Development and Utilization of a Multi-Species Database to Analyze the Incidence, Duration, and Reason for Single Animal Housing
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Problem Statement:
AAALAC International recommended we further expand and develop our social housing policy to better understand incidence, duration, and the reasons for animals being single-housed in our facilities. By analyzing our data, we are gaining an understanding of where the single housing of animals occurs in our facilities and are able to refine our policies to create a culture of social housing for animals wherever possible.

Description of the research:
Using a revised version of our previous "IACUC Single Animal Housing Alert" card we collected data on single housing from October 1, 2017 through September 30, 2018. The "IACUC Single Animal Housing Alert" card documents: (1) date single housing began; (2) date single housing ended; (3) investigator; (4) protocol number; (5) reasons for single housing the animal, including aggressive, non-compatible, breeding (breeder/female close to parturition), last animal from cohort/only animal of one gender weaned from litter/single animal order, fasting/post-operative period/quarantine, health reason determined by veterinary staff, or experimental reason (see approved protocol for specific details). The collected data showed a total of 434 instances of single housing in our facility of a variety of species, including mice, rats, rabbits, and pigs. In decreasing order, the majority of single-housed animals were mice (n=398), with a median of 12 days (range 1 to 206 days); pigs (n=29), with a median of 6 days (range 1 to 38 days); rats (n=5), with a median of 1 day (range 1 to 65 days); and rabbits (n=2), with a median of 5 days (range 4 to 6 days). The average mouse cage census for this period was 1,425 ± 97 cages; with an estimated individual mouse population of 5,000 animals, showing that approximately 8% of the mouse colony was single-housed during this time period. In decreasing order, the major reason for single housing was last animal from cohort/only animal of one gender from litter/single animal order (n=323); breeding (male breeder/female close to parturition) (n=74); aggressive, non-compatible (n=23); experimental reason (see approved protocol for specific details) (n=9); fasting/post-operative period/quarantine (n=5); and no animals (n=0) were single-housed for health reasons determined by the veterinary staff. These data were evaluated by the IACUC during the semi-annual inspections to better understand the reasons for single housing animals, and review policies to help facilitate social housing of all animals, when possible. This system was simple, straight-forward, and easy for the research staff to comply with, which provided valuable data for the IACUC to evaluate trends in single housing. Future strategies include converting this from a cage-card-based-system to an electronic system.