

**August 2006**

**The American College of  
Veterinary Emergency and Critical Care**



**Training and  
Application Guidelines  
for individuals seeking  
Residency or Fellowship Program  
approval in 2006  
or Credential Approval and  
Examination in 2007**

**Credentials Fee - \$300.00**

**Examination Fee - \$500.00**

**Resident's Registration Fee-\$200 (one time at initiation of program)**

**Credentials Deadline - January 9, 2007**

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## DEFINITIONS

**Residency Training Committee:** A standing committee of the ACVECC, which evaluates and approves Residency Program Centers and fellowship training programs, tracks residents in all types of programs, carries out annual reviews of residents in residency training programs and fellowship programs, and submits an annual recommendation to the Chair of the Credentials Committee documenting successful completion of training programs.

**Credentials Committee:** A standing committee of the ACVECC, which receives and evaluates credentials packages for Board Certification Examination.

**Candidate:** Individual applying for entry to an approved residency training program, or an individual applying to the Residency Training Committee for pre-approval of a fellowship training program.

**Residency Training Program:** A training program that has been approved by the American College of Veterinary Emergency and Critical Care under the mentorship of an ACVECC Diplomate, with the goals of intensive training and board certification in veterinary emergency and critical care. Residency training programs occur at Residency Program Centers

**Fellowship Training Program:** A training program that has been approved by the American College of Veterinary Emergency and Critical Care under the mentorship of an ACVECC Diplomate for those individuals that are Diplomates of an allied specialty, with the goals of intensive training and board certification in veterinary emergency and critical care. These programs are approved by the Residency Training Committee on an individual basis.

**Diplomate of an allied specialty:** The clinical specialties that are considered allied to the ACVECC include:

1. American College of Veterinary Internal Medicine (ACVIM)
  - a. Internal Medicine specialty
  - b. Cardiology specialty
  - c. Neurology specialty
  - d. Oncology specialty
2. American College of Veterinary Surgeons (ACVS)
3. American College of Veterinary Anesthesiologists (ACVA)

**Program Mentor:** An ACVECC Diplomate who is available to the resident on a continuing basis, and coordinates the entire program (both residency training and fellowship training). The Program Mentor/Supervisor must be licensed and authorized to practice at the Residency Program Center where the training is taking place. The Program Mentor will be charged with aiding in program design and with direct overview of the implemented program, including monitoring that the resident or fellow is achieving adequate progress in the program. The Program Mentor is responsible for reviewing and critiquing progress report (Appendix 6), Procedures Performed checklists (Appendix 8), and any necessary emergency/critical care case logs (Appendix 7). An effective residency program is an intense, intimate partnership in learning that can only be accomplished with frequent and regular interaction and communication between the Program Mentor and the resident or fellow. In addition to completing the stated residency requirements, it is the responsibility of the resident or fellow and Program Mentor to achieve the goals of learning critical thought, clinical expertise, literature awareness, communication skills, and high ethical standards that comprise the "spirit" of the residency guidelines. Changes in Program Mentor must be approved by the residency training committee. He/she will be asked to sign letters attesting to satisfactory progress of the resident or fellow annually (Appendix 5) and at the time of credential application to sit for examination, verifying that the resident has successfully completed all aspects of the program (Appendix 10). It is expected that the Program Mentor will act as a rotation supervisor for at least part of the program (see Appendix 2).

**Supervisor:** Appropriate Board-certified Diplomate (approved by ACVECC Residency Training Committee) who supervises rotations in emergency/critical care (ACVECC Diplomate only) or core and elective specialty rotations.

**Residency Program Centers:** Residency Program Centers are facilities that meet the minimum standards for *Veterinary Emergency and Critical Care Centers* as stated in the Guidelines for Veterinary Emergency and Critical Care Facilities published in the October-December 2001 issue of JVECC (vol.11, No. 4) (Appendix 1). Residency Program Centers are affiliated with one or more ACVECC Diplomate licensed and authorized to practice as a staff specialist in the facility. All rotations in Emergency/Critical Care (both direct and indirect) occur at approved Residency Program Centers

**Direct supervision:** The resident and Program Mentor/Supervisor are participating in clinical practice in which both the Program Mentor/Supervisor and the resident are on duty and concurrently managing cases, with a minimum of 20 hours overlapping time occurring over 3 days or 3 work shifts per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where direct supervision takes place. The Diplomate need not personally examine each patient seen by the resident, but must provide frequent consultation, and in-depth case review of those cases which can contribute to the progress of the resident's academic and clinical education. The resident must have a significant role in case management as either primary clinician or consultant. The resident must not be restricted to the role of an observer. Direct supervision must occur at an approved Residency Program Center.

**Indirect supervision:** Face-to-face contact with a Program Mentor/Supervisor for at least four hours per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where indirect supervision takes place. The supervisor need not personally examine each patient seen by the resident but must provide frequent consultation and in-depth case review of those cases which can contribute to the progress of the resident's academic and clinical education for a minimum of 4 hours per week. The resident must act as primary clinician or have significant input in case management. The resident must not be restricted to the role of an observer. Indirect supervision must occur at an approved Residency Program Center.

# QUALIFYING FOR EXAMINATION AND CERTIFICATION

## OVERVIEW

Each applicant, before he or she is declared eligible for examination, must:

1. Be a graduate of a college of veterinary medicine accredited or approved by the AVMA, or hold a certificate from the Educational Commission for Foreign Veterinary Graduates (ECFVG), or be licensed to practice in some State or Province of the United States, Canada, or other country.
2. After graduating from a recognized school of veterinary medicine, meet training requirements, as specified:
  - a. Completion of a one year rotating internship or equivalent practice experience as determined by the Residency Training Committee.
  - and**
  - b. Completion of an approved training program in veterinary emergency and critical care. This training must be received through a residency training program or fellowship training program.
3. Provide documentary evidence of advanced competence in veterinary emergency and critical care.
  - a. The resident has the choice of submitting either four (4) quality case reports or one (1) first-authored refereed article that has been published in a quality peer reviewed journal. The topic of the article should be relevant to emergency medicine or critical care. **The resident cannot submit both case reports and a publication.**
  - b. Three letters of recommendation, one of which must come from the Program Mentor.
  - c. Statement of Certification from Program Mentor (Appendix 10).
  - d. Each candidate must provide 5 multiple choice questions.

## PROCEDURAL INFORMATION

1. **Residency training programs and Fellowship training programs may begin either January 15<sup>th</sup> or July 15<sup>th</sup>** (except under special circumstances, approved by the Residency Training Committee). Residents entering any approved residency training program or fellowship training program must notify the Executive Secretary of ACVECC and chairperson of the Residency Training Committee prior to the beginning of their program, and pay the required fee to the ACVECC Executive Secretary.
2. Institutions seeking approval as a Residency Program Center must submit a proposal requesting pre-approval to the Residency Training Committee by petition through the Residency Training Committee Chair. **Deadlines for proposal submissions are March 1st and September 1st except under extraordinary circumstances approved by the Residency Training Committee.** Such proposals must be approved as "Residency Program Centers" by both the Residency Training Committee and the ACVECC Board of Regents. Approved Residency Program Centers are reviewed by the Residency Training Committee every 3 years or if there is a change in Program Mentor. Residency Program Centers are expected to conform to the training guidelines that are in place at the time of each review. Instructions for submitting a Residency Program Center proposal are included in these guidelines.
3. Fellowship training programs are training programs in Veterinary Emergency and Critical Care designed for Diplomates of allied specialties. Fellowship training programs must be pre-approved before they begin. Candidates seeking approval of fellowship training programs must submit a proposal to the Residency Training Committee by petition through the Residency Training Committee Chair. **Deadlines for proposal submissions are March 1st and September 1st, except under extraordinary circumstances approved by the Residency Training Committee.** The Residency Training Committee will evaluate each proposed program and make recommendations for requirements. Individual programs that meet required standards must be approved by both the Residency Training Committee and the Board of Regents. Instructions for submitting a fellowship training program proposal are included in these guidelines.
4. All residents and fellows submitting credentials for examination must have completed a program that was approved by the Residency Training Committee (either a Fellowship Training Program or a Residency Training Program) at an approved Residency Program Center).
5. Fellows who are submitting credentials for examination must provide copies of 1) the initial letter of approval of their program from the Residency Training Committee, 2) the annual letters approving their progress from the Residency Training Committee, 3) the letter from the Residency Training Committee following the final annual report, approving submission of credentials, and 4) the signed Program Mentor Statement of Certification that they have successfully completed their program (Appendix10).

## ACVECC TRAINING PROGRAMS

1. **Definition:** A Residency Training Program or a Fellowship Training Program in the American College of Veterinary Emergency and Critical Care is an intensive postgraduate training program, designed to prepare an individual for Examination for Board Certification in this Specialty and for a career as a specialist in Emergency and Critical Care.

The goals of the residency training program include:

- a. Development of a critical thought process and use of the problem based approach to patient care.
  - b. Development of clinical skills and expertise in the field of emergency and critical care (see Appendices 8 and 9).
  - c. Development of a critical understanding of the current veterinary and human literature, and proficiency in library research skills (see Appendix 9).
  - d. Demonstration of an ability to teach, communicate, and effectively present information.
  - e. Demonstration of exceptional ethical standards and ability to act as a professional role model.
2. All ACVECC training programs begin January 15<sup>th</sup> or July 15<sup>th</sup>, unless otherwise approved by the Residency Training Committee.
  3. All Residency Training Programs are 3-year programs minimum, occurring primarily in Residency Program Centers with one or more ACVECC Diplomates on staff. All Fellowship Training Programs are 1.5 year programs minimum, occurring primarily in Residency Program Centers with one or more ACVECC Diplomates on staff. Residency training programs and fellowship training programs must be completed within a maximum of 6 years, with all rotations occurring in a minimum of 1 week blocks, with a minimum of 10 weeks per year. A week is defined as a 7-day period in which the resident/fellow works a minimum of 40 hours.
  4. **Residency training programs** must meet the following minimum standards: (Note: the blocks of training time cannot run concurrently.)
    - a. 60 weeks direct supervision in emergency/critical care supervised by an ACVECC Diplomate. Direct supervision must occur at an approved Residency Program Center. Direct supervision is defined as follows: The resident and Program Mentor / Supervisor are participating in clinical practice in which both the Program Mentor / Supervisor and the resident are on duty and concurrently managing cases, with a minimum of 20 hours of overlapping time occurring over 3 days or 3 work shifts per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where direct supervision takes place. The diplomate need not personally examine each patient seen by the resident, but must provide frequent consultation, and in-depth case review of those cases which can contribute to the progress of the resident's academic and clinical education. The resident must have a significant role in case management as either primary clinician or consultant. The resident must not be restricted to the role of an observer. **Note:** A significant component of the practice of a Supervisor must be emergency and critical care medicine and/or surgery, during the time that they are providing supervision to the resident. Any deviation from these guidelines must be approved by the Residency Training Committee.
    - b. 25 weeks indirect supervision in emergency/critical care supervised by an ACVECC Diplomate. Indirect supervision must occur at an approved Residency Program Center. Indirect supervision is defined as face-to-face contact with a Program Mentor/Supervisor (as above) for at least 4 hours per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where direct supervision takes place. The same criteria for Supervisor apply as for direct supervision.



sponsored by local, state, and national veterinary or human medical organizations. This category is differentiated from "i" above in that "i" is a regularly scheduled, ongoing seminar series in a hospital setting while "ii" is a sporadically offered veterinary conference. Monthly local veterinary association meetings would, however, fall into this category if the subject is appropriate to this discipline. Topics should cover a wide range of issues in emergency/critical care medicine (Appendix 8) and cannot be accrued in less than two years. The course work may be associated with paramedical and nursing courses related to critical care or emergency medicine. The course work requirement cannot be fulfilled by a one time enrollment in a comprehensive intensive continuing education program. The intent of the requirement is to ensure a continuum of active participation in formal continuing or graduate education. All continuing education must be documented (title, date, location, speaker, length) per Appendix 6.

Continuing Education that is intensely focused on a specialized facet of emergency/critical care (e.g. hemodialysis) may be logged concurrent with the Independent Study requirement on an individual basis at the discretion of the Credentials Committee; however, general CE requirements may not be logged concurrently with Independent Study time.

- (iii) That the resident has participated in a graduate degree or fellowship program (degree not required) in an allied biomedical science (e.g., physiology, pharmacology, cardiovascular studies, toxicology) involving didactic courses and research experience that is associated with the discipline of emergency/critical care. If a post-graduate degree is not awarded, description and validation of the course work must be submitted to the Residency Training Committee and documentation of a minimum of 50 classroom lecture hours of course work must be available.

5. **Fellowship training programs** must meet the following minimum standards: (Note: the blocks of training time cannot run concurrently.)

- a. 60 weeks in emergency/critical care supervised by an ACVECC Diplomate. This training must occur at an approved Residency Program Center. At least 30 weeks must be direct supervision while the remainder of the 60 weeks may be indirect supervision. Direct supervision is defined as follows: The fellow and Program Mentor / Supervisor are participating in clinical practice in which both the Program Mentor / Supervisor and the fellow are on duty and concurrently managing cases, with a minimum of 20 hours overlapping time occurring over 3 days or 3 work shifts per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where direct supervision takes place. The diplomate need not personally examine each patient seen by the resident, but must provide frequent consultation, and in-depth case review of those cases which can contribute to the progress of the resident's academic and clinical education. The fellow must have a significant role in case management as either primary clinician or consultant. The resident must not be restricted to the role of an observer. Indirect supervision is defined as face-to-face contact with a Program Mentor/Supervisor (as above) for at least 4 hours per week. The Program Mentor/Supervisor must be licensed and authorized to practice in the facility where direct and indirect supervision takes place. The same criteria for Supervisor apply as for direct supervision.
- b. The following specialty rotations:  
Note: all specialty rotations must be supervised by a board-certified Diplomate in that specialty as recognized by the American Board of Veterinary Specialties or the following European specialty colleges: European College of Veterinary Internal Medicine (ECVIM), European College of Veterinary Surgery (ECVS), European College of Veterinary Anesthesia



Continuing Education that is intensely focused on a specialized facet of emergency/critical care (e.g. hemodialysis) may be logged concurrent with the Independent Study requirement on an individual basis at the discretion of the Credentials Committee; however, general CE requirements may not be logged concurrently with Independent Study time.

6. Experience in teaching. All residents and fellows must document **six hours of lecture and 6 hours of laboratory teaching** on emergency and/or critical care topics to veterinary students, AHTs, faculty, or veterinary audiences during their course of training. Time spent teaching in clinical practice will not satisfy this requirement. This teaching requirement CANNOT be met in an informal setting such as Problem-Based Learning courses, student rounds, cage rounds, or lectures to lay audiences.
7. Annual progress reports are required from **all** Residents and Fellows (Appendix 5 and 6).
8. All Residents and Fellows must contact the current ACVECC Executive Secretary and the current Chair of the Residency Training Committee prior to the start of their programs to register as a resident/fellow. All Residents and Fellows have a responsibility to contact the current ACVECC Executive Secretary and the current Chair of the Residency Training Committee whenever a change in contact information (address, telephone number, e-mail address) occurs during their training program, credential procedure, and up to the time when they achieve ACVECC Board Certification.

## **INSTRUCTIONS FOR FELLOWSHIP TRAINING PROGRAM PROPOSALS**

All fellowship training programs must be **pre-approved** by the Residency Training Committee prior to the start of the program. Final approval of the program by the Council of Regents can occur after the start of the program.

**Fellowship program proposals must be submitted by March 1<sup>st</sup> for programs starting July 15th or September 1<sup>st</sup> for programs starting January 15th.** Proposals will not be evaluated unless they are complete. The Residency Training Committee will respond to the proposal within 60 days of these dates. Once the Residency Training Committee has approved the proposal, final approval of the training program will occur at the next meeting of the ACVECC Council of Regents.

***One (1) hard copy and one (1) copy on electronic media (CD, DVD, etc) of all proposals must be submitted to the Chair of the Residency Training Committee. Please refer to the definitions found in the Training and Application Guidelines. Proposals should be enumerated as follows:***

- I. State that the proposal is for a fellowship training program and describe the goals of the program as enumerated on page 8 of the Training and Application Guidelines.
- II. Overview: State the beginning and ending dates of the fellowship, the name of the Program Mentor, and the name and location of the pre-approved host Residency Program Center(s). Residency Program Centers are the sites where rotations in Direct and Indirect supervision in Emergency/ Critical Care will occur and must comply with the minimum standards for a Veterinary Emergency and Critical Care Center (Appendix 1). Residency Program Centers must have one or more ACVECC Diplomate licensed and authorized to practice at the facility and serving as a rotation supervisor.
- III. State if some training in Emergency and Critical Care will occur outside a previously approved Residency Program Center. If a training site is not a previously approved Residency Program

- a. Total number of cases seen
  - b. Total emergency/critical case load for the hospital
  - c. Proportion of the emergency/critical care caseload that the fellow will participate in managing.
  - d. Staffing of veterinarians and nursing/technical staff.
  - e. Communications with referring veterinarian policies.
  - f. Medical Records policies.
  - g. Continuing Education policies for veterinarian and nursing/technical staff.
  - h. Library description
  - i. Verification of the level of care and maintenance provided in areas of laboratory, pharmacy, medicine, surgery, radiology, diagnostic imaging, anesthesiology, infectious disease control and house keeping consistent with the minimum standards of a Veterinary emergency and Critical Care Center as outlined in the *Guidelines for Veterinary Emergency and Critical Care Facilities* (Appendix 1).
- IV. If some training in Emergency and Critical Care will occur outside a previously approved Residency Program Center, a list of Supervisors providing Direct and Indirect supervision of Emergency/Critical Care rotations.
- V. Description of how Direct and Indirect supervised rotations in Emergency/Critical Care will be achieved including shifts, overlap with supervisor, case rounds schedule, etc.
- VI. Names and board certification of individuals providing supervision of core and elective (non-emergency/Critical Care) rotations.
- VII. Completed Program Outline (Appendix 3) including:
- a. Program Overview
  - b. Year-By-Year Outline
  - c. Week-by-Week Outline of the First Year
- VIII. Description of means by which any 2 of 3 of the following requirements will be met during the residency period:
- a. 100 hours of Rounds/Seminars occurring over a minimum of 2 years
  - b. 25 hours of Continuing Education in Emergency/Critical Care
  - c. Participation in a graduate or fellowship program in an allied biomedical science.
- IX. Description of means by which the didactic and laboratory teaching requirement will be met during the residency period.
- X. All copies of Fellowship Training Program Proposals must include the following information:
- a. Curriculum vitae of the candidate to date with clearly detailed dates of any internships, residency training, graduate degrees, board certification, and employment in emergency/critical care.
  - b. A copy of the candidate's veterinary degree and other pertinent certificates (internship, residency, board certification).
  - c. A mentorship agreement form (Appendix 2) signed by the Program Mentor.
- XI. Fellowship Training Program candidates may request background credit for previously supervised core and elective rotation requirements. These rotations must have been completed within 5 years of the time of Fellowship proposal submission. The request must be documented by signed written certification from the Diplomate who supervised the candidate and must represent an

equivalent training experience for the credit requested. Background credit will not be granted for rotations completed during an internship or equivalent experience. Requests for background credit must be submitted and accepted prior to the start of a new program.

## INSTRUCTIONS FOR RESIDENCY PROGRAM CENTER PROPOSALS

All Residency Program Centers must be pre-approved by the Residency Training Committee prior to initiating a residency training program. Final approval of the program by the Council of Regents can occur after the start of the program.

**Residency Program Center proposals must be submitted by March 1st or September 1st.** Proposals will not be evaluated unless they are complete. The Residency Training Committee will respond to the proposal within 60 days of these dates. Once the Residency Training Committee has approved the proposal, final approval of the training program will occur at the next meeting of the ACVECC Council of Regents.

***One (1) hard copy and one (1) copy on electronic media (CD, DVD, etc) of all proposals must be submitted to the Chair of the Residency Training Committee. Please refer to the definitions found in the Training and Application Guidelines. Proposals should be enumerated as follows:***

- I. State that the proposal is for Residency Program Center approval and describe the goals of the program as enumerated on page 8 of the Training and Application Guidelines.
- II. Overview: State the name of the Program Mentor(s), and the name, location, and the specialties represented at the Residency Program Center(s). Residency Program Centers are the sites where rotations in Direct and Indirect supervision in Emergency/ Critical Care will occur and must comply with the minimum standards for a Veterinary Emergency and Critical Care Center (Appendix 1). Residency Program Centers must have one or more ACVECC Diplomates licensed and authorized to practice at the facility and serving as a rotation supervisor.
- III. Description of the emergency caseload at the Residency Program Center(s) to include the following:
  - a. Total number of cases seen
  - b. Total emergency/critical case load for the hospital
  - c. Proportion of the emergency/critical care caseload that each resident will participate in managing.
- IV. Description of the Residency Program Center(s) where training in Emergency/Critical Care will occur with attention to the following headings outlined in the *Guidelines for Veterinary Emergency and Critical Care Facilities* published in the October-December 2001 issue of JVECC (vol.11, No. 4) in Appendix 1.
  - a. Staffing of veterinarians and nursing/technical staff.
  - b. Communications with referring veterinarian policies.
  - c. Medical Records policies.
  - d. Continuing Education policies for veterinarian and nursing/technical staff.
  - e. Library description
  - f. Verification of the level of care and maintenance provided in areas of laboratory, pharmacy, medicine, surgery, radiology, diagnostic imaging, anesthesiology, infectious disease control and house keeping consistent with the minimum standards of a Veterinary emergency and Critical Care Center as outlined in the *Guidelines for Veterinary Emergency and Critical Care Facilities* (Appendix 1).
- V. List of Supervisors providing Direct and Indirect supervision of Emergency/Critical Care rotations.

- VI. Description of how Direct and Indirect supervised rotations in Emergency/Critical Care will be achieved including shifts, overlap with supervisor, case rounds schedule, etc.
- VII. Names and board certification of individuals providing supervision of core and elective (non-emergency/Critical Care) rotations.
- VIII. Projected plans for meeting the requirement in Independent Study/Practice.
- IX. Completed Program Outline (Appendix 3) including:
  - a. Program Overview
  - b. Year-By-Year Outline
- X. Description of means by which the following requirements will be met during the residency period:
  - a. 200 hours of Rounds/Seminars occurring over a minimum of 2 years
  - b. 50 hours of Continuing Education in Emergency/Critical Care
- XI. Description of means by which the didactic and laboratory teaching requirement will be met during the residency period.
- XII. Mentorship agreement form(s) (Appendix 2) signed by the Program Mentor(s).

## **GUIDELINES FOR CONTINUED EVALUATION AND OVERSIGHT OF RESIDENCY PROGRAM CENTERS**

All Residency Program Centers are expected to comply with the minimum standards of a Veterinary Emergency and Critical Care Center as outlined in *the Guidelines for Veterinary Emergency and Critical Care Facilities* (Appendix 1)

Residency Program Centers will be evaluated every three (3) years by the Residency Training Committee. This will ensure that no resident can complete a training program without having their Residency Program Center evaluated at some time during their program. Evaluations will start in 2007 for any Residency Program Center approved in 2004. Evaluations for Residency Program Centers approved in 2005 will occur in 2008. Evaluations of new Residency Program Centers will occur every 3 years from the year of their approval.

The Residency Program Center evaluation process will start in March of the year of evaluation. One (1) hard copy and one (1) copy on electronic media (CD, DVD, etc) of all evaluations must be submitted to the Chair of the Residency Training Committee by no later than March 31<sup>st</sup> of the year of evaluation. The Residency Training Committee's initial evaluation will be completed within 3 months of this time. Either a letter granting continued approval of the Residency Program Center and training program or a letter outlining recommendations for changes or further clarification will be sent to the Program Mentor at the Residency Program Center by June 30<sup>th</sup>. This will allow time for recommendations to be considered and evaluated by the Program Mentor prior to the start of the next academic year. Incomplete evaluation submissions will be returned to the Program Mentor of the Residency Program Center to be completed.

Initial evaluation will require submission of the following documentation (Appendix 4):

1. The presence of a minimum of 1 ACVECC Diplomate per 3 residents-in-training providing all direct and indirect supervision to the residents. The Diplomate : Resident ratio should not exceed 1:3. The ACVECC Diplomate(s) should be practicing Veterinary Emergency & Critical Care at the Residency Program Center full time. The Residency Training Center must be staffed by an ACVECC Diplomate on-site for a minimum of 20 hours per week for a minimum of 30 weeks per year. If any direct or indirect supervised Emergency & Critical Care rotations are going to be performed outside the Residency Program Center, a letter from the ACVECC Diplomate supervising the off-site rotation(s) stating their willingness to provide supervision is required.
2. The name and board certification of all allied specialists providing supervision for elective / specialty rotations. If any of the elective / specialty rotations are to be performed outside the Residency Program Center, a letter from the allied specialist supervising the off-site rotation(s) stating their willingness to provide supervision is required. Proper documentation is required of any allied specialists that are new to the Residency Program Center or Residency Training Program (off-site supervision) since the last review and will be providing supervision of elective / specialty rotations.
3. Internet resources and current texts available at the Residency Program Center and current periodicals accessible to the resident(s) or fellow(s) in training. Access to a medical or veterinary library should be documented. A minimum of 75% of the list of the examination committee.
4. Listing of current seminars that are available at the Residency Program Center or off-site but easily accessible. This listing should include the frequency each seminar is available, the type of seminar (morbidly/mortality, seminar, journal club, Grand Rounds, etc), and the level of training of the presenter(s) (resident, physician, board-certified specialist, etc).
5. Listing of current equipment available at the Residency Program Center, especially equipment that is pertinent to the practice of high-quality Emergency & Critical Care. A statement verifying that the equipment is in good repair and accessible to the resident(s)-in-training should be provided.
6. Listing of any capital improvements or additions of new equipment at the Residency Program Center since the last review.
7. Verification that the case load managed by the resident(s)-in-training covers the range of problems / diseases expected of a board-certified Emergency & Critical Care specialist. Documentation should include number of cases evaluated at the Residency Program Center per year, emergency & critical

care cases evaluated per year, and estimation of number of cases managed by each resident or fellow in training. Documentation should also include the number and type of specialization of all specialists practicing at the Residency Program Center and whether the specialist is part time or full time at the Residency Program Center. Verification of case load and staffing.

8. Number and names of residents currently in the training program at the Residency Program Center.
9. Number of residents who have completed the residency training program since the last review.
10. Number of residents who have submitted credentials to the Credential Committee since the last review.
11. Number of residents who have had credentials accepted by the Credential Committee since the last review.
12. Number of residents who have taken the Emergency & Critical Care certification examination since the last review.
13. Number of residents who have passed the Emergency & Critical Care certification examination since the last review.

Follow-up documentation requested by the Residency Training Committee regarding adjustments or improvements at the Residency Program Center should be submitted to the current Chair of the Residency Training Committee by September 30<sup>th</sup>. One (1) hard copy and one (1) copy on electronic media (CD, DVD, etc.) of this documentation should be submitted. Either a letter granting continued approval of the Residency Program Center and training program or a letter requesting an on-site visit will be sent to the Program Mentor at the Residency Program Center by November 31<sup>st</sup>.

If follow-up materials remain inadequate, an on-site visit by a representative of the Residency Training Committee will be performed within 90 days of the letter. During this visit, the Residency Training Committee representative will inspect the Residency Program Center and will meet with the Program Mentor to discuss steps they can take to ensure adequate training of their residents. Written documentation of recommendations and discussions among the representative of the Residency Training Committee and Program Mentor will be provided to the Program Mentor within 30 days of the meeting.

If an on-site visit to a Residency Program Center is required, the Residency Program Center in question will be placed in "probationary status" and must cease from adding new residents until all concerns of the Residency Training Committee have been resolved in a favorable manner. Residents currently in training programs at the Residency Program Center in question are permitted to continue their training as outlined in the previous review of the Residency Program Center. If a Residency Program Center is placed on "probationary status", all residents and/or fellows training at the Residency Program Center will be notified in writing of the "probationary status" and supplied with a copy of all relevant information pertaining to the deficiencies. If deficiencies previously identified are not resolved to the satisfaction of the Residency Training Committee, the Residency Training Center will be deemed inadequate for residency training.

If a Residency Program Center is judged inadequate for residency training by the Residency Training Committee, the status as a Residency Program Center will be withdrawn. Any appeals of this decision will be handled through the ACVECC Board of Regents.

All evaluations of Residency Program Centers will be provided to the ACVECC Board of Regents for review and final approval.

Changes in an ACVECC Diplomate's status of employment at all Residency Program Centers should be reported to the current Chair of the Residency Training Committee at the time of the change.

## ANNUAL REPORT SUBMISSION

All residents and fellows must file an annual progress report. One (1) hard copy and one (1) copy on electronic media (CD, DVD, etc) of all annual reports must be submitted to the Chair of the Residency Training Committee. **Deadlines for report submission are March 1st (for programs beginning in January, and covering the period of the previous January through December 31st) and September 1st (for programs beginning in July, and covering the period of the previous July through June 30th).** Late submissions will not be evaluated until the following submission date, and the training program may be deemed inactive during that period. (Credit may not be granted for rotations completed, and the training program may have to be extended.)

The progress report will be reviewed by the Residency Training Committee and recommendations/requirements will be forwarded to the resident or fellow and Program Mentor.

Any proposed changes from the original accepted fellowship proposal must receive prior approval by the Residency Training Committee.

If the resident or fellow intends to submit credentials in January and the training program is not yet completed, an interim report must be received by the Residency Training Committee by November 1st of the preceding year. This report must provide documentation of plans to complete all training and credentialing requirements by the deadline established for that candidate by the Residency Training Committee in the calendar year of intended examination. The response by the Residency Training Committee, confirming eligibility to submit credentials, must be included in the credentials application. A final report detailing completion of all training requirements must be received by the Residency Training Committee 8 weeks prior to the examination. The Residency Training Committee will notify the candidate, the Executive Secretary, and the Examination Committee of the acceptability of this final report at least 1 month prior to the examination.

The annual report must utilize the format provided by ACVECC (see appendices 5 and 6), and must include:

1. A completed and signed ACVECC residency training program and fellowship training program annual report form signed by the resident or fellow and Program Mentor (Appendix 5).
2. A completed Progress Report (Appendix 6), documenting rotations and other requirements completed by the resident or fellow. All core or elective specialty rotation supervisors must sign Appendix 6, part A attesting to satisfactory completion of individual weeks in order to receive credit for the rotation.

## APPLICATION PROCEDURE FOR ADMISSION TO EXAMINATION FOR DIPLOMATE STATUS

1. Application for examination must be made to the Executive Secretary on a form provided by the College, procured through written request by the resident (Appendix 10). The application is filed along with the prescribed application fee and required documents (see Credential Application Checklist) prior to the closing date for the next scheduled examination. Application fees will not be refunded if the resident or fellow is determined not eligible to take the examination.
2. All residents and fellows must provide the Executive Secretary with certification that they have completed their training by 4 weeks prior to the examination. This can be completed by either:
  - a. Providing copies of their residency certificate **or**
  - b. Providing copies of the signed Program Mentor Statement of Certification that they have successfully completed their program (Appendix 10) and the letter confirming completion of all training requirements by the Residency Training Committee (see Annual Report section).
3. Eligibility rulings are made by the Council of Regents on recommendation by the Credentials Committee, and residents and fellows will be notified whether they are eligible for examination no less than six months preceding the scheduled examination date.
4. The resident or fellow is required to sign the Waiver, Release, and Indemnity Agreement (Appendix 10).

# ACVECC RESIDENT'S CREDENTIAL APPLICATION CHECKLIST

You must submit one (1) hard copy along with a CD containing an electronic version of the completed credentials packet to the Credentials Committee through the Executive Secretary

All documentation in hard copy form must be indexed and bound in 3-ring binders or the equivalent.

1. A copy of your Veterinary Medical degree (DVM, VMD, BVSc, etc.).
2. A copy of your curriculum vitae with clearly detailed dates of any internships, residency or fellowship training, graduate programs (degrees), and employment in emergency/critical care.
3. One of the following:
  - A. A copy of your residency certificate. Individuals completing residency programs may omit the residency certificate at the time of credential submission, but must forward the certificate to the Executive Secretary no later than 4 weeks prior to the examination date.  
*See documentation required on pages 8 and 9.*
  - B. Copies of (*see documentation required on pages 8 and 9.*)
    - i) The initial letter of approval of your program from the Residency Training Committee
    - ii) The annual letters approving your progress from the Residency Training Committee
    - iii) The letter from the Residency Training Committee following the required November 1<sup>st</sup> Interim report (see Annual Report section), approving submission of credentials
    - iv) The signed Program Mentor Statement of Certification (Appendix 10) that you have successfully completed their program. Individuals completing residency or fellowship programs may omit the residency certificate at the time of credential submission, but must forward the certificate and the letter from Residency Training Committee documenting completion of all training requirements to the Executive Secretary 4 weeks prior to the examination date.
4. Four (4) written case reports (if this option is selected) and the Affidavit of Case Report Originality (Appendix 11), with a copy on disc for verification of the word count.  
**OR**  
A copy of your preferred first authored publication (if this option is selected). If the article is in review or in press, then the applicant must also document its submission or acceptance with a letter from the editor at the time of the application. A copy of the manuscript under consideration should also be submitted. Manuscripts under review only at the time of credentials submission must have final acceptance (in press) documented by June 30<sup>th</sup> of the year of intended examination in order for a candidate to successfully fulfill credentialing.
5. Three (3) letters of recommendation, one of which must come from your training program mentor. Letters should come from individuals able to attest to the resident's or fellow's clinical skills/abilities/experience/involvement in the emergency and critical care arena.
6. Five (5) multiple choice questions for consideration for use in subsequent examinations. Questions must be prepared in the format prescribed (see page 23).
7. Your completed application. (Appendix 10)
8. The signed waiver, release, and indemnity agreement (Appendix 10).
9. Your application fee in the form of a personal check or money order paid to the order of the ACVECC. If reapplying, an additional application fee is required. Re-applicants should review specific, pertinent guidelines.

**Procedural Information:**

The Application Packet must not be sent to the Executive Secretary unless it is complete.

Applicant must send **one (1) hard copy** of the completed application and all pertinent materials along with a CD containing an electronic version of the completed credentials packet (we recommend scanning the completed document to a pdf file) to the Secretary of the ACVECC at the address listed below. Do not FAX or E-mail your application to the Executive Secretary; it must be mailed or it will not be accepted.

Executive Secretary: Armelle de Laforcade  
Executive Secretary, ACVECC  
Tufts Cummings School of Veterinary Medicine  
200 Westboro Road  
North Grafton, MA 01536

The application **must be received** by the Executive Secretary no later than the deadline date for credentials submission.

Individuals submitting first-time applications or re-applications should contact the Executive Secretary and request updated guidelines as specific application requirements are subject to change, and all applicants must adhere to stipulations for the year of application or re-application.

For individuals re-applying, you must enclose any correspondence that indicates previous acceptance of any portion of the application. Such applicants need only submit those aspects of credentials that were NOT previously accepted by the credentials committee, along with the correspondence of what WAS accepted.

## CREDENTIAL APPLICATION EVALUATION PROCEDURE

1. Both the basic credentials and the case reports and/or publication(s) must be accepted.
  2. The basic credentials will be evaluated as "acceptable" or "unacceptable." The reviewer will record his/her evaluation on a standard form that will be retained by the College.
  3. Subsequent to review of the basic credentials, the case reports or publication will be evaluated by the Credentials Committee. Once the case reports or publication are graded acceptable, they will be held on file for a three credential cycle period and will remain accepted during that time.
  4. When a resident or fellow resubmits credentials after previously having his/her credentials rejected, a *complete* application packet (except previously approved case reports) must be submitted to the Credentials Committee, and it will be examined with all other credentials packets for that application cycle.
  5. The Committee will seek to notify the resident or fellow of the acceptance or rejection of his/her credentials within 60 days of application deadline. It is the responsibility of the *applicant* to notify the Executive Secretary in writing of any address change. An applicant's failure to notify the above of a current address may cause misdirected mail and a significant delay in communicating results.
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### EVALUATION OF THE LETTERS OF RECOMMENDATION

Three (3) letters of recommendation must be in the office of the Executive Secretary of the College by the application deadline date. One letter must be from the program mentor. If for any reason three (3) letters are not present at that time of credentials submission, the credentials will be rejected.

1. Each letter of recommendation will be evaluated on the following criteria:
  - a. Source of recommendation (Evaluator). Letters will only be accepted from those individuals directly familiar with the applicant's scientific and clinical skills.
  - b. Content of recommendation. An unsatisfactory recommendation is one wherein the letter fails to support the candidate's application.
2. If two (2) of the three (3) letters of recommendation are deemed unsatisfactory by two (2) members of the Credentials Committee, the application will be disqualified.

If one (1) of the three (3) letters of recommendation is unsatisfactory, the Credentials Committee will review and discuss all the letters of recommendation. At least one (1) of the two (2) acceptable letters written for the candidate must be from an ACVECC diplomate. Personal contact with the individual who wrote the unsatisfactory letter of recommendation may be deemed necessary prior to accepting the application.

## **INSTRUCTIONS FOR CASE REPORTS**

**(Note that applicant might elect to submit a first authored refereed publication in lieu of case reports)**

The purpose of the case reports is to:

- a. Verify that the applicant has been working in the area of veterinary emergency and critical care.
- b. Demonstrate applicant's ability to use medical principles in the diagnosis and treatment of animal disease.
- c. Display applicant's ability to communicate medical observations and data to colleagues in a clear, concise, and organized manner.

### **CASE SELECTION FOR CASE REPORTS**

1. Case selection for reports should be those in which principles of emergency/critical care are directly applicable as a major part or whole of case management. Cases should have been presented and evaluated within three years preceding application. Residents should not submit cases in which case management has been seriously compromised due to owner constraints.
2. The case reports must demonstrate the applicant's abilities in emergency/critical care medicine. This includes thoroughness, logic and accuracy in assessment, diagnosis and therapy as well as overall case management. All appropriate differential diagnoses should be mentioned, followed by a description of the logic used to arrive at the final diagnosis. Laboratory tests should be justified and abnormal results discussed. All appropriate and recognized veterinary medical diagnostic tests or therapies that were used or considered for the case must be described and discussed. Finally, do not report on laboratory research even if it has direct applications to clinical medicine.
3. Specifically, the case reports must document the applicant's ability to evaluate different types of problems in emergency/critical care. The reports must cover different disease processes. For example, one report of bacterial endocarditis and one report of infectious arthritis would be considered as being in the same category.

### **FORMAT OF THE FOUR CASE REPORTS**

#### **CANDIDATES MUST READ GUIDELINES CAREFULLY AND CONFORM TO ALL STIPULATIONS**

**NOTE: IF A CASE REPORT DOES NOT CONFORM TO FORMAT, THE CASE REPORT MAY BE REJECTED WITHOUT BEING READ.**

1. Without exception, case reports must be limited to 2,000 words or less. Reports must be typed, double-spaced, and limited to five (5) pages in length. Margins of at least one (1) inch should be present at the top, bottom, and both sides. Printing should be no smaller than 12 characters/inch (typewriter), 12 pitch (12 point) for other (e.g., computer) printers, high quality print only. With effort, even relatively complex cases can be adequately described within this space limitation. Leave adequate margins for binding or stapling. A copy of the case report must be provided on disc for verification of the word count.
2. All documentation used in the management of a case must be submitted with the case report. Laboratory data, radiology reports, ECGs and all other pertinent support materials from the medical record must be tabulated or included as appendices. Tabulated or appended material is not included in the word limit. However, this information must be assessed in the report itself. Biochemical tests, urinalyses, and CBCs must be reported on the standard forms that are included with the application (Appendix 12). Reference values for *your* laboratory should be listed in the *first* column of each table of patient laboratory data in each copy of each case report.

3. Each report should have a title page that includes the applicant's social security number (or similar identification number), the case report number and title. No other identifying information should be present. The title page is not included in the 2000 word limit. A 2 to 4 sentence summary of the case should be included on the title page.
4. The reports should be written in a narrative format, and follow the outline of a problem-oriented medical approach. Grammar and spelling must be flawless, and slang/colloquialisms must not be used. All cases should be written with strict attention to editorial detail, as if they were to be submitted for publication. Plagiarism and the use of extensive quotations are unacceptable. Failure to follow these instructions may result in rejection of the case report.
5. Applicants must not identify themselves on case reports in any way except by social security number as previously described. Be certain that all identifying marks are removed. For example, pathologists or radiologist's signatures and hospital names must not appear in the text or appendices. Failure to maintain anonymity may result in rejection of the case report.
6. The case reports may be mentored, but they are expected to be the work of the applicant. A diplomate may examine case reports and advise the applicant as to the suitability of a given case. The case report must reflect the applicant's thoughts, not a consensus of opinion. The applicant and his/her mentor must sign the accompanying affidavit attesting to the originality of the applicant's case reports.

## **EVALUATION OF CASE REPORTS**

1. Each case report will receive a numerical score from 1 to 10 from each of the reviewers. A maximum score of 10 will be assigned to a case of suitable difficulty to demonstrate the resident's competence in emergency/critical care medicine and that is free from errors in assessment, data collection, clinical judgement, and therapeutic management. A score of 6 or less is unacceptable. Any case report that receives a score of 6 or less from a majority of reviewers (minimum of 3) will be considered unacceptable.
2. Three of the 4 case reports must be acceptable. The application will be rejected if more than 1 case report is judged unsatisfactory.
3. Points will be subtracted from the maximum score of 10 for the following reasons:
 

a. Case selection	d. Major error
b. Procedural error	e. Minor error
c. Language error	
4. **Case Selection**  
  
Simple, straight-forward cases that fail to demonstrate the resident's competence in veterinary emergency/critical care medicine will not be accepted. The four (4) case reports must include at least three (3) different body systems. If the majority of the reviewers agree that the case report does not fulfill the criteria described in the section "Instructions for Case Reports" in the application instructions, the report will be unacceptable.
5. **Procedural Errors**  
  
Failure to follow the report format requirements will result in the deduction of 1 to 4 points. Case reports containing major procedural errors including: exceeding the 2000 word limit, report not double-spaced, failure to maintain anonymity, missing parts, etc. will receive an automatic four (4) point deduction and will not be accepted by the Credentials Committee.
6. **Language Errors**  
Reports with misspelling, clumsy syntax, or serious errors of grammar may lose from 1/4 to 3 points.

7. Major Errors

From 1 to 5 points could be deducted. Major errors are errors in assessment, failure to adhere to the tenets of problem-oriented medical records, diagnostic or therapeutic plans that were potentially or actually detrimental to the patient, or that delayed or obscured the correct diagnosis or therapy. Note: A major error that resulted in death or increased morbidity should result in failure of the case (deduction of 4 or more points). These include, but are not limited to:

- a. Failure to assess all clinical and laboratory problems (i.e., one problem pursued at the expense of all others).
- b. Diagnostic Errors
  - (1) Erroneous assessment of data such that an incorrect diagnosis was made.
  - (2) Diagnosis not supported by data presented.
  - (3) Failure to rule out important differential diagnoses. Premature establishment of a definitive diagnosis. Omission of diagnostic tests that were essential to confirm or substantiate the diagnosis.
- c. Therapeutic Errors
  - (1) Therapy was inappropriate, delayed, or withheld.
  - (2) Therapy was detrimental to the patient.
  - (3) Therapy instituted for one problem without regard for its potential deleterious effects on another problem.
- d. No explanation of why the necessary diagnostic and/or therapeutic plan was not followed.
- e. Understanding/appreciation of the pathophysiology of the major disease process not demonstrated.
- f. Problems/complications arising from diagnostic or therapeutic procedures or the progression of the disease were not anticipated when they were predictable.

8. Minor Errors

From 1/4 to 1 point could be deducted. Minor errors are inadequacies that are noteworthy but not crucial to the total management of the patient. These include but are not limited to:

- a. Failure to assess all clinical and laboratory problems.
- b. Incomplete, incorrect or inappropriate list of differential diagnoses. (This could be a major error, depending on the significance of the Ddx that was overlooked.)
- c. Performance of tests that were not indicated but that did not harm the patient. Indiscriminate or premature ordering of tests.
- d. Failure to mention diagnostic or therapeutic procedures that would have been helpful that were not absolutely necessary (example: echocardiography would have been helpful to assess the degree of impairment of cardiac performance in this patient but was unavailable).
- e. Superficial or outdated understanding of pathophysiology. (This could be a major error, depending on the significance of the pathophysiology that was overlooked.)

9. Each reviewer will record his/her evaluation on a standard form, indicating the number of points deducted and the reasons for the deductions. These forms will be retained by the College. The Chairperson of the Credentials Committee and Executive Secretary of the College will retain these and send a written summary to all unsuccessful applicants.

## INSTRUCTIONS FOR PUBLICATIONS

Seven (7) copies of the publication must be submitted. The publication must be in print (but cannot be > 5 years since publication) or accepted for publication or under review following submission. Manuscripts that are submitted (under review), but not accepted by the credential deadline must be accompanied by a letter from the journal editor verifying submission by the credential deadline. These publications pending acceptance must have final acceptance by the Editor by June 30th of the calendar year for which examination is applied to/planned. If the manuscript has been submitted or accepted but not yet published, seven (7) copies of the letter of acceptance must be included with the manuscript or the publication will not be evaluated.

If you are unsure whether a response from a journal is considered "acceptance," you should petition the Chair of the Credentials Committee in writing, for clarification prior to the credential application or publication acceptance deadline. A minimum of **6 weeks** time may be needed for the Credentials Committee to respond to the request for clarification on this issue.

The manuscript must be published in a refereed, scientific, medical or veterinary publication. If the applicant has two (2) or more publications, he/she should be careful to select the one that meets the stated criteria. The topics of these publications should be relevant to the discipline of emergency and critical care. Original research, retrospective studies, prospective studies, review articles, and case reports are examples of potentially acceptable publications. Book chapters do not qualify as refereed publications. A refereed journal is one that is governed by policies and procedures established and maintained by a standing editorial board that requires critical review of all papers and approval of at least one recognized authority on the subject. Mainstream journals of major disciplines are acceptable providing the journals adhere to the principles of peer review, and the subject of the paper is relevant to CC/EM. It is the candidate's responsibility to include a letter from the editor of that journal that outlines the editorial process in detail, should potential question exist with respect to rigor of peer review process (e.g., unfamiliar journal). If the letter does not adequately document to the Credentials Committee that the journal is acceptable, the publication will be rejected without further review. Any questions concerning the acceptability of a publication or journal should be directed to the Chair of the Credentials Committee in writing, at least 12 weeks prior to the credentials deadline to allow for committee action on your request. In past years, otherwise strong applicants have had difficulty determining whether a specific article is satisfactory. Program mentors and potential applicants are counseled to consult the Chair of the Credentials Committee with any questions.

## Instructions for Multiple Choice Questions

1. The applicant must submit five (5) multiple choice questions. Questions must be typed double-spaced. Margins of at least one (1) inch should be present at the top, bottom, and both sides. Printing should be no smaller than 12 character/inch (typewriter), 12-pitch (12 point) for other (e.g., computer) printers, high quality print only.
2. The question must be categorized by one of the topics listed below. No more than 1 question is allowed per topic.

### Topic List

Sepsis/Infectious Disease/Therapeutics  
Fluid/Electrolyte/Acid-Base/Renal  
Cardiovascular  
Shock  
Monitoring  
Coagulation/Transfusion Medicine/Hematology  
Trauma  
Pulmonary  
Environmental Emergencies (burns, heatstroke, hypothermia, snakebite, etc.)  
Gastrointestinal/Metabolic/Endocrine  
Toxicology  
Neurology  
Surgical Principles  
Cardiopulmonary Cerebral Resuscitation  
Anesthesia/Analgesia  
Nutrition  
Reproductive/Urogenital  
Diagnostic Imaging

3. Each question must follow the format below. Five answers must be provided for each question. The correct answer must be listed first.

Topic: Cardiovascular System

Question:

While performing an echocardiographic examination on a 4 year old Cocker Spaniel you determine that the diastolic left ventricular internal dimension (LVIDd) is 3.5 cm and systolic left ventricular internal dimension (LVIDs) is 3.0 cm. What is the fractional shortening of the left ventricle?

CHOICE: (Correct answer first)

1. 15%
2. 10%
3. 20%
4. 30%
5. 40%

REFERENCE:

Echocardiography. Harvey Feigenbaum. 4<sup>th</sup> Edition. Lea and Febiger. Philadelphia, PA. 1986. pp.131.

QUESTION WRITER:

Name:

4. The question must be referenced. Each reference must be a peer-reviewed journal or a textbook. At least three of the five questions must be referenced from peer-reviewed journals or textbooks published in the previous 3 years. The following are not acceptable publications to reference:

Proceedings of..(various meetings, specialties)

Short communications

Serial articles (e.g. ECG of the month, Topics in drug therapy, What's your diagnosis?)

Letters to the Editor

Lay Publications (e.g., Equus, Cat Fancy)

5. The applicant must provide his or her name after each question
6. The multiple choice questions may be mentored, but they are expected to be the work of the applicant..

**CANDIDATES MUST READ GUIDELINES CAREFULLY AND CONFORM TO ALL STIPULATIONS**

**NOTE: IF A MULTIPLE CHOICE QUESTION DOES NOT CONFORM TO FORMAT, THE MULTIPLE CHOICE QUESTIONS MAY BE REJECTED WITHOUT BEING READ.**

## **ACCEPTABLE JOURNALS**

Journal of Veterinary Emergency and Critical Care  
Journal of the American Veterinary Medical Association  
American Journal of Veterinary Research  
Journal of Small Animal Practice  
Journal of the American Animal Hospital Association  
Equine Veterinary Journal  
Compendium of Continuing Education  
Veterinary Record  
Research in Veterinary Science  
Veterinary Science Research Communications  
Canadian Veterinary Journal  
Canadian Journal of Veterinary Research  
Journal of the American College of Veterinary Internal Medicine  
Veterinary Radiology  
Veterinary Surgery  
Veterinary Anesthesia  
Journal of Veterinary Pharmacology and Therapeutics  
British Veterinary Journal

**NOTE:** This list is not exhaustive and many other journals may be acceptable. Candidates are reminded that the topics of acceptable publications must be relevant to the discipline of emergency/critical care medicine.

If you are uncertain of the suitability of a journal, you should petition the Chair of the Credentials Committee for clarification, in writing, well in advance of the application deadline as noted above.

## **THE FOLLOWING ARE NOT ACCEPTABLE PUBLICATIONS**

Proceedings of . . . (various meetings, specialties)  
Short communications  
Serial articles (e.g., ECG of the month, Topics in drug therapy, What's your diagnosis?)  
Letters to the Editor  
Lay Publications (e.g., Equus, Cat Fancy)  
Book chapters

## THE CERTIFYING EXAMINATION

1. Candidates approved by the Credentials Committee and Council of Regents must submit all fees prior to final approval to participate in the examination. The candidate will be advised of any amendments to the general examination format (#5 below) no less than three months prior to examination.
2. Examinations will be given once annually.
3. Examinations will be prepared and administered by the Examination Committee. Passing scores on each section will be proposed by the Examination Committee and approved by the Council of Regents.
4. A candidate will take all parts of the examination the first time. The candidate will have 3 examination cycles to successfully complete examination. Individuals who wish to further defer examination for medical reasons, must petition the Council of Regents on an annual basis.
5. The examination shall be divided into three parts.
  - a. Part I - General Multiple Examination covering topics important to emergency and critical care. The questions will include but not be restricted to the disciplines of anatomy, physiology, pathophysiology, pharmacology, microbiology, immunology, nutrition, and clinical aspects of the specialty.
  - b. Part II - Species Specific Multiple Choice Examination covering topics from current literature and textbooks important to the discipline of emergency and critical care
  - c. Part III - Clinical Examination: Slides, videotapes, tissues, radiographs, and other laboratory or audiovisual devices will be used to supplement questions on clinical cases. Questions will be written format (multiple choice, short answer, short paragraph).
6. A minimum passing score, as proposed by the Examination Committee, must be achieved on each part.
  - a. All candidates sitting for an examination will be notified of the results of the examination on the same date, within 45 days of the date of the examination.
  - b. Candidates failing two or more parts must retake the entire examination. Candidates failing a single part of the examination only need to retake that portion. All candidates retaking one or all parts of the examination must resubmit the examination fee and must officially notify the Executive Secretary by submitting a form provided by the College.
  - c. Candidates who have failed all or part of the examination will have 30 days after email notification of their examination results to request written clarification from the ACVECC Executive Secretary. The clarification of deficiencies will be provided to the Candidate within 45 days of receipt of the Candidate's request.
7. All examination requirements must be completed within three examination cycles from the date the candidate's credentials are accepted by the College.
  - a. Exception to this requirement may be made to the Council of Regents following written petition by the applicant through the Executive Secretary.
  - b. A candidate that does not pass the examination within three examination cycles must re-submit credentials for approval. If credentials are re-approved, candidate has three additional examination cycles to pass the examination and this candidate must take the entire examination during the first of these additional three cycles.

## **CERTIFICATION**

1. Applicants must successfully pass the certifying examination.
2. Final approval for Diplomate status must be granted by the Council of Regents.
3. A certificate will be issued to the Diplomate by the Executive Secretary upon approval by the Council of Regents.

## **APPEALS**

1. Applicants denied eligibility to sit for the Diplomate Certification Examination may appeal this decision within 30 calendar days of receipt of the letter of notification. The appeal must be made by written petition to the Executive Secretary and shall include a statement of the grounds for reconsideration along with appropriate documentation.
  - a. Upon receipt of an appeal, the Executive Secretary shall notify the President of the Council of Regents and the Chair of the Credentials Committee. The President of the Council will appoint a committee of three Diplomates to serve as an ad hoc Appeal Committee within 15 calendar days of receiving notification of the appeal.
  - b. The Chair of the Credentials Committee shall submit to the Appeal Committee a written statement indicating the reasons for rejecting the applicant. The complete application file of the applicant will be provided for the Appeal Committee to review.
  - c. The Appeal Committee shall review the appeal(s) and render the recommendation(s) to the Regents within 30 calendar days from the date the committee was appointed.
  - d. The Council of Regents will render a decision on the appeal upon the recommendation of the Appeal Committee and notify the petitioner of the decision within 15 calendar days after receipt of the report of the Appeal Committee.
  - e. The petitioner may appeal the decision of the Council to the AVMA Advisory Board on Veterinary Specialties.
2. Candidates failing to pass the Diplomate Certification Examination may appeal this decision within 30 calendar days of receipt of the Examination Committee's letter of clarification.
  - a. The request for appeal must be made by written petition to the Executive Secretary and shall include a statement of the grounds for reconsideration along with appropriate documentation.
  - b. The Executive Secretary shall notify the President of the Council of Regents and the Chair of the Examination Committee. The President shall appoint three Diplomates to serve as an ad hoc Appeal Committee within 15 calendar days of receiving notification of an appeal. The Chair of the Examination Committee shall submit to the Appeal Committee the examination and scores of the candidate, the complete list of scores of all candidates on that examination, and a statement as to the criteria used for the Committee's recommendation for success or failure.
  - c. The Appeal Committee shall review the appeal(s) and render the recommendation(s) to the Regents within 30 calendar days from the date the committee was appointed.
  - d. The Council will render a decision on the appeal upon consideration of the recommendation(s) of the Appeal Committee and notify the petitioner of the decision within 15 calendar days after receipt of the recommendation(s) of the Appeal Committee.

## Appendix 1

# GUIDELINES FOR VETERINARY EMERGENCY AND CRITICAL CARE FACILITIES

*These guidelines are intended to provide **minimum** standards for veterinary emergency and critical care facilities.*

### DEFINITIONS/TERMINOLOGY

To avoid confusion on the part of the general public and to provide guidelines for consistency in the designation of Veterinary Emergency Facilities, the following nomenclature is suggested which is consistent with the AVMA guidelines. The veterinary Emergency and Critical Care Society (VECCS) recommends that the following terminology be used when referring to emergency service and facilities.

**Emergency Service:** The category of service provided should be clearly evident to the public.

- **Veterinary Emergency Service** - A veterinary service with a veterinarian on the premises during all hours of operation receiving and managing emergency cases.
- **On-Call Veterinary Emergency Service** - A veterinary service on-call or available to receive and manage emergency cases as requested if veterinarian is available. Does not have constant coverage by a veterinarian during all hours of operation.

**Emergency Facility:** A veterinary facility with the primary and dedicated function of receiving and managing emergency patients during its specified hours of operation.

- **Emergency Clinic** - A facility that is specifically operated, staffed and equipped to provide emergency service. Most patients are treated on an outpatient basis. The specified hours of operation are expected to be other than the normal business hours of general veterinary practices. Patients are transferred to the primary care veterinarian the next workday.
- **Emergency Hospital** - Emergency facility similar to an Emergency Clinic but with more advanced capabilities enabling hospitalization and management of multiple critical patients.
- **Emergency/Critical Care Center** - A facility specifically designated to be operated, staffed and equipped (in accordance with Parts 1 and 2 of these guidelines) 24 hours a day to provide a broad range of veterinary emergency and critical care service. It is suggested that professional staff include board certified specialists and veterinary technician specialists (AVECCT). Centers that share a facility with a specialty practice or primary care practice must provide staffing and equipment to ensure appropriate emergency and critical patient care.

### PART 1: MINIMUM GUIDELINES FOR A VETERINARY EMERGENCY FACILITY

### Staffing

During the specified hours of operation a licensed veterinarian should be on the premises at all times and sufficient staff must be available to provide expedient patient care. Staffing should be sufficient to allow:

- Processing multiple patients
- Performance of a wide range of life-saving procedures to include but not be limited to cardiopulmonary resuscitation and emergency surgery. This requires at least three people, including one veterinarian and one veterinary technician.
- Appropriate and timely consultation with veterinary specialists. A close association with a Diplomate of the American College of Veterinary Emergency and Critical Care, or other veterinary diplomates with a special interest and experience in emergency and critical care is recommended to optimize patient care and facilitate patient referral if necessary.

### Communications

Good communications must be maintained to allow efficient transfer of patient information between the emergency facility and primary care veterinarians. It is highly recommended that the emergency facility have all the clinic and home telephone numbers of primary care veterinarians. A report should be sent to the primary care veterinarian in a timely manner to ensure immediate continuity of care and for inclusion in the patient's permanent record.

**Medical Records** A complete and thorough medical record on file for each patient should be kept at the emergency facility.

The Medical record must follow AVMA guidelines for the POMR and must include:

1. Client identification
2. Patient signalment
3. Presenting complaint(s)
4. History
5. Physical examination
6. Clinical pathology tests performed and results
7. Diagnostic imaging procedures and interpretation
8. Tentative diagnosis or rule-outs
9. All treatments including anesthesia records and

- surgical procedures
- 10. Progress notes
- 11. Medications administered
- 12. Client instructions and other client communications including release forms
- 13. Client and referring veterinarian communications
- 14. All entries in the medical record should clearly identify the individual(s) responsible for administering care and entering data.

**Continuing Education** Continuing education must be provided for professional and technical staff and must allow:

- veterinarians and technicians to comply with CE requirements for state licensure.
- veterinarians to meet specialty board CE requirements to maintain certification
- technicians to meet CE requirements of their respective certification and licensing boards

All veterinarians should obtain at least 30 hours of accredited continuing education every two years in the field of emergency and critical care medicine. Veterinarians in Animal Emergency Centers should obtain at least 40 hours of CE every two years in the field of emergency and critical care medicine. Technicians should receive at least 24 hours of continuing education in the field of emergency and critical care medicine every two years. A system of ongoing, in-service training should be provided for veterinarians and technical staff to assure teamwork and familiarity with current procedures and guidelines. All facilities should maintain a library containing current textbooks, periodicals and, ideally, electronic data sources and Internet access.

**Emergency Capabilities** The level of care and maintenance provided in areas of laboratory, pharmacy, medicine, surgery, radiology, diagnostic imaging, anesthesiology, infectious diseases control, and housekeeping should be consistent with currently accepted practice and procedures for a veterinary emergency and critical care facilities 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. Emergency facilities should have procedures in-place to quickly obtain specialist consults and to refer cases as appropriate.

All emergency facilities should have the capacity to perform the following:

1. Diagnosis and management of life-threatening emergencies including cardiovascular, respiratory, and neurological problems to include: a) cardiopulmonary resuscitation including electrical defibrillation b) placement and maintenance of thoracostomy tubes, c) emergency tracheostomy and tracheostomy tube care, d) oxygen supplementation, e) assisted ventilation.

2. Monitoring capabilities should include: a) electrocardiogram, b) arterial blood pressure, c) central venous pressure, d) pulse oximetry, e) esophageal stethoscope.
3. Emergency surgery including: a) surgical hemostasis, wound debridement and application of wound dressings, b) stabilization of musculo-skeletal injuries, c) aseptic thoracic, abdominal, and neurosurgery, or d) be able to refer to a facility that can perform these procedures in a timely manner.
4. Treatment of circulatory shock using crystalloids, colloids and blood products and equipment such as calibrated burettes or infusion pumps to allow accurate delivery of fluids. Facilities should have natural and/or artificial blood products and the capacity to type and cross match donor and patient blood.
5. Anesthetic and analgesic therapy to include opiates, non-steroidal medication, and inhalational anesthesia. Intra-operative monitoring should include an electrocardiogram, esophageal stethoscope, blood pressure monitor and pulse oximetry when appropriate.
6. Laboratory functions: Perform in a timely manner a) a complete blood count, BUN, refractometric total solids, blood glucose, urinalysis, b) activated clotting time, c) electrolyte measurements (Na, K, Cl), d) FIV/FeLV serology, e) cytology, f) heartworm testing, and g) fecal examination (flotation, cytology and parvovirus antigen test). Additionally, an emergency facility must have laboratory supplies to collect, prepare, and preserve samples for a complete serum biochemical profile, blood gas analysis, full coagulation profiles, microbiological culture, and histopathology.
7. Imaging: a) Produce good quality radiographs while ensuring the safety of patient and staff. A radiographic machine of at least 300 mA and an automatic film processor are highly recommended. b) On-site ultrasonography capability is highly recommended
8. Have or have ready access to endoscopy.

**PART 2: MINIMUM GUIDELINES FOR A VETERINARY EMERGENCY AND CRITICAL CARE CENTER**

Emergency and Critical Care Centers must meet all the previous requirements as well as the following:

1. Be able to serially monitor a CBC, full serum biochemical profile, coagulation screen and blood gases **on site**.
2. Monitor direct arterial blood pressure and end tidal carbon dioxide concentration.
3. Perform peritoneal or pleural dialysis.
4. Have the ability to provide enteral and parenteral nutrition.

Perform long-term mechanical assisted ventilation

## APPENDIX 2 STATEMENT OF MENTORSHIP

I hereby certify that I will act as Program Mentor for \_\_\_\_\_.  
(candidate's name or Residency Program Center name)

I understand that, as Program Mentor, I will:

- coordinate the entire training program
- be available to the resident or fellow on a continuing basis
- directly overview the implemented program, and the resident's or fellow's progress
- meet with the resident or fellow at least every 3 months to evaluate program progress
- act as primary rotation supervisor (direct and/or indirect supervision) for at least 10 weeks of the program
- review and critique resident's or fellow's progress report (Appendix 6), Procedures Performed checklists, and any necessary emergency/critical care case logs.
- sign a letter annually verifying that the resident or fellow is progressing satisfactorily
- sign a letter at the time of credential application verifying successful completion of all aspects of the program

I have reviewed the proposed residency training program, and offer my full support as mentor of this candidate.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

## APPENDIX 3 PROPOSED PROGRAM OUTLINE

Candidate or Residency Program Center Site: \_\_\_\_\_

Proposed Program Duration: \_\_\_\_\_ years.      Anticipated Start Date: \_\_\_\_\_

**Note: Programs cannot begin until they are approved by the Residency Training Committee. Programs can begin in January or July.**

A. PROGRAM OVERVIEW

A.1. Rotations

REQUIREMENT	SITE/LOCATION	ROTATION SUPERVISORS	NUMBER OF WEEKS
Direct supervision emergency/critical care:			
Indirect supervision emergency/critical care:			
Independent study / practice:			
<b>Elective rotations:</b>			
Internal Medicine			
Surgery			
Anesthesia			
Cardiology			
Radiology/Imaging			
Neurology			
Clinical Pathology			
Ophthalmology			

B. YEAR-BY-YEAR OUTLINE

REQUIREMENT	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<b>Direct supervision - E/CC</b> (weeks)					
<b>Indirect supervision - E/CC</b> (weeks)					
<b>Independent study/practice</b> (weeks)					
<b>Internal medicine</b> (weeks)					
<b>Surgery</b> (weeks)					
<b>Anesthesia</b> (weeks)					
<b>Cardiology</b> (weeks)					
<b>Additional electives</b> (weeks)					
<b>Seminars, journal clubs, etc.</b> (hours)					
<b>Continuing education</b> (hours)					
<b>Teaching</b> (hours)					

C. WEEK-BY-WEEK OUTLINE OF FIRST YEAR (Fellowship Programs Only)

WEEK	DATES	ROTATION	SUPERVISOR
1			
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## **Equipment Guidelines for Emergency and Critical Care Facilities**

**Emergency Capabilities** The level of care and maintenance provided in areas of laboratory, pharmacy, medicine, surgery, radiology, diagnostic imaging, anesthesiology, infectious diseases control, and housekeeping should be consistent with currently accepted practice and procedures for a veterinary emergency and critical care facilities 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. Emergency facilities should have procedures in-place to quickly obtain specialist consults and to refer cases as appropriate.

### **Laboratory Equipment** (please check all that apply):

On site monitoring of the following must be available:

- CBC
- Serum chemistry profile
- Coagulation screening
- Blood gases
- Electrolytes (Na, K, Cl, Ca)
- Urine dipstick
- Microscope & materials needed for cytologic evaluation of blood films, urine sediments, and fecal flotations
- Refractometer
- FeLV/FIV serology
- Parvovirus antigen test
- Heartworm antigen test
- Glucometer

Access to on-site or off-site evaluation of:

- Histopathology
- Microbiologic culture & sensitivity

### **Imaging**

- Radiographic machine of at least 300 mA
- Automatic processing unit
- Appropriate radiation safety equipment
- Ultrasound machine
- Endoscope

**Surgery, Anesthesia, & Intra-operative/critical care monitoring** (please check all that apply):

- Materials for surgical hemostasis (ex: electrocautery, topical hemostatic agents)
- Equipment for wound debridement and application of wound dressing
- Equipment for emergency stabilization of musculo-skeletal injuries (splints, casting material, external fixators, etc)
- Analgesic medication (opioids, non-steroidal anti-inflammatory medications)
- Inhalational anesthesia
- Injectable anesthesia
- Electrocardiogram
- Esophageal stethoscope
- Blood pressure monitors (Doppler, Oscillometric)
- Pulse oximeter
- End tidal CO2 monitor
- Direct arterial blood pressure monitoring
- Central venous pressure monitoring

**Emergency Therapeutics** (please check all that apply):

Residency training center should have adequate equipment and technical support necessary to perform the following procedures:

- Closed and open chest cardiopulmonary resuscitation
- Electrical defibrillation
- Thoracostomy tube placement
- Peritoneal &/or pleural dialysis
- Tracheostomy tube placement and maintenance
- Oxygen supplementation
- Long-term assisted mechanical ventilation
- Enteral and Parenteral nutrition
- Administration of natural and/or artificial blood products
- Type and crossmatch donors and patients
- Treatment of circulatory shock using crystalloids, colloids, and blood products using calibrated infusion devices

I hereby certify all equipment is functional and in good repair, and all consumables are regularly inventoried to insure adequate supplies are available for the practice of quality emergency and critical care medicine and surgery.

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(Signature of Program Mentor)

(Date)



Periodicals: At least the previous 4 years should be available at all times. Please check all that are available.

- Journal of Veterinary Emergency and Critical Care
- Critical Care Medicine
- Journal of the American Veterinary Medical Association
- American Journal of Veterinary Research
- Veterinary Surgery
- Journal of Veterinary Internal Medicine
- Journal of Veterinary Anesthesia and Analgesia
- Veterinary Clinics of North America (small and/or large animal as pertains to the practice)
- Annals of Emergency Medicine
- Journal of Trauma
- Other pertinent journals

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What Internet Resources are available at the Residency Program Center?

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What is the availability of a Veterinary or Medical school library for your residents?

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I hereby certify all documented library holdings are current and available to the residents and fellows for the practice of quality emergency and critical care medicine and surgery.

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(Signature of Program Mentor)

(Date)

## ACVECC Residency Core & Elective Rotation Supervisor Information

Name: \_\_\_\_\_

Degree(s): \_\_\_\_\_ Granting

University \_\_\_\_\_ Year \_\_\_\_\_

Degree(s): \_\_\_\_\_ Granting

University \_\_\_\_\_ Year \_\_\_\_\_

Degree(s): \_\_\_\_\_ Granting

University \_\_\_\_\_ Year \_\_\_\_\_

Specialization(s): \_\_\_\_\_ Year(s) obtained \_\_\_\_\_

### Practice Affiliation

Name of Practice: \_\_\_\_\_

Job Title: \_\_\_\_\_

Address:-

\_\_\_\_\_

City, State, Zip/Postal: \_\_\_\_\_

Years of affiliation: \_\_\_\_\_

Other practice

affiliations: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Resident Training

I have participated in training \_\_\_\_ (number) of ACVECC residents/fellows.

I have supervised \_\_\_\_ (weeks) of ACVECC residency training in my specialty OR  
 (check) I have supervised greater than 25 weeks of ACVECC residency training.

I have read the most current version of the ACVECC Residency Training Guidelines and agree to adhere to the principles and practices expected of me in training and mentoring.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX 5  
ACVECC RESIDENCY OR FELLOWSHIP TRAINING PROGRAM**

## PROGRESS REPORT CERTIFICATION

This form must be completed and submitted to the Residency Training Committee along with Appendix 6.

I hereby attest that I have satisfactorily completed all of the requirements for the stated reporting period, according to the intended program. All information contained within this report is accurate, complete, and truthful.

\_\_\_\_\_  
Resident's / Fellow's Name

\_\_\_\_\_  
Reporting Period

\_\_\_\_\_  
Resident's Signature

\_\_\_\_\_  
Date

### Program Mentor's Report

I hereby attest that the above resident has satisfactorily completed all of his/her requirements for the reporting period, according to the intended program. I have reviewed and approved the resident's or fellow's progress report (Appendix 6), Procedures Performed checklist, and any necessary emergency/critical care case logs.

\_\_\_\_\_  
Program Mentor's Signature

\_\_\_\_\_  
Date

**APPENDIX 6  
ACVECC RESIDENCY and FELLOWSHIP TRAINING PROGRAM  
PROGRESS REPORT**

Resident/Fellow \_\_\_\_\_  
 Residency Program Center \_\_\_\_\_  
 Year of Program \_\_\_\_\_

**A. CLINICAL ROTATIONS**

**By signing this form, rotation supervisor attests to the dates of each rotation and Resident's/Fellow's satisfactory completion of the rotation.**

WEEK	START DATE	ROTATION	SITE/LOCATION	SUPERVISOR'S SIGNATURE
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Total number of weeks completed for reporting period:

Direct supervision \_\_\_\_\_

Indirect Supervision \_\_\_\_\_

Independent study \_\_\_\_\_

Specialty Rotations

Internal Medicine \_\_\_\_\_

Surgery \_\_\_\_\_

Anesthesia \_\_\_\_\_

Cardiology \_\_\_\_\_

Electives \_\_\_\_\_ (specify specialty)

Diagnostic Imaging \_\_\_\_\_

Neurology \_\_\_\_\_

Oncology \_\_\_\_\_

Ophthalmology \_\_\_\_\_

Clinical Pathology \_\_\_\_\_







D. TEACHING

**Append schedule, handout and/or proceedings:**

Didactic:

Date:      Where:      Audience:      Subject:      Hours:

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Clinical or Laboratory:

Description:      Hours:

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Total number of teaching hours completed for reporting period

Didactic lecture      \_\_\_\_\_

Clinical/laboratory      \_\_\_\_\_



## APPENDIX 8A ACVECC

### Small Animal Training Program Candidate Procedural Check-List

This checklist serves as a guideline for Residents / Fellows and Program Mentors  
The Resident / Fellow is expected to attain proficiency in the vast majority of the below listed procedures.  
The Resident / Fellow is expected to use this as part of a guideline for training.  
The Program Mentor may choose for the Resident / Fellow to maintain a count of frequency of procedures performed and review this list as part of the Program Mentor review process.

#### Vascular

- emergency shutdown and venotomy peripheral vein
- emergency shutdown and venotomy central vein
- control of massive bleeding from major peripheral arterial injuries
- control of massive thoracic bleeding via emergency thoracotomy
- control of massive abdominal bleeding via emergency laparotomy
- placement of arterial line - femoral artery
- placement of arterial line - peripheral artery
- intraosseous catheter placement - dog/cat
- intraosseous catheter placement in bird
- central line median femoral vein - cat
- central line median femoral vein - dog
- arterial blood sampling
- central line - jugular - cat
- central line - jugular - dog
- autotransfusion

#### CPCR

- closed chest CPCR
  - intratracheal drug administration
  - intraosseous drug administration
  - sublingual drug administration - compression
  - simultaneous ventilation - compression
  - interposed abdominal compression
- open chest CPCR
  - intracardiac drug administration
  - assessment of blood flow (via doppler) during CPCR
  - emergency thoracotomy and closure
  - cross-clamp aorta
  - defibrillation
  - external
  - internal

#### Cardiovascular

- echocardiogram
  - pericardial effusion
  - valvular insufficiency
  - dilated cardiomyopathy - dog
  - hypertrophic cardiomyopathy - cat
- stabilization catastrophic congestive heart failure [CRI vasodilators & inotropics]
- indirect blood pressure \_\_\_ Doppler \_\_\_ oscillometric
- direct blood pressure measurement
- pericardiocentesis
- ECG
- nonselective venogram or arteriogram
- cardiac pacing
- cardiac output catheter placement and monitoring (PCWP; calculation of indices)
- CVP measurement
- application of principles of crystalloid fluid therapy
- application of principles of colloidal fluid support

### **Respiratory/Airway/Oxygenation**

- thoracocentesis (air , fluid )
- chest tube placement
  - dog  cat
- set-up underwater suction apparatus for pleural drainage
- set-up autotransfusion system for hemothorax
- tracheal foreign body retrieval by endoscopy or surgery
- set-up, management and monitoring of patient on ventilator
  - PEEP  CMV/Asst CMV
  - CPAP  IPPV, SIMV/IMV
- use of sedatives/NMJ blockers in the ventilated patient
- weaning off ventilator
- evaluation of blood gases
- nebulization and coupage
- transtracheal wash
- fine needle lung aspirate
- endotracheal wash
- slash tracheostomy
- elective tracheotomy
- sternal position tracheal intubation
- dorsal position tracheal intubation
- transtracheal oxygen catheter
- nasal packing for massive hemorrhage
- bag or hood oxygen delivery
- cage oxygen delivery
- Capnography (ETCO<sub>2</sub>)
- Pulse oximetry
- Thoracic lavage
- Bronchoscopy
- BAL
- nasal oxygen catheter

### **Abdominal/Gastrointestinal**

- paracentesis
- diagnostic peritoneal lavage
- abdominal ultrasound
- control of abdominal bleeding by external counterpressure
- cystostomy tube placement for emergency urinary bladder drainage
- cystocentesis
- emergency abdominal exploration
  - intestinal anastomosis
  - gastrotomy
  - gastropexy
  - removal of pyometra
  - cystotomy
  - traumatic abdominal bleed control
  - placement of peritoneal dialysis catheter and perform dialysis
  - gastric lavage (  toxin ingestion;  GDV resuscitation)
  - management of open peritoneal drainage
  - esophageal/gastric foreign body retrieval via endoscopy
  - urethral obstruction relief via catheterization - dog
  - urethral obstruction relief via catheterization - cat
  - indwelling urethral catheter placement
    - female dog  male dog
    - female cat  male cat
  - splenectomy
  - enterotomy
  - liver lobectomy
  - diaphragmatic hernia
  - caesarian section

### **Musculoskeletal/Dermatologic**

- spica bandage or splint to forelimb
- spica bandage or splint to rear limb
- wound debridement and closure with suction drain
- placement of metasplint
- hip luxation replacement and bandage
- elbow luxation replacement and bandage
- shoulder luxation replacement and bandage
- placement of modified Robert Jones bandage
- wound management degloving injury
- placement of half-cast
- laceration repair
- debridement and external fixator application for open fracture of long bone

### **Anesthetic and Analgesic Procedures**

- |                          |   |                          |                                    |
|--------------------------|---|--------------------------|------------------------------------|
| <input type="checkbox"/> | epidural anesthesia/analgesia               | <input type="checkbox"/> | low flow/closed circuit anesthesia |
| <input type="checkbox"/> | intercostal nerve blocks                    | <input type="checkbox"/> | CRI analgesia                      |
| <input type="checkbox"/> | intrapleural analgesia                      | <input type="checkbox"/> | transdermal analgesia              |
| <input type="checkbox"/> | intravenous regional anesthesia             | <input type="checkbox"/> | intra-articular analgesia          |
| <input type="checkbox"/> | balanced anesthesia in the critical patient |                          |                                    |

### **Nutrition**

- placement and management of NG tube
- placement and management of esophagostomy/pharyngostomy tube
- placement and management of PEG tube
- placement/management of jejunostomy tube
- calculation/formulation of TEN  PPN  TPN

### **Ophthalmologic**

- |                          |                        |                          |                                     |
|--------------------------|------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | third eyelid flap      | <input type="checkbox"/> | measurement of intraocular pressure |
| <input type="checkbox"/> | enucleation            | <input type="checkbox"/> | ophthalmoscopy                      |
| <input type="checkbox"/> | emergency tarsorrhaphy | <input type="checkbox"/> | management of uveitis               |
| <input type="checkbox"/> | subconjunctival flap   | <input type="checkbox"/> | management of glaucoma              |

### **Medical Procedures**

- |                          |   |                          |                                       |
|--------------------------|---|--------------------------|---------------------------------------|
| <input type="checkbox"/> | low dose dexamethasone suppression test | <input type="checkbox"/> | bone marrow core biopsy               |
| <input type="checkbox"/> | ACTH stimulation test                   | <input type="checkbox"/> | cross-match                           |
| <input type="checkbox"/> | TSH stimulation test                    | <input type="checkbox"/> | blood product collection & separation |
| <input type="checkbox"/> | urine protein:creatinine ratio          | <input type="checkbox"/> | activated clotting time measurement   |

#### Set-up CRI:

- |                          |                |                          |                              |
|--------------------------|----------------|--------------------------|------------------------------|
| <input type="checkbox"/> | dopamine       | <input type="checkbox"/> | buccal mucosal bleeding time |
| <input type="checkbox"/> | dobutamine     | <input type="checkbox"/> | toe nail bleeding time       |
| <input type="checkbox"/> | nitroprusside  | <input type="checkbox"/> | CSF tap and pressure         |
| <input type="checkbox"/> | insulin        | <input type="checkbox"/> | blood culture collection     |
| <input type="checkbox"/> | lidocaine      | <input type="checkbox"/> | bone marrow aspirate         |
| <input type="checkbox"/> | procainamide   | <input type="checkbox"/> | arthrocentesis               |
| <input type="checkbox"/> | metoclopramide |                          |                              |

#### Cytologic evaluation of:

- blood smears
- fine needle aspirates
- abdominal/thoracic fluid

### **Radiographic Procedures**

- |                          |                  |                          |                |
|--------------------------|------------------|--------------------------|----------------|
| <input type="checkbox"/> | IVU              | <input type="checkbox"/> | barium swallow |
| <input type="checkbox"/> | cystourethrogram | <input type="checkbox"/> | upper GI       |
| <input type="checkbox"/> | myelogram        |                          |                |

## APPENDIX 8B ACVECC

### Large Animal Training Program Candidate Procedural Check-List

This checklist serves as a guideline for Residents / Fellows and Program Mentors  
The Resident / Fellow is expected to attain proficiency in the vast majority of the below listed procedures.  
The Resident / Fellow is expected to use this as part of a guideline for training.  
The Program Mentor may choose for the Resident / Fellow to maintain a count of frequency of procedures performed and review this list as part of the Program Mentor review process.

#### Vascular

- \_\_\_ control of massive bleeding from major peripheral arterial injuries
- \_\_\_ placement of arterial line - peripheral artery
- \_\_\_ intraosseous catheter placement -foal
- \_\_\_ arterial blood sampling, metatarsal artery
- \_\_\_ arterial blood sampling, transverse facial artery (adult)
- \_\_\_ arterial blood sampling, brachial artery (foal)
- \_\_\_ central line - jugular - foal
- \_\_\_ autotransfusion or emergency blood transfusion administration
- \_\_\_ lateral thoracic vein catheterization (adult)
- \_\_\_ medial vein or cephalic catheterization (adult)

#### CPCR

- \_\_\_ closed chest CPCR - foal
- \_\_\_ intratracheal drug administration
- \_\_\_ intraosseous drug administration
- \_\_\_ simultaneous ventilation - compression
- \_\_\_ assessment of blood flow (via Doppler or ETCO<sub>2</sub>) during CPCR

#### Cardiovascular

- \_\_\_ echocardiogram, including M mode
- \_\_\_ stabilization - congestive heart failure
- \_\_\_ indirect blood pressure \_\_\_ Doppler \_\_\_ oscillometric
- \_\_\_ direct blood pressure measurement
- \_\_\_ pericardiocentesis
- \_\_\_ ECG
- \_\_\_ Fetal ECG
- \_\_\_ cardiac output catheter placement and monitoring or Lithium dilution technique;(PCWP; calculation of indices)
- \_\_\_ CVP measurement – adult
- \_\_\_ CVP measurement -- foal
- \_\_\_ application of principles of crystalloid fluid therapy
- \_\_\_ application of principles of colloidal fluid support

#### Respiratory/Airway/Oxygenation

- \_\_\_ endotracheal intubation (foal)
- \_\_\_ endotracheal intubation (adult)
- \_\_\_ manual ventilation with self-inflating bag (AMBU bag) (foal)
- \_\_\_ ventilation with demand valve (adult)
- \_\_\_ thoracocentesis (air \_\_\_, fluid \_\_\_)
- \_\_\_ chest tube placement
- \_\_\_ set-up autotransfusion system for hemothorax
- \_\_\_ set-up, management and monitoring of patient on ventilator (foal and anesthetized adult):
- \_\_\_ use of capnography (ETCO<sub>2</sub>)
- \_\_\_ PEEP \_\_\_ CMV/Asst CMV
- \_\_\_ CPAP \_\_\_ IPPV, SIMV/IMV
- \_\_\_ use of sedatives/NMJ blockers in the ventilated patient
- \_\_\_ weaning off ventilator \_\_\_ bag or hood or IN oxygen delivery

- \_\_\_ evaluation of arterial blood gases
- \_\_\_ evaluation of venous blood gases
- \_\_\_ nebulization and coupage
- \_\_\_ transtracheal or endotracheal wash
- \_\_\_ BAL
- \_\_\_ pulse oximetry
- \_\_\_ needle biopsy (lung)
- \_\_\_ endoscopy of upper airway
- \_\_\_ slash tracheostomy
- \_\_\_ elective tracheotomy
- \_\_\_ nasal oxygen catheter
- \_\_\_ transtracheal oxygen catheter
- \_\_\_ nasal packing for massive hemorrhage
- \_\_\_ use of nebulizer
- \_\_\_ ultrasound lungs and pleural space – adult
- \_\_\_ ultrasound thorax - foal
- \_\_\_ cytology and Gram stain of TTW, pleural fluid
- \_\_\_ radiograph thorax – adult
- \_\_\_ radiograph thorax - neonate

### **Abdominal/Gastrointestinal**

- \_\_\_ abdominal paracentesis (abdominocentesis)
- \_\_\_ cytology and Gram stain of peritoneal fluid
- \_\_\_ abdominal ultrasound – adult
- \_\_\_ abdominal ultrasound –foal
- \_\_\_ emergency abdominal exploration – acute abdomen (colic)
- \_\_\_ gastric lavage ( \_ toxin ingestion; \_ reflux)
- \_\_\_ esophageal obstruction (choke) resolution via endoscopy/ lavage
- \_\_\_ indwelling urethral catheter placement:
  - \_\_\_ in female foal      \_\_\_ in female adult
  - \_\_\_ in male foal      \_\_\_ in male adult (temporary ok)
- \_\_\_ abdominal radiography – foal
- \_\_\_ peritoneal lavage
- \_\_\_ liver biopsy

### **Musculoskeletal/Dermatologic**

- \_\_\_ apply splint to forelimb
- \_\_\_ apply splint to rear limb
- \_\_\_ wound debridement and primary closure with suction drain
- \_\_\_ wound debridement and secondary closure
- \_\_\_ placement of modified Robert Jones bandage
- \_\_\_ wound management degloving injury
- \_\_\_ placement of half-cast
- \_\_\_ laceration repair
- \_\_\_ external stabilization of fractures
- \_\_\_ acute management of joint and tendon injuries

### **Anesthetic and Analgesic Procedures**

- \_\_\_ epidural anesthesia/analgesia
- \_\_\_ CRI analgesia
- \_\_\_ transdermal analgesia
- \_\_\_ intravenous regional anesthesia
- \_\_\_ intra-articular analgesia
- \_\_\_ balanced anesthesia in the critical patient (inhalational, circuit)
- \_\_\_ short-acting injectable anesthesia

### **Nutrition**

- \_\_\_ placement and management of NG tube- adult
- \_\_\_ placement and management of NG tube- foal
- \_\_\_ calculation/formulation/administration of: TEN \_\_\_ PPN \_\_\_ TPN \_\_\_

### **Ophthalmologic**

- measurement of intraocular pressure
- enucleation
- ophthalmoscopy
- emergency tarsorrhaphy
- management of uveitis
- corneal scraping and cytology
- management of corneal ulcer

### **Medical Procedures**

- sling recumbent adult horse
- dexamethasone suppression test
- bone marrow core biopsy/aspirate
- activated clotting time or PTT/PT measurement

#### Set-up CRI:

- dopamine
- dobutamine
- norepinephrine
- lidocaine

buccal mucosal or template bleeding time

- CSF tap – A/O
- CSF tap – L/S
- perform neurologic examination
- perform caudal (coccygeal) epidural

- blood culture collection
- arthrocentesis

#### Cytologic evaluation of:

- blood smears
- fine needle aspirates
- abdominal/thoracic fluid

- use of bench top chemistries (e.g. ISTAT)
- hematocrit and total protein via refractometry
- use of colloid osmometer
- ELISA or immunoassay for foal IgG concentration
- milk electrolyte analysis for foaling prediction
- cross-match
- blood product collection, separation and administration of transfusion

management of dystocia

### **Radiographic Procedures**

- barium swallow
- myelogram
- cystoscopy
- gastroscopy
- pharyngoscopy (and guttural pouches)
- radiograph -- cranium
- radiograph -- cervical
- radiograph -- long bones
- radiograph -- joints
- radiograph -- distal extremity

## APPENDIX 9

### ACVECC

## SAMPLE DISCUSSION TOPICS FOR RESIDENCY TRAINING SEMINARS

### Example 1:

#### PREHOSPITAL/ADMISSION - TRIAGE

Facility setup  
Organization  
Emergency drugs/supplies  
Primary telephone contact  
Client communication  
Hospital Transport  
Primary Survey  
Secondary Survey

#### RESUSCITATION

Airway  
Breathing  
Control of acute bleeding/blood loss  
Cardiovascular support  
Vascular access techniques  
Fluids  
Emergency Drugs  
External support - MAST, wraps  
Monitoring  
Shock  
Thermal support  
Ischemia-reperfusion injury

#### PRIMARY SUPPORT TECHNIQUES

Fluids  
Acid-base balance  
Oxygen administration techniques & flow rates  
Humidification  
Cardiac support  
    Inotropic drugs  
    Vasoactive agents  
    Antiarrhythmics

#### DIAGNOSTICS

Hematology  
Clinical Chem - lactate, magnesium  
Coagulation  
Urine  
Radiography/contrast procedures  
Ultrasound  
Echocardiography  
Color flow Doppler  
Radionuclear scanning  
Cardiac catheterization

#### CARDIOVASCULAR

ECG interpretation and application  
Blood pressure monitoring  
Auscultation  
CVP  
Cardiac output-principles and techniques  
Wedge pressure measurement  
Antiarrhythmics  
Inotropic agents

Vasoactive drugs

Digitalis  
Oxygen balance - delivery and uptake  
Primary myocardial disease  
    Cardiomyopathy  
    CHF

#### RESPIRATORY

Lung anatomy  
Auscultation  
Radiography  
Blood gases - invasive, noninvasive measurement  
Tidal volume measurement  
Work of breathing  
V/Q relationships  
Pulmonary volumes  
End tidal gases - utilization  
Bronchial disease  
Primary pulmonary disease  
Pleural space disease  
Chest wall disease and injury  
Diaphragm disease and injury  
Vascular disease - PTE  
Pulmonary edema  
Laryngotracheal disease  
Control of breathing  
Ventilatory support techniques  
    Oxygen  
    IPPV  
    PEEP  
    Permissive hypercapnia  
    HFV-HFJV, HFO  
    IRV  
    CPAP  
    Weaning techniques  
Airway management techniques

#### CNS

Brain: Trauma  
    Cerebral blood flow/oxygen demand  
    CSF dynamics  
    Intracranial pressure  
    EEG  
    Clinical evaluation of activity level -  
    reflexes  
Spinal Cord:  
    Trauma/injury response  
    Mechanisms of neural transmission  
    Pain modulation

#### Peripheral NS:

Neural injury  
Motor end plate dz - Guillain Barré,  
    Coonhound, Tick  
Pain  
Electrodiagnostics

Ocular injuries

### **RENAL**

Physiology of kidney  
ARF/CRF - factors and response  
Oliguria  
Fluid balance  
Acid-base balance  
Drug clearance  
Role of lower tract in barrier protection  
Urinary tract obstruction

### **REPRODUCTIVE**

Prostatitis  
Paraphimosis  
Penile trauma  
Orchitis/testicular torsion  
Pyometra, metritis  
Mastitis  
Eclampsia  
Postpartum hemorrhage

### **LIVER**

Physiology - vascular, hormonal factors  
Metabolism - glucose  
Drug clearance mechanisms  
Acid-base balance  
Role in shock  
Hepatic failure  
Cirrhosis

### **GI**

Physiology - motility  
Microbiology  
Endothelial physiology  
Vascular supply  
Prophylaxis for stress states  
    Sucralfate, H<sub>2</sub> antagonists, antacids  
Pancreas - physiology, response to injury

### **COAGULATION/TRANSFUSION MEDICINE**

Normal cascade  
Lab testing  
DIC  
AT III  
Procoagulant therapy  
    DDAVP  
    Aminocaproic acid  
Anticoagulant therapy  
    Heparin  
    Aspirin  
    Coumadin  
Thrombolytic therapy  
    Streptokinase  
    TPA  
Hb physiology

### **Transfusion Practices**

ACD, CPD, Heparin collection  
Fate of anticoagulants post-transfusion  
Artificial hemoglobin solutions

### **ENDOCRINE**

Diabetes mellitus  
Diabetes insipidus  
Hypoglycemia/Insulinoma  
Cushing's Disease  
Addisonian complex  
Pheochromocytoma  
Thyroid disease  
hypercalcemia/hypocalcemia (Parathyroid disease)

### **PANSYSTEMIC**

Thermal injury  
Inflammation - Endothelial physiology & re-sponse to injury  
Sepsis syndrome  
    Mediators  
    Trigger  
    Responses - cytokines, NO, mechanisms of injury  
Heat stroke

### **NUTRITION**

Biochemistry of catabolism  
    Simple and stressed starvation  
    Evaluation of requirements  
Essential components of nutrition  
    AA, CHO, Lipid, Vit, Min  
    Role in injury and therapy  
Feeding options  
    Enteral  
    Parenteral  
Techniques of feeding  
    Oral  
    Forced  
    NG tube  
    NE tube  
    Esophagostomy  
    PEG tube  
    Jejunostomy tube  
Monitoring nutrition response  
    Lab  
    Glucose  
    AA profile  
Complications

## **TOXINS/INFECTIOUS**

Mechanisms of infection-host response

Microbiology

Gram +

Gram -

Anaerobes

Fungi

Yeasts

Viruses

Nosocomial infection

Patterns of resistance

Sites of entry

Prophylaxis

Toxins

Plants

Drugs

Household chemistry

Poisons

Gaseous

Food - chocolate

Rodenticides

Decontamination procedures

## **PHARMACOLOGY**

Pharmacokinetics and factors in efficacy

Antibiotics

Antifungals

Antivirals

Antineoplastics

Antiinflammatory

NSAID

Steroid

Lazaroids

Fluids/colloids

Inotropic agents

Cardiovascular medications

Respiratory medications

GI medications

Prokinetics

H<sub>2</sub> antagonists

Sucralfate

Renal medications

CNS medications

Anticonvulsants

Sedatives - hypnotics

Tranquilizers

Antiepileptics

Anesthetics

Pain medications

Neuromuscular blockers

Hormonals

Insulin

Thyroid

DOCA

Steroids

Example 2:

1. Pathophysiology of acute renal failure
2. Respiratory physiology
3. Pathophysiology of acute respiratory distress
4. Reperfusion injury
5. Ventilatory support and ventilator modes/oxygen therapy
6. Sepsis - cytokines
7. Mechanisms of immune-mediated disease (IHA-example)
8. Shock
9. Acute abdomen
10. Antiarrhythmias/arrhythmia mechanisms
11. Catecholamines
12. Peritoneal dialysis - fluid type, management, catheter type
13. Hypertension
14. Pathophysiology of diabetes mellitus with ketoacidosis
15. Heatstroke
16. Pulse oximetry; end-tidal CO<sub>2</sub> monitoring
17. Magnesium
18. Open fractures
19. Coagulation physiology/pathophysiology
20. Acid-base physiology/pathophysiology
21. Electrolyte disorders and correction
22. Surgical approaches to chest/abdomen
23. Fever of unknown origin - approach/pathophysiology
24. Head trauma - determinants of ICP
25. Management of acute CHF
26. Determination of cardiac output - define/apply
27. Toxicities - Site of action, clinical signs and treatment for:
  - Ethylene glycol
  - Anticoagulant rodenticides
  - Vitamin D rodenticides
  - Metalddehyde
  - Aspirin and Acetaminophen
  - Methylxanthine
  - Fleet enema
  - Organophosphates
  - Zootoxins
  - Strychnine
  - Amitraz
  - Ivermectin
  - Lead
  - Plant toxins
28. Antibiotics - mechanism of action, spectrum of activity, ab(s) of preference for certain organisms
29. Ophtho emergencies
  - Glaucoma, proptosis
30. Seizures - etiology and management
31. CPR/CPCR
32. Transfusion medicine
  - Available blood products, indications
  - Blood types and typing
  - Cross matching - when and who?
33. Cardiac pacing
34. Hypertonic saline
35. Colloids
36. Anesthetic and Analgesic agents - Mechanism of action, indications, side effects, contraindication
  - Inhalant anesthetics
  - Narcotics (receptors, agonist/antagonist, etc.)
  - Phenothiazines
  - Diazepam
  - Barbiturates
  - Paralytic agents/neuro-muscular blockers
37. Reperfusion injury
38. Anaphylaxis
39. Oncologic emergencies
40. Iatrogenic oncologic emergencies
41. GDV - principles of surgery and practice
42. Surgical materials and suture patterns
43. Open abdomen - surgical principles and techniques
44. Nutritional support - tube placement, calculation of Na<sup>+</sup> req.
45. TPN - indications, composition, complications
46. Pancreatitis - pathophysiology
47. Hepatoencephalopathy - pathophysiology and treatment
48. Pulmonary edema - non-cardiogenic

Example 3:

**Proposed Topics - Physiology/Pathophysiology**

1. **Body Fluid Compartments and Fluid Shifts**  
To include: Cell membrane integrity and transport mechanisms; osmolality; oncotic pressure  
Clinical relevance: Fluid losses and dehydration; sodium disturbances; crystalloid, hypertonic saline and colloid therapy; mannitol therapy.  
References: Ganong/Guyton; Rose; DiBartola; review articles
2. **Neuromuscular Physiology**  
To include: Nerve excitation and conduction; skeletal and smooth muscle contraction; synaptic transmission (inhibitory, excitatory), reflexes, sensation (including pain).  
Clinical relevance: Seizures, botulism, tetanus, strychnine toxicity, myasthenia gravis, polyradiculoneuropathies; ivermectin toxicity, electrolyte induced neuromuscular weakness; action of valium, phenobarbital; respiratory muscle fatigue and energy requirements, opioid receptors; neuromuscular blockade (atracurium, etc.); effects of aminoglycosides, etc.  
References: Ganong/Guyton; review articles
3. **Energy Balance and Metabolism**  
To include: Carbohydrate, protein, fat metabolism; function of pituitary, thyroid, adrenal glands and pancreas, the renin angiotensin system, nitrogen balance.  
Clinical relevance: Diabetic ketoacidosis, insulinoma, hypoglycemia, Addison's, Cushing's disease, hypo- and hyperthyroidism, pancreatitis, nutrition.  
References: Ganong/Guyton; Feldman and Nelson; review articles
4. **Electrolytes:** Na, K, Mg, Ca (+ physiology of bone and regulatory mechanisms), P, Cl, Mg  
To include: Role of the RAA system; strong ion difference and acid-base implications  
References: Rose; DiBartola; review articles
5. **Cardiovascular Physiology**  
To include: 1) The mechanical cardiac cycle, cardiac output (including measurements of), cardiac muscle function and autonomic regulation; 2) Arterial, venous, lymphatic, capillary circulation, including local and systemic regulatory mechanisms, circulation through special regions including cerebral circulation (anatomy, blood-brain barrier, regulation of cerebral perfusion pressure, brain metabolism and energy requirements), coronary circulation, renal circulation and splanchnic circulation; 3) Shock; 4) Hypertension-regulatory mechanisms; treatment; 5) Heart failure; 6) Cardiac arrhythmias.  
References: Ganong/Guyton; review articles; Ettinger
6. **Pulmonary Physiology**  
To include: Properties of gases; regulation and mechanics of respiration; gas exchange; pulmonary circulation; ventilation-perfusion matching; dynamic and static compliance and other pulmonary function tests (including tidal breathing flow volume loops); A-a gradient; O<sub>2</sub> content and carrying capacity; O<sub>2</sub> toxicity; ARDS; pulmonary hypertension; oxygen transport (VO<sub>2</sub>, DO<sub>2</sub>) and unloading; CO<sub>2</sub> transport.  
Clinical relevance: Hypoxemia, hypercapnia, hypocapnia; mechanical ventilation; PTE, oxygen therapy  
References: Ettinger; West; review articles
7. **Renal Physiology**  
To include: Circulation, GFR, tubular function, H<sub>2</sub>O excretion, acidification of urine and bicarbonate excretion, regulation of Na, Cl, K, Ca, P, Mg (proximal and distal tubular and loop of Henle function); neurologic control of micturition  
Clinical relevance: Diuretic therapy, peritoneal dialysis, chronic and acute renal failure (including effects of aminoglycosides), tubular acidosis; acid-base regulation, defense of tonicity and volume  
References: Ettinger; Rose; DiBartola; review articles

8. Hemostasis and Transfusion Therapy

To include:

Coagulation, fibrinolysis, DIC, platelet function and abnormalities; Heparin therapy; thrombolytic therapy; VWD and familial coagulopathies; blood transfusion therapy (blood typing, cross matching, complications); coagulation tests

References:

Ettinger; Vet Clinics; review articles

## **APPENDIX 10**

### **APPLICATION FOR EXAMINATION BY THE AMERICAN COLLEGE OF VETERINARY EMERGENCY AND CRITICAL CARE**

Please complete this application form and return, with a check for the application/ reapplication fee, to the Executive Secretary.

THIS FORM MUST BE TYPED IN ORDER TO BE PROCESSED IN THE OFFICE OF THE ACVECC EXECUTIVE SECRETARY.

1. Applicant's name: \_\_\_\_\_

2. Social Security Number: \_\_\_\_\_

3. Date of Birth: \_\_\_\_\_

4. Place of Birth: \_\_\_\_\_

5. Citizenship: \_\_\_\_\_

6. Office Address and Telephone Number: \_\_\_\_\_

\_\_\_\_\_  
(City) (State) (Zip)

\_\_\_\_\_  
Telephone Number Fax Number E-mail

7. Home Address and Telephone Number: \_\_\_\_\_

\_\_\_\_\_  
(Street)

\_\_\_\_\_  
(City) (State) (Zip)

\_\_\_\_\_  
Telephone Number Fax Number E-mail

8. Species Specialization: Large Animal [ ]  
Small Animal [ ]

9. Training and Professional Contributions:

a. Veterinary College Attended \_\_\_\_\_

b. Date of Graduation from Veterinary College \_\_\_\_\_

c. Internship (Dates: \_\_\_\_\_ )

\_\_\_\_\_  
(Name of Hospital)

\_\_\_\_\_  
(Street)

\_\_\_\_\_  
(City) (State or Province) (Zip)

d. Residency (Dates: \_\_\_\_\_ )

---

(Name of Hospital)

---

(Street)

---

(City) (State or Province) (Zip)

e. Practice Experience:

1.

---

(Name of Hospital)

---

(Street)

---

(City) (State or Province) (Zip)

2.

---

(Name of Hospital) (Dates)

---

(Street)

---

(City) (State or Province) (Zip)

3.

---

(Street)

---

(City) (State or Province) (Zip)

f. Continuing Education: Provide, on a separate sheet of paper, lists of the seminars you have attended and presented on the subject of emergency and critical care medicine. Include: 1) title, 2) length, 3) veterinary group in attendance, 4) place, and 5) date.

g. Publications: Provide a list of your scientific and clinical publications. Use standard bibliography format.

h. List your advanced degrees and present specialty board affiliations, i.e., MS, PhD, Diplomate ACVIM, ACVS, etc. Provide photocopy of diplomas or certificates.

9. Name, office address and telephone number of your Program Mentor.

---

(Name)

---

(Address)

---

---

(City) (State or Province) (Zip)

---

(Telephone Number)

IF YOU WISH, YOU MAY PROVIDE ADDITIONAL COMMENTS OR GENERAL INFORMATION ON A SEPARATE SHEET OF PAPER.

**PROGRAM MENTOR STATEMENT OF CERTIFICATION**

I hereby certify that I have personally overseen the clinical training program of \_\_\_\_\_ (Candidate's Name) and that this training program has been approved by the ACVECC residency training committee and meets the standards established by the ACVECC.

---

(Signature of Program Mentor)

(Date)

This form must be signed and returned with the completed application.

## WAIVER, RELEASE AND INDEMNITY AGREEMENT

I hereby submit my credentials to the American College of Veterinary Emergency and Critical Care for consideration for examination in accordance with its rules and enclose the required application fee. I agree that prior to or subsequent to my examination; the Board may investigate my standing as a veterinarian, including my reputation for complying with the standards of ethics of the profession. I understand and agree that the application fee shall be nonrefundable.

I agree to abide by the decisions of the Board of Regents and thereby voluntarily release, discharge, waive and relinquish any and all actions or causes of actions against the American College of Veterinary Emergency and Critical Care and each and all of its members, regents, officers, examiners and assigns from and against any liability whatsoever in respect of any decisions or acts that they may make in connection with this application, the examination, the grades on such examinations and/or the granting or issuance, or failure thereof, of any certificate, except as specifically provided by the Constitution and Bylaws of this organization. I agree to exempt and relieve, defend and indemnify, and hold harmless the American College of Veterinary Emergency and Critical Care, and each and all of its members, regents, officers, examiners and assigns against any and all claims, demands and/or proceedings, including court costs and attorney's fees, brought by or prosecuted for my benefit, extended to all claims of every kind and nature whatsoever whether known or unknown at this time. I further agree that any certificate which may be granted and issued to me shall be and remain the property of the American College of Veterinary Emergency and Critical Care.

I certify that all information provided by me on the application is true and correct. I acknowledge that I have read, understand and agree to abide by the above two paragraphs.

---

(Signature)

---

(Date)

---

(Please print your name)

## APPENDIX 11

### AFFIDAVIT OF CASE REPORT ORIGINALITY

This letter attests that each of the four (4) case reports were written by the signed applicant with the understanding that they may have received peer review. The applicant attests that these case reports have not been previously submitted to ACVECC or other specialty boards for credential purposes. The applicant further attests that he/she was the primary provider of medical care for each of the subjects in his/her case reports. The applicant understands that failure to abide by these guidelines of assurance for originality will lead to disqualification of his/her application by the ACVECC Credentials Committee.

---

Applicant                      Date

---

Program Mentor              Date

## Appendix 12: Laboratory Forms for Case Reports

### HEMATOLOGY REPORT

DATE/HOSPITAL DAY				
PCV %				
RBC x 10 <sup>6</sup> /μl				
Hgb				
MCV fl				
MCH pg				
MCHC %				
Reticulocytes/μl				
RBC Morphology				
Nucleated Cells/μl				
Nucleated RBCs/μl				
White Blood Cells/μl				
Metamyelocytes/μl				
Band Neutrophils/μl				
Seg. Neutrophils/μl				
Lymphocytes/μl				
Monocytes/μl				
Eosinophils/μl				
Basophils/μl				
Leukocyte Morphology				
Platelets/μl				
Sed. Rate mm/hr				
Coomb's (Direct/Indirect)				
LE prep				
Antinuclear antibody				
Antiplatelet antibody				
Fibrinogen mg/dl				
ACT sec.				
OSPT sec.				
APTT sec.				
Fibrin degradation products μg/ml				
Buccal mucosal bleeding time (min)				

\* If your laboratory units differ from those listed above, or if units are not noted, insert correct laboratory units.

SERUM CHEMISTRY REPORT

DATE/HOSPITAL DAY				
BUN	mg/dl			
Creatinine	mg/dl			
Alk. Phos.	IU/L			
ALT	IU/L			
AST	IU/L			
LDH	IU/L			
SDH	IU/L			
CPK	IU/L			
Total Bilirubin	mg/dl			
Direct Bilirubin	mg/dl			
Amylase				
Lipase				
Glucose	mg/dl			
Na	mEq/L			
K	mEq/L			
Cl	mEq/L			
Ca	mg/dl			
P	mg/dl			
Mg	mg/dl			
Osmolality	mOsm/kg			
Total Protein	gm/dl			
Albumin	gm/dl			
Globulin	gm/dl			
Cholesterol	mg/dl			
Uric Acid	mg/dl			
Ammonia	µg/dl			
Bile acids pre-prandial				
Bile acids post-prandial				
Cortisols (Designate pre/post samples; test performed)				

BLOOD GASES REPORT

DATE/HOSPITAL DAY				
Source				
PH				
pO <sub>2</sub> mmHg				
pCO <sub>2</sub> mmHg				
HCO <sub>3</sub> mEq/L				
Total CO <sub>2</sub> mEq/L				
Base Excess mEq/L				
FiO <sub>2</sub>				

URINALYSIS REPORT

DATE/HOSPITAL DAY				
Source (e.g., cath/void/cysto)				
Color				
Appearance				
Specific gravity				
pH				
Protein				
Glucose				
Ketones				
Bilirubin				
Blood				
Urobilinogen				
Casts				
Hyaline/LPF				
Granular/LPF				
Other				
Leukocytes/HPF				
Epithelial Cells/HPF				
Erythrocytes/HPF				
Crystals				
Bacteria				
Other				
Osmolality				

