
University of Pennsylvania School of Medicine
Policy and Procedure Manual

**QUARANTINE OF RODENTS DUE TO INFECTIOUS DISEASE OUTBREAK IN SCHOOL OF
MEDICINE ANIMAL FACILITIES**

RESEARCH ADMINISTRATION

Policy Number: RA-ANML-002

Date Approved:

I. PURPOSE

To establish guidelines for the quarantine of rodents during an infectious disease outbreak in the School of Medicine animal facilities.

II. POLICY STATEMENT

These guidelines serve as the official School of Medicine policy for imposing, maintaining, documenting, and lifting of quarantine. Quarantine may be imposed following the detection of mouse hepatitis virus (MHV), epizootic diarrhea of infant mice (EDIM), and other pathogens.* These policies are intended to supplement/complement Policy Number RA-ANML-001: Management of MHV-Infected Rooms/Suites in SOM Animal Facilities. Pathogens such as MHV and EDIM can cause profound changes in murine physiology, affecting the interpretation of a wide variety of experimental results. Such outbreaks can have a devastating affect on research and can result in the euthanasia of numerous animals. Early management and imposition of quarantine are critical to containing and eradicating such pathogens.

*Other pathogens may include: Sendai virus, Lymphocytic choriomeningitis virus (LCMV), Ectromelia virus, Mouse minute virus (MMV), sialodacryoadenitis virus (SDAV, rat coronavirus), conventional rat parvovirus (RV).

III. WHO SHOULD KNOW THIS POLICY?

- Dean
- Vice Dean for Research and Research Training
- School of Medicine Animal Research Committee (SOM-ARC)
- Faculty and lab personnel engaged in animal research
- University Laboratory Animal Research (ULAR) Staff
- IACUC Chair

IV. POLICY AND PROCEDURES

Imposition of Quarantine

- Quarantine is imposed immediately (within 24 hours) after diagnostic tests indicate the presence of a pathogen in a SOM animal facility.
- ULAR Diagnostic Services holds authority to impose quarantine and will communicate this fact immediately by e-mail to the facility veterinarian(s), the facility manager, the Associate Director for Husbandry and Facilities, investigators with animals in the room or facility, and the SOM-ARC. ULAR will also communicate notification of quarantine through ULAR listservs at <http://www.ular.upenn.edu/content/listservs.html>
- Investigators in affected facilities will be asked to mark, within 24 hours of notification, all cages of rodents that can be euthanized in order to reduce the population of susceptible animals in the room. Euthanasia will be performed by ULAR staff.

Basic Principles of Quarantine

- **Posting: Room and Facility**

ULAR personnel will post quarantine signs on the doors of affected room(s) immediately upon imposition of quarantine. In addition, notification will be posted to the ULAR website and sent by e-mail to affected personnel (see “Imposition of Quarantine” above.)

- **Gowning Stations and Procedures**

All personnel will be required to wear the usual PPE (face masks, hair covers) and to double gown, double glove, and put on two pairs of shoecovers when entering a room under quarantine. Upon exiting the animal room, the outer gown, gloves and shoecovers should be removed in the room and disposed of in containers within the animal room. The remaining PPE should be removed in the anteroom or hallway outside the animal room and disposed of in containers provided for this purpose.

- **Restrictions on Movement of Staff and Investigators**

No one should enter any other rodent housing room on the same day after entry into a quarantined rodent facility unless he or she has followed decontamination procedures and showered and changed all clothing, including shoes.

- **Restricted Access and Security**

Locks will be changed on doors of quarantined room(s) within 48 hours of quarantine being imposed and access will be limited to normal working hours (7:00AM-6:00PM). There will be no night or weekend access unless special arrangements are made. Animals will be cared for by ULAR in a compliant and humane manner.

- **ULAR Staff**

These procedures pertain both to investigators and ULAR staff. Additionally, ULAR will revise the order of rooms to be cleaned in order to minimize the chance of transferring infectious agents to a clean room.

Animals and Tissue Use

- **Breeding Suspension**

For some types of infection, e.g., MHV, breeding will be suspended. Male and female mice must be separated within 24 hours of the quarantine announcement. Investigators or their lab staff are strongly encouraged to separate breeding pairs; however, investigators may also mark the cages for separation by ULAR staff. Following this period, ULAR caretakers will euthanize any neonates born in quarantined rooms and place any breeding males in separate cages if investigators fail to do so.

- **Restriction on Movement of Live Animals**

- a. Live rodents may not be removed from any quarantined room(s). ULAR staff will make provisions to provide appropriate equipment/services to the quarantine rooms to euthanize live animals as necessary.
- b. Scientists and ULAR staff will avoid relocating cages within quarantined rooms.
- c. In the event of a viral outbreak, animals cannot be removed from or enter the affected room(s). New shipments of mice that had already been ordered prior to the quarantine will be considered on a case-by-case basis. In the case of pinworms, mice from approved vendors or mice having approval for transfer can enter the quarantined room and be treated with the rest of the population, but they cannot be removed from the room(s) under any circumstances.
- d. In the event of a zoonotic outbreak, both laboratory personnel and animals will be barred from entering the affected room(s).

- **Removal of Dead Animals And Tissues**

Dead rodents and rodent tissues may be removed from the room and transported to the investigator's laboratory, but must be placed in containers that are double-bagged and sprayed with Clidox before leaving quarantined room. Tissues derived from animals in a quarantined room must not be injected into other rodents. Intestinal, liver and lymphoid tissues are at high risk of being infected with mouse hepatitis virus (MHV). Tissues removed from the quarantined facility should be fixed in formalin or some other cross-linking agent if possible. If tissues are not fixed, but are manipulated in the laboratory, care should be taken to disinfect all contact work surfaces, equipment and supplies. Clidox or a 5% Clorox solution is recommended. (Freezing will preserve virus, not kill it.)

- **Cages**

- a. All dirty cages must remain in the quarantined room, with the filter tops on. They will be removed by ULAR personnel within 24 hours.
- b. Clean cages must be requested from ULAR staff and will be placed in the room. Personnel who have been in a quarantined room may not leave the room and get clean cages from the central suite corridor (BRB) or the clean cage rooms (CRB and Stemmler). Cage requests will be filled within 24 hours of notification of ULAR staff. Personnel may not enter any other rodent facility on campus until they have showered and changed clothes, including shoes.

- **Exporting Animals**

Investigators who wish to export animals to off-site facilities are required to complete a “Request to Send Rodents to Other Institutions” form, which can be found at:

http://www.ular.upenn.edu/forms/Ship_Rodents_to_Institutions_Form.pdf.

Submitting this form to ULAR initiates the exportation process. If an appropriate off-site facility is not available for relocation, the SOM-ARC will identify an external vendor.

- **MHV Guidelines**

Procedures for managing MHV outbreaks in quarantined facilities are detailed in Policy Number RA-ANML-001: Management of MHV-Infected Rooms/Suites in SOM Animal Facilities.

Lifting of Quarantine

- The cessation of quarantine is linked to the verified absence of pathogens following specific diagnostic testing as outlined in this policy.
- The decision to lift the quarantine will be made by the ULAR Associate Director, Diagnostic Services and Rodent Quality Assurance.
- When a quarantine is lifted, ULAR will notify by e-mail the SOM-ARC and all investigators who use the affected room(s). The facility veterinarian(s) and the facility manager, as well as the Associate Director for Husbandry and Facilities, will be notified concurrently.
- After the quarantine has been lifted, the room will revert to normal operational procedures.

V. CONTACTS

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Vice Dean, Research and Research Training, SOM Date