

Minimum Requirements for Certification of Veterinary Emergency and Critical Care Facilities

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)**

Requirements

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

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- 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

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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.

Requirements

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:

Requirements

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:

1. Cardiopulmonary resuscitation
2. Placement and maintenance of thoracostomy tubes
3. Emergency tracheostomy and tracheostomy tube care
4. Blood product administration
5. Oxygen supplementation
6. Assisted ventilation

7. Perform emergency surgery including but not limited to:

1. Surgical hemostasis, wound debridement, and application of wound dressings
2. Stabilization of musculoskeletal injuries
3. Aseptic thoracic and abdominal surgery

1. Treat circulatory shock using:

1. Crystalloid fluids
2. Colloid fluids
3. Blood products
4. 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:

1. Pure agonist opioids
2. Non-steroidal anti-inflammatory medication
3. Alpha-2 agonists
4. Injectable and inhalation anesthetics
5. Reversal agents for opiates and alpha-2 agonists
6. Sedative medication

7. Provide intraoperative monitoring to include but not limited to:

1. Body temperature
2. Electrocardiography
3. Blood pressure
4. Capnography
5. Pulse oximetry

6. Maintain an anesthetic log for all anesthetized patients documenting duration of anesthesia, monitoring parameters and medications administered.
7. Decontaminate and administer antidotes when indicated for toxin exposure.
8. 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.
9. 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)**
- 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)**
- Perform volume- or pressure-cycled mechanical ventilation. **(Level I)**
- Perform invasive blood pressure monitoring. **(Level I)**
- 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

Requirements

- Textbook of Medical Physiology, Guyton & Hall
- Berne & Levy Physiology, Koeppen & Stanton, et al.
- Textbook of Veterinary Physiology, Cunningham

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, 2nd ed.
- 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 one of the following published within the previous 10 years

- Textbook of Veterinary Internal Medicine, Ettinger & Feldman
- Small Animal Internal Medicine, Nelson & Couto

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

Requirements

- Small Animal Surgery, Fossum
- Textbook of Small Animal Surgery, Slatter
- Veterinary Surgery: Small Animal, Tobias & Johnston

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 Ophthalmology – an edition of one of the following published within the previous 15 years

- Essentials of Veterinary Ophthalmology, Gelatt
- Slatter's Fundamentals of Veterinary Ophthalmology, Maggs et al.

Veterinary Pharmacology – an edition of one of the following published within the previous 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 previous 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

Veterinary Pediatrics – an edition of one of the following published within the previous 15 years

- Veterinary Pediatrics, Hoskins
- Small Animal Pediatrics, Peterson & Kutzler

Specific topic areas of Veterinary Medicine published within the previous 15 years

- Canine and Feline Endocrinology and Reproduction, Feldman & Nelson
- Infectious Diseases of the Dog and Cat, Greene
- Ferrets, Rabbits and Rodents, Quesenberry & Carpenter (**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

Requirements

- 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

Veterinary Avian Medicine and Surgery – an edition of one of the following published within the previous 15 years

- Avian Medicine and Surgery, Altman **(Level I)**
- Avian Medicine and Surgery in Practice, Doneley **(Level I)**
- Essentials in Avian Medicine and Surgery, Coles **(Level I)**

Journals

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

The use of e-books for reference texts is acceptable provided the following information is supplied:

1. The e-books must be legally purchased/obtained

2. Proof of purchase including the hospitals address must be submitted

3. Everyone in the hospital must have access to the books at all times

4. Please submit a copy of the hospitals e-book library (list or book cover) by accessing the library online and using the print screen function to make a copy of the page or provide username and password information to allow verification.

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)**

Requirements

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

Requirements

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**)

Requirements

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

Requirements

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

Requirements

Injectable

Oral

Corticosteroid

Injectable

Oral

Dextrose (injectable)

Drugs for CPR

Epinephrine

Vasopressin

Atropine

Glycopyrrolate

Electrolyte additives

Requirements

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

Requirements

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

Requirements

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

Requirements

Lactate

Dry chemistry analyzer

Electrolytes

Blood gas

Coagulation

PT

APTT

FIV/FELV antigen testing

Cytology

Urinalysis

Fecal flotation

Requirements

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

Requirements

FIV feline immunodeficiency virus

FELV feline leukemia virus

ICU intensive care unit

ISO isolation

PT prothrombin time

NMDA N-methyl d-aspartate

SX surgery