Introduction

Many countries, professional organizations, and non-governmental organizations have issued guidelines for adequate veterinary medical care for laboratory animals. They are thus considered internationally to be an essential component of animal care and use programs.

In the United States, the Guide for the Care and Use of Laboratory Animals (the Guide; NRC 1996), a publication of the National Research Council through the Institute for Laboratory Animal Research (ILAR), provides guidelines that serve as the basis for the US Public Health Service Policy on Humane Care and Use of Laboratory Animals. Among the critical topics included in the Guide is veterinary medical care for laboratory animals, and the report’s recommendations outline key fundamental issues for institutions.

While the Guide primarily provides guidelines for use in the United States, it also serves for voluntary accreditation by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) both in the United States and internationally, and is a point of reference for many countries that do not have national laws or guidelines. Thus the recommendations in the Guide have international implications, although many countries have guidelines for adequate veterinary medical care unrelated to those in the US Guide.

In an effort to compare and contrast many of these guidelines, a group of individuals from different countries and institutions met in conjunction with the FELASA/ICLAS meeting in Como, Italy, in June 2007. Participants knowledgeable in a variety of guidelines for adequate veterinary care presented information from the American College of Laboratory Animal Medicine (ACLAM), the Canadian Association for Laboratory Animal Medicine (CALAM/AMCAL), the European College of Laboratory Animal Medicine (ECLAM), the European Society of Laboratory Animal Veterinarians (ESLAV), the Federation of European Laboratory Animal Science Associations (FELASA), the Indian Committee for the Purpose of Control and Supervision on Experiments on Animals (CPCSEA), the Japanese Association for Laboratory Animal Science (JALAS), the Singapore National Advisory Committee for Laboratory Animal Research (NACLAR), the UK Animals (Scientific Procedures) Inspectorate (ASPI), and the United States Department of Agriculture (USDA). The presentations also included overviews of ILAR and the International Association of Colleges of Laboratory Animal Medicine (IACLAM). This brief report summarizes the discussions at that meeting.

Veterinary Care Guidelines

The guidelines for veterinary care differ among countries and in most instances do not originate from government legislation but from professional organizations of laboratory animal veterinarians. The guidelines include recommendations concerning the appropriate qualifications for veterinarians working in laboratory animal facilities, the authority of laboratory animal veterinarians in oversight of facilities and experiments, and the distinct role of the veterinarian in research activities and in review of protocols involving laboratory animals.

Qualifications

There is specific mention of required qualifications for veterinarians in US law (Animal Welfare Act, [CFR 1985]), UK law (Animals (Scientific Procedures) Act; UK Home Office 1986), and in the Council of Europe Convention (Council of Europe 2006), which, although nonbinding, has been translated into the European Directive 86/609 (EU 1986). Professional organizations in the United States (ACLAM), Canada (CALAM/AMCAL), and Europe (FELASA/ECLAM/ESLAV) have made specific recommendations for veterinarians in laboratory animal facilities, namely that they have training and/or experience in the management of the species maintained in the facility. In the United States and Canada, it is desirable (but not mandatory) that laboratory animal veterinarians acquire ACLAM certification. In the United States, the Guide for the Care and Use of Laboratory Animals (the Guide; NRC 1996), a publication of the National Research Council through the Institute for Laboratory Animal Research (ILAR), provides guidelines that serve as the basis for the US Public Health Service Policy on Humane Care and Use of Laboratory Animals. Among the critical topics included in the Guide is veterinary medical care for laboratory animals, and the report’s recommendations outline key fundamental issues for institutions.

While the Guide primarily provides guidelines for use in the United States, it also serves for voluntary accreditation by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) both in the United States and internationally, and is a point of reference for many countries that do not have national laws or guidelines. Thus the recommendations in the Guide have international implications, although many countries have guidelines for adequate veterinary medical care unrelated to those in the US Guide.

In an effort to compare and contrast many of these guidelines, a group of individuals from different countries and institutions met in conjunction with the FELASA/ICLAS meeting in Como, Italy, in June 2007. Participants knowledgeable in a variety of guidelines for adequate veterinary care presented information from the American College of Laboratory Animal Medicine (ACLAM), the Canadian Association for Laboratory Animal Medicine (CALAM/AMCAL), the European College of Laboratory Animal Medicine (ECLAM), the European Society of Laboratory Animal Veterinarians (ESLAV), the Federation of European Laboratory Animal Science Associations (FELASA), the Indian Committee for the Purpose of Control and Supervision on Experiments on Animals (CPCSEA), the Japanese Association for Laboratory Animal Science (JALAS), the Singapore National Advisory Committee for Laboratory Animal Research (NACLAR), the UK Animals (Scientific Procedures) Inspectorate (ASPI), and the United States Department of Agriculture (USDA). The presentations also included overviews of ILAR and the International Association of Colleges of Laboratory Animal Medicine (IACLAM). This brief report summarizes the discussions at that meeting.
Kingdom, the Named Veterinary Surgeon in a laboratory animal facility is required to have attended a training course accredited by the Royal College of Veterinary Surgeons during the first year in that position (RCVS Guidelines for Named Veterinary Surgeons). The FELASA/ESLA/V/ECLAM recommendations for a laboratory animal veterinarian call for completion of the FELASA Category C (scientists) and Category D (specialists) training courses. Achievement of ECLAM Diplomate status is more advanced and considered highly desirable.

The guidelines from India and Singapore both state that the veterinarian should have training or experience in laboratory animal science or medicine. Singapore also requires the veterinarian to be licensed by the country’s Agri-Food and Veterinary Authority. In Japan, there are no specific guidelines for qualifications of veterinarians in laboratory facilities; in fact, neither the law nor guidelines provide for any aspect of veterinary care. In New Zealand, the Good Practice Guide for the Use of Animals in Research, Testing and Teaching (NAEAC 2002) states that veterinarians must have appropriate qualifications, and the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (NHMRC 2004) requires veterinarians to familiarize themselves with the biology and clinical characteristics of the species used.

Authority of the Veterinarian

The ACLAM (1996) position on adequate veterinary care states specifically that the veterinarian must have the appropriate authority to execute the duties inherent in ensuring the adequacy of veterinary care and in overseeing aspects of animal care and use. This authority is critical to ensure that the program meets applicable standards. The veterinarian must also have the authority (1) to ensure the administration of anesthesia and analgesia as required to relieve pain and suffering in animals (unless such intervention is precluded for scientific reasons approved by the institutional animal care and use committee, IACUC) (ACLAM 1996) and (2), according to US regulations, to perform euthanasia if s/he deems it necessary for the welfare of the animal.

In Canada, the veterinarian must be responsible for, and have the authority to ensure, the provision of a comprehensive veterinary care program and oversight of all aspects of animal care and use (CALAM/AMCAL 2007). In addition, the Canadian guidelines stipulate that the senior administration of the institution and the animal care committee must delegate the authority to the veterinarian to treat, remove from a study, or euthanize an animal based on the his/her professional judgment.

In Europe, there are country-by-country differences in who holds the authority to make decisions regarding experimental procedures and euthanasia. In some countries the veterinarian is responsible, whereas in others it is the researcher, although often, as in the United Kingdom, the researcher is obliged to respond to veterinary advice. The FELASA guidelines recommend the establishment of institutional management systems to resolve possible conflicts between the researcher and veterinarian. The guidelines of Singapore’s National Advisory Committee for Laboratory Animal Research (NACLR) recommend that the IACUC assign the veterinarian responsibility for tasks related to the care and use of animals and also state that the veterinarian must have adequate program oversight authority.

Role of the Veterinarian

The multifaceted roles of the veterinarian in the animal care and use program are delineated in the guidelines from several organizations and/or countries.

Partner in Animal Research

One of the roles of the veterinarian is to participate in the review of protocols that involve animals. In this capacity, a veterinarian must serve on the IACUC (e.g., in the United States and Singapore), animal ethics committee (Australia, New Zealand), or in the ethical review process (UK). In New Zealand, the veterinarian must be nominated to the committee by the New Zealand Veterinary Association and be independent of the institution or individual whose use of animals is being reviewed (Williams 2005). In Canada, the veterinarian advises on animal welfare issues for the animal care committee (ACC). In Europe, the FELASA/ESLA/V/ECLAM document recommends that the veterinarian participate in ethical review committees in the European countries that mandate such reviews. In this role, the veterinarian can have input on proposed animal procedures in terms of their impact on animal welfare (e.g., the prevention or elimination of pain and/or distress), use of adequate pharmaceutical agents (e.g., analgesics and anesthetics), and proper methods of euthanasia (see below under Animal Health). In this capacity, the veterinarian also serves as an advisor on the appropriate use of animals in research and teaching, providing professional guidance, in conjunction with investigators and the oversight committee, on aspects of the design and performance (e.g., animal model selection, surgical techniques) of experiments that use animals.

Animal Health

The major role of the veterinarian in an animal research program is to monitor the health and well-being of the animals in his/her care, provide appropriate treatment to sick animals, and ensure the oversight/administration of proper euthanasia. These responsibilities cover a large number of areas.

- **Health monitoring** includes isolation of sick animals as well as quarantine and stabilization programs for newly arrived animals to assess their health status and allow them to acclimate to their new environment.
• **Preventive care** includes obtaining animals from reputable, quality sources, providing vaccinations, and treating infections. It also includes protection of animals from diseases that may exist in the facility, whether experimentally induced or opportunistic, for example by providing specialized caging or ensuring appropriate air pressure differentials for biocontainment or bioexclusion.

• **Routine health observation** is the responsibility of the veterinarian or animal care staff under veterinary direction.

• **Disease surveillance** includes the monitoring of animals for infectious agents, often through the use of sentinel animals.

• **Resolution of disease outbreaks** includes the isolation of sick animals to prevent the spread of disease to healthy animals, and the diagnosis and treatment of sick animals.

• **Appropriate use of analgesia, anesthesia, and tranquilizer drugs** is the responsibility of the veterinarian, who must ensure such use to relieve pain in the animals according to the approved protocol.

• **Euthanasia** falls under the authority of the veterinarian, who must ensure the use of appropriate methods and who should have the authority to euthanize an animal that is experiencing severe pain or distress (in consultation with the investigator to ensure that the scientific goals of the study are not compromised).

• **Surgical, postsurgical, and postprocedural care** must be reviewed and approved by the veterinarian.

• **Animal well-being and behavioral management** are the responsibility of the veterinarian and animal care staff, who must ensure the monitoring and promotion of animal well-being through adequate housing and husbandry, enrichment of an animal’s environment, human-animal socialization, and other factors related to the general care of the animals.

• **Maintenance of clinical records** requires the veterinarian to provide oversight of the animal facility’s clinical records, which should include information about treatment prescribed and provided, clinical procedures, drugs administered for control of pain and/or distress, and documentation of euthanasia and of necropsy findings (if performed).

All or most of these animal-health related responsibilities are specified in the guidelines of ACLAM, CALAM/AMCAL, FELASA/ESLAV/ECLAM, NACLA, and CPCSEA, in guidance to the UK law (RCVS 2004), and in the *Guide for the Care and Use of Laboratory Animals*. No specific roles for the veterinarian in these capacities are mentioned in guidelines from Japan, where major responsibility for the health of the animals is assigned to the principal investigator. Other countries (e.g., China) are developing practices similar to Japan with regard to veterinary care, relying on the scientists rather than veterinarians to assume responsibility for animal health and welfare.

In New Zealand and Australia (NHMRC 2004), the major influence of veterinarians on animal care is through their responsibilities on the Animal Ethics Committees, although in New Zealand investigators are advised to consult with veterinarians whenever adverse effects occur so that standard veterinary care treatment regimes can be immediately implemented (NAEAC 2002).

### Other Components of Adequate Veterinary Care

Guidelines from the United States, Canada, and Europe describe numerous activities related to a program of adequate veterinary care:

- Training of institutional personnel in the care and use of laboratory animal species
- Assistance in the development and oversight of the institution’s occupational health and safety program as it relates to animal care
- Monitoring for zoonotic diseases that could have an impact on animal care staff
- Advice on the institution’s biological and chemical hazard policies as they relate to the care, use, and disposal of animals or animal-related material
- Monitoring and/or advice on standards of hygiene for personnel involved in animal care and use
- Advice on the development and/or implementation of disaster plans for the animal facility

### Summary and Conclusions

The meeting of representatives from various countries and organizations was extremely valuable for assessing differences in their guidelines and regulations governing adequate veterinary care for laboratory animals. There seem to be several distinct approaches to the oversight of laboratory animal health and related issues: one approach assigns major responsibility to the veterinarian and animal care staff (e.g., in the United States, Canada, Europe, India, and Singapore), one puts the onus on the investigator using the animals (e.g., Japan, China), and one relies on the oversight of animal ethics committees (Australia, New Zealand). These differences in requirements may have significant effects on the training and education of laboratory animal veterinarians.

In the context of conducting animal research on a global basis, the differences in responsibilities of veterinarians, and associated differences in the definition of adequate veterinary care for laboratory animals, may hamper the ability of institutions to ensure the uniform care of these animals across international boundaries. We hope that the elucidation of these differences serves to encourage further meetings to foster harmonization of these guidelines. The creation of an International Association of Colleges of Laboratory Animal Medicine (IACLAM) is the first attempt by veterinarians around the world to develop a platform for communication among those who specialize in this field and to explore harmonization of training standards. The ILAR conference “Animal Research in a Global Environment – Meeting the
Challenges” (September 2008, Washington DC), cosponsored by IACLAM, offered another opportunity to bring the animal research community together to discuss how these differences might be resolved over time, and to recommend ways to bring about that harmonization to ensure that animals are under the care of those who can best assess and promote their health and welfare.

References


