records for compliance with animal use protocols and with Animal Welfare Act regulations, and reports concerns and suggestions to the individual and the PI. Serious ongoing records deficiencies are reported to the Committee on Animal Research. Record all medications, anesthetics, and analgesics used. Review your animal use protocol; if there is a commitment to using a particular medication, you must record its use, no matter how routine it may seem (Tip: Consider modifying your records form to include a check-off box or "time administered" for each routine medication).
MOUSE HEPATITIS VIRUS
What is MHV?
Mouse Hepatitis Virus is a coronavirus, antigenically related to rat coronavirus, bovine coronavirus and human coronavirus OC43. MHV infections in immunocompetent mice are often subclinical. Enteric or respiratory pathology can occur. There is often a large decrease in reproductive success and neonatal mice frequently die. Mice may present with a wasting syndrome as well. Sometimes there are no clinical signs at all.

This is an extremely contagious infection and the most ubiquitous infection in laboratory mice worldwide.

Immunocompetent mice usually run a short course of disease, clear the infection and do not maintain a latent state. Assuming that all of your mice have normal functioning immune systems, that course can be expected. You should note that there are many strains of the virus (over 20) and some viral drift, so mice can become infected with other strains at a later time. Mice with a positive titer have generally already cleared the virus.

MHV strains vary widely in their virulence and tissue tropism. Mice strain also vary considerably in their susceptibility to these MHV strains.

Effects on Research
Of course, the obvious effects include death in neonatal mice, and organ lesions such as enterocitis and hepatitis. In addition, MHV may result in altered immune response and altered susceptibility to other infections.

MHV can also contaminate transplantable tumors and cell lines, including hybridomas.

How is MHV Detected?
Serology screening for MHV and other rodent diseases is performed quarterly. Original testing on serum is by ELISA methods and then confirmed by IFA. Assume a mouse in your animal room has just tested positive for MHV.

How to address an infection
The classic approach to dealing with an single room MHV outbreak is to create a new, clean room for the affected population, especially at the beginning of the quarantine period, and not to use it for any other mouse room for the rest of that day. Husbandry should service this room after all other clean rooms. No items entering the isolated room can be taken to or used on mice in other rooms. In-room activities can continue if they do not expose other animals to risk of infection. Discuss this with LARC veterinarians.

Use of gloves, shoe covers, disposable lab coats, or room-dedicated lab coats, and similar items when entering the room.

Retesting for MHV at the end of isolation, as well as about halfway through the isolation period. The time of isolation usually runs for 10 to 12 weeks, with negative MHV test results needed before lifting isolation.

It is important to note that burn out is not guaranteed to work. (Actually, nothing is absolutely guaranteed, but the other two approaches have the best success.) However, if all steps are taken and an adequate period of time has passed, there is a reasonable chance to eliminate the outbreak.

Continuing research during an outbreak
Please contact LARC veterinarians to determine whether animals can be removed to your lab for tissue collection or other procedures. Reducing the affected population, especially at the beginning of the quarantine period, is encouraged.

Remind your staff that these mice should not come into contact with any other mice or enter areas that other mice may inhabit. Be sure to clean laboratory equipment and working space with an appropriate disinfectant. Removed mice should be euthanized rather than returned to the colony. To reduce risk of spread of infection, we suggest that your staff place any cages holding mice into a clean bag before transporting them to your lab for testing. Traffic flow is especially important when you have mice in both infected and uninfected rooms, in which case, you should always work in the uninfected room first.

When MHV occurs, there are several options to control it. Size of your colony and nature of your research influences the approach selected for your case. With proper procedures, an outbreak can be controlled and effects on your research can be minimized.

Please work closely with LARC veterinarians when facing an outbreak of MHV.