LAS-Learning

Course Organisers Instructions

EU Module 24 - Designated Veterinarian

Development of interactive e-learning modules on specific areas of the Education & Training framework facilitating implementation of DIR 2010/63/EU

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1. Module Description

a. Overview

The Designated Veterinarian, possessing specialised knowledge in laboratory animal medicine, is responsible for offering guidance on animal welfare and treatment to individuals involved in breeding, supplying, or utilising animals for research purposes. This course provides an introductory overview of the Designated Veterinarian's role and offers insight into the necessary knowledge and skills for effective performance in this capacity.

This document provides guidance and suggestions to support the course organiser's efforts. Each module is aligned with the learning outcomes outlined in the EU Education & Training framework for laboratory animal science.

We recommend consulting the EC Training and Education framework guidance document if you access the site independently. This resource offers an overview of training requirements for individuals with different responsibilities under their relevant national legislation.

Further reading and additional education and training may be necessary to meet national or institutional training requirements. At the end of each module, you will find a list of recommended further readings and references cited throughout the content. Links to these references are provided whenever possible.

This module was developed by Anne-Dominique Degryse, Ngaire Dennison, Lucy Whitfield, and Maggie Lloyd, experts in veterinary and laboratory animal medicine, who mainly focused on animal welfare and research practices. Their work spans research, publications, and training in these fields. The module was further revised by an international Reflection Group panel, with coordination led by Nuno H. Franco.

The module is currently in the testing phase. We appreciate your collaboration in integrating it into your courses and providing feedback. After completing a module, please fill out the form below with your feedback.

b. Learning Objectives

This module will equip participants with essential knowledge and skills to navigate animal research's ethical, legal, and practical aspects. The key learning objectives include:

2. Statutory roles, communication and interactions.
3. Specific legislative requirements.
4. Ethics, welfare & three Rs.
5. Life as a DV part 1 – health welfare and husbandry.
6. Life as a DV part 2 – procedures.
7. Communication and clinical governance

2. Course Program

The module is organised into different chapters, with lessons and learning objectives for the participants as follows:

Chapter	Lesson	Learning objectives
Introduction	1-2	General introduction about the course Get to know the learning objectives
Statutory roles, communication and interactions	3-5	Duties and responsibilities of the Designated Veterinarian Roles and responsibilities of others and interactions with the DV Assess your knowledge
Specific legislative requirements	6-9	Role of the DV in the use and disposal of medicines for animals Role of the DV in import, export, and transport of laboratory animals Legislative controls on the creation and use of Genetically Altered Animals Assess your knowledge
Ethics, welfare & three Rs	10-15	The Three Rs The Harm Benefit analysis Good science and good welfare Culture of care Where to go for more information Assess your knowledge
Life as a DV part 1 – health, welfare and husbandry	16-27	Planning your visit to the animal facility Health and biosecurity Species and care - introduction Species and care - small laboratory animals Species and care - aquatics Species and care - farm animals & horses Species and care - carnivores Species and care - non-human primates Species and care - Avian species Humane Killing Safety in the facility Assess your knowledge
Life as a DV part 2 – procedures	28-30	Genetically altered animals Anaesthesia and surgery Assess your knowledge
Communication and clinical governance	31	Communication, record keeping and clinical governance
Summary and knowledge check	32-34	Module summary List of references and further reading Assess your knowledge

Table 1 - Learning objectives per parts and lessons.

a. Progress Tracking

Once learners begin working through a module, their progress is automatically tracked. This allows them to pause and resume their studies at any point. Upon completing the module, learners retain access to all sections, enabling them to revisit and review specific topics to reinforce their understanding.

b. Model Structure and Implementation Guidance

The module is structured into several parts, which were designed to be followed in sequence but can also be taken iteratively based on the learner's needs. Please note that a **certificate of completion** is issued exclusively to learners who finish all parts of the module.

From a pedagogical perspective, each tutor is responsible for deciding which materials to use in face-to-face sessions, which parts learners should complete independently, and whether to mandate their completion. However, it is essential to consider the time required to complete the eModule or its parts to avoid overburdening learners.

We highly recommend completing the module to ensure it aligns with your course's content and scope. Familiarising yourself with the material will also enable you to engage more effectively with students on the various topics covered in the eModule.

c. In-Depth Explanation Lesson by Lesson

Lesson	Title	LO	Explanation
	About this course		Aims of the course with information about the course duration and the learning opportunities used.
Introduction			
1	Introduction		Overview of responsibilities and training requirements for DVs, with recommendations for further training
Chapter 1: Statutory roles, communication and interactions			
1	Duties and responsibilities of the Designated Veterinarian	24.1	Overview of responsibilities of tasks of the DV defined in Directive 1020/63, and additional non-statutory tasks the DV may be asked to undertake. Identification of potential conflicts of interest and how to avoid them.
2	Roles and responsibilities of others and interactions with the DV	24.2 24.9	Overview of roles of people with specified responsibilities under the Directive and others likely to be encountered in the facility. Outline of how these people interact with the DV, and the importance of effective communication. Outline of tasks and composition of the animal welfare body
3	Knowledge-check		Covering LO 24.1 and 24.2
Chapter 2: Specific legislative requirements			

1	Role of the DV in the use and disposal of medicines for animals	24.3	Outline of key pieces of legislation covering the acquisition, storage, supply and use of medicines in animals, and how these apply in a research environment.
2	Role of the DV in import, export, and transport of laboratory animals	24.4	General legislative requirements for the import, export and transport of animals with an overview of the role of the DV.
3	Legislative controls on the creation and use of Genetically Altered Animals	24.5	Overview of regulations covering the creation and management of genetically altered animals.
4	Knowledge-check		Covering LO 24.3, 24.4 and 24.5
Chapter 3: Ethics, welfare and 3 Rs			
1	The Three Rs	24.6	Definition and examples of the three Rs with examples of each. Outline of the role of the DV in promoting implementation of the three Rs. Overview of methods for pain and distress recognition in lab animals, and the importance of refinement in improving scientific outputs.
2	The Harm Benefit analysis	24.11	Definition or harm benefit analysis, with examples of harms and benefits and process for weighing harms and benefits.
3	Good science and good welfare	24.7 24.12	Discussion of the importance of good welfare in promoting good science and the impact of ill health on scientific outputs. Overview of sources of bias in animal models and the role of the DV.
4	Culture of care	24.9	Definition of culture of care and outline of why it is important. Overview of how to build a culture of care and the role of the DV in this.
5	Where to go for more information	24.10 24.8	Sources of information on ethics and the three RS and how the DV can promote these in the establishment, including use of ethical concepts in decision making.
6	Knowledge-check		Covering LO 24.7, 24.8, 24.9, 24.10, 24.11, 24.12.
Chapter 4: Life as a DV part 1 - health, welfare and husbandry			
1	Planning your visit to the animal facility	24.14 24.13	Basic principles of planning a visit to the animal facility.
2	Health and biosecurity	24.16 24.17 24.18 24.22	Key principles of disease surveillance in laboratory animals. Overview of the importance of biosecurity and how to achieve this, with strategies for management of disease outbreaks.

3	Species and care - introduction	24.19 24.20 24.24	Overview of the principles of laboratory animal husbandry and the relationship between husbandry and health. Includes: - Overview of different types of housing - Brief introduction to environmental control and lab animal nutrition. - Principles of enrichment and the importance of meeting ethological needs - Introduction to the Five Domains of animal welfare and the impact of the animal caretaker. - Outline of the benefits of positive reinforcement training
4-9	Species and care - species specific sections	24.24	An overview of basic biology, breeding and maintenance, behaviour, common conditions and use in research for different laboratory animal species, including: - Small laboratory animals - Aquatics - Farm animals and horses - Carnivores (dogs, cats, ferrets) - Non-human primates - Avian species
10	Humane Killing	24.21	Outline of the legal requirements for humane killing and the role of the DV in this.
11	Safety in the facility	24.23	Introduction to potential hazards in the laboratory, risk management and the role of the DV.
12	Knowledge-check		Covers LO 24.13, 24.14, 24.16, 24.17, 24.18, 24.19, 24.20, 24,21, 24.22, 24.23 and 24.24
Chapter 5: Life as a DV part 2 - procedures			
1	Genetically altered animals	24.25	Overview of different methods of inducing changes in genetic material, and the importance of managing genetic drift. Outline of welfare implications of genetic alteration, and strategies for welfare assessment and reducing wastage. Overview of nomenclature of inbred and genetically altered animals and the importance of standardisation.
2	Anaesthesia and surgery	24.26 24.27 24.28	Overview of legal requirements for anaesthesia and analgesia, and differences between clinical and research anaesthesia, including problems that may be encountered in research animals. Summary of pre-anaesthetic preparation and medication suitable for research animals. Methods for anaesthetic monitoring and factors affecting choice of anaesthetic including options for long-term and non-recovery anaesthesia. Peri-operative care, and outline of consequences of sub-optimal anaesthesia for animals and science.

			Differences between experimental and clinical surgery and challenges for the DV, with an outline of the DV's role in refining surgery.
3	Knowledge-check		Covers LO 24.26, 24.27 and 24.28
Chapter 6: Communication, record keeping and clinical governance			
1	Communication, record keeping and clinical governance	24.29 24.15 24.30	Overview of elements of good communication and why this is important for the DV. The importance of record keeping for the DV. Types of records and formats in which these may be kept. Overview of sources of information for the DV.
Final summary and knowledge check			
1	Summary		Module summary
2	References and Further Reading		References for additional materials
3	Knowledge-check		Final summative knowledge check covering the entire module.

Table 2 - Explanation lesson by lesson.

3. Participants' Profile

No specific prior knowledge is required. This course is intended as an introduction for veterinarians who will be taking on a Designated Vet (DV) role under the Directive 2010/63/EU.

Following completion of this course, you will have a working knowledge of the role and be able to operate as a DV in a variety of biomedical research settings. The course also provides signposts to further information that can be used to deepen understanding as required by the particular role the DV will be undertaking.

4. eModule

The eModule provides clear definitions, essential knowledge, and interactive components designed to enhance understanding of key animal ethics theories and develop critical thinking skills. Participants will learn to ethically frame and evaluate animal research from a broad perspective and a case-by-case approach.

The content and references are curated from expert sources, including researchers and information specialists, ensuring high-quality and reliable information. The module is presented dynamically, combining text, images, built-in exercises, and videos to engage learners effectively. It can be integrated into courses as homework or used during a lecture day. Many lessons are designed to deliver comprehensive information and understanding without additional in-class interaction.

a. Limitations

While the module on the Designated Veterinarian (DV) role provides valuable insights and guidance, several limitations may affect its implementation and effectiveness. Future iterations of the module can be improved to better support Designated Veterinarians in their crucial roles, ultimately enhancing the welfare of animals in research settings. However, references and further reading suggestions open vast possibilities for interested users to learn more about this topic.

b. Blended Learning Approach

E-learning modules offer significant advantages, particularly for learners who may find it challenging to attend traditional intensive training sessions spanning several days. Such sessions can disrupt work schedules and limit participants' ability to balance learning with other responsibilities. While this eModule covers all required learning outcomes, we do not advocate entirely replacing face-to-face teaching (or "live" online discussion sessions) with e-learning. Instead, we recommend a blended learning approach (hybrid or mixed-mode learning). This approach combines the flexibility of e-learning with the engagement of interactive, live sessions, ensuring that learners receive the necessary information while accommodating those who require greater flexibility.

The modules are split into short, manageable lessons, allowing participants to integrate learning activities into their daily schedules seamlessly.

5.Implementing Blended Learning Strategies

Flipped Classroom Arrangement

Before face-to-face classes, learners are introduced to the course contents (for example, by completing our e-learning modules). You can recommend that learners take the whole course (and request a certificate of completion) or focus on specific lessons or chapters.

This approach can:

- Familiarise learners with the content in advance, helping them better understand complex concepts.
- Prepare and motivate learners to engage more actively in their learning and during face-to-face classes.
- Harmonise learners' knowledge levels before in-person classes.
- Provide sufficient background knowledge for group work, allowing for more focused and productive discussions.
- Provide a starting point for interactive discussion.

Consolidate Learning and Prepare for Exams

The courses are designed to align with the learning outcomes of traditional laboratory animal science courses. Learners can use each module to study and prepare for the final exam. Additionally, the built-in quizzes allow learners to test their knowledge and track their progress.

Address Expertise Gaps in Your Facility

Gathering expertise across all subjects covered in the EU-functions modules can be challenging, especially in smaller establishments. This may hinder the ability to deliver training that meets all outcomes of the Education and Training framework to a high standard. Using these modules as a basis, tutors and learners can access quality reference material that could mitigate such gaps and ensure education and training are up to standard.

Use Modules as Teaching Resources

Tutors can integrate text, videos, images, interactive exercises, and quizzes into their teaching activities. This not only boosts engagement but also caters to different learning styles. For each module, we provide suggestions for topics that can be incorporated into interactive discussion sessions.

6. Textbooks and Reading Materials

The **"References and Further Reading"** lesson provides most references and readings. They comprise scientific articles, sections of books, websites, and videos. Clicking on any link will open a new window to download or visualise the additional material. Several links to further resources can also be found in the module contents to better guide the reader.

The additional materials provide more information on specific topics, tools, and resources. They are ideal for learners who wish to expand their knowledge or gain a more comprehensive understanding of the issues.