General Emergency Procedures – Rodent Facilities

Purpose

This Standard Operating Procedure (SOP) describes the procedures relating to Emergencies. Animal care emergency procedures fall into two principle categories:

A. Emergency procedures involving individuals or groups of animals in biomedical research/teaching
B. Wide scale emergency procedures associated with natural disasters

Causes may include:

- Disease
- Traumatic injury
- Unintended deprivation eg sipper blockage
- Unpredicted effect of experimental procedures
- Temperature extremes
- Environmental dysfunction related to power-outage or other building related emergencies

Responsibility

Animal care staff, Facility Supervisors, Facility Manager.

Materials

- Animal Facility and nominated suitable alternative
- Cage cards
- Liquid disinfectant; Clidox, Virkon or other
- Rodent diet (within 6 months of the milling date)
- Clean or sterilized water bottles
- Clean or sterilized water valves
- Clean or sterilized individually ventilated cages with bedding
- Clean or sterilized environmental enrichment devices

Procedure

To minimise murine diseases it is essential that the principles in SOP041 Animal Acquisition Receiving and Acclimation – Laboratory Animals, SOP043 Bioexclusion Definitions-Rodents, SOP042 Rodent Quarantine are applied in all rodent facilities within the University.

1. Emergency Procedures for Individuals or groups of animals

If an animal is found in a state of ill-health, injured, or suffering unpredicted effects of experimental procedures the following should occur:

1.1 The PI should be informed immediately that animals held under their project protocol are in a state of ill health.
1.2 If the ill-health is related to the experimental protocol, and adverse effects are clearly identified in that protocol, then then intervention should be discussed directly with the PI and a course of action decided between animal care staff, PI, and the Facility Supervisor.
1.3 If animal care staff or the Facility Supervisor are unable to contact the PI or other research / academic supervisory staff then immediate advice should be sought from the designated facility veterinarian.
1.4 Where the animal is in a critical condition, fully recumbent or has a high likelihood of imminent death, and the PI or other supervisory academic staff cannot be contacted, then immediate euthanasia is advised by approved method without recourse to the PI.
1.5 The carcass must be retained for post-mortem and stored in suitable conditions for this purpose. The PI must be informed immediately and an unexpected death report submitted to the institutional ACEC within 48 hours.
1.6 Complete the relevant facility form and enter in the facility animal recording database.
1.7 Ensure that the experimental group is informed of the situation and outcome.
1.8 If there is any suggestion that this may involve a Code non-compliance issue, the Animal Care and Ethics Committee Governance Officer/Presiding Officer must be notified confidentially via email in the first instance to animalethics@csu.edu.au

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2. Natural Disaster Emergency procedure

There is need to assess risk levels, preparedness and contingency plans in the event of natural disasters, and infectious diseases that may affect facility staff levels. An outcome of natural disasters involving one animal facility is the possible relocation of animals to another animal facility or suitable holding area. Suitably of the area should be assessed on the basis of provision of temperature, humidity and light/dark cycles optimal for rodent husbandry. In the advent that no suitable alternative holding facility can be identifies, animals that cannot be rehoused will need to be euthanised by approved methods.

3. Loss of electricity/ water

Maintain communication with Division of Facilities Management (DFM) re scheduled power outages. The IVC cages can maintain barrier status in the absence of airflow providing that the cages remain unopened. Air circulation must be restored within 10 hours to prevent excessive ammonia concentrations building within cages. Any scheduled outing over this time, arrange a generator from either DFM. Room temperatures should be carefully monitored during any power outage. Where room temperature exceed 25^{o}C or drop below 18^{o}C alternative heating or cooling equipment must be provided urgently.
Loss of water - re-schedule any cage washing as required or reuse cages unwashed with fresh bedding. Sterile drinking water should be obtained from alternative sources until the facility water supply is reinstated.

4. Fire and Flood

In the advent of a fire, normal fire evacuation policies should be applied for to ensure staff safety. The fire evacuation policy for each holding facility should include information on animal evacuation procedures. The biggest risk often comes from smoke inhalation. Where fire to effects a facility, emergency accommodation would involve another CSU facility with equivalent ability to control temperature, humidity and light/dark cycle.

Follow the evacuation procedure as per Site Evacuation Plan for each building. Evacuation of animals via covered IVC/ transport boxes and relocation of IVC to an alternative approved CSU animal holding facility. Procedures for evacuation will be determined as part of the facility detailed site action plan in the case of fire, flood or other emergency. This document should be reviewed in conjunction with this SOP

5. Earthquake

Earthquake has the potential to completely destroy facilities, and also completely invalidate the barriers that are setup to protect animals from pathogens. Caging such as IVC's will afford some measure of protection, dependent on the degree of building damage. In the literature relevant to earthquake damage and animal facilities, reference is made to the fact that for colonies to survive, it is essential that alternative facilities be available. However it is very possible that the damage sustained to all CSU animal facilities might be similar, and if so this would obviously negate the possibilities of animal transfer. Procedures for evacuation will be determined as part of the facility detailed site action plan in the case of fire, flood or other emergency. This document should be reviewed in conjunction with this SOP

6. Emergency procedures in the advent of a human pandemic

The possibility of a human flu pandemic, e.g. Avian Influenza would exert considerable pressure on our ability to maintain experimental animal colonies due the necessary labour required to undertake this activity. In addition, zoonotic strains may also cause significant mortality in laboratory mice.

The percentage of the human population affected, morbidity, mortality and the average period of technicians' inability to work, and the subsequent effect on maintaining laboratory animal facilities, will all depend on the strain of virus involved, the speed at which preventative medicine programs might be implemented, i.e. vaccination, treatment interventions.

To address staffing shortfalls:

- An emergency staffing plan should be developed by the Facility Manager and Facility Supervisor in conversation with Facility staff.
- Protocols should be implemented to determine appropriate intervals between cage changing / feeding / watering to reduce staff activity but maintain appropriate levels of animal care.
- Ordering of provisions and supplies should ensure animals have sufficient food, water and bedding to ensure adequate supply during the predicted period of the outbreak.
- If the total personnel available were to be at 30% level it is envisaged that material support staff could be utilised for the hands on animal maintenance, academic staff may also be required to assist in the maintenance of animals vital to their research projects.
- The minimum critical staffing level should be clearly identified by Management prior to the advent of a human disease emergency. Below a critical animal care staffing level (including research staff) it may be necessary to euthanase animals.

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If this decision were made it should be mandatory that essential and / or genetically unique, breeding stocks are given preference for survival.

- A detailed animal care and staffing protocol for a human health disaster should be determined by Facility Managers and Supervisors, in communication with the Institutional ACEC and be part of the maintenance plan for each Facility.

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