

# VT-2650: VETERINARY EMERGENCY AND CRITICAL CARE

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## Cuyahoga Community College

**Viewing: VT-2650 : Veterinary Emergency and Critical Care**

**Board of Trustees:**

March 2022

**Academic Term:**

Fall 2022

**Subject Code**

VT - Veterinary Technology

**Course Number:**

2650

**Title:**

Veterinary Emergency and Critical Care

**Catalog Description:**

Fundamentals of veterinary emergency and critical care, including client communication, triage, first aid; patient transport, emergency techniques; life support measures, care of recumbent or otherwise compromised patients; wound care and nursing considerations; CPR and CPR. Also integrated review of fluid therapy and patient monitoring techniques.

**Credit Hour(s):**

1

**Lecture Hour(s):**

1

## Requisites

**Prerequisite and Corequisite**

VT-2610 Veterinary Anesthesia, Analgesia, and Dental Techniques.

## Outcomes

**Course Outcome(s):**

Provide sound advice to a client calling a veterinary facility about a potential animal emergency.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Respond appropriately to a client's telephone call about an animal's appearance or clinical signs.
2. Appropriately advise a client on first-aid techniques that may be done instead of, or in addition to, the animal being seen by a veterinarian.
3. Advise a client on safely approaching, restraining and transporting a seriously compromised patient to a safe place or a treatment facility.

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**Course Outcome(s):**

Maintain patient monitoring systems and extract relevant accurate clinical data in a critical-care patient.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. List the steps for Preparation and maintenance of patient monitoring devices such as central venous pressure (CVP); arterial blood pressure and ECG.

2. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

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**Course Outcome(s):**

Treat an animal patient of any common species (dog, cat, horse, cow, etc.) as an emergency or critical care patient in a number of commonly seen situations.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Describe common treatments for a number of poisonings and intoxications for small and large animals.
2. List a number of treatments for a number of common emergency situations: gastric dilatation-volvulus (GDV); laminitis; colic, displaced abomasum; trauma.
3. Explain the veterinary technician's possible roles in obstetrical cases: normal vaginal delivery and dystocia in a number of domestic species.
4. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

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**Course Outcome(s):**

Provide first aid, or advise a client to do so, to an animal patient prior to the animal's being evaluated by a licensed veterinarian.

**Objective(s):**

1. Describe common treatments for a number of poisonings and intoxications for small and large animals.
2. Respond appropriately to a client's telephone call about an animal's appearance or clinical signs.
3. Appropriately advise a client on first-aid techniques that may be done instead of, or in addition to, the animal being seen by a veterinarian.
4. Recognize the signs of shock and list the possible causes.

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**Course Outcome(s):**

Safely and humanely transport an injured or ill animal to an animal-care facility without further injury or trauma.

**Objective(s):**

1. Explain the set-up of a gurney, stretcher, or other clinical transport or restraint system to receive an injured patient from client or pet ambulance transport.
2. Advise a client on safely approaching, restraining and transporting a seriously compromised patient to a safe place or a treatment facility.

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**Course Outcome(s):**

Begin and conduct appropriate intravenous (IV) or other therapy involving fluids, medications or transfusion products, including selection of delivery device and supportive monitoring; record-keeping; additives to primary product; precautions and contra-indications.

**Objective(s):**

1. Explain the selection of supportive fluids for a patient in a given clinical situation, including selection of delivery device and supportive monitoring, record keeping; additives to primary product; precautions and contra-indications.
2. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

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**Course Outcome(s):**

Safely collect; prepare and store blood or blood products for transfusion.

**Objective(s):**

1. Explain the selection of supportive fluids for a patient in a given clinical situation, including selection of delivery device and supportive monitoring, record keeping; additives to primary product; precautions and contra-indications.
2. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

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**Course Outcome(s):**

Discuss a potential emergency situation with a client and triage via telephone or in-clinic based on the results of this conversation.

**Objective(s):**

1. Describe common treatments for a number of poisonings and intoxications for small and large animals.
2. Define triage and give examples on this method of patient evaluation.
3. Respond appropriately to a client's telephone call about an animal's appearance or clinical signs.
4. Accurately perform an in-hospital triage for a newly arrived patient.

**Course Outcome(s):**

Assist an animal patient that presents in shock by recognizing the signs and potential complications.

**Objective(s):**

1. Explain the selection of supportive fluids for a patient in a given clinical situation, including selection of delivery device and supportive monitoring, record keeping; additives to primary product; precautions and contra-indications.
2. Recognize the signs of shock and list the possible causes.
3. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

**Course Outcome(s):**

Use and maintain emergency devices including drains, thoracotomy tubes, respiratory support and oxygen or respiratory therapy.

**Objective(s):**

1. Explain the selection of supportive fluids for a patient in a given clinical situation, including selection of delivery device and supportive monitoring, record keeping; additives to primary product; precautions and contra-indications.
2. Explain the steps for preparation and maintenance (if needed) emergency and treatment devices such as bandages, casts, fluid and transfusion transport lines, drains and oxygen therapy.
3. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.

**Course Outcome(s):**

Perform cardiopulmonary resuscitation (CPR) and cardiopulmonary cerebral resuscitation (CPCR) on an animal patient along with basic or advanced life support procedures.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Maintain a critically-ill or injured patient in a safe, clean and comfortable environment.
2. Explain the proper performance of cardiopulmonary resuscitation (CPR) and cardiopulmonary cerebral resuscitation (CCPR).

**Methods of Evaluation:**

- A. Midterm and final exams.
- B. Case reports
- C. Written assignments as assigned.
- D. Role-playing and simulation exercises

**Course Content Outline:**

1. Triage by telephone or remote device
  - a. Clinical signs that may indicate emergency conditions
  - b. Questioning the client and responding to their answers
  - c. Client options
  - d. Trauma
2. First aid
  - a. "Client emergencies"- directing treatment and observations
    - i. Abrasions or minor bleeding
    - ii. Broken toenail
    - iii. Mild issues with GI indiscretion
    - iv. Mild lameness
    - v. Mild allergic response
  - b. Pre-transport first aid

- i. Control of more serious bleeding- direct pressure, bandaging
  - ii. Lameness, other musculoskeletal injury
  - iii. Heatstroke, hyperthermia
  - iv. Frostbite, hypothermia
  - v. Acute collapse
  - vi. Contraindications for client-administered first aid
3. Getting patients to clinic or hospital
  - a. Advising client about safe approach to seriously ill or injured animal
  - b. Advising safe transport of ill or injured animals
4. Hospital-arrival triage
  - a. Evaluation of critical systems
    - i. Respiratory system
    - ii. Cardiovascular
    - iii. Neurologic
    - iv. Pain
    - v. Hydration
    - vi. Skin and body condition
  - b. Initial diagnostic panel
  - c. Shock
    - i. Signs
    - ii. Causes: distributive, cardiogenic, obstructive, septic
    - iii. Reperfusion: post-shock
  - d. Basic nursing care
    - i. Clipping, cleaning wounds
    - ii. IV placement
    - iii. Stabilization for further diagnostics or treatment
  - e. Basic life support techniques and maintenance
    - i. Fluid therapy
    - ii. Temperature support- heating, cooling
    - iii. Catheterization: IV, urinary
    - iv. Clean caging, padding and body support
    - v. Analgesia
5. Advanced life-support techniques and maintenance
  - a. Centesis
  - b. Drains
  - c. Tracheostomy tubes
  - d. Oxygen therapy techniques
  - e. Maintaining patient monitoring devices
  - f. CPR and CCPR
  - g. Responding to common poisonings or intoxications
  - h. Small animals
    - i. Household products: xylitol, grapes, chocolate etc.
    - ii. House plants
    - iii. Medications
    - iv. Seasonal dangers
    - v. Outdoor hazards
  - i. Large animals
    - i. Plants toxic to horses, ruminants
    - ii. Feed additives or supplements
    - iii. Toxicities
    - iv. Medications
  - j. General considerations for commonly-seen emergencies
  - k. Small animals
    - i. Trauma
    - ii. GDV
  - l. Horses

- i. Colic
- ii. Acute laminitis
- iii. Trauma
- m. Cattle
  - i. Displaced abomasum
  - ii. Acute collapse: milk fever
- 6. The veterinary technician's role in obstetrics
  - a. Normal vaginal delivery
  - b. Dystocia
  - c. Retained placenta

## Resources

Battaglia and Steele. *Small Animal Emergency and Critical Care for Veterinary Technicians*. 3rd. Philadelphia: Saunders, 2015.

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Hackett and Mazzaferro. *Veterinary Emergency and Critical Care Procedures*. 2nd. Ames, IA: Wiley-Blackwell, 2014.

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Giminez and Giminez. *Technical Large-Animal Rescue*. 1st. Ames, IA: Wiley-Balckwell, 2008.

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Bassert, Joanna. (2022) (2022) *McCurnin's Clinical Textbook for Veterinary Nurses, 10th edition*, St. Louis, Missouri:Elsevier.

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## Resources Other

Veterinary Emergency and Critical Care Society <http://www.veccs.org>

Association of Emergency and Critical care Veterinary Technicians <http://www.vecct.org>

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