



Anesthesia

Banfield Pet Hospital is focused on creating a practice that places the delivery of quality veterinary care at the heart of everything we do. We strive to understand the needs of pets and clients to deliver safe, high-quality healthcare to every pet, every time.

The quality of our anesthesia practices is built on a solid foundation of evidence-based standards and protocols, sound operational practices, a focus on patient safety and robust team member training and development programs.

Having clear standards is key to ensuring that we deliver safe care and that we are able to continuously improve our processes and systems.

- **Clinical Essentials:** Standards of practice that constitute the minimum acceptable level of care. Practice below this level of care is below expectations. Failure to provide at least this level of care, or clearly document sound reasons for not providing this care, can result in disciplinary consequences.
- **Best Practices:** Standards of practice that meet or exceed an expected level of care and encompass a scale of care from “desirable” to “aspirational.”

Our commitment to the continuous improvement of our anesthesia standards and protocols supports our belief that we can create a better world for pets through the delivery of high-quality veterinary care.

CLINICAL ESSENTIALS

GENERAL

All associates must comply with their state practice acts

Veterinarians or trained associates under the direct supervision of a veterinarian perform anesthetic procedures²

Sedate or anesthetize brachycephalic pets with brachycephalic-specific protocols and monitoring^{6, 10, 15, 23}

Offer referral of critical or unstable pets when appropriate and in the best interests of the pet^{1,3}

All associates understand human health hazards related to anesthesia^{4,7}

A CPR team is available during normal hours of operation^{2, 25}

Do not administer vaccines to an anesthetized patient unless there is a significant pet or associate safety concern to vaccinating a fully conscious pet³³

Document all perianesthetic physical examination findings, changes in physical status and anesthetic procedure complications in the medical record⁷

Administer all anesthetic medications “to effect” and do not exceed maximum drug dosages^{6, 7, 27}

Place an IV catheter and T-port with every general anesthetic event^{2, 7}

Administer IV fluids with every general anesthetic event lasting >10 minutes unless patients are hypovolemic²

Place an endotracheal tube with every general anesthetic event²

Assisted ventilation is available for every anesthetic procedure^{2, 21}

EQUIPMENT

Utilize the Anesthetic Machine Checklist for every general anesthetic event^{6, 17, 21}

A crash cart containing emergency drugs and equipment is readily available, in a designated place, portable, clearly labeled and appropriately stocked at all times^{2, 25}

Thoroughly clean, disinfect, dry and store personal anesthesia equipment in a manner that prevents contamination prior to each use^{7, 21}

Anesthetic machines and equipment are tested and maintained on a regular basis and a permanent log of maintenance is kept. Anesthetic events are postponed until all equipment is fully functional^{7, 16, 26}

The attending veterinarian ensures all equipment is working correctly prior to proceeding with premedication and anesthesia⁶

PREANESTHETIC

The attending veterinarian chooses protocols and determines specific drug dosages⁶

Assign an ASA status to each pet undergoing general anesthesia and address status appropriately as part of the preanesthetic evaluation. Discuss increased risks of anesthesia for pets with an ASA status of >III with owners and postpone, cancel or refer anesthetic procedures when indicated^{3, 7, 8, 10, 15, 24}

Pre-emptively identify patient-specific factors that may influence anesthesia (*e.g.*, signalment, adverse drug reactions) and adjust protocols appropriately⁷

Obtain and review clinical pathology data prior to general anesthesia. Verify, document and address all clinically significant abnormalities prior to premedication, communicate to the team, and discuss with the client. Dismissal of abnormal results is not permitted^{6, 7, 18, 24}

Perform a thorough physical examination prior to any anesthetic event and obtain a current and accurate weight. Verify, document and address all clinically significant abnormalities prior to premedication, communicate to the team, and discuss with the client. Dismissal of abnormal findings is not permitted^{6, 7, 24}

The attending veterinarian reviews the medical history of each pet prior to any anesthetic procedure^{6, 9}

Perform a physical examination (including all cardiovascular parameters) post-premedication and pre-induction for every general anesthetic event^{7, 24}

Identify pets at greater risk for developing hypothermia (*e.g.*, poor body condition) and institute pre-emptive warming measures^{21, 31}

Address and resolve physical examination abnormalities that may negatively impact anesthesia (*e.g.*, dehydration, obesity) prior to anesthesia when possible, especially with elective procedures⁶

Keep all pets that have been administered preanesthetic medication under visual observation at all times⁶

INDUCTION & INTUBATION

Coat endotracheal tube cuffs with sterile, water soluble lubricant^{7, 21}

Fill endotracheal tube cuffs to the amount required to provide a complete seal and deflate prior to removal (unless otherwise directed by veterinarian)²¹

Keep endotracheal tubes in place until protective, vigorous laryngeal reflexes return without applying noxious stimuli⁷

If patient repositioning is necessary, disconnect intubated pets from the breathing circuit prior to movement and reconnect after attaining proper positioning⁷

MONITORING & RECOVERY

Assign at least one hospital associate with the **sole** responsibility of dedicated, continuous patient monitoring and recovery to every immobilization and general anesthetic procedure. If there is not a trained, dedicated associate, the procedure must be rescheduled^{3, 6, 7, 10, 21}

The responsibility for patient monitoring is relinquished only by transfer to another trained team member with their consent²

Identify and address immediate and postoperative pain²

Continuously measure temperature, heart and respiratory rates, blood pressure, ECG, SpO₂, end-tidal CO₂ (with capnography capability). Document at a minimum of every 5 minutes (or more frequently as clinically indicated) for every general anesthetic event from the time of induction until full recovery^{7, 21, 24}

Identify, verify, communicate to the anesthesia team and address abnormal patient monitoring parameters and trends. Presumptions of malfunctioning equipment and dismissal of abnormal parameters are not permitted^{6, 7, 21, 31}

Abort, as able, elective anesthetic procedures in cases of worsening or refractory patient physical parameters (e.g., hypotension, hypothermia)^{6, 24}

Keep all patients recovering from an anesthetic procedure under visual observation at all times until full recovery^{6, 24}

A final postanesthetic evaluation of each patient is performed by the veterinarian prior to discharge from hospital^{6, 7}

IV CATHETER & MULTI-DOSE VIAL USAGE

Aseptically place a sterile IV catheter and T port for every patient receiving IV fluids^{12, 14, 20}

Mark fluid bags with date, time and all additives when initially accessed or when administration sets are attached (fluid bags are spiked), using the available label¹³

Use aseptic technique when accessing patient IV lines, multi-use vials and fluid bags^{12, 14, 20}

Change extension sets between each patient undergoing general anesthesia. Use a new, sterile extension set for each patient receiving IV fluids^{12, 13}

Discard ALL used fluid bags and administration sets at the end of the day^{12, 32}

Discard fluid bags and administration sets immediately if contamination is noted or suspected and replace with new²⁸

Discard fluid bags and administration sets upon discontinuation of fluid therapy and replace with new in ANY of the following^{11, 14, 20}

- If backflow of blood into any portion of the fluid line is noted
- After fluids have been used on a pet with a known infection
- If any supplemental therapeutics have been injected into the bag or administration line
- If fluid bags and administration sets are used to deliver a fluid which may promote microbial growth

Clamp administration sets closed in between procedures (within day of use window) and place new, sterile needle with cap in place over end of administration set. Hang administration set when not in use so as to not contact patients, tables, or other materials^{13, 14, 28}

For fluid bags and administration sets used for SC fluid administration^{12, 32}

- Discard immediately if any signs of gross contamination
- Use a new extension set and needle for each patient
- Discard at end of day

Multi-dose vials^{11, 14, 20, 28}

For medication/dilution/reconstitution:

- Use aseptic technique
- Discard immediately if any signs of gross contamination
- Obtain a new, sterile syringe and needle for each use
- Discard syringe and needle after each use

If fluid bags used for medication dilution, reconstitution, or preparing flush solution:

- Follow requirements for multi-use vials
- Discard fluid bag at end of day

BEST PRACTICES

GENERAL

Designate dedicated anesthetic induction and recovery areas^{7, 21, 26}

Review anesthetic human safety hazards annually with all hospital associates²

Review current CPR recommendations and provide CPR training at least annually to all hospital associates^{2, 25}

Use a new fluid bag and fluid administration set for each pet, regardless of route of fluid administration. Identify each bag with pet name, in addition to date and time^{12, 13, 14, 20, 28, 32}

EQUIPMENT

Utilize esophageal instrumentation to provide further means of patient monitoring⁷

PREANESTHETIC

Identify, discuss and address genetic conditions that may impact anesthesia⁷

Provide pre-oxygenation to all pets who will benefit from and tolerate the procedure^{7, 18}

Utilize the preanesthetic timeout checklist for every general anesthetic procedure⁷

MONITORING & RECOVERY

Train all hospital associates in the appropriate use of pain scales and recognizing pain in pets. Bring concerns of patient analgesia to the attending veterinarian's attention. Review pain recognition training annually^{5, 16}

Utilize advanced analgesic therapies (soaker catheters, spinal blocks, etc.) appropriately to contribute to pet safety and comfort¹⁶

Encourage and pursue additional training in advanced anesthetic administration and monitoring for hospital associates⁷

Utilize and follow an anesthetic recovery form with all general anesthetic procedures^{3, 6}

References and suggested reading for *Clinical Essentials and Best Practices*:

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