

Use of animals in Research and Education

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World
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for Animal
Health

Organisation
mondiale
de la santé
animale

Organización
Mundial
de Sanidad
Animal

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Background

- Millions of animals are used for research and education in the world
- Many major medical breakthroughs have been made with the help of animal experiments
- WOAHA emphasises the need for humane treatment of animals and that good quality science depends upon good *animal welfare*
- WOAHA recommends that Member countries address all essential element of animal welfare (WOAHA guiding principles of animal welfare)



INTERNATIONAL GUIDING PRINCIPLES

FOR

BIOMEDICAL RESEARCH INVOLVING ANIMALS

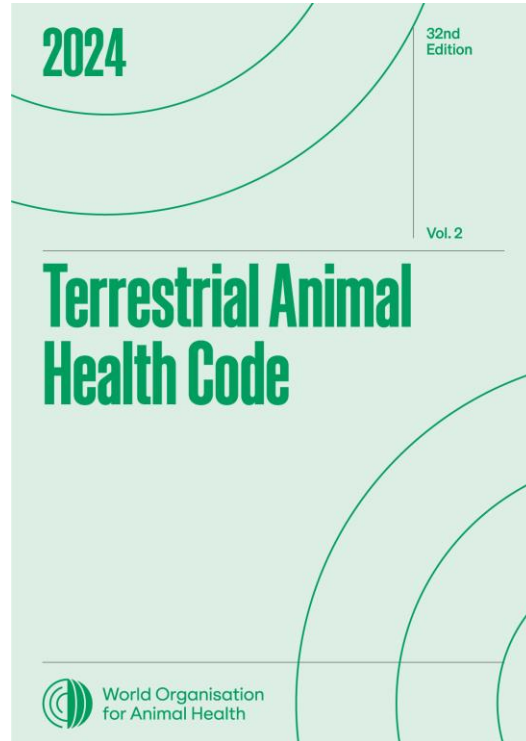
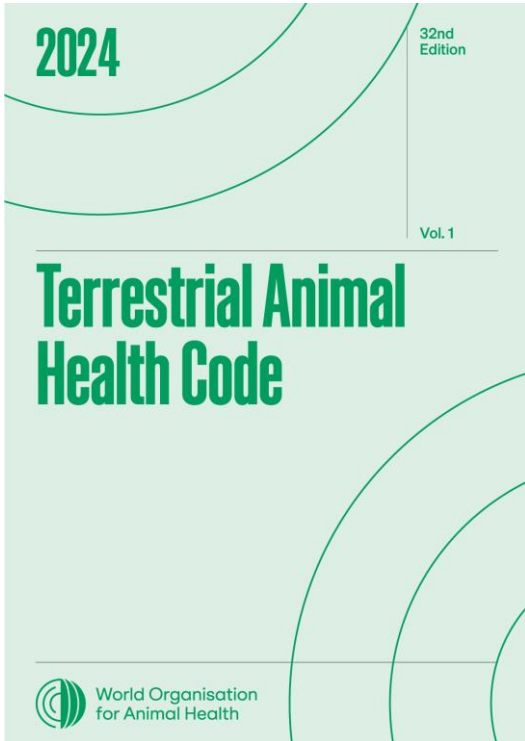
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- UK 1876 – Cruelty to Animals Acts
- USA 1966- Animal Welfare Acts
- Country's Acts ?



CHAPTER 7.8.

USE OF ANIMALS IN RESEARCH AND EDUCATION



| Article | Topic/Content |
|----------------|--|
| Article 7.8.1 | Definitions |
| Article 7.8.2 | Scope |
| | The 3Rs - Replacement, Reduction, Refinement |
| Article 7.8.3 | The oversight framework |
| Article 7.8.4 | Assurance of training and competency |
| Article 7.8.5 | Provision of veterinary care |
| Article 7.8.6 | Source of animals |
| Article 7.8.7 | Physical facility and environmental conditions |
| Article 7.8.8 | Husbandry |
| Article 7.8.9 | Transportation |
| Article 7.8.10 | |



Article 7.8.3 - The 3Rs (Russel and Burch, 1959)

- Scientists are working on new approaches that replace, reduce, and refine (improve) animal experiments. This is known as the 3Rs of scientific research.
- **Replace** – finding different options, other than use of animals
 - *relative replacement* - use of methods utilizing cells, tissues or organs of animals
 - *absolute replacement* - that do not require the use of animals to achieve the scientific aims (use non animal methods –in silico, human data)
- **Reduce** – developing methods to reduce use of animals
 - use of methods that enable researchers to obtain comparable levels of information from fewer animals (use fewer animals and guided by statistics)
 - obtain more information from the same number of animals;
- **Refine** –improving current animal research to reduce suffering
 - Use methods that prevent, alleviate or minimise pain, suffering, distress
 - Improve the housing/living conditions and transportation of the animals
 - Use the best anaesthesia and analgesia protocols
 - Favour non-invasive exploratory approaches (MRI, ultrasound...)



Article 7.8.4 The oversight framework



Competent Authority is to implement a system (governmental or other) for verification of compliance by institutions.



Committee of Experts

- Animal Care and Use Committee,
- Animal Ethics Committee,
- Animal Welfare Body
- Animal Care Committee



Members

- scientist,
- veterinarian,
- public member



Ethical review of animal use

undertaken by regional, national or local ethical review bodies or committees.



Three key responsibilities

- Project proposal review
- Facility inspection
- Ethical evaluation





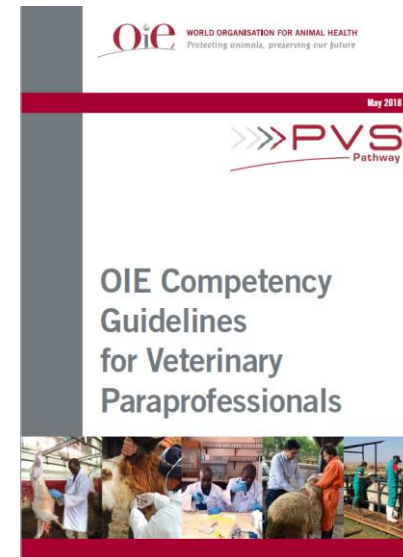
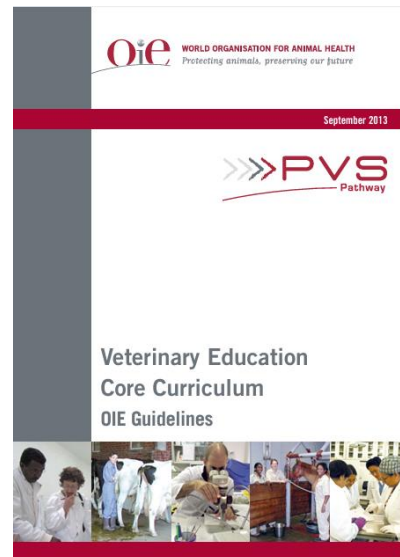
Article 7.8.5 Assurance of training and competency

- The personnel working with the animals are appropriately trained and competent to work with the species used and the procedures to be performed, including ethical considerations.



- **Scientific staffs** –direct ethical and legal responsibility
- **Veterinarians** –vet medical knowledge, animal behaviour, needs and stress
- **Animal care staffs** – care of animals
- **Students**- learn scientific and ethical principles
- Members of the local oversight committee or others involved with oversight

Animal Welfare should be included in Veterinary Education Curriculum





Article 7.8.6 Provision of veterinary care

- Adequate veterinary care includes responsibility for promoting an animal's health and welfare before, during and after research procedures
- Veterinary care includes attention to the physical and behavioural status of the animal.
 - Clinical responsibilities – vaccinations, disease control
 - Post-mortem examinations
 - Veterinary medical records
 - Advice on zoonotic risks and notifiable diseases
 - Advice on surgery and postoperative care
 - Advice on analgesia, anesthesia and euthanasia
 - Advice on humane endpoints

Article 7.8.7 Sources of animals

- Animals to be used for research should be of high quality to ensure the validity of the data.

1) Animal procurement

- Animals should be acquired legally; purchased from recognised sources producing high quality animals.
- The use of wild caught nonhuman primates is strongly discouraged.
- Purpose bred animals should be used whenever these are available

2) Documentation

3) Animal health status

4) Genetically defined animals

5) Genetically altered /modified animals

6) Animals captured in the wild

7) Endangered species

8) Transport, importation and exportation

9) Risks to biosecurity



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Article 7.8.8 Physical facility and environmental conditions

- Ventilation
- Temperature and humidity
- Lighting
- Noise

Article 7.8.9 Husbandry

- Transportation
- Acclimatisation
- Cages and pens
- Enrichment
- Feeding
- Water
- Bedding
- Hygiene
- Identification
- Handling

Article 7.8.10 Transportation

- Transportation is a typically stressful experience for animals.





Outcome – What is achieved?

- Improve animal care
- Protect animal welfare
- Ensure proper use of animals
- Attend to bioethical principles and societal concerns
- Ensure capacity building
- Protect human safety
- The 3 Rs

Thank you!

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