San Diego State University

Institutional Animal Care and Use Committee
Program of Veterinary Care

Program of Veterinary Care

San Diego State University (SDSU) employs two part-time campus veterinarians to develop, monitor and maintain the Program of Veterinary Care. Both veterinarians are experienced in laboratory animal medicine and qualified to respond to medical emergencies, to assist with model selection and protocol design, and to provide professional oversight of the general animal care program. The attending campus veterinarian serves as a member of the Institutional Animal Care and Use Committee (IACUC) and is in charge of the preventive medicine program. The associate campus veterinarian serves as an alternate member of the IACUC and is in charge of clinical veterinary medicine.

Both veterinarians report to the Vice President for Research and Innovation and/or the Division of Research Support Services and have authority over animal health and welfare aspects of the SDSU IACUC. The veterinarians establish, maintain, and supervise programs of disease control and prevention, pest and parasite control, pre-procedural and post-procedural care, nutrition, euthanasia, and other veterinary care for all animals held for research and teaching at SDSU. One or the other of the veterinarians conducts routine rounds on average one time a week, or more frequently as needed, which involves facility visits, meetings with investigators and other personnel, and animal health inspections. Both veterinarians receive daily communications from the animal facility staff of animal health observations. Both veterinarians are available via email and mobile telephone for efficient communication regarding animal program-related issues and for response to emergencies.

Medical Records

For USDA-covered species, a medical record is established for each animal upon arrival at SDSU. For non-USDA covered species, medical records can be kept as group records, rather than individually, and are started when a surgical procedure is performed or when an animal becomes ill, rather than upon arrival. This record is maintained in the animal room. Investigators are advised that notes on all injections, blood sample collections, and other manipulations must be recorded in the animal's record. Records are maintained for three years after an animal's death.

Daily Observations

All animals in all campus facilities are checked daily, 365 days a year, for signs of disease or illness. During weekend and holiday checks in OLAC managed facilities, Laboratory Animal Technicians have been trained that, should they encounter an emergency situation involving any research animal in the facility, the following steps should be taken:

The OLAC manager and principal investigator and/or his/her representative are contacted. If warranted, the veterinarian will be contacted for advice about possible

treatment or a determination may be made that the veterinarian should come and examine the animal.

If the situation cannot be remedied so that the animal is not suffering or in pain, the Laboratory Animal Technician may euthanize the animal. In the event that the OLAC manager, principal investigator, and veterinarian cannot be contacted, the technician may determine that an animal should be euthanized to prevent suffering. The welfare of the animal is the priority for our decision making process.

All Laboratory Animal Technicians are trained to provide euthanasia, and perform other procedures that would be necessary to provide an animal with nursing care and limited treatments for an emergency situation. Technicians that have not been trained in these methods are not allowed to conduct checks during times such as weekends and holidays when trained personnel would not be available to assist them.

Animals housed in facilities not managed by OLAC will be monitored daily by lab staff trained in the care and husbandry of that species. This training is on file. If animals are found ill or if there is a facility issue in these areas, the principal investigator and his/her representative are contacted. If they are unavailable, the veterinarian should be contacted to ensure the animal is cared for and treated properly, or euthanized. If there are colony issues, such as water or HVAC failures, the veterinarian should also be contacted to assist in correction of these issues. In addition, personnel caring for animals in facilities not managed by OLAC are responsible for informing the IACUC of any adverse events.

Animal Procurement

OLAC has established a list of approved animal vendors. The list was developed in an effort to obtain the very best animals and to assure continued protection of the health and condition of animals already in use in campus facilities. Health reports from vendors are kept on file in the OLAC office and checked quarterly.

In general, OLAC policy limits animal purchases to the list of approved vendors. No animals may be purchased without an approved animal protocol. All requests for animal purchases must be reviewed by the OLAC manager before animals are delivered. At that time, the OLAC manager will determine where the animals are to be housed, that an IACUC-approved protocol exists and then approve their purchase and arrival, assuring OLAC awareness as to when the animals will arrive.

Occasionally it is necessary to receive animals from sources other than approved vendors (such as other universities, etc.). In these instances, special arrangements must be made with OLAC by the investigator, to include prior testing for viruses and other microorganisms. Upon arrival, animals must be quarantined or isolated from the main vivarium until their health status is confirmed.

Zebrafish will generally be obtained from other universities and approved vendors such as Zebrafish International Resource Center (ZIRC). If adult zebrafish are obtained, they must be quarantined. Embryos do not need to be quarantined if the steps below are taken.

As there are no approved vendors for chickens, they are also obtained from other sources. These sources must be from Newcastle disease-free areas and sources. Different shipments must be quarantined from each other.

Animal Receiving
On arrival, animals are unpacked, inspected, caged, and provided fresh food and water within two hours. The shipment is verified for accuracy, the vendor's health status report is reviewed, and the shipment is entered in the animal receiving log.

Quarantine/Stabilization
In spite of every effort to obtain healthy, robust animals, there may be instances when animals are received that do not meet institutional standards or are not of a quality to be acceptable for institutional purposes. Because of this, it is OLAC's policy to maintain a quarantine/stabilization period to provide the time necessary for animals to recover from the stress of shipping and handling and to acclimate to new surroundings (stabilization) and to allow time for thorough observation of the animals. No routine vaccinations are available for any of the usual species of animals housed in SDSU facilities.

Animals from approved vendors are not routinely tested for pathogens on arrival. Animals from other sources will have at least a basic disease profile run as part of the quarantine process.
Stabilization and quarantine periods vary according to species, source, and intended use. The following list is a guideline provided to Investigators setting a schedule for research protocols.

Stabilization (for approved vendors):

	Minimum	Maximum
Rats:	3 days	14 days
Mice:	3 days	14 days
Reptiles:	7 days	21 days
Amphibians:	7days	14 days
Chickens	7days	14 days
Fish – see below		

Quarantine:

Rats:	7 weeks
Mice:	7 weeks
Reptiles:	7-21 days
Amphibians	7-14 days

Chickens 7-14 days
Fish – see below

During the quarantine/stabilization period, all animals are checked daily for outward expression of disease or conditions that might render them unsuitable for their intended purpose. If warranted, all animals will receive treatment for any disease/injury identified during this time period, after consultation with the veterinarian and principal investigator. Moribund or untreatable animals will be subjected to blood sampling and then euthanized. The bodies will be submitted for post mortem examination.

Fish embryos should be shipped directly to the fish facility overnight. Upon arrival, embryos will be bleached following standard protocols, as published in ZFIN.com:

"To bleach eggs, prepare two beakers of bleach solution, containing 0.1 ml of 5% sodium hypochlorite in 170 ml of system water. Mix thoroughly. Place the eggs in the first beaker, and allow them to stand for 5 min. Pour off the bleach solution, and rinse the eggs with system water. Allow the eggs to stand in system water for 5 min. Place the eggs in the second beaker of bleach solution for 5 min. Rinse the eggs with system water. Place the eggs into a small disposable petri dish. Eggs that have been properly bleached can be removed safely from the quarantine room."

If adults are obtained, they should be housed in a separate tank system and bred. The embryos can then enter the facility after the bleaching process described above.

Separation by Species, Source, and Health Status
All species are physically separated into separate rooms. Since the number of vendors is limited, separate facilities are not maintained for animals from different sources/vendors. A rodent quarantine room is available.

Surveillance, Diagnosis, Treatment, and Control of Disease

Regular rodent colony surveillance measures and screening are conducted by disease testing semiannually. Testing services are conducted at an outside diagnostic reference laboratory

All animals maintained at SDSU are observed for signs of illness, disease, or injury by Laboratory Animal Technicians trained to identify changes in behavior or condition. An animal whose appearance or behavior indicates substantial change from normal is identified by attachment of a health/observation notification card to the animal's cage. The observations are recorded on the Daily Health Report log and reported to the OLAC manager. The veterinarian reviews these logs and examines animals as needed. For more urgent clinical problems, the veterinarian is contacted in a timely manner and, if necessary, will examine the animal(s) and establish an appropriate plan as needed.

Investigators are notified immediately of animal health problems. If an animal is moribund or not treatable, the OLAC staff will request permission to euthanize the animal immediately or follow approved animal protocol guidelines for notification and action in the case of category E procedures. If the investigator cannot be located, the staff reserves the right to use their best judgment in determining whether euthanasia is indicated and perform such if necessary, but may contact the veterinarians for confirmation of this judgment.

Animals housed in facilities not managed by OLAC will be monitored daily by lab staff trained in the care and husbandry of that species. This training is on file. If animals are found ill or if there is a facility issue in these areas, the principal investigator and his/her representative are contacted. If they are unavailable, the veterinarian should be contacted to ensure the animal is cared for and treated properly, or euthanized. If there are colony issues, such as water or HVAC failures, the veterinarian should also be contacted to assist in correction of these issues. In addition, personnel caring for animals in facilities not managed by OLAC are responsible for informing the IACUC of any adverse events.

Anesthesia and Analgesia

The campus veterinarians and the IACUC have established general guidelines for the use of anesthetics, analgesics, and sedatives. These guidelines provide recommendations for the type and amount of drug and preferred route of administration. These recommendations follow generally accepted laboratory animal veterinary practices.

In unusual cases, investigators are encouraged to consult the veterinarians for assistance and recommendations. During initial training, investigators are informed that procedures, which are considered painful in humans should be considered painful in animals and appropriate use of anesthesia and analgesia should be made.

Each Animal Protocol Form (APF) requires detailed information relative to use, type, and administration of anesthetics, analgesics, and sedatives in proposed research projects. The information provided in the APF is subject to review and approval by the IACUC.

Surgery and Post-Surgical Care

Presently, survival surgical procedures are conducted only in rodents (rats and mice). No dedicated surgical facilities appropriate for non-rodent species are available at SDSU. Therefore no survival surgery is performed on species other than rodents.

The faculty member or principal investigator must assure appropriate conduct and supervision of surgical techniques and procedures by their personnel and students. When appropriate and/or requested, the campus veterinarian may review the surgical procedure and work with/train faculty, students, and laboratory personnel on surgical techniques.

If required by experimental design, the need for surgery and the procedures to be used will be outlined in detail on the APF submitted for IACUC approval. Rationale and justification for the project are important criteria for acceptance, as are the use of anesthetics and/or analgesics to relieve any pain associated with the procedures.

Although aseptic technique for rodents is not covered by USDA regulations, the IACUC endorses adherence to the NIH Guide for the Care and Use of Laboratory Animals when working with rodents. Therefore, all rodent recovery surgical procedures are to be performed in a clean, non-cluttered area with sterile instruments and surgical gloves, using aseptic techniques.

Sick or Injured Animals

Because of the limited number of vendors and their quality assurance methods, OLAC does not routinely treat incoming animals for parasites or other medical conditions but relies on observation of animals for signs of disease or illness. If internal or external parasites are suspected, animals and their body excrements are examined. If parasites are determined to be a problem, the use of properly prepared anti-parasitic drugs will be prescribed by the veterinarian for use against ectoparasites and internal nematode infections.

Non-invasive, non-systemic therapy (i.e., topical antibiotics) is initiated upon observation of some of the more common conditions in rodents such as dermatitis, conjunctivitis, and superficial wounds unless the investigator has requested an exception to this practice.

If an animal develops some other condition that requires treatment that is more invasive or extensive, the veterinarian will be consulted and an appropriate treatment instituted. Every effort will be made to contact the investigator for discussion of the treatment before it is initiated, but in the case of an emergency, the OLAC Staff reserves the right to treat animals if an investigator cannot be reached. In these cases, the veterinarian has sufficient laboratory animal experience to be able to prescribe treatment and/or euthanasia, if necessary, in such a manner that will impact the project as little as possible. However, the **primary emphasis is for the welfare of the animal.**

The following conditions that could occur in rodents have been discussed with the OLAC staff. Discussions include signs, symptoms, prevention and treatment:

- Pasteurellosis
- Pododermatitis
- Cannibalism
- Species Separation
- Malocclusion / Overgrown Incisors
- Pest Control and Product Safety
- Handling

Euthanasia methods must be detailed in the protocol and comply with the AVMA Guidelines for the Euthanasia of Animals. Rodents can be euthanized by CO2, overdose of inhalation anesthetics such as isoflurane, overdose of injectable anesthetics (3-5 times the anesthetic dose) or overdose of euthanasia solution, such as Euthasol (IV or IP, 100-120 mg/kg) by the veterinarians or trained OLAC staff. Mice and rats under 200 grams can also be euthanized by cervical dislocation or decapitation if personnel have been trained in the procedure. This should be performed under anesthesia. All species will be euthanized according to methods detailed in the APF and that are compatible with the most current AVMA Panel on Euthanasia.

This Program of Veterinary Care will be reviewed at least annually.

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