfolio was designed and has been used for the final evaluation of competences in the following 5th year subjects: Clinical Practice, Mobile Clinics and External Practical Training I and II, Small Animal Clinical Rotatory and Large Animal Clinical Rotatory.

The Committee for Final Degree Project is the executive body responsible for the Portfolio. The committee has approved the portfolio that is revised annually.

In order to increase the number of animals available for students' hands-on clinical practice, the EAEVE indicators have been introduced in the Annual Faculty Report. Therefore, these indicators are revised annually and resulting strategies are included in the Annual Objectives of the Faculty as defined in procedure PEC01 related to the definition of the Quality Assurance Policy of the Faculty included in the QAS. Therefore, we have the opportunity to correct any detected deficiency in the indicators on an annual basis.

5.1.2. Description of the specific strategy of the Establishment in order to ensure that each student receives the relevant core clinical training before graduation, e.g. numbers of patients examined/treated by each student, balance between species, balance between clinical disciplines, balance between first opinion and referral cases, balance between acute and chronic cases, balance between consultations (one-day clinic) and hospitalisations, balance between individual medicine and population medicine

Due to the characteristics of the population of Gran Canaria, with the larger population numbers located in urban areas, the number of small animals treated by means of intramural clinical activity is higher than that of large animals. To provide a complementary training in the core subjects' clinical activity in large animals, the VTH has improved the large animal mobile clinics. Through the Official Veterinary College of Las Palmas, five veterinary clinician practitioners were selected with the requisite of providing an active professional clinical activity in ruminants (3), poultry (1) and porcine (1). Three students participate actively in the extramural clinical activity with these practitioners once a week.

An appropriate balance between Large and Small Animals has also been considered. For example, the subject 'Internal Medicine I' (6 ECTS) is focused on Large Animals Medicine (Ruminant and horses at 50%, approximately) and the subject 'Internal Medicine II' (6 ECTS) is focused on Small Animal Medicine. In Propaedeutics, the number of hours for basic clinical examination training is similar in Large Animals (3,5 h. for ruminants, 3,5 h. for horses, and 6,0 h. for small animals).

In other subjects, the distribution of hours depends on the number of diseases that affect different species, i.e. in 'Infectious Diseases I and II': 15 the topics focus on infectious diseases that affect different species (i.e. Rabies or Botulism), with 16 topics for ruminants (i.e. Agalaxia or Bovine

Leukosis), 5 topics for fowls (i.e. Marek or Gumboro Disease); 4 topics for pigs, 4 topics for equines and 4 topics for carnivores.

In other subjects, the distribution of hours depends on the pathogens, for example in the subject 'Parasitic Diseases', the distribution of the topics is the following; diseases produced by Protozoa, by Helminths, and by Arthropods. However, a special topic is focuses on parasitic diseases that affect fish.

In the 10th and last semester, the two optional subjects are 'Large Animals Clinical Rotatory' (6 ECTS) and 'Small Animals Clinical Rotatory' (6 ECTS); therefore, the students freely choose one of the two subjects according to their particular interests.

In order to guarantee a wide range of types of patients, the VTH has classified the caseload into the following kinds of patients: (A) *referral patients*, which are cases referred by veterinary practitioners to one of the Specialty Clinical Services or are treated as an emergency, mostly during nights and at weekends, and then returned to the referring veterinarian; (B) the *University Community patients*, which animals are owned by students or university employees and are first opinion patients that are directed to the most appropriated clinical service according to the their main complaint; and (C) *Animal Shelter or Animal Protection Societies patients*, which are treated for surgical purposes (mainly sterilization programs) or for specific medical attention. The VTH has a balanced percentage of patients (according to data from 2017): 51% (A – second opinion), 33% (B – first opinion), 16% (Animal Shelter patients). Therefore, in our opinion, the VTH guarantees a balanced caseload providing a wide variety of patients available for teaching. The number of patients of different species treated can be consulted in the VTH's last annual memorandum (2017).

The accompanying table shows the number of clinical activities undertaken in the different clinical services. There is a wide range of clinical activities in all the clinical services and the number of cases is sufficient to guarantee the acquisition of Day-One Competences by our 70-80 students enrolled in the clinical subjects every year.

Intramural Clinical activities by clinical services	2015	2016	2017
Clinical analysis	2.683	2.260	2.042
Cardiorespiratory	602	432	437
Dermatology	328	394	415
Reproduction and Obstetrics	1.030	754	145*
Traumatology	775	516	716
Surgery (soft tissue)	486	433	230
Odontology	39	36	37
Diagnostic Imaging	1.345	1.470	1.553
Ophthalmology	477	487	254
Internal Medicine	1.724	3.956	2.827
Anaesthesia**	523	592	572
Hospitalizations	832	929	943
Oncology	821	486	1.209
Infectious	137	123	184
Exotics	31	80	116
Equids	1.422	830	1.055
Ruminants	116	105	87
TOTAL	**11.761**	**13.084**	**13.462**

* The reduce number of cases is motivated because the activity has been moved to the Animal Shelter and the data have been not included in the VTH database.
** Surgical cases not included.

Also, in order to guarantee a balanced distribution of the clinical activities in the different VTH clinical services, the 75 hours rotation in the subject 'Clinical Practice' were distributed in the following activities: Cardiology (5h), Surgery (15h), Oncology (5h), Dermatology (10h), Traumatology (10h), Internal Medicine (10h), Ophthalmology (10h) and Reproduction (10h). Anaesthesia and Diagnostic Imaging activities are included and Day-One Competences are assessed in the portfolio. In the elective subject 'Clinical Rotation in Small Animals', the distribution is: the following: Oncology (10h), Ophthalmology (10h), Surgery (20h), Traumatology (10h), Internal Medicine (10h) and Dermatology (15h). However, in the elective subject 'Clinical Rotation in Large Animals', the distribution is Ruminants (55h), Equines (20h) and Reproduction (15h).

5.1.3. Description of the organisation and management of the teaching farm(s) and the involvement of students in its running

The farm is managed through the ULPGC Experimental Animal Research General Service (SGIAE) which is the unit responsible for the facilities and the welfare of the housed animals used for teaching purposes in different subjects.

For day-to-day tasks there are 5 workers who are responsible for the general care of the animals during the whole year.

There is not mandatory program in relation of the running of the farm for all the students; however, the subjects 'Animal Production', 'Animal Reproduction and Obstetrics', and 'Animal Health' encourage the envolvement of students in a voluntary manner.

Some of the main activities developed by students in the farms and included in the subjects are those listed below:
Animal Welfare: Goat and Morphology (3,5h).
Animal Welfare: Etogram (2h).
Animal Production: Milking (3h).
Animal Production: Dairy products I (4h) and Dairy products II (3h).
Preventive Veterinary Medicine: clinical practice (2h).

Parasitology: Herd Health Management (3.5h).
Reproduction and Obstetrics: clinical practice (25h).

5.1.4. Description of the organisation and management of the VTH and Mobile clinics

The VTH is open 24 hours/7 days a week.

The Small Animal Clinical Services are the described on the VTH website (link). Both the general and specialized consultation appointments are from Monday to Friday (8:30-13:30) for the Small Animals Clinical Services. During this time slot, the practical training included in 3rd and 4th year subjects is programmed from 8:30 until 12:30 hours and until 13:30 for the 5th year students. For theoretical training the activities start in the afternoon (3rd and 4th year students from 13:30 hours and 5th year from 14:30). The Oncology Service also offers consultations during the afternoons.

The Large Animal (Equine, Ruminants, Porcine and Avian) Clinical Activities are mostly extramural and are scheduled during the mornings from Monday to Friday (usually 8:30-13:30).

The Equine Clinical Services is run by the VTH, and most equine patients are attended extramurally. A VTH vehicle is used for transportation of students to farms. These activities are scheduled to be included in the subjects: 'Internal Medicine I', 'Clinical Practices' and 'Large Animal Rotatory Clinic'.

Ruminant, Porcine and Poultry Clinical Activities are completed in the following:

- Core Subjects ('Infectious Diseases', 'Parasitology', 'Preventive Medicine', 'Internal Medicine I' and 'Large Animal Clinical Rotation') using the Faculty transportation system (minibus) to the farms with the academic staff.
- The VTH Mobile Clinics are run by 3 veterinarians (Ruminants), 1 veterinarian (porcine) and 1 veterinarian (Poultry). These VTH staff members transport the students in their own vehicles to the farms in groups of 2-3 students once a week.

The emergency service and intensive care run 24 hours/7 days a week. The 5th year students participate in this service during at nights and weekends. This activity is mandatory for all students and is scheduled in the last year.

Also, the infectious, parasitology and toxicology services are managed by the VTH. The VTH receives the samples and sends them to the referred labs for diagnosis reports.

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

The cadavers come from the VTH clinical services and from the Animal Shelter. Also, the VTH has a clinical service for Necropsy (link), and any external veterinary clinic can send the cadavers to the Necropsy service by using a referring document (link). There are several private companies for the transportation of small animals' patients and cadavers (link). For Large Animals, a special official authorization is needed from the Animal Health Authorities.

Three practical training activities in Anatomy include fresh carcasses from the animal shelter, necropsy room or hospital. The available of fresh material is limited by the number of euthanatized animals. Nowadays, fresh carcasses are used for 9 hours/student:

Subject: *VETERINARY ANATOMY I*
Activity: *Topographical Anatomy of the head, neck and thorax in the dog* (3h.)
Activity: *Topographical Anatomy of abdominal and pelvis cavities in the* dog (3h.)

Subject: *VETERINARY ANATOMY II*
Activity: *Avian Anatomy* (3h.)

Also, more fresh carcasses are used for practical training activities in Anatomy if they are available from the necropsy room or the hospital. However, those students who are more interested in Anatomy 'intern students' have the opportunity to use more fresh carcasses because they help in the preparation of the teaching material.

Cadavers are preserved and stored by refrigeration, congelation or in formaldehyde. The correct disposal of cadavers and Specified Risk Material (SRM) are managed by the ULPGC general service for waste management (link).

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

During the current year 2018-2019 the average group size of the clinical training are the following:

INTRAMURAL:	**EXTRAMURAL:**
General Pathology (Necropsy) – 6,9 Special Pathology (Necropsy) – 5,3 Propaedeutic – 7,2 Radiology – 5,2 Anaesthesiology and Surgery I – 5,6 Surgery II – 4,8 Internal Medicine II (Small Animals) 6,0 Clinical Training – 6,4 Emergency (nights and weekends) – 2	Infectious Diseases I – 8,3 Infectious Diseases II – 6,4 Parasitic Diseases – 6,8 Preventive Veterinary Medicine – 8 Internal Medicine I (Ruminant and Equine) – 8 Mobile Clinics (Ruminants, Porcine and Poultry) – 2,65 Slaughterhouse – 2,5 EPT - 1

5.1.7. Description of the hands-on involvement of students in clinical procedures in the different species, i.e. clinical examination, diagnostic tests, blood sampling, treatment, nursing and critical care, anaesthesia, routine surgery, euthanasia, necropsy, report writing, client communication, biosecurity procedures, ... (both intra-murally and extra-murally).

Students complete the following activities during the clinical training:

42518 – PHYSIOPATHOLOGY

- Blood sample collection in sheep, goat and cows.
- Complete blood analysis (haematology, coagulation, clinical biochemistry and clinical enzymology)
- Writing the lab report with the results of the clinical analysis.

42519 & 45532 - PATHOLOGY (GENERAL AND SPECIAL)

- Performing necropsy with cases based on the routine and standardized method.
- Describing and interpreting the gross lesions observed in each organs and system according to the standardized description protocol.
- Identification, description and interpretation of histological lesions from selected cases during the necropsies.

- Documenting the case and presenting it in public sessions to the rest of their classmates as a case report, for 15 minutes, with the following structure: clinical history, necropsy findings, histopathological findings, morphological diagnosis and bibliographical review (aetiology, pathogenesis, clinic, injuries, diagnosis…).
- Describing and interpreting gross lesions from a collection of more than 100 organs with the main lesions organized by organs and systems.
- Using samples of exfoliative cytologies, identifying nodular skin lesions and differential diagnosis of lymphoadenomegalies. In particular, in cutaneous lesions differential diagnosis of inflammation versus neoplasia. Epithelial / mesenchymal neoplasia. Benign/ malignant neoplasia. Differential diagnosis of Lymphoadenomegalies including Reactive lymphoid hyperplasia / Lymphadenitis / lymphomas.

42520 – PROPAEDEUTICS & CLINICAL PATHOLOGY

- Applying the classic methods for clinical examinations in dogs, cats, horse and cow.
- Completion of an anamnesis and the physical examination
- Handling and restraining every domestic species
- Performing ultrasound examination
- Collecting samples (blood, urine) for further laboratory analysis.
- Interpreting the results of the clinical analysis.

42521 - INFECTIOUS DISEASES I

- Herd Health recheck and application of treatments.
- Vaccination
- California test for detection of subclinical mastitis and treatments.

45522 – PARASITIC DISEASES

- Small Ruminants: physical examination through the five-point check® and individual faecal samples collection. Drench, vaccination, antibiotics administration (trans-mammary, intramuscular, etc), cut hoof and blood collection.
- Pigs: drench, iron administration in piglets, samples collection from adult pigs, ultrasound examination, drug administration, and others.
- Poultry and Rabbits: Drench and vaccination.
- Pigeons: samples collection from the surface of the oral and oesophageal mucosa. Blood samples collection. Physical examination.
- Zoo Animals: drench animals collected by local authorities before their entry in the zoo.

42523 - MARINE MAMMAL'S HEALTH AND FISH PATHOLOGY II

- Performing the study of comparative morphological and physiological aspects of marine mammals and fish.
- Practicing the necropsy protocol for marine mammals and fish.
- Performing diagnosis of fish pathology.
- Performing diagnosis of marine mammals' pathology (natural and anthropogenic pathologies).
- Performing health assessment and conservation studies of wild marine mammals (pathology as a conservation tool).

- Performing health assessment and welfare studies of under-human-care marine mammals.

42524 – RADIOLOGY

- Performing conventional radiological examinations
- Restraining and positioning for X-Ray examination
- Practicing the biosecurity protocol for radiation protection
- Performing the interpretation of radiologic imaging

42525 - INFECTIOUS DISEASES II AND ICHTHYOPATHOLOGY

- Performing the preventive medicine plan in small animals
- Performing a fish necropsy and sample collection
- Completing the diagnosis and characterization of pathogenic agents of bacterial, viral and fungal aetiology in the Lab
- Applying on-site health programs and control measures for the most common diseases in aquaculture

42528 – ANAESTHESIOLOGY AND SURGERY I

The student performs different surgical procedures in the Wet Lab:

- Anaesthesiology Workshop: anaesthesia machine management and anaesthetic blocks techniques.
- Basic Surgery Workshops: Scrub in and drape a surgical area, and recognize and name all the general surgical instruments.
- Reconstructive Surgery Workshop: on a cadaver, apply different reconstruction techniques: triangular and square defects, and the design of skin flaps to solve those situations.
- Orthopaedic Surgical Workshop: placement of different implants and osteosynthesis techniques on an alternative teaching material.
- Surgical Sutures Workshop: suture patterns in skin and soft tissues applying different suture patterns.

The student attends the Traumatology and Orthopaedic Clinical Service:

- Workshop of clinical trauma cases: study of real clinical cases with radiographs and discussion about the possible treatments in an interactive method of questions and answers for each clinical situation.
- Clinical case review practice: review of clinical cases through the radiological study and their possible treatments.
- Clinical Orthopaedic Practice: management of real clinical cases and practice in surgical trauma techniques. Students participate in anaesthesia and assist in surgery.

42533 – SURGERY II

The student performs different surgical procedures in the Wet Lab:

- Thoracic Surgery: thoracocentesis, chest tube placement and left lateral thoracotomy with approach to the base of the heart.
- Ophthalmic Surgery: using pig's heads from the slaughterhouse, the students performs blefarorrhaphy, nictitating membrane flap, Hotz Celsus entropion technique and enucleation.
- Intestinal Surgery: laparotomy, enterectomy and enterotomy on dog’s cadaver.
- Abdominal Surgery: gastrotomy, gastropexy, liver biopsy with guillotine method and splenectomy.

The students attend General Surgery Clinical Service:

- Checking the pre-anaesthetic status of the animal and selecting the suitable anaesthetic protocol for every case.
- Performing the anaesthetic drugs administration, including intubation and patient monitoring during surgical procedures.
- Performing basic surgical techniques and procedures such as ligation, sutures, drainages, etc. as well as ovariohysterectomy, and orchiectomy.
- Students are allowed to assist the surgeon with more complex procedures
- After the surgical procedures the student actively participate in the post-operative care, are present in the communication with the pet owner and finally write medical records with the appropriate academic staff supervision.

45534 - PREVENTIVE MEDICINE, HEALTH POLICY AND VETERINARY PUBLIC HEALTH:

- Porcine Farms: evaluates the biosecurity measures applied on farms. Vaccination of piglets. Intramuscular administration of iron dextran to piglets. Antimicrobial treatment of growing / finisher pigs. Tail docking of piglets.
- Goat Farms: evaluate the biosecurity measures applied on farm. Perform a brief audit of different items related to goat production, including husbandry, biosecurity, hygiene, design of the site, animal welfare, etc. Blood drawing / serum sample collection for assessment of herd health status regarding contagious agalactia using ELISA. Middle ear/conjunctival/ milk sample collection for general bacteriological and mycoplasma isolation. Animal restraining and identification.
- Dairy Farms: evaluates the biosecurity measures applied on farm. Performs a brief audit of different items related to milk cow production, including husbandry, biosecurity, hygiene, design of the site, animal welfare, etc. Milk sample collection for the evaluation by MCT (Mastitis California Test), microbiological cultures for the assessment of herd health status regarding *Mycoplasma bovis* infection. Conjunctival swabs obtained from calves for detection of keratoconjunctivitis by *Mycoplasma bovoculi* and *Moraxella bovis*
- Avian Farms: evaluates the biosecurity measures applied on farm. Evaluates the vaccine protocols and vaccination procedures applied on farm.

The clinical activities completed in the subjects: '42540 - Clinical Practice'; '42543 - Mobile Clinics And External Practical Training I'; '42544 - Mobile Clinics And External Practical Training II'; '42546 - Small Animal Clinical Rotatory' and '42547 - Large Animal Clinical Rotatory'; are described in the portfolio (link). Also, the student can complete these activities during the practical training performed in the other 5th year clinical subjects: 45538 - Internal Medicine I; 42541 - Internal Medicine II; 42539 - Reproduction and Obstetrics I and 42542 - Reproduction and Obstetrics II. Therefore, the clinical activities of these subjects can also be found in the portfolio.

During the Clinical Rotation (5th year) - Extramural activity at the Island Animal Shelter of Gran Canaria: surgical patient management practice I and II (8h): this includes performing routine pre-surgical physical examinations, being in charge of anaesthetic management and assisting with surgical procedures on real cases for routine reproductive treatment.

5.1.8. Description of the procedures used to allow the students to spend extended periods in discussion, thinking and reading to deepen their understanding of the case and its management.

Before starting their daily clinical activity in all the Consultations, Hospitalisation, and Surgery Operating Rooms, students do a round with the academic staff responsible. On this round, they review the appointed cases and, if they attended previously, they discuss the procedures that have

already been performed and the approach to be taken for the next visit. During the clinical activities, the clinician promotes the clinical thinking process and encorages students to discuss and read clinical literature to promote the evidenced-base medicine. At the end of the consultation, students analyse and discuss the patients they have treated with the clinical staff, as well as complete the writing of the clinical report in GestorVet™. Also, activities for the understanding of the case are completed in the necropsy room, before, during and after the clinical activities in order to complete the final necropsy reports.

Furthermore, during the final assessment of the subjects 'Clinical Training' and 'Small Animals Clinical Rotation' or 'Large Animals Clinical Rotation', every student has to present one clinical case or one series of cases to the rest of the 5th-year students. In this final assignment, we promote the interaction and discussion about the resolution of cases in order for students to acquire in-depth clinical knowledge as a complement to daily clinical learning processes. They should include their personal participation, and a complete critical discussion based on the literature, which allows them to improve their understanding of the case or series of cases.

These activities have been designed to complete the student workload described in the 5th year clinical training subjects. At least the 20% of the ECTS are devoted to self-study and supervised self-learning.

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

We use Gestorvet™, an online veterinary hospital management software program developed by a locally based company (Softy Factory Solutions, Gran Canaria) that integrates a clinical and administration database. There are specific user profiles for accessing Gestorvet: the administration, technician and veterinarian profiles. Each user can access Gestorvet from any computer or portable device with a personal username and password. Veterinary students also have a specific profile for students and they have access to the clinical database and to the hospital agenda. The Gestorvet Control Panel allow us to adapt consultation templates by specialty for a better workflow of the specialty services. The General Consultation template registers the date and time, veterinarian, student and the clinical information including the following: chief complaint, history, physical examination, problem list, differential diagnosis, treatment and follow-up. The Specialty Consultation templates include additional data according to each specialty. Each consultation and recheck data is registered including laboratory tests, imaging studies and patient's photographs when available. Gestorvet allows multiples ways for searching information. This patient record system is an excellent tool for teaching and research purposes. Academic Staff have access to a large amount of clinical information to prepare material with for use in the classroom, to use for the discussion of clinical cases with students at the VTH, and to use to evaluate data for clinical research. Students can access the medical records to study cases, to stay updated on the follow-up of patients and to select cases and use the medical records to prepare their TFG (Final Degree Project). Finally, we would like to point out that Gestorvet includes features that we consider to be very useful. One of them is the Previsualization button that allows a quick and complete review of the patient's clinical information. Another convenient feature is the Share button, a very practical tool to instantly send the medical record to the referring veterinarian and to the owner.

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

The use of Animals for Research and Teaching purposes is regulated by RD 53/2013, which is the translation to the local context of the Directive 2010/63/EU of the European Parliament and of the Council of 22 September 2010 on the protection of animals used for scientific purposes.

All the procedures performed with animals at the ULPGC, except for those which are not covered by this legislation such as the non-experimental clinical veterinary practices in the VTH, must be approved by the Animal Research Ethical Committee (*Órgano Encargado del Bienestar de los Animales, OEBA*). This Committee h been accredited by the Spanish Ministry of Science, Innovation and Universities (the former Ministry of Economy and Competitivity) for this purpose. The suitability of the procedure in relation to the objectives of the study is considered. The aim is to reach valid conclusions with the minimum number of animals, apply maximum refinement, and use alternative methods whenever possible.

In addition to the Competent Authority, in our case is the (*Dirección General de Ganadería)* Department of Agriculture of the Canary Islands Government. Also, this authority has accredited the adequacy of the three available facilities at the ULPGC for animal experimental purposes. These facilities are managed by the ULPGC General Experimental Animal Research Service (*Servicio General de Investigación Animalario Experimental-ULPGC*, SGIAE). The veterinarians of the SGIAE are responsible for the Animal Welfare during the experimental procedures which carried out.

5.1.11. Description of how and by who the number and variety of animals and material of animal origin for pre-clinical and clinical training, and the clinical services provided by the Establishment are decided, communicated to staff, students and stakeholders, implemented, assessed and revised

The Academic Staff for each pre-clinical and clinical subject of the Degree design a teaching programme based on the syllabus contents. The approximate number and variety of animals and animal materials to be used for optimal training is then defined. This programming is done during April and May before the academic year starts and the SGIAE is informed. This programming is presented for discussion and approval to different governing bodies such as the Department Councils, Faculty Committees and the Faculty Board. The practical training schedules are made public using the software 'Academic'. All the information is studied annually by the Committee for Academic Affairs and it is later submitted for the approval of the Faculty Board. All the stakeholders (academic staff, support staff and students) are represented in the governing bodies.

In addition, the Annual Faculty Report include references to the EAEVE indicators in order to be able to revise and promote improvement in the case of low quality or deficiencies detected in animals and material of animal origin. This information is used for the writing-up of the Specific Annual Objectives in the QAS as described in the (PEC01) procedure related to the writing and revision of the Quality Assurance Policy and Objectives.

Also, the QAS (PAC02) procedure, which is related to the management of the material resources, includes the identification of needs, demands or requests given by any of the stakeholders. In the case of demands of animals, the application is forwarded to the SGIAE and/or to the VTH director.

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

	2017-2018			2016-2017			2015-2016			Mean		
Material	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
Full Skeleton	1	1	1	1	1	1	1	1	1	***1***	***1***	***1***
Skulls	10	10	12	8	8	10	5	8	10	***5***	***8.66***	***10.6***
Hyoid Bone	3	1	1	2	1	1	2	1	1	***2.33***	***1***	***1***
Mandibles	12	10	14	10	10	12	8	10	10	***10***	***10***	***12***
Vertebrae	>100	>100	>15	>100	>100	>15	>100	>100	>15	***>100***	***>100***	***>15***
Forelimb Bones	> 100	>100	>20	> 100	> 100	>20	> 100	> 100	>20	***> 100***	***> 100***	***>20***
Hindlimb Bones	> 100	>100	>20	> 100	> 100	>20	> 100	> 100	>20	***> 100***	***> 100***	***>20***
Fixed Material:	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
Heads	3	2	2	3	2	2	2	2	2	***2.66***	***2***	***2***
Tongues	10	2	2	8	2	2	8	2	2	***8.66***	***2***	***2***
Larynx	5	2	2	3	2	2	3	2	2	***3.66***	***2***	***2***
Heart	5	3	2	5	3	2	4	2	2	***4.66***	***2.66***	***2***
Lungs	4	3	2	4	3	2	3	3	2	***3.66***	***3***	***2***
Stomachs	3	2	2	2	2	2	2	2	2	***2.33***	***2***	***2***
Liver	4	2	2	3	2	2	3	2	2	***3.33***	***2***	***2***
Spleen	4	2	2	3	2	2	5	2	2	***3.33***	***2***	***2***
Kidneys	6	2	2	6	2	2	5	2	2	***5.66***	***2***	***2***
Male Genital Apparatus	4	2	1	4	2	1	4	1	1	***4***	***1.66***	***1***
Female Genital Appar.	2	2	1	2	1	1	2	1	1	***2***	***1.33***	***1***
Fetuses and Placentas	3	2	3	3	2	3	3	2	3	***3***	***2***	***3***

A (Cattle), B (Small Ruminants), C (Pigs)

	2017-2018		2016-2017		2015-2016		Mean	
Material	**D**	**E**	**D**	**E**	**D**	**E**	***D***	***E***
Full Skeletons	1	2	1	2	1	2	***1***	***2***
Skulls	> 25	>70	> 25	>70	> 25	>70	***> 25***	***>70***
Hyoid Bones	3	3	2	2	2	2	***2.33***	***2.33***
Mandibles	> 25	>70	> 25	>70	> 25	>70	***> 25***	***>70***
Vertebrae	> 100	>100	> 100	>100	> 100	>100	***> 100***	***>100***
Forelimb Bones	> 100	>100	> 100	>100	> 100	>100	***> 100***	***>100***
Hindlimb Bones	> 100	>100	> 100	>100	> 100	>100	***> 100***	***>100***
Fresh Material	**D**	**E**	**D**	**E**	**D**	**E**	***D***	***E***
Dogs Cadavers		40		40		40		***40***
Fixed Material:	**D**	**E**	**D**	**E**	**D**	**E**	***D***	***E***
Complete Dog Cadavers		15		15		15		***15***
Heads	18	15	15	12	12	10	***15***	***12.3***
Tongues	6	10	5	10	4	10	***5***	***10***
Larynxs	12	15	10	12	8	10	***10***	***12.3***
Anatomic Sections	>20	>50	>20	>50	>20	>50	***>20***	***>50***
Hearts	12	>15	10	>15	10	>15	***10.6***	***>15***
Lungs	8	15	6	15	6	15	***6.6***	***15***
Stomachs	8	>10	8	>10	6	>10	***7.3***	***>10***
Livers	7	>10	6	>10	6	>10	***6.3***	***>10***
Spleens	6	>10	6	>10	6	>10	***6***	***>10***
Kidneys	10	>10	8	>10	8	>10	***8.6***	***>10***
Male Genital Apparatus	6	>10	5	>10	5	>10	***5.3***	***>10***
Female Genital Appar.	6	>10	6	>10	6	>10	***6***	***>10***
Brains	2	>20	2	>20	2	>20	***2***	***>20***
Eyes	2	8	2	6	2	4	***2***	***6***
Auricles	5	5	5	4	5	4	***5***	***4.3***
Fetuses and Placentas	3	5	3	5	3	5	***3***	***5***

Equine (D), Dogs and Cats (E).

	2017-2018			2016-2017			2015-2016			Mean		
Material	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**
Full Skeletons	3	3	1	3	2	1	3	2	1	***3***	***2.33***	***1***
Skulls	6	12	3	6	9	2	6	6	2	***6***	***9***	***2.3***
Bones, Feathers, Nails, Beaks.	>20	-	20	>20	-	20	>20	-	20	***>20***	***-***	***20***
Mandibles	-	8	3	-	5	2	-	4	2	***-***	***5.6***	***2.3***
Hyoid Bones	-	4	1	-	3	1	-	2	1	***-***	***3***	***1***
Vertebrae	-	>100		-	>100		-	>100		***-***	***>100***	
Appendicular Skeleton	-	8	2	-	6	2	-	4	2	***-***	***6***	***2***
Ribs	-	>100	>20	-	>100	>20	-	>100	>20	***-***	***>100***	***>20***
Sternums	-	3	1	-	3	1	-	3	1	***-***	***3***	***1***
Fixed Material:	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**
Complete Cadavers	26	-	-	24	-	-	24	-	-	***24.6***	-	-
Fixed Material:	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**	**F**	**G**	**H**
Dissected Birds	9		-	7		-	6	-	-	-		-
Hearts	-	1	-	-	1	-	-	1	-	-	***1***	-
Lungs	-	2	-	-	2	-	-	2	-	-	***2***	-
Stomachs	-	1	-	-	1	-	-	1	-	-	***1***	-
Livers	-	1	-	-	1	-	-	1	-	-	***1***	-
Spleens	-	1	-	-	1	-	-	1	-	-	***1***	-
Kidneys	-	1	-	-	1	-	-	1	-	-	***1***	-
Male Genital Apparatus	-	1	-	-	1	-	-	1	-	-	***1***	-
Brains	-	2	-	-	1	-	-	1	-	-	***1.3***	-

Poultry and Rabbits (F), Cetaceans (G) and Pinnipeds (H).

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

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	1	3	1	2
Small ruminants	84	76	71	77
Pigs	8	0	0	3
Companion animals	0	0	0	0
Equine	0	0	0	0
Poultry & rabbits	30/60	30/60	30/60	30/60
Exotic pets	0	0	0	0
Others *(specify)*	0	0	0	0

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

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	4	3	4	**3.6**
Small ruminants	-	105	116	**110.5**
Pigs	2	4	2	**2.6**
Companion animals	3,602	3,305	3,274	**3,393.6**
Equine	22	32	18	**24**
Poultry & rabbits	-	-	-	**-**
Exotic pets	201	80	75	**118.6**

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

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	73	43	9	41.6
Small ruminants	371	380	792	514.3
Pigs	5	313	133	150.3
Companion animals	137	123	184	148
Equine	378	282	364	341.3
Poultry & rabbits	55	328	94	159
Exotic pets	-	-	-	-
Others: Zoo animals, Dromedary camels	25	28	6	19.6

Table 5.1.5. Percentage (%) of first opinion patients used for clinical training *(both in VTH and mobile clinics, i.e. tables 5.1.3 & 5.1.4)*

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	-	-	-	-
Small ruminants	-	-	-	-
Pigs	-	-	-	-
Companion animals	51	46	47	48
Equine	-	-	-	-
Poultry & rabbits	-	-	-	-
Exotic pets	-	-	-	-
Others *(specify)*	-	-	-	-

Table 5.1.6. Cadavers used in necropsy

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	6	1	15	7.3
Small ruminants	37	22	23	27.3
Pigs	17	29	27	24.3
Companion animals	578	519	500	532.3
Equine	9	7	9	8.3
Poultry & rabbits	191	160	140	163.7
Exotic pets	34	15	17	22
Others *(marine mammals and turtles, fishes, wild birds, zoo animals, etc.)*	129	90	61	98.3
TOTAL	**1001**	**843**	**792**	**878.7**

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

Species	2017-2018	2016-2017	2015-2016	Mean
Cattle	45	44	49	46
Small ruminants	55	55	47	52,3
Pigs	25	25	23	24,3
Companion animals	-	-	-	-
Equine	-	-	-	-
Poultry & rabbits	23	22	19	21,3
Exotic pets	-	-	-	-
Fishes (Aquaculture)	55	55	55	55
Marine Mammals	20	20	20	20
TOTAL	223	221	213	219

Table 5.1.8. Number of visits in slaughterhouses and related premises for training in FSQ

Species	2017-2018	2016-2017	2015-2016	Mean
Ruminant's slaughterhouses	6 (30 h)	6 (30 h)	6 (30 h)	6 (30 h)
Pig's slaughterhouses				
Poultry slaughterhouses				
Collective kitchens (School Canteen)	1 (3,5 h)	1 (3,5 h)	1 (3,5 h)	1 (3,5 h)
Food industries	3 (10 h)	3 (10,5 h)	2 (7 h)	2,67 (9,17 h)
Food Markets	2 (6,5 h)	2 (8 h)	1 (4 h)	1,67 (6,17 h)

5.2. Comments

The Annual Faculty Reports and the Specific Annual Objectives described in the QAS procedure (PEC01) related to the Quality Assurance Policy and include references to the EAEVE indicators. Therefore, the Faculty is committed to provide adequate animal resources and teaching material of animal origin for the acquisition of Day One Competences of students.

Local horse owners usually do not move their animals to hospital because clinicians have traditionally come to the farm. Therefore, there is a limited intramural case-load of equine patients; notwithstanding it is important to highlight that the Day-One skills related to Equine Medicine are covered by the extramural activity carried out by the Academic Staff in the Equine Clinical Service at the VTH with an elevated extramural caseload (1,422 clinical activities in 2015, 830 clinical activities in 2016, 1,055 clinical activities in 2017). In the opinion of the Faculty, this could provide compensation for the indicator I10 (Equine intramural) with an indicator of I14 (Equine Extramural) as defined in the introduction of ANNEX 4 of the SOP.

5.3. Suggestions for improvement

In order to promote intramural large animal clinical activity, which is particularly desirable in the Equine clinic, the Faculty have proposed to the Rectorate (the decision makers) an extension of the Large Animal Clinic (see the initial proposed project in ANNEX VIII).

On the other hand, we will enable a new box for infectious equine patient, which will be a unique facility for attending these infectious diseases in the Canary Islands and could increase the number of equine cases. Finally, all intramural services and their improvements should be promoted and disseminated by the VTH in order to reach a higher number of intramural cases.