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Euthanasia records for individual animals

The IACUC semiannual inspections at Great Eastern University were opportunities to evaluate a part of the animal care and use program and also to educate investigators, when needed, on issues concerning animal use and regulatory compliance. Therefore, it seemed reasonable to Sheila Manes, a new IACUC member, to discuss euthanasia records with investigators and their staff members. To Manes' way of thinking, euthanasia records were no different than anesthesia or analgesia records and should be part of the laboratory's research records. She believed that if a drug was used, then there should be a record of the concentration and volume administered to the animal, along with a comment on its observed effectiveness. To her surprise, however,

both her co-inspector and the research laboratory personnel said that they only recorded the date of euthanasia because all the methodological details were included in their IACUC-approved protocol.

Manes and her co-inspector quickly looked at the pertinent federal regulations, including the *Guide for the Care and Use of Laboratory Animals*¹, and were unable to find references to the type of records required for euthanasia of animals. After the inspection, they tried to find specific information but failed. Even the *AVMA Guidelines for the Euthanasia of Animals*² offered little help, indicating only that strict records are needed for the use and storage of controlled substances. Indeed, the laboratories at Great Eastern had records of the total amounts of controlled substances

received and withdrawn when they were used for euthanasia but not of the amounts given to specific animals.

Do you think that animal-specific records are required for substances used for euthanasia? Does your response depend on the type of substance used? For example, what type of records (if any) would you recommend for rodents euthanized with sodium pentobarbital? What type of records would you recommend for rodents euthanized with carbon dioxide, individually or in groups?

1. Institute for Laboratory Animal Research. *Guide for the Care and Use of Laboratory Animals* 8th edn. (National Academies Press, Washington, DC, 2011).
2. American Veterinary Medical Association. *AVMA Guidelines for the Euthanasia of Animals: 2013 Edition* (AVMA, Schaumburg, IL, 2013).

RESPONSE

Ensure animal welfare

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As I read this case report and formulated my initial thoughts, I could hear researchers from across the country in my subconscious grumbling about 'regulatory creep' and excessive paperwork pulling their staff away from the important work of science. Certainly any new regulatory or record-keeping requirements are not necessary but simply an attempt to ensure job security for regulatory bureaucrats. And in this age of USDA enforcement, decreasing funding opportunities and increased institutional pressure on researchers, concerns about increasing demands on researchers' time are warranted.

Therefore, without the backing of a clear requirement in the *Guide for the Care and Use of Laboratory Animals*, the Animal Welfare Act or the Public Health Service *Policy on Humane Care and Use of Laboratory Animals*, our regulatory recommendations need to be carefully thought out and clearly presented to gain the support of our clients, the researchers.

The ultimate goal of record-keeping shouldn't be to stay in compliance and out of regulatory trouble but to ensure the humane care and use of animals and the quality of the data and analysis. Accurate record-keeping addressing euthanasia ensures that any experimental differences that may be associated with the euthanasia can be accurately accounted for. Certain pathology findings commonly associated with different euthanasia methods, such as splenomegaly (barbiturates), intranasal and laryngeal hemorrhage (carbon dioxide), blood in the upper airways (decapitation) and myocardial necrosis and intrapleural hemorrhage (cardiac puncture), can be accurately explained by careful recording of euthanasia techniques. Record-keeping also allows labs to evaluate the performance of the euthanasia procedure in objective measures, as opposed to relying on subjective assessments based on memories, possibly from multiple lab members.

Accurate record-keeping is also important for researchers and institutions to remain in compliance with the various agencies monitoring animal welfare in biomedical research. For euthanasia of nonhuman primates (our most visible and closely

scrutinized species), an institution would be flirting with disaster by not including the specifics of the euthanasia and instead relying on the statement that all the methodological details were included in the IACUC-approved protocol. I expect that no USDA inspector would accept this as documentation of the administration of appropriate anesthesia or analgesia, and, as the risks of animal suffering during inappropriate euthanasia are equal to the risks of surgery, the inspector should not accept this lack of record-keeping for euthanasia. Record-keeping also provides the laboratory an extra layer of protection should any questions or concerns arise in the future.

The benefits described above also apply to the euthanasia of mice, but the issue is complicated by the large numbers of mice that may be used and the lack of individual records for many mice used. Despite these difficulties, labs should keep general records that can accurately identify the euthanasia procedure for each mouse and that note any atypical events during the procedure in order to ensure the quality and accuracy of the results and the humane nature of the euthanasia.