

# **THERE ISN'T A PANIC BUTTON: IMPROVE YOUR PRACTICE'S EMERGENCY RESPONSE**

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Regardless of how many emergency cases a practice sees daily or weekly, most veterinary practices can benefit from a standardized approach to handling emergency patients. It is often said that “time is trauma” and “prior planning prevents poor performance,” and this is nowhere truer than in the emergency setting. Technicians and customer service personnel are in a unique position to drive innovation and improvement in triage, intervention, and client communication, thereby improving patient outcomes.

Triage of the emergent patient begins over the telephone. The majority of our first contacts with clients are via telephone, making it important that information be clear, concise, and correct. It is recommended that all practices maintain an emergency call log to document call volume, client contact information, and case details. It is equally important that any staff member interacting with clients via the telephone be mindful of the requirements for a valid veterinarian-client-patient relationship in their state or province so that no diagnosis or treatment recommendations are made outside that relationship. For better or worse, staff must rely on the client's knowledge base, experience, and description to make our decisions, and for this reason, a good rule to follow may be that if the client is worried enough to contact the clinic, they are probably worried enough to bring the pet to be evaluated. Required information for all calls includes the pet's signalment (age, breed, and sex) along with the client's name, telephone number, and location. The current complaint should be logged along with a brief overview of the problem (onset, duration, severity) and any care rendered by the client, breeder, or regular veterinarian.

If gastrointestinal signs are the complaint, staff should verify whether diarrhea is present, vomiting, or both; if vomiting is noted, verification that it is productive should be established. The character and color of vomitus and/or diarrhea should be noted along with the presence of blood. Staff should inquire about the patient's level of pain and if abdominal distention is noted. For patients in respiratory distress, the client can check the oral mucous membranes and relay that information along with any other details, such as if coughing or respiratory distress are noted. For calls involving possible toxicity, staff should establish what may have been ingested, the approximate quantity, and time of ingestion or application if topical. If the pet is bleeding, it should be noted from where and how copious the hemorrhage seems to be. Similarly, in cases of trauma, staff should ask when the trauma occurred and what type (blunt vs. penetrating) while noting the animal's level of consciousness (LOC) and pain. If a client calls with a complaint of whelping difficulty, staff should establish how long the animal has been in labor, how many young have been delivered (making note of any stillbirths), the dam's breed, and if a neonate is visible in the birth canal. For urinary emergencies, it is important to establish when the animal last urinated and if the client thinks the animal can pass any urine at all.

Once this information has been gathered, the location of the clinic along with directions and any pertinent information about exam fees should be relayed. No diagnosis should be given over the telephone, but staff should try to reassure clients and remain calm. Once the call is complete, the rest of the team should be notified that an emergency is en route—if an estimated arrival time is available, it is always helpful. Supplies can be prepared based on the type of emergency. Once the patient arrives, it should be evaluated ASAP. This includes unexpected walk-in cases. Ideally, a trained technician would be the first staff member to examine the patient, but customer service personnel can also be trained in basic triage. “Triager” is a French verb that means “to sort.” The idea came to prominence following armed conflicts in the late 19<sup>th</sup> century and became standard during World War I. Patients are sorted based on urgency and larger risk to life. There are many triage systems employed in human emergency medicine, including those that feature numerical or color-coding that correlates to severity of injury and projected wait time. There is no standardized triage system in veterinary medicine, although several have been proposed. In general, triage systems can be specific to a facility and reflect the patient population, staffing, and needs of the hospital. Whatever system is adopted should be well understood by staff and applied consistently.

Some conditions require immediate treatment. These include cardiopulmonary arrest (CPA), active seizures, collapse, hemorrhage, respiratory distress, or stuporous/obtunded mentation. These patients should be moved to a ready area as soon as possible while another staff member establishes consent to treat and a code status while giving a very broad estimate for the cost of care. Staff should be empathetic but firm and reassure clients that treatment will begin immediately; they should also be clear that a doctor will speak with them as soon as the patient is more stable. Rapid consent for emergency care will streamline treatment and prevent the DVM or staff from getting “bogged down” in an exam room explaining procedures. A short, concise document can be prepared that outlines the need for intervention, type of intervention that may be required, and estimated costs. It is optimal to state the potential need for further treatment and expense and to provide a space for the client to select a code status (CPR or DNR). This document can be kept in the reception area, presented to clients with pets presenting in an unstable or critical condition, and retained in the pet's medical record in case of dispute. Once consent is established, it is imperative that a doctor speak to the client at the first available opportunity to update them about their pet's condition. Minutes can feel like hours when a client is in emotional distress. If the practice is an open one, the client will be present through most stabilization measures and update may not be needed.

The primary survey assesses those body systems most necessary to sustain life: cardiovascular, respiratory, and neurologic. Assessment of these systems yields rapid information about perfusion, shock, and oxygenation. The technician should evaluate heart rate, pulse rate, pulse quality, and synchronicity of the pulses to detect deficits. A respiratory rate should be calculated and respiratory effort assessed along with auscultation of all lung fields and examination of the oral mucus membranes and capillary refill time (CRT). The patient's neurologic function can be rapidly evaluated by noting LOC and ambulation. Some clinicians recommend the inclusion of the urinary system in the primary survey, and some also include FAST ultrasound of the thorax and abdomen in their primary survey (Focused Assessment with Sonography for Trauma). Following the primary survey, action is taken to resolve or correct abnormalities noted in these systems. It may include oxygen via flow-by, mask, or cage; establishing vascular access via IV or intraosseous catheter; administration of fluids or drugs, decontamination of intoxicated patients, abdomino- or thoracocentesis, pericardiocentesis, or CPR. Once the primary survey and early treatment is rendered, the secondary survey can occur. This is a nose to tail, thorough examination of the patient including all body systems (eyes/ears/oral cavity, gastrointestinal, genitourinary, neurologic, integumentary, lymphatic, and musculoskeletal systems) plus a re-evaluation of the cardiovascular and respiratory systems.

All clinics that see emergency cases should have a dedicated ready area for the evaluation and treatment of these cases. Ideally, it will be centrally located, brightly lit, with sources of oxygen, electricity, and water, and with enough space for multiple staff members to work on a single patient simultaneously. This area should also contain any equipment or supplies needed in an emergency. Common items include the crash cart or box, catheter and fluid supplies, supplies for intubation, supplemental oxygen, and tracheostomy; supplies for gastric lavage, abdominocentesis, thoracocentesis, and suction; the defibrillator, laryngoscopes and light sources, clippers, monitoring devices (ECG, pulse oximeter, capnography, Doppler or oscillometric blood pressure unit), and any forms used by the practice (consent to treat, patient history and vitals forms, CPR flowsheets, etc.).

Whether the practice has a crash cart (a large rolling tool cart with multiple drawers that lock is a good choice) or a crash box (a tackle or tool box) will depend on the needs of the practice. Smaller boxes are more portable, but only hold essentials and may not meet specifications for controlled drug security and handling. Large carts contain more supplies and are more secure, but may be less portable. No matter which style is adopted, all staff should be trained in how to use the equipment in the area safely, including defibrillators and monitoring devices. A monthly/weekly/daily schedule of maintenance and training should be organized to ensure that the cart is fully stocked, all drugs and supplies are in date, and that staff can use them confidently. It is helpful if each drawer of the cart is labeled with the contents and divided with foam inserts, silverware trays, modular storage bins, or food storage containers. Food storage bags can also be used in a tackle box to separate supplies. Supplies should be organized by type. Recommended drugs include atropine, atipamezole, calcium gluconate, epinephrine, flumazenil, lidocaine, naloxone, sodium bicarbonate, and vasopressin, but any other drugs commonly used in an emergency can be included. Stock and expiration should be checked frequently and inventory re-stocked as needed. DEA requirements regarding the storage and inventory of controlled drugs and their logs should be met. It is important to have a current emergency drug dosing guide placed prominently in the ready area (posters are available through the RECOVER initiative).

Every crash cart should contain multiple sizes of endotracheal tubes, laryngoscope handles and blades with functioning bulbs, tube ties, stylets, and inflation syringes along with emergency tracheostomy supplies. A ready oxygen supply should be within reach (Ambu bag, anesthesia machine, central oxygen regulator or oxygen concentrator). A complete range of intravenous catheter gauges and lengths, spinal needles, fluid lines, needles, syringes, supplies for sterile venous cutdown, and t-ports enable rapid vascular access via venous or intraosseous routes. It is helpful to stock 1-2 liters of common isotonic crystalloid fluids in the cart with access to hypertonic saline, blood products, pressure infusion bags, and infusion pumps. Additional equipment includes orogastric tubing, red rubber catheters, a light source, mouth gags, and lavage pump. Carts/boxes should be checked and stocked during every shift and after every emergency event. Supplies should not be removed from the cart for other purposes. Carts that lock prevent this, and many practices employ breakable zip ties or tape locks to alert staff that the cart has been opened.

Vascular access is the patient's lifeline. In most cases, the shortest length, largest diameter intravenous catheter that the vessel will accommodate should be selected. Technical staff should become confident catheterizing all peripheral vessels and not just the cephalic veins. If percutaneous placement is not successful within 3-5 minutes or is not possible, a venous cutdown or intraosseous (IO) catheter placement should be undertaken. Multiple good resources exist detailing the procedure for both emergency venous cutdown and IO catheter placement. It is important to remember that both cutdown and IO catheters are considered to be short-term measures that permit fluid resuscitation until an IV catheter can be placed. In the case of venous cutdowns, the site should be considered contaminated since there is rarely time for a full aseptic prep. Risks of IO catheterization include infection, extravasation of fluids/drugs, hematoma, or fracture in very small patients. In pediatric patients with softer bones, a hypodermic or spinal needle is commonly placed as an IO catheter, and common sites include the femur, ilial wing, humerus, and tibia. Battery powered drivers and specialty catheters are used for IO placement in adult animals with mature bone. The most common site is the femur. A catheter placed via cutdown or IO should be removed as soon as alternative vascular access is attained.

One of the most significant developments for technicians in emergency medicine has been the standardization of CPR guidelines through the RECOVER initiative (Reassessment Campaign on Veterinary Resuscitation), an evidence-based project that provides consensus statements, CPR algorithms, technical instruction, guidance on preparedness and recognition of arrest, guidelines for post-resuscitation care, and CPR log sheets. It is imperative that any technician working in the emergency environment be educated about the most current CPR techniques, including recognition of at-risk patients, survival statistics, psychomotor skills, and leadership roles. Basic life support (BLS) has 4 components: recognize arrest, start chest compressions, begin airway management, and start manual ventilation. The target rate of chest compressions is 100-120 beats per minute regardless of patient size/species. Breaths should be given at 10 per minute taking care not to over-inflate the lungs. Advanced life support (ALS) includes drug therapy, correction of acid-base imbalances, and defibrillation. The concept of return of spontaneous circulation (ROSC) and its relationship to end tidal carbon dioxide (ETCO<sub>2</sub>) levels is an important one, with target measurements >15 mm Hg in the dog and >20 mm Hg in the cat indicating ROSC. High quality BLS and ALS can improve CPR outcomes to ~50%. Survival to discharge following CPA and CPR averages 2-10% in veterinary patients, although 35-45% of animals do have ROSC. Most animals who undergo CPR will re-arrest.

Technicians are frequently called upon to guide clients through the decision-making process when a pet enters the emergency room. Communication with distraught strangers can be incredibly difficult; it requires skill, empathy, and tact to ensure that clients understand events and feel comfortable with the care being provided to their pet. Technicians should determine their own communication style so that they can adapt their normal mode to accommodate the client as needed—some are more direct, while others require a more give-and-take style. Reflective listening is an excellent tool to ensure that clients understand what they are being told, and to ensure that staff understand the client's concerns and wishes. Technicians should also be mindful of their body language, tone, and posture when interacting with clients. Active listening, open body language, and eye contact are important to ensure effective communication.

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