Investigator Orientation Handbook

Building 14B North

Division of Veterinary Resources

July 2011

http://www.ors.od.nih.gov/sr/dvr

Table of Contents

Behavior, Social Management, and Enrichment

Rodent Section

18. Rodent Room Procedures
    Procedures Prohibited in Animal Rooms
    Relevant SOPs
19. DVR Rodent Breeding Policy / SOP
20. Requesting Cage Cards
21. Facility Health Status
22. Incoming Animals from Approved Sources – Rodents
23. Incoming Animal from Non-approved Sources – Rodents
24. Isolation - Rodents
25. Transferring Rodents between NIH facilities
26. Quarantine for Disease Outbreaks
27. Shipping/Transporting
28. Animal Receiving Procedures

Non-Human Primate Section

29. Non-Human Primate (NHP) Room Procedures
    Procedures Prohibited in Animal Rooms
    Relevant SOPs
30. Atypical Behavior Reporting and Relevant SOPs
31. Facility Health Status
32. Quarantine
33. Transferring Animals between NIH Facilities
34. Shipping/Transporting
35. Animal Receiving Procedures
36. Escaped Animals
37. Operation of Squeeze Cages/Racks, Locks
38. Animal Exposure Program Compliance

Gottesman Memo on Communicating Animal Care and Use Concerns within the NIH Intramural Research Program

Investigator Orientation Checklist

- ❑ Introduction
  - ❑ Camera Policy
  - ❑ Hours of Operation
  - ❑ DVR Policy for Tours, Photos, and Outside Animals
- ❑ Building and Room Entry procedures
  - ❑ Card Key
  - ❑ Consequences for Non-Compliance
- ❑ Health Status and Traffic Patterns
  - ❑ Rodent Room Priority
  - ❑ Non-Human Primate Room Priority
  - ❑ DVR Building Entry
  - ❑ Campus Building Entry
  - ❑ Entering Multiple Buildings in the Same Day
- ❑ Introduction to 14B North Key Staff
- ❑ Space Assignment Procedures
  - ❑ Animal Holding
  - ❑ Procedure rooms
- ❑ PPE Requirements
- ❑ Floor plan of Building 14B North
- ❑ Location of Safety Equipment
- ❑ Emergency Exit Procedures
- ❑ Emergency On-Call List with Phone Numbers
- ❑ Use of Procedure Rooms
  - ❑ Scheduling
  - ❑ DVR Provided Supplies and Equipment
- ❑ Investigator Provided Supplies and Equipment
- ❑ Policies and Relevant SOPs
- ❑ DVR Pathology Services
- ❑ Initiating and Submitting Requests for Technical Support
- ❑ Animal Health Reporting
  - ❑ Normal Hours
  - ❑ After Hours, Weekends, and Holidays:
  - ❑ Reporting Atypical Behavior of Non-Human Primates
- ❑ Locker Room / Lunchroom / Break Room Procedures
- ❑ Security
- ❑ Additional DVR Services
  - ❑ Diagnostic Services
  - ❑ Nutrition
  - ❑ Pharmacy
  - ❑ Behavior, Social Management, and Enrichment

Rodent Section

- ❑ Rodent Room Procedures
  - ❑ Procedures Prohibited in Animal Rooms
  - ❑ Relevant SOPs
- ❑ DVR Rodent Breeding Policy / SOP
- ❑ Requesting Cage Cards
- ❑ Facility Health Status
- ❑ Incoming Animals from Approved Sources – Rodents
- ❑ Incoming Animal from Non-approved Sources – Rodents
- ❑ Isolation - Rodents
- ❑ Transferring Rodents between NIH facilities
- ❑ Quarantine for Disease Outbreaks
- ❑ Shipping/Transporting
- ❑ Animal Receiving Procedures

Non-Human Primate Section

- ❑ Non-Human Primate (NHP) Room Procedures
  - ❑ Procedures Prohibited in Animal Rooms
  - ❑ Relevant SOPs
- ❑ Atypical Behavior Reporting and Relevant SOPs
- ❑ Facility Health Status
- ❑ Quarantine
- ❑ Transferring Animals between NIH Facilities
- ❑ Shipping/Transporting
- ❑ Animal Receiving Procedures
- ❑ Escaped Animals
- ❑ Operation of Squeeze Cages/Racks, Locks
- ❑ Animal Exposure Program Compliance

- ❑ Gottesman Memo on Communicating Animal Care and Use Concerns within the NIH Intramural Research Program

Signature:_____ Date: _____

1. Introduction

Building 14B North is operated by the Division of Veterinary Resources (DVR). Institutes request animal holding space and husbandry services through their APD from DVR. A current IACUC approved Animal Study Proposal (ASP) must be on file for access to be granted to DVR facilities.

Camera Policy

Cameras are not allowed in DVR facilities without prior approval of the DVR Director.

Hours of Operation

Animal holding facilities will be staffed from 7:00 am to 3:30 pm Monday through Friday. Weekend and holiday hours are between 7:00 am and 11:00 am.

Eating, drinking, and smoking is prohibited in DVR animal holding areas and laboratories.

DVR Policy for Tours, Photos, and Outside Animals

Tours- All visits to animal and diagnostic facilities must be approved and scheduled through the Director, DVR. Individuals less than 16 years of age are not allowed in animal or diagnostic facilities. Open toed shoes are not allowed in animal or diagnostic facilities.

Photos- Still and video photography is not allowed in DVR animal or diagnostic facilities without the approval of the Director, DVR.

Outside animals- Non-research animals are not allowed in DVR facilities.

2. Building and Room Entry procedures

Card Key

Individuals requiring access to DVR facilities will provide a photocopy of his/her NIH ID card (both front and back of the card) to the Government Facility Manager. After completion of a building orientation, the Administrative Assistant (with Facility Manager approval) will contact NIH's Access Control Group to give you key card entry to the perimeter fence and building. The Administrative Assistant will also enter your ID number into the room entry system granting you access to rooms where your animals are housed, and the procedure rooms.

Consequences for Non-Compliance

Non-compliance with DVR procedures may result in loss of access.

3. Health Status and Traffic Patterns

Building 14B North is free from all specific infectious rodent pathogens with the exception of mouse norovirus. Any changes in health status will be communicated via the Animal Health List Serve.

If a suspect test result is obtained as a result of sentinel testing data, DVR will confirm the test result. Upon a positive confirmation, DVR will quarantine the room, and notify all PIs and APDs through the Animal Health List Serve.

Rodent Room Priority

Within Building 14B/N, all rooms are considered to be of the same health status except for the Quarantine holding room 141.

Non-Human Primate Room Priority

The Room Entry Sequence is posted on each animal room door.

DVR Building Entry

Within the DVR Buildings on campus the following traffic pattern should be followed:

- 14BN
- 14 F
- 10A, 14C, and 14G are on equal status from an SPF perspective.
- 28
- 14G / 106 which is a special study room with animals of various health status
- 14D

For instance, you cannot enter 14B/N after entering any other DVR animal holding facility. Once you have enter building 28D you cannot enter any other DVR rodent building

Campus Building Entry

If you want to enter 14B North after being in any other rodent building or enter any other rodent building after being in building 14B North you should contact the Facility Veterinarian or Facility Manager for that building for the specific requirements.

Entering Multiple Buildings in the Same Day:

You must check with the Facility Veterinarian or Facility Manager of each building to determine the order of entry if you have been in any other animal facility prior to entering a DVR animal facility.

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4. Introduction to 14B North Key Staff

Position	Name	Phone #
Facility Manager	Andy Limerick	301-402-6731
Facility Veterinarian - Rodent	Dr. Joanne Smith	301-496-5257
Facility Veterinarian - NHP	Dr. Tom Thomas	301-496-5993
Contract Task Leader	Musa Savane	301-496-1076
Lead Veterinary Technician	Theresa Aguirre	301-594-8135
Floor Leader	Kevin Ham	301-594-8135
Administrative Assistant	Karen Bloomfield	301-594-8135

Please contact the Facility Manager or the Facility Veterinarian if you have any special requests for animal housing, technical procedures or if you experience any unsatisfactory service from the staff.

5. Space Assignment Procedures

Animal Holding

Requests for animal holding space for a specific building are made to the DVR Facility Manager. Investigators requiring additional animal holding space assignment should direct their request to their Institute Animal Program Director or designee.

Procedure rooms

Investigators who would like to lease a dedicated procedure room should contact the DVR Facility Manager to discuss availability. Final arrangements to lease dedicated procedure rooms should be coordinated with the DVR Facility Manager, DVR Business office and IC Business office. Otherwise, procedure rooms typically support multiple investigators from various ICs.

6. PPE Requirements

Please see the following SOP 109 for DVR's PPE Requirements

SOP 109 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 3/16/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 6/9/2005

Date Revised: 3/16/2011

TITLE	**:**	Personal Protective Equipment (PPE)
SCOPE	**:**	All animal care and investigative staff entering animal facilities
RESPONSIBILITY	**:**	Facility manager
PURPOSE	**:**	To describe the purpose of wearing PPE and when and where it is appropriate.

GENERAL

1. Personal Protective Equipment (PPE) in the research setting serves two functions.

    a. It protects the employee from animal allergens, noise, and from spreading infectious agents transmissible to humans outside the animal facility.

    b. It also protects our specific pathogen free animals from infectious diseases that the employee may be carrying on their clothes or person.

2. The type of PPE required will vary based on the species, the health status of the animals and the level of contact with potential contaminants. For example, in general, more PPE is required when dumping or hosing dirty caging or handling animals. Questions regarding any circumstances not described in this SOP will be directed to the facility manager and veterinarian who will provide guidance based on a risk assessment.

3. Contract animal care staff is required to wear provided scrubs and steel toes footwear when working in the animal facility. Scrubs will not be worn beyond the 14/28 complex, in the Bldg. 10 Clinical Center (for 10A and 10B2 staff), or off of the NIH Animal Center campus.

4. Open toed shoes and clogs are not permitted in any animal facility.

5. Do not wear rubber boots or scrubs/clothing that is wet or soiled in facility administrative areas and lunch rooms.

6. PPE should cover areas of exposed skin that may come in contact with the animal. There should be no gaps between the coveralls/lab coat and gloves.

7. Specialized protective clothing or equipment may be required in specific areas (e.g. – heat resistant gloves and aprons when removing items from the autoclave, ear protection in cage wash and dog and pig holding areas).

8. Powered Air-Purifying Respirators or PAPR's provide respiratory protection to the user and will be used when there is a significant risk of splash related exposures. See SOP 113 for details on operation and use of PAPRs.

9. PPE is located at the entrance to the animal facility areas and where additional PPE is necessary to enter specific areas.

10. Follow PPE chart below and signage as posted at the entrance to the animal facility and additionally at specific rooms or areas.

11. Remove and discard all disposable PPE upon exiting animal areas at designated threshold exit areas.

12. See SOP 110 for additional requirements and traffic patterns for DVR facilities.

REFERENCES

Estep RD, Messaoudia I, Scott W. Wong SW. 2010. Simian herpesviruses and their risk to humans. Vaccine 28S: B78–B84.

ILAR. 1997. Occupational health and Safety in the Care and Use of Research Animals. National Academy Press: Washington DC.

CAGEWASH FACILITIES

1. The primary occupational risks from working in cage wash areas are allergens and biological contaminants in soiled caging and exposure to noise from machines.

2. The greatest exposure occurs when cages are being emptied or sprayed. To minimize exposure, staff will wear water resistant clothing and a PAPR to prevent contamination of the mucus membranes.

3. Exposure to machine noise can cause loss of concentration which can lead to accidents, increase fatigue and permanent hearing loss over time. All staff entering the cage wash area will wear hearing protection when machines are running.

CAGEWASH STAFF (DIRTY)

- Scrubs
- Steel toed shoes (dry operations)
- Steel toed rubber boots (wet operations)
- PAPR (or hair bonnet and mask – dry operations)
- Gloves
- Hearing protection (while equipment is running)
- Water resistant coveralls or Polypro with rubber apron

CAGEWASH STAFF (CLEAN)

- Scrubs
- Steel toed shoes (dry operations)
- Steel toed rubber boots (wet operations)
- Hair bonnet
- Mask
- Gloves
- Hearing protection (while equipment is running)
- Rubber apron and eye protection for wet operations (tunnel washer unloading and filling water bottles

VISITORS / RESEARCH / ORF STAFF (CLEAN)

- Lab coat
- Hair bonnet
- Mask
- Shoe covers
- Hearing protection (while equipment is running)

VISITORS/ RESEARCH / ORF STAFF - (DIRTY)

- Lab coat
- Hair bonnet
- Mask
- Shoe covers
- Hearing protection (while equipment is running)
- Gloves and eye protection

AUTOCLAVE OPERATION – UNLOADING

- Rubber apron
- Heat resistant gloves
- Face shield

RODENT AND RABBIT FACILITIES

1. The primary occupation risk when working with rodents and rabbits is sensitization to allergens in rodent urine and rabbit fur. The greatest exposure occurs with conventional housing. In these facilities, PPE protects the wearer from exposure.

2. Ventilated racks and hoods in rodent barrier facilities significantly reduce occupational exposure to allergens. PPE in barrier facilities is primarily to prevent the introduction of potential pathogens to the rodents.

3. Contact with chemical disinfectants can cause eye and/ or skin irritation. To minimize chemical exposure staff will wear water resistant sleeves when handling cages in barrier facilities and a PAPR and water resistant coverall when sanitizing animal rooms.

FACILITY STAFF

- Scrubs
- Steel-toes shoes
- Hair bonnet
- Mask
- Gloves
- Shoe covers
- Lab coat (conventional facilities)

VISITORS / RESEARCH STAFF

- Lab coat or coverall
- Hair bonnet
- Mask
- Gloves (if handling animals)
- Shoe covers

CHANGING / HANDLING RODENT CAGES

- Add water resistant sleeves

HANDLING RABBITS / CHANGING PANS

- Add lab coat (remove before exiting room)

RODENT / RABBIT ROOM SANITATION (In addition to requirements above)

- Add PAPR
- Add Water resistant coverall

BIOHAZARD, QUARANTINE, CHEMICAL OR RADIOLOGICAL HAZARD POSTED ROOMS

- Follow directions on door signage for special equipment
- Remove additional PPE before exiting room

ISOLATION ROOMS (Appropriate PPE for facility entry)

- Exit to dirty corridor wherever possible and remove PPE at de-gowning area

- If returning to clean corridor change all PPE

NONHUMAN PRIMATE FACILITIES

1. In nonhuman primate facilities PPE has two main functions:

    a. Protect humans from *Macacine herpesvirus 1* (McHV1) which is transmitted in macaque bodily fluids and gains access to the human body through mucosal surfaces or open wounds (Estep, 2010)

    b. Protect the nonhuman primates from human respiratory infections

2. To minimize the risk of transmission of McHV1 via a splash, all exposed skin on the arms, legs and torso must be covered when entering a NHP room and/ or when working with NHP. For this reason, visitors and investigators who are wearing shorts or skirts will be asked to change into scrubs or wear a jumpsuit before entering the animal facility.

3. Masks protect NHP from human respiratory infections. PAPRs protect the wearer but do not filter expired air. For this reason staff wearing a PAPR must still wear a mask.

4. During daily sanitation high level of bacteria from the feces are present in the wash water, and contaminate the floor. During sanitation, staff will wear water resistant outerwear, and a PAPR to avoid prevent contaminated water and/ or chemical disinfectants from contacting the mucus membranes. To prevent spreading bacteria to administrative areas, staff will step in a foot bath when exiting the animal room and visitors will wear shoe covers while in animal areas.

5. All individuals handling or manipulating NHP must wear a disposable lab coat or coverall. This layer will be removed with gloved hands and protects the wearer from contacting soiled scrubs with bare hands.

<u>FACILITY STAFF</u>

- Long sleeved scrubs
- Steel toes shoes
- Gloves (2 pairs)
- Mask
- Hair bonnet
- PAPR (if there is a splash hazard) **or** Face shield with safety glasses or goggles

<u>VISITORS / RESEARCH STAFF</u>

- Lab coat or coverall
- Mask
- Hair bonnet
- Face shield with safety glasses or goggles
- Gloves
- Shoe covers

<u>NHP ROOM SANITATION / CAGE CHANGING</u>

- Add water resistant coveralls
- Add rubber boots (steel-toe)
- PAPR

<u>NHP MANIPULATIONS/ PROCEDURES</u> (In addition to requirements above)

- Add lab coat or coveralls
- Change gloves between groups of animals or if they are soiled
- Change lab coat / coverall if it gets wet or soiled

<u>BIOHAZARD / CHEMICAL / RADIOLOGICAL HAZARD OR QUARANTINE POSTED ROOMS</u>

- Follow directions on door signage for special equipment
- Remove additional PPE before exiting room

CARNIVORE/UNGULATES FACILITY ENTRY – Wings/Areas adjacent to animal kennels

1. The primary occupational risks from working daily in carnivore and ungulate areas is associated with sensitization to allergens originating in the animal's saliva, hair and skin and exposure to loud noise.

2. The greatest allergen exposure occurs when handling and manipulating the animals. To minimize exposure, individuals handling or manipulating animals will wear gloves, and street clothes will be covered with a lab coat.

3. During daily sanitation high level of bacteria from the feces are present in the wash water, and contaminate the floor. During sanitation, staff will wear water resistant outerwear, and a PAPR to avoid prevent contaminated water from contacting their mucus membranes. To prevent spreading bacteria to administrative areas, staff will step in a foot bath when exiting the animal room and visitors will wear shoe covers while in the animal wing.

CARNIVORES / UNGULATES STAFF

- Scrubs
- Safety shoes (steel-toe)
- Hearing protection (as posted)

VISITORS/ RESEARCH / ORF STAFF

- Shoe covers
- Hearing protection (as posted)

ROOM / KENNEL / STALL SANITATION

- Add Water resistant coveralls or apron
- Add Rubber boots
- Add PAPR (goggles or a face shield may be used to sanitize outdoor kennels when the ambient temperature is over 85° F)
- Add Gloves

CARNIVORES / UNGULATES MANIPULATIONS/ PROCEDURES (In addition to requirements above)

- Add Gloves
- Lab coat (Visitor / Research Staff Only)

BIOHAZARD / CHEMICAL / RADIOLOGICAL HAZARD OR QUARANTINE POSTED ROOMS

- Follow directions on door signage for special equipment
- Remove additional PPE before exiting room

TRANSPORTING ANIMALS

Animal transportation staff are exposed to the same species specific hazards as listed for facility staff while loading and unloading animals.

ANIMAL TRANSPORTATION STAFF

- Uniform provided
- Steel toes shoes

RODENT TRANSPORTS (LOADING AND UNLOADING)

- Add gloves

NHP TRANSPORTS (LOADING AND UNLOADING)

- Add Mask
- Add gloves (2 pairs)
- Add goggles
- Add water resistant coveralls (under wet conditions)

AWAKE CARNIVORES AND UNGULATES (LOADING AND UNLOADING)

- Add Hearing protection
- Add gloves

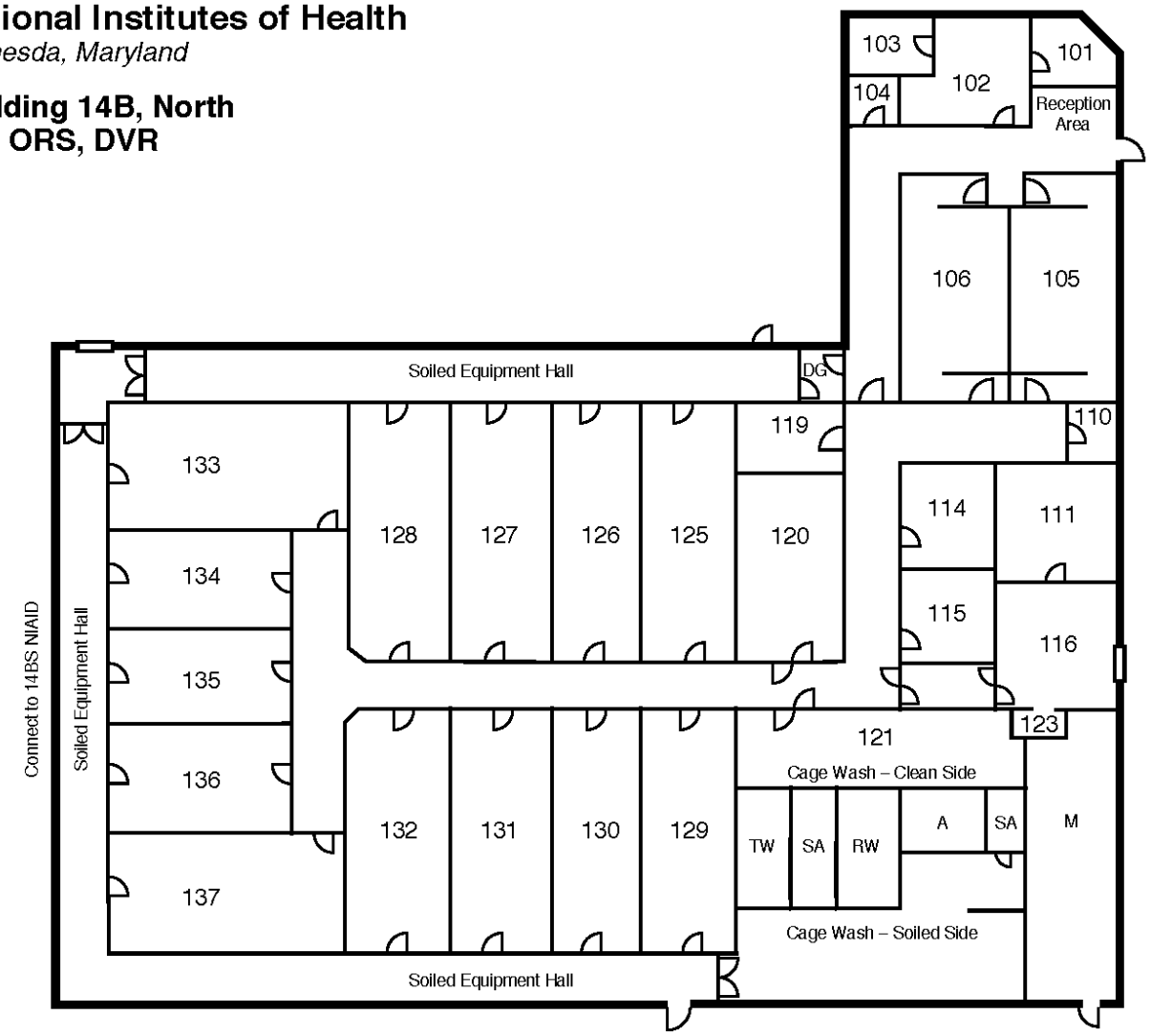
TRUCK SANITATION

- Water resistant coveralls
- Goggles
- Gloves
- Rubber boots or shoe covers

7. Floor plan of Building 14B North

National Institutes of Health
Bethesda, Maryland

Building 14B, North
OD, ORS, DVR



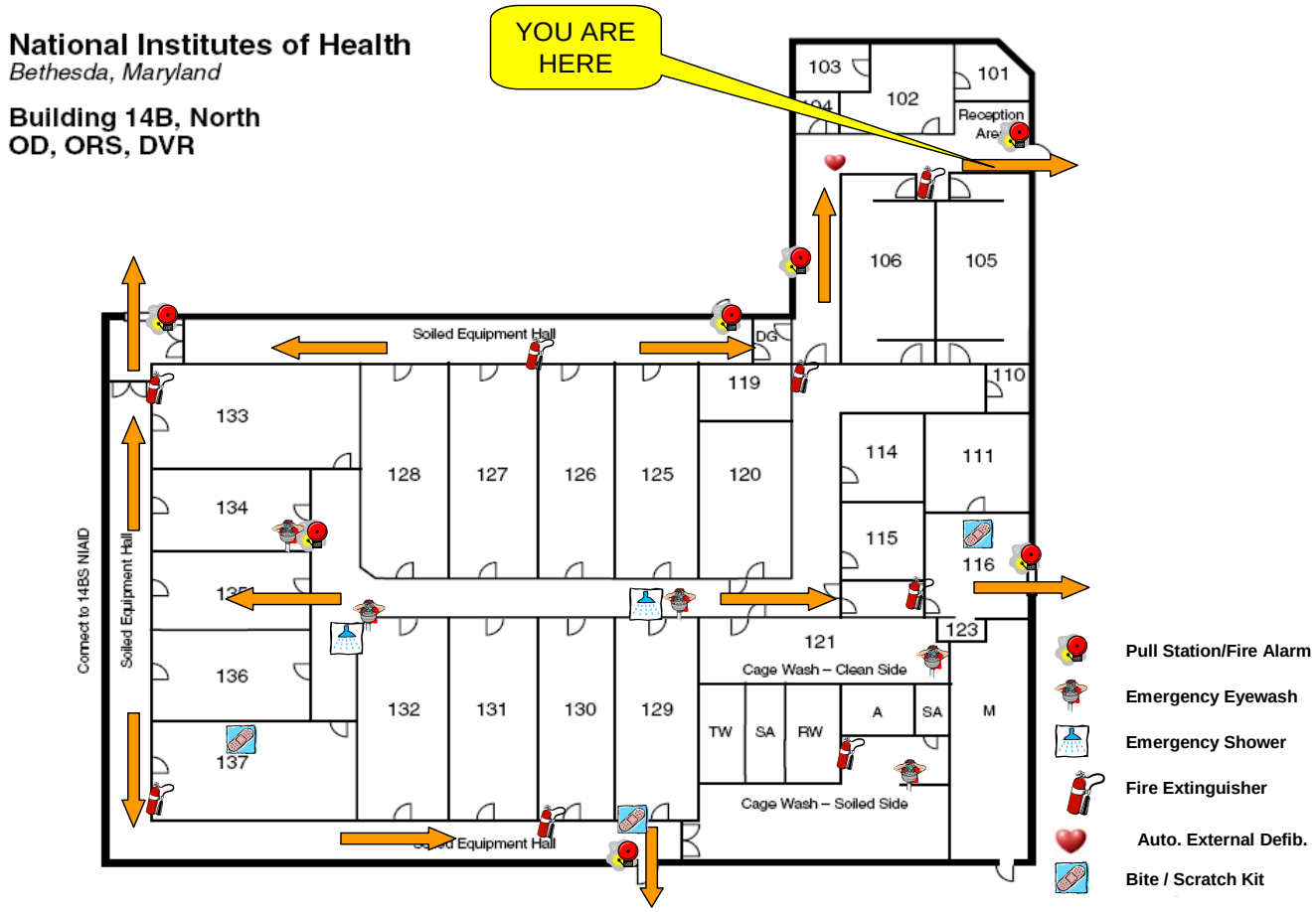
◄South North ►

8. Location of Safety Equipment

- Emergency showers
- Eye wash station
- Bite / scratch kit (NHP facilities)
- Material safety data sheets

Evacuation Floor Plans – Posted at various locations throughout the building to show where emergency equipment is located and the nearest emergency exit route. See floor plan below.

EMERGENCY EVACUATION FLOOR PLAN



9. Emergency Exit Procedures

Secure animals in their home cage or transport cage as necessary. Quickly and carefully exit the facility at the nearest exit. After exiting the building, report to the facilities Occupant Emergency Coordinator (OEC) in the orange best or his/her alternate at the pre-designated meeting site so they can provide the Fire Department a building occupant status report. Do not enter the facility until the all clear has been given by the OCE or his/her alternate.

The designated meeting site for Building 14B North is on the breezeway at the front of the building.

10. Emergency On-Call List with Phone Numbers

Emergency contact phone numbers are posted on red and white plastic holders throughout the buildings. For after hour animal health issues call the DVR Veterinarian on call. For facility issues call the Facility Manager.

11. Use of Procedure Rooms

Scheduling

Procedure rooms must be scheduled in advance with the Lead Veterinary Technician.

DVR Provided Supplies and Equipment

DVR provides basics supplies for use such as disinfectant, animal boxes, plastic bags, etc. Investigators are responsible for cleaning up after use. Use of equipment:

- Downdraft table
- Chemical fume hoods
- Euthanasia chambers
- Anesthesia chambers

Investigator Provided Supplies and Equipment

Specialized equipment and supplies must be supplied by the investigator. If these items need to be stored in the facility contact the Facility manager. All equipment and must be in compliance with regulatory requirements and within recommended use dates.

Policies and Relevant SOPs

Consult with the DVR Facility Manager or DVR Facility Veterinarian for more information about policies specific to procedure rooms.

These relevant SOPs and can be found on the following pages:

- SOP 112: Safety Procedures When Working With Needles
- SOP 301: Euthanasia of Rodents Using Standard CO2 or Isoflurane Chambers
- SOP 300: Euthanasia of Nonhuman Primates

SOP 112 **Approved:** *Charmaine Foltz, DVM* **Date:** 6/8/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 1/1/2004

Date Revised: 6/8/2010

TITLE : Safety procedures when working with needles
SCOPE : All personnel working with needles
RESPONSIBILITY : Facility Veterinarian
PURPOSE : To describe safe practices for handling and recapping needles

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1. Never recap a needle that has been used on an animal. Place the contaminated needle directly into the sharps container and dispose of the cap separately.

2. Do not bend or break needles after use.

3. When recapping a needle after drawing up medication, changing needle size or switching needles after contamination, follow proper recapping technique.

PROPER RECAPPING TECHNIQUE

1. Place the cap on the work surface.

2. Using one hand to hold the syringe or needle, direct the needle into the cap while keeping the other hand away from the needle and cap.

3. After the needle has been successfully positioned within the cap, secure the cap onto the needle using the other hand or work surface.

SOP 301 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 3/4/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 3/4/2010

TITLE	**:**	Euthanasia of Rodents Using Standard CO2 or Isoflurane Chambers
SCOPE	**:**	All Personnel Trained and Approved for Performing Euthanasia
RESPONSIBILITY	**:**	Veterinarians, Facility Manager
PURPOSE	**:**	To Conduct Inhalant Euthanasia of Rodents, Including Neonates, Effectively, Efficiently, and with Minimal Stress to the Animals.

GENERAL COMMENTS

1. Only trained personnel are authorized to euthanize rodents.

2. When euthanizing animals with CO_2, euthanasia in the home cage is preferred. This avoids the stress of mixing unfamiliar animals. Mice are placed in the polycarbonate anesthesia conduction chamber when using isoflurane for this procedure. If using the isoflurane anesthesia chamber, place no more than four mice or one rat in one chamber at a time.

3. For critical clinical cases, the animals to be euthanized remain in the home cage while those not to be euthanized are moved to a clean cage.

4. Verify animals are dead before removing them from the chamber.

    a. For adults, weanlings, and neonates over 10 Days of age, confirm that death has occurred in all rodents by visual observation (absence of respiratory efforts, absence of corneal reflex, blanching of eyes, sunken sides of the body, absence of movement) of each animal.

    b. If any animal is found to be alive, immediately repeat exposure to inhalant. If there is any question that the animals are still alive when they are removed from the chamber, use a secondary physical method, such as cervical dislocation or decapitation, to ensure death.

    c. For neonates under 10 days of age, death after CO_2 or isoflurane exposure must be ensured by use of a secondary physical method.

5. Carcasses are removed from the CO_2 or isoflurane chamber and transferred to plastic-lined MPW boxes for disposition per SOP 1047. Label the box with the building number, the room number and initial. Close box per instructions. Check off the box noted: research animals.

6. When used, the euthanasia and isoflurane induction chambers are to be sanitized at the end of the day.

7. The person performing euthanasia should sign and date the relevant euthanasia log, tech request, or health record.

8. Special procedures apply for quarantined rooms and animals exposed to biological, chemical, or radiological agents. Please consult with the Facility Veterinarian in those cases.

EUTHANIZING ADULTS, WEANLINGS, AND NEONATES OLDER THAN 10 DAYS

1. The regulator valve, located on the front of the regulator, should be in a closed position before opening the CO_2 cylinder valve. Turning it counter-clockwise closes regulator valve. Carbon Dioxide tanks contain 99.9% CO_2.

2. Check that the tygon tubing between the regulator and the top of the CO_2 chamber or euthanex lid is patent and securely attached.

3. Check that the cap of the exhaust port, located on the lower left side of the chamber, is securely in place.

4. Place the animal holding containers in the euthanasia chamber. Cages/boxes should be arranged in such a way as to ensure good circulation of air to all animals.

5. Close the top of the chamber. If using a euthanex lid, place the lid over the top of the cage so that no gaps exist and the opening of the cage is completely covered by the lid.

6. Initiate the flow of CO_2 by turning the cylinder valve handle on top of the tank counter-clockwise (left).

7. Check the regulator tank gauge to determine the pressure of gas in the CO_2 tank. Tanks found to be low or empty are to be replaced with a full tank prior to initiating the procedure.

8. Without pre-charging the chamber, introduce 99.9% carbon dioxide at the rate of 20% of the chamber volume per minute so as to optimize reduction in distress of the animals. (For a 10-liter volume chamber, use a flow rate of approximately 2 liter(s) per minute.) After the animals become unconscious, the flow rate can be increased to minimize the time to death. Sudden exposure of conscious animals to carbon dioxide concentrations of 70% or greater has been shown to be distressful.[1,3]

9. Adults and weanlings are to remain undisturbed in the CO_2 chamber for a minimum of 10 minutes.

10. Turn off the flow of CO_2 by turning the handle on top of the cylinder clockwise (right).

11. Open the CO_2 chamber. Confirm that death has occurred and remove carcasses. For adults, weanlings, and neonates, consider using a secondary physical method, such as cervical dislocation or decapitation, to ensure death after CO_2 inhalation.

12. The CO_2 chamber should be left open and time allowed between groups of animals for the air in the chamber to equilibrate with room air. For smaller chambers this can sometimes be accomplished by tilting the chamber for a few seconds to allow the CO_2, which is heavier than air, to be dumped out.

EUTHANIZING WEANLINGS UNDER 10 DAYS

1. Acceptable means of euthanizing neonatal rodents includes use of isoflurane or CO_2 followed by a secondary physical method (e.g. cervical dislocation or decapitation). Weanling rodents under 10 days of age are very resistant to hypoxia and require prolonged isoflurane or CO_2 exposure time to reach unconsciousness and death.[2,4] Therefore, all weanling rodents under 10 days of age **MUST be cervically dislocated or decapitated after anesthetizing with isoflurane or CO_2.**

2. Neonates should be kept warm during euthanasia and heat lamps are recommended for that purpose.

3. Neonate anesthesia, Isoflurane - Place animals in a bell jar with an inhalant anesthetic, i.e., isoflurane, saturated in gauze in the bottom of the bell jar, so that there is no direct contact between the animals and the gauze. Cover with lid. Leave for 10 minutes to anesthetize the neonates. *Please note, a chemical fume hood, ducted biosafety cabinet or down draft table must be employed when using inhalant anesthetics. An anesthesia chamber can be used with a vaporizer to anesthetize the rodent. Once neonates are anesthetized, remove the animals and promptly decapitate using sharp scissors or a scalpel. Animals may also be cervically dislocated by trained personnel after isoflurane exposure. **Death must be ensured by decapitation or cervical dislocation prior to disposal.**

4. Neonate anesthesia, CO_2 - Follow directions as described for adults, but expose neonates for 15 rather than 10 minutes. Remove animals from the chamber and decapitate using sharp scissors or a scalpel. Animals may also be cervically dislocated by trained personnel after CO_2 exposure. **Death must be ensured by decapitation or cervical dislocation prior to disposal.**

EUTHANIZING FETI

1. Unless an alternative method of euthanasia of feti is described in an ASP, feti are to be euthanized by exposing the mother to $C0_2$. Death of the mother must be verified after euthanasia and prior to disposal.

REFERENCES

1. Anton F, Euchner I, Handwerker HO. Psycophysical examination of pain induced by defined CO_2 pulses applied to nasal mucosa. *Pain* 1992; 49:53–60

2. Beaver, B.V., et al, 2007. AVMA Guidelines on Euthanasia. J. Am. Vet. Med. Assoc. http://www.avma.org/issues/animal_welfare/euthanasia.pdf

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SOP 300 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 1/8/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 1/8/2011

TITLE : Euthanasia of Large Animals
SCOPE : Veterinarians and veterinary technicians
RESPONSIBILITY : Veterinarian
PURPOSE : To describe procedures for humane euthanasia of large animals

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GENERAL

1. Euthanasia of animals is often performed as the final procedure in an approved ASP so that the investigators can evaluate changes in the animal's tissue as a result of the research, or at the discretion of the veterinarian to prevent pain and suffering.

2. Euthanasia will be performed by veterinarians or technically proficient veterinary technicians.

3. The method of euthanasia will be determined by procedures described in an approved ASP or the attending clinical veterinarian.

4. The animal must be evaluated until no audible heart sounds can be detected with a stethoscope. A secondary method to ensure death may be performed at the discretion of the veterinarian.

5. The person performing euthanasia will document the time, date and method of euthanasia in the animal's medical record.

6. The decision to euthanize an animal is normally made by the clinical attending veterinarian after consultation with the principal investigator. In emergency situations or when an animal is in a medically terminal condition, if the principal investigator or institutional veterinarian cannot be reached within a reasonable time frame, the animal may be euthanized at the attending veterinarian's discretion. Additionally, in cases in which there is no agreement between the principal investigator and the attending clinical veterinarian regarding the euthanasia of a research animal, the attending clinical veterinarian has the ultimate authority to euthanize an animal.

POST MORTEM EVALUATION

1. Animals will have a diagnostic post-mortem evaluation at the discretion of the veterinarian or principal investigator. Procedures in SOP 205 should be followed for submission of animals to DVR Pathology.

2. Special considerations for NHPs: ARAC Guidelines for the Prevention and Control of Tuberculosis in Nonhuman Primates state that all NHPs should be considered for postmortem examination for the presence of tuberculosis. Animals may be submitted to the DVR Pathology Service for surveillance necropsy, or alternatively, necropsies may be performed by or under the direction of veterinarian at NIH.

12. DVR Pathology Services

The Pathology Service provides comprehensive diagnostic services in anatomic pathology to investigate spontaneous deaths and morbidity in a wide variety of laboratory animals utilized in the intramural research programs at the NIH. At DVR, all nonhuman primates that die for any reason, including euthanasia, will be necropsied by the Pathology Section.

Necropsies are conducted by a staff of board certified veterinary pathologists.

Preliminary necropsy reports are distributed the following work day with a final report including completion of any other related diagnostic tests and histopathology analysis within approximately 2-3 weeks.

Submissions may be made by investigators, facility managers, veterinary technicians or veterinarians. Individuals should submit a pathology submission form available online at http://dvr.od.nih.gov/.

The Pathology Service also offers a Mouse Phenotyping Service to provide comprehensive analysis of genetically engineered mice. Investigators interested in this service should contact Dr. Michael Eckhaus at 301-496-4465 for more information. The Pathology Service also provides review and oversight of necropsies of sentinel animals submitted for routine health surveillance.

The Pathology Service can arrange to assist investigators with special procedures, provide consultation to research investigators, veterinarians and facility managers related to anatomy, gross pathology, histology / histotechnology, histopathology, ultrastructural pathology and laboratory animal disease.

The Pathology Service is able to collaborate with research investigators on a variety of scientific initiatives on a time limited basis.

13. Initiating and Submitting Requests for Technical Support

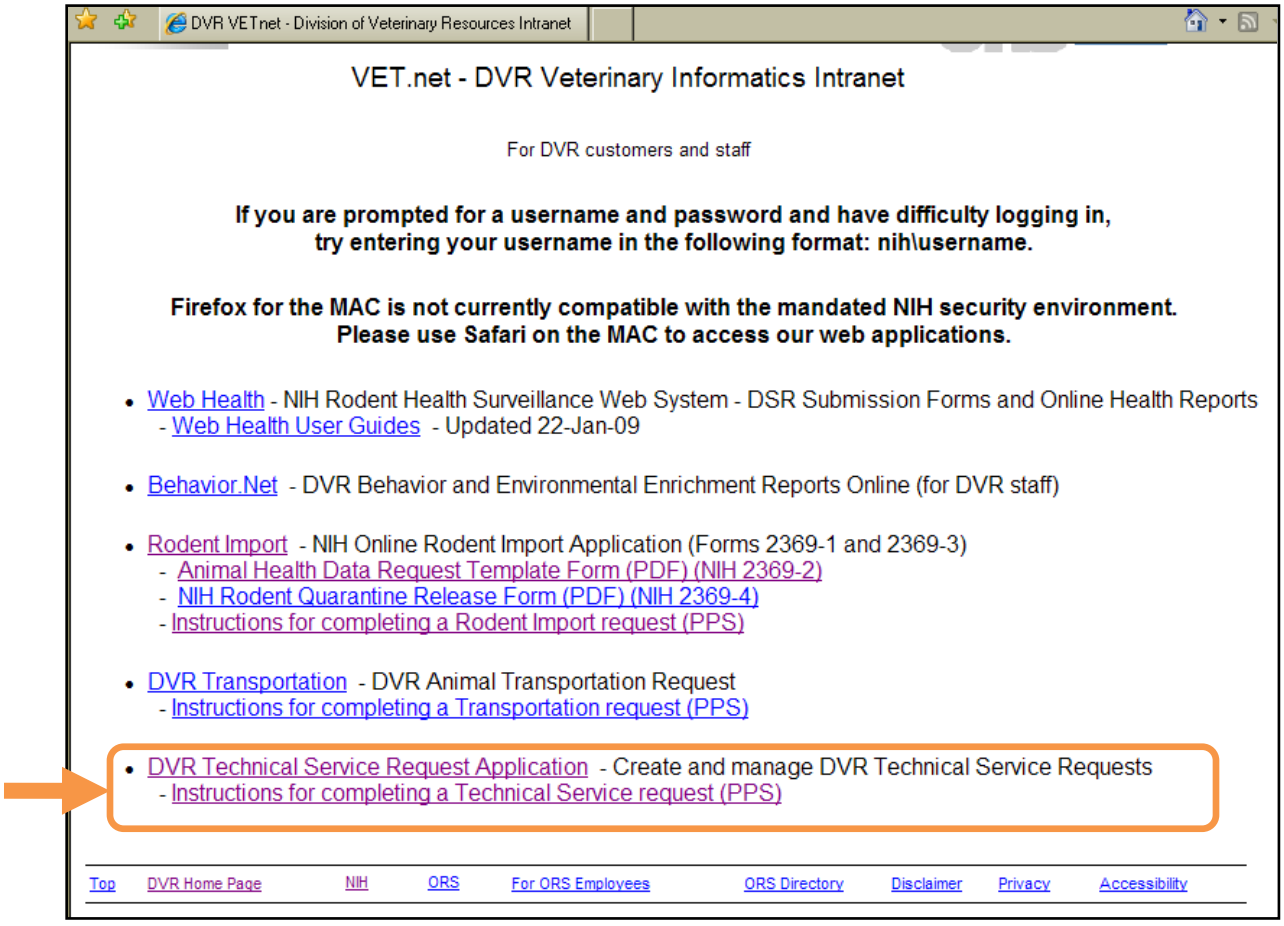
For Technical Staff assistance, a “Technical Service Request (TSR) ” must be submitted. In order to ensure timely scheduling of services, please submit TSRs at least 48 hours prior to the date of the requested procedure(s), as technical time is scheduled on a “first come, first serve” basis. Standing requests must be renewed at the start of each fiscal year.

Technical Service Request (TSR) submissions are processed electronically and may be found at the following link: http://dvr.od.nih.gov/dvr/dvr.aspx

Per Diem includes tagging, tailing and weaning services in rodent facilities, and TB testing (as applicable) and annual or quarterly veterinary exams in non-rodent facilities. Other technical research support service requests will incur charges to cover the technicians’ time to provide the service, billed in ¼ hour increments. For more information, please refer to the “Technical

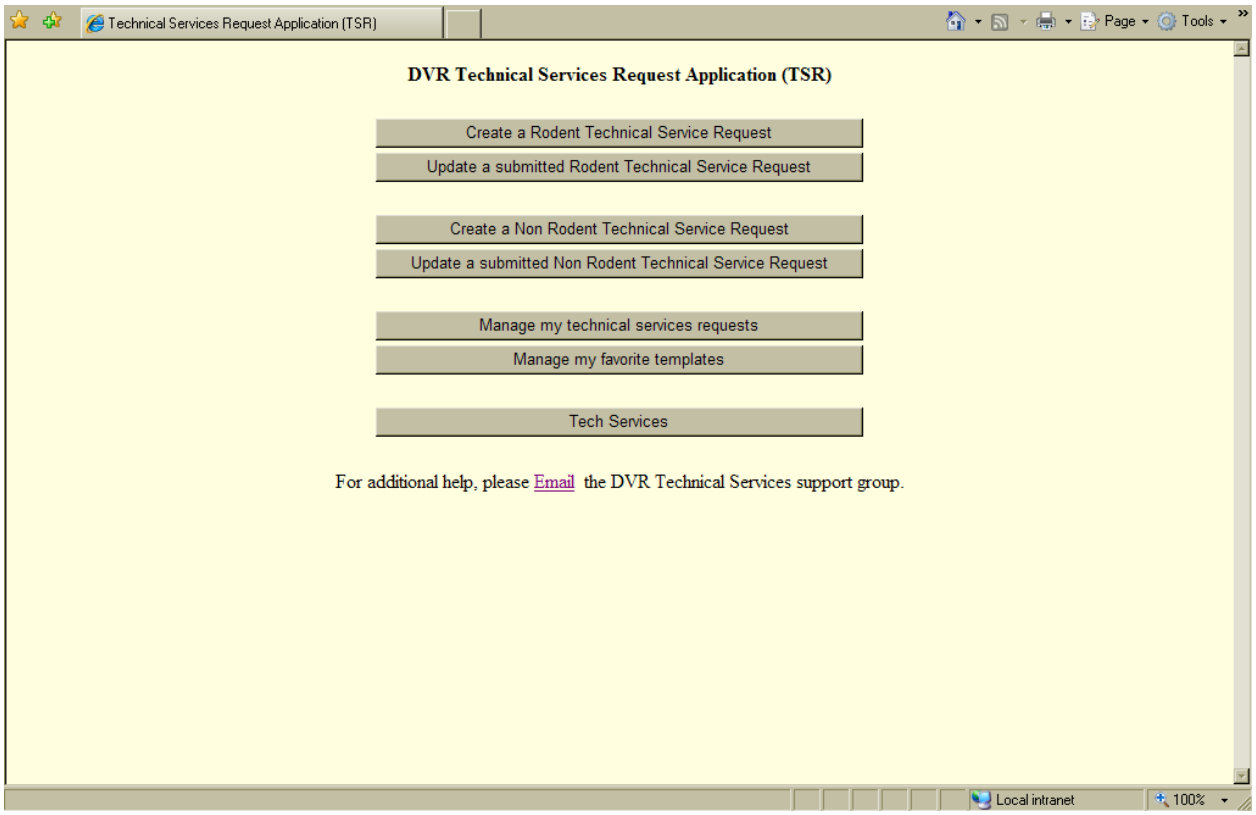
Services Billing Plan" on DVR's webpage http://dvrnet.ors.od.nih.gov. A complete list of DVRs current rates for per diems and technical time can be found at the following link: http://www.ors.od.nih.gov/sr/DVR/Documents/DVRrates.pdf

Below is a screen shot of the entry page for submission of technical service requests. Scroll down to **DVR Technical Service Request Application**.



Review the instructions first if you are new to the process.

Then click for the application (second screen below will appear) to submit or update a rodent or non-rodent technical request. The instructions will provide additional detail to guide you through the process.



14. Animal Health Reporting

Normal Hours

Contact a DVR Veterinary Technician or the Facility Veterinarian if there is a concern about the health of an animal.

After Hours, Weekends, and Holidays:

Consult the emergency contact and on-call signs located in corridors throughout the buildings to contact the Facility or On-call Veterinarian.

Reporting Atypical Behavior of Non-Human Primates

Please see the Reporting Atypical Behavior portion of the Non-Human Primate Section.

15. Locker Room / Lunchroom / Break Room Procedures

The locker room, lunchroom, and break room are available for use. Please be aware that they are shared with DVR staff, contract staff, and staff from other ICs. Please respect this area and clean up after yourself when using these resources.

PPE should not be worn in the lunchroom and break room.

16. Security

Please see the following SOP 100 for information on DVR security procedures at the Bethesda campus.

SOP 100 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 8/23/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 8/23/2010

TITLE	**:**	Security and Facility Emergency Procedures at the Bethesda Campus
SCOPE	**:**	All personnel
RESPONSIBILITY	**:**	Facility Manager
PURPOSE	**:**	To ensure that the animal areas at the Bethesda campus are secure and to describe procedures for reporting facility maintenance emergencies

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SECURITY

Note: Facility security is everyone's responsibility and is critical to ensure the safety of the personnel, animals, research integrity and the facilities.

Any exception to these practices must be approved by the Director, DVR

1. Access to animal facilities is restricted to authorized personnel only. Visitors to the buildings must be accompanied by a DVR representative, or authorized investigator.

2. Cameras and camera phones are not permitted in animal facilities except for official government business. All photographs taken in animal facilities remain the property of the government.

3. The 14/28 gates will remain open from 7 AM to 5 PM Monday – Friday.

4. Every contract and government manager is responsible for ensuring the perimeter and interior doors of each DVR facility are secure. Doors will be checked twice a day; once before noon and once prior to leaving for the day. Doors found to be broken must be reported immediately to maintenance by placing a trouble call to 301-435-8000 or put a ticket in through the web system at http://orf.od.nih.gov .

5. A building specific Facility Shutdown Checklist will be filled out at the end of each day.

6. Any strangers will be asked to identify themselves. Do not physically engage anyone who refuses to identify him or herself. Notify the NIH Police Force if strangers are uncooperative. The NIH Police emergency number is **911**.

7. The non-emergency telephone number for the NIH Police is 301-496-5685.

8. For specific facility security advice, an annual security survey should be arranged with the Division of Physical Security Management by calling 301-496-9109. A report of their findings and subsequent facility action should be kept on file in each facility.

FACILITY EMERGENCY PROCEDURES

1. To report a maintenance emergency, call the ORF Call-in Desk at 301-435-8000 (24 Hour Service). **Maintenance Emergencies should be phoned in and not reported by a computer**

generated ticket. Emergencies- Failure of critical equipment or utilities, flooding conditions, or similar problems that pose imminent danger to health of animals or personnel, or substantial loss to buildings, equipment and scientific research.

2. The main telephone number for the Bethesda Campus Maintenance is 301-496-6484 during normal hours and **301-435-8000** after 5:00 PM, weekends and holidays. The main telephone number for Building 10 Maintenance is 301-496-5862.

PHONE NUMBERS

- NIH emergency number 911
- Trouble call central desk (emergency & evenings) 301-435-8000
- Building Maintenance (7am-5pm) 301-496-6484
- Building 10 Maintenance 301-496-5862
- Division of Physical Security Mgmt. 301-496-9109

17. Additional DVR Services

Diagnostic Services

DVR operates a central animal diagnostic laboratory staffed by five board-certified veterinary pathologists. Our pathologists are available for research consultation as well as investigation of non-protocol related illness and disease. Other diagnostic support services include bacteriology, mycoplasmology, serology, parasitology, histopathology, electron microscopy, immunocytochemistry, and genetic monitoring.

Nutrition

DVR monitors animal feed and bedding purchased for use at the NIH. The DVR laboratory animal nutritionist provides quality assurance of animal feed and bedding, formulates standard diets and special diets for specific research protocols, and is available to consult with investigators and veterinarians who require assistance in the selection, formulation, and analysis of laboratory animal diets and bedding.

For more information on DVR Nutrition, please visit our website at http://www.ors.od.nih.gov/sr/dvr/ or contact Dennis Barnard at 301-402-7255.

Pharmacy

The DVR Pharmacy provides fast, convenient and cost-effective one-stop shopping for veterinary and human over-the-counter or prescription products. Many high volume items are kept in stock in the pharmacy and are available for immediate pick up. The DVR Pharmacy has access to a Government Pharmacy Prime Vendor contract which provides excellent pricing on human drug products and is able to realize a significant cost savings to our customers.

The pharmacist is available for consultation involving protocol design and drug applications, dosages, delivery methods, and interactions or adverse effects. The DVR Pharmacist can assist NIH veterinarians and investigators in the selection and purchase of veterinary or human medications and products required for research protocols.

For more information on the DVR Pharmacy, please visit our website at http://www.ors.od.nih.gov/sr/dvr/ or contact Karen Sillers at 301-435-2780.

Behavior, Social Management, and Enrichment

DVR animal behaviorists provide expertise and consultation to NIH investigators and veterinarians. The DVR behavior management staff also designs programs to enrich environments and ensure the psychological well-being of research animals. Programs are in place to address social housing, manipulable objects, food treats, exercise, animal training and conditioning, innovative housing, and human interactions for each animal species maintained in DVR facilities and across NIH.

For more information on DVR’s Behavior, Social Management, and Enrichment services, please contact Dr. Jim Weed at 301-435-7257.

Rodent Section

18. Rodent Room Procedures

Procedures Prohibited in Animal Rooms

The following procedures are not to be performed in animal rooms:

- Euthanasia
- Incisions
- Necropsy
- Stereotaxic procedures
- Surgery

Relevant SOPs

The following relevant SOPs and can be found on the following pages.

- SOP 501: Cage Changing Using Micro-Isolator Systems (Non-Quarantine and Non-Conventional Areas)
- DVR Cage Flag System

SOP 501 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 1/6/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 1/6/2010

TITLE	**:**	Cage Changing Using Micro-Isolator Systems (Non-Quarantine and Non-Conventional Areas).
SCOPE	**:**	All Personnel Working With Rodents
RESPONSIBILITY	**:**	Facility Manager
PURPOSE	**:**	To ensure proper Micro-Isolator procedures are performed in Rodent Facilities

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GENERAL PROCEDURE NOTES:

1. All cage changes must be performed under the hood.

2. Cage changes will be performed at least every 7 days. Every other cage change will include changing the wire lids and filter tops.

3. Do not place clean caging on the floor.

4. Designated service carts should be used for clean and dirty equipment.

5. Spray gloves with appropriate disinfectant each time your hands re-enter the biosafety cabinet. Keep gloves wet at all times while working in the cabinet. When changing cages, change gloves between each side of each rack. In some instances, there may be a requirement to change gloves between groups of animals.

6. Wipe the inside of the biosafety cabinet with appropriate disinfectant and replace disposable pads between each side of the rack.

7. Clean and soiled areas of the biosafety cabinet should be designated and a defined process of moving from clean to soiled (one side of the cabinet to the other) maintained when changing cages to prevent contamination from one cage to another. This movement may be from left to right or right to left depending on the animal care personnel's preference. Refer to the diagram at the end of this SOP.

8. Procedures for changing sentinel cages are listed under the Sentinel Cage section of this SOP.

9. Do not place cages, equipment or utility wipes on the front grill of the hood or against the back wall. Any items that block the air flow from the back wall of the hood through the front grill will compromise the safety features of the cabinet.

10. All biohazard, chemical hazard and radioactive cages must be changed in a biosafety cabinet.

11. Cages labeled as hazardous will be changed last. Follow cage breakdown procedures as listed under the Handling Hazardous Cages section in this SOP. For 14G-106 follow the established cage changing policy.

12. When the hood is not in operation all clean equipment will be stored on the same side of the hood.

DAILY PREPARATION FOR CHANGING CAGES USING MICRO-ISOLATOR PROCEDURES:

1. Prepare the disinfectant solution. Label the bottle with the disinfectant name and the expiration date.

2. Wipe the inside surfaces of the biosafety cabinet with the disinfectant. Do not spray the disinfectant on the rear filter wall or get it soaked. The rear filter wall must be disinfected using a sponge or utility wipe.

3. Soak two disposable pads with disinfectant and place them side by side on the work surface inside the hood.

4. Let the biosafety cabinet operate for at least 4 minutes before using.

5. Spray the nesting material and feed containers with disinfectant and place them on the clean side of the cabinet. Dispose of any feed appearing abnormal post-autoclaving (e.g., excessive clumping, caramelized, discolored, positive reading of the sterility check strip).

6. Place a sentinel cage on the soiled side and to the rear of the biosafety cabinet as described in the Sentinel Cage section of this SOP.

7. Spray a clean cage or clean cage set up and water bottle thoroughly with disinfectant and place on the clean side of the cabinet.

8. Remove the cage to be changed from the rack. Wipe the rack area where the cage was removed with disinfectant.

9. Spray the cage to be changed with disinfectant and place it into the soiled side of the biosafety cabinet.

10. If changing the complete set up (cage bottom, wire bar lid, and filter top), place the clean filter top to the clean side of the clean cage. Place the soiled filter top to the soiled side of the cage to be changed. Remove filter tops by tilting the filter top off the cage bottom and laying it upside down on the biosafety cabinet work surface.

11. If changing cage bottoms only transfer the wire lid and filter top from the cage to be changed to the clean cage as animals are transferred. **Do not** dump the feed from the wire bar lid. Add fresh feed if necessary.

12. Slide the wire bar lid of the clean cage back to provide sufficient space to transfer animals.

13. Place fresh nesting material in the clean cage for mice. Place a fresh paper tube in the clean cage for rats.

14. Transfer animals using appropriate handling procedures to the clean cage. All animal care staff must rake their fingers through the soiled cage bedding to ensure there are not any adults or pups remaining in the cage. This procedure must be performed on every single cage that is changed.

15. Transfer the cage card to the clean cage.

16. Transfer a portion of the nesting material from the soiled cage to the clean cage.

17. Observe the animals for any abnormalities and report findings by filling out a DVR Health Report.

18. Ensure the clean cage has adequate feed and a fresh full water bottle.

19. Secure the wire bar lid and filter top on the clean cage and return the cage to the rack in the same location the soiled cage was removed.

20. Transfer one level scoop of soiled bedding from the soiled cage and place in the sentinel cage as described in the Sentinel Cage section of this SOP.

21. Remove the soiled equipment from the hood as indicated below:

When changing complete non hazardous set ups:

1. Dump the feed from the dirty wire top into the soiled cage.

2. Remove the water bottle and place it into the soiled water bottle rack.

3. Remove soiled wire top, filter top and cage from the hood. Stack soiled cages on a designated cart and cover the top cage with a filter top.

When changing non hazardous cage bottoms only:
(the next change cycle must be a complete set up)

1. Remove the soiled cage from the hood. Stack soiled cages on a designated cart and cover the top cage with a filter top.

Handling Hazardous Cages

1. Ensure that autoclave bags and an autoclave cart are available for use.

2. Remove the water bottle and place it in a designated covered cage for autoclaving.

3. Bag each cage or group of cages in the biosafety cabinet.

4. Place a steam sterilization test strip in the biohazard bag.

5. Spray the bag with the appropriate disinfectant as you bring it out of the biosafety cabinet. Stack the bags on the autoclave cart for autoclaving.

6. The floor supervisor must check all cages for animals before the cart is sent to the autoclave. The floor supervisor initials and date must be documented for each cart.

7. Disposable cage bottoms will be placed directly into MPW boxes. Wire lids, filter tops and bottles will be bagged and autoclaved.

8. Always review the Animal Study Proposal for additional precautions or instruction prior to working with any hazardous cages.

Sentinel Cages

1. Use a clean empty cage bottom, clean empty wire lid and a clean filter top for each new sentinel cage.

2. Use a one ounce scoop for transferring soiled bedding to the sentinel cage.

3. During routine cage changing, the caretaker will transfer one level scoop (1oz.) of the dirtiest, most heavily soiled bedding from <u>every</u> cage on the rack, or rack side. The soiled bedding should be dumped into the new sentinel cage through the wire top. The filter-top lid should remain in

contact with the cage bottom at all times. A gap of no more than two inches between the filter-top lid and the cage bottom is permissible to allow for the bedding transfer.

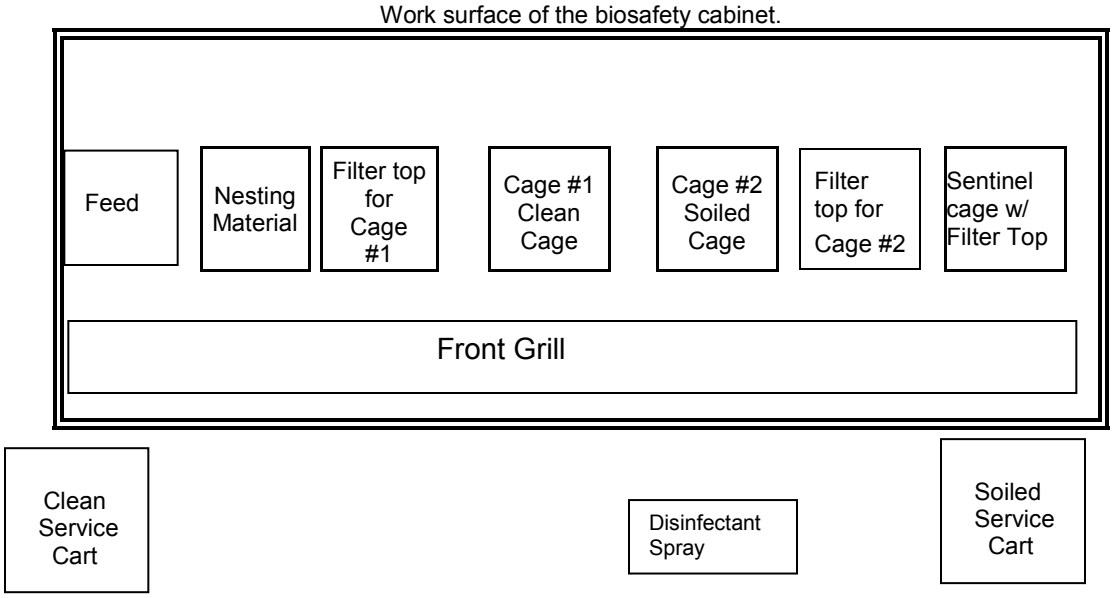
4. When cage changes for the rack, or rack side, are complete remove the filter-top & wire-bar lid from the new sentinel cage. Thoroughly stir the bedding in the new sentinel cage. Remove the excess bedding, ensuring to leave approximately ¾ of an inch of soiled bedding in the new sentinel cage.

5. Place a fresh water bottle and fresh food on the new sentinel cage. The sentinel animals will be transferred from their old cage into the newly prepared cage. Secure the wire lid and filter top and transfer the cage card to the new cage. The new cage will be placed in the sentinel position on the rack, or rack side from which the bedding samples were taken. The transfer of the sentinel animals should be the last cage change for that rack side. Refer to Sentinel Program SOP 500.

6. A separate clean one ounce scoop should be used for each side of the each rack. Sanitize the reusable scoops by soaking them in 10% bleach solution for at least 15 minutes.

7. Sentinel cages on racks that house hazardous cages must be labeled with the hazard.

Diagram for a 6 foot biosafety cabinet set up. Clean / soiled sides can be switched to accommodate left or right handed employees.



Note: If using a 4 foot biosafety cabinet, modification to the diagram may be necessary to ensure adequate air flow through the cabinet. However, the clean to dirty concept must be followed and the air flow must not be compromised.

DVR CAGE FLAG SYSTEM

ONE-TIME USE FLAGS

One time use flags are filled out and placed on cages, where they remain until they are no longer needed. These flags are made of cardstock and are not laminated; after use, they are discarded. Two flag sizes are available (3”x2” or 5”x1.5”) as needed to fit inside the cage card holders. These flags must be placed in front of the other cage cards.

FLAG	COLOR	REQUIRED INFORMATION	USAGE NOTES
WEANING DUE	Light Green	• Day 21 after birth • Day 28 after birth	To be filled out and placed on breeder cages by the **Caretaker** when new litters are identified.
SPECIAL FOOD	Violet	• Type of food or water • Start date and End Date • Who is responsible for providing food or water – Lab staff or facility staff? • Investigator name • After hours contact information	These flags are to be filled out by the **Technicians** and/or **Investigator** at the time of the Tech Request, and placed on cage at the start of the special food/water requirement or restriction.
SPECIAL WATER	Light Yellow		
FOOD RESTRICTION	Pink	• Length of restriction • Start date and End Date • Who is responsible for providing food or water – Lab staff or facility staff? • Investigator name • After hours contact information	
WATER RESTRICTION	Light Blue		
CHEMICAL HAZARD	Orange	• Chemical name • Administration rout • Administration date • Carcinogen? (Y/N) • Handle waste as MPW? (Y/N) • Last day to handle waste as MPW (if applicable)	

MULTI-USE FLAGS

Multi-use tags are placed on cages to indicate special statuses or conditions, where they remain until the status changes or they are no longer needed. These flags are laminated, and after use they may be reused as needed on other cages. Several sizes are available as needed to fit inside the cage card holders. These flags must be placed in front of other cage cards, but behind any one-time use flags already on the cage.

FLAG	COLOR	USAGE NOTES
SICK	Red	Placed on the cage card when the caretaker finds a new health case in the cage. This flag signifies to the technician that there is a new case to be looked at.
OBSERVATION	Yellow	Placed on the cage card by the technician when the new case has been observed and the treatment plan is to continue observing the animal but no treatment is required per the veterinarian. This tag is also placed on cages post-operatively & signifies that the animal is receiving post-op observations.
ON TREATMENT	Blue	Placed on the cage by the technician after a new health cases has been observed and the veterinarian has developed a treatment plan.
PENDING	Green	Placed on the cage by the technician after they have performed their initial observation of a new health case and is waiting on feedback from either the veterinarian and/or the investigator on the disposition/treatment plan for the animal.
HAREM BREEDING ALLOWED	Grey	Breeding cages on ASPs with approved harem breeding should be marked by this tag. The tag can be placed by the technician or investigator setting up the breeder cage. This flag is shorter than other multi-use flags and sits at the bottom of the cage card holder.

OTHER MARKERS

FLAG	DESCRIPTION	USAGE NOTES
	Gold star sticker	Placed on a cage where barbering or evidence of barbering has been observed. The sticker is to remain as long as there is evidence of barbering on any of the animals in the cage. Cages with this sticker on them should also have an additional form of enrichment in the cage at all times.

19. DVR Rodent Breeding Policy / SOP

The Guide specifies how many animals can be comfortably housed in a determined space. Based on those guidelines overcrowding must be avoided. Breeding cages are generally the source of severely overcrowded cages, particularly cages with more than one breeding female. Because of labor requirements and animal welfare issues associated with these cages pair breeding is the desired breeding arrangement for rodents. Alternatives to pair breeding can be accommodated if approved by the IC APD and ACUC, *and* adequate procedures are described to ensure that overcrowding does not develop.

DVR's breeding and weaning procedures are described on the following pages in SOP 502.

SOP 502 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 3/4/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 3/4/2011

TITLE	**:**	Breeding and Weaning Procedures
SCOPE	**:**	All personnel Involved with Rearing Rodents
RESPONSIBILITY	**:**	Facility Manager, Veterinarian
PURPOSE	**:**	To ensure that animal care meets Guide recommendations and research needs

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DVR RODENT BREEDING POLICY

The *Guide for the Care and Use of Laboratory Animals* specifies how many animals can be comfortably housed in a determined space. Based on those guidelines overcrowding must be avoided. Breeding cages are generally the source of severely overcrowded cages, particularly cages with more than one breeding female. Because of labor requirements and animal welfare issues associated with these cages pair breeding is the desired breeding arrangement for rodents. Alternatives to pair breeding can be accommodated if approved by the IC APD and ACUC, *and* adequate procedures are described to ensure that overcrowding does not develop.

PROCEDURES

1. All cages with breeding animals will be identified as breeders.

2. When pups are born, fill out the Birth and Weaning log. Cages will be marked with a wean tag indicating when the pups will be weaned at 21 or 28 days of age. Send the original log to the Administrative Assistant on a weekly basis. The Administrative Assistant will transfer the data to the electronic birth log and forward the birth log to the Special Operations Assistant annually.

3. If requested by the principal investigator, high fat breeder chow may be used in breeding cages. The cage or group of cages (rack side) not being fed the standard facility feed should be clearly labeled and described in a Technical Services Request form to indicate the type of food the mice are consuming.

4. For breeding cages managed by the investigator, technical staff will notify the investigator when pups are 20-21 days old. Pups will be weaned by 28 days of age unless there is an ACUC or clinical exemption. If animals are not weaned by 28 days of age, the facility staff will wean and separate the pups by sex with no more than five per cage and notify the investigator of the location of the pups. If sufficient space is not available to wean the animals the investigator will be notified and will have 24 hours to create space. In the event the investigator does not respond within 24 hours, the disposition of the recently weaned animals will be at the discretion of the facility veterinarian.

5. For breeding cages managed by DVR, the facility staff will wean pups between 20 and 23 days of age, unless an exception is described in the investigator's protocol. If the pups are small (< 8 gm body weight) and a second litter is not present in the cage, the pups may be left with the mother until 28 days of age. If at 28 days of age, the pups are still too small to wean, the cage will be flagged as a clinical case and a health report will be turned in to the veterinary technical staff for evaluation and will follow up. The veterinary technical staff will follow up with a recommendation

to delay weaning or to wean and provide nursing care (check teeth, nestlets, food on the floor, etc.) as directed by the facility veterinarian.

6. Abnormally small mice (< 8 gm body weight average for litter) weaned from the mother prior to 28 days of age due to the birth of a second litter will be flagged as a clinical case and a health report will be turned in to the veterinary technical staff for evaluation and follow up nursing care as directed by the facility veterinarian.

7. **Monogamous (pair) Breeding**: If a new litter is born before the previous litter is weaned, the older litter will be immediately weaned and separated by sex.

8. **Harem/ Trio Breeding**: Harem or trio breeding can be accommodated if approved by the IC ASP and ACUC, *and* adequate procedures are described to ensure that overcrowding does not develop. Cages housing harem breeders should be clearly marked Harem or Trio Breeders. The facility manager and veterinarian share responsibility, upon ASP review, to receive clear instructions on the roles and responsibilities of DVR and the investigator with respect to managing this breeding strategy, which will be described at the holding room level. It is the responsibility of the investigator to reestablish harem or trio groups when pups are weaned.

9. A standard mouse cage can house no more than five mice weighing up to 25 grams. The technical and/or husbandry staff will immediately separate any cage that exceeds this capacity unless an exception exists in an approved Animal Study Proposal. See the recommended space guidelines in Table 3.2 below.

10. Complete cage cards for each cage of weaned animals with the following information:

    a. Animal study protocol number
    b. Last names of the Principal Investigator (PI) and co-PI
    c. Institute (IC)
    d. Animal information: ID number, DOB, sex, complete strain information, and source of origin.

TABLE 3.2 Recommended Minimum Space for Commonly Used Laboratory Rodents Housed in Groups

(excerpt from the *Guide for the Care and Use of Laboratory Animals*, 2011)

Animals	**Weight. (grams)**	**Floor Area/Animal, (sq. inches)**	**Height, (inches)**
Mice	<10 Up to 15 Up to 25 >25	6 8 12 ≥15	5 5 5 5
Female + litter		51	5

20. Requesting Cage Cards

Standard breeder and weaning cage cards are located in each animal room.

21. Facility Health Status

Consult with the Facility Veterinarian for information on the health status of the facility, health surveillance program, isolation requirements for incoming animals, and assistance with colony health information for importing, exporting or transferring animals.

Building 14B-N accepts animals that are positive for mouse norovirus.

22. Incoming Animals from Approved Sources – Rodents

Animals ordered and approved through the CAPS system will be housed directly in the designated IC holding room.

23. Incoming Animal from Non-approved Sources – Rodents

Non-approved sources include universities, animal facilities outside of the NIH, overseas facilities, or production facilities that have not been approved by the NIH. Pursuant to NIH Policy Manual 3043-1, a Rodent Import Application must be completed and approved by your IC rodent import officer (often the APD) and the Facility Veterinarian. A copy of the health surveillance report obtained within a calendar year must accompany the rodent import application. You IC rodent import officer or the Facility Veterinarian can assist in obtaining the necessary information.

24. Isolation - Rodents

Depending on the health status of the sending facility, as determined by the Facility Veterinarian animals may need to be housed in isolation and undergo additional testing prior to housing in your animal room to protect the rest of your colony from adventitious infection. The Facility Veterinarian will discuss the length of isolation and the different testing options available on a case by case basis. Breeding animals during isolation will be approved by the Facility Veterinarian on a case by case basis and will depend on the space availability in the isolation room.

25. Transferring Rodents between NIH facilities

To transfer animals between buildings on the NIH campus, complete the Internal/NIH/IC Rodent Transfer Request Form, 6200A, and submit an electronic copy to both the sending and receiving Veterinarian and Facility Manager. The sending facility will submit health reports to

the receiving facility. Upon notification of approval the sending facility will make transportation arrangements and prepare the animals for transport. The sending facility will also notify the investigator of the date of the transfer. If the request is denied by the receiving facility, the sending facility will ensure that the requester is informed.

26. Quarantine for Disease Outbreaks

If a facility experiences an outbreak of an adventitious agent that would normally be excluded, quarantine procedures will be implemented by the Facility Veterinarian and Facility Manager. These procedures could involve modifications in husbandry procedures such as special room entry orders / traffic patterns and colony testing depending on the agent involved.

27. Shipping/Transporting

Rodent transport containers are located in Procedure room 134 and storage room 119. Containers are used when transporting animals from one facility to another, after approved authorization, or to labs for final procedures. Containers must have filter paper and be secured with tape to prevent escape.

Rodent shipping crates are ordered through the CAPS system. These crates are used for sending animals to facilities outside of NIH. If shipping overseas you must order crates with view windows.

Out of state and or out of the country transportation is arranged though the NIH Shipping Office at 301-496-5921. The following forms: NIH 1884 shipping request; NIH 1192 health report; the NIH transfer agreement; and, the USDA health report must be filled out prior to shipping.

Local animal transportation can be arranged through the DVR transportation services using the online request form at http://dvr.od.nih.gov, or in an emergency, calling 301-496-8184. Transportation must be requested at least 24 hours in advance.

Bicycles and scooters are not approved methods of transportation.

28. Animal Receiving Procedures

When incoming animals are received, they will be inspected, identified with a cage card and housed in either your animal room, or in the isolation room depending on the circumstances. The facility administrative staff will notify the PI, co PI and ordering investigator via e-mail of animal receipt and location. DVR recommends 2-3 days acclimation time prior to using the animals in any procedures

Non-Human Primate Section

29. Non-Human Primate (NHP) Room Procedures

Procedures Prohibited in Animal Rooms

The following procedures are **not** to be performed in animal rooms:

- Euthanasia
- Incisions
- Necropsy
- Stereotaxic procedures
- Surgery

Relevant SOPs

These relevant SOPs and can be found on the following pages:

- 602: Feeding and Watering Nonhuman Primates
- 603: Care and Husbandry of Nonhuman Primates (NHP)
- 14BN/14D NHP Cage Tag System

SOP 602 **Approved:** *Charmaine Foltz, D.V.M* **Date:** 8/27/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 9/3/1992

Date Revised: 8/27/2010

TITLE	**:**	Food and Water for Nonhuman primates
SCOPE	**:**	Animal care staff
RESPONSIBILITY	**:**	Facility manager and veterinarians
PURPOSE	**:**	To describe procedures for providing food and water for nonhuman primates

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GENERAL

1. On the day of arrival or at the end of the quarantine period (if the sender provides food that the nonhuman primates (NHP) have been consuming), NHPs will be assigned to a food type and amount by the receiving veterinarian or facility manager using guidelines in Tables 1 and 2 and/or the animal's ASP as a guideline. The assigned ration and amount will be indicated at the cage or room level and in the animal's medical record.

2. NHP will be fed at the intervals described in SOP 603.

3. Any NHP not eating, or that appears to be gaining or losing excessive weight will be brought to the attention of the veterinarian.

4. During specific life stages (gestation, lactation, infancy), or illness, the ration offered and the amount of food given may be adjusted at the discretion of the veterinarian. The new ration and the amount will be recorded in the animal's medical record and at the cage or room level.

5. Juvenile NHPs in quarantine should be fed *ad libitum*.

6. Additional food treats may be offered for enrichment as described below.

7. Remove all old, leftover feed from the feeder and cage prior to giving any fresh feed.

8. Follow procedures described in SOP 907 with respect to receipt of food and sanitation of feed containers.

9. NHP will only be fed fresh, in date feed as described in SOP 1039.

10. All NHP will have access to fresh drinking water *ad libitum* unless an approved Animal Study Proposal requires controlled amounts of water.

ASSESSING ADEQUACY OF FEED AMOUNTS

1. All NHP will be weighed at a minimum every time they are TB tested, and each time they are removed from their cage for a clinical or research procedure. The NHPs' weights will be recorded in their medical record.

2. A NHP that gains or loses more than 5% of their previous weight, or has body condition changes, will be brought to the attention of the veterinarian for evaluation and possible ration adjustment.

3. Feed ration adjustments will be made at the discretion and under the supervision of the veterinarian and documented in the animal's medical record.

DISTRIBUTION OF FOOD TREATS

1. All personnel responsible for distribution of food treats to primates will receive safety training as described in SOP 601.

2. Food treats are given to all animals in the facility on a regular basis unless it is prohibited by an animal study protocol or medical restriction. Some examples of treats include peanuts, popcorn, or manufactured primate treats.

3. A schedule for distribution of food treats will be generated by the facility manager or designee and posted in the facility.

4. Food treats will be placed into the food bin where available, scattered in the sawdust bedding on the floor where appropriate, or carefully handed to the nonhuman primates.

5. The facility veterinarian and/or facility manager are responsible for approving food treat regimes and any new treats prior to distribution to the animals. The laboratory animal nutritionist will be consulted on an as needed basis.

Legend

- **5038 PMI** is Old World monkey diet containing 15% protein, 5% fat, and 4.5% crude fiber.
- **5045 PMI** is Old World monkey diet containing 25.8% protein, 5%, and 4.9% crude fiber.
- **5049 PMI** is Old World Fiber Plus monkey diet containing 20% protein, 5% fat, and 10% crude fiber
- **5040 PMI** is New World monkey diet containing 20% protein, 9.5% fat, and 3.5% crude fiber.
- **NIH monkey diet** is an open formula Old World monkey diet currently made by Harlan. It contains 15% protein, 5% fat, and 6% crude fiber.
- **H 8788** is Old World high fiber monkey diet containing 15% protein, 4% fat, and 10% crude fiber.
- **H 2050** is Old World high protein and fiber monkey diet containing 20% protein, 5.4% fat, and ~~9~~8% crude fiber.
- **H 2050J** is Old World jumbo (large biscuit) high protein and fiber monkey diet containing 20% protein, 5.4% fat, and ~~9~~8% crude fiber.
- **H 7195** is Old World high fiber monkey diet containing 20% protein, 5.9% fat and 18% crude fiber.
- **H 8794** is a New World monkey diet containing 20% protein, 10% fat, and 5% crude fiber.

[a] **The caloric requirements are estimated using the following references**:

1. Kerr, G. R. (1972). Nutritional Requirements of Subhuman Primates. Physiol. Rev. 52, 415-467.
2. National Research Council (NRC) (2003). Nutrient Requirements of Nonhuman Primates. National Academy of Science, Washington, DC.
3. Knapka, J. J. et al. (1995). Nutrition. In "Nonhuman Primates in Biomedical Research: Biology and Management," (B. T. Bennet et al., ed), Academic Press, Inc.
4. Greenberg, L. D. (1970). Nutritional Requirements of Macaque Monkeys. In "Feeding and Nutrition of Nonhuman Primates," (R. S. Harris, ed.), Academic Press, Inc.

Table 1. Recommended feeding guidelines for Old World Primates

Daily Amount (number of biscuits) of Diet to Feed Adult Old World Primates

Monkey Wt (Kg)	Daily Calorie Requirement (kcal)	5038 PMI	5045 PMI	5049 PMI	8777 NIH	8788 H	2050 H	2050J H	7195 H
3- 6	280-470	9-15	9-15	12-19	12-19	5-8	5-8	4-7	7-12
7-10	470-700	16-22	16-22	20-28	20-28	9-11	9-11	8-11	13-18
11-15	700-940	23-30	23-30	29-39	29-39	12-15	12-15	12-14	18-24
16-20	940-1150	31-37	31-37	40-47	40-47	16-19	16-19	15-17	25-30
21-25	1150-1370	38-44	38-44	48-56	48-56	20-22	20-22	18-20	31-35
26-30	1370-1550	45-49	45-49	57-64	57-64	23-25	23-25	21-23	36-40
31-35	1550-1740	50-55	50-55	65-72	65-72	26-28	26-28	24-26	41-45
36-40	1740-1923	56-62	57-63	73-79	73-79	29-30	29-33	27-29	46-50
41-45	1923-2100	63-67	64-69	80-87	80-87	31-34	34-35	30-31	51-54

The adult Old World Primate dietary regimen is based on the caloric maintenance formula $1.3 \times 93(\text{Wt kg})^{.75}$

Daily Amount (number of biscuits) of Diet to Feed Juvenile Old World Primates[a]

Monkey Wt (Kg)	Daily Calorie Requirement (kcal)	5038 PMI	5045 PMI	5049 PMI	8777 NIH	8788 H	2050 H	2050J H
1-1.4	110-140	4-5	4-5	5-6	5-6	2-3	2-3	2-3
1.5-1.9	165-209	6-7	6-7	7-9	7-9	3-4	3-4	3-4
2.0-2.4	210-264	8-9	8-9	10-12	10-12	4-5	4-5	4-5
2.5-2.9	275-319	10-12	10-12	11-13	13-14	5-6	5-6	5-6
3.0-3.4	330-374	13-14	13-14	14-17	15-17	6-7	6-7	6-7
3.5-3.9	385-429	14-20	15-22	15-18	17-19	8-9	10-11	9-11
4.0-4.4	440-484	20-22	23-25	18-19	19-21	9-10	11-13	10-12
4.5-5.0	495-550	23-25	26-29	20-22	21-24	10-11	13-14	12-13

The juvenile Old World monkey dietary regimen is based on 110 kcal GE/kg/day provided in:

- Knapka, J. J. et al. (1995). Nutrition. In “Nonhuman Primates in Biomedical Research:Biology and Management,” (B. T. Bennet et al., ed), Academic Press, Inc.

Table 2. Recommended feeding guidelines for New World Primates

Daily Amount (number of biscuits) of Diet to Feed Adult Callitrichids (marmosets and tamarins)

Monkey Wt (Kg)	Daily Calorie Requirement (kcal)	5038 PMI	5045 PMI	5040 PMI	8777 NIH	8788 H	2050 H	8794 H
0.20.299	50-64	2-3	2-3	20-25	2-3	1	2	12-15
.3-.399	65-80	3-4	3-4	26-30	3-4	2	2	16-19
.4-.499	81-95	4-5		31-36	4-5	2-3	3	20-22
.5-.70	96-120	5-6	5-6	37-45	5-6	3-4	3-4	23-28

The adult Callitrichid dietary regimen is based on the caloric maintenance formula $2.2 \times 70(\text{Wt kg})^{.75}$

Daily Amount (number of biscuits) of Diet to Feed Adult Aotus and Squirrel Monkeys

Monkey Wt (Kg)	Daily Calorie Requirement (kcal)	5038 PMI	5045 PMI	5040 PMI	8777 NIH	8788 H	2050 H	8794 H
0.5-1.0	100-184	5-9	6-10	41-70	5-8	3-4	3-5	23-43
1.1-1.5	185-250	10-12	11-13	71-94	9-11	5-6	6-7	44-58
1.6-2.0	251-310	13-14	14-16	95-117	12-13	7-8	8-9	59-72

The adult aotus and squirrel monkey dietary regimens are based on the caloric maintenance formula $2.63 \times 70(\text{Wt kg})^{.75}$

SOP 603 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 4/18/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 4/18/2011

TITLE : Care and Husbandry of Nonhuman Primates (NHP)
SCOPE : Animal Care Personnel
RESPONSIBILITY : Facility Manager and Veterinarian
PURPOSE : To describe procedures for care and husbandry of NHP

DAILY OBSERVATIONS

1. Observe all animals in the morning between 7:00 and 9:00 am and again in the afternoon between 2:00 and 3:00 pm. On weekends and holidays, the second observation occurs between 11:00 am and 12:00 noon. Record any abnormalities on the health check form and submit the form to the veterinary technicians by the end of the observation period.

2. Report any emergencies to the veterinary technician or the facility veterinarian. For animals found down in the cage use the paging system and page: "code blue room #---". All veterinary technicians and veterinarians in the building will respond.

3. Record the temperature and humidity in the animal facility on the Animal Room Husbandry Log and note any temperature and humidity readings outside the acceptable range by circling them on the husbandry log.

    a. New World Primates: The temperature range is 77 F – 82 F and the Humidity less than 70%

    b. Old World Primates: The temperature range is 73 F – 79 F and the Humidity less than 70%

4. During periods of low humidity monitor animals closely for clinical problems (e.g., nose bleeds). Health related issues must be reported as clinical cases.

5. Report any facility maintenance issues, pest management issues, caging and equipment issues to the facility manager.

6. Monitor light timers to ensure proper functioning. Most timers are set to turn the lights on at 6 am and off at 6 pm. Owl Monkey timers are set to turn the lights on at 1 am and off at 1 pm. Evening health checks for Owl Monkeys are done by flashlight.

7. During weekend shifts, report all facility problems to the contract supervisor on call. The supervisor will either place an online maintenance request, or for critical issues will call ORF at 301-435-8000 in Bethesda, or the NIHAC Power Plant at 301-496-9040 in Poolesville, or if there is no response, 301-435-8000 in Bethesda. The contract supervisor will provide a report by 10 a.m. to the government facility manager on call for the weekend.

8. Emergency numbers are posted on the red signs near the front entrances to the facility if the problem requires immediate attention.

DAILY TASKS

1. Feed animals in the morning between 7:00 and 8:00 am and again in the afternoon between 2:00 and 3:00 pm. On weekends and holidays, the second feeding occurs between 11:00 am and 12:00 noon. The feed type and amount is determined by the facility veterinarian and posted at the room level.

2. Check each water lixit to ensure it is functional. Alert your supervisor and the facility manager of any malfunctioning lixits immediately. If the lixit cannot be repaired in a timely manner, the supervisor or facility manager will determine if the animals will be moved to another cage or provide a water bottle.

3. Change water bottles in the morning. Refill water bottles in the evening if the bottle is less than ¾ full.

4. Wash down cage pans and rooms as described in SOP 613.

5. Change cages as directed in SOP 613.

6. Provide enrichment devices, feed supplements and activities according to SOP 400.

7. Restock supplies (food, disinfectants, etc.) as needed. Report low supply levels to the facility manager so that they may be re-ordered.

8. Record all husbandry procedures on Animal Room Husbandry Log. Secure doors. Check lights and light timers.

9. The facility supervisor and veterinary technicians will ensure all animals are observed daily.

BODY WEIGHTS

1. Using a jump box, weigh all new world monkeys monthly and give the weight log to the veterinary technicians to record in the medical record.

2. Old world NHP will be weighed when they are sedated for TB testing and their weights will be recorded in the medical record.

PROCEDURE/TRANSPORT

The veterinarian or their designee will observe all animals entering or leaving the facility.

IDENTIFICATION

Old World Primates are identified using tattoos. New World primates may be identified with collars.

CAGING REQUIREMENTS

1. NHP will be assigned to a cage size by the facility manager based on the guidelines below.

2. NHPs within ½ kg of needing a larger cage will be moved to the next larger cage size (e.g., 9.5 kg NHPs will be moved to a 6.0 sq. ft. floor space cage and 14.5 kg NHPs will be moved to a 8.0 sq. ft. floor space cage).

3. Professional experience and species specific behavior plays a large part in determining if an animal needs a taller cage. Even among the macaque species there is diversity in body types and how they utilize the height of a cage. For instance a 9 kg cyno will have plenty of vertical space to

stand erect whereas a 9 kg pigtail has a longer body type and may require more vertical space than a standard 30 inch tall 4.3 sq. ft. cage allows. Larger/taller animals should be evaluated as individuals and professional judgment and experience should be used to recommend larger cages.

4. Any exceptions not meeting the minimum floor and height requirements outlined in the Guide* require monthly review by the veterinarian, semi-annual review by the ACUC, and must be reported in the semi-annual ACUC report.

5. Guide Standards for Primates.

Animal Group	Species (example)	Weight in KG	Floor Space (ft^2)	Height (in)
Group 1	Marmosets, Tamarins, infants less than 6 months.	Under 1	1.6	20
Group 2	Capuchins, Squirrel, Aotus	1-3	3.0	30
Group 3	Rhesus, Cynomologus, Pigtails	Up to 10	4.3	30
Group 4	Rhesus, Cynomologus, Pigtails	Up to 15	6.0	32
Group 5	Baboons and non brachiating monkeys	Up to 25	8.0	36

DVR 14BN, 14D NHP Cage Tag System

NPO or Bio-Hazard	Placed on the cage card when the Primate is not to be fed before a procedure. Also used with bio-hazard stickers for study specific.
Diet Restriction	Placed on the cage card by the technician when diet restriction is needed for an overweight Primate.
Animal ID Number 14BN or Bio-Hazard in 14D	Blue or black tag placed on the cage for identification of each animal. Tag can be blue or black. Blue used in 14D for bio-hazard study specific.
Pair Cages or Study Specific Baboons IDs	Green tag placed on the cage for pairs. Also used for Baboon study ID. Study specific.
Special Instructions	White tag placed on a cage for special instructions.

30. Atypical Behavior Reporting and Relevant SOPs

These relevant SOPs can be found on the following pages:

- 400: Environmental Enrichment for Nonhuman Primates
- 402: Clinical and behavioral assessment of SIB in Primates
- 405: Clinical and Behavioral Assessment of Abnormal Behavior in Primates
- 601: Working Safely with Non-Human Primates

SOP 400 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 5/18/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 10/18/1991

Date Revised: 5/18/2011

TITLE	**:**	Environmental Enrichment for Nonhuman Primates
SCOPE	**:**	Animal care staff
RESPONSIBILITY	**:**	Facility management and behavior staff
PURPOSE	**:**	To outline the circumstances and procedures by which environmental enrichment will be provided to nonhuman primates.

ENVIRONMENTAL ENRICHMENT

Environmental enrichment is provided to non-human primates (NHP) to encourage species appropriate behavior and satisfy the physical and psychological needs of the animals (DVR Environmental Enrichment Plan). The most important enrichment for NHPs is social housing. Food treats are given to NHP to promote foraging and to provide novel and different items to eat. The quantity of food treats offered is small so that it does not compromise the animal's appetite for nutritionally balanced food.

SOCIAL ENVIRONMENT

Nonhuman primates are housed with other members of their species and/or similar species in a variety of social contexts.

SINGLY HOUSED ANIMALS

Nonhuman primates housed singly have visual, auditory, and olfactory contact with members of their species and/or similar species.

ENRICHMENT PROVISION

1. Provide standard inanimate enrichment such as toys and novel foods to nonhuman primates as appropriate by facility and protocol.

2. Any deviation from the DVR environmental enrichment program will be documented in writing. Documentation of any approved deviations from the program will be kept on file by facility management.

3. Some examples of enrichment currently provided to nonhuman primates in DVR include: Tug toys, rings, dental balls, rattles, mirrors, challenger balls, Prima-Hedrons

4. Provide each nonhuman primate cage with two floor toys, one hanging toy, and an elevated perch where appropriate. Toys are rotated with the regular cage wash schedule. Chains on hanging toys are not to exceed 8 inches in length.

5. Where appropriate, retain standard non-food enrichment items within the cage or enclosure during routine cage sanitizing procedures. Remove worn or damaged enrichment items from enclosures, discard in the regular trash, and replace.

Novel Foods

1. Distribute novel food items at least twice weekly. The following list indicates the type and quantity of novel foods that may be used: fruit (1/2 small apple), vegetables (leaf of romaine lettuce), hard-boiled eggs (1), prima-treats (2-3) or other novel food items approved by the facility veterinarian and manager.

2. The facility manager or designee will create a prospective schedule indicating the days and types of novel foods that will be offered to NHP. Caretakers will document giving novel foods on the Room Log or Enrichment Consumption Log.

3. Novel food can be either handed directly to nonhuman primates or placed in the feed bin or food cup. The food cup method may be used in the case of fearful or overly aggressive animals. Any uneaten produce remaining in the cage or food cup will be removed the next day.

4. To distribute food items to socially housed animals, disperse items to promote access for all animals. To adequately distribute to all animals it may be necessary to place items in or on different parts or levels of enclosures.

Supplemental Enrichment

1. Provide supplemental enrichment devices to nonhuman primates on a rotating, scheduled basis. Devices can be either mirrors or challenger balls.

2. Supplemental enrichment items such as mirrors or challenger balls can remain up on cages for a minimum of 3 days but can remain longer.

3. Challenger balls will be loaded with novel foods, i.e., prima-treats or peanuts, when the balls are first placed on cages.

4. When placed on cages, challenger balls will be refilled two or three times per week.

5. Remove mirrors or challenger balls and run items through the cage wash prior to placement on new cages.

Wooden Chew Sticks

1. Wooden chew sticks, obtained from approved sources, will be provided to singly or pair housed macaques on dry bedding no less than once per month.

2. The monthly schedule for distribution will be determined by the facility manager.

Foraging Boards

1. High density polyethylene foraging boards will be permanently attached to cages.

2. Foraging boards will be filled with seed mix or other similarly appropriate foraging items two or three times per week.

Swimming Pools

1. Swimming pools (modified soap barrels) may be provided to nonhuman primates living in flex-agons (cribs in building 104).

2. Pools will be provided on a rotational basis, one crib at a time, Monday - Friday during the work week.

3. Pools will be provided only when the ambient outdoor temperature is above 65 degrees F.
4. Pools will be filled with water in the morning during regular working hours
5. Nonhuman primates will not have access to pools outside of regular working hours.
6. Each pool will be emptied at the end of a working day.
7. Supplemental enrichment (access to the pool) will be documented on the appropriate form.
8. Staff will monitor those nonhuman primates having access to the pools during their regularly scheduled building visits.

Activity Enclosures in 14D

1. Animals resident in rooms with built-in activity units should be rotated into the unit for a maximum of one day
2. Each activity unit will be cleaned before the next animal is rotated in.
3. Animals may be placed into an activity unit following wash down.
4. No animals will be put into the units on weekends.
5. Documentation will include the ID and date the animal was placed into the unit.

DVD Players

1. Where a DVD player is available, DVDs may be played for nonhuman primates during regular business hours.
2. DVD players will be turned off at the end of the business day.
3. The Lexan boxes covering the DVD player and the cart will be sanitized with appropriate disinfectant when the room is sanitized or when the DVD cart and player leave an animal room.

SOP 402 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 5/14/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 5/14/2007

Date Revised: 5/14/2010

TITLE	**:**	Clinical and behavioral assessment of SIB in primates
SCOPE	**:**	Veterinarian and behavior staff
RESPONSIBILITY	**:**	Veterinarians and behavior staff
PURPOSE	**:**	To describe intervention strategies and procedures for SIB cases in nonhuman primates.

SELF-INJURIOUS BEHAVIOR (SIB) - Any self directed act that results in tissue injury. (Davenport et al. 2008)

FACTORS AFFECTING SIB

1. Adult rhesus monkey males have a greater incidence of abnormal behavior, including self injury, than do adult females.

2. During and after the rearing period, macaque species differed in the extent of abnormal behavior and the specific dimensions of behavior that are affected.

3. The more time spent asocially during infancy, the greater the expression of abnormal behavior.

4. Serious self-injury requiring medical treatment occurs almost exclusively in adult macaques, with the exception of trauma induced by extreme self-sucking and mouthing behavior in younger monkeys.

5. Abnormal behavior could be largely overcome when asocially raised monkeys are socialized with younger monkeys

6. Socially reared monkeys who continue to be housed socially after the rearing period rarely develop SIB.

Taken from Self-injurious behavior. 2002. Chapter by Novak, Crockett, Sackett

REPORTING SIB

1. Caretakers will report animals demonstrating SIB-like behavior on daily health check reports. SIB resulting in open wounds or bleeding will also be reported immediately to the veterinarian and or veterinary technician.

2. The caretaker, technician, or veterinarian will request assessment by the behavioral staff by placing an entry in the Request for Behavior Assessment log or e-mailing the behavior group at OD DVR ENRICHMENT (e-mail listing on global directory).

3. The veterinarian in consultation with the behaviorist is responsible for oversight, management and follow-up of reported cases of SIB observed in nonhuman primates. The veterinarian is responsible for follow-up on SIB cases with the principal investigator.

CLINICAL MANAGEMENT

1. The injury is treated as required including wound closure, bandaging, pain relief and antimicrobials.

2. Follow up management is dependent on the severity of the injury and the frequency SIB. (see table below)

Behavior Scoring: Mild, Moderate, or Severe

		Frequency		
		Once in a month	More than once in a month	More than once in one week
Severity	No harm, bruising, pin pricks or abrasions	Mild	Moderate	Severe
	Surface lacerations	Moderate	Severe	Severe
	Subcutaneous wounding	Severe	Severe	Severe

3. Medical intervention is required for animals with severe SID in addition to behavioral management. Tranquilization (e.g. diazepam, acepromazine or other medication) is generally the first line treatment. Efficacy may not be seen for 3 or 4 days.

4. If SIB continues, tranquilization can be continued or additional drugs such as fluoxetine, sertaline, chlorpromazine, and buspirone can be used and continued for an indefinite amount of time. Fluoxetine and sertaline require up to several weeks to be effective so concurrent tranquilization is required. If above medications are not effective, additional drugs affecting animals' behavior could be tried, such as: amitriptylline, clomipramine, L-tryptophan, naloxone, clozapine, resperidone, guanfacine or other medications. L-tryptophan is a precursor of serotonin and effective results are slow to develop.

5. Heavy bandages (boxing gloves), E-collars, or epoxy castes may be beneficial and considered for more difficult cases. Animals on long term tranquilizers will have blood work every quarter (at the time of TB test). The investigator will be consulted before initiating treatment involving less commonly used drugs (mood-altering etc.)

6. Long term treatment is recommended when the animal is of high value to the investigator and the treatment plan is effective in reducing episodes of surface lacerations (or worse).

7. Treatment plans will be evaluated periodically (at least monthly) in collaboration with the behavioral staff during the management of the case and at each SIB episode.

8. If multiple treatment plans are no longer effective and SIB continues to occur (≥ 3 incidents in a 6 month period) resulting in surface lacerations (or worse) euthanasia or use in an acute study within 30 days is recommended.

9. If the principal investigator disagrees with the above recommendation (euthanasia or acute study), the facility veterinarian will notify the Chief, Veterinary Medicine Branch, of the

disagreement. The Chief, VMB will notify the Director, DVR and the Chair, ORS/DVR ACUC regarding an animal welfare concern.

10. All treatments and observations will be documented in the animal's medical record, and a notation will be made on the Master Problem list that the animal has SIB. If the animal is on long term medication then a note will be made on the Master Problem list (or a sticker placed) which indicates the medication, dosage, and frequency being prescribed.

BEHAVIORAL MANAGEMENT

1. Any monkey reported with SIB will be evaluated by the next business day after the behaviorist receives notification of the initial event.

2. Behavioral intervention begins by observing the specific cases and providing a treatment plan for individual animals. For most cases, intervention begins by placing a visual block on the front of the cage housing the monkey demonstrating SIB.

3. The behaviorist assesses the effectiveness of visual block in modifying the behavior. If there is little obvious improvement following visual block placement, the behaviorist may recommend that monkey may be moved to another part of the room. The behaviorist will make recommendations regarding where in a room to move a particular monkey.

4. Socialization may also benefit the animal. If socialization is allowed by the protocol (s), the behaviorist may recommend this option. This option is reviewed on a case by case basis. See SOP 403 for procedures to describe socializations procedures in monkeys.

5. The behaviorist consults with the veterinarian to determine any relevant background for each case of SIB. Based on this investigation, the behaviorist and the veterinarian determine the best course of action for each case.

6. On continued reporting of supplemental incidents of self injurious behavior, the behaviorist will work with the veterinarian to determine the best resolution to the problem.

7. Every monkey in the facility is observed or scanned for behavior problems at least monthly. When scanning the behaviorist looks for any evidence of self trauma, pin pricks, abrasions, or lacerations. Any animal observed with these early indicators is added to the weekly observation and monthly treatment evaluation lists. If the event is directly observed by the behaviorist, these findings are reported to the veterinarian that same day.

8. All behavioral observations and treatments will be documented according to SOP 401.

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SOP 405 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 5/14/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 7/26/2007

Date Revised: 5/14/2010

TITLE	**:**	Clinical and behavioral assessment of abnormal behavior in primates
SCOPE	**:**	Veterinary, husbandry and behavior staff
RESPONSIBILITY	**:**	Veterinarians and behavior staff
PURPOSE	**:**	To operationally describe intervention strategies and procedures for abnormal behavior cases in primates

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GENERAL

Nonhuman primates may exhibit abnormal behaviors including locomotor stereotypy, hair loss and floating limbs in response to stress (a trigger).

Triggers May Include:

- Anesthetization of other monkeys in the same room for sample collection
- Movement of other monkeys from room to room for cage cleaning
- Conduction of animal procedures either in the room or outside the room in the hallway which included the subject monkey. i.e., checking water lixits, room wash down, health check observations, behavioral observations.
- Conduction of animal procedures either in the room or outside the room in the hallway which did not include the subject monkey
- Building construction above, adjacent to, or within the same building where the monkey is being held.
- Any other potential event which could stimulate the monkey to engage in abnormal behavior.

Note: Individuals working with non-human primates should be aware of their potential influence to escalate the display of abnormal behavior.

BEHAVIORAL OBSERVATIONS

1. Every monkey in the facility is observed or scanned for behavior problems at least monthly. When scanning the behaviorist looks for any evidence of self trauma, pin pricks, abrasions, or lacerations or behavior problems. Any animal observed with these early indicators is added to the weekly observation and monthly treatment evaluation lists.

2. The behaviorist consults with the veterinarian to determine any relevant background for each case. Based on this investigation, the behaviorist and the veterinarian determine the best course of action.

3. All behavioral observations and treatments will be documented according to SOP 401. If a trigger can be identified, it is noted in the behavior record.

BEHAVIORAL MANAGEMENT

1. Any monkey reported with abnormal behavior will be evaluated by the next business day after the behaviorist receives notification of the initial event.
2. Behavioral intervention begins by observing the specific cases and providing a treatment plan for individual animals. For most cases, intervention begins by placing a visual block on the front of the cage housing the monkey demonstrating abnormal behavior.

3. The behaviorist assesses the effectiveness of visual block in modifying the behavior. If there is little obvious improvement following visual block placement, the behaviorist may recommend that monkey may be moved to another part of the room. The behaviorist will make recommendations regarding where in a room to move a particular monkey.

4. Socialization may also benefit the animal. If socialization is allowed by the protocol (s), the behaviorist may recommend this option. This option is reviewed on a case by case basis. See SOP 403 for procedures to describe socializations procedures in monkeys.

5. If intervention steps do not eliminate or attenuate a behavioral problem, it will be noted in the behavior record for future reference.

COMMON ABNORMAL BEHAVIOR IN PRIMATES

Locomotor Stereotypy (LST)

LST is defined as moving in a repetitive, ritualized pattern that serves no obvious function (i.e., is not a part of play, sex, grooming, etc). Subcategories can include pacing, circling, flipping, non-huddled rocking, and head tossing. The presence of strange or unusual sounds or people in a colony room may be a sufficient trigger to stimulate locomotor stereotypy in monkeys. The presence of familiar individuals in a colony room, i.e., care staff, facility managers, behaviorists, or veterinarians, may also elicit a locomotor stereotypy from resident primates.

Scored*: *Mild, Moderate, or Severe

- **Mild**: (2) Animal engages in locomotor stereotypy in specific contexts (e.g. only when someone first enters room, only during feeding or distribution of novel food), and is easily interrupted.

- **Moderate**: (3) Animal engages in intermittent locomotor stereotypy in various contexts, and is not easily interrupted.

- **Severe**: (4) Animal engages in locomotor stereotypy for the majority of daily activity budget, stopping infrequently and for short periods of time. A video recording can be used to make this determination.

Hair Loss (HLS)

Hair loss is not a behavior abnormality in itself, but a symptom of an underlying problem. Scored using two components: percentage of body missing hair and pattern of hair loss.

Scored*: *Mild, Moderate, or Severe

		Percentage of Body with Hair Loss		
Pattern of Hair Loss		**1-33%**	**34-66%**	**67-100%**
	Thinning/Mottled	Mild (2)	Mild (2)	Moderate (3)
	Patchy/Bald	Moderate (3)	Severe (3)	Severe (4)

Pattern of Hair Loss:

- **Thinning**: Hair is evenly but sparsely distributed.
- **Mottled**: Areas of hair intermixed with small patches of thin or missing hair that is most often observed on the limbs
- **Patchy**: Areas of hair intermixed with large patches of missing hair
- **Bald**: Well defined areas of missing hair

References

Kramer, J., Fahey, M., Santos, R., Carville, A., Wachtman, L. & Mansfield, K. Alopecia in rhesus macaques correlates with immunophenotypic alterations in dermal inflammatory infiltrates consistent with hypersensitivity etiology. 2010. *J Med Primatol* 39:112-122.

Novak, MA, Meyer, JS. Alopecia: Possible causes and treatments, particularly in captive nonhuman primates. 2009. *Comp Med* 59: 18-26.

Floating Limb (FLT)

FLT- While sitting passively, one limb or tail is observed beginning a slow, upward movement. This apparently goes unnoticed at first by the animal. Scored using two components: context in which the behavior occurs and level of response by the animal to the limb.

Scored: Mild, Moderate, or Severe

		Context	
		Specific	**Non-Specific**
Response	**Non-Aggressive**	Mild (2)	Moderate (3)
	Aggressive	Moderate (3)	Severe (4)

***Context*:**

- **Specific**: Behavior only occurs under stressful circumstances (e.g. only when someone stares directly at the animal).
- **Non-Specific**: Behavior occurs under many different circumstances, may not appear to be stimulus cued.

Response:

- **Non-Aggressive**: Animal ignores floating limb or notices limb but does not react by attacking the limb.
- **Aggressive**: Animal attacks the floating limb.

SOP 601 **Approved:** *Charmaine Foltz, DVM* **Date:** 6/8/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 7/1/1992

Date Revised: 6/8/2010

TITLE	**:**	Working Safely with Nonhuman Primates (NHP)
SCOPE	**:**	All staff working with NHP
RESPONSIBILITY	**:**	Facility Manager and Veterinarian
PURPOSE	**:**	To describe safety procedures for working with NHP

GENERAL

1. No one under the age of 18 is authorized to be in the animal areas of all DVR nonhuman primate facilities.

2. Eating, chewing gum, applying makeup etc. are prohibited in all animal holding and procedure rooms.

3. Current enrollment in the Animal Exposure Program (AEP) for nonhuman primates is required to work with nonhuman primates. Contract employees must be enrolled in an equivalent occupational health program. Documentation of enrollment either must be on file in the facility or listed on a database provided by OMS or the contractor. Retrovirus Exposure Surveillance Program (RESP) enrollment is recommended for personnel working with animals which are known or suspected to be infected with SIV or HIV-2.

4. Herpes B virus (*Cercopithecine herpesvirus 1*) is one of the most important hazards facing handlers of nonhuman primates. Wound care instructions are outlined in SOP 103. Individuals working with macaques must be familiar with the guidelines for working with these species and be familiar with where the exposure kits are kept and how to use them.

5. All accidents and injuries involving animals (especially bites, scratches and splashes), animal waste or equipment will be reported promptly to the facility manager or veterinarian. Refer to SOP 103.

6. Animal room doors will be kept closed except when moving equipment in or out.

7. Animal rooms are checked and secured by close of business each day by animal care personnel. To obtain access outside of typical business hours contact facility management.

8. Always wash your hands after removing gloves and prior to eating or drinking. Do not enter office space or the break area with soiled scrubs or soiled boots or with PPE that has been in animal areas.

INTERACTING WITH NHP

NOTE: Close interaction with laboratory primates may put individuals at risk for bites, scratches, or splashes.

1. Review the safety training videotape Working Safely with Nonhuman Primates , SOP 109, and SOP 110 , protective clothing and room entry sequence, before interacting with nonhuman primates. Each individual who will be working with nonhuman primates will receive orientation and supplemental training regarding appropriate interaction with primates from an experienced staff member or supervisor prior to working with monkeys.

2. Before entering nonhuman primate rooms, look through the window in the door to make certain that no animal has escaped from their cage. If a loose animal is not observed, some clues that an animal may be loose include mops and squeegees in the middle of the floor, etc. If an animal is outside of its enclosure, follow SOP 609 .

3. While in a nonhuman primate room, always be aware of your surroundings. Never back up unless aware of what is behind you. NHPs have a tendency to reach out of their cage and grab at personnel.

4. Avoid making quick or sudden movements, loud noises, or staring directly at the animals' eyes

5. Non-contact interaction with nonhuman primates may include:
    a. Lipsmacking to macaques
    b. Speaking in a calm, soft voice to the animal

6. Avoid unnecessary physical contact with nonhuman primates.

7. Avoid handling nonhuman primates unless they are chemically restrained.

8. Only personnel trained and proficient in hand capturing animals are allowed to handle non-sedated animals. Certain species of nonhuman primates, e.g. squirrel monkeys, owl monkeys, and marmosets, must be hand-caught without prior use of chemical restraint. See SOP 609.

31. Facility Health Status

Consult with the Facility Veterinarian for information on the health status of the facility, health surveillance program, isolation requirements for incoming animals, and assistance with colony health information for importing, exporting or transferring animals.

32. Quarantine

Normal quarantine and conditioning is performed at the NIH Animal Center.

If a facility experiences an outbreak of an adventitious agent that would normally be excluded; quarantine procedures will be implemented by the Facility Veterinarian and Facility Manager. These procedures could involve modifications in husbandry procedures such as special room entry orders / traffic patterns and colony testing depending on the agent involved.

For additional information on quarantine procedures, please see the following SOP 610.

SOP 610 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 5/11/2011
Director, Division of Veterinary Resources, ORS

Date Issued: 3/07/1991

Date Revised: 5/11/2011

TITLE : Quarantine of Nonhuman Primates
SCOPE : Animal Care Personnel and Veterinary Technicians
RESPONSIBILITY : Facility Manager and Veterinarians
PURPOSE : To Establish Proper Quarantine Procedures for Nonhuman Primates

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GENERAL

1. Isolation of newly received non-human primates (NHP) from external sources is necessary to determine their health status and suitability for use in research and for entry into NIH animal facilities. The quarantine period also allows time for the animals to be acclimated to their new environment, and to recover from shipping stress.

2. The disposition of any NHP developing signs of infectious disease during the quarantine period will be determined by the veterinarian. If euthanized, the animal will be submitted to the pathology service for a diagnostic examination. If the veterinarian elects to treat the animal(s), quarantine may be extended at the discretion of the veterinarian.

3. Personnel will wear PPE as described in SOP 109. To prevent the possible spread of pathogens to other animals in the facility, the outer layer of protective clothing will be immediately removed upon leaving the room, and shoes/boots cleaned in a foot bath.

RECEIPT AND IDENTIFICATION OF ANIMALS

1. All animals will be accompanied by a health certificate signed by a licensed veterinarian or appropriate foreign regulatory official, medical records, experimental history and colony of origin health history.

2. Animals are visually assessed immediately upon delivery by a technician to detect any problems that may have developed during transport. Any problems are communicated immediately to the veterinarian.

3. All personnel unloading the animal crates, including the driver, will wear PPE as described in SOP 109. Personnel handling wooden shipping crates must wear gloves adequate to prevent injuries from sharp object (splinters, wires and other metal objects).

4. Crated animals will be immediately delivered to the designated quarantine room and housed within 4 hours of delivery in individual cages unless given a waiver by the facility veterinarian.

5. The animal's identification number (generally a tattoo) is recorded on the cage or cage pan and the animal's record, and serves as the primary method of permanent identification throughout the quarantine period. Place a small amount of food (about 1/4 of a daily ration) and fruit into each food hopper.

6. A Quarantine sign will be placed on the door.

7. An individual health record and the Quarantine Procedures Plan will be established within 24 hours of receipt.

8. Animals will be visually examined by the veterinarian and their existing medical record reviewed within 48 hours of arrival. The veterinarian will perform complete physical examination by between 3 and 7 days after arrival, to allow the animals to acclimate to the facility before being sedated. For animals procured from commercial sources not meeting contract specifications, the disposition will be determined by the veterinarian in consultation with the vendor.

DISEASE DETECTION, PREVENTION AND CONTROL PROCEDURES – MACAQUES AND AFRICAN GREEN MONKEYS

Week 1

An in-processing physical exam will be conducted by a veterinarian. Perform TB test, weigh, administer Ivermectin (0.2 mg/kg SQ) and draw blood for CBC and chemistry panel. Feces will be collected for parasite exam and/or enteric pathogens as directed by the veterinarian. Normally, rectal swabs and/or parasite exams are performed after 3 consecutive days of diarrhea or whenever blood is noted in the feces. Animals will be tattooed as needed.

Week 3

TB test #2 (alternate eye lids) and weigh.

Week 5

TB test #3 (alternate eye lids), weigh, administer Ivermectin (0.2 mg/kg SQ) and tattoo as necessary. For macaques, draw blood for SAIDS/Herpes/measles testing. SAIDS testing consists of serology for SRV-1, 2, 3, and 5, SIV, STLV-1 & 2; and PCR for SRV-1, 2, 3 and 5. Virus profiles for African Greens will consist of SIV, SA8, SA11, SHF, STLV-1 & 2, and measles.

Week 7

TB test #4 (alternate eye lids), weigh.

Week 9-13 (typically)

Perform an exit exam. Quarantine is completed, as determined by the facility veterinarian.

DISEASE DETECTION, PREVENTION AND CONTROL PROCEDURES – BABOON, PATAS AND NEW WORLD SPECIES

Week 1

Perform TB test #1, weigh, administer Ivermectin (0.2 mg/kg SQ) and draw blood for CBC and chemistry panel. The veterinarian will perform an in-processing physical exam. Feces will be collected for parasite exam and/or enteric pathogens as directed by the veterinarian. Normally, rectal swabs and/or parasite exams are performed after 3 consecutive days of diarrhea or whenever blood is noted in the feces. Animals will be tattooed as needed.

Week 3

TB test #2 (alternate eye lids) and weigh.

Week 5

TB test #3 (alternate eye lids), weigh, administer Ivermectin (0.2 mg/kg SQ). Virus profiles for baboons will consist of HPV-2, SIV, STLV-1,2, EBV, SA11, and measles. Virus profiles for patas monkeys will consist of SHF, SIV and measles. Virus profiles for new world species will be Herpesvirus platyrrhinae, Herpesvirus saimiri, SquiCMV, and measles

Week 9-13

Perform exit exam. Quarantine is completed, at the discretion of the facility veterinarian.

QUARANTINE RELEASE PROCEDURES

1. At the end of the designated quarantine period, a veterinarian will conduct a physical examination, recording all findings in the animal's medical record.

2. The veterinarian will conduct a complete review of the medical record to ensure quarantine release is appropriate (i.e. consecutive, negative TB tests (4 for macaques & African Greens and 3 for New World, patas and baboons), negative fecal cultures (as needed), and a satisfactory exit physical exam.

3. Animals will not be released from quarantine if the veterinarian determines that they harbor a disease that poses a threat to established NIH animal colonies or their health status is such that they would not be suitable for the intended procedures described in the ASP. The disposition of these animals will be determined in consultation with the IC veterinarian and the Principal Investigator as appropriate.

BEHAVIORAL EVALUATION

A member of the behavior staff will evaluate each primate within two weeks following arrival in the facility and generate an individual behavioral evaluation which becomes part of the animal's permanent record.

33. Transferring Animals between NIH Facilities

Coordination of animal transfers is performed by the Facility Managers of the sending and receiving facilities. To transfer animals between buildings on the NIH campus, please contact the Facility Manager of the sending facility. The sending facility will submit health reports to the receiving facility. Upon notification of approval the sending facility will make transportation arrangements and prepare the animals for transport. The sending facility will also notify the investigator of the date of the transfer. If the request is denied by the receiving facility, the sending facility will ensure that the instigator is informed.

34. Shipping/Transporting

Local animal transportation can be arranged through the DVR transportation services using the online request form at http://dvr.od.nih.gov, or in an emergency, calling 301-496-8184.

35. Animal Receiving Procedures

When incoming animals are received, they will be inspected, identified with an ID tag and housed in the appropriate size cage. The facility administrative staff will notify the PI, co PI and ordering investigator via e-mail of animal receipt and location. (DVR recommends 2-3 days acclimation time prior to using the animals in any procedures.)

36. Escaped Animals

For information on handling escaped animals, please see the following SOP 609: Procedures for Handling Escaped Animals - Nonhuman Primates.

SOP 609 **Approved:** *Charmaine Foltz, D.V.M.* **Date:** 5/17/2010
Director, Division of Veterinary Resources, ORS

Date Issued: 9/15/1989

Date Revised: 5/17/2010

TITLE	**:**	Procedures for Handling Escaped Animals - Nonhuman Primates
SCOPE	**:**	Animal Care Personnel, Veterinary Technicians, and Facility Managers
RESPONSIBILITY	**:**	Facility Managers and Veterinarians
PURPOSE	**:**	To capture nonhuman primates which escape from their cages

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NOTE: **Recovery of escaped animals takes priority over all other husbandry activities. Remain calm and avoid sudden movement around the animals.**

1. Notify the supervisor, veterinary technician and duty veterinarian immediately.
2. A minimum of two personnel adequately trained in the recapture of nonhuman primates will assist with recovery of an escaped animal.
3. Announce an animal has escaped and restrict access of personnel not involved in the recapture to the area.
4. Wear all required protective clothing (thick restraint gloves for the person who may be required to restrain the animal).
5. Make sure there is an open cage for an animal to run into.
6. Attempt to lure the animal back into the cage with fruit or treats.
7. It may be necessary to capture the animal with a net, anesthetize the animal by use of a tranquilizer dart, or use other methods considered appropriate by the facility manager and/ or veterinary staff if an animal does not voluntarily return to its cage.
8. Notify all staff when the animal is recaptured.
9. Examine and count all animals in the room. Check all animals for any injuries and report any problems to the veterinarian for evaluation.
10. Observe the animals frequently for several hours after recapture.
11. Facility management and the facility veterinarian will evaluate the situation that preceded the escape and determine if additional training and/or other actions are required.

37. Operation of Squeeze Cages/Racks, Locks

This information is covered as a hands-on portion of the Non-Human Primate Safety Awareness Training.

38. Animal Exposure Program Compliance

The Animal Exposure Program is defined in NIH Policy Manual 3044-2:

> **Animal Exposure Program (AEP)** - That portion of the NIH occupational health program, managed by the Occupational Medical Services, Division of Occupational Health and Safety, specifically designed for all NIH personnel who work in animal facilities and/or areas where research animals are housed or used and who have significant contact, (as determined by the Principal Investigator or Immediate Supervisor), with research animals or their fresh tissues or body fluids. Institute and Center programs outside the metropolitan Washington DC area, e.g. NCRR's Alamogordo Primate Facility, NIA, NIDA, NIEHS and NIAID-RML, shall implement equivalent programs, as appropriate.

As part of the AEP requirements, those entering the facility must have a negative TB test within the last year.

Reporting Animal Welfare Concerns

DEPARTMMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institutes of Health
Bethesda, Maryland 20892

March 26, 2010

TO: Addressees

FROM: Deputy Director for Intramural Research, National Institutes of Health

SUBJECT: Communicating Animal Care and Use Concerns within the NIH Intramural Research Program

As the NIH Institutional Official (IO) for Intramural animal research this memorandum reaffirms my commitment to maintain full and open communications regarding animal care and use in the NIH Intramural Research Program (IRP). I feel strongly that all IRP staff must clearly and thoroughly understand NIH management and administrative practices to best enhance our research environment. The care and use of animals in NIH research requires compliance with Federal laws, regulations and policies.

I strongly encourage anyone in the NIH IRP, including NIH employees and contractors, who have concerns regarding the care and use of animals in research at NIH to voice those concerns. The concerns may be reported anonymously to me, and/or the Director, Office of Animal Care and Use. Additionally, any animal welfare concern can be reported to the members of the Institutes/Centers (IC) Animal Care and Use Committees (ACUC) or to the IC Facility Veterinarians. Concerns relayed through any of these routes will be reviewed by the respective IC ACUC and corrective measures instituted, if appropriate.

The OACU Director assists me in assessing all concerns. My office determines the level at which the concern is pursued, including involving the Animal Research Advisory Committee (ARAC) Ombudsman, who can mobilize further resources as outlined in the ARAC Guideline: Responding to Animal Care and Use Complaints from Outside the NIH, http://oacu.od.nih.gov/ARAC/documents/Complaint_Response.pdf.

The Office of Laboratory Animal Welfare (OLAW) issued reporting guidance in 2005. Any of the following incidents (extracted from OLAW's guidance) must be reported promptly to one of the responsible individuals described above. OLAW guidance: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-034.html

Reportable incidents include:

- Conditions that jeopardize the health or well-being of animals, including natural disasters, accidents, and mechanical failures, resulting in actual harm or death to animals;
- Conduct of animal-related activities without appropriate ACUC review and approval;
- Failure to adhere to ACUC-approved protocols;
- Implementation of any significant change to ACUC-approved protocols without prior ACUC approval;
- Conduct of animal-related activities beyond the expiration date established by the ACUC;
- Chronic failure to provide space for animals in accordance with recommendations of the Guide;
- Participation in animal-related activities by individuals who have not been appropriately trained;
- Failure to monitor animals post-procedurally as necessary to ensure well-being;
- Failure to maintain appropriate animal-related records (e.g., identification, medical, husbandry);
- Failure to ensure death of animals after euthanasia procedures;
- Failure of animal care and use personnel to carry out veterinary orders (e.g., treatments).

If you are uncertain about whether an incident or activity should be reported, please report it.

Upon notification of an incident, and following my review of the results of any related investigation, I will report noncompliant activities and the resultant corrective actions to OLAW.

In summary, I strongly encourage any individual who has concerns related to the use of animals in research at NIH to voice those concerns. I stress that NIH will not tolerate any reprisal against an individual who has come forward with concerns involving the care and use of animals. Individuals who feel that a personnel action has been taken against them because they reported an apparent violation of animal care and use requirements, should present their case to their supervisor, their IC Director, the NIH Director, the Office of the Inspector General, or the Office of Special Counsel.

Please direct questions or comments regarding the intent or contents of this memorandum to me or to the Director, Office of Animal Care and Use, telephone: 301-496-5424.

Michael M. Gottesman

Michael M. Gottesman, M.D.

Addressees:
IC Directors and Scientific Directors
IC Lab/Branch Chiefs
IC ACUC Members and Animal Program Directors
IC Facility Veterinarians and Animal Facility Managers
Animal Care Staff Members
NIH IRP Principal Investigators and Animal Users