



College of Veterinarians of British Columbia

Professional Practice Standard: Small Animal Anesthetic Monitoring¹

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This College publication describes a mandatory standard of practice. The *Veterinarians Act* in section 52 provides that a failure to comply with a standard may be investigated.

Preamble

This Standard is intended to help minimize anesthetic morbidity through earlier detection of pathophysiological conditions such as hypotension, hypoxemia and severe hypercapnia.

Minimum Requirements

The following are the CVBC's minimum requirements for anesthetic monitoring in small animal practices.

1. Circulation

Determination of adequate circulatory function requires:

- Continuous awareness of heart rate and rhythm,
- Gross awareness of peripheral perfusion (pulse quality, mm colour, CRT), and
- Measurement of blood pressure. (There may be exceptional circumstances which preclude measurement)

Heart rate must be recorded at **approximately 5-minute intervals**.

Values must be assessed and recorded at appropriate (approximately 5-minute) intervals. Note that appropriate intervals may be much less than every 5 minutes if the situation dictates.

There may be some situations where these assessments/modalities are temporarily impractical (e.g. movement of an anesthetized patient to a different area of the hospital).

2. Blood Gases

Determination of adequate oxygenation of the patient's arterial blood requires:

- Pulse oximetry,
- Arterial blood gas analysis of PaO₂ (if available and more appropriate for critically ill patients), **or**
- Capnography

¹ Council approved the 'Professional Practice Standard: Small Animal Anesthetic Monitoring' on February 19, 2019. It is available on the CVBC website (www.cvbc.ca) under Resources > Bylaws, Standards & Policies.

Values must be recorded at **approximately 5-minute intervals**. Note that appropriate intervals may be much less than every 5 minutes if the situation dictates.

There may be instances where the nature of the procedure being performed (at least temporarily) precludes the use of a pulse oximeter.

3. **Ventilation**

Respiratory rate must be recorded at **approximately 5-minute intervals**. Note that appropriate intervals may be much less than every 5 minutes if the situation dictates.

4. **Temperature**

Temperature must be recorded during the pre-anesthetic examination, **within 5 minutes prior** to the commencement of surgery, and **immediately** post-operatively. The temperature must be taken and recorded intra-operatively **every 15 minutes**, unless conditions prohibit it.

Also see the CVBC's *Professional Practice Standard: Thermoregulating Devices*.

5. **Medical Record Keeping**

- a) Record ALL drugs administered to each patient in the peri-anesthetic period and in early recovery, noting the dose, time, and route of administration, as well as any adverse reaction to a drug or drug combination.
- b) Record all other relevant details, including: endotracheal tube diameter, bp cuff size, and IV catheter gauge
- c) Record monitored variables on a regular basis (approximately every 5 minutes) during anesthesia.
- d) Record heart rate, respiratory rate, and temperature at intervals appropriate to the patient's status in the early recovery phase (15-60 minutes after extubation).
- e) Document any adverse events or unusual circumstances for reference if/when the patient requires future anesthesia.

COMMENT

A complete record of events meets the CVBC's Medical Record Keeping Standards. In addition, thorough anesthetic records will:

- enhance recognition of significant trends or unusual values for physiologic parameters and allow assessment of the response to intervention, and
- maintain a legal record of significant events related to the anesthetic period.

6. **Recovery Period**

Monitoring in recovery must include evaluation of:

- a) pulse rate and quality,
- b) mucous membrane color,
- c) respiratory pattern,
- d) signs of pain, and

e) temperature

at a frequency determined by the status of the individual patient.

7. **Personnel**

A responsible and competent person must check on the patient's status at regular intervals (no longer than every 5 minutes) from induction to recovery. Note that "regular intervals" may be much less than every 5 minutes if the situation dictates. The responsible person must contemporaneously record the parameters outlined in this standard.

The surgeon may, if necessary, act as the anesthetic monitor, but a second individual must be present to contemporaneously record the parameters and make the adjustments directed by the surgeon (unless the procedure is such that the surgeon is able to make the recordings and adjust the anesthesia independently).

8. **Sedation without General Anesthesia**

If a patient is sufficiently obtunded (sedated or debilitated) to lose control of protective airway reflexes, it should be monitored.

Intermittent monitoring of basic respiratory and cardiovascular parameters must be routine in the heavily sedated animal. Supplemental oxygen, an endotracheal tube, and materials for IV catheterization must always be readily available. Particular attention must be paid to brachycephalic breeds that are at increased risk for airway obstruction under heavy sedation.

For anesthetic procedures which take less than 10 minutes, less than strict adherence to these minimum requirements may not be considered a breach of this Standard.

The Council acknowledges that this Professional Practice Standard does not address the delegation and supervision of anesthetic monitoring. These requirements are currently prescribed in Part 4 of the CVBC bylaws (sections 259-266). A Standard cannot impose requirements that are contrary to the bylaws.

Registrant consultation of the bylaws is projected to occur later in 2019. Following consultation, bylaw revisions will be presented to registrants for vote and may result in a review of this Standard.

Link to Resources:

There are many standard anesthetic monitoring forms available online for download. The CVBC recommends that all registrants use a version of these forms, which allow the entire anesthetic period to be memorialized accurately and with greater ease.

Examples of anesthetic monitoring forms may be found here:

http://www.avtaa-vts.org/refDownload/view/57359_SiteSearch.pml?refId=56821

VIN members: <https://www.vin.com/members/cms/project/defaultadv1.aspx?pId=15&catId=27>

*This Professional Practice Standard is adapted and modified from the [American College of Veterinary Anesthesia and Analgesia \(ACVAA\)](#)'s *Small Animal Monitoring Guidelines* (2009)*