



CM SOP #402 – Rodent Husbandry and Care

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I. Purpose & Scope

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures involved in the daily husbandry and care of mouse and rat colonies housed in Comparative Medicine (CM) facilities operated by Florida Atlantic University.

This SOP is intended to ensure that rodents receive appropriate daily care and observation, that environmental and husbandry issues are identified and addressed promptly, and that required documentation is completed consistently and accurately. This SOP applies to all central facilities managed by Comparative Medicine and to all CM personnel involved in the daily husbandry and care of mice and rats.

II. Roles & Responsibilities

Comparative Medicine Staff

- Performing only those tasks for which they have been trained
- Performing daily husbandry and animal observation procedures as outlined in this SOP
- Completing required documentation accurately and in a timely manner
- Correcting problems when possible and documenting corrective actions as appropriate
- Promptly reporting abnormal environmental conditions, malfunctioning equipment, or animal health and welfare concerns to the appropriate CM management
- Following posted room instructions, protocol-specific requirements, and veterinary directions
- Animal Care Tech I's (ACT-I) assigned to room husbandry are primarily responsible for room-level daily husbandry, room maintenance tasks, census activities, and live trap checks.
- ACT II & III are responsible for reviewing health logs and progress notes during weekdays, completing treatments and related paperwork as assigned, supporting animal health communication, and providing technical support to husbandry staff

Research Staff, Students, Visitors

- Maintaining accurate cage card and census information when required by CM procedures
- Completing required logs for post-surgical or other protocol-specific monitoring
- Responding promptly to communications related to overcrowding, weaning, dead animals, or other husbandry concerns
- Following CM instructions when environmental or husbandry issues may affect research animals

CM Management

- Ensuring procedures are followed as outlined in this SOP



- Ensuring staff are appropriately trained and competent
- Coordinating responses to room, facility, and equipment issues
- Communicating major environmental concerns to research personnel as appropriate
- Monitoring documentation compliance
- Requiring retraining or corrective action when performance deficiencies are identified

CM Director and AV

- Providing oversight of rodent husbandry and care standards
- Ensuring veterinary support is available for animal health and welfare concerns
- Communicating major animal health concerns to research personnel as needed
- Ensuring appropriate training is available to CM personnel
- Supporting coordination with Facilities, EH&S, and other institutional units when environmental or infrastructure problems affect animal welfare

III. General Notes & Definitions

Monitoring the well-being and health of all animals in the care of Comparative Medicine is of utmost importance. All animals must be observed at least once daily from the day of arrival or birth until final disposition. The frequency of tasks listed in this SOP is intended as a minimum and tasks should be performed more often if necessary depending on room occupancy, breeding intensity, experimental conditions, or animal health status.

Rodent housing room environmental conditions must remain within acceptable institutional and Guide-based standards. Room conditions are monitored through building systems and the in-room monitoring system. Technicians must still remain attentive to macroenvironmental and equipment-related issues, including leaks, lighting problems, air flow abnormalities, sewer odors, rack issues, and cage changing station problems.

The macroenvironment of the room and microenvironment within the cage both affect animal welfare and research quality. Husbandry staff should work in a calm, efficient manner and minimize unnecessary noise, cage movement, and disturbance.

For reverse light cycle rooms, the dark cycle must be respected. A red flashlight should be used during the dark cycle. White light must not be introduced into reverse light cycle rooms during the dark cycle.

Handle contaminated or flagged cages after all other routine cages in the room whenever possible.

- **AWS:** Autowatering system
- **Per Diem Sheet:** Protocol-specific census sheet used to document animal counts and communicate/correct count discrepancies.
- **Overcrowded cage:** A cage exceeding institutional density standards unless specifically exempted by protocol or veterinary direction.
- **Spot change:** An off-schedule cage change performed because of flooding, excessive soil level, overcrowding, moldy or wet food, or other conditions requiring immediate intervention.



- **Macroenvironment:** the environment at the room or vivarium level and includes factors such as room temperature, relative humidity, lighting cycle, air changes, differential pressure, equipment function, leaks, odors, and other facility conditions that may affect animal health and welfare.
- **Microenvironment:** the environment inside the cage or primary enclosure and includes bedding quality, moisture, food and water availability, sanitation, enrichment, cage density, and other cage-level conditions that may affect animal health and welfare.
- **Reverse light cycle:** a lighting program in which the room's light and dark periods are intentionally inverted from the standard day-night schedule so that rodents are in their active (dark) phase during normal working hours. In rooms operating on a reverse light cycle, white light must not be introduced during the dark cycle unless specifically approved, and staff should use red lighting or a red flashlight when entry during the dark phase is necessary.

IV. Materials & Equipment

- Health Concern – Evaluation Requested cards
- Post Surgical Animals cards
- Overcrowd labels
- Spot change cage cards
- Wean strips
- Carcass stickers and carcass bags
- Clean cages and cage cards
- Food bins and rodent feed
- Water bottles
- Disinfectant
- Gloves
- Paper towels, Wypalls, soap, pens, permanent markers, stickers, sticky notes
- Red flashlight for reverse light cycle rooms
- Cage changing station
- IVC racks
- Autowatering system components
- In-room temperature and humidity sensor
- Eyewash station tag
- Live traps

V. Procedure

Start of Room Entry and Environmental Check

1. Enter the room using the appropriate workflow for the room's health status.
2. Check the macroenvironment immediately upon entering the room.
3. Look for leaks, abnormal odors, burnt-out lights, room condition problems, and equipment issues involving IVC racks, cage changing stations, dump stations, or other room equipment.
4. If any facility or equipment issue is identified, notify the FM immediately through the Teams channel.



5. If water is observed anywhere it should not be, identify the source if possible and alert the VOM immediately.
6. For reverse light cycle rooms, use a red flashlight during the dark cycle. Do not introduce white light into the room during the dark cycle.

Immediate AWS and Flooding Check

1. For rooms with autowatering systems, check first for flooded cages before beginning the rest of the daily observations.
2. Change flooded cages immediately.
3. Check the water valve for malfunction.
4. Remove faulty valves from circulation and replace them with a working valve.
5. Tug and toggle the replacement valve once the cage is seated.
6. Alert the VOM to the valve issue.
7. Contact veterinary staff promptly if an animal has been in a flooded cage.

Health Logs, Progress Notes, and Special Instructions

1. On weekdays, ACT-IIs review the Health Log and Progress Notes for treatment instructions and prior health-related entries.
2. On weekends and holidays, the ACT-I overseeing husbandry for the room will review these forms unless otherwise directed.
3. Complete any required treatments and paperwork before moving on when applicable.
4. Review all posted special instructions on cages before starting food, water, and health checks.
5. Observe special feeding, watering, fasting, or other protocol-specific instructions exactly as posted.
6. Note: If a cage is marked "Do Not Feed" or "Special Diet" and there is no entry indicating feeding occurred the previous day, contact the supervisor or AV before proceeding.

Daily Food, Water, and Health Checks

1. Complete food, water, and health checks no later than 10:00 AM unless prior approval has been given.
2. Spend at least three seconds observing each cage and mentally check off food, water, and health.
3. If a check is interrupted or there is any chance a cage was missed, recheck the entire affected rack or shelf.
4. Check the food level in every cage.
5. If food is less than a full monolayer, top off the food hopper.
6. For racks with AWS, ensure a valve is present for every cage.
7. If the valve cannot be clearly seen through the cage, gently pull the cage out enough to verify that the valve is present.
8. For cages requiring water bottles, replace the bottle if it is less than 100 mL full for mice or less than 150 mL total for rats.
9. When placing a new bottle, make sure the lid is tight and shake the bottle to ensure water flows.
10. Make sure cages are docked properly so water is accessible and ventilation functions normally.



11. Be attentive to moldy, wet, sticky, or otherwise abnormal food and bedding conditions.

Health Observations and Required Actions

- A. Non-urgent health concerns
 1. If a non-urgent health concern is noted, place a red Health Concern – Evaluation Requested card on the front of the cage.
 2. Complete the Health Log and the top portion of the Progress Notes form.
 3. Create a case number and indicate that case number on the red card.
 4. Report the concern in the Teams channel, including:
 - a) clinical observation
 - b) room number
 - c) rack and cage location
 - d) PI name
 - e) protocol number
 - f) a photo of the clinical concern and cage card, if helpful
- B. Emergency health concerns
 1. If any of the following is observed, contact the AV or Clinical Services Manager immediately by phone call or text:
 - a) Moribund or recumbent animal,
 - b) Seizures,
 - c) Severe wounds with muscle exposure, or
 - d) Dehiscence of a surgical site.
 2. Do not continue routine duties until a veterinary staff member has been reached and acknowledges the concern.
- C. Dead animals
 1. Remove the carcass promptly.
 2. Record the ear tag number if applicable.
 3. Place the carcass in a carcass bag and apply a carcass sticker.
 4. Place the bagged carcass in the refrigerator, unless a lab-specific exception applies.
 5. Submit a photo of the cage card to the Teams channel with:
 - a) ear tag number if applicable
 - b) room number
 - c) rack number
 - d) cage location on the rack
 6. An ACT II or III, the Facility Manager, or veterinary staff will email the information to research personnel.
 7. Research personnel have 24 hours, or until Monday close of business if over a weekend, to request necropsy or collect tissues before the carcass is transferred to the freezer for EH&S pickup.
- D. New Litters and Breeding-Related Actions
 1. Check for new litters during daily rounds.
 2. If a new litter is found, place a wean strip on the cage card.
 3. Where pink breeder cards are used, complete the appropriate rows on the breeder card.
 4. When possible, avoid handling cages with litters that are less than four days old.



5. Exceptions may be made if the cage needs food, water, or immediate husbandry intervention such as a spot change.

Overcrowding and Weaning Actions

- A. Flagging overcrowding
 1. If there are more than 4 same-sex adult mice in a cage, flag the cage with an Overcrowded label and send a photo of the cage card to the Teams channel with room, rack, and cage location.
 2. If there are more than 2 adult rats in a cage, flag the cage with an Overcrowded label and send the same information.
 3. Check for protocol or veterinary exemptions before separating animals.
- B. Immediate separation situations
 1. Separate immediately, unless exempted, in the following situations:
 - a) more than 5 adult mice or more than 2 adult rats in a mixed-sex cage
 - b) 2 or more pregnant females in the same cage
 - c) 3 or more adults in a cage with a litter, in which case the male should be removed first
 - d) a litter that is two days past its wean date
 - e) one adult female with two litters approximately 21 days apart
 2. When separating weanlings, separate by sex.
 3. Ensure parent identification information is included on the new cage cards so research personnel know the source cage.
 4. Complete the time and supply log and the wean sheet.
 5. Post a photo of the cage card and location information to the Teams channel or email all CM staff when immediate separation is performed.

Post-Surgical Cages

1. Observe post-surgical cages, identified by a red Post Surgical Animals card, more closely than standard cages.
2. Verify that all required logs are completed correctly.
3. If logs are missing or incomplete, take a photo of the log and post it to the Teams channel with room, rack, and cage location.

Off-Schedule Cage Changes and Cage Change Follow-Up

1. Perform off-schedule cage changes for any cage that:
 - a) is excessively soiled (wet bedding covers > ~20% of cage)
 - b) is flooded
 - c) contains moldy, wet, or sticky food
 - d) has a noticeable ammonia or foul odor
 - e) contain animals that appear dirty around tail/belly/feet
 - f) has a compromised nest in breeder cages
2. Follow the applicable rodent cage changing SOP for all cage changes.
3. Flag any off-schedule change with a Spot Change cage card and record the date.
4. After each cage change, double-check:
 - a) food level
 - b) water level
 - c) valve function by tug and toggle when applicable
 - d) that animals are moving freely



- e) that no animals are trapped in the food hopper or along cage lid edges

Daily Room Reset and General Maintenance

1. Sanitize the work tray of the change station.
2. Keep the change station free of items and do not use it for storage.
3. Check under the tray for bedding, fecal pellets, or other debris and wipe or sweep as needed.
4. Empty the garbage can at least weekly or any time it is approximately 80 percent full.
5. Reset the room and restock supplies as needed, including:
 - a) disinfectant
 - b) gloves
 - c) Wypalls
 - d) paper towels
 - e) soap
 - f) stickers
 - g) health cards
 - h) pens
 - i) permanent markers
 - j) Progress Notes
 - k) food
 - l) water
6. Keep doors, viewing windows, and walls free of smudges, fingerprints, and debris.
7. Sweep floors of visible debris.
8. After 2 pm, a second check for food, water, and health concerns should be completed.

Food Bin Checks

1. Check whether the room food bin is due for sanitization (every 30 days).
2. If the bin is due, obtain a fresh sanitized bin from the clean side of cage wash.
3. Transfer feed from the previous bin into the new bin, preventing transfer of as much food dust as possible.
4. Update the feed expiration date and sanitization date on the new bin.
5. Remove the marker from the old lid if used.
6. Place the dirty bin and lid in the dirty side of cage wash.

Vermin Monitoring

1. Check live traps daily.
2. If a live rodent is present, notify the FM immediately.
3. If a dead rodent is present, don gloves, remove it, and handle it according to carcass handling procedures.

In-Room Environmental Monitoring

1. Check the in-room temperature and relative humidity sensor daily.
2. Record the minimum and maximum temperature and relative humidity from the previous 24 hours on the room log.



3. Reset the sensor every day.

Regular Maintenance Tasks

A. Daily tasks

1. Sign off each completed task described above and on *CM Form 003: Daily Animal Room Check Sheet* on the room log with your initials.
2. Do not sign off tasks that have not been completed.
3. Signing off on an incomplete task is grounds for disciplinary action and may be grounds for formal reprimand or termination if animal welfare was affected.

B. Twice-Weekly Room Maintenance Tasks

1. Take census and update the Per Diem Sheet for each IACUC protocol on Tuesdays and Fridays.
2. Review census sheets and communicate or correct erroneous entries made by research personnel.
3. Sweep and mop floors on Wednesdays and Fridays.

C. Weekly Room Maintenance Tasks

1. Flush autowater racks.
2. Thoroughly clean the spill trays of changing stations.
3. Wipe down the entire change station, including all vertical and horizontal surfaces, using an approved disinfectant.
4. Wipe down and sanitize sinks, counters, tables, doors, and other room equipment.
5. Flush the eyewash station, verify proper function, and complete the tag.
6. Remove trash.
7. Replace mop heads

D. Twice-Monthly Room Maintenance Tasks

1. Check IVC rack filters during the first and third weeks of the month.

E. Monthly Room Maintenance Tasks

1. Check changing station filters.
2. Sanitize garbage cans and lids.
3. Sanitize food bins.
4. Dust flat surfaces.
5. Clean door jambs and air vents.
6. Clean glass.
7. Clean stainless steel.

F. Less Frequent or As-Needed Tasks

1. Change disinfectant spray bottles and pumps as required by the manufacturer.
2. Ensure each cage has a legible CM cage card upon arrival or at weaning.
3. If a cage card is missing, illegible, or incorrect, correct it or report it to the supervisor.
4. Sanitize or wash carts after they contact dirty cages or leave the vivarium.
5. Sanitize bedding bins every three months or more often if needed.

G. Recordkeeping

1. At the end of the month, turn all Animal Room Daily Check Sheets in to the FM, to be kept for at least 1 year.
2. Progress Notes remain in the housing room for at least six months.



3. Record animal counts on the Per Diem Sheet at least weekly; three times per week is preferred.
4. The eyewash tag must also be completed when the eyewash is tested.

VI. Health & Safety

- Personnel must wear appropriate PPE and follow universal precautions when working with rodents and room equipment.
- Highly concentrated disinfectants may require additional PPE and personnel should know where to locate the SDS.
- Personnel must maintain good personal hygiene and wash hands after handling animals, supplies, chemicals, or equipment.
- Mice and rats can bite or scratch, and equipment may cause injury if used improperly.
 - Follow the relevant SOPs for equipment operation, chemical handling, and injury reporting.
 - If an injury occurs, including an animal bite or scratch, notify the supervisor immediately and follow *CM SOP 008: Reporting Accidents, Injury, and Illness*.

VII. References & Attachments

- *Guide for the Care and Use of Laboratory Animals*
- Public Health Service Policy on Humane Care and Use of Laboratory Animals
- AVMA Guidelines for the Euthanasia of Animals
- *CM SOP 102: Health Monitoring*
- *CM SOP 200: Cage Changing Rodents*
- *CM Form 001: Monthly Animal Per Diem Sheet*
- *CM Form 003: Animal Room Daily Check Sheet*
- *CM Form 004: health Concern Progress Notes*
- Cage flags:
 - Health Concern – Evaluation Requested card
 - Post Surgical Animals card
 - Overcrowded label
 - Spot change card
 - Wean strip
 - Eyewash tag

VIII. Revision History

Revision Date	Revision Number	Summary of Changes
08/08/2014	2	lone worker, cage card per cage (instead of animal), added satellite facilities and special circumstances as exceptions to checking animals before 10am, and added VSATS
04/12/2016	3	Added FM & Training Coordinator to Responsibilities, Trap Seal Primer, Updates on procedures
08/10/2016	4	Update health check time within workday consistent with health status level



07/19/2017	5	Added details to daily checks, added training every six months
05/15/2021	6	Added information about noise/vibration and post-surgical animals
07/09/2024	7	Updated processes and reordered tasks
03/30/2026	8	Updated format, made ADA compliant, streamlined processes & language, reflected changes implemented by new management

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