OFFICE OF RESEARCH COMPLIANCE
CENTRAL MICHIGAN UNIVERSITY

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I. BACKGROUND

The Central Michigan University Animal Welfare Assurance to Public Health Service A4076-01 ("PHS Assurance") states that Central Michigan University (CMU) will comply with the Public Health Service (PHS) Policy on Humane Care and Use of Laboratory Animals[1]. The PHS Policy requires compliance with The Animal Welfare Act[2] and Animal Welfare Regulations (AWARs)[3] as well as the Guide for the Care and Use of Laboratory Animals ("The Guide")[4]. According to The Guide, "*Animals should be cared for by qualified personnel every day, including weekends and holidays both as a safeguard for their wellbeing and to satisfy research requirements*". The Animal Welfare Act regulations[3] (9 C.F.R. §§ 2.33(b)(3), 2.40(b)(3)) require "…*dealers, exhibitors, and research facilities to observe all animals daily to assess their health and well-being*". The Central Michigan University Institutional Animal Care and Use Committee (IACUC) is charged by the PHS Assurance and CMU Institutional Policies with ensuring institutional compliance with the AWARs and the Guide.

II. POLICY

It is the Policy of the CMU IACUC that all animals utilized in teaching, research and outreach activities will be observed daily to assess their health and well-being, that these observations will be documented in writing and that the documentation will be maintained in the animal room for as long as the animals are kept in the room. Although the act of monitoring may be delegated to a research personnel (e.g., research students, technicians, etc.), the Principal Investigator (PI) listed on an animal use protocol is responsible for ensuring that animals are observed and assessed daily.

III. DEFINITIONS

Detailed Animal Health Check: Health checks that may require manipulation of enclosures and physical manipulation of animals by trained personnel. All health problems observed must be documented. A list of common issues to look out for is included in Appendix A.

Visual Health Check (Microenvironment): A visual check of each animal enclosure and the animals within that ensures the animals seem healthy and that their behavioral and physical needs are met. See Appendix B for specific items.

Environmental Checks (Macroenvironment): Daily environmental checks of the animal room and equipment. See Appendix C for more details.

Cage Changes: Moving animals from a soiled cage to a clean cage. Animals are observed when cages are changed and if any animals have clinical problems that are not described and addressed in clinical records maintained by the PI, this will be reported to the PI.

Aquarium Maintenance: Water changes, cleaning, water testing, etc.

Water changes: Removing water and excess built up organic matter. Inspection of mechanical filters for replacement/cleaning. Water replaced is within acceptable range (temperature, pH, hardness, etc.) of the existing environmental parameters.

IV. PROCEDURES

A. All required Observations/Assessments/Monitoring must be documented and the records maintained in the animal room for as long as the animals are kept in the room.

B. Observation/Assessment:
   1. All animals must have an environmental and visual health check performed daily.
   2. In addition, animals will be observed and assessed during cage changes/aquarium maintenance with any suspected clinical abnormalities (those not already documented) being reported to the PI.
   3. When Environmental/Health Checks or Cage/Water Changes are conducted by Vivarium staff, observations of suspected environmental or clinical abnormalities will be reported to the PI if they are not already documented in the room.
      a. Observations that require timely intervention, to reduce morbidity or mortality, will immediately be reported to the PI and the vivarium/facility manager.
      b. If the PI does not respond in a timely manner the vivarium/facility manager can initiate an appropriate treatment. When necessary (e.g., when a treatment described in the approved animal use protocol, or standing treatment order does not exist), the Attending Veterinarian (AV) should be consulted.
      c. Observations of clinical problems not described in the animal use protocol or for which standing treatment orders do not exist must be communicated to the AV.
      d. Observations will be reported to the AV when vivarium staff are unable to contact the PI or their supervisor/vivarium manager.
   4. Detailed animal health checks must include manipulation of animals and/or their enclosures unless it is not appropriate for the species (e.g., aquatic species). When appropriate, body weight must be monitored.
   5. Animals identified with clinical abnormalities must be monitored as described below and their cages or enclosures must be properly identified.

C. Clinical Monitoring (including post-surgical monitoring and care):
   1. Once clinical monitoring has been initiated a monitoring record must be initiated, and the veterinarian must be contacted unless a standing treatment plan is already in place.
   2. The record can be lab/protocol specific and does not have to follow a set format. The IACUC has example post-operative monitoring forms available to any lab that does not want to create their own.
   3. Minimal required information in a clinical record must include either:
      a. All information as specified in the protocol including endpoint criteria, or;

b. If not specified in the protocol, recorded information will include:
   i. Animal identification including:
      1. Species or strain
      2. Sex
      3. Cage number/location
      4. Tattoo or tag number (if available)
      5. Protocol number (or PI if PI only has one protocol)
      6. Either age or date of birth or date received

      If the cage card already contains this information, the animal ID and cage number with a note to see the cage card may be sufficient but a picture or copy of the cage card containing this information should be readily available to the AV upon request.
   ii. Identity and emergency contact information of the PI and the person maintaining the clinical record and/or the emergency contact for the animal/protocol ((unless posted elsewhere in the room). At a minimum, the PI must be listed.
   iii. A description of any abnormal observations (e.g., dehydration, weight loss, lesions). If there have been no changes in the clinical status of an animal it should be noted, at a minimum, that the condition has not changed.
   iv. It is recommended that standardized assessment tools [e.g., body condition scores (BCS)] be implemented to minimize the subjectivity of an assessment.
   v. If abnormalities have been observed and treatment has been initiated, a description of the treatment(s) and periodic updates to the treatment plan, including pain management when appropriate, should be documented.

D. Reports of Mortality:
   1. Vivarium staff, where applicable, will report deceased animals to the research staff. A list of deceased animals, by protocol number and date, will be compiled for each room. The reports should be made the same day.
   2. The PI and research staff will maintain, in the animal room, a consolidated list, by protocol number, of all animals that have been found dead including those that have been reported to them by the vivarium staff.
   3. The PI and research staff must provide a monthly report of animals found dead for each protocol. The report must include date animals found, number found dead, and the total number of animals on the protocol.

V. REFERENCES

Public Health Service Policy on Humane Care and Use of Laboratory Animals (2015)

Animal Welfare Act: [United States Code, Title 7 (Agriculture), Chapter 54 (Transportation, Sale, and Handling of Certain Animals), Sections 2131– 2159]

Animal Welfare Regulations: Title 9 – Animals and Animal Products. Chapter I – Animal and Plant Health Inspection Service, Department of Agriculture

The Guide for the Care and Use of Laboratory Animals, 8th ed. 2011. National Research Council of the National Academies. Washington, D.C.: The National Academies Press

Appendix A: Conditions that may be observed during **Detailed Animal Health Checks**

Note: this list is not exhaustive, and the observer should be alert for any/all abnormalities. However, observation of any of these or other clinical issues must result in the cage or enclosure being appropriately identified and the initiation of a clinical monitoring record.

When performing health checks document all problems observed, including those listed below:

1. Rodents/Terrestrial Mammals:
    a. Physical Issues:
        i. Abnormalities of the eyes, ears, nose, mouth, or face, including red pigment around eyes (rats)
        ii. Convulsions/tremors or seizures
        iii. Dehydration
        iv. Excessive sneezing, difficulty breathing
        v. Excessive weight loss (emaciation) or weight gain
        vi. Lacerations, ulcers, tumors/masses, bleeding, or discharge from an orifice
        vii. Hypothermia/hyperthermia
        viii. Lameness
        ix. Skin irritation
        x. Vaginal, rectal, or penile prolapse, dystocia
        xi. Unkempt hair or ruffled fur, hair/fur loss

    b. Behavioral Indicators:
        i. Cage aggression
        ii. Head tilt/circling in cage
        iii. Hunched posture
        iv. Inappetence
        v. Lethargy
        vi. Problems with vocalization
        vii. Scratching (excessive) and/or self-mutilation
        viii. Separation or different behavior from the group

2. Aquatics:
    a. Open red sores
    b. Fin and tail fraying/rot
    c. Body discoloration/slime, changes in coloration
    d. Cloudy or exophthalmic eyes
    e. White spots, patches, or cottony growths
    f. Pipping, flashing
    g. Rapid or labored respirations
    h. Loss of equilibrium
    i. Poor body condition or no appetite

Appendix B: Visual Health Checks

Visual checks may be conducted without manipulation of the cage or animal. These checks should document that:

1. Animals are bright, alert, and responsive
2. There is an adequate amount of food and water available to the animals
3. Waste (feces, urine, ammonia) levels are acceptable
4. Enclosures and associated devices (e.g., water bottles on rodent cages) are functional and functioning properly, (e.g., rodent tubs aren't cracked, wet or flooded, there is a lack of condensation buildup on micro-isolator enclosures; bird cages aren't wet or flooded; fish aquaria are flooded, etc.)