



Dipartimento di Medicina Veterinaria e  
Produzioni Animali  
Università degli Studi di Napoli Federico II

# SELF-EVALUATION REPORT

DEPARTMENT OF VETERINARY MEDICINE AND ANIMAL  
PRODUCTION UNIVERSITY OF NAPLES FEDERICO II

**EAEVE VISITATION**  
**17TH – 21ST APRIL 2023**



UNIVERSITÀ  
DEGLI STUDI DI NAPOLI  
FEDERICO II



SCUOLA DI AGRARIA  
E MEDICINA VETERINARIA





## **Acknowledgment**

This Self-Evaluation Report is the result of the cooperation and efforts of all members of the Department, including students, support staff, and academic staff. It has been prepared in accordance with ESEVT SOP Zagreb 2019 as amended in September 2021. It was sent to the members of the Na VEE for comments and corrections and finally approved by the Department Board on February 13, 2023.

We sincerely thank all contributors for their willingness to provide factual data and specific information.

We would also like to thank the staff who worked hard to organise the EAEVE expert visitation. We hope that the report will provide an accurate and useful basis for the evaluation work that the EAEVE Expert Team will conduct during the visitation in Naples in April 2023.

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**List of acronyms and abbreviations**

<b>Acronym</b>	<b>English</b>	<b>Italian</b>
<b>ACG</b>	Ambulatory Clinic Group	Gruppo Clinica Mobile
<b>ANS</b>	National Student Registry	Anagrafe Nazionale degli Studenti
<b>ANVUR</b>	National Agency for the Evaluation of Universities and Research Institutes	Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca
<b>ASL</b>	Local Public Health Authority	Azienda Sanitaria Locale
<b>AVA</b>	Self-Periodic Evaluation and Accreditation	Autovalutazione, Valutazione periodica, Accreditamento
<b>AY</b>	Academic Year	Anno Accademico
<b>CAB</b>	UniNa Centre for Libraries	Centro di Ateneo per le Biblioteche
<b>Extramural CCT</b>	Extramural Core Clinical Training	Tirocinio obbligatorio
<b>CERVENE</b>	Regional Veterinary Reference Centre for Non-Epidemic Emergencies	Centro Regionale di Riferimento Veterinario per le Emergenze Non Epidemiche
<b>CESTEV</b>	UniNa Centre of Science and Life Technologies	Centro di Servizi di Ateneo per le Scienze e Tecnologie per la Vita
<b>CLA</b>	UniNa Language Centre	Centro Linguistico di Ateneo
<b>CQA</b>	UniNa Quality Centre	Centro Qualità di Ateneo
<b>CRAS</b>	Wildlife Rescue Centre	Centro di Recupero Animali Selvatici
<b>CREMOPAR</b>	Regional Centre for Monitoring Parasitic Diseases	Centro per il Monitoraggio delle Parassitosi
<b>CRESAN</b>	Regional Reference Centre for Animal Health	Centro di Riferimento Regionale per le Malattie degli Animali Domestici
<b>CRIBBAM</b>	Regional Reference Centre for Biosecurity, Animal Welfare, and the Fight against Maltreatment	Centro di Riferimento Regionale per la Biosicurezza, il Benessere Animale ed il Maltrattamento
<b>CRII</b>	Regional Centre for Horse Increase	Centro Regionale di Incremento Ippico
<b>CRIPAT</b>	Regional Reference Centre for the Safety of Public and Collective Catering Services and Traditional Agrifood Production	Centro di Riferimento Regionale per la Sicurezza della Ristorazione Pubblica e Collettiva e delle Produzioni Agroalimentari Tradizionali
<b>CRISSAP</b>	Regional Reference Centre for Fish and Fish Product Safety	Centro di Riferimento Regionale per la Sicurezza Sanitaria del Pescato
<b>CRIVU</b>	Centre for Veterinary Urban Hygiene	Centro di Riferimento Regionale per l'Igiene Urbana Veterinaria
<b>CSA</b>	Experimental Centre for Avian and Rabbit	Centro Sperimentale Avicunicolo
<b>CSI</b>	UniNa Centre for IT Services	Centro Servizi Informatici
<b>CUN</b>	National University Council	Consiglio Universitario Nazionale
<b>EAEVE</b>	European Association of Establishments for Veterinary Education	Associazione Europea delle Istituzioni per l'Educazione Veterinaria
<b>EBVS</b>	European Board of Veterinary Specialists	Associazione Europea degli Specialisti Veterinari
<b>ECAR</b>	European College of Animal Reproduction	College Europeo di Riproduzione Animale
<b>ECBHM</b>	European College of Bovine Health Management	College Europeo Gestione Sanitaria Bovini
<b>ECCS</b>	Emergency and Critical Care Service	Servizio di Pronto Soccorso e Terapia Intensiva
<b>ECLAM</b>	European College of Laboratory Animal Medicine	College Europeo Animali da Laboratorio
<b>ECOVE</b>	European Committee on Veterinary Education	Comitato Europeo per l'Educazione Veterinaria
<b>ECM</b>	Continuing Education Programmes	Programmi di Formazione Continua

<b>ECTS</b>	European Credit Transfer System	Sistema Europeo di Trasferimento dei Crediti Formativi
<b>ECVAA</b>	European College of Veterinary Anaesthesia and Analgesia	College Europeo di Anestesia e Analgesia Veterinaria
<b>ECVPH</b>	European College of Veterinary Public Health	College Europeo di Sanità Pubblica Veterinaria

<b>Acronym</b>	<b>English</b>	<b>Italian</b>
<b>ECVS</b>	European College of Veterinary Surgeons	College Europeo Chirurgia Veterinaria
<b>EH</b>	Equine Hospital	Clinica Equina Punto Verde
<b>EIC</b>	Erasmus and International Committee	Commissione Erasmus e Internazionalizzazione
<b>ENQA</b>	European Association for Quality Assurance in Higher Education	Associazione Europea per l'Assicurazione della Qualità nell'Educazione Superiore
<b>ESEVT</b>	European System of Evaluation of Veterinary Training	Sistema Europeo per la Valutazione della Formazione Veterinaria
<b>ESG</b>	Standards and Guidelines for Quality Assurance in the European Higher Education Area	Standards e Linee Guida per l'Assicurazione di Qualità nella Formazione Veterinaria
<b>EVPC</b>	European Veterinary Parasitology College	College Europeo di Parassitologia Veterinaria
<b>ExC</b>	Examination Committee	Commissione d'Esame
<b>FFO</b>	Ordinary Financing Fund	Fondo di Funzionamento Ordinario
<b>FNOVI</b>	National Federation of Veterinary Professional Association	Federazione Nazionale Ordini Veterinari Italiani
<b>FSQ</b>	Food Safety and Quality	Sicurezza e Qualità degli Alimenti
<b>FTE</b>	Full-Time Equivalent	Impiego a tempo pieno
<b>FVE</b>	Federation of Veterinarians of Europe	Federazione dei Veterinari Europei
<b>FVTH</b>	Frullone Veterinary Teaching Hospital	OVUD Frullone
<b>HVTH</b>	Historical Veterinary Teaching Hospital	OVUD Sede Storica
<b>ICU</b>	Intensive Care Unit	Terapia Intensiva
<b>IPT</b>	Intramural Practical Training	Pratiche interne
<b>IT</b>	Information Technology	Servizi Informatici
<b>IVSA</b>	International Veterinary Students Association	Associazione Internazionale degli Studenti di Medicina Veterinaria
<b>JC</b>	Teachers & Students Joint Committee	Commissione Paritetica Docenti Studenti
<b>JPC</b>	Job & Placement Committee	Commissione per l'Impiego
<b>LC</b>	Veterinary Library Committee	Commissione Biblioteca di Veterinaria
<b>MAVet</b>	Veterinary Anatomy Museum	Museo di Anatomia Veterinaria
<b>MG</b>	Management Group	Gruppo di Gestione
<b>MUR</b>	Ministry of University and Research	Ministero dell'Università e della Ricerca
<b>Na VEE</b>	Veterinary Education Establishment of Naples	Dipartimento di Medicina Veterinaria e Produzioni Animali (DMVPA)
<b>NSQ</b>	National Scientific Qualification	Abilitazione Scientifica Nazionale
<b>OTC</b>	Orientation & Tutoring Committee	Commissione di Orientamento e Tutorato
<b>PI</b>	Integrated Veterinary Centre	Polo Integrato
<b>PNRR</b>	National Recovery and Resilience Plan	Piano Nazionale di Ripresa e Resilienza
<b>PPE</b>	Personal Protective Equipment	Dispositivi di Protezione Individuale
<b>PPT</b>	Professional Practical Training	Tirocinio e Clinical Rotating
<b>PQA</b>	UniNa Presidium of Quality Assurance	Presidio Qualità di Ateneo
<b>QA</b>	Quality Assurance	Assicurazione della Qualità
<b>RAD</b>	Didactic Order	Ordinamento Didattico
<b>RG</b>	Review Group	Gruppo del Riesame
<b>RRC</b>	Cyclic Review Report	Riesame Ciclico

<b>RTDa</b>	Fixed-term (temporary) Researcher Type A	Ricercatore a tempo determinato di tipo A
<b>RTDb</b>	Fixed-term (temporary) Researcher Type B	Ricercatore a tempo determinato di tipo B
<b>SC</b>	Steering Committee	Comitato di Indirizzo
<b>SER</b>	Self-Evaluation Report	Report di Autovalutazione
<b>SInAPSi</b>	UniNa Student Active and Participatory Inclusion Services Centre	(Centro) Servizi per l'Inclusione Attiva e Partecipata degli Studenti
<b>SMA</b>	Annual Monitoring Report	Scheda di Monitoraggio Annuale
<b>SOP</b>	Standard Operating Procedure	Procedure Operative Standard
<b>SS</b>	Student Secretariat	Segreteria Studenti

<b>Acronym</b>	<b>English</b>	<b>Italian</b>
<b>SSC</b>	Safety and Security Committee	Commissione Prevenzione, Protezione e Sicurezza
<b>SSD</b>	Academic Discipline	Settore Scientifico Disciplinare
<b>SUA</b>	Unique Annual Report	Scheda Unica Annuale
<b>SUA-CdS</b>	Teaching Course Unique Annual Report	Scheda Unica Annuale del Corso di Studi
<b>SWOT</b>	Strengths, Weaknesses, Opportunities, Threats	Punti di Forza, Debolezza, Opportunità, Minacce
<b>TB</b>	Teaching Bylaws	Regolamento Didattico
<b>TO</b>	Teaching Office	Ufficio Didattico
<b>UniNa</b>	University of Naples Federico II	Università degli Studi di Napoli Federico II
<b>VMTC</b>	Veterinary Medicine Teaching Course	Corso di Studi in Medicina Veterinaria
<b>VPH</b>	Veterinary Public Health	Sanità Pubblica Veterinaria
<b>VQR</b>	Research Quality Evaluation	Valutazione della Qualità della Ricerca
<b>VTH</b>	Veterinary Teaching Hospital	Ospedale Veterinario Universitario Didattico (OVUD)



## Introduction

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### *Brief history of the Department of Veterinary Medicine and Animal Production*



UNIVERSITÀ  
DEGLI STUDI DI NAPOLI  
FEDERICO II

*Ad Scientiarum Haustum et*

The University of Naples Federico II ([UniNa](#)) is the oldest public nonsectarian university in the world. UniNa has been student-centred since its foundation on June 5, 1224 by the Holy Roman Emperor and King of Sicily, Federico II of Swabia who stated: [...] *We decree that Seminarium Doctrinarum in the pleasant city of Naples the arts shall be taught, and the studies shall be cultivated, so that those who are fasting and hungry for knowledge may find something in our kingdom to satisfy their craving and not be forced to wander in a foreign land in search of knowledge [ ]; we allow the students to come and live there [...]; we seek teachers, we promise goods, and to those who appear worthy we offer prizes.* UniNa is the most important of the five Neapolitan academies with approx. 95,000 students and 6,000 employees – of whom some 3,000 are researchers. After the entry into force of the Italian University Law 240/2010, UniNa was divided into [four schools](#) (Agricultural Sciences and Veterinary Medicine, Humanities and Social Sciences, Medicine and Surgery, Polytechnics and Basic Sciences) and 26 [departments](#).



Dipartimento  
Medicina Veterinaria  
Produzioni Animali

The Veterinary School of Naples was founded in the second half of the eighteenth century at the behest of Ferdinand IV of Bourbon and by Ignazio Dominelli, a young doctor from Messina and veterinarian of the royal stables. In 1798, the School and Veterinary Hospital was opened for equines to civilian and military students. From 1802 - after a brief closure during the Neapolitan Republic - it was reopened and made accessible to citizens. In 1815, Murat transferred the School to the Franciscan convent attached to the Church of *Santa Maria degli Angeli alle Croci*. The earliest privileges or patents (as the academic title granted by the King was defined at that time) date back to 1824. From 1835, some fundamental changes were made to the admission process and to its organization and the study was extended to all domestic animals. After the unification of Italy, the new School of Veterinary Medicine and Agriculture was included in the higher education institutions of the Kingdom and in 1935 the school became a Faculty of UniNa, housed in the convent of *Santa Maria degli Angeli alle Croci*, the current site of the Na VEE.

The years passed and in 1992, in addition to the Veterinary Medicine Teaching Course, the five-year Animal Production Science Teaching Course was added, which in the following years, with the ministerial reform of 2004, gave rise to the current three-year programme in Animal Production Technologies and the master's programme in Animal Production Science. In 2019, the educational offer of the Na VEE was further enriched by the creation of a new 2-year residential master's degree programme (Precision Livestock Farming) which is delivered entirely in English.

In 2010, after the reform of the university system, the Faculty disappeared and the Department of Veterinary Medicine and Animal Production ([DMVPA](#)) was created, which together with the Department of Agriculture gave rise to the School of Agricultural Sciences and Veterinary Medicine. Over the years, spaces available at the Na VEE have considerably changed. After the [collapse of a wing of the building](#) in December 2015, part of the activities (teaching and administration) took place for a few months in the Institute of the Salesians of Don Bosco. Currently, the teaching facilities have been expanded and include the educational complex of the UniNa Service Centre for Life Sciences and Technologies – CESTEVA (Area 4).

The Na VEE is one of 13 Departments of Veterinary Medicine in Italy and is the only academic institution in the veterinary field in the Campania Region (13,590 km<sup>2</sup>), one of the most relevant agricultural areas in Europe with a high number of food producing animals including the typical Mediterranean buffaloes. The Na VEE promotes lectures, simulated and practical teaching and provides, in agreement with EU Directives and ESG recommendations, research-based and evidencebased veterinary training in compliance with ethics and animal welfare without neglecting innovation while respecting environmental and economic sustainability of the region. The standard of clinical assistance is acknowledged as a reference point by the public and the veterinary professionals at the Veterinary Teaching Hospital (VTH). It is based on a constant relationship-exchange with stakeholders, including private professional associations, veterinary public entities, farmers, and pet owners. The Na VEE has expertise also in the areas of breeding food producing animals, in food inspection and public health in general, but also in areas such as fishery products, aquaculture and apiculture. Prevention of infectious and parasitic diseases, including zoonoses, also are strategic objectives and strong features of the VEE. The Na VEE staff is highly qualified in terms of teaching, research, internationalization, and public engagement.

The Na VEE is responsible for the teaching course in Veterinary Medicine (five-years single cycle). It offers, in addition to the other three above mentioned degree courses, a rich *portfolio* of postgraduate courses, i.e., a PhD in Veterinary Sciences, seven (three-year) Specialization Schools, two Level I and one Level II Masters, six Postgraduate improvement courses, one Clinical Rotating Internship Programme, one Residency Programme of the European Veterinary Parasitology College (EVPC), and some continuing education courses (Area 10).

The Veterinary Medicine Teaching Course has an appealing programme, and despite structural and logistical constraints, the fair relationship between students, academic and support staff allows for a welcoming environment for veterinary learning and education. Graduate veterinarians from the Na VEE can enter all commonly recognized branches of the veterinary profession.

The close relationship with local institutions, especially with the Campania Region Veterinary public health, has led over the years to a fruitful collaboration between the Na VEE and various institutions where practical activities are currently carried out for teaching and research. In 2000, the Regional Centre for Monitoring Parasitic Diseases (CREMOPAR) was established, regulated by an agreement between the Ministry of Agriculture of the Campania Region and the Unit of Parasitology of the Na VEE. In 2003, the Campania Region acquired the Improsta farm, which allowed the creation of a regional centre for advanced services and a pilot enterprise in the agri-food system. In 2011, a Memorandum of Understanding was signed by the President of the Campania Region, the Rector of UniNa and the Director of the Experimental Zooprophyllactic Institute of Southern Italy for the creation of the Integrated Veterinary Centre (PI), establishing the Na VEE as the institutional instrument for UniNa participation in the activities with veterinary public health partners. This synergy produces advantages for both systems. Both basic and specialised training, through this integration, deliver teaching that is more closely aligned to the actual performance needs of future vet professionals, thanks to the direct contact of trainees with the target audience for the services as well as the greater availability of facilities, which would otherwise be difficult to implement and manage in the university environment alone. At the same time, the Na VEE carries out teaching activities, also making use of the facilities of the Local Public Health Authority (ASL), i.e., the hospital for stray dogs and cats (Frullone Veterinary Teaching Hospital - FVTH) and participates in the organisation and delivery of training courses aimed at veterinary practitioners. This cross-collaboration, unique in Italy, makes it possible to optimize financial resources for public institutions in terms of premises, equipment, and personnel (Area 2). The PI operations take the form of the Regional Reference Centres, listed below.

Finally, since 2012, UniNa and the Campania region have allocated a substantial budget (Area 2) for the expansion of the new VTH integrated into the FVTH and for the construction of new departmental

premises, classrooms, multimedia rooms, libraries, and laboratories to allow the Na VEE to move to this location (Frullone campus). The preliminary project was drawn up in 2013 and after a public tender the execution project was approved in 2016. However, due to several bureaucratic difficulties and pandemic-related delays, the construction work which started in 2021 will be completed in 2024. The fact that most of the premises are still located in the historical building, including the historical VTH (HVTH), makes it necessary to move some student practices to extra-mural facilities, especially for food producing animals and equine caseloads.

<b>Regional References Centres (Reg-RC)</b>	
Centre for Veterinary Urban Hygiene	CRIUV
Wildlife Rescue Centre	CRAS
Reg-RC for Fish and Fish Product Safety	CRISSAP
Reg-RC for Non-Epidemic Emergencies	CERVENE
Reg-RC for the Safety of Public and Collective Catering Services and Traditional Agrifood Production	CRIPAT
Reg-RC for Animal Health	CRESAN
Reg-RC for Biosecurity, Animal Welfare and the Fight against Maltreatment	CRIBBAM

The first EAEVE visitation dates back to 2002. On that occasion the Na VEE did not receive approval. A second ESEVT visitation in 2013 did not identify any major deficiency and recommended [full approval](#) of the Na VEE.

**The main developments and changes in the Na VEE** since the last visitation are described below within each ESEVT area:

### **Area 1. Objectives, Organisation, and QA Policy**

- Development of a 2022-2024 Strategic Plan, which includes Mission statements and a SWOT analysis.
- Veterinary Medicine Teaching Course (VMTC): certification (since 2017) of compliance of the Quality Management System with the requirements of the international standard UNI EN ISO 9001:2015. This process has been closely followed by the UniNa Quality Centre (CQA).

### **Area 2. Finances**

- Although the principles of financial autonomy of the Na VEE are limited by the Italian regulation, the Na VEE has set up a financial/business strategy (approved by the VEE Board) to access research grants and contracts with the industrial sector and stakeholders, and to allow strategic reinvestment of funds, e.g., facilities and equipment, tools for student biosecurity/biosafety, services for student transportation to the external premises.

### **Area 3. Curriculum**

- An extensive revision of the teaching syllabus has been made in accordance with the standards set out by the UniNa Presidium of Quality Assurance (PQA) with regards to clearly stated specific learning outcomes, course contents, teaching methods, assessment criteria which also comply the ESEVT Standard Operating Procedures (SOP).
- Periodically the VMTC curriculum is updated to meet the requirements of vet professionals, in particular the elective tracks which were rarely chosen by the students have been revised and/or replaced by new attractive tracks (e.g., precision veterinary medicine).
- The VMTC curriculum is annually and cyclically monitored for QA.

- The English course has been revised (B2 level) and the staff of the UniNa Language Centre (CLA) has been asked to improve the English proficiency of students. Furthermore, the annual number of seminars in English held by foreign teachers has been increased and so has the interaction with foreign students through Erasmus and IVSA programmes.

#### **Area 4. Facilities and equipment**

- After the logistical problems related to the COVID-19 pandemic, in September 2022 the 24/7 VTH service was reopened all year round.
- An Exotic Pet Clinical and Surgery Service has been established at the HVTH to increase the caseload of non-traditional pet animals.
- In November 2022, to overcome logistical problems (the HVTH is in the city centre of Naples), the intramural equine clinic was closed and an agreement with an Equine Hospital (EH, *Clinica Equina Punto Verde*) was signed to guarantee the equine caseload.
- The VTH equipment, and the dissection and necropsy rooms, have been upgraded.
- A new central software platform (MyClinical) for keeping track of VTH patients has been developed by internal staff and used by staff and students since January 2021.
- A security/safety manual (Annex I) has been continuously implemented.
- A security/safety course (4+12+1 hours + teaching videos) has become mandatory for staff and students.

#### **Area 5. Animal resources and teaching material of animal origin**

- The Na VEE staff put in place strategies and agreements with public and private providers that ensure adequate hands-on pre-clinical and clinical training on different animal species.

#### **Area 6. Learning resources**

- Innovative teaching systems and tools have been developed also due to the constraints of the pandemic. They include video tutorials, the Veterinary Educational Portal (UniNaVET), MOOC e-learning platforms, and self-learning using Microsoft Teams Forms®.
- UniNa has developed a system that allows students to access all online learning resources, and library services, through their institutional account.
- A new Skill Lab has been opened for the students.

#### **Area 7. Student admission progression, and welfare**

- Student support services have been implemented also with a specific section on the website (Student Helpdesk) managed by the Student & Teachers Joint Committee, the Orientation and Tutoring Committee, the UniNa Student Active and Participatory Inclusion Services centre (SInAPSi) and a department contact person for disabled students.

#### **Area 8. Student assessment**

- Internal guidelines have been adopted by the VMTC Committee to align learning outcomes and assessment methods (Annex D).

#### **Area 9. Academic and support staff**

- There has been a remarkable increase in contracts for veterinary practitioners (Area 2), covering different subjects, particularly for the clinical activities at the 24/7 VTH and EH.
- The Na VEE developed and delivered a training course to support effective teaching, Training for Teach in Vet, aimed at developing teachers' skills in improving student learning. The

course, held every two years, is aimed at academic staff but also other staff (support staff, PhD, post doc, research fellows, and vet practitioners) involved in the teaching activities.

#### **Area 10. Research programmes, continuing, and postgraduate education**

- Introduction of a Committee for the Evaluation of Research Quality (VQR) promoting actions to improve research at the Na VEE.
- Introduction of a Third Mission Committee to increase public engagement activities.
- In the last three years, four academic staff have been included in the list of the world's top 2% scientists. In the 2022, International Global Ranking of Academic Subjects, the Na VEE ranked fifth out of sixteen Italian universities dealing with Veterinary Sciences.
- The Next Generation EU funds, through the National Recovery and Resilience Plan (PNRR) recently allocated to the Na VEE, provide a unique opportunity to improve infrastructure, facilities, and equipment and to recruit new researchers for fostering research and teaching.

**The main problem with the Na VEE** is that the premises are currently in different locations (e.g., the HVTH, FVTH, CESTEV). This is an obvious limiting factor for the optimal integration of students and staff involved in the educational programme and prevents the exploitation of all synergies. It is reasonable to assume that in the VEE's development plan some objectives and structural improvements can only be achieved when the new premises are completed and fully functional by 2024. The full integration of the VTH and FVTH and the new departmental premises in the Frullone campus will represent a unique opportunity for staff and students of the Na VEE.

The ESEVT SOPs 2019 approved at the Zagreb General Assembly as amended in Turin in September 2021 have been chosen for the visitation.

#### *Notes on the COVID-19 pandemic*

All the exceptional rules adopted for the extraordinary circumstances linked to the COVID-19 pandemic are reported in Annex N.

## Area 1. Objectives, Organisation and QA Policy

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### 1.1. Mission statements

The Na VEE, a community of professors, students, and support staff, is daily committed to fostering quality higher education, innovative scientific research, constant comparison with the international scientific community and continuous dialogue with the public in the fields of Veterinary Medicine, Animal Science and Food Safety. According to the specifications of the Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) and UniNa, the Na VEE pursues four main areas, namely education, research, internationalization, and the Third Mission (public engagement). The general objectives of the Na VEE, as stated in the Strategic Plan 2022-2024, can be summarized as follows: **Teaching and training objectives**

- Stimulating students' critical skills, interest, and passion, favouring meritocracy, and guaranteeing their right to learn.
- Encouraging personal, cultural, and professional growth in line with society's demands. - Improving the quality of teaching, strengthening the international sphere of education.
- Providing students with solid theoretical and practical knowledge bases and methodological tools for adequate, ethical, research-based, evidence-based veterinary training.
- Promoting graduates' specialisation for the pursuit of their profession and research. - Complying with the requirements of ESEVT, ISO and ANVUR.

### Research objectives

- Supporting basic and applied research for the advancement of the veterinary approach in a One Health perspective.
- Improving basic and professional knowledge related to veterinary medicine and animal production through various scientific disciplines.
- Promoting scientific research by strengthening the capacity to attract external resources through improved competitiveness in national and international calls for proposals.
- Introducing integrated objective criteria in resource allocation and ex-post evaluation.

### Internationalisation objectives

- Strengthening the international dimension of teaching and research.
- Promoting the international mobility (incoming and outgoing) of students, PhD students, researchers, lecturers, and support staff.
- Increasing international collaboration and participation in competitive calls.

### Third Mission objectives

- Transferring and disseminating research results outside the academic context in an ongoing dialogue with the local community.
- Organising educational, clinical-assistance and scientific dissemination activities to communicate the results of evidence-based research to all citizens.

According to the curriculum (Area 3) of the Veterinary Medicine Teaching Course, the training strategy of the Na VEE follows the standards and guidelines for quality assurance of the European Higher Education Area (ESG 2015) as set out by the European Association for Quality Assurance in Higher Education (ENQA) Board, the EU Directives (2005/36 and 2013/55), the principles established by EAEVE and by the ISO EN 9001:2015. The Na VEE's strategy is based on a multimodal approach to ensure the effectiveness of the teaching offer: the parameters provided by ESEVT are periodically assessed, alongside the training needs of individual teaching courses, while student requests, the opinion of stakeholders and the offer of the local job market are also considered. The aim of Na VEE is to provide students with practical knowledge and skills to acquire the Day One

Competences. This is achieved through lectures and practical learning, carried out in the various intra- and extra-mural facilities of the VEE, including the HVTH, the FVTH, the Ambulatory Clinics, the necropsy and dissection rooms, and the numerous laboratories. The student acquires animal production skills through periodic visits on herds in the field. Agreements are also signed with external facilities both in the public and private sectors, with external practitioners, and the internal resources are optimized to guarantee pre-clinical and clinical training in animals and materials of animal origin. Since 2019 a dedicated Committee (EAEVE Committee) has been set up to plan and propose actions aimed at increasing compliance of the VMTC with the most recent version of ESEVT SOP. The VMTC also adheres to the ANVUR Periodic Accreditation procedures, and since 2018 this has also been implemented by a Quality Management System certified by an accredited authority, in accordance with the UNI EN ISO 9001:2015 Standard. This process has been closely monitored by the CQA.

### 1.2. Organization of the Na VEE

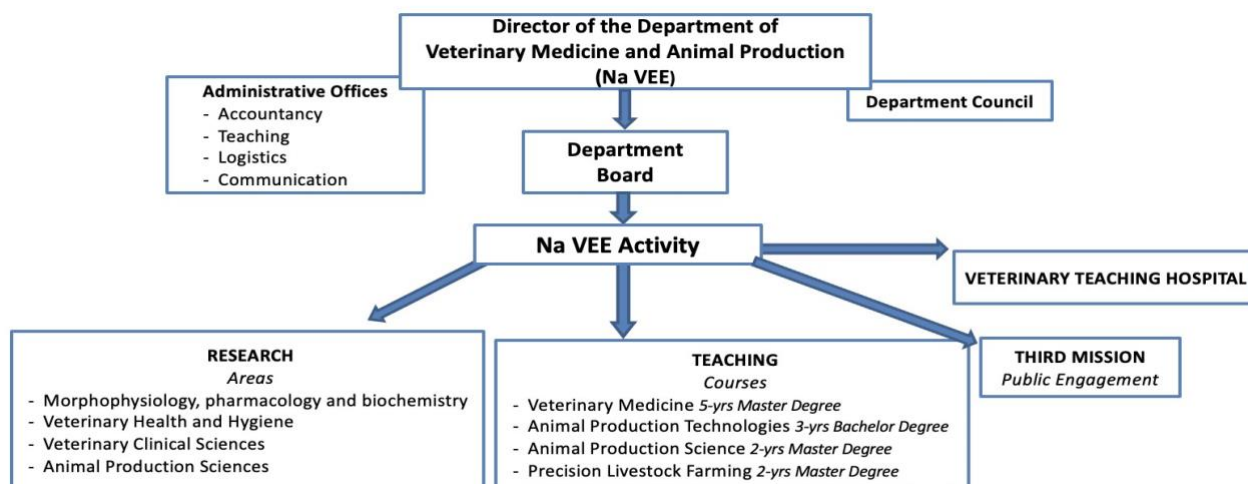
The Na VEE is a Department of UniNa, a public institution under the authority of the Italian Ministry of University and Research (MUR). UniNa has a clear governance structure and establishes its own statute and regulations for educational, scientific, organisational, administrative, financial, and accounting activities. The Rector acts as the head and official representative of UniNa and chairs the two main governing bodies of UniNa, namely the Board of Governors and the Academic Senate. A General Manager is responsible for the organisation and management of UniNa's services, resources and support staff. UniNa includes 4 schools and 26 departments, 161 teaching courses (single cycle, 3-years bachelor's and 2-years master's degree) and 163 postgraduate programmes.

The Na VEE, after the collapse of a wing of the historical building in December 2015 and to improve the teaching quality, is currently organized in three sites, all located in Napoli city:

- Historical site including the HVTH, Via Delpino, 1 - CESTEV, Via Tommaso De Amicis, 95
- Frullone hill, including FVTH, Via Marco di Rocco di Torrepadula, 35.

Name of the establishment	Dipartimento di Medicina Veterinaria e Produzioni Animali (DMVPA)
Institution	Università degli Studi di Napoli Federico II
Address	Via Delpino 1, 80137 Napoli, Italia
Telephone	+39 0812536122
E-mail	<a href="mailto:Dip.Medicina-Veterinaria-ProdAn@unina.it">Dip.Medicina-Veterinaria-ProdAn@unina.it</a>
Website	<a href="https://www.mvpa-unina.org">https://www.mvpa-unina.org</a>
Title and name of the Head of VEE (Director of the Department)	Aniello Anastasio, DVM, PhD (Full Professor) <a href="mailto:aniello.anastasio@unina.it">aniello.anastasio@unina.it</a>
Is the establishment within a university?	Yes
Address of the University	Corso Umberto I, 40, 80138 Napoli, Italia
Veterinary Medicine Teaching Course Coordinator	Paolo Ciaramella, DVM (Full Professor) <a href="mailto:paolo.ciaramella@unina.it">paolo.ciaramella@unina.it</a>
VTH Director	Gaetano Oliva, DVM (Full Professor) <a href="mailto:gaetano.oliva@unina.it">gaetano.oliva@unina.it</a>
Official authority overseeing the VEE	Italian Ministry of University and Research (MUR), Rector of UniNa (Matteo Lorito, Full Professor)

The full organizational chart of the Na VEE is reported in a [specific section](#) of the website. A simplified version (Fig. 1.1.) and the organizational chart of the Veterinary Medicine Teaching Course (Fig. 1.2.) are reported below.



**Fig. 1.1.** Organisational chart of the Na VEE (simplified version)

The Na VEE is organised hierarchically. **The Director of the Department**, i.e., the VEE's Head, is elected every three years by the Department Board. His/her term of office may be renewed only once. He/she appoints a **Vice Director** (Deputy Head) and may assign certain functions/activities to delegates. **The Department Council (VEE Council)** is a collegial body envisaged in the UniNa Statutes, which assists the Director of the Department in the exercise of his/her functions and has teaching and proposing duties. The members of the Na VEE Council hold office for three years; their term of office may be renewed only once. The Council is composed of the Na VEE Director, the head of the Na VEE accountancy office, the Vice Director, and nine members elected among the academic staff to ensure equal representation of each category of permanent and temporary positions. **The Department Board** is the governing body of the VEE. It is composed of all academic staff of the Na VEE (professors and researchers), the administrative officer, and representatives of support staff, PhD students, and students. It meets regularly (on average 10-11 times per year). Within the Na VEE, each teaching course is managed by its own **Teaching Course Committee** chaired by a Coordinator; the management processes are mapped and described in the Teaching Bylaws, where roles and responsibilities are identified within each operational function. The coordinators are elected every three years by the members of the Department Board, they may be renewed only once, and are responsible for the organization and quality of teaching. Each Teaching Course Committee is composed by all internal and external professors who have a didactic role in the curriculum, and representatives of support staff and students.

The **Veterinary Medicine Teaching Course Committee** is chaired by the **Veterinary Medicine Teaching Course Coordinator**, who holds a DVM degree and is a qualified veterinarian. The VMTC Committee meets periodically to approve the organization of teaching and learning (planning, timetable, examination, and graduation calendars, etc.), to discuss day-to-day issues (student and Erasmus practices, practical training, analysis of student evaluation results) and extraordinary activities related to teaching (e.g., student requests, changes in the study regulations) and to monitor the progress and quality of the curriculum. For the evaluation of the quality of teaching, the indications provided by the PQA are followed up through the **Quality Assurance (QA) system** developed in accordance with the self-assessment, evaluation, and accreditation document of the Italian University System by ANVUR and ISO.

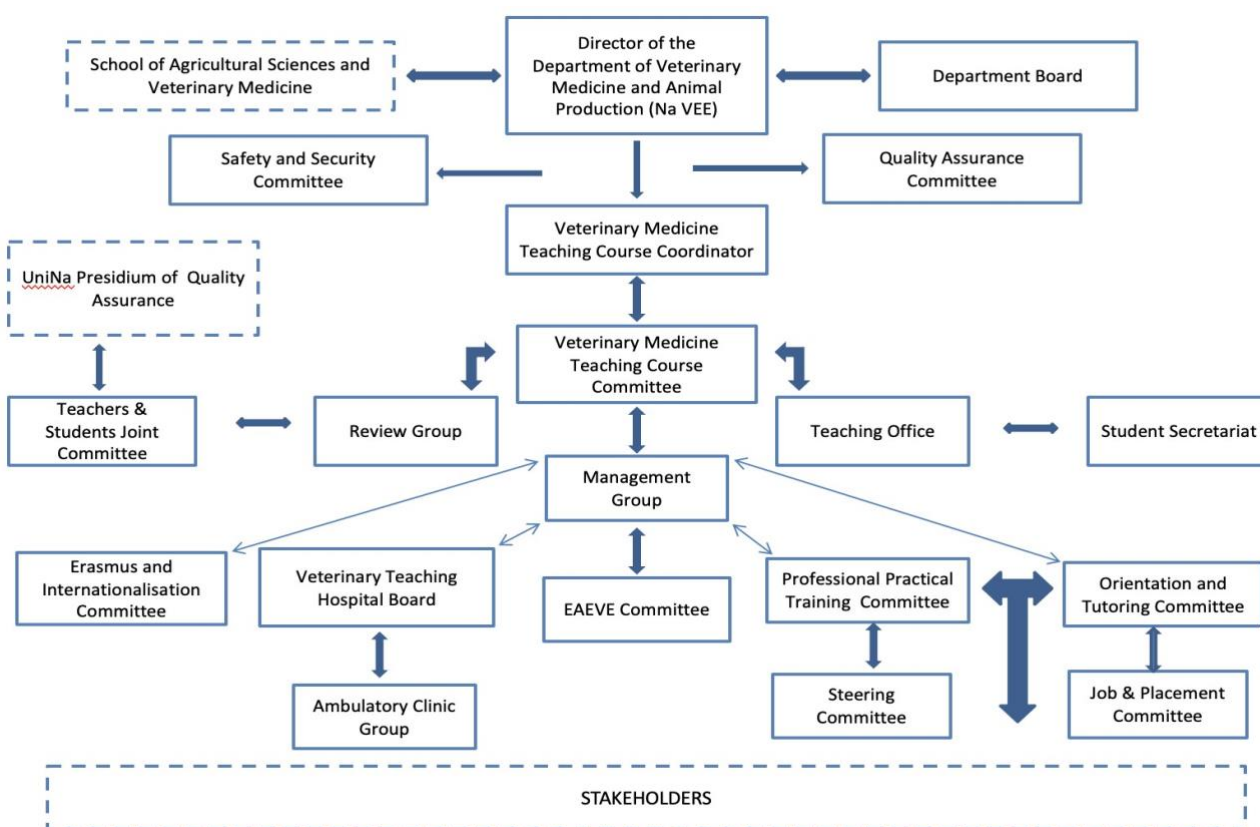
Administrative issues supporting the Na VEE teaching, research and public engagement institutional activities are managed by four offices, namely *i*) Accountancy, *ii*) Contracts, Logistics, VTH



Management, *iii*) Teaching, Doctorate, Postgraduate programmes, *iv*) Communication, Personnel, Protocol and Support Staff. Moreover, support staff is also employed in the Na VEE VTH and laboratory activities. The Head of the Accountancy office, alongside the Director, is responsible for all the financial procedures of Na VEE. This person also participates in the meetings of the Na VEE Council and Board with the functions of secretary.

The Na VEE currently consists of about 100 academic staff, i.e., full professors, associate professors, assistant professors, and temporary researchers (Annex A), and junior staff (PhD students, research associates, research fellows) working in 17 Academic Disciplines (SSD) belonging to four scientific macro-areas, namely *i*) morphophysiology, pharmacology and biochemistry, *ii*) animal production sciences, *iii*) veterinary health and hygiene, *iv*) veterinary clinical sciences.

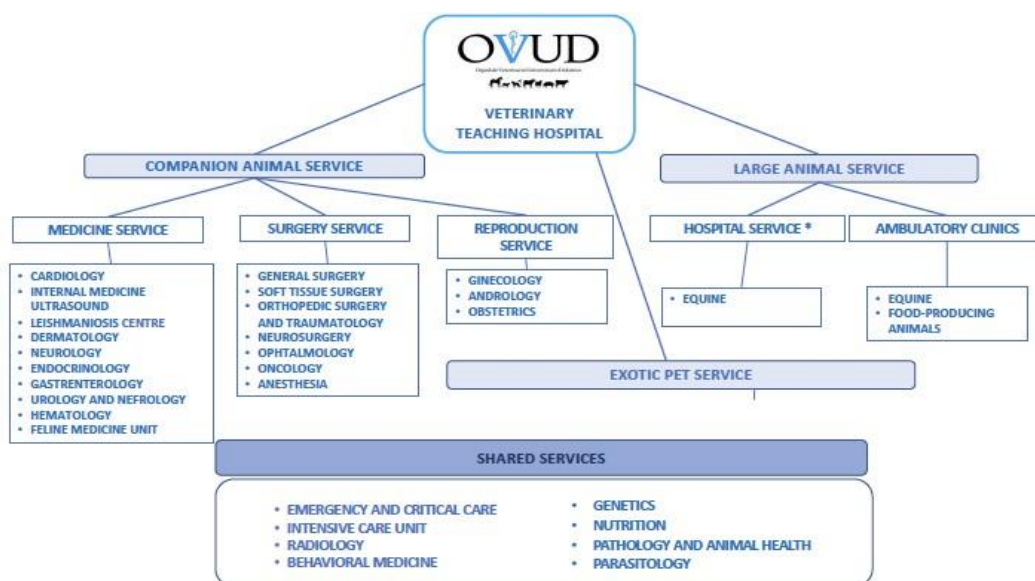
The **PhD Board in Veterinary Sciences** is made up of 21 members of academic staff (3 from foreign universities), including the PhD Coordinator who is proposed by the Na VEE Director and nominated by the Department Board. Members of the PhD Board are appointed from among the academic staff whose research activities are consistent with the research fields covered by the PhD programme, and in compliance with the requirements to be met for the ministerial accreditation.



**Fig. 1.2.** Organisational chart (diagram) of the Veterinary Medicine Teaching Course

The **Historical Veterinary Teaching Hospital (HVTH)** is managed by a HVTH Director (a qualified veterinarian) and a HVTH Board. The HVTH Director is proposed by the Director of the Na VEE and appointed by a working group that includes the ASL and the City mayor. The 24/7 HVTH service has undoubted educational value within an evidence-based and research-based training framework. The activities of the HVTH are organised into different services and shown in the organizational chart below (Fig. 1.3.).

The activities of the Na VEE and of the VMTC Committee are guided by various committees/boards. All these committees report to the Department Board and the VMTC Committee on major decisions.



\*In November 2022, intramural equines activities were transferred to the Equine Hospital (*Clinica Equina Punto Verde*)

**Fig. 1.3.** Organisational chart of the Historical Veterinary Teaching Hospital Services

### Na VEE Committees

Permanent committees are nominated by the Director of the Department and approved by the Na VEE Board. The Na VEE [committees](#) are reported below.

**Quality Assurance** (Members: 4 academic staff, 1 support staff, 2 students). It is responsible for supporting, monitoring and controlling the QA processes of the Department, in accordance with ANVUR, UniNa and in consultation with the Na VEE Director, the Teaching Course Committees, the Review Group, the Steering Committee and the Teachers & Students Joint Committee. **Research Quality Evaluation (VQR)** (Members: 7 academic staff). It analyses and monitors internal research activities, and their evaluation in comparison with national and international reference parameters, to optimize the evaluation of the research products of the academic staff.

**Third Mission** (Members: 6 academic staff). It is the institutional reference body for the activities of the Na VEE public engagement. It coordinates the set of activities through which the Na VEE interacts with society and disseminates scientific knowledge through citizen initiatives.

**Safety and Security** (Members: 8 academic staff, 10 support staff). It prepares, publishes and updates the safety/security manual; provides updated training on prevention of chemical and biological risks, protection, biosafety and biosecurity; promotes Good Laboratory and Clinical Practices; keeps the hazardous waste loading and unloading register providing the pick-up; takes care of the purchase, storage and distribution of personal protective equipment (PPE); promotes the risk assessment document.

**Veterinary Library** (Members: 6 academic staff, 2 support staff from UniNa). In accordance with guidelines established by the [UniNa Centre for Libraries](#), it decides on matters concerning the library policy and decides on the books and journals acquisitions based on the needs of teachers and students.

**Orientation and Tutoring** (Members: 6 academic staff, 2 students). It is responsible for tutorial guidance of first-year university students and high school students who wish to obtain detailed information about the Na VEE teaching courses in terms of admission and didactic organization. It represents the link with SInAPSi and its coordinator is also responsible for disabled students.

**Job & Placement** (Members: 4 academic staff, 1 student). It is responsible for promoting postgraduate career activities. It maintains contacts with public and private veterinary companies and supports private and public institutions in the search and selection of personnel.

**Erasmus and Internationalisation** (Members: 7 academic staff, 2 support staff, 1 student). It is the reference body for international activities of the VEE and coordinates functions for international

mobility programmes (e.g., Erasmus Key Actions 103 and 107) for incoming and outgoing students, doctoral candidates, teaching staff and support staff, promotion of the initiatives of the University Language Centre, collaboration with international student associations (e.g., IVSA).

**Double Degree** (Members: 7 academic staff, 1 support staff, 1 student). It is responsible for an integrated programme of study aimed at obtaining a double degree thanks to an agreement between two universities, during which students attend each foreign academic institution for 1 or 2 years.

**Teachers & Students Joint Committee (JC)** (Members: 4 academic staff, 4 students). This is the only Na VEE Committee whose components are elected according to the Italian University Law 240/2010. It provides a permanent monitoring of the Na VEE teaching activities. It monitors the educational and service activities offered to students; it formulates opinions on the correspondence between the ECTS assigned to each subject and the learning objectives; it prepares the annual report on the progress of teaching activities; it uses the information contained in various documents (student teaching evaluation questionnaires, review group reports, etc.), data obtained from the UniNa Statistical Office, and specific indicators (e.g., ESEVT indicators in the case of the VMTC) to produce an annual document and proposes corrective actions when needed.

#### *Committees/Boards/Groups of the Veterinary Medicine Teaching Course*

Permanent committees/boards/groups of the VMTC are nominated by Na VEE Director and approved by Na VEE Board. They include student and stakeholder representatives.

**EAEVE Committee** (Members: 11 academic staff, 5 students). The academic members are selected from the different teaching areas (basic science, pre-clinical, clinical subjects, animal health and food inspection). It is coordinated by two ESEVT experts and integrated with the QA Committee. The student members are selected from the different years of course. The EAEVE Committee is responsible for informing all components of the Na VEE of the ESEVT SOP. It prepares the selfevaluation report (SER), verifies the compliance of the VMTC with the ESEVT Standards and the Day One Competences, and monitors its continuous fulfilment.

**Professional Practical Training (PPT) Committee** (Members: 6 academic staff, 2 students). It consists of at least one academic staff member for each professional area (clinical, inspection, infectious diseases, animal husbandry), and two student representatives. It deals with all the aspects related to PPT both intra- and extra-mural; it identifies potential weaknesses also related to ESEVT Day One Competences and proposes corrective actions. It plans PPT activities and determines the schedule and location of PPT, considering student requests as much as possible.

**Management Group** (Members: 6 academic staff, 1 support staff, 5 students). It is made up of the VMTC Coordinator, the teachers/students responsible of the year (year coordinators), a member of the Teaching Office (TO). It organizes teaching planning, course timetables, exam, graduation calendars; at the end of the semester evaluates the progress courses; it also performs syllabus periodic evaluations.

**Review Group (RG)** (Members: 4 academic staff, 1 support staff, 2 students). It includes the VMTC Coordinator and the QA Committee Coordinator, students and support staff. It annually draws up the Annual Monitoring Report (SMA) and periodically prepares the Cyclic Review Report (RRC), using surveys on the employment level of graduates and data extracted from the questionnaire used to assess student satisfaction.

**Steering Committee** (Members: 2 academic staff, 2 students, 4 stakeholders). It is entrusted with annually redefining veterinary training needs based on national and international job requirements and adjusting training objectives to align expected learning outcomes with the training needs.

**HVTH Board** (Members: 1 director and 6 head of units). It provides basic and highly specialized diagnostic-therapeutic health services for companion and food producing animals with access to the public. Meetings of the HVTH Board, chaired by the HVTH Director, are attended by academic staff offering courses in clinical sciences, PhD students and fellows, and support staff involved in HVTH clinical activities. In addition, a VTH Board (composed of HVTH and FVTH Directors and the VMTC

Coordinator) was recently formed to organize the activities of the staff and students involved in FVTH and CRAS.

**Ambulatory Clinic Group** (Members: 1 academic staff, 2 support staff). It schedules the ambulatory clinic services with academic staff and students and manages the relations with the farms of food producing animals and stables of equines located in the Campania region.

The Na VEE has formal agreements with private and public institutions where students can complete part of their practical training (see [here](#)). Moreover, the Na VEE may enter into formal agreements with other VEEs either directly (e.g., at the suggestion of academic staff) or through UniNa. Formal agreements have been made with other UniNa departments, other departments/universities in Italy and other countries, especially those related to the Erasmus exchanges. Over the years, the Na VEE has built an increasingly open environment to international relations, with a particularly marked increase in the number of Erasmus agreements (>30), and research agreements (>20).

### 1.3. Na VEE strategic plan and SWOT analysis

In 2022 the Na VEE has developed and approved a 2022-2024 [Strategic Plan](#) in line with the [corresponding plan](#) adopted by UniNa. A detailed **SWOT analysis** (Strengths, Weaknesses, Opportunities and Threats) is included in the plan and organised according to Teaching, Research, Internationalisation and Third Mission activities of the Na VEE. The main points are summarized below.

#### Swot Analysis

TEACHING	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• A long-standing historical tradition, since 1798</li> <li>• EAEVE approval (2013) and UNI EN ISO 9001:2015 accreditation of the VMTC (2017)</li> <li>• Strong links with the local public veterinary authorities for educational, research and third mission purposes</li> <li>• High participation of the student and stakeholder components in all the organisational activities</li> <li>• Innovative teaching tools (video tutorial, multimedia teaching material, MOOC e-learning platforms, Skill Lab)</li> <li>• Diversified postgraduate programmes including those of the EBVS</li> </ul>	<ul style="list-style-type: none"> <li>• VEE premises in several locations (e.g., HVTH, FVTH, EH, CESTEV, etc.).</li> <li>• High running costs of practical training and related staff needs (e.g. teaching to be delivered in small groups to meet EAEVE requirements)</li> <li>• Limited number of support staff with obvious repercussions on the organizational management of practical training</li> <li>• Lack of qualified veterinary nurses in the department</li> <li>• Extra bureaucracy in many procedures (Italian laws), with obvious repercussions on timeliness of work procedures</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Completion of construction work at the new building and transfer of staff and students to the Frullone campus</li> <li>• Increasing the number of support staff members to meet ESEVT standards</li> <li>• Increasing the number of international Visiting Professors</li> <li>• Hiring diplomates recognised as specialists by the EBVS</li> </ul>	<ul style="list-style-type: none"> <li>• High cost of veterinary education, including high maintenance costs for VTH equipment and facilities</li> <li>• Complex harmonization of the National (ANVUR) and European (EAEVE) accreditation systems</li> <li>• The national admission ranking of the VMTC prevents the completion of students' enrolments by the start of teaching activities, which might jeopardise students' careers</li> </ul>
RESEARCH	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Prominent research staff with a multidisciplinary approach</li> <li>• Quality certification of most of the VTH procedures and most of the VTH laboratories (UNI EN ISO 9001:2015)</li> <li>• Ability to attract funding from regional, national and international competitive calls</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of high-quality facilities and equipment</li> <li>• Suboptimal results in the 2015/2019 Research Quality Assessment (VQR)</li> <li>• Quality and quantity of scientific production not evenly distributed across the academic staff</li> </ul>

Opportunities	Threats
<ul style="list-style-type: none"> <li>Research investments linked to various national and international funding sources (e.g., PNRR)</li> <li>Collaboration networks with several national and international public and private institutions</li> <li>Promotion of a departmental Grant Office and open labs</li> </ul>	<ul style="list-style-type: none"> <li>Excessive bureaucracy limiting institutional activities</li> <li>Excessive workload for support staff due to the increase in the number of projects and agreements</li> <li>Variability of national evaluation methods and criteria for research</li> </ul>

INTERNATIONALISATION	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Good international standards with more than 30 Erasmus bilateral agreements, and more than 20 framework agreements</li> <li>Support to students' international activities by IVSA</li> <li>Facilities with a high attractiveness for traineeship of foreign students</li> </ul>	<ul style="list-style-type: none"> <li>Scarce supply of subjects delivered in English</li> <li>Extra-mural facilities located in various parts of the region and not always accessible by public transport</li> <li>Lack of a departmental office dedicated to internationalization and scarcity of full-time support staff</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>Activation of new teaching subjects in English</li> <li><i>Ad hoc</i> training courses for academic and support staff to increase international relations for research, teaching and/or traineeship purposes</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient financial support provided by scholarships for Erasmus students</li> <li>Bureaucratic constraints that cannot always be resolved</li> </ul>
THIRD MISSION	
Strengths	Weaknesses
<ul style="list-style-type: none"> <li>Several ongoing activities: spin-offs, agreements with enterprises, laboratories, farms, the third sector</li> <li>Na VEE edits the information magazine "Un Mondo di Bufale", hosts the Museum of Veterinary Anatomy and a WHO Collaborating Centre for parasitic diseases</li> </ul>	<ul style="list-style-type: none"> <li>Poor communication of Third Mission activities in the recent past</li> <li>Limited experience in bringing about internal and external changes with an effect on organization and intended recipients</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>Promoting an 'engaged' department to implement social, educational, cultural and entrepreneurial activities while enhancing and transferring university knowledge outside the academic context</li> </ul>	<ul style="list-style-type: none"> <li>Poor propensity of some members of the department for dissemination activities and for clear identification of Third Mission objectives</li> </ul>

The table below reports a summary of the **Operating Plan** with objectives, related actions and indicators as well as the timeframe for their accomplishment.

TEACHING			
Objectives	Actions	Achievement indicators	Timeframe
Improving teaching efficiency	Implementing blended courses (e.g., MOOCs)	Number of new MOOCs	3 years
	Monitoring of students' progression and implementation of corrective actions	Number of students progressed in the years	2 years
	Implementing the Veterinary Educational Portal UniNa VET	Percentage of student accesses to the Portal UniNa VET	2 years
	Integrating basic, pre-clinical and clinical disciplines	Number of teaching hours delivered for 'incursion didactic'	1 year
	Continuing education for teaching and adjunct staff promoting the use of innovative approaches	Number of teaching hours delivered for teachers	1 year
Enhancing the international dimension	Promotion of study mobility actions (e.g., Erasmus programme, etc.)	Number of incoming and outgoing students and staff	2 years

	Increasing the number of international Visiting Professors/Researchers/Fellows	Number of Visiting Professors/Researchers/ Fellows	2 years
	Activation of additional EBVS-approved residency programmes	Number of new EBVS residency programmes	3 years
RESEARCH			
Objectives	Actions	Achievement indicators	Timeframe
Reinforcement of interdisciplinary research, improvement of research proposals	Organising focus groups to promote the exchange of knowledge and technology between research units	Number of initiatives carried out and relevant assessment, evaluation of research products	2 years
	Promoting research networks and partnerships, also with the support of a Grant Office	Number of new research partnerships and grants of national or international relevance	2 years
	Investing in research infrastructures and acquiring shared expertise (open lab)	Number of laboratories and equipment shared (e.g. -omics )	3 years
Increase in the quality of scientific production and improvement of VQR ranking	Preparation for National VQR accreditations for 2023-27 (increasing research product quality)	Improve the ranking of academic staff	2 years

INTERNATIONALISATION			
Objectives	Actions	Achievement indicators	Timeframe
Increasing the attractiveness for students from foreign countries (incoming) and encouraging Na VEE students (outgoing)	Increasing partnerships with international institutions	Number of new international agreements	1 year
	Improving the international reputation of teaching staff	Higher ranking of academic staff in international rankings	2 years
	Internationalising the training curriculum	Number of ECTS delivered in English	3 years
	Recruiting PhD students/researchers from other countries	Number of foreign PhD students/researchers at the VEE	1 year
Promoting the international mobility of support staff	Informing and encouraging support staff to take part in calls for applications for mobility for a training period at foreign universities	Number of meetings with support staff	1 year
Double degree activation	Agreement for a double degree in Veterinary Medicine is being negotiated with the University of Cordoba	Signing the agreement for a double degree in the academic year 2023/2024	2 years
THIRD MISSION			
Objectives	Actions	Achievement indicators	Timeframe
Dissemination of veterinary sciences to the citizens and society	Activities of public benefit, scientific dissemination involving citizens Increasing the number of agreements, spinoffs and patents	Number of events, agreements, spinoffs and patents	2 years

#### 1.4. Policy for Quality Assurance

The Na VEE ensures a continuous implementation of the Quality System (Annex H) in accordance with three certification systems to ensure that all procedures are harmonized among themselves:

1. ESEVT, the international EAEVE/FVE system.
2. the international UNI EN ISO 9001:2015 quality management system.
3. the Italian AVA Quality Assurance System for Higher Education.

The Na VEE works in a national quality assurance system that provides for continuous monitoring of all activities on three levels:

- Local - Department (Na VEE)
- Local - UniNa (Evaluation Board)
- National - Ministry of University and Research (MUR) through ANVUR.

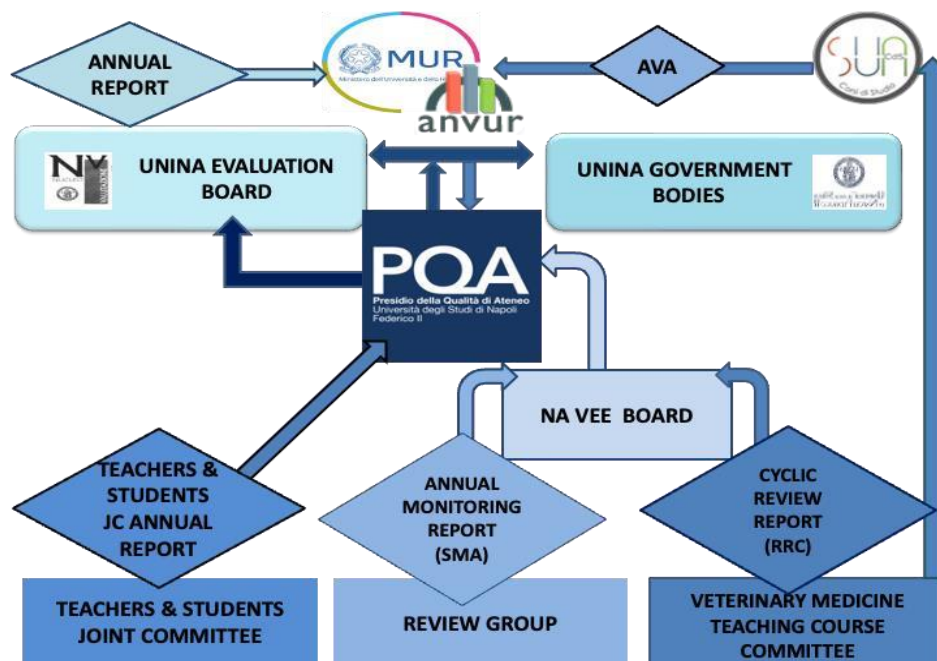
**Na VEE QA** - The Na VEE outcome assessment system includes an annual and a cyclical reports both established by ANVUR and monitored by the PQA and the UniNa Evaluation Board based on the AVA system (Fig. 1.4). The annual report provides for the filling of “Unique Annual Report of the Teaching Course (SUA-CdS)” by the VMTC Coordinator, its discussion in the VMTC Committee and approval by the Na VEE Board. In the SUA-CdS, all aspects of studying veterinary medicine are evaluated, namely the planning and regular review of goals, the organization, resources used, and student welfare. In the SUA-CdS, quantitative indicators concerning students' careers and the employment rate of graduates are also collected. These indicators are provided by the National Student Registry (ANS). The values of these indicators, together with the results of the student evaluation questionnaires prepared by the UniNa Evaluation Board and by the Teachers & Students Joint Committee (internal questionnaire), as well as the results of the graduate evaluation questionnaires derived from the [Alma Laurea](#) surveys are analysed and discussed by the Review Group that draws up the Annual Monitoring Report (SMA). The drafting of the SMA includes the identification of critical issues derived from the indicators or the results of the questionnaires and the planning of corrective/improvement actions. In the SMA of the following year, the corrective measures are evaluated to close the loop of the QA PDCA cycle or alternatively to propose different corrective measures. The cyclic evaluation takes place every five years by drafting the Cyclic Review Report (RRC), which helps to evaluate the monitoring of the criticalities in the planned timeframe and examines all aspects of the VMTC, i.e., teaching course planning, student experience, resources, monitoring and comments on the indicators. The RRC is also drafted when serious problems are identified or extensive improvement measures are proposed, involving a modification of the Teaching Bylaws or the didactic order (RAD). Both SMA and RRC are publicly discussed in the VMTC Committee, approved in the Na VEE Board and sent to the UniNa PQA. The Na VEE Teachers & Students JC independently evaluates the ANS indicators and the results of the student evaluation questionnaires and drafts an annual report. This report is sent to the UniNa PQA and the PQA sends it to the UniNa Evaluation Board.

**UniNa (PQA and Evaluation Board)** - The internal QA process of UniNa is coordinated by the Presidium of Quality Assurance (PQA) which, in accordance with the QA Policy, enacted by D.R. 3743/2021, defines and monitors the QA procedures as follows:

- for teaching: planning, management, monitoring, and self-evaluation procedures of the teaching courses (including those related to SUA-CdS, RRC, SMA, Teachers & Students JC report, consultations with interested parties, student evaluation questionnaires);
- for research: self-evaluation procedures and research monitoring by the UniNa Departments and regular updating;
- for third mission: coordination, survey, valorisation and self-evaluation procedures of the public engagement activities of UniNa Departments.

In the management of QA process, the PQA analyses and corrects the SMA and RRC and sends them to the UniNa Evaluation Board.

**Ministry of University and Research (MUR)** evaluates the quality assurance of universities through the ANVUR as part of the Higher Education Quality Assurance System (AVA). AVA sets standards for the self-assessment of programmes and institutions. ANVUR also carries out an external assessment, conducted by experts based on peer reviews and carried out through on-site visitations and document analysis. ANVUR is a member of [ENQA](#) in Higher Education, thereby ensuring full compliance with the ESG standards. Since 2017, all UniNa teaching courses have been accredited by ANVUR.



**Fig. 1.4.** Operational flow of Management processes for quality assurance

Staff, students and stakeholders are actively involved in all management processes of the VMTC and of the Na VEE itself. Student representatives are present in the QA Committee, in the Review Group, Management Group and in the Teachers & Students JC. Within the Review Group they take an active part in highlighting critical issues and proposing corrective actions. All QA documents (SUA-CdS, SMA and RRC) are published every year on the Na VEE website. Stakeholders are part of the Steering Committee and actively participate in the annual planning of the VMTC. Furthermore, two members of the academic staff are presidents of two Veterinary Provincial Orders of the Campania Region. Stakeholders are constantly involved in the VMTC activities, as they are enrolled in the PPT, and in the HVTH shifts.

### 1.5. Interactions with stakeholders and the wider society

The Na VEE has numerous opportunities to meet with stakeholders at meetings scheduled throughout the academic year. Moments of meeting include:

- Welcome day for 1<sup>st</sup> yr. students at the beginning of the first semester (September).
- Organization of the compulsory PPT and monitoring of the progress of the training itself (April-May).
- Scheduled meetings with fourth- and fifth-year students on approaching the world of work.
- Regular meetings with 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> yr. students about real working conditions in the veterinary profession.

In addition to the annual meetings, there are numerous opportunities for meetings and interactions with stakeholders in the revision and monitoring phases of the VMTC. All the information for stakeholders and the public is available on the Na VEE website, including:

- VMTC overview, e.g., objectives, curriculum, learning environment, learning outcomes, selfevaluation outcomes (Annex B).
- List of teaching subjects which are linked to teacher UniNa pages ([docenti.unina](http://docenti.unina)) where it is possible to access the syllabus and all the other information about each subject.
- Orientation and Tutoring Committee activities for guidance on admission, ongoing, outgoing and professional procedures.



- Job & Placement Committee activities for information about job opportunities for graduates.
- Erasmus and Internationalization information.
- HVTH activities.

Na VEE annually participates in many initiatives such as: UniNa Orientation, Open Days, UNIVExpo, the Student Hall, Federico II meets the School, where the UniNa teaching courses are presented to high schools, and the Researcher's Night. Last year Na VEE participated in the organization of the national project *Meet Me Tonight* as an event associated with the European Researchers' Night. Research grants and contracts as well as job opportunities, including contracts for shifts in the HVTH are advertised on a specific section of the [Na VEE website](#) and/or [UniNa website](#).

All features of studying veterinary medicine are annually reported in the SUA-CdS which is published on the Na VEE website and is also accessible through a [national communication platform](#) intended to allow students, families and stakeholders to compare information on the different national study programmes. The Na VEE website also includes the results of research and third mission activities. The profile of the current student population and the employment destinations of past students come from the *Alma Laurea* annual surveys. A Job & Placement Committee has recently been established to follow the career path of former students more closely. However, contact between the Na VEE and *alumni* is always open, thanks to the many active postgraduate courses (specialization schools, PhD, Clinical Rotating Internship, other scholarships and contracts). The ESEVT Na VEE's status together with the last ESEVT Self Evaluation Report and Visitation Report are included in a [specific section](#) of the Na VEE website.

#### 1.6. Na VEE monitoring and review activities

The monitoring activity offers the opportunity to detect possible deficiencies, identify corrective actions and, if required, to review the strategy and define new actions and indicators.

The **Strategic Plan implementation assessment and revision** involves the following steps with transparent decision processes and dissemination:

- The Department Council drafts the Strategic Plan, in accordance with the UniNa Strategic Plan; priorities, objectives and goals are identified by interviewing academic and support staff, students and stakeholders.
- The Department Board discusses and approves the Strategic Plan.
- The outcomes of the monitoring envisaged within the Strategic Plan are outlined every year in an 'Annual Report' that helps to monitor and assess the results of the interventions carried out throughout the period covered by the Plan. This document describes the results of the Na VEE performance evaluation in each year over the three-year period in question. The 2022-2024 Na VEE Strategic Plan was approved by the Department Board in 2022. - The Plan was positively evaluated by the UniNa Rector and General Director.

In addition, the EAEVE Committee suggests changes to assure compliance with the ESEVT SOP. Changes to adapt the organization to new strategies or to meet requests from the stakeholders fall within the responsibility of the Department Board. The QA Committee, in accordance with the VMTC Committee and the Na VEE Board, proposes, implements, monitors and reviews the QA policy. All the QA procedures are shared with academic and support staff, students and stakeholders.

#### 1.7. External review and progress

The first EAEVE visitation was in 2002. On that occasion, the Na VEE did not receive approval. A second ESEVT visitation in 2013 did not identify any major deficiency and recommended full approval of the Na VEE. However, the experts listed some suggestions and needs for improvement, namely building a new teaching hospital, developing a long-term business plan, increasing the number

of specialised staff (at EBVS level) to create clinical centres of excellence, improving practical training through e-learning, continuously reviewing elective tracks and revising the English course. In the past years, Na VEE has provided the EAEVE office with two interim reports, the first submitted in 2016 (covering indicators from December 2013 to November 2016) and the second submitted in 2019 (covering changes and indicators from December 2016 to November 2019). The main improvements of Na VEE during this period are summarised below:

- Since 2014, an annual Clinical Rotating internship programme for companion animals (dogs and cats) has been implemented at the HVTH to give graduates the opportunity to pursue higher education training programmes.
- Since 2017, the VMTC has been officially UNI EN ISO 9001:2015 accredited, and this accreditation has been regularly renewed. Several laboratories, procedures, and services at VEE and HVTH have also achieved accreditation in recent years.
- The number of European specialists at Na VEE did not change, despite the hiring of two EBVS diplomates (Area 9). In addition, a residency programme of the European Veterinary Parasitology College (EVPC) was activated at Na VEE, and the establishment was indicated as a site for three Alternative Residency Programmes of the following Colleges: European College of Bovine Health Management (ECBHM); European College of Veterinary Anaesthesia and Analgesia (ECVAA); European College of Animal Reproduction (ECARBiotechnology). Three academic staff members are currently candidates for the final examination. Other three academic staff members and two junior staff members are attending alternative residency programmes.
- The elective tracks were periodically modified based on stakeholder and student suggestions, and the English course syllabus was partially modified.

Unfortunately, on December 9, 2015, a building in the Na VEE partially collapsed. As a result, since January 2016, all activities, including lectures and practical training, have been relocated to UniNa facilities in different areas of the city. The HVTH was closed for about six months, and clinical work on animals was carried out in facilities of private practitioners under their supervision and/or with academic supervisors. Necropsies of small ruminants and companion animals were performed at the facility of CREMOPAR in Eboli, Salerno. A bus connection between Naples and Eboli was organized for these activities each week for students and academic staff. In any case, this *force majeure* event negatively affected some indicators that were below the minimum values in the second interim report. Gradually we returned to the department's facilities when it was made usable after the collapse. Subsequently, to improve student welfare, some teaching activities were moved to CESTEV. Afterwards, there was a further closure for the pandemic.

#### *Comments on Area 1*

The SWOT analysis and the Operating Plan included in the Strategic Plan are useful tools for implementing and monitoring the teaching, research, internationalization and third mission activities of the Na VEE. The awareness, among academic and support staff as well as students, of the objectives, actions, indicators, and timeframes makes everybody engaged in the overall improvement of the Na VEE. Following the new legislation that introduced the AVA QA system for universities, a QA culture has been continuously disseminated among the staff, which combined with the 'culture' disseminated by the EAEVE Committee with clear objectives specifically for veterinary education. The challenge is to persuade the staff that QA processes do not represent additional administrative workload but an opportunity for the entire community. The main UniNa bodies (i.e., Rector, Board of Governors, Academic Senate) were thoroughly informed about the ESEVT standards and provided significant support (Area 2) to the Na VEE in terms of funding for facilities and equipment.

*Suggestions for improvement on Area 1*

Both at UniNa and Na VEE levels, QA procedures should be further implemented and/or improved to mitigate identified weaknesses and threats. There should be a more coherent flow of information between the various internal bodies (e.g., councils/boards/committees). The Na VEE should increase the number of experts in both the ESEVT and AVA systems to increase internal awareness of the opportunities that can arise from a well-managed QA system. It is undoubtedly true that there are advantages to adhering to different QA systems, but sometimes they change their procedures. Therefore, the overall QA system should be more stable and better coordinated between the different QA actors (AVA/QA/EAEVE).

## Area 2. Finances

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### 2.1. Economic and finances process

Na VEE is an expenditure centre of the University of Naples Federico II (UniNa). Each year, the Ministry of Universities (MUR) provides UniNa with an Ordinary Financing Fund (FFO), and about 67% of this is used for salaries of university employees (academic and support staff). The remaining share is distributed among the 26 Departments according to a [three-year financial plan](#) based on the University Statute and Law 240/2010. The distribution of funds considers UniNa's overall objectives in terms of the number and type of teaching courses, as well as staff and students involved in institutional activities. FFO is earmarked for the overall educational activities and general expenses related to the day-to-day management of UniNa's activities, including salaries of temporary practitioners who specifically collaborate on VTH services. Utilities, maintenance and renovation of premises, logistics, and cleaning and security services are the responsibility of UniNa's Central Administration.

The Na VEE is a centre of responsibility with management autonomy over its own funds pursuant to [Law 240/2010](#) and in accordance with the university statute. Resources are used efficiently to ensure the autonomous management of teaching and scientific research activities and public engagement. However, as a public institution, the Na VEE is mainly dependent on funding from the national budget. The financial year begins on 1 January and ends on 31 December. By 30 April, the Na VEE Accountancy Office certifies the overall financial management of the previous year (revenue and expenditure) which will form part of the University's Single Budget to be approved by UniNa Board of Governors. By the end of October, the Na VEE Board approves the annual and triennial Provisional Budget.

In recent years, UniNa has also transferred to Na VEE a specific amount for the HVTH following a specific request from the Na VEE Board. To draft the Na VEE budget, in autumn the Na VEE Director meets with Teaching Course Coordinators, the VTH Director and the head of the Na VEE Accountancy Office to prepare a proposal for the following calendar year. The document is then forwarded to the Department Board for discussion and approval.

When resources are made available by UniNa, the head of the Na VEE Accountancy Office decides on funding allocations based on the teaching needs of the four teaching courses and their requirements. Overall, the funds annually allocated to the Na VEE include:

- MUR-FFO - which corresponds to a share of the ministerial allocation to UniNa, allocated to the Na VEE for the creation of its own annual budget, named Na VEE FFO, to support expenses related to teaching, research and public engagement. Cost for staff at the student secretariat and library, maintenance and renovation of premises, logistics and cleaning, and security services are directly managed by UniNa offices.
- MUR funding for academic and support staff - managed directly by UniNa.
- UniNa funds – (i.e., student fees) collected by the central administration of UniNa and assigned to the Na VEE through an internal negotiation process based on university regulations. These three portions are not individually distinguishable but used as a whole.
- Funds from the Campania Regional Veterinary Service for the operations of PI and the related Regional Reference Centres (see Introduction) for an average annual amount of € 500,000.
- Funds from Campania Region Agricultural Ministry allocated for the maintenance of CREMOPAR (€ 100,000/year). These funds are used both to fund specific fellowships and for consumables and equipment needed for centre activities. Moreover, in 2020 Ministry provided Improsta farm with € 1,500,000 to renovate the buildings used for teaching activities for Na VEE students.

- The Na VEE funds also include revenues from clinical and diagnostic activities, resources from public and private institutions, European and international grants, revenues from contracts and joint work agreements, and voluntary contributions.
- The HVTH budget is managed by Na VEE, and most of it comes from services provided (to private clients and other veterinary facilities in the area), or from specific contracts with other institutions. Only the radiology service is part of an autonomous expenditure centre, the [Interdepartmental Centre for Veterinary Radiology](#), which uses its specific revenues.

The Na VEE pays a total margin of 16.5% to UniNa on revenues from commercial services delivered to the public: 10% of these funds are channelled into local university research grants and 6.5% will be used to offer professors incentives. The Na VEE also charges and manages a sum of 5% from grants and services delivered to the public, including the HVTH services.

**Table 2.1.1.** Annual expenditures during the last 3 years (in Euros)

Area of expenditure	2022 <sup>1</sup>	2021	2020	Mean
Personnel	11,434,347	10,509,743	9,917,472	10,620,520
Operating costs	2,192,356	1,387,917	1,250,484	1,610,252
Maintenance costs	186,001	46,831	66,372	99,735
Equipment	445,976	852,577	462,365	586,973
<b>Total expenditure</b>	<b>14,258,681</b>	<b>12,797,068</b>	<b>11,696,693</b>	<b>12,917,480</b>

<sup>1</sup>Provisional balance.

**Personnel costs:** include only permanent and fixed-term academic personnel, permanent support staff dedicated to research and administrative services, fellowships, and HVTH temporary practitioners. Costs of other UniNa staff serving the needs of Na VEE and the veterinary education organization, such as those related to staff at the student secretariat and library shared with other UniNa Departments, are not included in personnel costs.

**Operating costs:** include costs directly incurred by Na VEE for the purchase of consumables, personal protective equipment (PPE), of materials needed for training, disposal of carcasses, waste management, student visits to extramural facilities, direct expenditure for ambulatory clinics (e.g., fuel, highway tolls, road tax and insurance). In 2020 and 2021 these costs were partially limited by the restrictions on activities and expenditure due to the pandemic.

**Maintenance costs:** include the routine maintenance costs for the vans used as ambulatory clinics and all the equipment used in the teaching facilities. These costs do not include those directly incurred by UniNa for air conditioning, elevators, fire extinguishers, building and gardening maintenance. In 2022 the maintenance costs increased considerably due to various extraordinary maintenance works (e.g., upgrading of dog and cat isolation unit, renovation of the necropsy room), which were paid directly by Na VEE. These additional investments were necessary, even though UniNa had earmarked € 3,000,000 to renovate the historical building (e.g., new air-conditioning system, renovation of facades and roofs).

**Equipment:** the Na VEE investment for equipment has progressively increased mostly due to the acquisition of HVTH equipment (e.g., an autoclave, an ultrasound machine, a surgical lamp, an Alcyon anaesthesia machine and an endoscopy Telepack), instruments and pads and domines for the Skill Lab, as well as equipment for necropsy and dissection rooms (one mobile table).

**Public authorities:** most of the public funding shown in Table 2.1.2 concerns salary payments. In addition, as already mentioned, UniNa annually transfers funds (FFO) that the Na VEE is authorised to manage itself. The FFO is determined also as a function of specific Na VEE needs, such as the purchase of teaching materials and the salaries of temporary support staff involved in the management

of the necropsy and dissection rooms (€ 80,000); Improsta farm (€ 80,000); scholarships for clinical rotating internship (€ 30,000); and the management of the MAVet (€ 30,000). The contracts for operators (such as internists and surgeons) are mainly financed by UniNa FFO specific funding. These staff members are essential to guarantee a 24/7 service.

**Utilities (e.g., water, electricity, gas, fuel) and other expenditures directly paid by UniNa:** as mentioned, these are not included in Table 2.1.2. UniNa Central Administration also covers the costs of cleaning and security service, and staff hired to support teaching (e.g., opening and closing classrooms, operating overhead projectors and video equipment, etc.) at UniNa's premises. Contracts are renewed regularly (1 or 3 years) by UniNa's Central Administration considering the specific needs of each department (for Na VEE a surplus of cleaning and surveillance services for the 24/7 HVTH).

**Table 2.1.2.** Annual revenues during the last 3 years (in Euros)

Revenues source	2022 <sup>1</sup>	2021	2020	Mean
Public authorities	11,846,168	11,374,205	10,809,006	11,343,126
Tuition fee (standard students)	524,945	745,860	798,002	689,602
Clinical services	199,726	163,445	70,394	135,060
Diagnostic services	94,334	143,617	72,920	83,627
Other services	1,746,674	195,653	178,592	706,973
Research grants	3,749,533	649,991	316,509	1,572,011
Continuing education	33,250	81,600	16,500	43,783
<b>Total revenues</b>	<b>18,194,630</b>	<b>13,047,309</b>	<b>12,261,924</b>	<b>14,501,288</b>

<sup>1</sup>Provisional balance.

**Tuition fees:** the MUR classifies all students as standard students. The annual enrolment fee is defined by the individual universities. At UniNa the tuition fee is determined in accordance with family income (ISEEU), year of enrolment and performance (number of ECTS achieved) of each student. Students enrolling for the first time on a teaching course at UniNa are divided into 17 classes of annual income (ISEEU) from 0 to over € 65,000, to which different bands of subsidised tuition fees correspond. In addition to the fee, there is the regional tax, which varies from € 16 to € 160 depending on the income. First-year students who have a secondary-school diploma with top grades (100/100 *cum laude*) receive a 50% discount. Thereafter, performance is assessed according to the year of enrolment and the number of ECTS obtained during the reference period. The ECTS accrued are automatically entered in the reserved area (Segrepass) of each student from the UniNa database. Based on the ECTS accrued in the previous academic year (by 10 August), students are divided into five classes of performance: 0-15, 16-24, 25-39, 40 of all ECTS, to which the following fee discount percentages correspond 0, 10, 15, 20 and 50, respectively. Tuition fees increase for students who have been on a teaching course for longer than its legal duration, i.e., 3 years for Bachelor's and from 2 to 6 years for Master's. The same criteria are used to calculate student fees for postgraduate courses (e.g., Masters and Specialisation schools). Enrolled international students are considered 'standard students' and cannot use the online procedure to calculate their specific tuition fees. For these students, fees are only differentiated according to citizenship (EU or non-EU students). Those belonging to specific programmes (e.g., Erasmus) follow financial agreements between the MUR and the institutions of their country of origin. The change in the amount of tuition fees over the years is due to the extension of the duration of the 2019-2020 and 2020-2021 academic years (plus 7 months) decided by the UniNa Rector and Board of Governors to limit economic risks for students and families due to the pandemic limitation.

**Clinical and diagnostic services:** income from services was partly affected by the pandemic situation in the first years included in this SER; the item 'clinical services' includes income from the activities

of the HVTH except for the Veterinary Radiology Centre as described above, whereas the other external services are included.

**Research grants:** this includes funding from UniNa and other public sources (regional, national, European and international grants). The Na VEE promotes the research activities of each academic staff member to build a quality research-based education. The Na VEE is considered a good attractor of funding from public and/or private sources, considering the average amount of funds derived from research (€ 1,572,011) and services (€ 218,687). In addition, these revenues increase Na VEE's spending autonomy, due to the application of Na VEE's overhead costs of 5% to them.

**Continuing education:** continuing education includes fees paid by postgraduate students enrolled in postgraduate improvement courses delivered directly at Na VEE. Each postgraduate improvement course has a specific fixed tuition fee, and this is not dependent on income.

**Table 2.1.3** Annual balance between expenditure and revenues (in Euros)

Year	Total expenditures	Total revenues	Balance (Ren-exp)
2020	11,696,693	12,261,924	565,231
2021	12,797,068	13,047,309	250,241
2022 <sup>1</sup>	14,258,681	18,194,630	3,935,950

<sup>1</sup>Provisional balance

## 2.2. Clinical and field services as instructional resources

Intra- and extramural clinical services are a priority for the management of Na VEE: their efficiency is a key factor in ensuring that students acquire the expected skills on the Day One Competences and in providing more and more opportunities for qualified postgraduate veterinary education. The HVTH has its own governing body (the HVTH Board) which has its own director. The HVTH director is proposed by the director of the Na VEE and appointed by a working group that includes the ASL and the city mayor. The members of the HVTH Board are all clinicians and heads of major HVTH services, responsible for the organizational management of the clinic and services. A specific ambulatory clinic group is composed of all academic and support staff involved in the ruminant and equine ambulatory clinic services, responsible for the organizational management of the clinical activities in the field (Area 1).

**Table 2.2.1.** Revenues and costs of HVTH (in Euros)

Year	2022	2021	2020
<b>HVTH revenues</b>			
HVTH	199,726	163,445	70,394
Services	93,497	143,618	72,920
<b>Total</b>	<b>293,223</b>	<b>307,063</b>	<b>143,314</b>
<b>HVTH costs</b>			
Temporary practitioners	234,912	153,962	211,810
Permanent staff overtime	67,787	55,206	254,36
Equipment	5,002	76,433	196,36
Consumables	108,432	94,413	55,866
<b>Total</b>	<b>416,134</b>	<b>380,014</b>	<b>312,749</b>

There is also an HVTH Council, composed of all staff involved in HVTH activities that meets regularly to report specific needs or to organize routine activities, without decision-making power. However, the HVTH is not an independent spending centre, and this ensures that a high priority is reserved for the teaching mission, since the approval of the HVTH financial budget is responsibility

of the Na VEE Board. Finally, in view of the future location of the new Teaching Veterinary Hospital at Frullone campus and the attendance of stray dogs and cats at the Local Health Authority, a VTH Board (composed by HVTH and FVTH Directors and the VMTC coordinator) was formed to organize the activities of the staff and students involved. The revenues of the HVTH are not sufficient to cover the costs of maintenance and equipment. The Na VEE staff is aware of the importance of the VTH activities for the education of students, therefore the Na VEE Board has always approved the partial financial support of the HVTH. In recent years, the Na VEE has undoubtedly enjoyed sufficient autonomy in the use of its resources (mainly represented by UniNa's FFO, and by a 5% overhead applied to research grants and services) to achieve the ESEVT standards and other goals announced in the three-year Strategic Plan (Area 1).

### 2.3. Resources allocation and investments

Evidence shows that, since 2012 UniNa has been working toward the completion of the new Frullone campus, where the Na VEE will have its permanent location: completion is scheduled for 2024, and this is perceived as an important step to increase the quality of teaching, research activities and services to provide students with high-level education in full compliance with ESEVT standards. Over the years, UniNa has allocated a total of € 20,000,000 for the completion of the Na VEE Frullone campus (Annex M). The choice of the Frullone location, near the offices and facilities of ASL, made it possible to curb costs and to use land and buildings owned by the regional authority. The Na VEE Frullone campus will allow the reunification of teaching activities and VTH services. At the time of writing this SER, the new Campus buildings are at an advanced stage of completion.

The new campus will include:

- **A five-storey building with** 8 classrooms for teaching activities (5x70 seats, 1x36 seats, 3x42 seats), a Skill Lab, 4 student rooms (6 m<sup>2</sup> each), 56 offices for a total of 146 seats (average 16 m<sup>2</sup>), 1 library with 29 seats, 1 computer classroom with 40 seats, 16 laboratories, 2 dissection rooms (120 m<sup>2</sup>).
- **An educational farm** (about 1 ha) with Boxes for horses and food producing animals.
- **An extension of the current FVTH** composed by a *Dog and cat unit* (8 consultation rooms, 1 ultrasound diagnostic room, 1 waiting room, 4 laboratories, 2 isolation units) and a *Food producing animals and horse unit* (2 operating rooms, 1 room for radiological diagnosis, 1 room for resonance imaging, 1 room for ultrasound diagnosis, 1 intensive care unit, 1 isolation unit, 12 boxes, 1 recovery box).

Expenditure increased dramatically in the last year because in the previous two years costs had been relatively limited due to the pandemic. In 2022, several expenditures were made to improve practical activities and ensure the acquisition of Day One Competences. Some equipment was purchased for the necropsy room, such as a new mobile table to easily perform necropsy on large animals (horses and food producing animals) and the replacement of the Imhoff tank. UniNa financed the construction of a new dissection room and Na VEE purchased the related equipment (tables, instruments, monitors). New equipment for HVTH and ambulatory clinic was bought (an autoclave, an ultrasound machine, and a surgical lamp). A horse head domines and several pads for surgeries suture and injection for Skill Lab were bought. Finally, to ensure that students achieve Day One Competences over the years, several agreements with practitioners, farms and veterinary clinics are signed. To guarantee a sufficient caseload of equine patients, an agreement has been signed with the largest private equine clinic (EH, *Clinica Equina Punto Verde*) in Campania, where students carry out practical activities as part of the 24-hour service and the use of the guest quarters is offered free of charge offered. At the clinic there are two rooms and a kitchen that students can use, and in 2022 and 2023 Na VEE invested € 9,000/year.

The VEE decision-making process regarding budget allocation involves, at different stages, the Na VEE Director, Council, Teaching Course Committees, VTH Board and Na VEE Board.



The allocated resources are used according to the annual planning of teaching activities. The effectiveness of budget allocation and utilisation is intramurally evaluated by academic and support staff representatives alongside students on the Na VEE Board. It is also evaluated at UniNa central level by the UniNa Evaluation Board. Students and staff play a role in evaluating and reviewing the budget allocation. They can communicate their suggestions and needs in various ways, including via representatives on the Na VEE Board, the Teachers & Students JC, and the Review Group to request revisions and adjustments. Student representatives are present in all the UniNa governing bodies, such as the Evaluation Board, the Academic Senate and Boards of Governors, where proposals are evaluated to be approved. The Teaching Course Committees themselves can submit suggestions and innovative solutions to be pursued. The Na VEE Board takes the various suggestions, including those by stakeholders, into consideration and addresses them according to the available budget. All decisions about major expenditures and investments are made at the planning stage for different needs; however, budget variations are possible if specific needs during the year dictate a change in resource allocation. Any changes must be approved by the Na VEE Director and Board with the support of the head of Na VEE Accountancy Office.

For facility-related issues, when necessary, a specific request is made to the UniNa Building Management Office. In the case of requests for further investments such as the acquisition of specific technical equipment (e.g., simulators, manikins, etc.), the Na VEE Board can plan new investments according to internal availability or by making specific funding requests to the UniNa Government Bodies. In recent years, specific requests for innovative teaching activities and technical investments have been elaborated by Na VEE staff members and submitted to the Na VEE Board for discussion and approval, and UniNa has funded some of these requests.

#### *Comments on Area 2*

The research funding system in Italy is particularly complex and fragmented. As shown, the Na VEE finances are strongly dependent on UniNa strategy and planning. However, the Na VEE charges, for general expenses, 5% overheads on clinical/diagnostic services and research grants. These overheads increase the level of autonomy of the Na VEE and can be used to strengthen all the initiatives for innovating teaching methods/equipment according to a SWOT analysis of the strategic plan. The Na VEE operational capacity is thus directly linked to the capability of its staff members to attract funds through services and research grants and sponsors. The national legislation requires an efficient use of public funds and UniNa is strongly committed to promoting actions that favour the use of the budget in the scheduled time. The National rules regulating the method to buy consumables, equipment and supply services change continuously and are particularly complex.

The mean cost of a VM student is higher than that of any other teaching course and this cost is now completely financed by UniNa (in the same amount as the other teaching courses) and Na VEE. In the last years National and International grants have not promoted medium- and long-term investments and it is thus more difficult to buy very expensive equipment. However, the Next Generation EU funds through the National Recovery and Resilience Plan (PNRR) recently assigned (four projects) to the Na VEE provide a unique opportunity to create infrastructure, facilities and equipment for the promotion of quality in scientific research and teaching.

#### *Suggestions for improvement in Area 2*

Actions should be taken to increase the fundraising ability of academic staff in terms of services and research grants. As for the recognition of the higher costs related to the training of VM students, the VEE should negotiate the overheads currently requested from UniNa. As described, the distribution of the FFO does not consider specificities and differences between different teaching courses. The EAEVE accreditation represents a step forward to increase recognition, at UniNa level, of the specificities of the VM teaching course and its costs.



## Area 3. Curriculum

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### 3.1. Curriculum design, resources, and management

The Na VEE aims to provide international standard veterinary education, and graduate professionals capable of self-responsible, independent veterinary work and life-long learning. The curriculum in place is consistent with EU Directive 2005/36/EC (as amended by directive 2013/55/EU) and embraces all subjects listed in Annex B and C. A balanced programme including lectures, supervised self-learning, laboratory, and desk-based work, as well as professional practical training (both intra-mural and extra-mural) has been designed and implemented to meet social expectations on the day one veterinarian. Due to the collapse of part of the main building, all the clinical activities on food production animals and equine are performed extramurally under the supervision of academic staff (senior and junior) and have to be thus considered as intra-mural. The **curriculum design** is consistent with current national standards in veterinary education. It is organized in 5 years, subdivided in 10 semesters, for a total of 300 ECTS (on average, 60 ECTS/year, 1 ECTS=25 hours (h) including both teaching and individual study at home; the number of allocated hours mainly depends on the subject). Teaching units are delivered either in form of single discipline ‘monographic’ courses or as ‘integrated’ courses including two or more ‘subjects’ (also named modules). All lectures begin according to the UniNa calendar, except for lectures of the first year which are delayed (about 1 month) due to the sliding of the National ranking for students’ admission. Basic sciences are primarily taught in the first two years while, starting from the third year, the exposure to pre-clinical and clinical/professional subjects gradually increases. With the final goal to reach an ‘integrated model’, in the last years the Na VEE adopted a system of ‘incursion didactic’ that encourages to incorporate clinical relevance among the different subjects.

The didactic order (RAD) was significantly modified in the academic year (AY) 2018-2019 consistently with the issues of the Ministerial Decree 270 of 22 October 2004. Hence, the last ESEVT on site visitation in 2013 occurred at a bridging phase between the ‘old’ and the current didactic order. A full revision of the mandatory professional practical training (PPT) was accomplished in 2019. In 2022, the organization was modified to promote student career progression and improve the integration between related disciplines. Finally, starting from AY 2023-2024, to implement the national provision, the Na VEE will adapt the whole curriculum to a qualifying degree, by eliminating the state exam for professional certification and introducing a final exam before the thesis defence.

The Veterinary Medicine Teaching Course Committee (VMTC Committee) is responsible for the design and management of the programme, whereas a major responsibility in analysing issues and suggesting solutions is placed (by national regulations) on the Review Group (RG) and Quality Assurance Committee (QA).

Relevant instances originating from the VMTC are illustrated in the VMTC Committee. In particular, the VMTC Coordinator is asked to report on the main issues concerning planning, monitoring and revision activities, including financial needs related to the purchase of teaching materials and/or to the enrolment of additional temporary staff in support of practical training. Proposals of the VMTC Committee are then approved by the Na VEE Board. This process ensures a rational distribution of resources and their harmonization at the Na VEE level (Area 2). Over the last two decades the Italian university system has undergone several changes which have directly affected the overall organization of the veterinary medicine curriculum. The most relevant prescriptions (Ministerial Decrees nos. 509/1999, 270/2004 and 240/2010) relate to:

- the length of the programme (5 years, 300 ECTS)
- the homogeneous distribution of ECTS across the programme (~60 ECTS/year)

- the balance between broad subjects' categories
- the balance between subject areas within the afore mentioned subject categories
- the number of core courses to offer (maximum = 30)
- the introduction of a mandatory accreditation system for all curriculum by [ANVUR](#).

Although the legislator's intention to lay down concrete rules to harmonize university curriculum across the country is understandable (there are as many as 13 VEEs in Italy), it is nonetheless clear that, given the circumstances, VEEs enjoy limited freedom to implement substantial curricular changes. However, autonomous decisions may be taken (within certain limits) on the ECTS assigned to specific subject areas; the balance between theoretical and practical hours at the teaching unit level; workload distribution at the ECTS level (e.g., the number of hours assigned to individual study vs. theoretical and practical hours). By means of example, starting from 2022/2023, some curricular changes that the Na VEE has recently managed to approve and progressively introduce included: reorganization of the compulsory PPT; re-scheduling and relocation of selected integrated courses. These types of changes are autonomously performed by Na VEE and UniNa Governing Bodies. Conversely, all changes impacting ECTS distribution among broad subject categories and/or subjects require further evaluations at National level (Area 7). This is clearly a long bureaucratic burden.

Possible **curriculum weaknesses** are monitored at multiple levels:

- each subject is coordinated by a teaching staff member with consolidated experience in teaching. The teaching staff is responsible for setting down the scientific and pedagogic pathway of the course and defining the educational objectives, learning outcomes and student assessment methods/format. The teaching staff is also bound to publish/update all relevant information about the course in the Subject Form, a key document linked to the UniNA Teacher page ([docenti.unina](#)) or through the Na VEE website.
- regular anonymous feedback on teachers and courses is provided by students through Segrepass, the UniNa online evaluation platform, before they decide to sign up for the exam. The outcomes of the survey related to each specific subject are submitted to the teacher responsible for the course and to the Na VEE Director to take corrective actions.
- at the end of each semester anonymous feedback on teachers and courses is provided by students through Microsoft Form®. The survey is produced by the Teachers & Students JC which is also responsible for data analysis. The outcomes of the survey are shown in VMTC Committee and Na VEE Board meetings.
- within the Teachers & Students JC, students report their opinions, intended as essential tools to identify unintended redundancies and overlaps between courses and monitor the efficacy of the implemented corrective actions. The JC submits a questionnaire to the students to evaluate their feedback, and evaluation questionnaires.
- the Professional Practical Training Committee (PPT Committee) analyses and discusses the results of the questionnaire in order to improve the service for the students.
- the Management Group (MG) directly involves students who can bring up teaching related issues and proposes possible implementing solutions. It annually monitors the coherence of the programme by reading and cross checking the Subject Forms and the corresponding syllabus of practical activities, to ensure that the principal objectives (e.g., the take-over of competences) are clearly defined and that learning outcomes are in line with those of the programme, without unnecessary repetitions. Minimal overlaps among courses are tolerated as they may favour a multilayer vision of significant topics.
- the RG is entitled to get in touch with the individual teachers to agree on integrations and possible amendments if any weaknesses are identified.
- Finally, the potential lack of consistency during the examination has been resolved through the creation of a unique student evaluation system to which all teachers adhere.

**Table 3.1.1.** Curriculum hours in each Academic Year (AY) taken by each student

AY*	A	B	C	D	E	F	G	H
1 <sup>st</sup> year	342-372**	4	20	53	36			455-485**
2 <sup>nd</sup> year	430	4		43	44	16		537
3 <sup>rd</sup> year	498	12	9	77	68	166		830
4 <sup>th</sup> year	466	19	26	15	94	162		782
5 <sup>th</sup> year	139	6		10	7	31		193
PPT					314	708		1022
Electives	66			66***				132
Thesis								250

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total.

\*An AY is subdivided into 2 semesters; \*\*Including 30 h of English only for students with a language level lower than B2 (Cambridge or similarly certified levels). \*\*\*for additional details please see Table 3.1.4.

**PPT:** includes Clinical Rotating from 1<sup>st</sup> to 4<sup>th</sup> year (total 272 h) and extramural core clinical training (extramural CCT) (total 750 h) performed during the last semester of the 5<sup>th</sup> year under external tutor supervision. In total each student has to attend 4201 h of both teaching (excluding English qualification) and professional training across the five years.

**Table 3.1.2.** Curriculum hours taken by each student

<b>Subjects</b>								
<b>Basic Subjects</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
Medical physics	15							15
Chemistry (Inorganic and organic sections)	30							30
Animal biology, zoology, and cell biology	55			8				63
Feed plant biology and toxic plants	41			1	3			45
Biomedical statistic	28			2				30
English*	30							30
<b>Specific veterinary subjects</b>								
<b>Basic Sciences</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
Anatomy, histology, and embryology	133.5	4	20	12	58			227.5
Physiology	125			10	19			154
Biochemistry	73			19				92
General and molecular genetic	12.5			4				16.5
Pharmacology, pharmacy and pharmacotherapy	60			12	5			77
Pathology	76	4		7				87
Toxicology	22			6				28
Parasitology	48			19	16			83
Microbiology	30			6				36
Immunology	15			4				19
Epidemiology	12			2	4			18
Information literacy and data management	30			10				40
Professional ethics and communication	29	3			1			33
Animal health and economics and practice management	87			12				99
Animal ethology	22				11			33
Animal welfare	13							13
Animal nutrition	15				8			23
<b>Clinical Sciences</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
Obstetrics, reproduction, and reproductive disorders	61				2	19		82
Diagnostic pathology	89		3	8		65		165
Medicine	57	6				38		101
Surgery	40	6				40		86
Anaesthesiology	32					21		53
Clinical practical training in common animal species	55					34		89
Preventive medicine	34			7	2	6		49
Diagnostic imaging	55	2				37		94
Therapy in common animal species	54					42		99
Propaedeutic of common animal species	66	4	6	11	9	42		138
<b>Animal production</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
Animal production, including breeding, husbandry, and economics.	92				31			123
Herd health Management	55			5	19			79
<b>Food Safety and Quality, Veterinary Public Health, and One Health Concept</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
Veterinary legislation including official controls, regulatory veterinary services, forensic veterinary medicine and certification	68				7	10		85

Control of food, feed and animal by-products	58		4	13	44			119
Zoonoses	89			27	20			136
Food hygiene and food microbiology	29		2	22				53
Food Technology	11		2	8				21

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total.

\*Only for students with a language level lower than B2 (Cambridge or similarly certified levels)

**Table 3.1.3.** Practical rotations under academic staff supervision (excluding extramural CCT)

List of practical rotations (disciplines/species)		Duration*	Year
<b>Intra-mural clinical Veterinary Teaching Hospital (VTH)</b>			
Clinical Rotating: care of hospitalized animals		32 h	1 <sup>st</sup>
Clinical Rotating: customer reception and first clinical examination assistance		60 h	2 <sup>nd</sup>
Clinical Rotating: clinical visit, intensive care assistance, surgical room access		70 h	3 <sup>rd</sup>
Clinical Rotating: assistance in the night emergency room, hospitalization management		60 h	4 <sup>th</sup>
<b>ESEVT subjects</b>		<b>Na VEE subjects</b>	
		<b>Duration*</b>	<b>Year</b>
Diagnostic pathology	Pathological anatomy I and II, Necropsy technique and Cadaveric diagnosis <i>(Companion animals and food producing animals)</i>	65 h	3 <sup>rd</sup>
Propaedeutics	Surgical semeiology, Semeiology for internal medicine, Surgical techniques <i>(Companion animals and food producing animals)</i>	77 h	3 <sup>rd</sup> 4 <sup>th</sup>
Medicine, Surgery, and Anaesthesiology	Surgical pathology Clinic for surgery Pathology for internal medicine Clinic for internal medicine and therapy Anaesthesiology <i>(Companion animals and food producing animals)</i>	142 h	3 <sup>rd</sup> 4 <sup>th</sup>
Diagnostic Imaging	Radiology and nuclear medicine Internal medicine diagnostic imaging <i>(Companion animals and food producing animals)</i>	37 h	3 <sup>rd</sup> 4 <sup>th</sup>
Clinical practical training in common animals' species	Surgical semeiology Semeiology for internal medicine Surgical techniques Veterinary obstetric Physiopathology of reproduction and artificial insemination <i>(Companion animals and food producing animals)</i>	34 h	3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup>
Obstetrics, reproduction, and reproductive disorders	Veterinary obstetric Physiopathology of reproduction and artificial insemination Clinic for reproduction <i>(Companion animals and food producing animals)</i>	21 h	5 <sup>th</sup>
<b>Ambulatory Clinic</b>			
Several services <i>(food producing animals and equine)</i>		50 h	4 <sup>th</sup>
<b>Herd health management</b>			
<i>Zoocultures (rabbit, poultry, and farm fish)</i>		8 h	2 <sup>nd</sup>
Breeding and welfare of ruminants		8 h	4 <sup>th</sup>
Breeding and welfare of monogastric <i>(dogs, swine, and horses)</i>		5 h	4 <sup>th</sup>
<b>Food Safety and Quality, Veterinary Public Health, and One Health Concept</b>			
Veterinary legislation including official controls, regulatory veterinary	Bacterial disease and preventive medicine <i>(Companion animals and food producing animals)</i>	17 h	4 <sup>th</sup>
	Avian pathology		5 <sup>th</sup>
	Veterinary legislation on food animal origin <i>(Food producing animals)</i>		

services, forensic veterinary medicine and certification	Viral disease, preventive medicine, and veterinary public health ( <i>Companion animals and food producing animals</i> )		
Control of food, feed and animal by-products	Industry of food of animal origin ( <i>food producing animals</i> )	57 h	4 <sup>th</sup>
	Practical work in slaughterhouses, laboratories and food industries ( <i>Food producing animals</i> )		
	Inspection and control of food products of animal origin ( <i>Food producing animals</i> )		
Zoonoses	Parasitic diseases ( <i>Companion animals and food producing animals</i> )	47 h	2 <sup>nd</sup> 3 <sup>rd</sup> 4 <sup>th</sup> 5 <sup>th</sup>
	Food microbiology ( <i>Food producing animals</i> )		
	Bacterial disease and preventive medicine ( <i>Companion animals and food producing animals</i> )		
	Avian pathology		
	Inspection and control of food products of animal origin ( <i>Food producing animals</i> )		
Food hygiene and food microbiology	Food hygiene and technology ( <i>Food producing animals</i> )	22 h	3 <sup>rd</sup>
	Food microbiology ( <i>Food producing animals</i> )		
Food Technology	Food hygiene and technology ( <i>Food producing animals</i> )	8 h	3 <sup>rd</sup>
<b>Electives</b>			
Teaching subjects from 1 to 6		66 h**	5 <sup>th</sup>

\*Intended as hours taken for each student. \*\*Details regarding the practical activities for the electives are reported in Table 3.1.4.

**Table 3.1.4.** Curriculum hours taken as electives for each student

ESEVT subjects		Na VEE subjects		A	B	C	D	E	F	H
<b>Track 1 - Hygiene and food safety of animals' production</b>										
Clinical Sciences	Pathological anatomy of slaughtered animals	22	-	-	-	-	-	22	-	44
FSQ & VPH, and One Health Concept	Food safety of animals' productions	22	-	-	-	-	22	-	-	44
FSQ & VPH, and One Health Concept	Food processing and innovative methods of preservation	22	-	-	-	-	22	-	-	44
FSQ & VPH, and One Health Concept	Food control of poultry and rabbit supply chain	22	-	-	-	-	22	-	-	44
Basic Sciences	Food residue toxicology	22	-	-	-	22	-	-	-	44
<b>Track 2 - Clinical and pathology of pet animals</b>										
FSQ & VPH, and One Health Concept	Infectious diseases and urban veterinary hygiene	22	-	-	-	-	-	22	-	44
Clinical Sciences	Clinical haematology and immunopathology	22	-	-	-	-	-	22	-	44
Clinical Sciences	Dermatology	22	-	-	-	-	-	22	-	44
Clinical Sciences	Advanced surgery for small animals	22	-	-	-	-	-	22	-	44
Clinical Sciences	Intensive and emergency care in pets	22	-	-	-	-	-	22	-	44
Clinical Sciences	Advanced surgery of reproductive system	22	-	-	-	-	-	22	-	44
Clinical Sciences	Veterinary oncology	22	-	-	-	-	-	22	-	44
Clinical Sciences	Dietetics of pets	22	-	-	-	-	-	22	-	44
<b>Track 3 - Production and welfare of livestock</b>										
Basic Sciences	Analysis and protection of genetic and cytogenetic resources	22	-	-	-	22	-	-	-	44
Animal production	Farm hygiene and biosecurity	22	-	-	-	-	22	-	-	44
Animal production	Dietetics of livestock	22	-	-	-	-	22	-	-	44
Animal production	Livestock and productions indexes	22	-	-	-	-	22	-	-	44
Animal production	Environmental impact of zootechnical farms	22	-	-	-	-	22	-	-	44
Animal production	Alternative breeding in avi-rabbit farming	22	-	-	-	-	22	-	-	44
<b>Track 4 - Health and welfare of farm animals</b>										



FSQ & VPH, and One Health Concept	Emerging infectious diseases	22	-	-	-	-	22	44
Clinical Sciences	Veterinary myopathology	22	-	-	-	-	22	44
Clinical Sciences	Veterinary radiology and nuclear medicine	22	-	-	-	-	22	44
Clinical Sciences	Advanced surgery for racehorses and podology	22	-	-	-	-	22	44
Clinical Sciences	Advanced internal medicine for ruminants	22	-	-	-	-	22	44
Clinical Sciences	Advanced internal medicine for racehorses	22	-	-	-	-	22	44
Basic Sciences	Parasitology of farms animals	22	-	-	-	22	-	44
Clinical Sciences	Imaging of the affections of the reproductive apparatus	22	-	-	-	-	22	44
<b>Track 5 - Zooanthropology human-animals relationship</b>								
Clinical Sciences	Behavioural medicine	22	-	-	-	-	22	44
Basic Sciences	Ethology applied to Zooanthropology	22	-	-	-	22	-	44
FSQ & VPH, and One Health Concept	Zootherapy in public health	22	-	-	-	22	-	44
Basic Sciences	Parasitic anthrozoosis	22	-	-	-	22	-	44
Basic Sciences	Veterinary behavioural pharmacology	22	-	-	-	22	-	44
Animal production	Ethology of animals used in rehabilitations therapies	22	-	-	-	22	-	44
<b>Track 6- Non-conventional species</b>								
Basic Sciences	Anatomy of non-conventional species	22	-	-	-	22	-	44
Basic Sciences	Physiology and welfare of nonconventional species	22	-	-	-	22	-	44
Clinical Sciences	Pathological anatomy of non-conventional species	22	-	-	-	-	22	44
Clinical Sciences	Surgery of non-conventional species	22	-	-	-	-	22	44
FSQ & VPH, and One Health Concept	Infectious diseases of non-conventional species	22	-	-	-	-	22	44
Basic Sciences	Parasitic infection of non-conventional species	22	-	-	-	22	-	44
Animal production	Management of wildlife resources	22	-	-	-	22	-	44

A: lectures; B: seminars; C: supervised self-learning; D: laboratory and desk-based work, E: non-clinical animal work; F: clinical animal work; G: others (specify); H: total.

Aiming at building a constructive alignment of the curriculum, each subject is subdivided into weeks exclusively dedicated to theoretical lectures and weeks with high prevalence of practical hours. In light of the Covid-19 restrictions, in 2022 the VMTC Committee in agreement with the students, decided to reschedule the hours of the Clinical Rotating as follows: *i*) for the 1<sup>st</sup> year, 12 of 32 h are spent in an equestrian centre for handling, *ii*) for the 2<sup>nd</sup> year, 12 of 60 h are spent in an equestrian centre for cures, *iii*) for the 3<sup>rd</sup> year, 16 of 70 h are spent in the FVTH.

For the **core clinical exercises/practical/seminars** prior to the start of the Clinical Rotating the students are organised in groups and carry out preparatory activities including laboratory work, practical with animals (non-clinical work), anatomical preparations, and cadavers.

In detail:

- **Safety and security training** (1<sup>st</sup> year): once per year the students have to achieve the health permission. The students are required to attend a training course and relative assessment to obtain relevant information on safety and security issues and animals' restraint before carrying out any activity in laboratories, clinics, farms, slaughterhouses (Area 4).
- **Biochemistry, clinical biochemistry, and clinical molecular biology** (1<sup>st</sup> year): methods for protein purification; enzyme kinetic assays; quantitative determination of biological macromolecules; methods for protein separation; preparation of biological samples; preparation of samples for blood count; electrophoresis of serum proteins; methods for extraction of RNA and DNA from biological samples.

- **Bioinformatics** (1<sup>st</sup> year): use of Office suite, and practice with MyClinical and other professional software employed in the veterinary sector.
- **Genetic** (1<sup>st</sup> year): structure of a genetics and genomics laboratory, sampling and processing of samples for genetic investigations, methods of DNA extraction and subsequent analyses.
- **Systematic comparative anatomy I and II, Topographic anatomy** (1<sup>st</sup> and 3<sup>rd</sup> year): evaluation of the anatomical planes and directions, evaluation of isolated organs and dissection of cadavers of domestic animals.
- **Veterinary physiology II** (2<sup>nd</sup> year): laboratory work (red and white blood cell counts); blood pressure measurement, respiratory rate and arterial pulse, auscultation of the heart tones with stethoscope in different species.
- **Veterinary microbiology and Immunology** (2<sup>nd</sup> year): sampling and examination of biological samples. Bacterial and yeast isolation and identification, antibiotic susceptibility testing, use of PCR in bacteriology. Cell culture techniques, use of PCR and RT-PCR in virology. Viral titre assay. Serum neutralization and crystal violet staining.
- **Parasitology and epidemiology of parasitic infections, Parasitic diseases** (2<sup>nd</sup> year): microscopical examination of endo- and ecto-parasites; necroscopic examination of animals' organs to evidence lesions caused by parasites; coprological, haematological, serologic, and molecular exams for diagnosis of parasites in different species.
- **Veterinary epidemiology** (2<sup>nd</sup> year): visits to horse, cattle, sheep, and pig farms. Use of opensource statistical software to visualize, manage, manipulate, analyse data. Use of browsers for scientific databases on the Internet: to search for scientific articles on epidemiologic studies.
- **General animal husbandry and Genetic improvement, Zoocultures** (2<sup>nd</sup> year): sampling and processing of samples for cytogenetic investigations, karyotyping techniques, karyotype anomalies and effects on animal health. Rabbit handling, sexing, pregnancy diagnosis, necropsy evaluation of the digestive and reproductive system of the laying hen, structure and management in aquaculture.
- **Pharmacy and pharmacodynamics, Veterinary toxicology and Chemotherapy** (3<sup>rd</sup> year): Preclinical experimentation. Monitoring of functional parameters in preclinical experimentation. Metrology. Kinetics of pharmacological molecules.
- **Animal nutrition, Food producing animals feeding, and Companion animals feeding** (3<sup>rd</sup> year): recognition and chemical evaluation of different feedstuffs and specific requirements of food producing and companion animals, rationing.
- **Pathological anatomy I and II, Pathological histology and cytology, and Necropsy technique and Cadaveric diagnosis** (3<sup>rd</sup> year): examinations of organs and viscera of different animal species; necropsy on companion and food producing animals. Histopathological and cytopathological examination of tissues and cells.
- **Surgical semeiology, Semeiology for internal medicine, Medical laboratory diagnostic, and Surgical technique** (3<sup>rd</sup> and 4<sup>th</sup> year): restraint, signalment, history collection, anatomic landmark propaedeutics for the clinical methodology. Hematobiochemical sampling preparation, in companion and food producing animals and training to perform main surgical procedures.
- **Food hygiene and technology, Food microbiology, Industry of food of animal origin, Practical work in slaughterhouses, laboratories and food industries, Inspection and control of food products of animal origin** (3<sup>rd</sup> and 4<sup>th</sup> year): techniques for food chemistry and microbiological analysis, *post-mortem* inspection of organs and carcasses of different species.
- **Legal medicine** (4<sup>th</sup> year): professional ethics, knowledge of policies and strategies of National and International Organizations involved in animal welfare and public health.
- **Bacterial diseases and preventive medicine, Viral diseases, Preventive medicine and public health** (4<sup>th</sup> and 5<sup>th</sup> year): knowledge of policies and strategies of National and International

- Organizations involved in animal and public health, infectious diseases control measures or other veterinary service programmes, application of biosafety measures to prevent and control of infectious diseases, sampling, collection, processing and management of biological samples.
- ***Veterinary ethology and animal welfare*** (4<sup>th</sup> year): behavioural visits and follow-up discussions with colleagues, interaction with the owner and the animal, and filling in the ethogram.
  - ***Breeding and welfare of ruminants, Breeding and welfare of monogastrics*** (4<sup>th</sup> year): technical visits to food producing animal farms and horse stables. Participation in all activities for animal management, animal housing, productive data recording and data management.
  - ***Veterinary obstetric, Physiopathology of reproduction and artificial insemination*** (5<sup>th</sup> year): gynaecological, andrological and neonatal examination, oestrus detection, artificial insemination timing and procedures, pregnancy diagnosis, semen collection, evaluation, handling and storage, principles of reproductive system ultrasonography.
  - ***Skill Lab***: from 2023, whenever possible the practical activities are also performed with the use of phantoms and pads for surgeries suture and injection.

The intramural part of the PPT programme gives all students the opportunity to join the **core of clinical rotations** and the emergency service.

**Professional Practical Training (intramural practical training):**

The intramural part of the PPT is carried out in the HVTH and FVTH (Table 3.1.3.). From 3<sup>rd</sup> to 5<sup>th</sup> year students are mandatorily involved in rotations at the VTH services (ECCS, ICU, Ambulatory Clinics). Progressive training is carried out in accordance with the level of responsibility requested of trainees, which increases over the years.

**During 3<sup>rd</sup> year**, students are organized in 12 shifts for a total of 70 h at VTH (9 shifts at HVTH and 3 at FVTH). Shifts are scheduled during day-time and low-responsibility activities are offered such as support to clinical consultation, ICU, and surgical units, with a supervisor-to-student ratio of 1:1.

**During 4<sup>th</sup> year**, students are mainly involved in the ECCS. Four shifts (night-time) for a total of 48h/student plus two weekends for a total of 12h/student (day-time) are scheduled to give them the chance to fully participate in ICU and ECCS for dogs, cats and exotic pets in the HVTH. Students participate in the *Punto Verde* Equine Hospital (EH) activities when animals are hospitalized. The EH staff contact the academic staff of the Ambulatory Clinics to carry out the clinical activity together (e.g., surgeries, therapies, etc.). The on-call students (Ambulatory Clinic service) participate in the above-mentioned activities and can use dormitory rooms to rest when clinical cases require nightly monitoring. Activities imply progressively increasing responsibility. Students are directly involved in the medical, anaesthetic, and surgical support during emergencies. Students can independently manage hospitalized patients, in this year. The academic staff is always present in case of necessity or support in each of the areas where students carry out their activities. On request, some pre-clinical and clinical activities of the Ambulatory Clinics can be also performed at the Regional Centre for Horse Increase (CRII), which signed an agreement with Na VEE (Area 4). During this year, students are also engaged in the **Ambulatory Clinics** service dedicated to farm animals and horses with a maximum academic staff-to-student ratio of 1:6. Students are usually divided into groups of maximum 6 persons spending at least 50h/students with the service. They attend clinical shift/activities in the field defined as ‘ordinary’ (weekly planned clinical activity on referred cases) and ‘emergency’ (referred cases), from 1<sup>st</sup> November to 31<sup>st</sup> October of the following year. Ambulatory Clinics and EH activities compensate for the lack of food producing animals and equine intra-mural hospitalization. The students, divided into ordinary and emergency groups, are entrusted to the different Services (Internal medicine, Surgery, Reproduction, Animal production, Infectious diseases, Parasitology) which alternate. This type of

clinical activity requires moderate to advanced responsibility for the students. They are directly involved in the clinical-diagnostic-therapeutic activities as well as in those of management of intensive and extensive breeding systems. For all clinical practical activities, students are trained in the basic use of the hospital management system (including data upload and writing of clinical reports). The academic staff is always present in case of necessity or support, and the presence of the veterinary practitioner working on the farm/stable represents an added value to guarantee a continuous and realistic comparison for the students with the daily clinical activity performed in the field. The [weekly clinical round planned](#), the emergency shifts, as well as the operating regulation, are indicated within the Na VEE website.

Additionally, starting from the second semester of 5<sup>th</sup> year, students are bound to attend the extramural CCT. The procedures to attend the extramural [CCT](#) are reported in detail on the Na VEE website. Two annual-shifts periods are scheduled, in February and September. Each shift period lasts 3 weeks, groups of 2-4 students are involved for the whole week (7/7days), for a total of 84 h per week and 252 h/student. The clinical part of CCT is carried out also intramurally at the HVTH. During the 3-week period, students are assigned to the different hospital services. The training is scheduled during daytime (12h/student) and night (12h/student). During these activities, students are also trained on how to discuss and present the clinical cases to colleagues. At the end of CCT performed within HVTH, each group of students prepares and delivers a seminar about a relevant topic for all the others involved in the clinical rotation.

During the **clinical practical training**, students must fill in a daily Logbook summarizing the main clinical findings, whereas a record of the clinical procedures they proactively carried out is kept on the VTH management system. Moreover, students must report clinical cases on the MyClinical platform. These procedures are signed off by the teaching staff on duty. The TO is responsible for planning and publishing the VTH monthly students' shifts on the website and on TeamUp (a freeware calendar online). On a monthly basis, a member of the Na VEE Council is responsible to control, on the MyClinical platform, the attendance of students in the HVTH. The attendance at the FVTH is still manually registered and checked by the on-call academic staff in order to reschedule extra shifts. During clinical rotations, students are involved in the management of the daily activity at the VTH, including communication with clients and medical history (the latter only in the HVTH), clinical examination, collection of biological samples, developing a diagnostic and treatment plan and documentation.

Supervised by the academic staff, students perform according to their level of expertise (4<sup>th</sup> and 5<sup>th</sup> year) or limit themselves to participation (3<sup>rd</sup> year) in the diagnostic and therapeutic procedures, evaluating recorded data, planning further investigations to improve the diagnostic work-up, engaging in differential diagnosis with the corresponding therapy and prognosis, and scheduling the patient follow-up. Moreover, students are expected to fill in the clinical report, agree on medical prescriptions and inform the owner on patient management. The development of clinical skills is enhanced by the regular clinical round attendance during practical activities of each subject (maximum tutor-to-student ratio of 1:5). Finally, all acquired competencies are preparatory requirements to start with the Clinical Rotating activities as efficiently as possible.

The training in inspection and **control of animal foodstuffs or feedstuffs of animal origin** and the respective feedstuff production unit, food hygiene and microbiology, food science, and practical work is provided in the subjects of *i*) food quality control, including hygiene and food technology and microbiology of food of animal origin (3<sup>rd</sup> year) and *ii*) industry and inspection of food products of animal origin, including industry and inspection of food products of animal origin, practical work in a slaughterhouse, inspection, and control of food products of animal origin and veterinary legislation of food products of animal origin (4<sup>th</sup> year). Practical activities in slaughterhouses and in premises for the production, processing, distribution/sale, or consumption of food of animal origin are carried out outside the Na VEE. The students undergo different training sessions under the supervision of the academic staff and Official Veterinarians. At the

slaughterhouses, activities (4<sup>th</sup> year) are organized in groups and each student receives 6 h of training per animal species (cattle, swine, poultry). At slaughterhouses activities are organized in groups of maximum 30 students (tutor-to-students ratio of 1:10). The students can: *i*) observe facilities/equipment to evaluate structural and functional eligibility, *ii*) participate in the *antemortem* inspection, *iii*) evaluate animal welfare in lairages and during stunning and bleeding, *iv*) evaluate slaughter techniques, and examine all the documentation, *v*) perform *post-mortem* inspection of the organs and carcasses. During the 3<sup>rd</sup> and 4<sup>th</sup> years students visit at least one cutting plant and/or food processing plant and the fish market (in groups of maximum 30 students with a ratio of 1:10). The objective of the training is to give the students practical knowledge of requirements to evaluate structural and functional eligibility, hygienic requirements, and traceability of the products. Moreover, at the fish market students perform an inspection of different fishes and shellfish. After each activity, all the students are asked questions through the evaluation cards (via Microsoft Forms®) on the contents of the attended practical lesson (additional 2 h/student).

The **Electives** are planned in the 9<sup>th</sup> semester and a list of chosen subjects is provided to the students before the beginning of the 5<sup>th</sup> AY on the Na VEE website. Electives are integrated tracks based on practical and theoretical activities (12 ECTS with ratio of 50:50), composed of several subjects. They can be carried out at the Na VEE or in other Universities/Institutions according to L240/2010. At least 8 of 12 ECTS have to be attended at the Na VEE. The request to attend an 'external' elective is examined by the MG which evaluates consistency with the programme and approved by the VMTC Committee. The activation of the elective course offered by the Na VEE requires a minimum number of students:  $n = 6$  for an elective track and  $n = 5$  to activate a subject. All 4<sup>th</sup> year students participate in a dedicated meeting to present the overall contents both of tracks and of subjects as well as the application procedures, at the beginning of the 8<sup>th</sup> semester. After that, students must give, through an informatic application, two progressive preferences regarding the tracks, and within each one they must express a further priority regarding the subjects (from first to last). Afterwards, the TO provides the VMTC Coordinator with a student's ranking list based on their preferences obtained using dedicated software. In case the minimum number of students to activate an elective track is not achieved, students are moved to their second choice. If the minimum number of students to activate a subject is not achieved, students are given a different one within the same elective track. Soon after the official results are made available during the meeting of the VMTC Committee and on the Na VEE website. Students must choose 3 subjects within the elective track selected. Each of them accounts for 4 ECTS, based on practical and theoretical activities (ratio 50:50). Elective tracks not chosen for three consecutive AYs are replaced with newly proposed ones, as happened for the students belonging to the 5<sup>th</sup> year of the AY 2022-2023. Indeed, some changes and rules have been introduced, as follows: students must choose 2 subjects of 6 ECTS each within the **track selected** (50:50 ratio of practical to theoretical). At the beginning of the first AY, a hard copy **Student's Logbook** of practical activities (hereafter PPT Logbook) is assigned to each student. This is the most important document to monitor the achievement of the Day One Competencies. The PPT Logbook reports each knowledge/skill, the date, and the topic, where the skill has been acquired as well as the signature of the tutor. The student receives validation when the academic supervisor verifies the achievement of the skill. Regarding the Ambulatory Clinics, activities performed by the students (continuously supervised by the academic staff) are certified directly in the farm/equine centre by means of electronic signature of clinical sheets (on MyClinical platform), by the academic staff in charge of the activity and by the students who actively participate. At the end of the time-period dedicated, the Coordinator of the service verifies the achievement of the minimum number of attendances to guarantee at least 50h of clinical activity and he signs the PPT Logbook in the dedicated section. At the beginning of the extramural CCT another hard copy Student's Logbook related only to the activities of the CCT (hereafter **CCT Booklet**) is assigned by UniNa and given to each student.

Also, the CCT Booklet reports each knowledge/skill, the date, the topic, and the place where the skill has been acquired as well as a signature of tutors. The final validation of the CCT Booklet falls within the responsibility of the PPT Committee who checks the daily activities register and the signatures on it by tutors in charge. Lastly, the VMTC Coordinator further validates the CCT Booklet before sending it out to the Student Secretariat. In case goals have not been achieved, the students are not admitted to the thesis defence. *Since AY 2021-2022*: during the extramural CCT each student must certify the acquisition of the competence by answering a list of questions on a google platform on a daily basis.

### 3.2. Objectives and academic environment highly conducive to learning

Description of how the Na VEE:

- **Ensures that the study programmes meet the objectives.** The educational objectives of the VMTC are achieved through frontal and practical teaching offered according to ESEVT recommendations and in compliance with the UNI EN ISO 9001:2015 standard. The knowledge acquired in basic subjects is also integrated on several levels with the characterizing subjects. From the AY 2019-2020, the so-called ‘incursion didactic’ has been introduced via seminars among the different subjects. This activity was made official through the insertion of the individual hours of each teacher in the U-Gov system (governative platform for the teaching organization system). The objectives are also ensured by means of the repeated didactic: the person responsible for the subjects is supported by additional academic staff to guarantee the assigned practical hours/student, maintaining the requested tutor-to-student ratio. For all subjects, especially the characterizing and integrative ones, the teaching load requires that the practical part represents at least 50% of the total. In addition to the curricular hours recognized within each ECTS, students spend 272 hours of clinical practice over the five years. The entire educational pathway, including access to the traineeship, is based on the criteria of preparatory exams. Follow-up activity concerning Day One Competences has been significantly enhanced by the introduction of changes in the organization of the subjects. Consistency between teaching programmes and objectives is annually verified by the MG and VMTC Committee. Once inconsistencies are identified the programmes are revised and reissued.
- **Promotes an academic environment conducive to learning.** The onset of an environment conducive to learning stems from the proper management of several components: *i*) quality of teachers, *ii*) programme contents, *iii*) physical and virtual learning spaces, *iv*) training activities including hands-on participation of students, *v*) number and variety of case studies students are exposed to.
- Specific actions have been taken over the last few years comprising the increased training/workstations, increased number of tutors and to enhance a hands-on student-centred approach.
- In 2016 the Na VEE joined the School of Agricultural Sciences and Veterinary Medicine with its own statute and regulation. The spaces available for the Na VEE teaching activities have been significantly widened with the acquisition of classrooms and laboratories located in the CESTEV (Area 4). The VMTC is partially carried out at CESTEV and partially in the main building. Research is a significant component of students' education, by promoting the development of a critical point of view to be applied to any future choice in the work arena. In addition, seminars and study days are organized by the Na VEE throughout the year to expose students to the science and research world and support them in the selection, based on their personal skills and attitudes.
- **Encourages and prepares students for self-learning and lifelong learning.** The Na VEE is oriented to the application of student-centred methodology useful to establish a personal relationship between the student and the teacher/trainers to foster a correct approach to veterinary science and practice. Clinical case problem solving, clinical rotations, and technical

visits, encourage students to develop a personal strategy focused on the improvement of their knowledge and skills suitable to be applied throughout their entire career. A noteworthy contribution is also provided by the continuing professional development of the teaching staff concerning technological resources in compliance with the growing availability of e-learning methodologies and by the significant promotion and application of self-learning resources by the teaching staff.

### 3.3. Educational aims and strategy

**Educational aims** are established at National level by MUR while the self-assessment and evaluation of the learning outcome is based on a reference tool (Area 1), called SUA-CdS, through which the VMTC reports the expected achievements. The SUA-CdS provides a complete set of information to students, families and stakeholders, useful to *i)* clarify the objectives of the VMTC, *ii)* describe the educational track and the learning environment, also illustrating the expected results, *iii)* describe the organizational structure and responsibilities related to QA, *iv)* indicate the results of the monitoring and review activity annually performed.

A key step is also the evaluation of consistency between the teaching programmes and the expected objectives which is monitored by the MG and VMTC Committee. In addition, an increase in the practical activities including clinical rotation, clinical rounds and clinical case discussions has been performed overtime. Still in the perspective of a cohesive framework, the potential impact of the educational track on the development of the One Day Competences has been improved by the VMTC Committee that specifically monitors and effectively guides the development of the required practical skills. The Na VEE ensures that the learning outcomes fit with the ESEVT Day One Competences through two major systems:

- A Tuning matrix (Annex C), regularly updated, allows the academic staff to visualize the connection between the training objectives of the ESEVT Day One Competences and those of the individual subjects taught. The system enables to quantify and monitor how the single subjects contribute to the purpose.
- A PPT Logbook built with activities aimed at obtaining as many Day One Competences as possible. The achievement of the skills is certified by the signature of the academic staff who manage/organize the specific practical activity.

### 3.4. Committee structure and procedures

The definition of roles, tasks, and competencies for everyone including staff, students and stakeholders within the organization is required by the UNI EN ISO 9001:2015 standard. The strategy applied to meet this standard is reported in Area 1. The evaluation of the results and dissemination are guaranteed by the annual drafting and online publication of the SUA-CdS, the management tool functional to the design, implementation, self-assessment, and redesign of the entire teaching course. Moreover, the Na VEE has been evaluated on the basis of National Students Registry indicators which are annually revised in July. The results of the Na VEE are compared with those obtained by other VEEs in the same geographical area and with those of the entire Country. Based on the SMA, RG assess and revises learning outcomes. Finally, learning outcomes are always decided, assessed, and revised with the active and regular participation of the students. Indeed, all the following committees, deeply involved in teaching activities, comprise students members: QA, MG, Teachers & Students JC, RG, PPT Committee, VMTC Committee, Na VEE Board.

### 3.5. Extramural Core Clinical Training (Extramural CCT)

The Extramural CCT is mandatory in the VMTC. Extramural CCT activities are planned to start from the 2<sup>nd</sup> semester of the 5<sup>th</sup> year, when students are supposed to have a good overall theoretical

and practical background. The extramural CCT is divided into two parts: one exclusively performed extra-mural the Na VEE (80% of the ECTS, at external public or private institutions) and the other intra-mural (20% of the ECTS, supervised by academic staff). The extramural CCT lasts 750 h (23 weeks) and is worth 30 ECTS. It can also be carried out at foreign public and private universities, as part of the Erasmus traineeship programme, or in other National universities. Requirements for admission to extramural CCT are to achieve the competencies and pass the preparatory exams. During extramural CCT, students are trained in 4 different veterinary expertise areas as follows: FSQ (9 ECTS), VPH (4 ECTS), Production animals (6 ECTS), Companion and Food Producing Animals Clinics (11 ECTS). The academic staff-to-student ratio is 1:1 for the clinical training, while for the other areas it is maximum 1:8. All extramural tutors are appointed upon an official agreement and specific teacher training. Here is the list of [practitioners, farm and institutions](#) involved.

During their extramural CCT in FSQ and VPH students are directly supervised by Official Veterinarians for a total of 6 weeks (staff-to-students ratio of 1:3). Constant and direct supervision of Official Veterinarians gives them the opportunity to better investigate and deepen issues relating to these expertise areas. For FSQ, they spend **3 weeks** at the ASL, **1 week** at the slaughterhouses, and **1 week** at the fish market, cheese factory and Border control Posts. For VPH, students spend **1 week** between the CSA, CRAS and CREMOPAR.

The food producing animals extramural CCT is scheduled as follows: **2 weeks** in the field under the supervision of a practitioner specialized in cattle and buffalo medicine and surgery. **Two** further **weeks** during which students are housed in farms: one for cows (Compostella) and one for Mediterranean Buffalo (Improsta). **One week** divided among to swine, poultry, and beekeeping medicine (approximately 2 working days/species due to the small number of these animals within the Campania Region and the strict local public health restrictions).

The companion animals extramural CCT is subdivided in **3 weeks** in a private practice for dogs, cats, and exotic pets. **One week** in the field under the supervision of a specialized equine medicine and surgery practitioner and **1 week** at EH. The programme gives students the possibility to constantly engage in daily veterinary practice to better strengthen their skills.

As mentioned above, part of the extramural CCT is also intramurally performed. In detail, students commonly spend: *i*) **3 weeks** with including day-time and night-time shifts at the HVTH, as well as *ii*) **1 week** at Diagnostic Service of Pathology and Animal Health of the HVTH, *iii*) **1 week** among different Na VEE laboratories including geographic information system, biotechnology, genetics, aquaculture, *iv*) **1 week** at the laboratory animal facility of CEINGE-Advanced biotechnologies centre of UniNa under the guidance of a non-academic veterinarian specialized in laboratory animals. Finally, **1 week** is allocated to animal assisted therapies at the Alzheimer centre (close to the FVTH).

During the clinical procedures performed on food producing and companion animals, pre-clinical activities are performed together with the clinical ones for a total amount of 2 and 1 weeks, respectively. The list of [activities planned for extramural CCT](#) period is annually reported on the Na VEE website. Students can access the extramural CCT in two annual timeframes: *i*) February-September, *ii*) September-February. During the extramural CCT period, every day, the student has to report and update the training activities on an CCT Booklet. Then, the CCT Booklet is verified and signed by the tutors, to certify the student attendance and the daily practical training. Students also have to report the clinical cases in an electronic storage system, which will be then submitted to the PPT Committee. At the end of the extramural CCT, the Booklet must be checked by the PPT Committee and finally validated by VMTC Coordinator. When the extramural CCT is completed, the tutors express an evaluation on the student training, considering the commitment and assiduity, the results and the professional maturity reached. Furthermore, at the end of their extramural CCT all students are required to fill out an evaluation questionnaire on affiliated host



facilities. If the evaluation is negative the PPT Committee will consider reviewing the training activities or ending the partnership.

**Table 3.5.1.** Curriculum weeks of Extramural Core Clinical Training (extramural CCT) for each student

Fields of Practice	Minimum duration (weeks)	Year of programme
Production animals (pre-clinical)	2	5
Companion animals (pre-clinical)	1	5
Production animals (clinical)	4	5
Companion animals (clinical)	8	5
FSQ	5	5
VPH	1	5
Others (specify)*	2	5

\*Animal assisted therapies, Laboratory animal facility, Beekeeping.

### 3.6. Providers and agreement for the extramural CCT

The extramural CCT providers belonging to the internal academic staff are UniNa employees. The nonacademic staff (e.g., private practitioners, Official Veterinarians, etc.) are agreed by means of a public application in which specific characteristics are required. The [application document](#), in duplicate, signed and printed by the manager of the host institution must be sent to the TO with an indication of the proposing subject. The specific model for affiliation to the training activities provided for the VMTC is also available on the UniNa website.

The agreed practitioners are recruited through public applications and receive a specific training course regarding teaching systems and methods, before starting their collaboration (Area 9). Part of them is paid in function of the Na VEE finance's availability (Area 2). The PPT Committee defines with this staff the kind of professional training that the student is expected to achieve in the period assigned to him/her. Furthermore, at the end of the extramural CCT programme, the practitioners communicate the assessment of students to the PPT Committee by filling out a standard evaluation report for each supervised student. When the extramural CCT is completed, the tutors express an evaluation on the student training, considering commitment and assiduity, the results, and professional maturity reached. Furthermore, at the end of their extramural CCT all students are required to fill out an evaluation questionnaire on affiliated host facilities. If the evaluation is negative the PPT Committee will consider reviewing the training activities or ending the partnership. The other members of the academic team, appointed as academic tutors in relation to their veterinary expertise area, assist students during their extramural CCT, ensuring a proper training.

### 3.7. Students' responsibility for extramural CCT learning

The students of the 5<sup>th</sup> year actively participate in the overall extramural CCT organization ranging from practices section to scheduling the duty-sheet. [To access the extramural CCT](#), students must have reached some goals (preparatory exams): the rules are published on the website. The current extramural CCT organization meets the evaluations criteria given by the ESEVT and the parameters of the quality certification of VMTC. During training periods, students are supervised and assisted by adequately trained tutors. Moreover, students are provided with an CCT Booklet, where the training activities carried out daily are reported. Then, it is verified and signed by the practitioner, to certify the student's attendance and the daily practical training.

At the end of their extramural CCT all students are required to fill out an evaluation questionnaire on affiliated host facilities and feedback is reviewed first by the PPT Committee and by the VMTC Committee.

Furthermore, students' complaints can be presented directly to the PPT Committee at any moment of their training. Thus, becoming aware of weaknesses, the PPT Committee can operate to ensure a more effective training management, by adopting corrective procedures (in the short-, mid- and long- term).

*Comments on Area 3*

- Heavy didactic load for a 5-year curriculum. More difficult because several practical activities are carried out extra-murally.
- Up to 2021, the elective tracks did not respond to students' and market requests. New attractive tracks have been recently created.
- The organization of practical activities should be considered a strength (e.g., a very intense clinical rotation, the Ambulatory Clinics service, the rental of buses and vans for visits to the farm, etc.). All of them are organized to make up for the facilities' deficiencies.
- Since the lectures were transferred to CESTEV, thanks to the presence of new and modern facilities, students and personnel's welfare has been significantly improved as shown by the students' evaluation and feedback.
- A close collaborative teacher-student relationship is Na VEE's strength point. Nevertheless, the physical distance in the pandemic phase has made the relationship between the parties more difficult and put a strain on the stability of the system. Part of the problem was managed/solved using innovative teaching systems that allowed students to continue their curriculum in the best possible way.

*Suggestions for improvement in Area 3*

- The new Frullone campus facilities will solve several logistical/management problems that affect the services offered to students, improving also the time for large animals handling.
- The Curriculum could be implemented via a more rational distribution of the subjects.
- At present, the only possible corrective to the constant students movement is to avoid their travelling between multiple locations on the same day.
- The monitoring/management of the Curriculum could be further implemented.

## Area 4. Facilities and equipment

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### 4.1. General description

The premises of the Na VEE are distributed across three different areas of Naples: the **historical building** (hereby defined as main building), close to the city centre, railway station, airport, and underground; **CESTEV** and **FVTH**, both on the Frullone hill, approximately 7 km from the main building, served by the underground. Except for certain activities of the compulsory extramural CCT all teaching activities of the VMTC take place in the three abovementioned premises.

The **main building** hosts offices of the Department's administrative staff and of Na VEE Director, some classrooms, other teaching facilities and laboratories, the main Na VEE library, study rooms for students, the Museum of Veterinary Anatomy (MAVet), meeting rooms, extra offices for teaching, administrative and technical staff, as well as laboratories for teaching and research managed by the four macro-areas of *i*) morphophysiology, pharmacology and biochemistry, *ii*) animal production sciences, *iii*) veterinary health and hygiene, *iv*) veterinary clinical sciences. The main building also includes the **HVTH**, facilities for dogs and cats, including hospitalisation, isolation unit, emergency service (24/7), consultation rooms, clinical laboratories, surgical, imaging and intensive care units, spaces for practical training with dummies, and the Skill Lab.

Moreover, an Exotic Pet Clinical and Surgery Service has been established.

The **CESTEV** is a fully equipped didactic complex, divided into three buildings:

- the first is exclusively dedicated to classrooms;
- the second is dedicated to collective activities, socialization, and teacher offices;
- the third is dedicated to service and technological spaces, the Student Secretariat, teaching and research laboratories.

The **FVTH** houses facilities for stray companion animals' hospitalization, isolation, 24/7 emergency service, offices for the staff. The FVTH also includes the **CRAS**, a II level rescue centre for wildlife collected from the entire regional territory. The FVTH is embedded in the **CRIUV** [C.R.I.U.V. - Portal Na 1 \(aslnapoli1.centro.it\)](http://C.R.I.U.V. - Portal Na 1 (aslnapoli1.centro.it)), one of the Regional Reference Centres of the PI described in Introduction, that – alongside the management, care and recovery of stray animals and support for specialised activities for public kennels throughout the Campania Region – allows the use of facilities to carry out teaching activities.

To complete the premises of Na VEE, outside the city, there are:

- The **Experimental Centre for Avian and Rabbit (CSA)**, located in the province of Napoli (Via Staffetta 42, Giugliano) approximately 30 km from the Na VEE main building. The CSA is involved in management and infectious diseases of poultry and rabbits offering diagnostic services such as necropsy, breeding mortality, bacteriological, virological, parasitological and serological analyses as well as consulting service through the Campania Region.
- The Regional Experimental buffalo farm **Improsta**, ~ 87 km from the Na VEE main building (SS 18 - Tirrenia Inferiore - Km 79+800, Eboli, SA), owns buffaloes barns, a cheese factory, laboratories for the analysis of forage and milk, a student lodge and kitchen. Forage production and preservation (ensilage or haymaking) are also performed.
- The Regional Centre for Monitoring Parasitic Diseases (**CREMOPAR**), ~ 87 km from the Na VEE main building (SS 18 - Località Cioffi, Eboli, SA), has protozoology, helminthology, entomology, immunology and molecular biology laboratories, and a necropsy room, equipped with modern instruments for the diagnosis of parasitic infections in sheep, goats, cattle, buffaloes, horses, pigs, poultry and rabbits from the Campania Region and other areas of Italy.

Maintenance costs of all UniNa facilities are entrusted to UniNa administrative offices (Area 2). The upgrading of Na VEE will be guaranteed by acquiring new facilities of Frullone campus thanks to the synergy between UniNa and Campania Region (Area 1-2). The Na VEE is responsible for the maintenance of all equipment, which is ensured thanks to dedicated contracts with companies which routinely check the instruments.

The compliance of physical facilities with relevant legislation is entrusted to UniNa, and specifically:

- UniNa [Building Management Office](#) for building management, logistics and sustainability;
- UniNa [Centre for the IT Services](#) (CSI) for the digital infrastructure;
- [Prevention and Protection department](#): periodically checks all instruments and organises mandatory inspections of all lifting equipment and trolleys, compressors, hoists, fire extinguishers, etc.

The three abovementioned offices, working together, ensure full compliance with national legislation. According to Italian Law no. 81/2008 on health and safety in work and teaching places, all the facilities and equipment can be checked at any time by the competent authority, without prior notice. Relevant equipment undergoes periodic inspection in line with requirements of the quality management system UNI EN ISO 9001:2015 with which some laboratories/services comply.

#### 4.2. Teaching facilities

Lecturing premises are located at the main building and CESTEVE and each of these is equipped with computer, video projector, screen and a blackboard, microphone with amplifier and speakers, video camera for remote connections, desk with chair, variable number of hangers, internet connection, both cabled and wireless (UniNa and Eduroam).

All classrooms are also available for exams and can be booked by mailing [giuseppe.marzatico@unina.it](mailto:giuseppe.marzatico@unina.it) (main building) and [alfonso.esposito3@unina.it](mailto:alfonso.esposito3@unina.it) (CESTEVE).

Building	Classroom Name	Area (m <sup>2</sup> )	Seats (No.)
Main	Miranda A	155	165
	Miranda B	88.74	50
	Anatomia Patologica	60	59
	Malattie Infettive	49.26	30
	Magna	106.37	80
	Scala	54.72	16
CESTEVE <sup>1</sup>	1 <sup>st</sup> year	72	75
	2 <sup>nd</sup> year	72	75
	3 <sup>rd</sup> year	72	75
	4 <sup>th</sup> year	72	75

<sup>1</sup> the classrooms at CESTEVE are shared with other UniNa Teaching Courses; four classrooms with 75 seats are assigned to the VMTC at the beginning of each semester

practical training, a refrigeration room (4°C) and a freezing chamber (-20 °C) respectively for short- and long-term storage of carcasses and viscera. A **locker room** completes the dissection room. Further locker rooms are scattered near the practical work premises to allow students to store personal items. In particular, lockers are on the ground and on the first floors. At CESTEVE there are: a linguistic-informatic laboratory, a microscopy laboratory (Area 6), and 6 didactic laboratories (total of 750 m<sup>2</sup>), located on the first floor with a common locker room. All these facilities can be booked by mailing [alfonso.esposito3@unina.it](mailto:alfonso.esposito3@unina.it). Moreover, at CREMOPAR there

is a necroscopy room equipped with 10 small stainless-steel tables, 1 stainless-steel large table and 5 chest freezers at  $-30^{\circ}\text{C}$ .

Since January 2023 a clinical **Skill Lab** (58,35 m<sup>2</sup>, 10 workstations) has been available on the ground floor of the main building. It is equipped with animal dummies and anatomical models of organs and tissues, screens and computers, tools for the preparation and administration of drugs and for surgery (Area 6).

**Study and self-learning** rooms are available both at the main building and CESTEV. In the main building there is a student room on the ground floor (96 m<sup>2</sup>) and the Zootecnia Room (about 33 m<sup>2</sup>, 50 seats) on the first floor. The four subsidiary libraries (Area 6) are normally used as study and self-learning rooms. Finally, at the MAVet there is a little room for self-learning equipped with 10 seats, a pc connected to a 50" screen with a series of software (Biosphera 3D) available for the study of virtual anatomy. In the CESTEV building there are two study rooms on the ground floor (261 m<sup>2</sup> - 60 seats) and on the first floor (622 m<sup>2</sup> - 200 seats).

At the main building there is no catering service but only vending machines near study and selflearning rooms and leisure areas. Moreover, the study room on the ground floor is equipped with a **lunch area**, with three microwaves, tables and chairs. On the ground floor of CESTEV, inside the canteen, there is a catering service serving freshly hot and cold dishes every day. Tables and chairs are available to have meals. Moreover, less than a km away, inside the Policlinic area, there is the large canteen of UniNa which all enrolled students can access. Finally, there are vending machines near all the leisure areas of CESTEV (see below for description).

In the main building there are two **leisure areas** equipped with vending machines: on the second floor and in the Miranda building. Additional benches are placed along the corridors on the different floors of the building. Finally, all common indoors and outdoors areas can also be used, upon authorization, for the organization of events.

At CESTEV, in addition to large outdoor spaces, both green and paved, there are wide spaces equipped with vending machines and chairs next to the classrooms.

For **accommodation**, students on duty during the night shifts at the HVTH have access to one bedroom area (13 m<sup>2</sup>) with beds on the mezzanine floor of the hospitalization unit, close to the ICU and Surgery units. Moreover, there is another room of 35 m<sup>2</sup> with shower and toilet service, dining hall (with a microwave) and relaxation area. **Toilets, washing/showers** are located all over the main building and in the CESTEV. Coin-operated washing and drying machines are available on the ground floor of the main building.

The Na VEE houses 52 **offices** in the main building, and two at CESTEV for academic staff. Moreover, there are 20 **research laboratories** in the main building, one in CSA and one in CREMOPAR; in addition, one Fish animal facility is present in the main building. The laboratories are used both for practical teaching and research activities (Annex F).

The **Museum of Veterinary Anatomy (MAVet)**, part of the UniNa Museum System, dates back to the early nineteenth century and most of its exhibits are located on the third floor of the Na VEE. Framed in the concept of disseminated museum, a remarkable exhibition of plaster horses created by the artist Max Landsberg in the late 19th century and recently restored, is displayed on the first floor. Plastic models of organs and miniatures of whole animals are displayed in the osteology room (Aula Scala on the ground floor) supporting students in learning osteomyology, heart anatomy etc. Museum resources allow students to deepen concepts of comparative anatomy by observing the well-assorted exhibition of whole and disarticulated skeletons as well as the numerous fluid-preserved or dried specimens. The museum includes a room devoted to plastic models of organs and apparatuses for educational purposes (Area 6).

### 4.3. Livestock facilities, animal housing, core clinical teaching facilities and equipment

There are two stables of **healthy horses** for teaching purposes: *i*) Stable of the Police's Mounted Unit (Capodimonte Garden – Naples, ~4 km from the main building) part of the Italian State Police (Ministry of the Interior), *ii*) Equine Centre of the Nunziatella Military School (Agnano area, Naples, ~15 km from the main building) part of the Italian Army (Ministry of Defence). Since these are military facilities, detailed maps of the two locations are unavailable due to National security reasons. The Stable of the Police's Mounted Unit has 4 horses, 10 brick boxes (~16m<sup>2</sup>/box), 1 outdoor paddock (~50 m<sup>2</sup>), 5 roofed grooming places, 1 horse washing box, 1 drying area (equine solarium), areas for food storage, 1 saddlery, 1 horse shoeing area, 2 locker rooms. The Equine Centre of the Nunziatella Military School has 10 horses, 12 brick boxes (~16m<sup>2</sup>/box), 1 roofed carousel stock, 1 indoor riding hall (300 m<sup>2</sup>), 2 outdoor paddocks (~100 m<sup>2</sup>), 3 roofed grooming places for horses, food storage areas, 1 saddlery, 1 horse shoeing area, 2 locker rooms, 1 leisure area. Both sites are characterized by high standards and management that fit the Na VEE teaching purposes. Moreover, they are governmental stables that must promote the best husbandry and welfare of the animal and must ensure biosecurity and biocontainment. The latter aspects are monitored both by internal self-control systems and by dedicated services of the Veterinary National Health System as envisaged by National legislation. The necessary equipment for animal handling and care is provided by the stables. These stables are used by students to perform the following activities: *i*) in 1<sup>st</sup> and 2<sup>nd</sup> years, animal handling and care, *ii*) in 3<sup>rd</sup> year, for practical activities of subjects of the core curriculum (i.e., preparatory for internal medicine and surgery). Students are supervised by specialized staff (professional horse keepers and, in the Nunziatella Military School, the Army Veterinary Medical Officer). Since these facilities are located within the city area, students usually reach them on their own. Fourth year students during Ambulatory Clinics activities can also perform pre-clinical activity on horses at the [Regional Centre for Horse Increase](#) (CRII; Santa Maria Capua Vetere– Caserta, ~30 km from the Na VEE main building). The CRII covers an area of approximately 60,000 m<sup>2</sup> with outdoor paddocks (~15 of different sizes), a hay barn of 1,000 m<sup>2</sup>, 6 silos and three shelters with almost 20 brick boxes (~10 m<sup>2</sup>/box). Moreover, a consultation room equipped with an equine stock and a stallion semen collection dummy and two andrology laboratories are present. A guesthouse (one bedroom, one bathroom and a kitchen) is available for students.

Regarding **healthy ruminants**, students of the 5<sup>th</sup> year spend 1 week at the Improsta farm during the extramural CCT (Area 3) where they can handle and practice on healthy animals. Here 300 buffaloes (130 heifers, 20 buffalo bulls and 150 buffalo cows) are housed in an area of 22,000 m<sup>2</sup>, including barns, food storage areas, calves' boxes and a milking parlour. An accommodation building with dormitory rooms and restrooms for students is present.

During activities on healthy equines and buffaloes, students are supervised by specialized staff, e.g., professional horse keepers, grooms, farm advisors and academic tutors. The site is characterized by high standards and management that fit the Na VEE teaching purposes. The stable belongs both to the Na VEE and the government office of the Campania Region (Area 2), for this reason it must promote the best husbandry and welfare of the animal and must ensure biosecurity and biocontainment. Moreover, these aspects are monitored by a dedicated service of the ASL, as envisaged by National legislation. The necessary equipment for animal handling and care is provided by the farm. Lastly, at present the Na VEE has no facilities that can house healthy animals (e.g., livestock animals, dogs, cats, and horses), therefore practical training is usually performed directly in farms/stables/doghouses chosen, from time to time, by the academic staff who organize the activity. All these facilities provide the necessary equipment for animal handling and care, adopt biosecurity and biocontainment measures required by the national legislation, and are supervised by the Veterinary National Health System.

Facilities for **research animals** are renovated and compliant with the relevant Italian legislation 26/2014 (implementation of Directive EU/2010/63), to guarantee the best housing conditions and the use of animal models whilst promoting good scientific practice. In the main building there is a fish facility that features recirculation aquaculture systems, 12 200-litre rectangular tanks, 9 250litre circular tanks, 3 750-litre square tanks and 9 60-litre sloped tanks. This facility is authorized by the Competent Authority for using animals for scientific purposes. In addition, academic staff and students can carry out research activities at different UniNa premises:

- the mouse facility located at [CEINGE](#) Biotecnologie Avanzate (Via G. Salvatore 486, Naples);
- the fish facility, housing small freshwater fish (via Mezzocannone 8, Naples) equipped with state-of-the-art, remotely controlled recirculating systems (four working units in total), and a laboratory dedicated to larviculture and experimental activities.

At the HVTH **companion animals** are **hospitalised** in different areas:

- Two large rooms dedicated to dogs for intensive and non-intensive patients, respectively. These rooms are equipped with dedicated cages, oxygen sockets, anaesthetic machines, washing point and all clinical care-related facilities.
- A room dedicated to cats for intensive and non-intensive patients, equipped with dedicated cages, oxygen sockets, washing point and clinical care-related facilities.
- The Isolation Unit, accessible through a filter zone, equipped with dedicated cages for animals with confirmed/suspected diagnoses of infectious diseases, a washing point and all clinical care-related facilities.
- An oncology unit dedicated to oncological patients.

The Large Animal Service at the HVTH, located on the ground floor of wing A of the main building, had allowed the **hospitalization of horses** until November 2022, when it was discontinued, and the spaces adapted to Skill Lab and storage rooms. To better fit the requirements for teaching purposes since September 2022 an affiliated private *Punto Verde* Equine Hospital (EH) has been inserted in the PPT of all students (Area 3). This is located ~ 28 km far from the main building and consists of a main building with reception, a locker room for students, a consultation room (39 m<sup>2</sup>), a preparation room (56 m<sup>2</sup>), a fully equipped surgery room (46 m<sup>2</sup>), a padded recovery room, a roofed food storage area and a shelter (150 m<sup>2</sup>) with 9 boxes (8 standard boxes of 9 m<sup>2</sup> and 1 box for foaling mares of 18 m<sup>2</sup>). The consultation room has: *i*) an equine stock for endoscopy or standing surgery and haematology and biochemistry analyzers, *ii*) a stock in the preparation room especially for reproductive examinations. Laparoscopic, endoscopic, and arthroscopic instruments of the EH are installed when needed. There are also three paddocks (~100 m<sup>2</sup>/each) for adult horses and for mares with foals, and a round pen. Close to this, there is a student accommodation building with two dormitory rooms (approximately 18 m<sup>2</sup>/room) with up to 4 beds each, two restrooms and a wide outdoor loafing area of 136 m<sup>2</sup>. In a separate area, with a dedicated entrance, there is an isolation unit to handle patients in quarantine or with infectious diseases, and this complies with the relevant national biosafety regulations and the recommendations of the Na VEE. All husbandry procedures and welfare policies are conducted according to the National registration and are monitored by the internal self-control systems and by dedicated services of the Veterinary National Health System. The high standards offered by the EH fit the Na VEE teaching purposes.

### **Facilities and equipment for clinical activities**

The Veterinary Teaching Hospital (VTH) is composed of **HVTH** for owned companion animals and exotic pets and **FVTH** for stray animals (companion animals and wildlife).

The clinical pathway of the **HVTH** takes place entirely on the ground floor of the main building. In the yard there is the entrance of the HVTH with a waiting room (46 m<sup>2</sup>), a first consultation

room (27 m<sup>2</sup>) where patients undergo initial clinical assessment which is digitally stored and made available from any workstation within the HVTH, and the Isolation unit for dogs and cats.

The Isolation unit for companion animals is 38 m<sup>2</sup> wide and consists of a filter zone and the proper isolation area equipped with dedicated cages to house animals (4 cages), washing points and all facilities allowing therapeutic procedures.

The yard gives access to the quadrangular cloister reserved to the indoor movement of patients and drivers, staff, and students between the following units:

- the oncology and chemotherapy unit (22 m<sup>2</sup>), consists of a consultation room area with a wash point and a separate area equipped with dedicated cages (4 individual cages) for chemotherapy;
- the Internal Medicine consultation room (20 m<sup>2</sup>), the room for both cardiology service and internal medicine ultrasound (24 m<sup>2</sup>) and a consultation room dedicated to exotic pets (22 m<sup>2</sup>);
- the Imaging service unit (68 m<sup>2</sup>), including radiographic equipment (X-rays, 16-slices multidetector rows CT, and ultrasonography);
- on the opposite side, there is the surgical unit: the entrance gives access to the mezzanine floor where there is a pharmacy of (10 m<sup>2</sup>), 2 toilets, a storage room (15 m<sup>2</sup>), a 35 m<sup>2</sup> room equipped with two autoclaves and all the material necessary for the preparation and sterilisation of surgical instruments as well as a 16 m<sup>2</sup> bedroom for temporary practitioners in on-call service. On the ground floor, there is a 90 m<sup>2</sup> surgical unit with a single entrance which leads to a filter zone and then to: *i*) a patient preparation room equipped with anaesthetic machine and all material necessary for preparing surgical patients, and *ii*) two surgical rooms;
- Surgical rooms: a larger room, with a dedicated surgeon's preparation area, is equipped with an endoscope tower, surgical microscope, anaesthesia machine and all the equipment needed to perform general, maxillofacial, abdominal, obstetric/gynaecological, oncological and minimally invasive surgery; a second surgical room, with a separate surgeon's preparation area, is fully equipped to perform the main orthopaedic procedures, arthroscopy, traumatology and neurosurgery. The rooms are separated by a service area equipped with two autoclaves.

Next to the surgery unit there is the specialist consultation room (18 m<sup>2</sup>) and the ICU (58 m<sup>2</sup>). The ICU consists of a 24/7 emergency consultation room (12 m<sup>2</sup>), a radiology room (3 m<sup>2</sup>), an awakenings and hospitalization room, and an intensive care room for dogs (16 individual cages). The latter two are equipped with oxygen sockets and one also has a washing point. On the mezzanine floor there is the toilet service for students and staff, and two laboratories for emergency, parasitology, and andrology. Moreover, there is the cat hospitalization and consultation unit (39 m<sup>2</sup>) made of two large rooms: the first, fitted with toilet service and washing point, for consultation and clinical procedures (19 m<sup>2</sup>) and the second (18 m<sup>2</sup>) equipped for housing intensive and not-intensive feline patients (4 cages).

The **FVTH** is a 1,100 m<sup>2</sup> hospital all on ground floor and includes: 1 Reception and waiting room; 1 consultation room; the emergency consultation room; 2 surgical theatres (between them there is the surgery preparation room with 2 autoclaves, and the sink for the surgeon and the washing room); 1 intensive care room equipped with two cage modules (~12 animals); 1 post-operative hospitalization room with 5 boxes; 1 diagnostic imaging room with indirect X-ray, ultrasound equipment and CT; 1 laboratory equipped with centrifuge, automated haematology analyzer, automated chemistry analyzer, an optical microscope and an extractor hood; 1 internal kennel with 14 boxes; 1 internal cattery with 16 cages; 1 drugs warehouse; 5 offices for staff and 1 room dedicated to the emergency free phone number service; 3 bathrooms and three changing rooms for both staff and students; 1 external kennel with 16 cages; 1 isolation room (4 cages).



All welfare policies are conducted according to National legislation and are controlled by the Veterinary National Health System to which the facility directly belongs. The high standards offered by the FVTH are adapted to Na VEE teaching purposes (Area 5).

With regards to CRAS, it includes: an Emergency room, Hospitalisation and Isolation rooms, 5 aviaries, 5 flight tunnels, and 20 boxes for wildlife rehabilitation purposes.

#### **Facilities and equipment for diagnostic services including necropsy**

HVTH services are all open Monday - Friday (9:00 am - 18:00 pm) except the laboratory of the Emergency and Critical Care Service which is available 24/7.

The **Haematology and Clinical Biochemistry Laboratory** is equipped with a centrifuge, 2 automated hematology analyzers, 2 automated chemistry analyzers, 1 semi-automatic analyzer for clinical chemistry, 1 blood gas analyzer, 1 automatic electrophoresis analyzer, 1 coagulation analyzer and an optical microscope, to perform the following analyses: complete blood count, cytological examination of peripheral blood smear and medullary blood smear, complete blood chemistry profile, coagulation profile, thyroid hormones, electrolytes, serum protein electrophoresis, urinalysis. Specialised analyses are provided by an external service.

The **Cardiology Service and Internal Medicine Ultrasound** is equipped with an Ultrasound Machine, a Holter device, an electrocardiograph and a blood pressure measuring device, to provide standard electrocardiography, Holter electrocardiography, echocardiography, blood pressure measurement and ultrasound exams for VTH patients and for external referred cases.

The **Interdepartmental Radiology Centre** is fitted with 16-sliced multidetector rows CT (MDCT), Direct Digital Radiographic System (DR), Indirect Digital Radiographic System (CR), Centralized Image Storage and Management System (PACS), Ultrasound Machine equipped with multifrequency electronic probes (microconvex, convex and linear) and software for CEUS examination, workstation for processing, management, visualization and storage of CT exams.

The **Gynaecology, Obstetrics and Andrology Services** is equipped with a Sperm Class Analyzer (SCA) system for objective analysis of semen parameters (motility, morphology, concentration) of all species and ultrasound device.

The **Bacteriological Diagnostics Service** is equipped to perform a proper bacteriological diagnosis. The service is equipped with a Quality System in compliance with European Standards (UNI EN ISO 9001:2015). The laboratory processes samples transferred both from the VTH and from external facilities.

The **Service of Diagnostic Parasitology** is equipped to perform a proper parasitological diagnosis. The service is equipped with a Quality System in compliance with European Standards (UNI EN ISO 9001:2015). The laboratory processes samples transferred both from the VTH and from external facilities.

The **Diagnostic Service of Pathology and Animal Health** takes place in two Laboratories and in the Necropsy Room. The laboratory is furnished with automatic stamping machine for cassettes and slides, inclusion unit, automatic staining system, microtomes, cryostat, 2 multihead microscopes with image acquisition system. The service is equipped with a Quality System in compliance with European Standards (UNI EN ISO 9001:2015). The Necropsy service includes necropsy on pets and food producing animals, field necropsy for food producing animals, preparation of necropsy reports, legal assistance and preparation of forensic reports, assistance in both civil and criminal court cases concerning animal offences, legal consultations.

The **Laboratory of Veterinary Genetics** is equipped to perform cytogenetic and molecular genetic analyses (including chromosomal aberrations, karyotype analysis, RFLP-PCR, AS-PCR, molecular sexing, PSE test) for the diagnosis of genetic disorders. The laboratory processes samples transferred both from the VTH and from external facilities.

To ensure adequate **students training in FSQ and VPH**, the Na VEE has agreements with different Local Health Authorities in charge of the official control in the different provinces of the Campania Region. Students visit different plants within the area of the Campania Region to which they have been assigned including:

- **Sorrentino (slaughterhouse)**: a small and medium-sized slaughterhouse located in Pagani (province of Salerno). It slaughters bovine animals (~ 4685/year), buffaloes (~ 2031/year), pigs (~ 1777/year), sheep and goats (~ 1520/year), and a few horses (~ 7/year).
- **IMAC s.r.l. (slaughterhouse)**: a leading company in central-southern Italy operating in the fresh chicken and turkey meat sector, as whole and or in portions. Located in the ASI industrial area of Caivano (province of Naples), this facility slaughters 500,000 animals/week with a total of more than 20,000,000 animals/year.
- **Visioni s.r.l.**: located inside a 2500 square meter industrial building located in Caivano, Zona Asi Loc. Pascarola (province of Naples). Main activities are storage, cutting, processing, and packaging of bovine and swine meat.
- **Fattorie Garofalo (Cheese factory)**: It is an agri-food company specialized in the production and marketing of buffalo mozzarella from Campania with protected designation of origin (PDO). The holding aims to strengthen its leadership as the largest buffalo farm in the world.
- **Fish market**: located in Salerno and covering an area of approx. 28,000 m<sup>2</sup>, of which 2,500 are roofed. The area is equipped with services for carrying out wholesale commercial activities of fishery products (aquaculture products, fresh, frozen, processed, dried, and MBV fish products). There are n. 12 boxes occupied by the respective commission agents. Each box is equipped with a dock for loading and unloading, a storage area with cold rooms, and an area for marketing. The products marketed can be categorised as follows: (i) ~ 30% locally produced, (ii) ~ 40% of national origin, and (iii) ~ 35% of EU and nonEU origin. In a separate area from the marketing area, there are cold rooms for the conservation of products unfit for human consumption.
- **Border control post (BCP)**: located in Naples, it consists of offices for the competent authorities, changing rooms, rooms for inspection (equipped with tables, washbasins, closets), cold rooms (equipped with refrigerators and freezers), a storage area, and berths for containers. Every year, checks are performed on ~ 9,000 EU products and ~2,500 nonEU products.

#### 4.4. Core clinical teaching facilities

The Emergency, Intensive Care and Hospitalization services of the VTH are in operation 24/7. The **HVTH** delivers specialised clinical service from Monday to Friday (9:00 am – 6:00 pm). The clinical counselling can be scheduled directly by the staff or via telephone reservation by customers. The schedule is done through a dedicated App (TeamUp). However, when compatible with the planned activities, unscheduled visits are accepted, while emergencies (yellow and red codes) are always accepted and evaluated in the Intensive Care and Hospitalization unit. Standard procedures are performed at the request of the intramural facilities or upon request by extramural facilities. Booking is mandatory for complex services (e.g., general anesthesia contrastographic, interventional radiology), except for emergencies. A specialised visit takes place only after the first visit or upon external request for referred clinical cases. The clinical path at the HVTH can be illustrated as follows: at the Acceptance Service (First Consultation Room) new patients undergo an initial clinical evaluation and their medical record is filled out and stored on the internal management [MyClinical](#) software. If deemed necessary, patients may be transferred to different services where a member of the academic staff and a member of the junior staff (at least one for service) are responsible for general and specialised visits based on their area of expertise. Each

unit may rely on the diagnostic support provided by different laboratories and services (see below). A list of specialised consultations can be found [here](#). The Emergency and ICU are always open. From Monday to Friday, it is run by the ICU responsible, a member of the academic and junior staff. A member of the academic staff and a practitioner are in charge from 8:30 am to 8:30 pm, while two practitioners on duty are in charge from 8:30 pm to 8:30 am of the following day. Two practitioners are always on duty during weekends and bank holidays. Scheduled shifts for anaesthesiologists and surgeons are planned for immediate intervention in the afternoon, night and holidays. Since 2022, every morning there is an 8:45 am briefing with academic staff members and practitioners on the clinical cases hospitalized. Every Tuesday morning (from 8:30 am to 9:30 am) an online meeting is scheduled for the whole staff, to report about operating procedures of the hospital and for discussing management issues. Once a month, the Director of the HVTH chairs an official meeting where relevant communications are provided to the staff and decisions are approved.

The clinical activities of the HVTH on companion animals are integrated with those of the **FVTH** on stray dogs and cats and wildlife. Here, a team of veterinarians of the ASL and an academic staff unit work together. HVTH staff provides specialised consultancy for FVTH patients. The care of hospitalised animals and the management of emergencies are provided thanks to shifts involving all the veterinary and non-veterinary (operators) staff. From Monday to Friday (9:00 am -1:00 pm and 3:00 pm - 7:00 pm) the hospital is open to the public for canine registry service, and management of feline colonies and stray dogs (neutering and census). The daily activities of the hospital usually involve the presence of two veterinarians at reception and in the consultation room area, two veterinarians in the surgery theatre, one in the hospitalization area while two or three are allocated to the internal service office. Moreover, every day there are about three members of the support academic staff and four operators who also take care of the transport of animals caught around Naples. In addition to the management of stray animals, basic and specialist medical services are provided. Whenever necessary, dogs and cats can be transported with suitable vehicles and hospitalized at the HVTH. All patients examined in the FVTH cases are registered on the Regional Health Service registry.

The **EH Clinica Equina Punto Verde** is currently the only 24/7 emergency hospital for horses in our Region, offering also specialized consultations. The EH delivers scheduled and unscheduled surgery, such as colic surgery, orchietomy, arthroscopy, orthopaedics, laparotomy, caesarean section. In addition, clinical activities on ruminants and equines are guaranteed by the ambulatory clinics described in detail below (Area 4).

All clinic activities, including **Ambulatory Clinics**, are organized to maximize the **hands-on training** (Area 5) of the students thanks to:

- the constant exposure to clinical-diagnostic activities on animals, guaranteed by a scheduled mandatory PPT;
- the possibility of absences in case of mandatory concomitant students' commitments;
- the strict application of a certain ratio of academic staff to students (1:6 max) allowing the right level of engagement for each student;
- the requirement of moderate to advanced direct responsibility for the students during the clinical-diagnostic-therapeutic activities, the management of intensive and extensive breeding systems, as well as in data upload and writing of clinical reports;
- the constant presence of supporting academic staff and of the veterinary practitioners;
- the rotation of students entrusted to the different SSD, exposing students to heterogeneous clinical cases with highly educational approaches to solutions;

- the possibility for each member of the academic staff to require support from specialists and/or members of other disciplines for case resolution, promoting student exposure to coworking and team-working activities as well as the development of skills;
- the mandatory duty stimulates the students to actively participate in PPT (Area 5);
- for Ambulatory Clinics, a flexible and effective clinical service based on two types of student groups, constantly available (for ordinary on-call shifts and for emergencies), to ensure a correct distribution of students reducing overload due to activities while promoting a steady and progressive learning schedule.

All the clinical activities are performed by highly qualified academic staff belonging to different SSD which collaborate during the clinical investigation. All involved staff receive the minimum training to teach (Area 9), about **good clinical practices** in animal health and welfare, as well as in the areas of biosecurity and bio-containment procedures adopted by the Na VEE, thus ensuring that the clinical-didactic activity complies with National Practice Standards.

#### 4.5. Student access to the diagnostic and therapeutic facilities

During the PPT students access all facilities, and admission to these is dependent on requirements such as passing preparatory exams, demonstrating knowledge of biosecurity procedures and achieving the expected activities on the Logbook (Area 3). Each student is informed by email or by posts on the website about the planned training activities. In the case of extramural CCT, once students have achieved the requirements autonomously, they get in contact with the academic staff and start the scheduling procedure. Possible deviations and shift recovery from the scheduled activities are allowed for reasons of *force majeure*.

#### 4.6. Isolation facilities

Species	Premises (codes)	Places	Area (m <sup>2</sup> )
Small animals	HVTH	5	39
Small animals	FVTH	5	10
Equine	EH	1	34
Ruminants and pigs	On field	-	-
Wildlife	CRAS	6	12

#### 4.7. Ambulatory clinics and Herd Health Management

Students practise field veterinary medicine and Herd Health Management during the practical activities of the curricular subjects (Animals nutrition; Breeding and welfare of ruminants and monogastrics; Bacterial diseases, preventive medicine and avian pathology; Parasitology and parasitic diseases; Zoocultures; Viral diseases, Preventive medicine and veterinary public health) and compulsory PPT (including extramural CCT). Practical activities of these subjects include technical visits to the farms to learn approaches for the management of infectious, parasitic and metabolic pathologies and technopathies of food producing animals, horses, rabbits and poultry. During the visits, students, accompanied by academic staff, must wear appropriate clothing for each type of farm, averting the risk of spreading parasitic and infectious diseases. At the same time, they learn how the farm is organised, with regards to legal constraints and specific production purposes. Whenever possible, students take samples and visit the animals. During extramural CCT, students are divided in groups of up to five and, accompanied by practitioners, visit pig, cattle, buffalo, sheep, goat, horse and bee farms to be trained in herd health management. Furthermore, students work alongside Official Veterinarians from the ASL to visit the different types of breeding, checking that all structural and managerial legal requirements are met. All abovementioned activities are performed in extra-mural facilities where students are driven via

private coaches or Ambulatory Clinics equipped for field interventions. In a limited number of circumstances, during extramural CCT, students may need to make such trips with their own vehicles. The Ambulatory clinics are used by 4<sup>th</sup> year students who participate throughout the entire academic year (from 1 November to 31 October of the following year). All the students take part in the clinical shifts/activities defined as (i) ordinary and (ii) emergency on referred clinical cases in the field. The service is characterized by extreme flexibility to ensure animal welfare, whilst meeting students and academic staff's needs. Six different discipline areas of the Veterinary Clinical Sciences participate, namely Internal Medicine, Reproduction, Surgery, Parasitology, Infectious Diseases, and Animal Production. On a quarterly basis, duty shifts and groups of students are allocated to each area. The complete operating procedures are available [here](#). Clients (farmers and/or animal owners) or practitioners can call the Na VEE using the contact number on the website or directly contact the [academic staff](#) to refer a case. After an initial triage by phone, the academic staff can decide to visit the animal (i) as an ordinary activity, informing the group of students assigned at least 24 h in advance; or (ii) for an emergency activity. In this case, the weekly group of students on-call for emergencies should be informed at least 1 h in advance. Starting from January 2023, the service has also been supported by a professional driver who will transport students and academic staff to farms and stables upon request. The main clinical activities or specialized consultations are described [here](#).

The Na VEE owns two 9-seat Renault Traffic vans which can be used for scheduled shifts and/or emergency calls. The Service is provided with the main consumables (e.g., syringes, tubes, gloves) and biosecurity materials (e.g., disposable gloves, gowns, shoe covers). Furthermore, the vans are equipped with portable ultrasound and dedicated probes (linear and convex), three portable ultrasounds equipped with transrectal probe, a complete portable digital radiologic device with direct digital acquisition system and related safety devices (e.g., leaded gowns and gloves), a portable blood gas analyser. In case of specific necessities, the equipment to meet the referred clinical cases is provided by each user.

#### **4.8. The transport of students, live animals, cadavers, materials of animal origin**

The Na VEE owns only the Ambulatory Clinics. When needed, 25 to 50-seat coaches are hired through a private company for transportation of larger groups of students. The Na VEE does not possess vehicles for: i) transportation of live animals, as these fall within the responsibility of the animal owners, ii) transportation of cadavers/organs, as these are entrusted to a dedicated company (PROTEG) based on specific contractual obligations. Transportation of stray animals from the FVTH to the HVTH and *vice versa* is provided by specific authorized vehicles under the responsibility of the ASL.

#### **4.9. Operational policies and procedures**

Na VEE supports the routine maintenance costs for the vans used as Ambulatory Clinics and all the equipment used in the teaching facilities, whereas the maintenance of FVTH facilities is guaranteed by the ASL. The daily operating activities and services of the Na VEE present different types of risks, which must be known to all users of the Na VEE, to ensure adequate preventive action and reduce the risk of accidents. The educational, clinical, diagnostic and research activities carried out in the Na VEE facilities, as well as the extramural activities, expose students, academic staff, and stakeholders to biological, chemical, physical and stress hazards. The knowledge of the possible sources of risk as well as the training of students and academic staff is aimed at preventing and reducing risks. Indeed, the Na VEE [Safety and Security Committee \(SSC\)](#) is responsible for the preparation of the safety and security manual, and documents. In this context, the Safety and Security manual (Annex I) aims to be a guide and a reference text on the risks to eliminate, minimize and prevent; as well as on the procedures to apply, to protect both human and animal health. As far as the Safety and Security manual preparation is concerned, reference regulation

considered is the UniNa Regulation on directives for safety and security in the workplace, pursuant to Legislative Decree No. 81/2008 and subsequent amendments and Ministerial Decree 5/8/1998, n.363, issued with DR n. 800 of 03/05/2013. The manual is reviewed every two years or when needed, also following the legislative updates. The Safety and Security manual is accessible [here](#) for free, and available for students, academic staff, stakeholders and the general public. However, a hard copy of the manual can be consulted in all research laboratories and consultation rooms of the Na VEE, to inform visitors too. A “Compendium of Safety and Prevention in the Clinical Management of food producing animals and equines” for students and academic staff involved in the Ambulatory Clinics service is available on both vans. In addition, laboratory-specific safety procedures are illustrated to students before starting the activities. This explanation is one of the duties that a member of the academic staff (RADRL) needs to perform as person in charge of the laboratory according to Ministerial Decree 363/98.

The SSC also organizes and coordinates compulsory courses on safety and security in workplaces for students and academic staff. The course includes a first 4-hour online basic course ending with an assessment test, and a 12-hour course dedicated to specific training on health and safety standards in the workplace, followed by a final assessment test. The course is provided either by the Service set up by the UniNa Prevention and Protection Department or by personnel of the National Institute for Insurance against Accidents at Work (INAIL) as part of an agreement with Na VEE. At the end of the training pathway, students and academic staff are awarded a certificate lasting 5 years. Besides the compulsory training on safety and security, an additional course is reserved for students of the VMTC. It consists of an hour of lecture enriched by educational videos relating to the first meeting and handling of companion and food producing animals and, at the end of the course, a final assessment test is delivered. On an annual basis and in collaboration with the UniNa Department of Occupational Health, the SSC also promotes a health programme for students and academic staff, consisting of a medical check, routine laboratory tests, an ergonomic postural test, an assessment of respiratory capacity via spirometry (examination suspended during the Covid emergency) and an assessment of cardiac function via ECG (examination carried out on request). Finally, the SSC ensures: *i*) the supply and distribution of the necessary PPE and Collective Protective Devices, *ii*) proper special waste management. With regards to special waste, all biological samples are collected in the appropriate container for special medical waste using the correct European Waste Code, according to the type and origin. In the case of surgical devices and needles, rigid-wall approved containers and appropriately marked and identified needle breaking devices are used.

Good practices are taken in high consideration by the Na VEE [Quality Assurance Committee](#) (QA Committee) as also demonstrated by the application of the Quality System in compliance with European Standards UNI EN ISO 9001:2015, which has been recently renewed for the year 2023 by external agency RINA [Audit Report 22 NA 1051 MQ](#) in order to guarantee adequate teaching and management procedures of the VMTC. Indeed, the QA Committee promotes the implementation of the quality of VMTC and assists the procedures by ensuring *i*) an efficient self assessment and criticality monitoring system, *ii*) constant attention to the opinions and needs of students, academic, technical and administrative staff who, at various levels and with different responsibilities, contribute to the achievement and maintenance of quality objectives, *iii*) the shared development of corrective actions aimed at effectively solving critical issues.

#### *Comments on Area 4*

The collapse of the old Department building (causing the unavailability of ~2000 m<sup>2</sup> of space) made the situation/organization very difficult, reducing the number of suitable facilities for students and personnel. Consequently, student activities are organized on different premises located in several areas of the city and Region. The organization of practical activities is well defined and robust (e.g., very intense clinical rotation, Ambulatory Clinics service, rental of buses

and vans for visits on fields) to compensate for deficiencies related to the old infrastructure. Time allocated to the handling of food producing animals should be increased. Despite these discomforts, the students benefit from exposure to a heterogeneous reality, which corresponds to their future working environment.

*Suggestions for improvement in Area 4*

The new Na VEE building at Frullone campus allows the possibility to perform most of the practical activities intramurally, optimizing student time. Moreover, the new building will include a new internal hospital for large animals promoting an overall improvement of the educational training (e.g., increasing time for large animals handling and quality of clinical activities).

## Area 5. Animal resources and teaching material of animal origin

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### 5.1. Use of animals and material of animal origin for hands-on training

**Global strategy of Na VEE** - The acquisition of practical skills represents one of the key elements of the training of a graduate in Veterinary Medicine. In this context, it is essential that students receive a balanced education between theoretical lectures and practice, both pre-clinical and clinical. The aim of the Na VEE is therefore to provide a training offer that allows each student to learn how to approach, handle and manage a series of healthy and sick animals, as well as cadavers and materials of animal origin to obtain the Day One Competences.

According to the curriculum (Area 3) of the VMTC, the training strategy of the [Na VEE](#) follows the standards and guidelines for quality assurance of the European Higher Education Area (ESG 2015) set out by the European Association for Quality Assurance in Higher Education (ENQA) Board, the EU Directives (2005/36 and 2013/55), the principles established by EAEVE and by the UNI EN ISO 9001:2015 standard.

The Na VEE's strategy is based on a multimodal approach to ensure the effectiveness of the teaching offer: the parameters provided by the ESEVT are periodically assessed, alongside the training needs of individual subjects, while student requests, opinions of stakeholders and offers of the local job market are also considered. The aim of Na VEE is to provide students with practical knowledge to acquire the Day One Competences. This is achieved through a frontal and practical learning pathway, carried out in the various sectors of the Veterinary Teaching Hospital (VTH), including the Historical VTH (HVTH) for privately owned pets and the Frullone VTH (FVTH) for stray dogs and cats, during the activities of the Ambulatory Clinics, in the necropsy and dissection room and in numerous laboratories of the Na VEE. Furthermore, the student acquires animal production skills through periodic and scheduled visits to affiliated farms. Moreover, agreements are stipulated with external facilities both in the public and private sectors, with external practitioners, and the internal resources are optimized to guarantee pre-clinical and clinical training in animals and materials of animal origin.

The **pre-clinical training** is provided through herd visits, and practical activities during integrated courses on models, healthy animals and material of animal origin (e.g., Anatomy; Veterinary physiology; Pharmacology and toxicology, etc.; Area 3). Moreover, the activities of PPT carried out in the VTH allow 1<sup>st</sup> and 2<sup>nd</sup> year students to learn the basic handling and management of companion animals, exotic pets and wild species. Pre-clinical activities on horses are performed at Regional Centre for Horse Increase (CRII) with the Ambulatory Clinics service (Area 4). From July 2022, these activities are also guaranteed thanks to the collaboration with the Equine Centre of the Nunziatella Military School, the Italian State Police's mounted unit in Capodimonte Garden (Area 4). First and 2<sup>nd</sup> year students could meet and interact with horses under the supervision of stable staff who is on hand to teach them how to handle and properly relate to animals. In addition, 3<sup>rd</sup> year students on the subjects of Semeiology for internal medicine and Surgical semeiology learn handling and restraining techniques for equine and food producing animals. During practical activities of integrated courses of food producing animals (Animal nutrition, Special animal husbandry, morphofunctional evaluation and animal welfare), training is performed at Improstata and in different farms (Area 1-4) to learn nutrition management and herd health management. These activities are carried out on ruminants, pigs and horses.

**Clinical training** is mainly provided in the VTH for dogs, cats and exotic pets, in the Equine Hospital (EH *Punto Verde*), by the Ambulatory Clinics for food producing animals and horses, in the CRAS for wildlife, and through practice on different species during the integrated courses of Clinical Sciences and Public Health.

A mandatory phase of the clinical training is the Professional Practical Training (PPT), composed of the Clinical Rotating and the extramural Core Clinical Training ([extramural CCT](#)), divided into



Intra- (20%) and Extramural (80%) activities. The PPT concerns all professional disciplines identified by ESEVT and by National regulations (Area 3).

To consolidate skills before the manipulation of live animals the Na VEE opened a Skill Lab in 2023 (Area 6). When the Large Animal Service was discontinued at the end of 2022, the equine surgery room of the main building was re-assigned to a Skill Lab until the Na VEE is moved to the new Frullone campus. In the meantime, some subjects already used dummies and simulators during their activities: practical training for intubation and cardiopulmonary reanimation in canine phantom were already performed during the practical activities of Anaesthesiology and Intensive and Emergency care in pets and suture training pads were used in the subjects of Surgical technique. The Skill Lab has been initially equipped with different phantoms or animal organs. Access is free, but an online calendar (TeamUp) is used to plan the activities. The Na VEE aims to invest part of the annual didactic budget to progressively upgrade the models (Area 2). Training on phantoms can be considered preparatory for hands-on activities on live animals, reducing the potential pain or distress and preserving the welfare of animals. Moreover, the use of animal simulators allows students to perform repetitive actions on the same animal.

**Relevant core clinical training before graduation:** One of the strategic objectives of the Na VEE is to guarantee that an adequate number of clinical cases are seen by students and that practical training is balanced with regards to both companion and food producing animals and the type of activity. The first animal practice is provided to students by the practical training of specific subjects ensuring a teacher-to-student ratio of 1:5 (Clinical sciences, Animal production, Food Safety and Quality, Veterinary Public Health, and One Health Concept) or 1:10 (Basic sciences) to enable each student to carry out adequate activities. Most of the clinical activities are also provided during the extramural Clinical Rotating carried out over the years in the VTH (Area 3), through 5<sup>th</sup> year activities during the extramural CCT programme, periodic and scheduled visits to affiliated food producing animal farms and through the attendance of the ancillary facilities of the Na VEE. The balance between animal species is largely affected by their distribution in the geographic area, as well as by economic factors and specific demands of the job market. For example, in Southern Italy, a considerable share of the economy is represented by Mediterranean buffalo cows (*Bubalus bubalis*) which are mainly bred to produce *Mozzarella di Bufala Campana DOP*. Another element that can dynamically influence the number and species of animals evaluated by students is the presence of infectious diseases. Indeed, access to farms can be limited when there are restrictions in place to contain the spread of a disease. For example, in the last years, the presence in Italy of the Swine Fever and Avian Influenza affected the swine and poultry caseload, even if an agreement with swine premise was stipulated to improve extramural CCT activities. The Na VEE made efforts to increase the practical activities on other species (ruminants) whenever limitations were in place; students had also access to multimedia teaching materials (e.g., videos, Microsoft Forms®, etc.).

In **companion animals** most of the intra-mural activities are performed at the VTH, in particular the VTH is split into two sites: the FVTH for stray animals and the [HVTH for owned animals](#) (Area 3). Clinical activities at the HVTH are divided into different Services: Medicine, Surgery, Reproduction, Emergency and Critical Care (ECCS), Intensive Care Unit (ICU). The students, both during Clinical Rotating along the whole VMTC, but especially in the 5<sup>th</sup> year intramural CCT, alternate across the various services to ensure a right balance between clinical disciplines. A mandatory step, in this context, is taking part in the ECCS, performing 12-hour shifts overnight or day in ECCS and ICU, which is essential in the provision of professional core teaching experience. To implement the activities of the ECCS, contracts with practitioners who work in the hospital are signed (Area 2). All patients examined by the students in the HVTH are recorded on the internal electronic platform (MyClinical), while at the FVTH cases are registered on the Regional Health Service and collected in a hard copy register. Since the MyClinical platform did not record data about the balance between first opinion and referral cases (table 5.1.5) and about

acute vs chronic cases, a professors' survey for the last year was conducted to estimate those data: *i*) HVTH - acute (30%) vs. chronic cases (70%), *ii*) Ambulatory Clinics - acute (70%) vs. chronic cases (30%). A modification of MyClinical platform is planned to allow the recording of these data. Some of the activities on **ruminants** are performed attending the Ambulatory Clinics in local farms under the supervision of a tutor. During 4<sup>th</sup> year of VMTC, students are divided into groups of maximum 6 spending at least 50h/student. They attend clinical shift/activities in the field defined as ordinary (clinical activity weekly planned on referred cases) and emergency. Most Italian farms of buffalo cows are in Campania Region, consequently, practical activities involving this species represent a wide range of students' experiences. The current VTH's facilities don't allow the hospitalization of food producing animals, but Ambulatory Clinics adequately compensate for this. Recovery of **horses** was possible until November 2022 with a limited number of cases (8/year). For this reason, most of the clinical experience of students on equines is provided by PPT and Ambulatory Clinics. An agreement between Na VEE and CRII has been signed to allow ordinary clinical activities of the Ambulatory Clinics on horses. Moreover, to improve the equine caseload an agreement with an EH, was signed. From AY 2021-2022, 5<sup>th</sup> year students spend 36h of their extramural CCT at the EH. Moreover, the academic team for equines has been increased with four more staff members. While the number of cases in ruminants was high over time, the caseload of equine clinical cases has gradually improved over the years. The extra-mural equine caseload has doubled every year in the academic period analysed. Clinical training on **wild animals** is guaranteed by the CRAS, allowing activities on hospitalized animals, and by the Zoo of Naples, when the clinical cases are referred to the academic staff. To improve the clinical practice on **exotic pets**, since February 2022, an Exotic Pet Clinical and Surgery Service has been established at the HVTH. Moreover, some clinical cases can be followed in private veterinary clinics or veterinary hospitals during extramural CCT. The current facilities of the VTH cannot afford the recovery of **swine**. However, students carry out activities during the extramural CCT programme supported by practitioners specialised in swine medicine, thanks also to new agreement stipulated in 2022 with an external facility. In the last three years, due to the spread of the Swine Fever, student access to swine farms has been difficult. Consequently, the caseload of clinical cases decreased, although largely compensated for by activities on other food producing animal farms. **Poultry** and **rabbits** practical training is carried out during the extramural CCT at the Experimental Centre for Avian and Rabbit (CSA) but over the last few years, due to the pandemic, the cases declined. As shown (Tables from 5.1.1-8) caseload was affected by: *i*) the COVID-19 pandemic emergency, *ii*) the infectious diseases emergency, *iii*) the absence of intra-mural specific facilities for large animals (food producing animals and horses). Meanwhile, extra-mural cases could adequately compensate for activities that cannot be performed intra-murally.

**Animal welfare:** The Na VEE is committed to guaranteeing animal welfare in every area of academic activities, both research and teaching. First, activities comply with National current legislation (Legislative Decree 26/2014, implementing Directive 2010/63/EU) on the protection of animals for scientific purposes and are overseen by the UniNa [Veterinary Service Centre](#). This supports the activities of the Animal Welfare Body, whose President, a Na VEE academic staff member, is the Director of the Veterinary Service Centre. The Veterinary Service Centre governs the whole administrative process, carried out under UNI EN ISO 9001:2015, and liaises with Animal Welfare Body members and Competent Authorities (e.g., Ministry of Health, Officials of ASL, etc). The use of animals for teaching purposes is authorised by owners filling an informative consent (e.g., for VTH activities) or oral consent (e.g., for activities in the field). Moreover, a record book of animal welfare has been recently introduced. The latter must be filled out whenever procedures with educational purposes are performed on healthy animals. All academic staff supervise the application of Good Clinical Practices. However, due to the absence of Na VEE facilities for food producing animals, all the activities are performed in external sites, where the groups are composed of a small number of students. The low student-to-animal ratio and the

supervision of staff members and/or tutors ensure that animal welfare is safeguarded, and that pain and unnecessary stress are avoided.

**Anatomy practical training:** Organs and cadavers of healthy animals are used. The animal organs used for these exercises come from slaughterhouses located in the Campania Region; the cadavers come from local veterinary clinics, from the HVTH and food producing animal farms. The practice material arrives weekly through an authorised company and is promptly refrigerated (0-4°C) in the dissection room of the Na VEE. Students examine the material under the supervision of academic staff and fill out a final report. Organs and cadavers used for anatomy training were found healthy in the *ante-mortem* evaluation. Furthermore, resources available to students include a comprehensive collection of bones and skeletons of various domestic species, dry preparations of joints and muscles and a complete collection of tissue and organ sections of domestic and laboratory animals such as mice and rats. Students examine this material under the supervision of academic staff in a dedicated dissection room.

**Pathology practical training:** Animal organs and cadavers, cytological and histological samples are used. The animal organs used for these practices come from slaughterhouses located in the Campania Region. As for cadavers, they come from the HVTH, veterinary clinics, the owners themselves, public and private kennels, non-profit associations, the ASL, zoos and circuses, the police and the judiciary. The equines also come from specific facilities with which the Na VEE has concluded special agreements for diagnostic, teaching and research purposes. For example, from 2022, a new agreement with Italian Equestrian Sport Federation ensured a constant supply of equine cadavers for autopsy. Moreover, the Na VEE facilities and staff have been directly involved in the epidemiological surveillance of West Nile disease on equine cadavers within the activity of the PI. Animal cadavers that are submitted for teaching purposes are always examined with the students during practical activities. Animal cadavers submitted for diagnostic or forensic purposes are always examined with the students during scheduled practical trainings or in dedicated necropsy sessions. Students perform necropsies under the supervision of academic staff in a dedicated room (necropsy room). At the end of the necropsy, the students identify the lesions, define the cause of death, take samples for histopathological, cytological, microbiological and parasitological investigations, and compile a necropsy report, under the supervision of the academic staff, via the MyClinical platform. The practice material arrives weekly at the Veterinary Pathology Unit through an authorised company and is promptly refrigerated (0-4°C) or frozen at 18°C until used. The cytological and histological samples used for the practical trainings come from the HVTH, private veterinary clinics and from pathological organs taken during necropsy sections. The paraffin blocks and slides are stored in the Veterinary Pathology Unit of the Na VEE. All biological material, used both for Anatomy and Pathology training, is disposed of through specialised companies, in compliance with current European legislation (EC Regulation 1069/2009). In addition, some necropsies, especially on small ruminants, are performed in the necropsy room of CREMOPAR.

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

Species	AY 2021-2022		AY 2020-2021		AY 2019-2020		Mean	
	No. cadavers	No. organs	No. cadavers	No. organs	No. cadavers	No. organs		
Cattle & buffalo	-	36	-	-	3	-	-	-
Small ruminants	-	11	-	-	-	-	-	-
Pigs	-	10	-	-	-	-	-	-
Companion animals	23	-	15	-	7	-	15	-
Equine	-	-	-	-	2	-	-	-

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

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	350	293	117	253
Small ruminants	110	-	-	-
Pigs	100	-	-	-
Companion Animals	123	255	127	425
Equine	133	49	6	63
Poultry & rabbits	108	-	-	-
Exotic pets	-	-	-	-
Wild animals	-	-	-	-

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

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	-	-	-	-
Small Ruminants	-	-	-	-
Pigs	-	-	-	-
Companion Animals	4815	3037	1854	3235
Equine	14	5	4	8
Poultry & rabbits	-	-	-	-
Exotic pets	20	10	3	11
Wild animals	3024	2476	2198	2566

**Table 5.1.4.** Number of patients seen extra-murally (Ambulatory Clinics + extramural CCT)

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	5928	1348	570	2615
Small ruminants	216	21	40	92
Pigs	85	51	83	73
Companion animals	3426	1366	569	1787
Equine	1180	393	224	599
Poultry & rabbits	-	7	3	3
Exotic pets	106	39	17	54
Wild animals	665	47	23	245

**Table 5.1.5.** Percentage (%) of first opinion patients used in clinical training (both in VTH and Ambulatory Clinics)

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	10.1	10	8.7	9.6
Small ruminants	10.1	10	10	10
Pigs	-	-	-	-
Companion animals	50	54	54.9	53
Equine	30	25.2	32	29.1
Poultry & rabbits	-	-	-	-
Exotic pets	50	80	58.3	62.8

**Table 5.1.6.** Cadavers used in necropsy

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	22	2	3	9
Small ruminants	15	2	8	8
Pigs & wild boars	9	7	4	7
Companion animals	297	282	219	266
Equine	25	2	-	9
Poultry & rabbits	50	40	80	57
Exotic pets	78	18	10	35
Aquatic animals	345	-	333	226
<i>Slaughterhouse Organs</i>				
Large ruminants	32	110	32	58
Small Ruminants	-	63	-	-
Pigs	32	42	-	25

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

Species	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Cattle & buffalo	124	92	24	80
Small Ruminants	16	18	8	14
Pigs	26	15	4	15
Poultry	18	15	1	11
Rabbits	-	2	-	-
Aquatic animals	16	15	3	11
Horse	-	2	5	2
Wild Ungulates	-	1	1	1
Bees	16	15	2	11

**Table 5.1.8.** Number of visits per student for training in FSQ

Species	AY 2021-2022		AY 2020-2021		AY 2019-2020		Mean
	Sub-PT	CCT	Sub-PT	CCT	Sub-PT	CCT	
Ruminant slaughterhouses	2	5	2	5	2	5	7
Pig slaughterhouses	-	-	1	-	1	-	-
Poultry slaughterhouses	-	1	-	1	-	-	-
Related premises*	2	6**	2	6**	2	6**	8
Dairy plants	-	2	-	2	-	2	2
Fish market	1	2	1	2	1	2	3
Canteen	-	1	-	1	-	1	1
Border Inspection	-	1	-	1	-	1	1

\* e.g., cutting and processing plants, distribution sale, catering, etc. \*\* Depending on the scheduled activities of Official Veterinarians Sub- PT: subjects practical activities; CCT: extramural CCT

**Variety of animals and material of animal origin, monitoring and revision activities:** The number and variety of animals and material of animal origin for both pre-clinical and clinical training is mainly established or affected by:

- the academic staff themselves and course objective they set;
- their availability in the geographic area;
- the monitoring of compliance with ESEVT indicators.

Timetable details and procedures of each subject are scheduled at the beginning of each semester. The activities of Clinical Rotating and those of Ambulatory Clinics are planned by the VMTC Committee and have the objective of ensuring adequate exposure of students to the caseload. Extramural CCT activities are planned within the PPT Committee and approved by the VMTC Committee. At the beginning of the 1<sup>st</sup> semester of each year, the VMTC Coordinator informs the students about all the activities planned. The composition of the student groups and the scheduling of the annual practical activities are defined by MG.

Clinical Rotating indications (shifts, locations, and timetable) are published monthly on the HVTH website and can be consulted by both students and staff.

As for extramural CCT activities, on the other hand, at the beginning of each extramural CCT session, the PPT Committee organizes a preliminary meeting with all students eligible for access to discuss the calendar sent to them few days earlier. Stakeholders and tutors of external facilities, before the publication of the calendar, are informed of the planned activities and, if these are accepted, the calendar is confirmed.

The EAEVE Committee is in charge of monitoring the appropriateness with objectives of the number and variety of animals and material of animal origin for pre-clinical and clinical training, the type and number of animals seen by the students during the practical activities of the subjects, Clinical Rotating and extramural CCT.

The students' activities are tracked through different instruments:

- Excel sheet filled by the Professor for each practice of subject with type/species/number of animals and material of animal origin.
- MyClinical platform, where academic staff enter the details of students performing the visit for HVTH, Ambulatory Clinics' activities and necroscopies (the FVTH is the only one left to use a hard copy register).
- Extramural CCT practice is officially recorded by students in a personal CCT Booklet (provided by UniNa), where activities are annotated and signed daily by the tutor, certifying attendance and the activities performed. At the end of each practice, internal and external tutors provide their assessment of the activities, considering diligence, results and the professional maturity of the students. The assessment reported is relevant in defining the degree mark as envisaged by didactic regulations. After the PPT Committee has checked the CCT Booklet, the final approval is given by the VMTC Coordinator. To be admitted to the thesis defence, it is necessary to submit the CCT Booklet to the Student Secretariat.
- To quantify the number of cases seen during the extramural CCT, different methods have been used over the years: checkbook registers until September 2021; a Microsoft Excel file with a sheet for each field of practice from September 2021 to March 2022; different Microsoft Forms® questionnaires for each field of practice from March 2022.
- Since their 1<sup>st</sup> year, each student also has a printed PPT Logbook containing the list of skills and procedures that could be acquired during the entire VMTC; members of the academic staff are responsible for verifying and certifying the Day One Competences achieved. The delivery of the certified Logbook to the TO is mandatory for the admission to the final graduation exam.

Once recorded, the students' activities are checked and evaluated in different ways:

- Since attendance is mandatory on the VMTC, at the end of each semester, professors check that students have completed the activities required to access the exams.
- The activities of the Clinical Rotating must be completed: in case of absence, students can make a shift change on another day, or be reinserted in the calendar to make up for lost days; attendance is checked by a member of the Na VEE Council who acts as a bridge with the TO.
- The Ambulatory Clinics' activities are scheduled at the beginning of the AY and students can independently manage their shifts to complete the minimum number of mandatory hours (at least 50/student).
- As for the extramural CCT, the members of the PPT Committee inform the students of any recovery needs in their areas of competence and certify their activities.

Periodically, through the VMTC Committee, the body that receives the different reports of the various committees (EAEVE Committee, PPT Committee, Teachers & Students JC), the activities are adapted to better meet the students' needs. Specific problems and solutions are discussed in the VMTC Committee and then in the Na VEE Board meetings. This is the official body that approves interventions aimed at improving and increasing available resources and materials. In addition, during the monthly meetings of the Na VEE Board, communications are made to all staff and student representatives.

## 5.2. Practical training at external sites

All students on the VMTC are involved in practical training at external sites scheduled throughout the curriculum. Educational visits to food producing animal farms, starting from the 2<sup>nd</sup> and 3<sup>rd</sup> years, are organized and managed directly by tutors. Moreover, 80% of the extramural CCT is delivered in external sites at:

- private veterinary clinics or veterinary hospitals
- farms of cattle, buffalo, small ruminants, pigs, horses, rabbits, poultry, bees and fish (seafood, aquaculture, beekeeping)
- ASLs
- slaughterhouses and food processing establishments (cheese factory, fish market). Extramural CCT is planned in the 2<sup>nd</sup> semester for 5<sup>th</sup> year students. Trainees are required to support the tutor during his clinical activities which include basic and specialist clinical visits, instrumental and laboratory diagnostic tests, surgical interventions and first aid procedures on companion animals. As for food producing animals, trainees are expected to perform visits in different types of farms (cattle, buffalo, small ruminants, pigs, horses, rabbits, poultry, bees and fish), supporting the tutor during his/her activities such as farm and nutritional management, animal welfare assessment, basic and specialist clinical consultation, surgical interventions. During the extramural CCT of FSQ and VPH each student visits different farms, supporting the Official Veterinarians in the application of national/regional measures for the control of food producing animals' transmissible diseases, the prophylaxis of the main infectious diseases of ruminants, equines, swine and poultry, and the prevention and control of zoonoses according to the one-health approach. Furthermore, trainees follow the tutor during official control activities, ranging from *ante-* and *post-mortem* slaughterhouse inspection of different species to inspection and audits at food companies.

Relations with extra-mural training sites are regulated through specific agreements, pursuant to current regulations. At each of the venues, skilled managers are identified and hired as external tutors, before being invited to follow a specific course for pedagogy and [teaching methodology](#). These individuals are private and public practitioners who signed contracts or agreements with the Na VEE. During practical training activities, students are under the supervision of the tutor, who checks their presence and activity. Academic supervision is guaranteed by the members of the PPT

Committee. They are in charge of supporting students and coordinating activities by acting as intermediaries between students and tutors, to ensure that the extra-mural training is performed correctly. All students must fill in a feedback form about the hosting institution. The venues with negative feedback are subjected to scrutiny by the PPT Committee which considers the possibility of reviewing the training courses or terminating the agreement.

### 5.3. Nursing procedures and problem-oriented diagnostic approach

Although the VTH of the Na VEE is not supported by a vet-nursing service (Area 9), nursing skills are taught to students by academic staff and practitioners during activities of Clinical Rotating, practical activities of the subjects, extramural CCT or Ambulatory Clinics. 1<sup>st</sup> and 2<sup>nd</sup> year students participate in handling sessions of different species at the VTH or in affiliated facilities (Area 4). During these sessions, trainees learn the safe and confident ways to handle and restrain animals of all species (dogs, cats, horses, etc). During the shifts in ECCS and ICU, students of all courses take care of hospitalized patients (feeding, grooming, walking animals), perform clinical examinations, prepare and administer treatments (injections, tablets, fluids), always under academic staff supervision. During the practical activities of the subject Surgical technique students are trained to perform preoperative hair removal, dressing in the operation room, preoperative surgical hand wash and aseptic technique, glove wearing, scrubbing of surgical area and preparation of the tools for surgical procedures. Hospital staff also show the students how to apply correct biocontainment procedures for infection control, including disinfection protocols. A [manual of safety and security](#) is available for all students since the 1<sup>st</sup> year.

**Hands-on clinical training** is provided from the 3<sup>rd</sup> year to the 5<sup>th</sup> year of the curriculum through the practical activities of subjects and during the Clinical Rotating. Activities included in the hands-on training are conducted in Medicine, Surgery, Reproduction services and ECCS and ICU at the HVTH for companion animals (intra-murally) and extra-murally for equids and food producing animals (e.g., Ambulatory Clinics, EH, farms).

The practical activities of the subjects are organized at the beginning of the semester depending on the VTH services schedule and with a maximum **teacher-to-student ratio** of 1:5; as for extramural activities, groups generally have a tutor-to-student ratio of 1:1, with a maximum of 1:4. As regards Clinical Rotating (see below), every day two students of the 2<sup>nd</sup> year assist the hospital staff in customer reception and in the first clinical examination of the patients arriving/referred to the HVTH (teacher/academic staff-to-student ratio of 1:2). Specialistic clinical examinations or surgeries are assisted by a student of the 3<sup>rd</sup> year. On some occasions, 1 or maximum 2 thesis students and volunteer intern students (3<sup>rd</sup> to 5<sup>th</sup> year students who ask to follow a specific clinical discipline; teacher-to-student ratio of 1:3). Another 3<sup>rd</sup> year student has an afternoon shift at ECCS and ICU of the HVTH to learn the management of hospitalized patients. The students of the 4<sup>th</sup> year cover four 12-hour night shifts and 2 6-hour shifts during the weekend. During the extramural CCT, 5<sup>th</sup> year students have a day or night shift seven days a week in ECCS and ICU of HVTH. During the day or night shifts in the ECCS and ICU there are 3 students (one 3<sup>rd</sup> year or one 4<sup>th</sup> year student, and two 5<sup>th</sup> year students) with 2 members of academic staff or practitioners on duty at the HVTH (ratio of 2:3).

Supervised hands-on training is also performed on cadavers and organs during the practical activity of the integrated course of Pathological anatomy and the subject of Parasitic diseases and during extramural CCT. Usually, a group of 2 or 3 students is present for each carcass or organs with a supervisor (ratio of 1:2/3). During ordinary or emergency activities of Ambulatory Clinics with food producing animals and horses, the students are supervised by one to three different academic staff members (ratio from 1:2 to 1:6) of different subjects.



Each student has a printed PPT Logbook containing the list of skills and procedures (not only nursing) that could be acquired during the training; members of the academic staff are responsible for verifying and certifying the competences achieved. Clinical Rotating is scheduled as follows:

- 1<sup>st</sup> year: handling (feeding, grooming, walking animals) on hospitalized animals (5-4 h shifts in the HVTH from 2:30 to 6:30 p.m. and 2-6 h shifts from 8:00 to 2:00 p.m. in equine centre);
- 2<sup>nd</sup> year: customer reception, collection of history and first clinical examination assistance (6 8-h shifts from 8:30 a.m. to 5:30 p.m. at the HVTH and 2 6-h shifts from 8:00 a.m. to 2:00 p.m. at equine centre);
- 3<sup>rd</sup> year: specific clinical examinations (internal medicine, surgery, or reproduction), management of hospitalized patients, surgery or diagnostic procedures (9 6-h shifts from 8:30 a.m. to 2:30 p.m. or from 2:30 to 8:30 p.m. at the HVTH and 16h at FVTH);
- 4<sup>th</sup> year: management of hospitalized patients, emergency and intensive care (60 h in 4night shifts from 8:30 p.m. to 8:30 a.m. and 2 6-h shifts from 8:30 a.m. to 2:30 p.m. or 2:30 p.m. to 8:30 p.m. on weekends at the HVTH, and 10 shifts of at least 5 h in Ambulatory Clinics);
- 5<sup>th</sup> year: management of hospitalized patients, emergency and intensive care, specific clinical examinations (internal medicine, surgery, reproduction), surgery or diagnostic procedures (252 h of intramural CCT in day or night shifts for 3 weeks).

During Clinical Rotating at the HVTH, students are assigned to different patients' clinical consultation, depending on their competences and year of VMTC. First year students are involved in hands-on pre-clinical training, receiving proper instructions and performing the handling and management of different species. Assistance in collection of history from clients and first clinical examination of the patients is performed by 2<sup>nd</sup> year students under the supervision of a staff member. Afterwards, specific clinical examinations in internal medicine, surgery or reproduction are performed by the academic staff supported by 3<sup>rd</sup> and 4<sup>th</sup> year students, and the consultation data is collected in MyClinical platform. At the end of the clinical examination, the staff review the medical records and discuss the case with the students to address any doubts and questions. The discussion includes differential diagnoses, diagnostic procedures to perform, the prognosis and therapeutic options. Furthermore, hands-on activities in the clinical training include the placement of intravenous and urinary catheters, the collection of blood, vaginal, faecal or urine samples, the preparation and positioning of the patient for diagnostic procedures (ultrasound, radiography, CT), bandaging or wound management and the monitoring of a patient under general anaesthesia or in ECCS and ICU. Active participation in surgery is required for the 4<sup>th</sup> or 5<sup>th</sup> year students. The training for some surgery procedures such as laparotomy, insertion of chest drains, gastrotomy, enterectomy, cystotomy, and pre-operative skin preparation is performed on pets' cadavers during the practical activity of the subject Surgical technique. Moreover, 5<sup>th</sup> year students are stimulated to participate in emergency life-saving procedures such as initial patient stabilization, endotracheal intubation, cardiopulmonary resuscitation. From 2023, students learn some skills on phantoms/pads in a Skill Lab before the hands-on activities on animals. During the practical activity of Anaesthesiology, specific phantoms are available to perform vascular access and orotracheal intubation several times before the practice on live animals. In euthanasia cases, the student assists the hospital staff from communication with the owner to the end of the procedure. All communication skills including communication to the patient owner/farmer and working in a team with other colleagues are also promoted during the Clinical Rotating, except for FVTH. In addition to the curricular hands-on training, students from the 3<sup>rd</sup> year may attend for 12 months the daily routine activity of the VTH or of the Ambulatory Clinics as volunteer intern students. Every year, at least 20 students are registered as intern students of the HVTH, indicating a specific disciplinary area of interest. During the intramural CCT at the CRAS, trainees are required to support the tutor during his clinical activities which include basic and specialist clinical consultations, surgical interventions, first aid procedures, hospitalization, rehabilitation and release in wildlife. The hands-on training of the students in necropsy techniques, morphological

examination of organs and systems, sampling, analysis and interpretation of cytology and histology specimens are guaranteed by the practical activities of integrated course of Pathological anatomy. Fifth year students have a week of CCT to perform entire necroscopies alone under the supervision of the academic staff and to learn the inspection of carcasses at slaughterhouses. Moreover, students are involved in the acceptance of samples at the Veterinary Pathology Unit and in the writing of reports on MyClinical. The extramural activities of Ambulatory Clinics in different integrated courses include supervised hands-on sessions on food producing animals and equids. The Ambulatory Clinics aim to connect the students with the context of food producing animal farms and horse stables and to teach second-level clinical, diagnostic, and managerial performances, such as:

- analysis of risk factors, management and follow-up of food producing animal herd
- reproduction and neonatology in horse and management of food producing animals breeding
- microbiology and parasitology investigation
- specific clinic examinations (internal medicine, surgery, reproduction and neonatology)
- sampling of blood, urine and faeces
- medical treatment plans
- minor surgical interventions (orchietomy, umbilical hernia repair, cutaneous and mucosal tumor removal, mandibular fracture surgery)
- necroscopy and histopathological investigations.

Different diagnostic techniques are performed in the field during Ambulatory Clinics activities, such as blood-gas analysis, ultrasound, radiography, endoscopy, electrocardiogram, Holter monitoring, and parasitological analysis. Moreover, the students are involved in signalment and history collection, physical examination of patients and apparatus. They are also encouraged to discuss specific diagnostic and therapeutic strategies. Extra-mural activities at the EH allow students to follow the daily management of patients, different anaesthesiologic, diagnostic and surgical procedures (orchietomy, colic surgery, arthroscopy, laparotomy) as well as first aid. Since 2022, every morning at 8:45 the students on the Clinical Rotating are involved in a morning briefing with the academic staff members about the history of the patients and the development of cases hospitalized at the HVTH; the professor on duty that day leads a **discussion** with students and colleagues, on the management of the clinical case analysing clinical examination findings and data recording, while also proposing diagnostic and treatment options and assuming a prognosis. During the Clinical Rotating, all students, especially of the 5<sup>th</sup> year, are involved in the decision-making process. The briefing is also used by hospital staff to explain the visits and procedures scheduled for the day in each service. At each shift change in ECCS and ICU there is a quick clinical handover of patients attended by all students on duty in that service. To stimulate the understanding of clinical cases, intern students or students of Elective tracks are encouraged to present to the academic staff and other students a presentation on a clinical case, emphasizing the major clinical findings and discussing the related recent literature. Moreover, every three weeks two groups of students conclude their intramural CCT with a seminar on a topic related to clinical cases examined (Area 3). All students are invited to participate in the Journal Clubs, Book reading or clinical case discussions organized by academic staff, interns, residents and PhD students of the VTH. Moreover, during some subject activities, especially Electives, students present a clinical case or an article (a review or a scientific publication). Experts in specific fields are also invited to deepen topics with seminars or lectures (Area 10). To improve the student's clinical experience, students are provided with a clinical case simulation with the possibility to discuss their answers on diagnosis and therapy with the case creators. Access to electronic publications, scientific papers and all literature within UniNa network takes place by IP recognition of the fixed computer or via the free Wi-Fi network, UniNa which does not require registrations or passwords and Eduroam which requires a login with institutional credentials. All students who want to access the same resources outside UniNa facilities can do this via proxy

server, using institutional e-mail credentials. Different libraries, which depend on the Veterinary Library, are open to students (Area 6).

#### **5.4. Medical record system**

The Na VEE aims at continuous improvement of the quality of services provided, both clinically and in terms of undergraduate clinical teaching. To this end, a new cloud-based [veterinary practice management software](#), developed in collaboration with MgSOFT Srl, was analysed, designed and implemented from 2019 to 2020. After an initial testing phase, the MyClinical platform became fully operational in January 2021. MyClinical provides a central platform for keeping track of hospital patients and owners. It also features several different functions that make the work of hospital staff easier and more productive. Specifically, it supports veterinary professionals in all HVTH services, and provides certificates issuing, management of estimates, billing and payments and management of administrative and bureaucratic documents. The login function allows all stakeholders attending the hospital to be uniquely profiled via university credentials, according to tasks and qualifications. Specifically, it is possible for students to detect: *i*) the hours of attendance for teaching and clinical activities *ii*) the clinical activities in which they participated. A dynamic tutorial is being developed to serve as an interactive guide for proper use of the platform. The platform also makes it possible to connect directly with the web portal of the Italian Ministry of Finance for the drafting of the Veterinary Electronic Recipes, as well as with the online database of veterinary medicinal products handled by the Italian Ministry of Health.

##### *Comments on Area 5*

Despite the economic effort of UniNa to build new facilities at Frullone campus, due to bureaucratic difficulties and to pandemic-related slowdowns, to date the Na VEE has not been provided with new facilities. This situation makes it necessary to displace students' practices at external sites, especially for food producing animals and equine. Moreover, the presence in Italy of the Swine Fever and Avian Influenza in the last year prevented students from accessing poultry and swine farms. The Na VEE staff put in place strategies that ensured to provide adequate and active hands-on pre-clinical and clinical training on different species. Although the caseload was reduced in the last two years for pandemic reasons, the restoration of full activities by the students after COVID-19 and the compensatory activities performed provoked a surge in the number. The organization of practical activities in different areas of the Region could be problematic for students, although the Na VEE goes to great lengths to organize transfers by Ambulatory Clinics or the rental of buses and vans for visits to farms. The use of didactic multimedia material, drastically increased during the pandemic, has become a resource to show the activities in farms or other facilities with restricted access in emergency situations related to infectious diseases. These have been proposed by the Na VEE, replacing part of the student training.

##### *Suggestions for improvement in Area 5*

The new Frullone campus will solve problems related to the absence of facilities for food producing animals and equine. The presence of the Large Animal Hospital and didactic farm in the new campus will increase the number of pre-clinical and clinical cases and will reduce the transfer of students to perform the practical activities on large animals. The new campus should allow the acquisition of animals of different species for didactic purposes. The use of MyClinical must be implemented by all academic staff in the short term to ensure the collection and storage of all clinical cases and to allow the retrospective analysis of routinely collected hospital data (balances between species, between first opinion and referral cases, between acute and chronic cases, between consultations for day patients in the clinic and hospitalizations, balance between individual medicine and population medicine). This analysis is also necessary for the Na VEE to establish changes in the global strategies for the acquisition by students of Day One Competences. A secure electronic version of the Logbook containing the list of skills and procedures (according to the Day One Competences) is necessary.

## Area 6. Learning resources

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### 6.1. Adequacy of learning resources

Na VEE considers learning resources a fundamental tool for the student's growth and for the achievement of the professional skills required by the VMTC. The traditional infrastructures have been implemented with digital resources which, following the pandemic, have undergone significant improvement, both from the point of view of quality and usability for students and staff. Available learning resources for students and staff can be listed as follows: study/reading rooms, multimedia rooms, [libraries](#), [a museum \(MAVet\)](#), a Skill Lab and the Veterinary Educational Portal UniNaVET. These are located in the main building all the buildings in which the [Na VEE](#) is divided. The museum and its library can also be visited in virtual mode.

Maintenance and management of study rooms and computers and classrooms for foreign language practice are entrusted to the technical staff, to which malfunction reports can also be made. The staff assess whether they can directly resolve the issue or whether it is necessary to consult higher bodies (Maintenance Service, Na VEE Director, and University Technical Office). Improvement proposals can be made by sending a request to the Teaching Committees which, in accordance with the Na VEE Director, and University Technical Office, will evaluate and prepare any changes. UniNa libraries are all part of the [University Centre for Libraries \(CAB\)](#) 'Roberto Pettorino', which is managed by the [CAB steering committee headed by a President](#).

The MAVet is part of the [UniNa Museum Centre](#). It is located at the main building, and it is open to the public as well as to Academic staff and students. The main permanent collection is on the third floor, while other exhibits can also be found in the building. All the information and the updates on events and temporary and permanent exhibitions can be found on the MAVet website. By filling out the [form](#), it is possible to request information directly from the museum staff. Finally, in accordance with the need to minimize the manipulation of live animals (3R), avoiding them stress and discomfort, and to allow students to start the practical activities as soon as possible, a Skill Lab has been set up at the main building, located on the ground floor. It is equipped with animal dummies and anatomical models of organs and tissues, screens and computers, tools for the preparation and administration of drugs and for surgery. The Skill Lab is organized in such a way as to allow the student, even in total autonomy, to carry out medical and surgical practices. The creation of the Veterinary Educational Portal represents a significant development of the Na VEE Teaching Courses. Conceived at the beginning of 2022, a Committee was appointed for its implementation. It is composed of 11 members: the coordinators of the 4 Teaching Courses of the Na VEE, 5 academic and 2 support staff members. The UniNaVET Portal was created with the intention of hosting multimedia teaching materials to support the Teaching Courses belonging to the Na VEE. Thanks to this tool, it will be possible to grant students access to all the teaching material (images, videos, texts, clinical cases, business cases and entertaining cases) deriving from the daily activities of individual academic staff in their different areas of competence. At the moment of writing this SER, the platform is under construction.

Various methods are used to disclose to students and staff how to access and use learning resources. At the beginning of each AY, a welcome session is organized for new students. During this session students are introduced to key services, and they are showed the learning facilities available in the different buildings as well as the e-learning resources and how to activate and manage the institutional e-mail account, access the online resources and benefit from the library services. Moreover, the CAB is responsible for training the technical-administrative staff and for keeping them up-to-date, while organizing guidance courses for users (staff and students) on the electronic resources. At the same time, this centre develops and makes available, on its website, guides, [information material](#) and [tutorials](#) on the use of the services and [electronic resources](#). The

[Veterinary Library Committee](#) (Area 1) monitors the resources already available and those that may be implemented. It annually draws up a report which is then approved by the Na VEE Board. Resources are presented to new students annually during the welcome session. New acquisitions are communicated by e-mail to all academic staff. As for new CAB resources, the UniNa-CAB support staff write to UniNa academic staff and students via e-mail, and communicates those that have been recently acquired. In addition, a constantly [updated notice section](#) reports on the new resources available. Anyone (students and staff) can propose the purchase of new resources, the proposal can be made by filling [a specific form](#) which must be signed by at least 10 proponents, the proposal is then evaluated by the steering committee which based on the specificity of the resource, motivations, interest of several subject areas and resources in the same area of interest, will decide to proceed with the purchase. For assistance, reporting of malfunctions or proposals for improvement, [specific instructions](#) are available.

## 6.2. Library and IT resources

The main Library was established in 2007 as VM Faculty Central Library, but since 2013 it has been reorganized as [Veterinary Area Library](#) according to the regulations of the UniNa Library System and of the CAB adopted with Rector's decree, thus assuming the current name (D.R. 2013/569 of 02.14.2013). In particular, the Veterinary Area Library, together with the other 11 area libraries of UniNa, constitutes the University Library System, which manages the conservation, enrichment, and use of the UniNa's documentary heritage. The UniNa Library System is coordinated by CAB, which also manages the [digital library \(SireLib\)](#) and provides the following centralized library services: *i*) acquisition and access to electronic resources, *ii*) management and development of online catalogues for the bibliographic resources of UniNa and for the Institutional Open Archive, *iii*) support to the different UniNa Area Libraries, and to the scientific community in the access to bibliographic resources. The Veterinary Area Library provides the resources necessary for scientific research and university teaching in the field of Veterinary sciences. The Veterinary Area Library is located on the first floor of the main building. The library staff consists of three well-trained and full-time members, all from pay-band category C, and 7 part-time students, who are engaged from January to October. As for the full-time staff members, two of them belong to the UniNa technical-data processing area and one to the UniNa administrative area. Thus, the library staff ensures the technical services and the daily management of the library and provide support to users. In particular, the library staff guarantees users the help they need to make the best use of the catalogue search tools, bibliographic consultancy activities, and aid with consulting catalogues online, conducting information searches on local and remote databases, accessing electronic documentaries. Further components of the library are the Library Director and the Veterinary Library Committee (Area 1). The Director, a librarian, manages the library activities and the allocated funds, while also supervising the administrative and bibliographic processes.

The Veterinary Area Library is open from Monday to Thursday from 9:00 am to 4:30 pm and Friday from 9:00 am to 2:00 pm, for a total of 35 hours per week. Short periods of closure are foreseen during the Christmas and the summer holidays. The holiday calendar is officially fixed by UniNa. The Veterinary Area Library is open to academic staff and students. The general public can also access the Library, only upon authorization from the Director, who also establishes the consultation procedures. The annual budget of the Veterinary Area Library is of € 22,000 and it is directly managed by UniNa. This budget does not include the costs of personnel, premise maintenance and subscription to periodicals, books, and e-books.

The Library is a single room (50 m<sup>2</sup>) and its equipment includes ten reading seats and two desktop computers with internet connection for consulting the on-line literature and catalogues (OPAC, MetaOPAC, ACPN, SBN), the electronic resources (databases, packages of periodicals and ebooks signed by UniNa) and the open access resources (FedOA, IRIS, SHARE Books, SHARE

periodicals, eCO) provided by the [Digital Library](#), alongside the educational DVDs available in the Veterinary Library.

In addition, the Library offers an interlibrary loan service, a document delivery service not only for students and academic staff but also for other libraries which are members of the NILDE (Network Inter-Library Document Exchange), a software used by libraries to reciprocally request and provide documents via the internet. NILDE is integrated with Italian Union Catalogue of Serials, a database that collects information from periodicals held by Italian libraries and covers all disciplines.

All the [information](#) regarding the Veterinary Area library staff members, library services, library facilities, opening hours and days can be found on the library website. The Veterinary Area Library website as well as the CAB website have been developed by a Content Management System with an Open-Source license, provided by the Minerva project (Ministerial Network for Valorizing Activities in Digitization). Software available for bibliographical search can be illustrated as follows: *i*) fedSearch that allows to find and consult books, e-books, periodicals, articles through the UniNa University Online Public Access Catalogue, *ii*) DiscoverySHARE, a platform where it is possible to find and consult books, e-books, periodicals, articles through the catalogues of the Universities belonging to SHARE (Scholarly Heritage and Access to Research) Consortium, *iii*) SHARE Catalogue where it is possible to do an integrated search on all catalogues of the Universities Libraries belonging to SHARE Consortium, *iv*) NILDE.

In different units of the Na VEE, four **subsidiary libraries** are open to students, and are named as follows: Anatomy, Infectious Diseases, Animal Production, and Surgery. The main Library oversees their materials, represented above all by books with a historical value, kept in closed book cabinets. These subsidiary libraries are now mainly used as study/reading rooms, and they are open from Monday to Friday with their own opening times. In particular, the book loan and consultation services are provided by the library staff during the Veterinary Area Library opening hours, while access as study/reading rooms is allowed from 7:00 am to 7:00 pm. The Anatomy Library covers an area of 47 m<sup>2</sup> with 12 seats and n. 10 electric PC sockets. The Infectious Diseases Library has an area of 52 m<sup>2</sup>, 14 seats, and n. 8 electric PC sockets. The Animal Production Library has an area of 40 m<sup>2</sup> with 12 seats and n. 12 electric PC sockets. The Surgery Library has an area of 37 m<sup>2</sup> with 6 seats and n. 6 electric PC sockets.

Besides the desktop computers of the Veterinary Area Library, students and all the academic staff can access all electronic resources by using their personal laptops in the Student room of 96 m<sup>2</sup> with n. 40 seats, and n. 29 electric PC sockets located on the ground floor of the Na VEE main building and in the two study/reading rooms of the CESTEVEV. Here, the study room on the ground floor covers an area of 261 m<sup>2</sup> with a total of 60 seats (15 desks with 4 chairs each) and n. 17 electric PC sockets, while the study room on the second floor is 622 m<sup>2</sup> wide with 200 seats (50 desks with 4 chairs each) and n. 142 electric PC sockets. These two study/reading rooms are shared with the students attending the other Teaching Courses located at CESTEVEV. In addition, at CESTEVEV there are also two multimedia rooms, one covering 134 m<sup>2</sup> called Laboratorio Informatico/Linguistico which has 24 seats, each equipped with one desktop computer with internet connection and n. 60 electric PC sockets; the adjacent 169 m<sup>2</sup> wide room is called Aula Informatica and has 30 desktop computers with internet connection available for students and university personnel to access electronic resources. Basic software (Microsoft package) and statistical packages are available on desktop computers. Indeed, in these two IT rooms, students can practice their IT skills during practical activities.

CSI (Centre for the IT Services) is UniNa Centre for the IT services and provides [Web Docenti](#), a web application developed entirely within UniNa, which allows professors to give students information about their subjects, interact with them, share teaching materials, manage forums on exam topics or answer specific questions on their own webpage. Recently, Web Docenti has also

been developed as an app and can be accessed directly from mobile devices. Authentication to Web Docenti is done with UniNa e-mail credentials.

Furthermore, UniNa has developed an e-learning project portal called [Federica](#), where students can consult the teaching materials of the subjects in e-Learning (available also in podcast format for iTunes), at any time, with an extraordinary wealth of contents organized in training modules: lessons, images, videos and links. On Federica, there are 300 on-line courses with free access, 27 of which are [on-line VM subjects](#). An evolution of the e-learning project portal Federica is represented by [Federica web learning](#). This tool is a centre for innovation, experimentation, and dissemination of UniNa multimedia teaching. This open access multiplatform is leader in Europe for open access multimedia teaching, and in the world top ten for the production of MOOCs, the Massive Open Online Courses. Federica.eu MOOCs are completely free and available on demand 24 hours a day. On Federica.eu, there are over 400 MOOCs organized in thematic fields. On the platform, there are 4 [Veterinary MOOCs](#) which can therefore be accessed by students.

**UniNa Wi-Fi/Eduroam** access is available within the Na VEE. All enrolled students, academic and technical-administrative staff in possession of e-mail credentials issued by UniNa can connect to the internet at high speed from their laptop, or mobile device. So, the access to electronic learning resources within the UniNa network takes place by IP recognition of the desktop computer or of the device connected via UniNa wi-fi.

On the Veterinary Area Library website, there is a link to the CAB website, where information and guidance about off-campus access is clearly explained. In particular, access from outside the UniNa network, using e-mail credentials, is possible in two ways: *i*) access via proxy: valid for all subscribed resources and requires the proxy setting in the users' browser; *ii*) access via IDEM / GARR: applies to most of the subscription resources and does not require software installations or special configurations. [Instructions](#) can be found on the CAB website.

### 6.3. Access to learning resources

The Veterinary Area Library owns 23 titles of scientific periodicals, 17 active subscription databases, scientific journal papers of past centuries, and more than 2000 volumes of the book collections, all of which can be searched in the [UniNa OPAC](#). The subsidiary libraries hold books concerning scientific research and historical books, as well as some rare and precious editions. In 2021, new OPAC additions were made. So, 67 new texts were purchased during the year based on the academic pathways and the information and documentary needs corresponding to the subjects of the VMTC. All the [volumes](#) were regularly catalogued and classified. Moreover, as part of the University Library System and of CAB, online access is granted to the most important scientific journals and e-books from the main biomedical publishers such as Elsevier, Springer, Kluwer, Wiley, providing a wide range of titles with subject areas in veterinary science, veterinary medicine, and zoology. Moreover, the CAB makes various databases available to the academic community, including the following: CAB abstracts and CAB abstracts Plus, Cambridge Science Collections, Cochrane Library, CRC Press, ISI Web of Science, Scopus, Zoological records, VetMed Resource and many others. E-books concerning Veterinary Medicine are available in full text in the [CAB and CRC Press collections](#), with a link from the [Veterinary Area Library](#) webpage. In particular, the CAB guarantees access to 29,000 paid electronic periodicals, 115,000 openaccess electronic periodicals, 92 active subscription databases, 251,142 paid e-books, 63,350 openaccess e-books, 48,012 proceedings by subscription, 25 open-access scientific journals in the SHARE platform, 32 open-access scientific journal bundles in the SHARE platform. From the Veterinary Area Library website, the institutional open archive [FEDOA](#) can also be accessed. This is a repository of PhD Thesis, searchable via simple and advanced search options. Moreover, from the above-mentioned Library website, it is also possible to access [IRIS](#), a platform allowing users to explore the research activity catalogue of UniNa. The Library also possesses an adequate multimedia stock: a 10-DVD collection by Med Tutor Veterinaria, edited by the well-known

Italian publisher UTET, about common questions, topics, practices and techniques of Veterinary Medicine; and also DVDs edited by VIDEOVET, from the Charles Louis Davis D.V.M.

Foundation and by CLIVE – Computer-aided Learning in Veterinary Education. As already mentioned, students can download teaching materials on Web Docenti, including Word documents, Microsoft Power Point presentations, pdf documents, visuals, links that academic staff use during their lectures. As for video links, these can be uploaded by professors on their personal page, which turns out to be especially important for those teaching basic subjects. An example of this is the links of scientific article videos from the platform [JoVE Video](#), which can be used thanks to UniNa's subscription to JoVE Unlimited including all the resources currently available and the future ones of the JoVE Video collections. Academic staff and students can use, through UniNa e-mail credentials, the JoVE collections to enhance teaching and learn key research concepts and techniques through simple video demonstrations covering a wide variety of topics in Biology, Chemistry, Genetics, Clinical Medicine, and others.

The MAVet represents another important learning resource for veterinary students. MAVet, currently located on the third floor of the main building, is part of the UniNa Museum System. MAVet has an informative as well as scientific and learning purpose. It is equipped with about a hundred complete skeletons, half of which are mammals, while the remaining share is comprised of birds, reptiles, amphibians, and fish. There are also about 60 naturalized animals including mammals, birds, and reptiles and several hundred anatomical preparations such as injected hearts, muscles of the limbs of various animals obtained with various techniques. MAVet is open from Monday to Friday from 10:00 am to 5:00 pm and it is accessible to students, academic staff, and the public. Furthermore, the Museum has a small classroom, big enough for ten students, which can be booked via e-mail, where it is possible to use virtual anatomy programmes. On the MAVet website, it is possible to [virtually visit the Museum](#) with its collections. Therefore, the stored sample collections are mainly used for educational purposes. Indeed, students and the general public are granted free access to the [videos of the lectures](#) made with the help of the museum preparations, it is also possible to consult the [wax Ziegler collections](#) and [3D models](#). [Pdf presentations](#) for detailed study on wax models can be found on MAVet website.

In addition, Veterinary Educational Portal UniNaVET, under construction, will be fully operational, accessible for free, and available for veterinary students and academic staff. It will be introduced to improve both learning and teaching in the core curriculum. The veterinary educational portal will be organized in four veterinary macro-areas of expertise (Basic subjects, Clinical sciences, Animal production, FSQ and VPH) and it will collect multimedia teaching materials to support students of the VMTC. Students will be able to easily consult multimedia teaching materials (image galleries, videos, links) for detailed study, systematically organized by macro-area.

A **Skill Lab** has been set up to grant students access to self-learning resources to supplement their training activities on live animals. Since November 2022, when the intramural equine clinic was discontinued and an agreement with *Punto Verde* EH was signed, the equine surgery room and the old stable formerly located on the ground floor of the main building were re-assigned to a temporary Skill Lab until the Na VEE completes the move to the new Frullone campus. The Skill Lab has been initially equipped with assorted dummies or animal organs: an equine head for intramuscular injections and venipunctures, a bovine theriogenology model, a total of 20 blood collection pads (10 for food producing animals, and 10 for companion animals) for further training on injection, blood sampling and the application of venous catheters, a canine head dummy for intubation training and a dog dummy for cardiopulmonary reanimation, so that students can practice different clinical and surgical techniques. Indeed, the Na VEE aims to invest part of the annual didactic budget to progressively upgrade the models (Area 2). Training on dummies can be considered preparatory for hands-on activities on live animals, reducing the potential pain or distress. Moreover, the use of animal simulators allows students to perform repetitive actions on



the same animals. The Skill Lab is organized in workstations, each equipped with a QR code linked to video clips that illustrate the procedures to follow. At each station, students can access the available equipment and supplies they need to carry out the planned activities. In particular, the activities include: *i)* handling of dummies / models, to perform the correct animal handling procedures, *ii)* soft tissue surgery, *iii)* hard tissue surgery, *iv)* nursing operations, *v)* reanimation procedures. At CESTEV, the microscopy lab (28 m<sup>2</sup>) has 13 seats and 52 electric PC sockets. It can be accessed by students attending the different teaching courses located at CESTEV that in this lab can consolidate their learning. However, specific practical activities are also carried out in the other teaching laboratories of CESTEV, and of the main building of Na VEE. To optimize the use of these labs, students are divided in small groups (maximum 5 students), and access is granted following a pre-established rotational timetable, whilst for the Skill Lab access is organized thanks to the online booking system TeamUp calendar. In this Skill Lab students must wear medical uniforms or lab coats, PPE and name badges. VTH offers all students access to a locker room to store their belongings while using the clinical Skill Lab. Once the activity has been performed, students need to certify their attendance on Microsoft platform, by reporting on their experience, and stating the hours spent in the lab. Skill Lab and its equipment is kept under closed circuit television surveillance, and daily maintenance is performed by a member of the support staff.

#### *Comments on Area 6*

The limited availability of spaces and facilities in the historical building of Na VEE, further aggravated by the loss of 2000 m<sup>2</sup> in 2015, entails complicated logistics. However, over the past few years, all academic staff has been committed and organized in the best possible way to make up for these shortcomings which will be resolved by moving to the new Na VEE building. Again, due to the limited availability of spaces, practical learning activities have been carried out in research laboratories. At the same time, the purchase of a small number of dummies was linked to scarcity of funds and storage space. However, in the last ten years, great effort has been made to strengthen the Veterinary Area Library in terms of quality management, e-learning platforms, elearning resources and tools, the allocation of new spaces for adequate training of veterinary students. From next year, there will be a new and larger Veterinary Area Library in the newly built Na VEE located at Frullone campus. This new Veterinary Area Library will be equipped with a greater number of reading seats, PC sockets, and desktop computers with internet connection. Furthermore, continuing professional development of the teaching staff and students, who have shown greater interest with the COVID-19 pandemic, has always been guaranteed especially with regards to technological resources, thanks to the growing availability of e-learning methodologies and to the significant promotion and application of self-learning resources by the teaching staff.

#### *Suggestions for improvement in Area 6*

Since Library has a key role in assisting students in their efforts during the academic path, it could be necessary to *i)* better advertise the Veterinary Area Library (comprising the Digital Veterinary Library) and the available e-learning platforms and tools through social media, *ii)* improve the Veterinary Area Library equipment with a larger number of reading seats and desktop computers connected to the internet, *iii)* increase the number of library staff members or, if not possible, allocating a larger number of part-time students to the library so as to improve the services offered, *iv)* increase the Library's standard opening hours, *v)* improve training courses for teaching staff so as to implement the use of e-learning platforms, *vi)* increase the number of on-line Veterinary courses and MOOCS on the platforms Federica and Federica Web Learning, to ensure wider elearning resources to veterinary students, *vii)* implement an on-line booking system to optimize access to Skill Lab, *viii)* implement an on-line platform where students can report all technical issues relating to study rooms and multimedia rooms.

## **Area 7. Student admission, progression and welfare**

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### **7.1. Student admission, progression and certification**

Information on the [VMTC](#), admission procedures and rules, requirements for student progression and student welfare are reported on the [Na VEE](#) and [UniNa](#) Orientation and Tutoring web pages. In Italy, the number of places in VMT courses has been limited since 1999 (Law 264/1999). Since 2004, access is regulated by the MUR with a national selection procedure. The number of places is determined by the MUR consulting the National Federation of Veterinary Professional Associations (FNOVI) and distributed among the 13 Italian VEEs. Over the years, the number of places has continued to decrease and in the last four years the number of allocated places for Na VEE has been 60 for Italian and EU students and 10 for non-EU students. According to the new regulations (ministerial notes 4251/2019 and 9691/2019), free places for non-EU students can be allocated to EU students retroactively from the AY 2016 - 2017.

The **enrolment criteria** are set forth in Ministerial Decree 270/2004, details on students' requirements are described below. Prospective students complete an **admission application** indicating one or more VEEs in order of preference. Applicants who score at least twenty on the admission test are considered to have been admitted and will be ranked. The student whose score allows admission to the location they have chosen as their first option will be considered an 'assigned student' and must formalize their enrolment within four days or they will forfeit their right to enroll. The student whose results allow admission to a location they did not choose as the first option is considered a 'booked student' and does not have to formalize enrolment within a time limit. The admitted students register with the Student Secretariat, which provides them with the enrolment number and the access data to the VEEs' [Segrepass](#) system. In addition to high school graduates, students who are already enrolled in other academic programmes may also participate in the admission selection process. The latter, once enrolled within the deadlines and modalities established in the announcement, may request the validation of the ECTS obtained in the previous teaching course by applying to the Student Secretariat. After receiving the discharge certificate of the previous course, the students forward the dossier to the VMTC Coordinator, who sends the programmes carried out to the respective teachers of the VMTC indicating: *i*) complete validation, *ii*) partial validation, *iii*) no validation. The procedure is discussed and approved in the VMTC Committee. The Student Secretariat updates the student's new career through its own programme and makes it consultable on the personal Segrepass page. Some students (e.g., Bachelor's and/or Master's graduated) can be directly enrolled in the 2<sup>nd</sup> year according to the number of passed exams and the availability of places. The availability of places must also be checked for students coming from the VMTC of other national VEEs. For paying tuition fee there are specific UniNa [guidelines](#) (Area 2).

The **VMTC Curriculum** is defined by the Day One Competences or minimum skills that the recent graduate must possess. The fundamental learning outcome is the timetable: the acquisition of the required competences within the five years is a real challenge for a curriculum characterized by an intensive training programme of theoretical and practical activities. Each year has specific learning outcomes, the schedule of lectures, practical activities, exams are entrusted to the academic staff who is responsible for each year subjects. The Na VEE teaching is strongly committed to ESEVT standards in line with those of other Italian VEEs. The Na VEE is in constant contact with the professional associations of Campania and other regions to identify territorial needs and better target training. A great deal of attention is paid to the communication aspects of the Na VEE, with continuous improvement of the website and social media pages that allow the real time-sharing Na VEE content. To promote the interaction between subjects' special attention is paid to the integration of practical activities (e.g., laboratories, clinics, in field).

The programmes and syllabus, approved by the VMTC Committee and UniNa PQA, are accessible (in Italian and English) on the Na VEE's website and on each academic staff's personal UniNa page. In addition, each integrated course has a link on the website that lists disciplinary and soft skills. The PPE necessary for compliance with safety and security standards for each practical activity is listed on the website and communicated to the students at the induction.

**Student prospective information** included in the incoming guidance is led by the [Orientation and Tutoring Committee](#) (OTC). The OTC presents the VMTC in Open Days organized by UniNa for schools. High school students can visit the Na VEE's facilities (e.g., HVTH, laboratories, MAVet, etc.), participate in classes, talk to Na VEE academic staff and students. At the end, they receive the visual material of Na VEE's teaching courses and a certificate of participation. Once a week, students can contact a member of the OTC by appointment, either in person at the Orientation Desk (CESTEV), or remotely through Orienta-Vet Microsoft Team.

The prospective foreign students, including Erasmus, can access specific admission procedures and learning outcomes visiting the [UniNa](#) and [Na VEE](#) website that shows all offered services and opportunities. In addition, the Na VEE website provides detailed information for foreign [incoming](#) students. Also, OTC fellows for tutoring activities provide face to face information to foreign students. For 1<sup>st</sup> year students, a welcome day is organized every year with informative presentations aimed at introducing the VMTC, VTH, Erasmus programme, SInAPSI services, advising and counselling, laboratory safety, and Na VEE facilities. On this day, students are also shown the Logbook. During the [orientation](#) days and upon request, students are provided with informational materials in paper or digital format (e.g., Italian/English brochures, VETMECUM, video of teaching courses presentation, study guide). The OTC also takes care of **students' progression** providing information and assigning to each student an academic tutor from the 1<sup>st</sup> year. Moreover, each AY, some undergraduate and graduate students receive a dedicated UniNa scholarship to support orientation and tutoring activities. The Na VEE guarantees orientation during different steps of a student's career: *i*) incoming guidance, carried out by the OTC, to support students with difficulties and provide further enrichment of their educational path, *ii*) the outgoing orientation, performed by the JPC and VMTC Committee with the support of the PPT Committee. During their career, students fill in three anonymous satisfaction questionnaires, in which they can make criticisms and suggestions. These are *i*) prepared by the UniNa Evaluation Office, *ii*) specific of Na VEE and developed by the Teachers & Students JC, *iii*) related to the extramural CCT made by PPT Committee. The results are evaluated by the Review Group, Teachers & Students JC and PPT Committee respectively and discussed during VMTC Committee meetings. The Na VEE guarantees also the outgoing orientation organized by the OTC, JPC and VMTC Committee with the support of the PPT Committee. Students of 4<sup>th</sup> year are invited to a meeting where elective tracks subjects' programmes are illustrated by academic staff. For 5<sup>th</sup> year students, JPC schedules specific meetings with Veterinary Officers, practitioners and industry giving information on working opportunities. Furthermore, the compulsory extramural CCT activities represent a constant point of contact for the student with the different professional realities. Students can do an internship, also in preparation for the final thesis, in the affiliated companies of the region. The possibility of visiting companies and public institutions (ASL) is also provided for young veterinarians during the 1<sup>st</sup> year after graduation.

## 7.2. Students number

**Table 7.2.1.** Number of new veterinary students admitted by the Na VEE

Type of students	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Standard students	67	61	63	64
Full fee students	-	-	-	-
<b>Total</b>	67	61	63	64

**Table 7.2.2.** Number of veterinary undergraduate students registered at the Na VEE

Year of programme	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
1 <sup>st</sup> year	72	68	64	68
2 <sup>nd</sup> year	53	60	68	60.3
3 <sup>rd</sup> year	58	66	51	58.3
4 <sup>th</sup> year	67	50	71	62.6
5 <sup>th</sup> year	50	71	56	59
6 <sup>th</sup> year	42	28	49	39.6
<b>Total</b>	<b>342</b>	<b>343</b>	<b>359</b>	<b>348</b>

**Table 7.2.3.** Number of veterinary students graduating annually

Type of students	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Standard students	38	58	77	58

**Table 7.2.4.** Average duration of veterinary studies (AY 2021-2022)

Duration	% of the graduated students
5 years	50
+ 1 year	18
+ 2 years	10
+ 3 years or more	22

### 7.3. Selection and progression criteria

**Admission** to the VMTC requires a five-year high school diploma or another degree obtained abroad and recognized as appropriate under current law. The student must also have adequate preparation and have acquired the analytical skills, knowledge and abilities listed in the Ministry 'Regulation on the Procedures and Contents of Admission Tests for Degree Programs with Scheduled Access at the National Level'. More details can be found in the [Teaching Bylaws](#). The initial preparation is assessed by a placement test including questions to assess the applicant's reasoning ability and knowledge on basic disciplines (e.g., biology, chemistry, etc.). The test is prepared by the MUR and is held nationwide in the same date for all Italian VEEs and all information are published on the [website](#). From AY 2022-2023 the placement test is scheduled twice (April and July). All procedures are also **published** on the [Na VEE website](#).

No discrimination is made against the admission of **students with learning disabilities, disorders and illness**. SInAPSI, is closely involved in the management of students also for special requirements of admission tests. The selection process is managed by the MUR, but an **internal selection committee** appointed by the Na VEE Director ensures the correct application of general procedures and of the policy for students with disabilities. Students who have been excluded from the admission ranking list may **appeal** to the Regional Administrative Court (TAR) against the MUR selection process. Every year, after an internal analysis of resources, the Na VEE Board proposes a proper number of students to enroll at the 1<sup>st</sup> year in function of the number of academic staff, animal sources and capability of facilities. To guarantee the quality of the VMTC the practical activities are conducted in small groups of students depending on the facility capacity and the number of supervisors. The amount of PPE and animal material for teaching is calculated each year by the VMTC Coordinator considering the number of students. The allocated resources are used according to the annual planning of teaching activities (Area 2). Some contracts with practitioners are annually funded by the Na VEE. The allocated resources are used according to the annual planning of teaching activities.

**Prospective number of new students admitted** for the next three AYs will be increased to 76 by the Na VEE.

#### **7.4. Policies and procedures on disabilities/illnesses**

The policy for students with learning disability, disorders and illness is the same as that UniNa. For students who feel excluded from university life due to disabilities, specific learning disorders or temporary difficulties, the UniNa offers the SInAPSi centre. The OTC of Na VEE is the link with SInAPSi and its coordinator is also responsible for disabled students. From the 1<sup>st</sup> year all students must undergo a medical examination at the Department of Occupational Health to obtain a certificate of health that allows them access to all internal and external teaching facilities (Law 81/2008). Students who are considered ineligible, defined fragile students by SInAPSi (e.g. immunosuppressed, chronically ill) or pregnant students are exempted from the hazardous practical activities and alternative practical training is provided.

#### **7.5. Decisions on students' progression**

Students can be differentiated according to their career position in: *i*) on-course students, regularly enrolled in one of the five curricular years, *ii*) out-of-course students (students beyond the allotted time to obtain a degree). The general criteria for the VMTC are defined in the TB and in the Student Guidance. They can be summarized as follows:

- a minimum of 75% in theoretical lectures and 90% in practical activities attendances are required for admission to course examination
- passing certain preparatory exams is a requirement for admission to other subjects (e.g., Anatomy, histology and embryology must be passed before Physiology) or to the extramural CCT (e.g. Parasitology and Parasitic diseases)
- to be admitted to the final graduation examination, students must have *i*) participated in the entire PPT and reported the signatures on the PPT Logbook and CCT Booklet *ii*) acquired a total of 290 ECTS and written a thesis.

All outcome assessment materials (Area 8) and [final exam regulations](#) can be found in Annex D. Accordance between subjects and Day One Competences is reported in Annexes B and C. All members of the academic staff are available to offer clarification or retakes of the programme for students who fail exams. A Tutoring Service is organized by Teachers & Students JC for out-of-course students. Student progression and performance is an evaluation criterion of the VMTC monitored by ANVUR. The ANVUR criteria and quality indicators are officially published each year in the SUA-CdS. The ANVUR indicators, the results of student evaluation questionnaires and the opinions of graduates are commented by the RG and QA Committee. The comments are included in the [Annual Monitoring Report \(SMA\)](#), which is supervised by the Teachers & Students JC, discussed and approved in the VMTC Committee and thereafter it is evaluated by UniNa PQA. The limited number of students and the availability of academic staff has created over the years a rather quiet and familiar environment. Therefore, the causes of attrition are few. Students complain above all about the intense teaching course organization and the overlap of examination dates. Admission criteria, procedures, and number of students admitted are determined by the MUR (Area 7). There is no restriction on admission for subsequent years of study, except for admission to extramural CCT, for which preparatory exams are required. The academic organization, including [class times and practical activities](#), examination calendar and final sessions, is administrated by the MG and the VMTC Coordinator, approved by the VMTC Committee and Na VEE Board. Progression criteria and services to students are planned, implemented, monitored, and revised by the VMTC Committee. All the decisions are ratified by the Na VEE Board. Student services are organized by the Student Secretariat. Basic information about the VMTC can be found in [VETMECUM](#). The Teachers & Students JC deals with student problems (Area 8). The figure below shows a schematic view of the organization and management of VMTC.



**Fig. 7.1.** Deming cycle of the Na VEE VMTC organisation

The starting point of VMTC monitoring is the annual meetings with the stakeholders in the Steering Committee (SC) or in meetings that usually take place at the beginning and at the end of the extramural CCT. In case of critical issues mentioned by students in their evaluations or problems communicated by them directly, the first step is a meeting of the Teachers & Students JC, followed by a meeting of the VMTC Committee. Proposed solutions usually consist of updating instruction, introducing, or changing practical activities, or introducing new professional elective tracks that closely match the needs of the field and the professional opportunities. These changes are easy to implement and require only changes in TB. When more extensive changes are required, both TB and RAD are modified, foreseeing the intervention of the UniNa PQA and the review by the National University Council (CUN). In these cases, the RG prepares the Cyclical Review Report (RRC) in which the VMTC assessment is deepened. The monitoring of quality assurance of the study programme is carried out according to the rules given by ANVUR through the AVA system (self-evaluation, periodic evaluation, accreditation). The self-evaluation is a regular and planned process aimed at verifying the adequacy of the learning objectives, the correspondence between the objectives and the results, the effectiveness of the management methods of TC and the appropriate improvement actions. The UniNa CQA and Na VEE QA are responsible for monitoring the quality. The UniNa PQA meets regularly and evaluates the quality indicators provided by ANVUR, as well as the results of students and graduates evaluations, identifies critical issues and plans improvement actions (Area 1).

### 7.6. Exclusion of students from the programme and appeal processes

A minimum score of 20/90 is required for admission to the examination. The application form must be properly completed; any error in compilation will disqualify the student. The entrance test fee must be paid by the stated deadline, or the student will be not admitted. The Na VEE has no procedures for excluding admitted students. According to the Italian law, the student who fails to take examinations and doesn't pay tuition fees for eight consecutive years will be expelled from the course. Before this happens, in Na VEE, the Student Secretariat contacts the student by e-mail to pay the fees and pass at least an exam to maintain his/her student status. A student expelled from the programme may re-enroll in subsequent years if free places are available. In this case, the student may apply for recognition of ECTS already earned. The student may also appeal against the exclusion decision directly to the Responsible Office of UniNa.

### **7.7. Students' welfare**

As mentioned above, students suffering from specific learning disabilities or temporary difficulties can contact the SInAPSi centre. Group meetings are organized annually, open to all students and led by experienced clinical psychologists. These include cards and training sessions for students, as well as seminars on anxiety, the approach to exams, public speaking, dealing with emotions in relationships with teachers and colleagues, and the most appropriate study methods for different personalities. The Anti-Discrimination and Culture of Differences Section of the SInAPSi, organizes a series of activities also with the participation of some VM students, aimed at recognizing the importance of feeling part of an institution and counteracting any form of discrimination. In addition, the University Single Guarantee Committee for Equal Opportunities, the Promotion of Employee Welfare and Against Discrimination aims to ensure equality and opportunity in the public sector with regard to gender, age, sexual orientation, geographical and ethnic origin, disability, religion and language, and the creation of a working environment characterized by respect for the principles of equal opportunities, organizational welfare and the fight against all forms of discrimination and moral and psychological violence.

### **7.8. Students' needs, complaints, comments, and suggestions**

As already mentioned, the students are represented in key Committees and are thus actively involved both in the normal organization of teaching at the VMTC and in dealing with problems and critical situations. The strictly anonymous evaluation tests they prepare each year are carefully analysed and discussed by the Na VEE RG, Teaching & Students JC, and QA. Since 2022, monthly meetings have been organized for all students, attended by the Na VEE Director and all Committee coordinators. At these meetings, students are free to talk about their problems or make requests, complaints and suggestions.

#### *Comments on Area 7*

The limited number of students and the availability of academic staff have created a rather friendly and familiar environment over the years. The students are represented in key Na VEE Committees and are therefore always actively involved in the management and organizational processes. This is certainly a strength, but sometimes there is a danger that the excessive involvement of students in organizational activities is to the detriment of the time they can devote to their studies. MUR's admission procedures are very slow, and students enroll very late, compromising their careers from the start. In addition, they do not adequately consider students' motivations for entering the veterinary profession; to this regard the Board of Directors of Italian VEEs has recently asked the MUR to include a motivation questionnaire that candidates must fill when registering to sit the admission test, but no actions can be taken at the VMTC level. However, the MUR has proposed a different organization of the admission procedure through the [CISIA agency](#). This new procedure brings forward the admission test date so that the student can be enrolled earlier. In the last three years, the total number of students graduating has decreased, but the number of those students oncourse who are graduating has increased.

#### *Suggestions for improvement in Area 7*

The use of electronic platforms should be implemented both for supplementary teaching and to better organize appointments with students, to repeat the parts of the exam programs that are not clear or to clarify any doubts.

## Area 8. Student assessment

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### 8.1. Na VEE student assessment strategy

The rules, responsibilities and organization of learning assessment are outlined in the VMTC [Teaching Bylaws](#). The body responsible for the assessment strategy is the Management Group (MG), and consists of the VMTC Coordinator, one member of the Teaching Office (TO), a teacher and a student representative for each curriculum year. The MG meets periodically to organize the teaching plan, the course timetable, as well as to schedule exams and thesis defences. In addition, at the end of each semester, the MG gets together to evaluate the progress of the courses, to review teaching programmes and syllabuses and to check the correlation between programmes and learning outcomes. The stakeholders sitting on the Steering Committee (SC) ensure that the contents of the individual subjects are updated.

The assessment strategies and rules were defined in the ‘assessment guidelines document’ (Annex D) prepared on the first UNI EN ISO 9001:2015 certification audit, approved by the VMTC Committee and subsequently revised in 2020 to adapt them to the COVID emergency (Annex N). In short, the assessment design and learning outcomes were defined according to the opinions of the stakeholders enrolled as tutors in the extramural CCT and as valuers during the professional qualification exam. For each subject, objectives and expected learning outcomes were expressed, in accordance with the Dublin Descriptors, and soft skills. They were reported in each Subject Form and published on the website (Annex B). Based on these criteria, definitions were provided of specific methodologies for assessing the acquisition of the different forms of knowledge and the most suitable assessment tasks for each subject, with distinctions between basic subject and basic science, and professional disciplines (Area 3).

The teaching organization of the VMTC includes monographic and integrated courses consisting of several subjects. Most courses (82%) are integrated, whose subjects may include partially exonerative and non-compulsory tests (~ 30%).

The achievement of learning outcomes is assessed by means of various types of exams. Generally, the basic science and basic subjects prefer oral interviews or mixed written-oral exams. As for the professional subjects, mixed written-oral or practical-oral exams, or single modality are used. More than 60% of exams are oral interviews, the remaining are divided as follows: written 14%, oral and practical 13% and oral and written 8%.

**Theoretical knowledge** is evaluated mainly in oral or written exams, assessing the student's ability to frame the general context, to organize and summarise the discourse focusing on the most revealing features. Logical reasoning, deduction and problem-solving abilities are also assessed.

**Pre-clinical practical skills** are assessed during the practical activities of the subjects and PPT. Practical and oral exams can also certify skills by evaluating the acquisition of both manual and reasoning abilities.

**Clinical practical skills** are mainly evaluated during PPT as well as during the practical activities of subjects. Manual and reasoning skills are also tested by practical and oral examinations. **Soft skills** (learning and communication skills, judgment and problem-solving abilities) are evaluated during the briefing of HVTH or by presentation of clinical cases prepared by students individually or in small groups.

The Logbook is used to certify the acquisition of skills.

### 8.2. Assessment criteria and procedures

All information about criteria and procedures used for the assessment and the expected learning outcomes are reported in the Subject Form. Assessment procedures are also explained at the beginning of each course by all professors. To ensure maximum transparency during the



assessment process, oral and practical tests are open to all. The evaluation is expressed with a mark out of 30 for the exams. The pass grade is 18 and the maximum grade is 30 *cum laude*.

The [criteria for assessing](#) the acquisition of knowledge/skills are as follows:

- a very thorough knowledge of the topics covered in the integrated course, alongside excellent critical analysis skills, clear linking of ideas, and a good command of the specific terminology are evaluated with the highest grades (27-30 *cum laude*)
- adequate knowledge of the topics covered in the integrated course, a good degree of control of critical analysis skills, some linking of ideas, and some commands of specific terminology are assessed with good grades; good relevance of the topics presented (24-26)
- acceptable preparation of the topics covered in the integrated course, a sufficient ability to analyse critically, and a limited command of specific terminology result in fair grades; sufficient relevance of the topics presented (18-23).

The Examination Committee (ExC) for each integrated course must include at least two professors, one of which is the integrated course coordinator. At the end of the oral, written, or practical exam, the professor tells the students their grade. If the student accepts the grade, this is recorded on the UniNa platform, with the students adding their personal code (PIN) for final validation of the grade. At the end of the scheduled data, the integrated course coordinator closes the examination report and sends it to the Student Secretariat. The list of exams preparatory for admission to other integrated courses can be found [here](#). There are no restrictions or preparatory exams on admission for subsequent years of study, except for admission to extramural CCT. Upon completion of an exam and before grade registration, the students can discuss the results or the grade of the exam with the committee. If the students need further improvement, they can make an appointment with the teaching staff to obtain clarifications on specific parts of the syllabus. The students can **appeal against** an assessment outcome directly with the professor or with the VMTC Coordinator or if there are serious problems, these can be reported to the Teachers & Students JC and eventually to the Na VEE Director, who may nominate a new ExC.

Grades for the thesis defence are awarded by a Graduation Committee made up of thesis supervisors, based on the defence itself and the entire career of the candidate (Area 10). The basic grade of the degree is obtained from the weighted average of the all the exam grades, converted to hundredths.

### 8.3. Student assessment review

The number of exams per year and the time gap between them are provided by the VMTC Coordinator, and dates are [scheduled each year](#). The procedures of the students' assessment are established by ExC and are available in the Subject Form. All actions regarding implementation, assessment and revision are addressed by students or academic staff to the VMTC Coordinator and the VMTC Committee for final approval. The [learning outcomes](#) evaluated during the assessment are reported for each single subject or integrated course.

### 8.4. Achievement of learning outcomes

Achievement of learning outcomes is certified by a positive grade in the final exam of any subject, by a positive grade or judgment in a mid-term test, when applicable, and by the final graduation grade awarded following thesis defence. The achievement of Day One Competences is certified through a signature by supervisors on the Logbook, which at the end is delivered to the TO. The acquisition of skills and the verification of attendance during the extramural CCT are daily certified by tutors, checked by the PPT Committee and finally validated by the VMTC Coordinator.

The MG, also upon suggestions of the Teachers & Students JC or the SC, regularly reviews the curriculum. Up to 11 [exam sessions](#) per AY are scheduled. In addition, a variety of tools and

settings are applied to encourage students to develop a personal strategy focused on the improvement of their knowledge and skills suitable for their entire career. These include clinical case-study exercises, clinical rounds, technical visits, interaction with specialists and practitioners, e-learning resources both for individual and shared work. At the same time, to deliver the curriculum more effectively and to expose students to further stimuli, seminars and study days are organized by the Na VEE throughout the year. Additional topics could be suggested by students, especially by the IVSA. The assessment strategy to evaluate the summative knowledge which stems from the above-mentioned educational approach is based on the evaluation of the following competences: *i*) a solid knowledge of the single subject in compliance with the development of the Day One Competences assessed by means of oral, written and/or practical test as required by each specific subject, *ii*) problem solving aptitude, *iii*) soft skills development. Furthermore, students actively participate in the learning process through interaction with their tutors and by playing a key role in the Teachers & Students JC and the MG.

### **8.5. Assessment methodology**

The fulfilment of the knowledge required by Day One Competences, as well as the assessment of theoretical and practical skills in accordance with EU Directive 2005/36/EC on the recognition of professional qualifications is the basis of the assessment paths. These include intermediate formative tests as well as blended examination methods in compliance with the requirements of each subject. Members of the academic staff are responsible for verifying and certifying the competences achieved. The delivery of the certified CCT Booklet to the Student Secretariat is mandatory for admission to the thesis defence. When required by the subject, specific provisions are applied to special needs, such as in the case of pregnant students or students with specific disabilities (Area 7).

#### *Comments on Area 8*

The number of exclusively oral tests is considerable. This can be a limit, but it enables direct interviewing and, more importantly, evaluation of the student's reasoning and problem-solving skills. The number of dates for examination is substantial, and students are given the exam calendar well in advance.

#### *Suggestions for improvement in Area 8*

It would be desirable to harmonize and standardize an exam format to enhance the impact of each exam on the development of the summative knowledge gained by students at the end of the curriculum.

The identification of rational and objective criteria should be provided to assess the Soft Skills held and developed at single student level.

Replacing the hard copy Logbook with an electronic version would lead to better validation.

## Area 9. Academic and support staff

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### 9.1. Staff qualification and skills in compliance with National legislation

The Na VEE must ensure that all staff are appropriately qualified and prepared for their roles, in agreement with National and EU regulations and must apply fair and transparent processes for the recruitment and development of staff. A formal training (including good teaching and evaluation practices, learning and e-learning resources, safety, security and QA procedures) must be in place for all staff involved with teaching. Most academic staff (calculated as Full-Time Equivalent-FTE) involved in the VMTC must be veterinarians. It is expected that more than 2/3 of the instruction that the students receive, as determined by student teaching hours, is delivered by qualified veterinarians. The competences and skills required for the veterinary curriculum are updated on a regular basis in accordance with MUR guidelines. The members of the academic staff are responsible for verify and certify competences, included in the PPT Logbook and CCT Booklet (according to the Day One Competences), achieved by the student during the entire VMTC (Area 5).

According to the Italian Law n. 240/2010 the academic staff is divided in 'permanent' and 'temporary' positions. Permanent positions include Full Professors, Associate Professors and Assistant Professors. Since 2010, Assistant Professors have been replaced by Temporary Researchers classified into Type A Researchers (RTDa; untenured) and Type B Researchers (RTDb; with tenure-track). To access both positions a PhD is mandatory. The RTDa have a 3 year-contract, with the possibility of further extension for two years; RTDb may be contracted for 3 years only. To access a permanent position (Full and Associate Professors), candidates can participate in available National public competitions after obtaining the mandatory [National Scientific Qualification](#) (NSQ) for the specific position. Different criteria are considered for Full and Associate Professors. National Boards, composed by selected Full Professors, evaluate and assess the candidate's scientific qualifications including titles, publications and research ability. The ANVUR periodically revises the parameters needed to apply for the NSQ according to the MUR. A precise balance between teaching, research and services and flexibility among recruited staff is not regulated in the Italian system. Teaching activities are primarily done by Full, Associate and Assistant Professors while the Temporary Researchers are mainly involved in research work. More than 2/3 of the academic staff involved in the VMTC are veterinarians (Table 9.2.2) and several members have a PhD and/or European/National specialization. Several members of academic staff (senior and junior) are board-certified, currently residents or eligible at EBVS (Annex A). A formal '[Training for Teach in Vet](#)' is mandatory to all teaching staff since 2022 and available as elearning resource. The [course](#) is divided in different levels (basic and advanced) dedicated to practitioners involved in the student's training, support staff, junior and senior staff. All the staff is also trained on [security and safety](#) matters. All notices are regularly communicated to staff (both academic and support staff) and published on the Na VEE website.

### 9.2. Number, qualifications, skills, and recruitment of academic staff

In the last three AYs, the academic staff involved in VMTC was 98, 97, 101 personnel units. The average gender distribution is as follows: 47% male and 53% female. Since the last EAEVE on-site visitation, the Na VEE academic staff involved in veterinary training has increased by 9%. Academic staff is required to provide a defined amount of teaching hours/year, including lectures, tutorials, supplementary lectures, tutoring, etc. Regarding the number of 'face-to-face' hours to be delivered within this range, minimum parameters have been set (at the National level) according to the academic role: *i*) Full and Associate professors: 120 hours per year, *ii*) Assistant professors: 60 hours per year, *iii*) RTDb: 90 hours per year, *iv*) RTDa: up to 60 hours per year (not mandatory).

The Italian University Law does not provide for any kind of official procedure to assess, on an individual basis, the competence, and actual teaching skills of the staff involved in the undergraduates'

training. However, the ANVUR carries out in-site assessment for the Universities accreditation through careful evaluation of all procedures. Since 2017, all UniNa Departments have been accredited by ANVUR. A formal programme named Formation Experiences Didactics Competences Evaluation Organization Reflexivity Innovation – [FEDERICO](#) for high quality teaching training has been delivered by UniNa since 2018 and dedicated to RTDb. Moreover, since 2022 the Na VEE provides solid continuing education for teaching staff through dedicated courses called ‘Training for Teach in Vet’ to improve teaching skills. Continued training on the operative procedures of the clinical practices of the VTH and on security and safety matters is also offered by Na VEE.

The **recruitment and advancement** of academic staff are dependent on public funding. From an operational point of view, UniNa allocates a variable amount (or fractions) of ‘budget points’ to the Na VEE each year. The MUR defines a point as the budget needed to hire a Full Professor. The number of points allocated to Na VEE is determined by the overall allocation of MUR resources and some locally determined factors, such as the achievement of research and teaching objectives, the student population size, the number of teaching hours, and the expected academic turnover. The Na VEE Board is in charge of identifying the staff needs (including teaching and support staff) and evaluates requests for new positions according to the different SSD based on criteria comprising teaching load, support to clinical and research activities, maintenance/expansion of teaching competences. The Na VEE Board after assessing the proposal(s), provides deliberations, then analysed by the UniNa Academic Senate and Board of Governors for the final approval of the new position(s). As described, the recruitment procedures are already set to guarantee a high teaching staff qualification. In particular, the possession of the NSQ for a specific SSD ensures that the permanent academic staff can provide up-to-date research-based education.

**Table 9.2.1.** Academic staff of the VMTC

Type of contract	2022	2021	2020	Mean
Permanent (FTE 0.75/1.00)	64.3	60	61	61.8
Temporary: RTDa + RTDb (FTE 0.50/0.75)	5.8	4.0	3.9	4.6
Interns (FTE 0.20)	0.6	1.0	1.0	0.9
Residents (FTE 0.50)	4.5	3.5	2.5	3.5
PhD students (FTE 0.25)	9.5	8.7	7.5	8.6
VTH Practitioners (FTE 0.25)	6.0	3.6	1.5	3.7
PPT Practitioners (FTE 0.25)	4.7	4.7	6.0	5.1
<b>Total (FTE)</b>	<b>95.4</b>	<b>85.5</b>	<b>83.4</b>	<b>88.1</b>

Before a permanent academic position is reached, several years of temporary contracts are needed (3 years of PhD, 1-2 years of post-doc, 3/5 years of RTDa and/or 3 years of RTDb) which makes the academic career less attractive compared to other civil servant status careers.

Universities require national/local competitions for the recruitment of permanent academic staff. Each candidate applies using the MUR's online platform. Following the announcement of a call for applications, a committee of professors from the same recruitment sector evaluates the candidate's science curriculum.

Academic staff is periodically evaluated for teaching and research activities. Academic staff research activities are evaluated by UniNa and, periodically, by a national quality system (VQR, by the ANVUR). Members of the temporary academic staff are requested to complete an annual report to be approved by the Na VEE Board.

**Table 9.2.2.** Percentage (% of FTE) of veterinarians in academic staff of the VMTC

Type of contract	2022	2021	2020	Mean
Permanent	81.7	81.7	80.0	81.1

Temporary	83.0	82.7	80.8	82.2
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**Table 9.2.3.** Support staff of the VMTC

Type of contract	2022	2021	2020	Mean
Permanent (FTE 1)	32	32	35	33
Temporary (FTE)	--	--	--	--
<b>Total (FTE)</b>	<b>32</b>	<b>32</b>	<b>35</b>	<b>33</b>

**Table 9.2.4.** Research staff of the Na VEE

Type of contract	2022	2021	2020	Mean
Permanent (FTE 1.00)	81	78	80	79.7
Temporary (FTE 1.00)	20	19	18	19.0
Research fellow (FTE 1.00)	68	77	79	74.7
PhD students (FTE 0.75)	28.5	25.5	22.5	25.5
<b>Total (FTE)</b>	<b>197.5</b>	<b>199.5</b>	<b>199.5</b>	<b>198.8</b>

### 9.3. Academic staff employment peculiarities

The Italian University system according to the Italian Law no. 240/2010 includes the following academic staff levels: *i*) Full Professor (permanent position), *ii*) Associate Professor (permanent position), *iii*) Assistant Professor (permanent position), *iv*) Temporary Researchers: RTDa (fixed-term position 3 + 2 years) and RTDb (fixed-term position 3 years).

The RTDa contract can be extended for two years (5 total years). The temporary researcher RTDb becomes Associate Professor position upon achievement of the NSQ and positive evaluation from an external committee proposed by the Na VEE Board and approved by the UniNa Academic Senate and Board of Governors. Before the Italian Law no. 240/2010, the researcher position was permanent and named Assistant Professor. Within the Na VEE a few Assistant Professors are still present, even though their roles are being replaced by RTDa and RTDb. Although their role is declining, they have the chance to advance in their career. The Italian system does not stipulate a specific ratio between teaching, research, and services, or flexibility among hired workers. The only burden that is mentioned is the teaching load (120 h/year), and it is as follows: full-time professors must devote at least 350 hours per year to teaching, including mentorship, tutoring, and learning assessment. Parttime academics are instead expected to deliver 250 h/year (200 for Assistant Professors). RTDa researchers are required to teach up to 60 h/year (not mandatory) while RTDb must teach 90 h/year. The required workload is generally seen as being consistent with other activities, such as professional development and research. The civil servant status implies a guarantee of staff stability and continuity. However, in case of heavy and challenging academic duties/roles a partial reduction of the teaching workload may be asked (Director of the Department).

Research, professional development, and other activities take up portions of the teaching staff's time (e.g., Third Mission). Moreover, there is a lot of pressure on academics hired to cover organizational positions. Nevertheless, neither explicit recognition for career progression nor economic incentives for the covering of these positions have been provided yet.

Currently the Na VEE provides continuous educational courses such as 'Training for Teach in Vet' to improve the teaching quality and guarantee the excellence of teaching staff. The Teachers & Students JC, RG, Na VEE QA and VMTC Committee normally monitor the quality of teaching in accordance with UniNa QA by [collecting and analysing student feedback](#). In addition, since 2017 the VMTC has been awarded the UNI EN ISO 9001:2015 quality certification.

To ensure the continuing education of the staff involved in the VMTC and the day-to-day work of the VTH, a number of seminars are organised by some Na VEE's clinical branches. Book readings,

journal clubs and seminars mainly involve junior staff and students, under senior staff supervision. In addition, staff is constantly trained in the operational procedures and safety and security regulations of Na VEE.

PhD students, during the three-year programme, are trained once a week on basic skills to plan and lead the research, and on the English language provided by UniNa Language Centre (CLA). Finally, continuing education programmes offered by UniNa allow academic staff to further develop their skills and competences through different exchange programmes, including the Erasmus and Mobility Programmes for EU and non-EU countries, and incentives for visiting fellows. In the last three years, 10 academic staff members used Erasmus and Mobility Programmes to visit and collaborate with universities in other EU and non-EU countries and 26 academic staff and 4 support staff members have been hosted by the Na VEE.

#### **9.4. Staff development and effort for the VEE improvement**

The Na VEE considers it a priority to invest in individual growth as a means of advancing the institution as a whole. As far as research is concerned, UniNa has been taking part in the 'Researchers Night' since 2016.

The event promoted by the European Commission has involved numerous Italian and foreign cities with a single objective: to bring the public closer to the world of research, in an informal and fun context. In addition, most academics are affiliated with scientific societies and regularly participate in National and International events and meetings in their field of research/professional activity. Academic staff involved in the EBVS residency programmes constantly share their expertise by inviting the entire Na VEE to brainstorm on multidisciplinary topics. This ensures life-long learning and continuous professional growth.

Formal appraisal of the academic staff occurs in several ways: from the student evaluation to the attainment of the NSQ. The Na VEE Board formulates proposals to the UniNa Board of Governors for allocation of resources related to both recruitment and promotion of permanent staff. However, promotion cannot be planned on an individual basis: as mentioned, permanent academic staff can be promoted via competitive selection procedures advertised by UniNa and regulated by a specific regulation complying with National laws. Competitive selection procedures can be open to all NSQ qualified participants either external or restricted only to UniNa qualified academic staff. Recruitment of support staff has been halted for several years, resulting in a high average age of staff. Support staff are evaluated periodically by UniNa in view of pay rises (horizontal mobility). Additionally, the Na VEE Director evaluates support workers annually to determine their 'Individual Performance'. Temporary staff including RTDa and RTDb, involved in the VMTC must provide an annual workload report.

#### **9.5. Teaching staff assessment**

Students regularly evaluate teaching staff through a mandatory, anonymous online survey. The results of the student opinion survey are collected in analytical forms that are sent to the Teachers & Students JC, RG, Na VEE QA, VMTC Committee and to the academic staff.

The survey is focused on three major topics: *i*) Organisational Aspects, *ii*) Teaching Effectiveness, *iii*) Overall Satisfaction. The survey results are public and available [online](#). The assessment of extramural CCT is made with a similar survey.

Moreover, the Teachers & Students JC monitors the quality of the VMTC. Among its activities, the JC: *i*) ensures compliance with the teaching activities laid down in the Teaching Bylaws, *ii*) monitors the range of courses on offer, the quality of teaching and the service provided to students by academic staff, *iii*) statistically evaluates student learning outcomes, *iv*) protects students' rights.

*Comments on Area 9*

Na VEE academic staff is considered adequate in terms of number and with regards to the level of qualification of the teaching staff currently involved in the VMTC. It is well known that the academic recruitment and progression process in Italy is very complex and involves a long period of precarious employment (3 years PhD plus 3-5 years RTDa plus 3 years RTDb) before one can become an associate professor, which makes the academic career less attractive than others. However, in the last three years, the academic senior staff of VMTC has increased by 3%. There has also been an increase in the number of the junior staff, especially PhD candidates, thanks to the PNRR funds which made it possible to expand this workforce. This plan gives the opportunity to implement research infrastructures and attraction tools, as well as to recruit new researchers, thus fostering the professional growth of staff and the quality of scientific research. The strengthening of the didactic tools, facilities, continuing education programmes for the staff and the exchange programmes with other Universities give to the Na VEE the right motivation to deal with future challenges.

*Suggestions for improvement in Area 9*

The need to provide academic personnel with up-to-date training remains a crucial issue since this should be delivered by including objectives aimed at a balanced growth of their organizational, research, and teaching skills. All the abilities ought to be fully acknowledged in the future and evaluated. Promotional standards for the academic positions should be adjusted accordingly. The Na VEE deems it crucial to develop guidelines to further enhance the potential of our institution within the limits of current law, as well as to identify criteria for encouragement and evaluation of skills not only research-related ones. The constant support, motivation and gratification of staff are key to achieving all future goals and to creating a stimulating environment for the training of new veterinarians. The Na VEE, in close collaboration with UniNa governance, will be committed to better orienting and streamlining the programmes of educational events aimed at promoting the professional growth of all support staff.

## Area 10. Research programmes, continuing and postgraduate education

### 10.1. Research activities

The Na VEE conducts high-quality research reflected in several scientific outputs. Research activity at the Na VEE is divided into several areas whose general objective is to improve animal health and welfare and public health. In the last three years, more than 500 scientific papers were published in Web of Science or Scopus-indexed journals (Annex G). Of these, more than 300 were published in journals belonging to the first quartile of their subject area. Currently, the Na VEE consists of about 100 researchers with permanent or temporary contracts who work in 17 SSD.

Research funding (Table 10.1.1) comes from different sources/agencies: *i*) International (e.g., Horizon 2020, Horizon Europe, Marie Skłodowska-Curie Actions, COST Action, ERASMUS, LIFE programmes, FEAMP), *ii*) National (e.g., PRIN MUR, MISE, Ministry of Health, PNRR, MiPAAF), *iii*) UniNa (e.g., FRA and STAR), *iv*) Campania Region (e.g., PSR), *v*) Research contracted by private companies, industries, or other institutions. Up-to-date research findings are used by academic teaching staff as a strategy to deliver and/or deepen a certain topic in class and to illustrate to students how their specialized work may have significance to society. The purpose is also to encourage the development of scientific thinking and, more generally, to spark interest and motivation to pursue scientific questions. During the first four years of the programme, many students choose on a voluntary basis to participate in the research activities of the Na VEE by attending the clinics/laboratories, under the supervision of staff members. For thesis, most undergraduates choose to participate in experimental research on a specific topic conducted under the supervision of an academic supervisor. The Na VEE also provides several exchange programmes for undergraduate students to experience research-based veterinary education at other universities.

**Table 10.1.1.** List of the major funded (> 50,000 €) research programmes in the Na VEE which were ongoing during the last full academic year prior the Visitation (year 2022)

Agency	Scientific topic	Research Grant, €	Research grant/year, €	Duration, yrs.
Campania Region- PSR	Animal production	691,779.53	230,593.18	3
EU-Horizon 2020	Animal production	668,683.00	222,894.33	3
EU-Horizon 2020	Parasitology and Parasitic diseases	400,000.00	133,333.33	3
Campania Region	Veterinary state medicine and public health and Preventive medicine	400,000.00	133,333.33	3
Campania Region	Veterinary state medicine and public health and Preventive medicine	235,000.00	117,661.18	2
EU-Horizon 2020	Parasitology and Parasitic diseases	218,900.00	54,725.00	4
Campania Region- GAL	FSQ & VPH, and One Health Concept	199,942.53	99,971.27	2
EU-LIFE	Parasitology and Parasitic diseases	195,700.00	48,925.00	4
Campania Region	Veterinary state medicine and public health and Preventive medicine	195,000.00	97,500.00	2
Campania Region	Veterinary state medicine and public health and Preventive medicine	195,000.00	65,000.00	3
Campania Region	Veterinary state medicine and public health and Preventive medicine	195,000.00	65,000.00	3
Italy- MUR	Parasitology and Parasitic diseases	150,500.28	37,625.07	3
Campania Region	Animal production	150,000.00	50,000.00	3
Campania Region	Veterinary state medicine and public health and Preventive medicine	150,000.00	50,000.00	3
Italy- PON	Animal production	150,000.00	37,500.00	4



Campania Region	Veterinary state medicine and public health and Preventive medicine	149,500.00	74,750.00	2
Campania Region- PSR	Animal production	120,047.64	30,011.91	4
Campania Region	Veterinary state medicine and public health and Preventive medicine	100,000.00	50,000.00	2
Campania Region	Parasitology and Parasitic diseases	100,000.00	50,000.00	2
Campania Region	Parasitology and Parasitic diseases	100,000.00	50,000.00	2
Campania Region- PSR	Animal production	92,410.33	46,205.17	2
Campania Region	Parasitology and Parasitic diseases	90,000.00	45,000.00	2
EU-Feamp	FSQ & VPH, and One Health Concept	90,000.00	45,000.00	2
Italy- STAR	Parasitology and Parasitic diseases	90,000.00	30,000.00	3
Campania Region- PSR	Parasitology and Parasitic diseases	79,000.00	19,750.00	4
Campania Region	Parasitology and Parasitic diseases	77,757.00	25,919.00	3
Campania Region	Veterinary state medicine and public health and Preventive medicine	75,000.00	25,000.00	3
EU-Feamp	FSQ & VPH, and One Health Concept	75,000.00	18,750.00	4
Campania Region	Parasitology and Parasitic diseases	70,000.00	35,000.00	2
Italy- Ministry of Health	Parasitology and Parasitic diseases	63,800.00	21,266.67	3
Campania Region	Parasitology and Parasitic diseases	60,000.00	30,000.00	2
Campania Region	Parasitology and Parasitic diseases	60,000.00	30,000.00	2
Campania Region	FSQ & VPH, and One Health Concept	60,000.00	30,000.00	2
Campania Region	Parasitology and Parasitic diseases	60,000.00	20,000.00	3
Campania Region	FSQ & VPH, and One Health Concept	60,000.00	15,000.00	4
EU-Horizon 2020	FSQ & VPH, and One Health Concept	54,103.48	18,034.49	3
EU-Erasmus	Anatomy	53,382.00	13,345.50	4
Campania Region	FSQ & VPH, and One Health Concept	50,000.00	50,000.00	1
Campania Region	Animal production	50,000.00	25,000.00	2
Campania Region	Pathological anatomy, histopathology, and necropsy	50,000.00	25,000.00	2
Campania Region	Veterinary state medicine and public health and Preventive medicine	50,000.00	16,666.67	3
Campania Region	Parasitology and Parasitic diseases	50,000.00	12,500.00	4
Italy-INAIL	Propaedeutics	50,000.00	12,500.00	4

## 10.2. Research programmes

**Research** is a significant component of students' education, by promoting the development of a critical point of view to be applied to any future choice in the work arena. As mentioned above, inclass academic staff presenting research findings encourage students to develop scientific thinking. Furthermore, study days are organized by the Na VEE throughout the year to expose students to the scientific and research world and support them in the selection of the option that is most suitable to their skills and attitudes. By participating in research programmes during the curriculum, students learn the fundamentals of **evidence-based medicine** and are trained by the academic staff to critically read scientific papers. On a compulsory or non-compulsory basis the student attends National and International workshops, seminars, conferences, and research promotion events (e.g. the Night of Researchers). Each research-oriented event is published on the [website of the Na VEE](#).

The compulsory graduation thesis may be an original experimental work or a critical review of a relevant topic in veterinary science. The thesis supervisor teaches undergraduate students how to use university library resources and work with databases (e.g., Web of Science, Scopus, PubMed). Therefore, as a first step, students are required to summarize the current state of knowledge on a specific topic and identify research gaps through a detailed analysis of the up-to-date literature. In the

case of the original experimental work, students are also required to follow and perform experiments in the laboratory or field, analyse data, and write a final text organised as a scientific paper. At the end of the graduation work, students are required to defend their thesis in front of a Graduation Committee. Undergraduates may participate in research activities on a non-compulsory basis (volunteer intern students). Participation in research is compulsory only for the original experimental work. Undergraduates are usually informed about the available projects in class or during the practical training sessions. Moreover, research strands are published on the [Na VEE website](#). The student may also make an appointment with their potential supervisor/s to discuss the research activities available. Overall, 10 ECTS are awarded for the graduation thesis work. Students must choose a topic and their supervisor/s at least 18 months before the final defence and, in any case, after the student has passed at least 16 exams. The thesis must be submitted 20 days before the defence. The student must defend the thesis, with the presentation and discussion of context, methods, and results thereof, in front of the Graduation Committee (composed of at least five members, four of which must be academic professors). Assessment criteria are reported on the [Na VEE website](#) (Area 8).

On the day of the thesis defence, each supervisor gives a brief presentation of the student research activity to the Committee. The evaluation of the student depends on the weighted average of grades obtained along the curriculum and score given to the defence. Experimental theses are usually (but not necessarily) awarded higher marks. The maximum score that can be attributed is 110/110 *cum laude*.

### 10.3 Advanced postgraduate degree programmes

As of today, post-graduate programmes (Table 10.3.1, 10.3.2, 10.3.3 and 10.3.4) available at the Na VEE include:

- [A three-year PhD course in Veterinary Sciences](#). In 2022, the Na VEE belonging to the [Task Force](#) on Microbiome Studies of the UniNa has been also involved in a Transdisciplinary Doctoral Programme in Microbiome Science co-funded by the EU (Call H2020-MSCACOFUND-2020). Moreover, four members of the Na VEE staff are current members of the PhD Board of other National or foreign Universities
- [Seven \(three-year\) Specialization Schools](#)
- [Two Level I Master](#)
- [One Level II Master](#)
- [One Residency Program](#) in the European veterinary parasitology college (EVPC). Moreover, the Na VEE staff included 4 EBVS college diplomates (ECVPC, ECVPH, ECVS and ECVM) over the years analysed in this SER. In addition, a Na VEE PhD student is a diplomate in ECVS
- [Six Postgraduate improvement courses](#); -  
Continuing education courses;
- [Rotating Internship Programme](#).

Postgraduate students are expected to increase with existing and new course provisions. The number of PhD students is expected to increase, in light of the implementation of the PNRR. Moreover, the presence of recent EBVS college diplomates within the academic staff will produce an increase in postgraduates involved in EBVS programmes in the next three years. On the other hand, fluctuation is not expected in attendances of Na VEE specialization schools.

Postgraduate students provide great support to the academic staff, but they are not involved in teaching. However, they are involved in undergraduate students' hands-on professional training. Undergraduate and postgraduate students collaborate under the supervision of the academic staff during clinical activities and share insights and skills about clinical case management. Generally speaking, the training of postgraduate students is not in conflict with the VMTC PPT. Since 2000

**Continuing Education Programmes (ECM)** for veterinarians are mandatory in Italy. Qualified veterinarians must acquire 50 ECM per year by attending accredited courses and sitting a final Multiple Choice Question exam. In the Na VEE, continuing education is provided through: specialization schools, postgraduate improvement courses lasting up to 12 months and often ECM accredited (Table 10.3.3), seminars, and conferences (Table 10.3.4). Courses, seminars, and conferences (both in person and online) are organized by the Na VEE alone or, mainly, in collaboration with stakeholders (e.g., professional associations). Moreover, the academic staff teaches in many ECMs that are organized in Italy. In the last three years, the Na VEE has organized over 30 seminars, workshops, and short courses mostly focusing on fields that are not covered by external institutions (Table 10.3.4). Moreover, the Na VEE hosts and sponsors many courses and seminars organized by external state and private institutions (not listed).

**Table 10.3.1.** Number of students registered at postgraduate clinical training

Training	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
<b>Clinical Rotating Internship Programme</b>				
Companion animals (dog and cat)	3	0	5	2.7
<b>Total</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>2.7</b>
<b>Resident EBVS disciplines</b>				
EVPC- European Veterinary Parasitology College	3	3	1	2.3
ECLAM -European College of Laboratory Animal Medicine	1	1	1	1.0
ECVPH - European College of Veterinary Public Health	1	0	0	0.3
ECAR - European College of Animal Reproduction	2	1	1	1.3
ECVAA - European College of Veterinary Anaesthesia and Analgesia	1	1	1	1.00
ECBHM- European College of Bovine Health Management	1	1	1	1.00
<b>Total</b>	<b>9</b>	<b>7</b>	<b>5</b>	<b>7.0</b>
<b>Clinical Specialisation schools</b>				
Physiopathology of Animal Reproduction	42	49	25	38.7

**Table 10.3.2.** Number of students registered at postgraduate research training

Degrees	2022	2021	2020	Mean
PhD	38	34	30	34
Research Fellowship*	68	77	79	74.7
<b>Total</b>	<b>106</b>	<b>111</b>	<b>109</b>	<b>108.7</b>

\*Can last for 1 month up to more than 12 months, research grant lasting 12 months is estimated as 1.

**Table 10.3.3.** Number of students registered at other postgraduate programmes in the Na VEE but not related to either clinical or research work (including any external/distance learning courses)

Programmes		AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Specialization schools	Laboratory animal science and medicine	25	25	25	25.0
	Applied ethology and animal welfare	78	84	58	73.3
	Inspection of food of animal origin	105	116	80	100.3
	Infectious diseases. prophylaxis and animal health	103	100	105	102.7
	Technology and pathology of poultry rabbit and game species	62	54	55	57.0
	Animal nutrition	58	67	31	52.0
	Collective catering	-	-	9	-
Postgraduate improvement courses	Care and welfare of unconventional pets	-	19	-	-
	Hygienic-sanitary management of apiaries to safeguard the environment and biodiversity	26	23	-	24.5
	Control of the fishery products chain	19	20	-	19.5
	Production of edible insects	13	15	-	14
	Food Safety in emergencies	-	27	-	-
Master	Veterinary forensic sciences	19	25	25	23
	One health: acupuncture, phytotherapy and food supplementation	29	32	-	30.5
	Conservation of agro-silvo-pastoral environments and animal biodiversity in Italy and Europe	6	-	-	-

**Table 10.3.4.** Number of continuing education courses provided by the NA VEE and number of attendees\*

Courses	AY 2021-2022	AY 2020-2021	AY 2019-2020	Mean
Number of courses	11	9	17	12.3
Number of attendees	585	600	1385	856.7

\*More detailed on courses and respective number of attendees are reported in Annex L.

#### 10.4. The QA system in research activities as an opportunity for student training

Besides compulsory courses, students are also encouraged to take part in seminars, workshops, and Journal Clubs. Ongoing research projects offer students varied opportunities to be integrated into a research team and perform the mandatory thesis work under qualified guidance.

Different procedures and organizations evaluate the quality of research and postgraduate courses. The ANVUR, and other public agencies periodically assess the **research** quality through dedicated scheme called VQR. The official bodies of the **PhD course** are the PhD Coordinator and Board. The latter: *i*) sets the number of doctoral students in accordance with the availability of grants; *ii*) defines methods for annual monitoring and scientific-cultural training of PhD students; *iii*) assigns research projects and appoints tutors in agreement with each PhD student; *iv*) evaluates activities carried out by the candidates.

**Clinical Rotating Internship Programme** dedicated to specialist training in dog and cat clinic to create high-quality practitioners able to access European specialization. The programme lasts 46 weeks during which the student must participate in the activity of the HVTH, rotating among different services: internal medicine, surgery, diagnostic imaging, reproduction, and 24/7 ECCS and ICU. The call for applications is launched once a year. The number of students is determined by the UniNa available funds. At the end of the programme, a Diploma is issued upon final examination.

**Residency:** The residency programmes offered by the Na VEE is the EVPC. Currently, two staff members are involved in the EVPC standard programmes, and one in the ECLAM. Moreover, three Na VEE academics with a permanent or temporary contract, one post-doc, and one PhD student are currently involved in EBVS alternative programmes (ECAR = 2, ECBHM = 1, ECVA = 1, ECVPH = 1). In the alternative programmes, the Na VEE supports the resident economically and scientifically. To meet the requirements of the residency, the research activity carried out at the Na VEE is recognized by each college. Moreover, within the Na VEE staff, 2 EBVS college diplomates are supervising two alternative programmes in the EVPC and ECVPH.

**Italian National Specialisation Schools:** Veterinary specialization schools awarding specialist qualifications are established by MUR. Specialization programmes are organized in three years of theoretical and practical courses. To get the Diploma each student must write and defend a thesis in front of a dedicated committee. The number of attendees is determined by the UniNa and admission is based on curriculum and written Multiple Choice Question tests.

#### *Comments on Area 10*

The Na VEE participates in several research activities, with many different research projects that cover several areas of veterinary medicine. In addition to the good position in different rankings the intense scientific activity of the Na VEE academic staff is proven by the large number of publications and other research outputs. The Na VEE continues to promote start-grants to encourage collaboration with other VEEs and to attract research fundings. The Na VEE allows undergraduates to join any research team and work with academic staff on one or more research projects throughout their careers. As a result, a significant number of students attend postgraduate research programmes.

The residency programmes offered by the Na VEE are still limited but the presence of recent EBVS college diplomates within the academic staff will allow an increase in postgraduates involved in EBVS programmes in the next years.

The Na VEE has strong and attractive programmes of postgraduate teaching that include National Specialisation Schools, Postgraduate improvement, and Continuing education courses covering several areas of veterinary medicine.

#### *Suggestions for improvement in Area 10*

Focus groups to promote knowledge and technology exchange between units are organised. Improving research proposals, often characterised by linear models and isolated actions, through support measures to broaden inclusive and shared funding possibilities and investing in research infrastructure and the acquisition of shared expertise (open lab).

In addition, increasing the quality of scientific production through the promotion of publications in high impact journals and introducing integrated objective criteria in the allocation of resources alongside an ex-post evaluation. Increasing the number of residency programmes offered at Na VEE by increasing the number of EBVS diplomates within the academic staff.

Finally, a strategy should be developed to attract private sponsors for residency fellowships and the Na VEE should promote the legal recognition of European or American Diplomates at the national level.



### ESEVT Indicators

Name of the Establishment: **Na VEE Dipartimento di Medicina Veterinaria e Produzioni Animali**

Date of the form filling: **16-feb-23**

Calculated Indicators from raw data		Establishment values	Median values <sup>1</sup>	Minimal values <sup>2</sup>	Balance <sup>3</sup>
<b>I1</b>	n° of FTE academic staff involved in veterinary training / n° of undergraduate students	0,253	0,15	0,13	0,127
<b>I2</b>	n° of FTE veterinarians involved in veterinary training / n° of students graduating annually	1,395	0,84	0,63	0,765
<b>I3</b>	n° of FTE support staff involved in veterinary training / n° of students graduating annually	1,747	0,88	0,54	1,207
<b>I4</b>	n° of hours of practical (non-clinical) training	755,133	953,50	700,59	54,543
<b>I5</b>	n° of hours of clinical training	1027,667	941,58	704,80	322,867
<b>I6</b>	n° of hours of FSQ & VPH training	412,000	293,50	191,80	220,200
<b>I7</b>	n° of hours of extra-mural practical training in FSQ & VPH	228,333	75,00	31,80	196,533
<b>I8</b>	n° of companion animal patients seen intra-murally / n° of students graduating annually	56,104	62,31	43,58	12,524
<b>I9</b>	n° of ruminant and pig patients seen intra-murally / n° of students graduating annually	0,000	2,49	0,89	<b>-0,890</b>
<b>I10</b>	n° of equine patients seen intra-murally / n° of students graduating annually	0,133	4,16	1,53	<b>-1,397</b>
<b>I11</b>	n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually	0,191	3,11	1,16	<b>-0,969</b>
<b>I12</b>	n° of companion animal patients seen extra-murally / n° of students graduating annually	30,988	5,06	0,43	30,558
<b>I13</b>	n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually	48,220	16,26	8,85	39,370
<b>I14</b>	n° of equine patients seen extra-murally / n° of students graduating annually	10,387	1,80	0,62	9,767
<b>I15</b>	n° of visits to ruminant and pig herds / n° of students graduating annually	1,890	1,29	0,54	1,350
<b>I16</b>	n° of visits of poultry and farmed rabbit units / n° of students graduating annually	0,208	0,11	0,04	0,163
<b>I17</b>	n° of companion animal necropsies / n° of students graduating annually	4,613	2,11	1,40	3,213
<b>I18</b>	n° of ruminant and pig necropsies / n° of students graduating annually	0,416	1,36	0,90	<b>-0,484</b>
<b>I19</b>	n° of equine necropsies / n° of students graduating annually	0,156	0,18	0,10	0,056
<b>I20</b>	n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually	1,595	2,65	0,88	0,715
<b>I21*</b>	n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually	0,295	0,27	0,06	0,235
<b>I22*</b>	n° of PhD graduating annually / n° of students graduating annually	0,197	0,15	0,07	0,127

<sup>1</sup>Median values defined by data from Establishments with Accreditation/Approval status in May 2019.

<sup>2</sup>Recommended minimal values calculated as the 20th percentile of data from Establishments with Accreditation/Approval status in May 2019.

<sup>3</sup>A negative balance indicates that the Indicator is below the recommended minimal value.

\*Indicators used only for statistical purpose.