HARVARD MEDICAL SCHOOL | CENTER FOR Comparative Medicine

180 LONGWOOD AVENUE
BOSTON, MASSACHUSETTS 02115
PHONE: 617-432-1288; EMAIL: HCCM@HMS.HARVARD.EDU

Surveillance Program:

Methods:

Through Q1 2025, all mouse colony surveillance was conducted quarterly in all BL-1N animal rooms in HCCM-managed rodent facilities via dirty-bedding sentinels. Outbred sentinel mice (4-6 weeks of age) were purchased from an approved vendor (Taconic Farms or Charles River Laboratories) each quarter and housed two animals per cage, one cage per rack. Cages were changed weekly or bi-weekly, depending on the cage type and facility management plan. Sentinels received soiled bedding from a pooled sample of bedding taken from colony cages on their rack. Fifty percent of sentinels' cage bedding was soiled bedding from the colony animals under surveillance. Surveillance diagnostics were initially carried out on one sentinel animal per rack. Gross necropsy was routinely performed on sentinels as a part of the health surveillance program.

Effective June 2025, all facilities transitioned from live dirty-bedding sentinels to a filter media sample exposed to dirty cage bedding collected from colony animals. The filter media is collected at the end of the surveillance period for PCR testing. One surveillance cage is seeded per rack. For each individual facility, cumulative health reports reflecting 18 months' worth of surveillance testing will contain language documenting the date of the transition from live mice to filter-media sampling of dirty bedding.

Also, effective June 2025, HCCM began transitioning from a quarterly to a trimesterly system. From June through December 2025, individual facility sampling dates will reflect this shift. The transition for all facilities will be complete by December, 2025.

HCCM does test for a list of viral pathogens and *Mycoplasma* as well as for fur mites and intestinal nematodes. HCCM does not perform bacterial cultures as part of the routine quarterly quality assurance surveillance on colony sentinels. HCCM does not test for *Helicobacter* nor does it report results for *mouse norovirus*, both of which, for purposes of importation, can be presumed present in our long-term resident colonies.

HCCM does not test for all pathogens listed each quarter. For a detailed testing schedule, see:
"Pathogen Test Profile and Schedule"

Pathogens tested:

Mouse: Sendai virus, Pneumonia virus of mice, Mouse hepatitis virus, Minute virus of mice, GD-7 virus (Theiler's meningoencephalomyelitis virus), Reo-3 virus, Mouse parvovirus, Epizootic Diarrhea of Infant Mice (EDIM), Mycoplasma pulmonis, Lymphocytic choriomeningitis virus, mouse adenovirus, K virus, Polyoma virus, Ectromelia, C. bovis, intestinal nematodes, fur mites.

Rat: Sendai virus, Pneumonia virus of mice, Sialodacryoadenitis virus, Kilham rat virus, Toolan's H-1virus, Reo-3 virus, Rat parvovirus, Mycoplasma pulmonis, GD-7 virus (Theiler's meningoencephalomyelitis virus), Lymphocytic choriomeningitis virus, mouse adenovirus 1 & 2, C. bovis, intestinal nematodes, furmites.

Refer to the Facility Health Monitoring Reports for further information on testing modalities.

Quarantine Program:

Quarantine is mandatory for animals arriving from non-approved suppliers. This is to ensure that animals introduced to specific pathogen free (SPF) colonies are also free of pathogens.

Methods: Colony animals are maintained in quarantine and are tested for the following agents using fecal PCR and PCR performed on pelage and oral swabs.

Prophylactic Treatments: On arrival, imported animals are treated prophylactically with fenbendazole in the feed for nematodes and Selamectin topical treatments for ectoparasites (fur mites). (*Note:* Hairless animals, i.e. hairless pups and nude mice, are not infested with fur mites and therefore are not treated with topical Selamectin).

Pathogens tested:

Mouse: Fur mites (Myobia, Myocoptes, Radfordia), Pinworm (Aspiculuris & Syphacia), Mouse hepatitis virus (MHV), Mouse parvoviruses (MPV-1-4; MVM), Mouse rotavirus (MRV/EDIM), Mouse rotavirus (MRV/EDIM), Mouse Norovirus (MNV), Theiler's murine encephalomyelitis virus (TMEV (GDVII), Mouse adenovirus (MAV-1 & MAV-2), Sendai Virus, Pneumonia virus of mice, Reo virus, Lymphocytic choriomeningitis virus, Ectromelia virus, Polyoma virus, Hanta (Seoul), Hantaan virus, Cilia-associated respiratory bacillus (CAR Bacillus), *Mycoplasma pulmonis,* and C. bovis.

Rat: Fur mites (Radfordia), Pinworm (Aspiculuris & Syphacia), Rat Corona Virus, Rat parvoviruses (RPV, KRV, RMV, H-1), Theiler's murine encephalomyelitis virus (TMEV (GDVII), Mouse adenovirus (MAV-1 & MAV-2), Sendai Virus, Pneumonia virus of mice, Reo virus, Lymphocytic choriomeningitis virus, Polyoma virus, Hanta (Seoul), Hantaan virus, Cilia-associated respiratory bacillus (CAR Bacillus), *Mycoplasma pulmonis,* and C. bovis.

Results & Actions: Data from the HCCM Diagnostic Laboratory and referral laboratories are assembled. Negative results will qualify animals for transfer out of quarantine to colony housing in the facility requested. As per prior arrangements stipulated in the quarantine process, positive results for excluded, untreatable pathogens will require humane sacrifice of the quarantined animals or removal of the quarantine lot by HCCM from HMS facilities to a commercial vendor for re-derivation.

Facility Husbandry:

Caging system: Individually Ventilated Cages are used in the VSC, Seeley G. Mudd (currently closed) and WAB facilities; static micro-isolators are employed at HSPH. Cages in barrier facilities (VSC, Seeley G. Mudd, WAB, HSPH) are autoclaved after cage wash and prior to cage change.

Food and Water: Irradiated Purina Lab Diet (typically, Pico-Mouse, or Pico-Rodent). Special diets are irradiated. Water is provided in bottles that are changed at least weekly. Reverse osmosis (RO) deionized (DI) water is used at WAB, HSPH, VSC, and Seeley G Mudd.

Cage Changing: Aseptic cage change procedures are employed using laminar flow work stations in all barrier rooms & SPF rooms. The cage change interval is bi-weekly for individually ventilated cages (IVC) and weekly for static micro-isolator cages.

Rack Sentinel Surveillance Interval: Trimesterly for all rodent facilities as of June 2025.