Education and Training requirements for veterinarians in Laboratory animal science and medicine (LASM): Minimum requirements to guarantee that graduates from Veterinary Establishments approved/accredited by the ESEVT fulfill the requisites of Designated Veterinarian (entry level) as stated in Directive 2010/63/EU

INTRODUCTION

- Veterinarians in order to be qualified as professionals need to take a minimum of 5-year training mandatory by European Legislation (Article 38 in Directive 2005/36/EC and Directive 2013/55/EU).
- Veterinary degree is equal to EQF 7.
- Preliminary results of the FVE-EAEVE survey on the training of LASM in European Veterinary Faculties' Curriculum, has shown that specific training requirements for the basic training for Designated Veterinarians (DVs) referred in the EWG consensus document, such as "National legislation" (module 1) and "Ethics, animal welfare and the Three Rs" (module 9) are in many cases already included in the undergraduate curricula even as a separate subject. Other modules such as "Design of procedures and projects" (module 10) are not necessary in all functions, e.g. in the case of supplier or breeding establishment.
- The obligatory undergraduate training in the field of LASM has to cover only the basis of knowledge and experience that will encourage a graduate veterinarian to search for a career in LASM.
- Need to acknowledge that veterinary schools have to comply with the minimum standards (obligatory undergraduate training) of the European System of Evaluation of Veterinary Training (ESEVT) in order to be approved/ accredited, but are free to develop their curriculum at a higher level. This is clearly presented in the outcome of the EAEVE-FVE survey, which has shown the large diversity in the amount of hours of Obligatory and Elective teaching of LAMS in the different schools in the EU.
- Whether a graduate veterinarian is capable of starting as DV in a facility (breeder, supplier or research establishment) is always the hiring employer that will decide on the competence of the particular employee as applies in any other field of the veterinary profession.
- A veterinarian, unlikely to the other professionals that may function under the Directive 2010/63/EU, is a regulated profession. Directive 2005/36/EC and Directive 2013/55/EU lay down the requirements for the regulated professions in EU and ensures mobility in the internal market. Among others, Directive 2005/36/EC and Directive 2013/55/EC lay down the minimum requirements for the veterinary undergraduate education and continuous professional development (CPD) for all regulated professions in recital 15[1].
- As any other professional, veterinarians are responsible for their CPD to cover the necessary level of knowledge as they develop in their career and therefore being able to acquire more complex roles.
- ECCVT (EAEVE, FVE and EBVS) have put together the minimum requirements for the Day-1 Competences for graduate veterinarians that apply in the evaluations by the ESEVT. These

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0132:0170:en:PDF

Recital 15

"Continuous professional development contributes to the safe and effective practice of professionals who benefit from the automatic recognition of their professional qualifications. It is important to encourage the further strengthening of continuous professional development for those professions. Member States should in particular encourage continuous professional development for doctors of medicine, medical specialists, general practitioners, nurses responsible for general care, dental practitioners, specialised dental practitioners, veterinary surgeons, midwives, pharmacists and architects. The measures taken by Member States to promote continuous professional development for those professions should be communicated to the Commission, and Member States should exchange best practice in that area. Continuous professional development should cover technical, scientific, regulatory and ethical developments and motivate professionals to participate in lifelong learning relevant to their profession."

requirements may apply for pets, food producing animals and also for teaching of LASM[2] since any of those animal species may be used for research purposes.

Based on the above document FVE and EAEVE has made a gap analysis and conclude that graduate veterinarians from Veterinary Establishments with minimum standards of quality (approved/accredited by the ESEVT) can be ready to take the role of DV in a breeder, supplier or research facility and therefore has the right to apply for such position after their graduation. Based on the particular curriculum of the school and the needs of the facility, the employer is responsible to decide on the best candidate.

[2] http://www.fve.org/education/docs_to_download/ECCVT%20Newsletter/Other%20activities/2015_2%20D1C_Adopted.pdf

Education and Training requirements for veterinarians in Laboratory animal science and medicine

LO: learning outcome

Core competencies	DESIGNATED VETERINARIAN Directive 2010/63/EU common education and training framework working document Learning outcomes (Trainees should be able to:)	ECCVT Day1 competences	VETCEE (EQF LEVEL 7)	ECLAM DIPLOMATE
Animal care, health and management	(Module 4) **+ LO 24.13-24.25**	Included		
	24.13. Relate the purposes of a routine animal house visit and how to deal with issues arising 24.14. Outline the preparation required for routine visits 24.15. Formulate the information to be included in health records and reports to the animal care staff and others 24.16. Summarise basic principles of disease surveillance, prevention and management in laboratory animals and the principles of health monitoring schemes, including information on relevant microorganisms infecting laboratory animals such as their classification, the potential impact on research and animal health, their	(1.3) 1.5 (1.15) 1.16 1.17 1.18 1.19 1.20		

	zoonotic potential, their prevention, diagnosis, treatment and eradication, as well as the clinical appearance, aetiology and pathology of common laboratory animal diseases 24.17. Outline the requirements for health screening, e.g. FELASA guidelines 24.18. Outline appropriate management and control strategies for biosecurity and disease outbreak in laboratory animals 24.19. Describe an overview of the principles of laboratory animal husbandry, outlining the main principles of cage/enclosure design and construction and the advantages and disadvantages of different types of caging system 24.20. Explain the principles relating to the choice of appropriate environmental conditions and types of environmental enrichment used for laboratory animals 24.21. Describe the different methods by which the relevant animals are allowed to be killed, the influence different methods can have on scientific outcomes and on how to select the most appropriate method 24.22. Outline the principles of hygiene/disinfection/sterilisation that apply to the laboratory animal facility including the parameters	(1.21) (1.22) (1.24) 1.28 1.29 1.33 1.36 2.1 2.2 2.3 (2.4) 2.5 2.6 2.9 (2.10) 2.12		

	influencing water quality, how to check for water quality and how to interpret results 24.23. Demonstrate an awareness of the main hazards that may be encountered in a laboratory animal facility and the role of the DV in minimizing the risks 24.24. Describe key biological characteristics and features of relevant species and recognize factors that may impact their care or use as laboratory animal 24.25. Discuss the creation and use of genetically altered animals in research including common types of GA animals and uses in research and different ways to create and evaluate GA animals, as well as how these are designated according to international guidelines for nomenclature	1.32		
Recognition of pain, suffering and distress	(Module 5)	Included 1.31 (1.32)		
Anaesthesia, analgesia and surgery	(Module 20-22) **+LO 24.26-24.28**	Included		
	24.26. Demonstrate adequate knowledge of the management of anaesthesia, analgesia and surgery in the context of animals used for scientific purposes 24.27. Relate the factors influencing choice of	1.16 1.29 1.30		

	anaesthetic protocols in different situations 24.28. Describe the specific issues arising from experimental surgery and identify the role of the DV in relation to experimental surgery	1.31		
National Legislation	Module 1 1.1. Identify and describe the national and EU laws and guidance which regulate the scientific use of animals and in particular the activities of those carrying out scientific procedures involving them. 1.2. Identify and describe related animal welfare legislation. 1.3 Describe the authorisation that is needed before acting as user, breeder or supplier of laboratory animals and especially the authorisation required for projects and where applicable individuals. 1.4. List sources of information and support that are available (regarding national legislation). 1.5. Describe the role of the personnel mentioned in Article 24, 25 and 26, and their statutory duties and other responsibilities under the National Legislation. 1.6. Describe the roles and responsibilities of the local animal welfare bodies and the national committee for	1.1 (1.2) 1.3 (1.32) 2.7 2.12		

	the protection of animals used for scientific purposes. 1.7. Indicate who is responsible for compliance at an establishment and how this responsibility may be exercised (e.g. through the local AWB). 1.8. Describe when a procedure becomes regulated under National legislation (minimum threshold of pain, suffering, distress or lasting harm). 1.9. Indicate who bears primary responsibility for the animals undergoing procedures. 1.10. List which species, including respective stages of development that are included in the scope of the Directive / National law. 1.11. Indicate the circumstances in which animals under the scope of the Directive should be humanely killed or removed from the study to receive veterinary treatment. 1.12. Describe the legislative controls over the killing of animals bred or used for scientific procedures			
	+ LO 24.1 - 24.5 24.1. Summarise the statutory duties and professional requirements of the DV 24.2. Compare the roles, responsibilities and interactions of those working under the Directive within an	1.20 1.25 1.26 (1.27)		

	establishment and explain the legal composition and the role of Animal Welfare Body 24.3. Explain the role of the veterinarian in directing prescription, order, storage and dispensing and disposal of medicines for animals maintained at authorised establishments and used in procedures 24.4. Describe the role of the DV in the import and export, and transport of laboratory animals 24.5. Outline legislative controls on the creation and use of Genetically Altered Animals	2.7 2.8 (2.10)		
Ethics, animal welfare and the Three Rs (level 2)	Module 9 9.1. Understand that there is a broad range of ethical, welfare and scientific perspectives on the use of animals in scientific procedures, and that thinking on all of these matters evolves over time and is influenced by culture and context. 9.2. Understand that this means there is need for on-going critical evaluation of the justification for using animals and of implementation of the Three Rs at all stages of the life of a project. 9.3. Recognise that there are ethical limits to what it is considered permissible to do under the Directive and that even within these legal constraints, there are also	1.4 2.1 2.2 2.12		

	likely to be national and institutional differences in this respect. 9.4. Explain that legislation requires that the justification for programmes of work is assessed by weighing potential adverse effects on the animals against the likely benefits; that harms to animals must be minimised, and benefits maximised. 9.5. Understand and provide the information necessary to enable a robust harm/benefit assessment to be performed; and explain why they personally consider that the potential benefits outweigh the likely adverse effects. 9.6. Understand the need to communicate appropriate information to a wider public audience, and be able to prepare an appropriate non-technical project summary to facilitate this. 9.7. Describe the importance of disseminating information that will promote understanding of ethical issues, good animal welfare, good science and application of the Three Rs.			
	+ LO 24.6-24.12 24.6. Define the Three Rs principles and provide examples of application of each to a breeding/supplier/user establishment; in particular,	1.4 1.8		

	discuss the alleviation of pain and potentially lasting harm 24.7. Justify the importance of good animal health and welfare (with regards to the scientific outcomes and societal or moral reason) and recognise the relationship between health and welfare and scientific validity 24.8. Identify sources of information relating to ethics, animal welfare and veterinary information enabling the implementation of the Three Rs 24.9. Explain the need for a culture of care and the individual's role in contributing to this 24.10. Explain how the DV can contribute to the dissemination of information that will promote understanding of ethical issues, good animal welfare, good science and application of the Three Rs 24.11. Identify the criteria used in making a harm-benefit analysis and be able to apply them 24.12. Identify the role of the DV in advising on choice of animal model and model refinement	1.13 2.1 2.2 2.3 2.12 **<u>24.25/ 24.28/</u>** Is it necessary for		

		ALL types of facilities, e.g. also for breeders and suppliers?		
Design of procedures and projects (level 1)	Module 10 10.1. Describe the concepts of fidelity and discrimination (e.g. as discussed by Russell and Burch and others). 10.2. Explain the concept of variability, its causes and methods of reducing it (uses and limitations of isogenic strains, outbred stocks, genetically modified strains, sourcing, stress and the value of habituation, clinical or sub-clinical infections, and basic biology). 10.3. Describe possible causes of bias and ways of alleviating it (e.g. formal randomisation, blind trials and possible actions when randomisation and blinding are not possible). 10.4. Identify the experimental unit and recognise issues of non-independence (pseudo-replication). 10.5. Describe the variables affecting significance, including the meaning of statistical power and "p-values". 10.6. Identify formal ways of determining of sample size (power analysis or the resource equation method).	**Module 10** Is it necessary for ALL types of facilities, e.g. also for breeders and suppliers? 1.3 1.12 2.10		

	10.7. List the different types of formal experimental designs (e.g. completely randomised, randomised block, repeated measures [within subject], Latin square and factorial experimental designs). 10.8. Explain how to access expert help in the design of an experiment and the interpretation of experimental results			
Introduction to the local environment	Module 50 50.1. Discuss how the scope and the spirit of the Directive 2010/63/EU and other legislation and guidelines pertain to the care and use of animals for scientific purposes in your establishment. 50.2. Describe the local organogram and your role within it. 50.3. Distinguish the roles, responsibilities and interactions of those working under the Directive within the establishment, namely those listed under Article 20, 24, 25 and 40. 50.4. Relate the tasks of the Animal Welfare Body and describe your role in contributing to these tasks. 50.5. Analyse ways in which your role can contribute towards the promotion and implementation and dissemination of the Three Rs at your establishment.	1.6 (1.7) 1.10 (1.12)		

	50.6. Discuss the importance of proactive approach to, and mechanisms of communication, as a tool to promote the Three Rs and the culture of care.			
"Designated Veterinarian"	Module 24: **See above + LO 24.29-24.30** (The principles of veterinary communications) 24.29. Define strategies for effective communication and explain how these promote animal welfare and good science 24.30. Review the opportunities to gather further veterinary information in laboratory animal medicine and science	1.4 (1.8) 2.11		

Veterinarians who take part to the evaluation of project will require task specific training for "Project Evaluator" (Module 25)