

Minimum Requirements for Certification of Veterinary Emergency and Critical Care Facilities (effective through December 31, 2016)

The Veterinary Emergency and Critical Care Society (VECCS) advocates that the following equipment and supplies are the minimum requirements for all Levels (I-III) of Veterinary Emergency and Critical Care Facilities. These minimum requirements allow veterinary emergency and critical care facilities to identify themselves using a certification process endorsed by the VECCS. The certification process is meant to raise the standard of care and increase public and professional awareness in the area of veterinary emergency and critical patient care.

PART 1: OPERATIONS OVERVIEW FOR A VETERINARY EMERGENCY FACILITY

Staffing

A licensed DVM must be on the premises during operating hours.

A working relationship with a DACVECC and/or other veterinary diplomates with a special interest and experience in emergency and critical care.

A relationship with a DACVR (onsite or via the internet) for the review of diagnostic images when necessary. **(Level I and II)**

It is recommended that there be at least one veterinarian on duty at all times with at least two years practice experience or one year small animal internship experience. **(Level I)**

A DACVECC employed full time and available for consultation either on-site or by phone 24/7. **(Level I)**

Sufficient staff must be available to provide expedient patient care and allow:

- Processing of multiple patients concurrently.
- Performance of a wide range of life-saving procedures to include, but not be limited to, cardiopulmonary resuscitation and emergency surgery. This requires a minimum of two people, one must be a veterinarian and the other can be a veterinary technician or assistant.
- The ability to call-in additional staff as needed.
- Provision of timely and appropriate in-hospital patient care.
- Appropriate and timely consultation with veterinary specialists.
- At least two certified technicians employed full time. **(Level I)**
- It is recommended that there be at least one certified Veterinary Technician Specialist (Emergency and Critical Care). **(Level I)**

Medical Records

A complete and thorough medical record for each patient should be kept on file at the emergency and critical care facility. Because of the importance of legibility and availability of medical records, all summary medical records should be computer-generated, digitally stored, and backed up. Additionally, the emergency and critical care facility must comply with state administrative codes for informed consent, patient record keeping and the release of patient records.

The medical record must include but not be limited to:

- Client information
 - Name
 - Address
 - Phone number
- Referring Veterinarian/Clinic
- Patient identification
 - Name
 - Species
 - Breed
 - Age
 - Sex (including reproductive status)
 - Color

- Patient vaccination status
- Patient history
- Patient weight
- Vital signs
 - Temperature
 - Heart rate
 - Respiratory rate and effort
 - Mucous membrane color
 - Mental status
 - Level of pain
- Physical examination findings
- Clinical pathology tests performed and their results
- Diagnostic imaging performed and their interpretation
- Tentative and/or differential diagnosis
- Procedures performed (including anesthetic and surgical release forms and reports)
- All drugs administered, prescribed, or dispensed to include:
 - Name
 - Dose, frequency and length of treatment
 - Route of administration
- Progress notes
- Additional treatment and nursing notes
- Client and referring veterinarian communications
- Discharge instructions, including follow-up instructions
- All entries in the medical records should clearly identify the individual(s) who administered care and entered data with time and date included.

Communications

Effective communications must be maintained to allow efficient transfer of patient information between the emergency and critical care facility and primary care veterinarians in a timely manner. It is highly recommended that the emergency and critical care facility maintain an updated list of veterinarians that includes an after-hours contact number and indicates whether or not they are willing to be contacted. A copy of the case summary including discharge instructions should be given to the clients at the time of patient discharge and a faxed or electronic medical record/report should be sent to the primary care veterinarian within 12 hours of patient discharge in order to ensure immediate continuity of care and for inclusion in the patient's permanent record.

Continuing Education

Continuing education (CE) must be provided for professional and technical staff and must allow:

- Veterinarians and veterinary technicians to comply with CE requirements for state licensure.
- Veterinary specialists to meet specialty board CE requirements to maintain certification.
- Veterinary technician specialists to meet CE requirements of their respective specialty academy to maintain certification.

All emergency facility staff veterinarians should obtain a minimum of 28 hours of CE every two years in the field of emergency medicine, surgery, and/or critical care medicine. A maximum of six hours per two year period may be obtained via online CE courses.

ACVECC residents must be in compliance with requirements of their training program.

First year interns and new graduates for the first calendar year after graduation are excluded from this requirement.

An in house training program should be provided for all technical staff to assure teamwork and familiarity with current procedures and guidelines.

Credentialed technical staff and non-credentialed technical staff having completed the in-house training program should obtain a minimum of ten hours of CE every two years in the field of emergency and critical care medicine. This CE can be obtained through either enrollment in a college/technical program, attendance of local, state, or national CE events or documented in-house CE.

A comprehensive, written training and continuing education program to include as a minimum the following components: journal club, morbidity and mortality rounds, and wet labs. **(Level I)**

Resources

The emergency and critical care facility must have appropriate and comprehensive references available to the staff at all times. Refer to Part 2 of this document for a list of the required references.

Internet access to online emergency and critical care resource information must be available.

Emergency Capabilities

The level of care and maintenance provided in areas of laboratory, pharmacy, medicine, surgery, anesthesiology, diagnostic imaging, infectious diseases control, and housekeeping should be consistent with currently accepted practice standards and comply with state, federal, and provincial directives. Instrumentation, pharmaceuticals, and supplies should be sufficient for the practice of medicine and surgery at a level of care consistent with that expected in the practice of veterinary medicine as directed by the individual country, state, or province practice acts.

All emergency and critical care facilities must have the capacity to:

1. Diagnose and manage life-threatening emergencies including cardiovascular, respiratory, metabolic, gastrointestinal, urogenital, neurologic, environmental, hematologic, hemorrhagic, toxicologic and coagulopathic problems.
2. Perform procedures to address life-threatening problems including but not limited to:
 - Cardiopulmonary resuscitation
 - Placement and maintenance of thoracostomy tubes
 - Emergency tracheostomy and tracheostomy tube care
 - Blood product administration
 - Oxygen supplementation
 - Assisted ventilation
3. Perform emergency surgery including but not limited to:
 - Surgical hemostasis, wound debridement, and application of wound dressings
 - Stabilization of musculoskeletal injuries
 - Aseptic thoracic and abdominal surgery
4. Treat circulatory shock using:
 - Crystalloid fluids
 - Colloid fluids
 - Blood products
 - Vasoactive drugs
5. Allow accurate delivery of fluids using calibrated burettes and infusion pumps.
6. Administer natural and/or artificial blood products as well as type and cross match donor and recipient blood.
7. Administer analgesic therapy and anesthetic agents including but not limited to:
 - Pure agonist opioids
 - Non-steroidal anti-inflammatory medication
 - Alpha-2 agonists
 - Injectable and inhalation anesthetics
 - Reversal agents for opiates and alpha-2 agonists
 - Sedative medication
8. Provide intraoperative monitoring to include but not limited to:
 - Body temperature
 - Electrocardiography
 - Blood pressure
 - Capnography
 - Pulse oximetry
9. Maintain an anesthetic log for all anesthetized patients documenting duration of anesthesia, monitoring parameters and medications administered.

10. Decontaminate and administer antidotes when indicated for toxin exposure.
11. Perform, in a timely manner, laboratory procedures listed in Part 3 of this document. Additionally the emergency and critical care facility must have laboratory supplies to collect, prepare and preserve samples for analysis at an offsite laboratory.
12. Perform diagnostic imaging to include but not limited to:
 - Plain film radiography
 - Ultrasonography with the minimum requirement that the staff veterinarians have proficiency in the detection of life-threatening clinical problems to include but not limited to fluid in the thoracic, pericardial, and peritoneal spaces.
 - Diagnostic abdominal ultrasound and echocardiography or a documented relationship with a DACVR and DACVIM. **(Level I)**
13. To evaluate and stabilize any small mammal, avian and reptile (“exotic”) animals kept as pets. These patients can be referred to a local “exotic” animal expert that sees emergencies, if a documented relationship is present. **(Level I)**
14. Perform volume- or pressure-cycled mechanical ventilation. **(Level I)**
15. Perform invasive blood pressure monitoring. **(Level I)**
16. Perform endoscopy and bronchoscopy. **(Level I)**

PART 2: MINIMUM REQUIRED REFERENCE LIST

Textbooks

General Physiology - an edition of one of the following published within the previous 15 years

Textbook of Medical Physiology, Boron and Boulpaep
 Review of Medical Physiology, Ganong
 Textbook of Medical Physiology, Guyton & Hall
 Berne & Levy Physiology, Koeppen & Stanton, et al.

Veterinary ECC- an edition of each of the following published within the previous 10 years

Small Animal Critical Care Medicine, Silverstein & Hopper
 Manual of Trauma Management in the Dog and Cat, Drobatz, et al

Veterinary ECC Technical Manuals - an edition of one of the following published within the previous 15 years

Veterinary Emergency and Critical Care Manual, Mathews
 Veterinary Emergency and Critical Care Procedures, Hackett & Mazzaferro
 Manual of SA Emergency & Critical Care Medicine, Macintire, et al.
 Advanced Monitoring and Procedures for Small Animal Emergency and Critical Care, Burkitt-Creedon & Davis

Fluid Therapy/Acid-Base/Electrolyte - an edition of the following published within the previous 10 years

Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice, DiBartola

General Veterinary Internal Medicine- an edition of the following published within the previous 10 years

Textbook of Veterinary Internal Medicine, Ettinger & Feldman

Veterinary Surgery - an edition of one of the following published within the previous 15 years

Small Animal Surgery, Fossum
 Textbook of Small Animal Surgery, Slatter

Veterinary Anesthesia - an edition of one of the following published within the previous 15 years

Veterinary Anesthesia & Analgesia, McKelvey & Hollingshead
 Lumb & Jones' Veterinary Anesthesia and Analgesia, Tranquilli, et al.

Veterinary Pharmacology - an edition of one of the following published within the last 10 years

Small Animal Clinical Pharmacology and Therapeutics, Boothe
 Small Animal Clinical Pharmacology, Maddison, et al.

Veterinary Toxicology - an edition of one of the following published within the last 15 years

Veterinary Toxicology: Basic and Clinical Principles, Gupta

Clinical Veterinary Toxicology, Plumlee
Small Animal Toxicology, Peterson & Talcott

Veterinary Clinical Pathology - an edition of one of the following published within the previous 15 years

Fundamentals of Veterinary Clinical Pathology, Stockham & Scott
Duncan & Prasse's Veterinary Laboratory Medicine: Clinical Pathology, Latimer et al.
Small Animal Clinical Diagnosis by Laboratory Methods, Willard & Tvedten
Veterinary Hematology and Clinical Chemistry, Thrall, et al.

Specific Topic Areas of Veterinary Medicine published within the previous 15 years

Veterinary Pediatrics, Hoskins
Canine and Feline Endocrinology and Reproduction, Feldman & Nelson
Infectious Diseases of the Dog and Cat, Greene
A Textbook in Veterinary Ophthalmology, (e.g. Gelatt)
Ferrets, Rabbits and Rodents, Quesenberry & Carpenter **(Level I)**
Avian Medicine and Surgery, Altman **(Level I)**
Reptile Medicine and Surgery, Mader **(Level I)**
Exotic Animal Formulary, Carpenter **(Level I)**

Veterinary Neurology - an edition of one of the following published within the previous 15 years

Fundamentals of Veterinary Clinical Neurology, Bagley
Handbook of Veterinary Neurology, Lorenz & Kornegay
BSAVA Manual of Canine and Feline Neurology, Platt and Olby
Veterinary Neuroanatomy and Clinical Neurology, de Lahunta and Glass
Small Animal Neurology, Andre Jaggy

Veterinary Oncology- an edition published within the previous 15 years

Small Animal Clinical Oncology, Withrow & MacEwen

Veterinary Cardiology - an edition of one of the following published within the previous 15 years

Textbook of Canine and Feline Cardiology, Fox, et al
Small Animal Cardiovascular Medicine, Kittleson & Keinle
Cardiovascular Disease in Small Animal Medicine, Ware

Journals (current subscriptions of each)

Journal of Veterinary Emergency and Critical Care
Journal of the American Veterinary Medical Association

PART 3: MINIMUM REQUIREMENTS FOR A CERTIFIED VETERINARY EMERGENCY FACILITY

Facilities

- ER receiving/triage area
- ICU area
- Dedicated isolation area with documented infection control plan
- Dedicated surgical preparation area for patient (not to be in surgery room) **(Level I and II)**
- Dedicated surgical room
- Radiology room that complies with federal and state radiation safety regulations
- Oxygen (ER receiving/ICU/ISO/SX/Radiology)
- Anesthetic scavenging (ICU/SX/Radiology)
- Suction (ER receiving/ICU/SX)
- Equipment sterilization capability and quality control
- Emergency preparedness plan or onsite backup power supply in case of power outage
- System in place to ensure continuous ongoing power in case of power outage **(Level I)**

In-Patient Support

- Anesthesia
 - Warming support (forced air, circulating warm water blanket or Hot Dog thermal unit)
 - Logs/Records
- Small animal blood products
 - Blood typing capability (canine and feline)
 - Fresh frozen plasma
 - Canine
 - Feline
 - Packed red blood cells **(Level I and II)**
 - Canine
 - Feline type A
 - Feline type B or readily available donor (Recommended)
 - Readily available screened canine and feline donors (onsite or local blood bank with 24 hour service) in lieu of canine and feline packed red cells **(Level III)**
- Red blood cell substitute (if available)
- Fluid therapy
 - Crystalloids
 - Replacement
 - Isotonic buffered
 - 0.9% Saline
 - Carrier (D5W))
 - Maintenance **(Level I and II)**
 - Synthetic colloids
 - Fluid pumps
 - Syringe pumps
 - Calibrated burettes
 - Intravenous catheter types
 - Peripheral
 - Central **(Level I and II)**
- Nutritional
 - Naso- esophageal or naso-gastric tube feeding
 - Esophagostomy tube feeding **(Level I and II)**
 - Partial parenteral nutrition capability **(Level I and II)**
 - Total parenteral nutrition capability **(Level I)**
- Pharmacy
 - Activated charcoal
 - Analgesia
 - Injectable agonist opioids
 - Nonsteroidal anti-inflammatory agents
 - Alpha-2 agonist
 - Local anesthetics
 - NMDA receptor antagonists

- Oral analgesic agents
- Antibiotics
 - Injectable (Minimum: beta lactam, fluoroquinolone, aminoglycoside, metronidazole)
 - Oral
- Antihistamine (injectable)
- Anti-seizure medications
 - Injectable
 - Oral
- Corticosteroid
 - Injectable
 - Oral
- Dextrose (injectable)
- Drugs for CPR
 - Epinephrine
 - Vasopressin
 - Atropine
 - Glycopyrrolate
- Electrolyte additives
 - Calcium gluconate
 - Potassium chloride
 - Magnesium sulfate or magnesium chloride **(Level I and II)**
 - Sodium phosphate or potassium phosphate **(Level I and II)**
- Insulin- Regular
- Lipid solution (20%)
- Sedative medications
 - Injectable
 - Oral
- Vasoactive/Antiarrhythmic drugs
 - Dopamine
 - Dobutamine
 - Lidocaine
 - Propranolol or Esmolol
 - Diltiazem **(Level I and II)**
 - Sodium nitroprusside or hydralazine **(Level I and II)**
- Renal Support
 - Peritoneal dialysis or hemodialysis **(Level I)**
- Respiratory support
 - Oxygenation (nasal/cage)
 - Ventilation
 - Ambu bag/ anesthetic machine
 - Anesthetic ventilator
 - Volume- or pressure-cycled mechanical ventilator **(Level I)**
- Monitoring
 - Blood pressure
 - Non-invasive
 - Invasive **(Level I)**
 - Body temperature
 - Capnometry/ capnography
 - Electrocardiography
 - Pulse oximetry
 - Tonometry
 - Urinary catheter and closed collection system
- Diagnostics
 - Radiography
 - 300 Ma radiography machine (standard or digital)
 - Automatic processor (with standard radiography)
 - Ultrasonography
 - Endoscopy **(Level I)**
 - Bronchoscopy **(Level I)**

Laboratory equipment and testing in house
Packed cell volume
Refractometric total solids
CBC with manual differential reading
Glucose
Lactate
Dry chemistry analyzer
Electrolytes
Blood gas
Coagulation
 PT
 APTT
FIV/FELV antigen testing
Cytology
Urinalysis
Fecal flotation
Parvoviral antigen testing

Abbreviations:

APTT	activated partial thromboplastin time
CBC	complete blood count
CPR	cardiopulmonary cerebral resuscitation
D5W	5% dextrose in water
DACVECC	Diplomate of American College of Veterinary Emergency and Critical Care
DACVIM	Diplomate of American College of Veterinary Internal Medicine
DACVR	Diplomate of American College of Veterinary Radiology
DVM	doctor of veterinary medicine
ER	emergency room
FIV	feline immunodeficiency virus
FELV	feline leukemia virus
ICU	intensive care unit
ISO	isolation
PT	prothrombin time
NMDA	N-methyl d-aspartate
SX	surgery