**IACUC Training Exercise #4 – 2019 (Cage sanitation considerations)**

The following exercise may be useful in stimulating discussion regarding compliance with PHS Policy and VA Handbook 1200.07. To facilitate discussion, page 1 of the exercise may be distributed to the IACUC members prior to a meeting. After a few minutes of discussion about the exercise during the meeting, the remainder of the exercise may be distributed to provide ideas for the committee’s consideration.

Tony, the Veterinary Medical Unit (VMU) Supervisor at the Hometown VAMC, met his friend, Sam, for lunch at the Picnic Basket Cafe. Sam was the animal facility manager at the nearby university; during their lunch, Sam told Tony that his IACUC had reservations about only changing mouse cages on individually ventilated cage (IVC) racks every 14 days. The IACUC at Sam’s university contended that solid bottom cages had to be changed weekly because the requirement was stated in the *Guide* (p. 70) “Solid-bottom caging, bottles, and sipper tubes usually require sanitation at least once a week.” Sam was anxious to get the cage sanitation interval settled because he needed to get started on writing the program description for the summer trimester AAALAC site visit. Tony was about to offer some advice when the waitress brought their food.

What do you think Tony was about to advise?

After Sam and Tony had finished their lunch, Tony used his phone to pull up the section of the *Guide* (p. 70-71) addressing cage sanitation (see below). He found the sentence that Sam’s IACUC had referenced (underline added below) and showed Sam the context in which it appeared.

*“Cleaning and Disinfection of the Microenvironment The frequency of sanitation of cages, cage racks, and associated equipment (e.g., feeders and watering devices) is governed to some extent by the types of caging and husbandry practices used, including the use of regularly changed contact or noncontact bedding, regular flushing of suspended catch pans, and the use of wire-bottom or perforated-bottom cages. In general, enclosures and accessories, such as tops,* ***should*** *be sanitized at least once every 2 weeks.  Solid-bottom caging, bottles, and sipper tubes usually require sanitation at least once a week. Some types of cages and housing systems may require less frequent cleaning or disinfection; such housing may include large cages with very low animal density and frequent bedding changes, cages containing animals in gnotobiotic conditions with frequent bedding changes, individually ventilated cages, and cages used for special situations. Other circumstances, such as filter-topped cages without forced-air ventilation, animals that urinate excessively (e.g., diabetic or renal patients), or densely populated enclosures, may require more frequent sanitation.*

*The increased use of individually ventilated cages (IVCs) for rodents has led to investigations of the maintenance of a suitable microenvironment with extended cage sanitation intervals and/or increased housing densities (Carissimi et al. 2000; Reeb-Whitaker et al. 2001; Schondelmeyer et al. 2006). By design, ventilated caging systems provide direct continuous exchange of air, compared to static caging systems that depend on passive ventilation from the macroenvironment. As noted above, decreased sanitation frequency may be justified if the microenvironment in the cages, under the conditions of use (e.g., cage type and manufacturer, bedding, species, strain, age, sex, density, and experimental considerations), is not compromised (Reeb et al. 1998). Verification of microenvironmental conditions may include measurement of pollutants such as ammonia and CO2, microbiologic load, observation of the animals’ behavior and appearance, and the condition of bedding and cage surfaces.”*

Tony explained that the Hometown IACUC had reviewed NOT-OD-12-148, which states “Should statements often involve performance standards. Well-established performance standards are not departures from the *Guide* and need not be reported in the semiannual report to the IO.”  The Hometown IACUC had asked the VMU staff to collect data on the cage environment at 14 days, to see whether a cage change at this interval was adequate to safeguard the health of the mice. The VMU staff conducted ammonia testing and found a small rise in the ammonia level, but it was still well within an acceptable range. At the next IACUC meeting, Tony and Dr. Diaz, the attending veterinarian, presented the ammonia testing data, as well as photographs of the cages throughout the 14 day interval, to the IACUC. The Hometown IACUC approved changing the solid-bottom cages on IVC racks only every 14 days, based on the performance standard established at their facility. The cage sanitation SOP and the quality assurance testing were also approved by the IACUC. Dr. Diaz had followed up with OLAW and was assured that they supported the Hometown IACUC’s actions.

Sam was excited to hear this news and wanted to rush back and explain to his IACUC that he had confirmation that cage changing intervals of 14 days have been approved by OLAW. Tony quickly cautioned Sam that the observations at Hometown VAMC could not be used to support any particular cage changing interval at another institution. Nonetheless, the university could use the Hometown VAMC-IACUC’s approach to determine the appropriate cage changing interval for their animal care and use program.