Perioperative and Anesthetic Records for Rodents

The Guide for the Care and Use of Laboratory Animals (2011) confirms that documenting appropriate care of animals undergoing surgery or other anesthetic periods is an important component of the “medical record” (see pertinent quotes below). The Guide also endorses the American College of Laboratory Animal Medicine (ACLAM) Public Statement: Medical Records for Animals Used in Research, Teaching and Testing, which specifically addresses “Records of Sedation or Anesthesia and Peri-surgical/Peri-procedural Care for Survival and Terminal Procedures” (citation listed below). This Information Sheet was developed to outline the IACUC and RRF minimal expectation for records used to document perioperative and anesthesia in rodents.

Records must be created to document surgical (survival or non-survival) interventions. Induction of and recovery from long-term anesthesia should also be recorded. The record should include the ability to identify individuals creating the record (e.g., initialed entries if multiple individuals are involved). Handwritten records should be legible to someone other than the writer. The record may refer to information provided in the IACUC-approved Proposal as long as there is sufficient information in the Proposal to specifically re-create the event or action. Note: a log/sheet that documents care for a group of animals is acceptable.

Required Information

- **Basic information**
  - Principal Investigator and Proposal number
  - Name of surgeon and anesthetist (if different)
  - Animal identification (if applicable) and initial body weight
  - Date and time of surgery/procedure

- **Procedural information**
  - All drugs given (name, dose, route, date and time)
  - Brief description of the procedure
  - A checkbox or series of checkboxes confirming adequate anesthetic depth (e.g., reflexes or lack of response to stimuli) and vital signs observed at least every 15 minutes from procedure initiation until recovery from anesthesia. Note: intraoperative monitoring does not need to be recorded in “real-time.” Careful attention to aseptic technique is of primary importance.
  - Date and time of anesthetic recovery (e.g., sternal recumbancy, ambulation)

- **Post-procedural information**
  - All drugs given (name, dose, route, date and time)
  - Postoperative observations, including dates, times, as applicable
  - Confirmation of suture/clip removal (if applicable)
  - A description of any complications or unexpected findings
**Recommended Information**

Other information that may be useful includes records of, or checkboxes confirming:

- Appropriate surgical area conditions for surgery (surgical site, body heat support)
- Sterile technique (instrument preparation, surgeon garb)
- Description of reflexes used to check anesthetic depth (e.g., toe pinch, tail pinch, change in heart rate from baseline)
- Description of the vital signs observed (e.g., heart and/or respiratory rate, mucous membrane color)
- Other post-operative care provided (e.g., use of soft food, temperature support, special bedding, return to social housing)

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**Pertinent Quotes from the IACUC Policy, “Performing Rodent Survival Surgery”**

- An assessment of anesthetic depth and vital signs, such as respiration rate and depth, mucous membrane color, heart rate, should be conducted at least every 15 minutes. Records of this assessment should be maintained…Intraoperative monitoring should be recorded (see: Rodent Survival Surgery Peri-operative Monitoring form).”
- To assist in the oversight process, the date(s) of surgical procedures must be indicated on rodent cage cards. This will not only serve to remind research staff when suture/clip removal is necessary, but also allow monitoring and reporting by the RRF Animal Husbandry Staff. Cage card notation may simply be an inscription such as “Sx – XX/XX/XX,” or may be an indication of the procedure itself (e.g., “Appendectomy – XX/XX/XX”).
- Survival surgery on all species requires that written documentation exist to verify that the procedures described in the animal use Proposal are in use, including anesthetic monitoring and analgesic administration. Such documentation may be recorded in individual animal records or a laboratory notebook. If the notebook is not maintained with the animals, then it must be readily available for review by the IACUC, RRF Veterinary Care staff, and regulatory agencies. Records should include notation of all surgical procedures, medications administered, relevant observations, and other peri-operative care procedures. The IACUC has created a Rodent Survival Surgery Peri-Operative Monitoring form that can be used or modified as appropriate.

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**Pertinent Quotes from the Guide**

- Medical records are a key element of the veterinary care program and are considered critical for documenting animal well-being as well as tracking animal care and use at a facility.
- Careful monitoring and timely attention to problems increase the likelihood of a successful surgical outcome. Monitoring includes routine evaluation of anesthetic depth and physiologic functions and conditions, such as body temperature, cardiac and respiratory rates and pattern, and blood pressure, and should be appropriately documented.
- An important component of postsurgical care is observation of the animal and intervention as necessary during recovery from anesthesia and surgery. Appropriate medical records should also be maintained.
- Agents that provide anesthesia and analgesia must be used before their expiration dates and should be acquired, stored, their use recorded, and disposed of legally and safely.
- Recurrent or significant problems involving experimental animal health should be communicated to the IACUC, and all treatments and outcomes should be documented.
- Examples of effective [post-approval] monitoring strategies include…review of anesthetic and surgical records.

**See also:** ACLAM Medical Records Committee (Karl Field [Chair], Michele Bailey, Larry L. Foresman, Robert L. Harris, Sherri L. Motzel, Richard A. Rockar, Gaye Ruble, and Mark A. Suckow). 2007. Medical Records for Animals Used in Research, Teaching, and Testing: Public Statement from the American College of Laboratory Animal Medicine. *ILAR Journal* 48: 1, 37-41.