Monitoring of the emergent patient can be one of the most challenging aspects in veterinary medicine, but can also be one of the most rewarding. Careful monitoring of the emergent patient is crucial in assessment and treatment of potentially life-threatening conditions. While advanced monitoring equipment is becoming increasingly available, triage evaluation and serial assessment can recognize patient changes before clinical deterioration. In addition to hands-on serial patient assessment, valuable monitoring tools include pulse oximetry, blood pressure monitoring, urine output, electrocardiography monitoring, and central venous pressure monitoring.

Fluid therapy is essential in the treatment of emergent veterinary patients. Many different types of intravenous fluids are available, including crystalloids, artificial colloids, and natural colloids. The type, dose, and administration rate can determine the outcome in a critically ill patient. This article discusses the various types of fluids and their indication for use.

This article reviews the use of transfusion medicine in veterinary medicine and discusses current research regarding donor screening and component therapy. Typing and crossmatching methodologies are discussed. Available components, potential uses, and controversies in treatment are also discussed.

This article reviews management of the acutely poisoned veterinary patient, including initial telephone triage, appropriate communication and history gathering from the pet owner, decontamination methods (including the use of appropriate emetic agents and dosing of activated charcoal), and general treatment of the poisoned patient. Symptomatic and supportive
care of the poisoned patient includes the use of fluid therapy, gastrointestinal support (eg, antacids), central nervous system support (eg, muscle relaxants, anticonvulsants), sedatives/reversal agents (eg, phenothiazines, naloxone, flumazenil), hepatoprotectants, and miscellaneous antidotal therapy.

The Use of Ultrasound for Dogs and Cats in the Emergency Room: AFAST and TFAST

Søren R. Boysen and Gregory R. Lisciandro

Internal injuries are common and often life-threatening conditions that can be challenging to detect based on physical examination, radiographs, and centesis. Recently, ultrasound has been introduced and evaluated in human and veterinary emergency medicine as a point-of-care test for a variety of emergent conditions. This article discusses the indications for point-of-care emergency ultrasound of dogs and cats in the emergency and critical care setting. Techniques for performing focused emergency evaluations are described and the current veterinary and human literature is contrasted, with emphasis on abdominal, pleural, pericardial, and pulmonary evaluation.

Management of Respiratory Emergencies in Small Animals

Catherine Sumner and Elizabeth Rozanski

Management of respiratory distress involves careful consideration of the history, physical examination, and diagnostic testing. Supplemental oxygen is useful. Urgent procedures, such as intubation, thoracococentesis, or tracheostomy, may be required. The prognosis is dependent on the underlying disease, but is often favorable. This article reviews the approach, differential diagnoses, and the approach to management for dogs and cats with respiratory distress.

Management of Cardiac Emergencies in Small Animals

Teresa C. DeFrancesco

Cardiac emergencies are life-threatening conditions that must be diagnosed quickly to avoid delays in therapy. A timely and accurate diagnosis leads to early relief of symptoms and improved survival. This article provides both a comprehensive review and updated management recommendations for common cardiac emergencies in dogs and cats. Specifically, the article confers updates for the efficient clinical recognition of decompensated cardiac patients, including focused echocardiography, cardiac biomarkers, and electrocardiogram interpretation. This article also reviews the latest recommendations for the treatment of heart failure (including the use of pimobendan) and the management of arrhythmias, pericardial effusion, and aortic thromboembolism.

Management of Urinary Tract Emergencies in Small Animals

Anusha Balakrishnan and Kenneth J. Drobotz

This article focuses on some of the most commonly seen urinary tract emergencies in dogs and cats, with emphasis on basic pathophysiology, diagnosis, and emergency management of these cases.
Endocrine Emergencies in Dogs and Cats
Amie Koenig

Success in treatment of endocrine emergencies is contingent on early recognition and treatment. Many endocrine diseases presenting emergently have nonspecific signs and symptoms. In addition, these endocrine crises are often precipitated by concurrent disease, further making early identification difficult. This article concentrates on recognition and emergency management of the most common endocrine crises in dogs and cats.

Surgical Considerations in the Emergent Small Animal Patient
Jennifer J. Devey

To ensure a successful outcome when performing emergency surgery, the clinician must have the knowledge to be able to assess the patient to determine that surgical intervention is necessary, and to determine the urgency of the procedure. The clinician must have the skills to manage common surgical emergency procedures and the equipment necessary to perform the surgery. This article discusses surgical considerations for the emergent patient, including preoperative patient assessment, readiness, surgical instrumentation, and patient preparation. An overview of the trauma triad of death, options for providing effective hemostasis, damage control surgery, peritoneal lavage and drainage, and wound management are reviewed.

Updates in the Management of the Small Animal Patient with Neurologic Trauma
Jillian DiFazio and Daniel J. Fletcher

Neurologic trauma, encompassing traumatic brain injury (TBI) and acute spinal cord injury (SCI), is a cause of significant morbidity and mortality in veterinary patients. Acute SCIs occurring secondary to trauma are also common. Essential to the management of TBI and SCI is a thorough understanding of the pathophysiology of the primary and secondary injury that occurs following trauma. This article reviews the pathophysiology of this primary and secondary injury, as well as recommendations regarding clinical assessment, diagnostics, pharmacologic and nonpharmacologic therapy, and prognosis.

Analgesia, Anesthesia, and Chemical Restraint in the Emergent Small Animal Patient
Jane Quandt

Appropriate stabilization of the critically ill animal before sedation or anesthesia is imperative to minimize anesthetic complications. Problems should be anticipated and an appropriate and efficient therapeutic plan should be formulated before anesthetic induction. Use of a balanced anesthesia technique should be considered to minimize potential deleterious effects of single-use drug therapy. Using a combination of different classes of analgesics may be more effective in treating established pain than using a single agent. The critically ill animal should have drugs titrated to effect to minimize the amount of drug needed and lessen potential side effects.
Basics of Mechanical Ventilation for Dogs and Cats
Kate Hopper and Lisa L. Powell

Respiratory failure may occur due to hypoventilation or hypoxemia. Regardless of the cause, emergent anesthesia and intubation, accompanied by positive pressure ventilation, may be necessary and life saving. Long-term mechanical ventilation requires some specialized equipment and knowledge; however, short-term ventilation can be accomplished without the use of an intensive care unit ventilator, and can provide oxygen supplementation and carbon dioxide removal in critical patients.

Updates in Small Animal Cardiopulmonary Resuscitation
Daniel J. Fletcher and Manuel Boller

For dogs and cats that experience cardiopulmonary arrest, rates of survival to discharge are 6% to 7%, as compared with survival rates of 20% for people. The introduction of standardized cardiopulmonary resuscitation guidelines and training in human medicine has led to substantial improvements in outcome. The Reassessment Campaign on Veterinary Resuscitation initiative recently completed an exhaustive literature review and generated a set of evidence-based, consensus cardiopulmonary resuscitation guidelines in 5 domains: preparedness and prevention, basic life support, advanced life support, monitoring, and postcardiac arrest care. This article reviews some of the most important of these new guidelines.