

# **Advanced Emergency Medicine Ultrasonography Fellowship Program Requirements**

Emergency Ultrasonography Fellowship Accreditation Council Working Group  
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# Advanced Emergency Medicine Ultrasonography Program Requirements

## INTRODUCTION

*Fellowships provide the advanced training needed to create future leaders in evolving areas of medicine such as Advanced Emergency Medicine Ultrasonography (AEMUS). This advanced training produces experts in AEMUS and is not required for the routine performance of emergency ultrasonography.*

- Int. A. An Advanced Emergency Medicine Ultrasonography (AEMUS) fellowship provides a unique, focused, and mentored opportunity to develop and apply a deeper comprehension of advanced principles, techniques, applications, and interpretative findings. Knowledge and skills are continually reinforced as the fellow learns to effectively educate new trainees in AEMUS, as well as clinicians in other specialties and practice environments. A methodical review of landmark and current literature, as well as participation in ongoing research, creates the ability to critically appraise and ultimately generate the evidence needed for continued improvements in patient care through clinical ultrasonography. Furthermore, fellowship provides practical experience in AEMUS program management, including quality assurance review, medicolegal documentation, image archiving, reimbursement, equipment maintenance, and other administrative duties of an AEMUS program director.
- Int B. This document focuses on the roles and responsibilities of the program, site, faculty, and fellows involved in AEMUS fellowships, recognizing that additional program responsibilities relative to residents and other trainees exist, but are beyond the scope of this document.
- Int. C. The educational program in AEMUS must be 12 months. <sup>(Core)\*</sup>

## I. INSTITUTIONS

### I.A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program and this responsibility extends to fellow assignments at all participating sites. <sup>(Core)</sup>

The sponsoring institution and the program must ensure that the program director has sufficient protected time and financial support for his or her educational and administrative responsibilities to the program. <sup>(Core)</sup>

- I.A.1. The sponsoring institution and participating sites must:
- I.A.1.a) provide salary support and/or protected time for program directors; <sup>(Core)</sup>
  - I.A.1.b) provide salary support and/or protected time for ultrasound faculty members; <sup>(Core)</sup>
  - I.A.1.c) provide other support personnel required for operation of the program. <sup>(Detail)†</sup>

## **I.B. Participating Sites**

- I.B.1. The program director must keep a current and accurate document that describes all sites involved in fellow education. <sup>(Core)</sup>
- The participating sites document should:
- I.B.1.a) identify the faculty who will assume both educational and supervisory responsibilities for fellows;
  - I.B.1.b) specify their responsibilities for teaching, supervision, and formal evaluation of fellows, as specified later in this document;
  - I.B.1.c) specify the duration and content of the educational experience; and,
  - I.B.1.d) state the policies and procedures that will govern fellow education during the assignment.
- I.B.2. Each participating site must provide appropriate support services, personnel, and space to ensure that fellows have sufficient time to carry out their clinical and educational functions. <sup>(Core)</sup>
- I.B.3. Programs using multiple participating sites must ensure the provision of a unified educational experience for the fellows. <sup>(Detail)</sup>
- I.B.4. Any required point-of-care ultrasound experience specified later in this document, not available at the primary clinical site or sponsoring institution must be provided through an experience at a participating site. <sup>(Core)</sup>
- I.B.5. The primary clinical site must be a primary hospital (hereafter referred to as the primary clinical site). <sup>(Core)</sup>
- I.B.6. Required rotations to participating sites that are geographically distant from the sponsoring institution should offer special resources unavailable locally that significantly augment the overall educational experience of the program. <sup>(Core)</sup>

## **II. PROGRAM PERSONNEL AND RESOURCES**

*The program director is responsible for ensuring the overall quality of the education provided to the fellow. It is understood that the program director must follow institutional protocols, policies, and procedures that are applicable to junior faculty, as fellows will work in the role of junior faculty during their AEMUS training period.*

### **II.A. Program Director**

- II.A.1. There must be a single program director with authority and accountability for the operation of the program. <sup>(Core)</sup>
- II.A.1.a) The program director must submit this information to the Emergency Ultrasound Fellowship Accreditation Council (EUFAC). <sup>(Core)</sup>

- II.A.1.b) The program director should continue in his or her position for a length of time to maintain continuity of leadership and program stability. <sup>(Detail)</sup>
- II.A.2. The program director should have sufficient release time from clinical work to adequately support the fellowship goals.
- II.A.3. Qualifications of the program director must include:
  - II.A.3.a) requisite specialty expertise and documented educational and administrative experience acceptable to the EUFAC; <sup>(Core)</sup>
  - II.A.3.b) prior attendance and graduation from an ultrasound fellowship; or training and/or experience that is acceptable to the EUFAC; <sup>(Core)</sup>
  - II.A.3.c) hold a current Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, or be board eligible to hold a Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, or qualifications that are acceptable to the EUFAC; <sup>(Core)</sup>
  - II.A.3.d) current medical licensure and appropriate medical staff appointment; <sup>(Core)</sup>
  - II.A.3.e) publication of original ultrasound research or review articles in peer reviewed journals; <sup>(Core)</sup>
  - II.A.3.f) have attended a regional or national ultrasound meeting within the past year;
  - II.A.3.g) research presentations at regional or national ultrasound (or related) conferences; <sup>(Core)</sup>
  - II.A.3.h) participation within regional or national ultrasound organizations or ultrasound sections within large emergency medicine organizations;
  - II.A.3.i) current clinical activity in clinical ultrasound. <sup>(Core)</sup>
- II.A.4. The program director must administer and maintain an educational environment conducive to educating the fellows. <sup>(Core)</sup>

The program director must:

  - II.A.4.a) oversee and ensure the quality of didactic and clinical education in all sites that participate in the program; <sup>(Core)</sup>
  - II.A.4.b) if applicable, approve a local director at each participating site who is accountable for fellow education; <sup>(Core)</sup>
  - II.A.4.c) approve the selection of program faculty as appropriate; <sup>(Core)</sup>
  - II.A.4.d) evaluate program faculty; <sup>(Core)</sup>
  - II.A.4.e) prepare and submit all information required and requested by EUFAC; <sup>(Core)</sup>
    - II.A.4.e).(1) This includes but is not limited to the program application forms and

any program updates to EUFAC and ensure that the information submitted is accurate and complete. <sup>(Core)</sup>

- II.A.4.f) provide verification of fellowship education for all fellows, including those who leave the program prior to completion; <sup>(Core)</sup>
  - II.A.4.g) obtain department chair (and/or designated institutional officials where applicable) review and signature on all program application forms, as well as any correspondence or document submitted to EUFAC that addresses: <sup>(Detail)</sup>
    - II.A.4.g).(1) program citations;
    - II.A.4.g).(2) request for changes in the program that would have significant impact, including financial, on the program or institution.
- II.A.5. The program director or designee is responsible for maintaining a log of ultrasound exams performed by the fellow in the emergency department. <sup>(Core)</sup>

## **II.B. Faculty**

- II.B.1. At each participating site, there must be a sufficient number of faculty with documented qualifications to instruct and supervise all fellows at that location. <sup>(Core)</sup>

The faculty must:

- II.B.1.a) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities, and demonstrate a strong interest in the education of fellows; and, <sup>(Core)</sup>
  - II.B.1.b) administer and maintain an educational environment conducive to educating fellows; <sup>(Core)</sup>
  - II.B.1.c) be readily available to the fellows for consultation of cases. <sup>(Core)</sup>
  - II.B.2. Faculty must hold a current Focused Practice Designation in AEMUS, be board eligible to hold a Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, or possess qualifications judged acceptable to the EUFAC. <sup>(Core)</sup>
  - II.B.3. There must be a minimum of one physician faculty member for up to 3 fellows and thereafter, an additional physician faculty member for every 3 fellows, and; <sup>(Core)</sup>
    - II.B.3.a) one of the faculty must include the fellowship program director; and, <sup>(Core)</sup>
    - II.B.3.b) together, all faculty members must devote a minimum of 10 hours per calendar month of instruction to the fellows. <sup>(Core)</sup>
- II.B.4. AEMUS fellowship faculty members must have hospital credentialing to perform ultrasound.
- II.B.5. Faculty development opportunities must be made available to each core

physician faculty member, including but not limited to ultrasound specific CME opportunities.

- II.B.6. Faculty members should participate in faculty development programs designed to enhance the effectiveness of their teaching, evaluation, and feedback. <sup>(Detail)</sup>
- II.B.7. Faculty members must supervise all fellows in their development of clinical, educational, research, advocacy, and administrative skills. <sup>(Detail)</sup>
- II.B.8. The physician faculty must possess current medical licensure and appropriate medical staff appointment. <sup>(Core)</sup>
- II.B.9. Any non-physician faculty must have appropriate qualifications in their field and hold appropriate institutional appointments. <sup>(Core)</sup>
- II.B.10. The faculty must establish and maintain an environment of inquiry and scholarship with an active research component.
  - II.B.10.a) The faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences.
  - II.B.10.b) Some members of the faculty should also demonstrate scholarship by one or more of the following: <sup>(Core)</sup>
    - II.B.10.b).(1) peer-reviewed funding; <sup>(Detail)</sup>
    - II.B.10.b).(2) publication of original research or review articles in peer reviewed journals, or chapters in textbooks; <sup>(Detail)</sup>
      - II.B.10.b).(2).(a) Faculty as a group must publish at least one article over the prior five years. <sup>(Core)</sup>
    - II.B.10.b).(3) publication or presentation of case reports or clinical series at local, regional, or national professional and scientific society meetings; or, <sup>(Detail)</sup>
      - II.B.10.b).(3).(a) Faculty as a group must present at least one abstract or presentation over the prior five years. <sup>(Core)</sup>
    - II.B.10.b).(4) participation in national committees or educational organizations. <sup>(Detail)</sup>
      - II.B.10.b).(4).(a) At least one faculty member must have demonstrated activity in a regional, national, or international ultrasound organization. <sup>(Core)</sup>
  - II.B.10.c) Faculty should encourage and support fellows in scholarly activities. <sup>(Core)</sup>

## **II.C. Other Program Personnel**

The institution and the program must jointly ensure the availability of all necessary professional, technical, and clerical personnel for the effective administration of the program. <sup>(Core)</sup>

## **II.D. Resources**

The institution and the program must jointly ensure the availability of adequate resources and administrative space for fellow education, as defined in the specialty program requirements. <sup>(Core)</sup>

- II.D.1. Resources must be available to support the provision of clinical experience in adult and pediatric critical care areas. <sup>(Core)</sup>
- II.D.2. The patient population must include patients of all ages and both genders, with a wide variety of clinical problems, and must be adequate in number and variety to meet the educational needs of the program. <sup>(Core)</sup>
- II.D.3. Fellows must work in a clinical environment with appropriate ultrasound equipment of sufficient quality to facilitate fellow education in the performance of all types of ultrasound exams, including endovaginal, cardiac, high-frequency, and other applications common in emergency medicine. <sup>(Core)</sup>
- II.D.4. Fellows must work in a clinical environment where ultrasound equipment is owned or controlled by the emergency department and available 24 hours a day, 7 days a week. <sup>(Core)</sup>
- II.D.5. Fellows must work in a clinical environment where ultrasound imaging is documented as an established procedure, process, or imaging modality; and,
  - II.D.5.a) the ultrasound report should include findings as interpreted by the clinician at the point-of-care; and,
  - II.D.5.b) the ultrasound report should include the name of the person who performed and interpreted the ultrasound images; and,
  - II.D.5.c) the ultrasound report should appear in the patient's medical record; and,
  - II.D.5.d) the ultrasound report should be recognizable as a clinician-performed point-of-care ultrasound.

## **II.E. Medical Information Access**

*As graduates of Emergency Medicine residencies and serving at times as independent care providers, fellows must have access to necessary medical informatics with ready access to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities should be available. ‡*

## **III. FELLOW APPOINTMENTS**

### **III.A. Eligibility Criteria for Entry into Fellowship**

*Questions regarding eligibility criteria for the AEMUS Focused Practice Designation should be directed to the American Board of Emergency Medicine.*

*AEMUS fellowship programs may enroll individuals who have not completed an*

*Emergency Medicine residency program accredited or approved by the ACGME, the Australasian College for Emergency Medicine (ACEM), or the Royal College of Physicians and Surgeons of Canada (RCPSC). However, these individuals will not be eligible to hold a Focused Practice Designation in AEMUS issued by the American Board of Emergency Medicine.*

*Applicants must be notified of the fellowship eligibility requirements at the time of application.* (Core)

The fellowship program director must comply with the criteria for fellow eligibility as specified in the Institutional Requirements. (Core)

### III.A.1. Eligibility Requirements – AEMUS Fellowship Programs

To enter, all fellows must have successfully completed a residency program accredited or approved by the ACGME, the ACEM, or the RCPSC. Eligibility does not extend to ACGME-accredited Transitional Year residency programs. (Core)

#### III.A.1.a) Fellow Eligibility Exception

An EUFAC-accredited fellowship program may accept an applicant who does not satisfy the eligibility requirements listed in Section III.A.1 if:

III.A.1.b) the Graduate Medical Education Committee (GMEC) reviews and approves the applicant's qualifications; and,

III.A.1.c) the Clinical Competency Committee (CCC) completes an evaluation of the applicant's performance within 12 weeks of matriculation;

III.A.1.d) the applicant is informed that their AEMUS training will not meet eligibility requirements for a Focused Practice Designation by the American Board of Emergency Medicine.

III.A.2. Prior to entry, each fellow must be notified in writing of the required length of the program.

### III.B. Number of Fellows

The program's educational resources must be adequate to support the number of fellows appointed to the program. (Core)

III.B.1. The program director may not appoint more fellows than approved by the EUFAC. (Core)

III.B.2. Prior approval by the EUFAC is required to change the number of approved fellows in the program. (Core)

## IV. EDUCATIONAL PROGRAM

*The AEMUS fellowship focuses on the education related to Advanced Emergency Ultrasound. It is expected that the fellow will learn additional aspects of general*

*emergency medicine, similar to any new graduate from an emergency medicine residency. Such continuing education is important for all emergency physicians throughout their career and is accomplished through existing departmental or divisional programs not covered in this document.*

**IV.A. The curriculum must contain the following educational components:**

- IV.A.1. Overall educational goals for the program, which the program must make available to fellows and faculty; <sup>(Core)</sup>
- IV.A.2. Competency-based goals and objectives for each assignment at each educational level, which the program must distribute to fellows and faculty in either written or electronic form; <sup>(Core)</sup>
  - IV.A.2.a) All educational components of the fellowship must be related to program goals and objectives. <sup>(Detail)</sup>
  - IV.A.2.b) The curriculum must include ultrasound core content areas (see Appendix). <sup>(Core)</sup>
- IV.A.3. Teaching of ultrasound content must be provided by faculty or the ultrasound director, with minor exceptions allowed for supplemental education;
  - IV.A.3.a) education by non-faculty is allowed for advanced applications; and,
  - IV.A.3.b) education by non-faculty is allowed for novel applications; and,
  - IV.A.3.c) any education by non-faculty should be overseen by program faculty.
- IV.A.4. Regularly scheduled educational sessions;
  - IV.A.4.a) The majority of educational experiences should take place at the primary clinical site. <sup>(Detail)</sup>
    - IV.A.4.a).(1) There must be at least 2.5 hours per week of planned educational experiences focused on ultrasound. <sup>(Core)</sup>
    - IV.A.4.a).(2) Planned educational experiences should include presentations based on the defined curriculum, morbidity and mortality conferences, journal review, administrative seminars, and research training. <sup>(Detail)</sup>
    - IV.A.4.a).(3) Each faculty member(s) must be present for more than 50% of planned didactic experiences. <sup>(Detail)</sup>
  - IV.A.4.b) Image review sessions for both quality assurance as well as education should occur regularly. <sup>(Core)</sup>
    - IV.A.4.b).(1) Faculty and fellows will review together at least 20% of total exams, or a minimum of 750 total exams. <sup>(Core)</sup>
  - IV.A.4.c) No less than 50% of ultrasound images obtained by a fellow should be reviewed with feedback given to the fellow in a timely manner. <sup>(Core)</sup>
  - IV.A.4.d) Imaging review sessions must be documented. <sup>(Core)</sup>

IV.A.4.e) Fellows must attend 70% of ultrasound-related seminars, conferences, and journal clubs. <sup>(Core)</sup>

#### IV.A.5. Ultrasound Image Acquisition and Interpretation

IV.A.5.a) Each fellow must personally perform, acquire, and interpret at least 1,000 ultrasound exams during the course of his or her training. <sup>(Core)</sup>

IV.A.5.a).(1) These exams should include a variety of applications. <sup>(Core)</sup>

IV.A.5.a).(2) These exams should include a variety of pathologic and normal findings. <sup>(Core)</sup>

IV.A.5.b) Fellows must participate in clinical and/or professional quality improvement activities involving a structured ultrasound image review. <sup>(Core)</sup>

IV.A.5.b).(1) Images reviewed at this time do not count toward the number of required ultrasound exams that the fellow must personally acquire.

IV.A.5.c) Fellows must participate in at least 5 ultrasound image acquisition educational sessions on average per month where they obtain ultrasound images, either in a clinical or educational setting.

IV.A.5.c).(1) Direct faculty supervision during image acquisition educational sessions is required at the start of fellowship, and then may transition to indirect faculty supervision commensurate with fellow experience.

*The number of ultrasound exams obtained and interpreted serves more as a minimum guide as it is understood that with more hands-on experience one becomes more proficient.*

#### IV.A.6. Curriculum Organization and Fellow Experience

IV.A.6.a) Programs must provide fellows a broad education, including the basic skills and knowledge in AEMUS, so that they may function as specialists competent in providing comprehensive patient care in AEMUS, research, teaching, and program administration. Fellows should maintain their primary Board skills during their fellowships.

IV.A.6.b) Fellows must have patient experience with a diverse clinical spectrum of diagnoses, for patients of all ages and genders, that enable them to develop and demonstrate competencies in AEMUS.

IV.A.6.c) Fellows are expected to participate in administrative experiences and quality assurance duties for the department, such as:

IV.A.6.c).(1) ultrasound billing reporting and audits; and,

IV.A.6.c).(2) hospital-wide or intradepartmental meetings on ultrasound; and,

IV.A.6.c).(3) ultrasound-specific committees; and,

IV.A.6.c).(4) ultrasound and/or AEMUS specific credentialing.

IV.A.7. Educational Skills

IV.A.7.a) Fellows are expected to develop skills in education under the guidance and direct feedback from faculty. <sup>(Core)</sup>

IV.A.7.b) Fellows are expected to obtain proficiency in creating educational materials such as lectures, handouts, and study guides.

IV.A.7.c) Fellows are expected to obtain proficiency in delivering educational materials such as didactics and hands-on education.

IV.A.8. Outcomes and Follow-up

IV.A.8.a) Fellows must participate in longitudinal follow-up of patients imaged clinically during their fellowship, including confirmatory or alternative imaging testing when performed. <sup>(Core)</sup>

**IV.B. Fellow Scholarly Activities**

IV.B.1. The curriculum must advance a fellow's knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. <sup>(Core)</sup>

IV.B.2. Fellows should participate in scholarly activity. <sup>(Core)</sup>

IV.B.2.a) Fellows should submit at least 1 research project to their institution's IRB.

IV.B.2.a).(1) Submitted project should start during the fellowship.

IV.B.2.b) Fellows must participate in research or scholarly activity that includes the following:

IV.B.2.b).(1) plan for publication of original research or review articles; or,

IV.B.2.b).(1).(a) with inclusion of the fellow as an author; or

IV.B.2.b).(2) at least one submission for presentation at local, regional, or national professional and scientific society meetings.

IV.B.3. The sponsoring institution and program should allocate adequate resources to facilitate fellow involvement in scholarly activities. <sup>(Core)</sup>

**IV.C Fellow Educational Activities**

IV.C.1. The curriculum must advance a fellow's knowledge of how to provide education in a variety of settings and a variety of formats. <sup>(Core)</sup>

IV.C.2. The fellow must prepare and deliver lectures on ultrasound topics with the fellowship director or faculty member present, or having reviewed and approved any newly developed lecture material with the fellow in advance of the presentation. <sup>(Core)</sup>

- IV.C.2.(a) The fellow must deliver a minimum of four lectures on four separate topics related to AEMUS; <sup>(Core)</sup>
- IV.C.2.(a).(1) lectures can be given to a variety of learners.
- IV.C.3. The fellow must provide at least 20 hours on average per month of hands-on teaching of ultrasound topics. <sup>(Core)</sup>
- IV.C.4. The fellow must attend at least one national ultrasound meeting during their fellowship.

## V. EVALUATION

### V.A. Fellow Evaluation

V.A.1. The program director must appoint the CCC comprised of a minimum of three program faculty including the AEMUS fellowship director. The additional two representatives may include non-AEMUS, emergency medicine faculty should there be only one faculty member who holds a Focused Practice Designation in AEMUS.

V.A.1.a) The CCC is responsible for fellow evaluation,

V.A.1.b).(1) The CCC should:

V.A.1.b).(1).(a) review all fellow evaluations semi-annually and provide each fellow with this documented, semiannual evaluation of his or her performance with feedback; <sup>(Core)</sup> and,

V.A.1.b).(1).(b) provide summary review and decisions regarding fellow progress, including promotion, remediation, and dismissal following institutional policies and procedures. <sup>(Core)</sup>

V.A.2. Formative Evaluation

V.A.2.a) The faculty must evaluate fellow performance and document this evaluation. <sup>(Core)</sup>

VA.2.a).(1) Faculty must evaluate the fellow at least every six months.

V.A.2.b) The program must:

V.A.2.b).(2) provide objective assessments of competence in AEMUS skills and document fellow progress; <sup>(Core)</sup> and,

V.A.2.b).(3) document progressive fellow performance improvement in AEMUS appropriate to educational level.

V.A.2.c) The evaluations of fellow performance must be accessible for review by the fellow, in accordance with institutional policy.

V.A.3. Summative Evaluation

V.A.3.a) The program director must provide a summative evaluation for each fellow upon completion of the program.

This evaluation must:

V.A.3.a).(1) become part of the fellow's permanent record maintained by the institution, and must be accessible for review by the fellow in accordance with institutional policy;

V.A.3.a).(2) document the fellow's performance during the fellowship; and,

V.A.3.a).(3) verify that the fellow has demonstrated sufficient competence to enter AEMUS practice without direct supervision.

### **V.B. Faculty Evaluation**

V.B.1. At least annually, the fellowship must evaluate faculty performance as it relates to the educational program. <sup>(Core)</sup>

V.B.2. These evaluations should include a review of the faculty's clinical teaching abilities, commitment to the educational program, clinical knowledge, professionalism, and scholarly activities.

V.B.3. This evaluation must include at least annual written confidential evaluations by the fellows.

V.B.4. These evaluations should also include a review of:

V.B.4.a) administrative and interpersonal skills;

V.B.4.b) quality of feedback to fellows;

V.B.4.c) timeliness in the completion of fellow evaluations;

V.B.4.d) mentoring of fellows; and,

V.B.4.e) participation in and contributions to fellow conferences.

V.B.5. A summary of the evaluation should be communicated in writing to each faculty member.

### **V.C. Program Evaluation and Improvement**

*It is anticipated that the fellow may participate in other department or division programs on general emergency medicine skill development or non-ultrasound skills related to emergency medicine. The following section refers only to those activities that relate to AEMUS.*

V.C.1. The program director must appoint a Program Evaluation Committee to conduct and document the Annual Program Evaluation as part of the program's continuous improvement process. <sup>(Core)</sup>

V.C.1.a) The Program Evaluation Committee must be composed of at least two program faculty members, at least one of whom is an AEMUS faculty member, and at least one fellow.

- V.C.1.b) Program Evaluation Committee responsibilities must include:
- V.C.1.b).(1) acting as an advisor to the program director, through program oversight; <sup>(Core)</sup>
  - V.C.1.b).(2) review of the program's self-determined goals and progress toward meeting them; <sup>(Core)</sup>
  - V.C.1.b).(3) guiding ongoing program improvement, including development of new goals, based upon outcomes; and, <sup>(Core)</sup>
  - V.C.1.b).(4) review of the current operating environment to identify strengths, challenges, opportunities, and threats as related to the program's mission and aims. <sup>(Core)</sup>
- V.C.1.c) The Program Evaluation Committee should consider the following elements in its assessment of the program:
- V.C.1.c).(1) curriculum; <sup>(Core)</sup>
  - V.C.1.c).(2) outcomes from prior Annual Program Evaluation(s); <sup>(Core)</sup>
  - V.C.1.c).(3) EUFAC letters of notification, including citations, areas for improvement, and comments; <sup>(Core)</sup>
  - V.C.1.c).(4) quality and safety of patient care; <sup>(Core)</sup>
  - V.C.1.c).(5) aggregate fellow and faculty scholarly activity; <sup>(Core)</sup>
  - V.C.1.c).(6) EUFAC Fellow and Faculty Surveys (where applicable); and, <sup>(Core)</sup>
  - V.C.1.c).(7) written evaluations of the program; <sup>(Core)</sup>
  - V.C.1.c).(8) aggregate fellow:
    - V.C.1.c).(8).(a) board pass and certification rates; and <sup>(Core)</sup>
    - V.C.1.c).(8).(b) graduate performance. <sup>(Core)</sup>
  - V.C.1.c).(9) aggregate faculty:
    - V.C.1.c).(9).(a) evaluation; and, <sup>(Core)</sup>
    - V.C.1.c).(9).(b) professional development. <sup>(Core)</sup>
- V.C.1.d) The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats <sup>(Core)</sup>
- V.C.1.d).(1) be distributed to and discussed with the members of the teaching faculty and the fellows.
- V.C.2. One goal of EUFAC-accredited education is to educate physicians who seek and achieve FPD certification. One measure of the effectiveness of the

educational program is the ultimate pass rate.

The program director should encourage all eligible program graduates to take the FPD AEMUS certifying examination offered by the American Board of Emergency Medicine.

- V.C.2.a) Any program whose graduates over the time period specified in the requirement have achieved an 80% pass rate will have met this requirement.
- V.C.2.b) Programs must report through existing EUFAC accreditation portals or websites, board certification status annually for the cohort of board-eligible fellows that graduated 7 years earlier.

## **VI. LEARNING AND WORK ENVIRONMENT**

*Fellowship education must occur in the context of a learning and working environment that emphasizes the following principles:*

*Excellence in the safety and quality of care rendered to patients by fellows today;*

*Excellence in the safety and quality of care rendered to patients by today's fellows in their future practice.*

*Excellence in professionalism through faculty modeling of:*

*- the effacement of self-interest in a humanistic environment that supports the professional development of physicians;*

*- the joy of curiosity, problem-solving, intellectual rigor, and discovery;*

*Commitment to the well-being of the students, residents/fellows, faculty members, and all members of the health care team.*

### **VI.A. Patient Safety, Quality Improvement, Supervision, and Accountability**

#### **VI.A.1. Patient Safety and Quality Improvement**

*All physicians share responsibility for promoting patient safety and enhancing quality of patient care. Graduate medical education must prepare fellows to provide the highest level of clinical care with continuous focus on the safety, individual needs, and humanity of their patients. It is the right of each patient to be cared for by fellows who are appropriately supervised; possess the requisite knowledge, skills, and abilities; understand the limits of their knowledge and experience; and seek assistance as required to provide optimal patient care.*

*As graduates of emergency medicine residencies and serving the role during their fellowship as independent providers of care, fellows are expected to abide by national, regional, and institutional expectations for patient safety,*

*quality improvement, and accountability. As such, the goals of patient safety, quality improvement, and accountability referenced in this document reflect only those unique to AEMUS and not the larger group of standards relevant to general emergency medicine care.*

VI.A.1.a) Patient Safety

VI.A.1.a).(2) Education on Patient Safety

Programs must provide formal educational activities that promote patient safety-related goals, tools, and techniques: <sup>(Core)</sup>

VI.A.1.a).(2).(a) education on the role of machine maintenance on patient safety; and,

VI.A.1.a).(2).(b) education on the role of proper infection control on patient safety; and,

VI.A.1.a).(2).(c) education on the role of reporting in the medical record on patient safety; and,

VI.A.1.a).(2).(d) education on the role of quality assurance on patient safety.

VI.A.1.a).(3) Policies shall be created and maintained concerning aspects of ultrasound safety, including;

VI.A.1.a).(3).(a) policies on infection control; and,

VI.A.1.a).(3).(b) probe and mode power applications; and,

VI.A.1.a).(3).(c) policies on machine maintenance; and,

VI.A.1.a).(3).(d) policies on patient call-back; and,

VI.A.1.a).(3).(e) principles of as low as reasonably achievable (ALARA).

VI.A.1.b) Quality Improvement

Continuous quality improvement is an integral part of an AEMUS training programs. Faculty and fellows are expected to participate in all aspects of image review, quality assurance feedback, and patient follow-up relevant to AEMUS.

VI.A.2 Supervision and Accountability

*As graduates of emergency medicine residencies and serving the role during their fellowship as independent providers of care, a fellow's clinical activities will fall under existing departmental or divisional policies. The following section references the supervision for activities related only to AEMUS.*

- VI.A.2.a) The program must demonstrate that the appropriate level of supervision in place for all fellows is based on each fellow's level of training and ability. Supervision may be exercised through a variety of methods, as appropriate to the situation. <sup>(Core)</sup>
- VI.A.2.b) The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each fellow must be assigned by the program director and faculty members. <sup>(Core)</sup>

## **VI.B. Professionalism**

*Programs, in partnership with their sponsoring institutions, must educate fellows concerning the professional responsibilities incumbent upon individuals performing AEMUS in the emergency department.*

- VI.B.1. The program director, in partnership with the sponsoring institution, must provide a culture of professionalism that supports patient safety and personal responsibility.
- VI.B.2. Fellows and faculty members must demonstrate an understanding of their personal role in care for patients in the emergency department, and how AEMUS impacts this care.
- VI.B.3. Programs must provide a professional, respectful, and civil environment that is free from mistreatment, abuse, or coercion of students, residents, faculty, and staff. Programs, in partnership with their sponsoring institutions, should have a process for education of trainees regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. <sup>(Core)</sup>

## **VI.C. Well-Being**

In the current health care environment, fellows and faculty members are at increased risk for burnout and depression. Psychological, emotional, and physical well-being are critical in the development of the competent, caring, and resilient physician. Self-care is an important component of professionalism and one that must be fostered in an AEMUS fellowship.

## **VI.D. Clinical Responsibilities, Teamwork, and Transitions of Care**

As graduates of emergency medicine residencies and serving the role during their fellowship as independent providers of care, a fellow's clinical activities will fall under departmental or divisional policies for responsibilities and transition of care. Clinical responsibilities for each fellow must be based on his or her skill level and available support services. <sup>(Core)</sup>

## **VI.E. Clinical Experience and Education**

*At times, AEMUS fellows are expected to work in an independent fashion clinically in the emergency department. As such, this independent practice*

*should adhere to department or division rules or expectations. As an AEMUS trainee, the fellow may function independently while working clinically, but they should be afforded all protections relative to physicians with significant other responsibilities, with a goal to support fellowship education.*

VI.E.1. Maximum Hours of Clinical and Educational Work Per Week

Clinical and educational work hours must be limited to no more than 80 hours per week, averaged over a four-week period, inclusive of all in-house clinical and educational activities, clinical work done from home, and all moonlighting.

VI.E.1.a) Fellows should not be contracted to work more than 20 clinical hours per week, averaged over the length of their fellowship.

VI.E.2. Mandatory Time Free of Clinical Work and Education

VI.E.2.a) The program must design an effective program structure that is configured to provide fellows with educational opportunities, as well as reasonable opportunities for rest and personal well-being.

VI.E.2.b) Fellows should have eight hours off between scheduled clinical work and education periods.

VI.E.2.b).(1) There may be circumstances when fellows choose to stay to care for their patients or return to the hospital with fewer than eight hours free of clinical experience and education. This must occur within the context of the 80-hour and the 1-day-off-in-7 requirements.

VI.E.2.c) Fellows must be scheduled for a minimum of 1 day in 7 free of clinical work and required education (when averaged over 4 weeks). At-home call cannot be assigned on these free days.

VI.E.3. Maximum Clinical Work and Education Period Length

VI.E.3.a) Clinical and educational work periods for fellows must not exceed 24 hours of continuous scheduled clinical assignments. <sup>(Core)</sup>

VI.E.4. Moonlighting

VI.E.4.a) Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program and must not interfere with the fellow's fitness for work nor compromise patient safety. <sup>(Core)</sup>

VI.E.4.b) Time spent by fellows in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit. <sup>(Core)</sup>

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**\*Core Requirements:** Statements that define structure, resource, or process elements essential to the fellowship.

**†Detail Requirements:** Statements that describe a specific structure, resource, or process, for

achieving compliance with a Core Requirement or statements that materially improve fellow education Programs and sponsoring institutions in substantial compliance with the detail elements may utilize alternative or innovative approaches to meet Core Requirements.

‡**Non-core Requirements:** Statements that describe fellowship elements that support educational goals that are not core to the fellowship but address topics or program elements that enhance the educational experience, introduce cutting-edge information, and increase content expertise that is not considered required

## **Appendix – Ultrasound Core Content Area**

The curriculum for Advanced Emergency Ultrasonography Fellowships is based on published group consensus that has evolved over the years. Current recommendations are based on the most up-to-date understanding of the core content areas.

Specific Content Areas are as follows:

### By Topic

- 1) Physics and Instrumentation
- 2) Trans-abdominal and Endovaginal Ultrasound of the Female Pelvis
- 3) Abdominal Aorta Ultrasound
- 4) Basic and Advanced Echocardiography
- 5) Hepatobiliary Ultrasound
- 6) Renal Ultrasound
- 7) Vascular Ultrasound
- 8) Soft Tissue Ultrasound
- 9) Musculoskeletal Ultrasound
- 10) Chest, Lung, and Airway Ultrasound
- 11) Ocular Ultrasound
- 12) Ultrasound Guided Procedures
- 13) General Abdomen and Bowel Ultrasound
- 14) Male Genitourinary Ultrasound
- 15) Ultrasound Administration

### By Patient Population

- 1) Ultrasound in Trauma
- 2) Ultrasound in First Trimester Pregnancy
- 3) Ultrasound in the Hypotensive Patient and Cardiac Arrest
- 4) Ultrasound in Unexplained Shortness of Breath
- 5) Ultrasound in the Pediatric Patient

The curriculum may contain additional topics that are either more advanced, niche topics or newly relevant topics in Advanced Emergency Medicine Ultrasonography.