

CPCSEA guidelines for laboratory animal facility

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Abstract

The Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) is a statutory body formed by the Act of the Indian Parliament under the Prevention of Cruelty to Animals Act 1960. The CPCSEA functions with a brilliant network of volunteers who liaise with the laboratories. For the first time in India: over 665 laboratories are registered with the CPCSEA; Institutional Animal Ethics Committees (IAECs) are constituted in every laboratory, which are only empowered to approve research project proposals that use rats, mice, guinea-pigs or rabbits; every project that uses canines, ovines, bovines or non-human primates can only be conducted if approved by the panel of scientific experts constituted for this purpose; guidelines on laboratory animal care and practice have been formulated and enforced; a protocol for the production of immunobiologicals from equines has been formulated and ratified by the Supreme Court of India; the CPCSEA has been deliberating on alternatives and working out modalities to introduce alternatives in basic/regulatory research and education, in keeping with the international arena; the CPCSEA, to date, has rehabilitated and homed over 300 dogs, 150 equines, 200 non-human primates and several cattle, cats, birds, rabbits and mice; the CPCSEA proactively trains and guides scientific and non-scientific personnel on issues of alternatives and laboratory animal welfare; and the CPCSEA has fought legal issues on laboratory animal care and use and have had verdicts that favoured alternatives and animal welfare.

Keywords: CPCSEA, animals act, animal experimentation, India, ethics

Introduction

India is one of the pioneering countries to institute Prevention of Cruelty to Animals Act in 1960 whereas such Act was instituted in France in 1963 and in USA in 1966. The detailed rules for experimentation on animals were first enacted by the Ministry of Agriculture in 1968 and were implemented by a Committee set up in pursuance of Section 15(1) of the PCA Act, 1960 [1]. However, the Committee was later wound up in 1977. After a hiatus of 13 years, a recommendation to reconstitute Committee for the purpose of control and supervision of experiments on animals (CPCSEA) was received from Animal Welfare Board of India (AWBI). After due consideration of the recommendation of AWBI, CPCSEA was set up by this Ministry on 8th February, 1991 [2]. The Committee was, subsequently, reconstituted on 23rd February, 1996 with 15 Members and one Member Secretary. Since then, this Ministry has reconstituted the CPCSEA routinely. The present Committee was constituted on 30th August, 2012 under the chairmanship of Additional Secretary, MoEF with 17 Members. At present, Shri Hem Pande, Additional Secretary, MoEF & CC is the Chairman of the Committee [3].

Guidelines

Animal Care

1. Cages should be checked First thing every day, to note the condition of the animals. A staff member will check the animal cages daily for visible signs of change or distress, such as leaky bottles, birth of new pups, decrease in food or water consumption, blood in cage, wounds, secretions around the eyes, nose and genital area,

respiratory distress, constipation, diarrhoea, swelling, sluggishness, gait, dull coat or loss of hair. All concerns will be reported to the Supervisor and depending on the severity of the concern, the PI/ attending veterinarian will be notified.

2. Cages should be changed at least once per week or more often as needed. During cage changing, animals are inspected for any abnormal conditions as listed above. Water bottles should be checked every day and fresh water should be added as needed.
3. Sanitize the water bottles once a week.
4. Shelves, cage holders, lids and bonnets should be cleaned once a month
5. Room should be sanitized every three to six months.
6. Sweep the floor should be and mop weekly or as needed.
7. Feeding plates should be wiped weekly.
8. Each cage must have an identification card with the following information: protocol number, investigator's name, date received, strain, sex, date of birth, and number of animals per cage.
9. Only items that are essential to the animal care of that room should be stored in the animal housing room.
10. The floor drains should be checked every day and flush out if necessary.
11. Doors should be wiped weekly [4].

Veterinary care

Adequate veterinary care must be provided and is the responsibility of a veterinarian or a person who has training or experience in laboratory animal sciences and medicine. Daily

observation of animals can be accomplished by someone other than a veterinarian; however, a mechanism of direct and frequent communication should be adopted so that timely and accurate information on problems in animal health, behaviour, and wellbeing is conveyed to the attending veterinarian [5].

Animal procurement

All animals must be acquired lawfully as per the CPCSEA guidelines. A health surveillance program for screening incoming animals should be carried out to assess animal quality. Methods of transportation should also be taken into account. Each consignment of animals should be inspected for compliance with procurement specifications, and the animals should be quarantined and stabilized according to procedures appropriate for the species and circumstances [6].

Quarantine

Quarantine is the separation of newly received animals from those already in the facility until the health and possibly the microbial status of the newly received animals have been determined. An effective quarantine minimizes the chance for introduction of pathogens into an established colony. The duration at quarantine in small lab animals from one week to one month [7].

Stabilization

Regardless of the duration of quarantine, newly received animals should be given a period for physiologic, psychologic and nutritional stabilization before their use. The length of time stabilization will depend on the type and duration of animal transportation, the species involved and the intended use of the animal [8].

Separation

Physical separation of animals by species is recommended to prevent interspecies disease transmission and to eliminate anxiety and possible physiological and behavioural changes due to interspecies conflict. Such separation is usually accomplished by housing different species in separate rooms, cubicles or cages. If two species have a similar pathogen status and are behaviourally compatible, it shall be acceptable to house different species in the same room. People should be restricted from entering in to the facilities unless otherwise required and after handling these animals they should not be handling any other animals in the facilities [9].

Surveillance, diagnosis, treatment and control of disease

All animals should be observed for signs of illness, injury, or abnormal behaviour by animal house staff daily, but more-frequent observations might be warranted, during postoperative recovery or when animals are ill or have a physical deficit. It is imperative that appropriate methods be in place for disease surveillance and diagnosis. Post mortem examination and signs of illness, distress, or other deviations from normal health condition in animals should be reported promptly to ensure appropriate and timely delivery of veterinary medical care. Animals that show signs of a contagious disease should be isolated from healthy animals in the colony. If an entire room of animals is known or believed to be exposed to an infectious, the group should be kept intact

and isolated during the process of diagnosis, treatment, and control. Diagnostic clinical laboratory may be made available [10].

Animal care and technical personnel

Institutions should employ people trained in laboratory animal science or provide for both formal and on-the-job training to ensure effective implementation of the program [11].

Personal hygiene

It is essential that the animal care staff maintain a high standard of personal cleanliness by using appropriate Personnel Protective Equipment (PPE) e.g. change of uniforms, footwear etc. Clothing suitable for use in the animal facility should be supplied and laundered by the institution. A commercial laundering service is acceptable in many situations. It is acceptable to use disposable gloves, masks, head covers, coats, coveralls and shoe covers. Personnel should change clothing as often as is necessary to maintain personal hygiene. Outer garments worn in the animal rooms should not be worn outside the animal facility. Washing facilities appropriate to the program should be available. Personnel should not be permitted to eat, drink, smoke or apply cosmetics and perfumes in animal rooms. They should finish the work with animals as early as possible and sit somewhere else outside and not in the animal rooms/areas [12].

Multiple surgical procedures on single animal

Multiple surgical procedures on a single animal for any testing or experiment are not to be practiced unless specified in a protocol only approved by the IAEC [13].

Durations of experiments

No animal should be used for experimentation for more than 3 years unless adequate justification is provided.

Physical restraint

Brief physical restraint of animals for examination, collection of samples, and a variety of other clinical and experimental manipulations can be accomplished manually or with devices be suitable in size and design for the animal being held and operated properly to minimize stress and avoid injury to the animal.

Important guidelines for the use of restraint equipment

1. Restraint devices cannot be used simply as a convenience in handling or managing animals.
2. The period of restraint should be the minimum required to accomplish the research objectives.
3. Animals to be placed in restraint devices should be given training to adapt to the equipment.
4. Provision should be made for observation of the animal at appropriate intervals. Veterinary care should be provided if lesions or illness associated with restraint are observed. The presence of lesions, illness, or severe behavioural change should be dealt with by the temporary or permanent removal of the animal from restraint.

Physical facilities

The physical condition, design and size of an animal facility depend on the scope of institutional research activities, animals to be housed, physical relationship to the rest of the institution, and geographic location. A well planned, properly maintained facility is an important element in good animal care.

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Personnel and training

The selection of animal facility staff, particularly the staff working in animal rooms or involved in transportation, is a critical component in the management of an animal facility. The staff must be provided with all required protective clothing (masks, aprons, gloves, gumboots, other foot wears etc.) while working in animal rooms. Facilities should be provided for change over with lockers, wash basin, toilets and bathrooms to maintain personal hygiene. It is also important a regular medical check-up is arranged for the workers to ensure that they have not picked up any zoonotic infection and also that they are not acting as a source of transmission of infection to the animals. The animal house in-charge should ensure that persons working in animal house don't eat, drink, smoke in animal room and have all required vaccination, particularly against tetanus and other zoonotic diseases.

Transport of laboratory animals

The transport of animals from one place to another is very important and must be undertaken with care. The main considerations for transport of animals are, the mode of transport, the containers, animal density in cages, food and water during transit, protection from transit infections, injuries and stress. The mode of transport of animals depends on the distance, seasonal and climatic conditions and the species of animals. Animals can be transported by road, rail or air taking into consideration of above factors. In any case the transport stress should be avoided and the containers should be of an appropriate size so as to enable these animals to have a comfortable, free movement and protection from possible injuries. The food and water should be provided in suitable containers or in suitable form so as to ensure that they get adequate food and more particularly water during transit. The transport containers (cages or crates) should be of appropriate size and only a permissible number of animals should only be accommodated in each container to avoid overcrowding and infighting.

Laboratory animal ethics

All scientists working with laboratory animals must have a deep ethical consideration for the animals they are dealing with. From the ethical point of view it is important that such considerations are taken care at the individual level, at institutional level and finally at the national level.

Maintenance

Housing, feeding, ventilation, lighting, sanitation and routine management practices for such animals are similar to these for the other animals of the species as given in guidelines. However, special care has to be taken with transgenic/gene knockout animals where, the animals can become susceptible to diseases where special conditions of maintenance are

required due to the altered metabolic activities. The transgenic and knockout animals carry additional genes or lack genes compared to the wild population. To avoid the spread of the genes in wild population care should be taken to ensure that these are not inadvertently released in the wild to prevent cross breeding with other animals. The transgenic and knockout animals should be maintained in clean room environment or in animal isolators^[16].

Disposal

A record of animal disposal and the manner of disposal should be kept as a matter of routine^[17].

Conclusion

Use of animals in research is a highly debatable topic. Though their use has led to several discoveries and understanding of many aspects of science but their use in certain sectors needs to be justified. There are national and international laws which govern the use of animals in research, all of which are based on the principles of the 4Rs-replacement, reduction and refinement and the rehabilitation of the use of animals in research. It is mandatory that all institutions involved in animal research develop and abide by the ethical review processes which promote good animal welfare practices by ensuring that the use of animals at the designated establishment is justified. With the availability of many alternatives, the lives of many animals can now be secure.

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