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 and clinicians in other specialties and practice environments. A methodical review of landmark and current literature, as well as participation in ongoing research, enables critical appraisal and ultimately generates the evidence needed to continue improving patient care through clinical ultrasonography. Furthermore, the fellowship provides practical experience in AEMUS program management, including quality assurance review, medicolegal documentation, image workflow management, 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 at least 12 months. (Core)*

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. (Core)

The sponsoring institution and the program must ensure that the program director has sufficient protected time and financial support for the program's educational and administrative responsibilities. (Core)

I.A.1. The sponsoring institution and participating sites must:

I.A.1.a) provide a minimum of 0.2 FTE salary support and/or equivalent protected time (e.g., time away from clinical duties) for program directors; (Core)

I.A.1.a.) (1) At a minimum, the program director must be provided with the dedicated time and support specified below for administration of the program. Additional support for core fellowship faculty must be provided as specified below. This additional support may be for the program director only or divided among the program director and core fellowship faculty, including associate/assistant program director, as applicable. (Core)

Number of Approved Fellow Complement	Minimum Support Required (FTE) for Program Director	Minimum Additional Support Required (FTE) for Core Fellowship Faculty	Total Minimum Program support
1-3	0.2	0.025	0.225
4-6	0.2	0.05	0.25
7-9	0.2	0.1	0.3

I.A.1.b) provide other support personnel required for operation of the program. (Detail)†

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. (Core)

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 resources to carry out their educational functions. (Core)

I.B.3. Programs using multiple participating sites must ensure the provision of a unified educational experience for the fellows. (Detail)

I.B.4. Any required point-of-care ultrasound experience specified later in this document, not available at the primary site or sponsoring institution, must be provided through an experience at a participating site. (Core)

I.B.5. The primary site must be a hospital (hereafter referred to as the primary site). (Core)

I.B.6. Required AEMUS 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. (Core)

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.

The program director must hold a current Focused Practice Designation in AEMUS by the American Board of Emergency Medicine. Non-FPD-eligible Program Directors require qualifications that are acceptable to EUFAC.

II.A. Program Director

II.A.1. There must be a single program director with authority and accountability for the operation of the program. (Core)

II.A.1.a) The program director must submit this information to the Emergency Ultrasound Fellowship Accreditation Council (EUFAC). (Core)

II.A.1.b) The program director should continue in this position for a length of time to maintain continuity of leadership and program stability. (Detail)

II.A.1.b.) (1) The program director must be at least two years removed from their AEMUS fellowship training and possess experience in ultrasound administration, scholarship, and teaching; non-FPD-eligible Program Directors require qualifications that are acceptable to the EUFAC. (Core)

II.A.1.c) A planned change in the program director leadership must be reported to and approved by EUFAC prior to implementation.

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; (Core)

II.A.3.b) prior attendance and graduation from an ultrasound fellowship; hold a current Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, non-FPD-eligible Program Directors require experience that is acceptable to the EUFAC; (Core)

II.A.3.d) current medical licensure and appropriate medical staff appointment; (Core)

II.A.3.e) publication of original ultrasound research or review articles in peer-reviewed journals; (Core)

II.A.3.e).1 Case reports, podcasts, and letters to the editor are not accepted as a substitute for original ultrasound research as defined in II.A.3.e).

II.A.3.f) have attended a regional or national ultrasound meeting within the past three years; (Detail)

II.A.3.g) published research in peer-reviewed journals or research by the program director has been presented at regional conferences or national ultrasound (or related) conferences within the past three years; (Core)

II.A.3.h) active participation within regional or national ultrasound organizations or ultrasound sections within large emergency medicine organizations within the past three years;

II.A.3.i) current clinical activity in clinical ultrasound. (Core)

II.A.4. The program director must administer and maintain an educational environment conducive to educating the fellows. (Core)

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; (Core)

II.A.4.b) if applicable, approve a local director at each participating site who is accountable for fellow education; (Core)

II.A.4.c) approve the selection of program faculty as appropriate; (Core)

II.A.4.d) evaluate program faculty in writing; (Core)

II.A.4.e) prepare and submit all information required and requested by EUFAC (Core)

II.A.4.e).(1) This includes but is not limited to the program application forms, ensuring submission of annual questionnaires, and any program updates to EUFAC, and ensuring that the information submitted is accurate and complete. (Core)

II.A.4.f) provide verification of fellowship education for all fellows, including those who leave the program prior to completion; (Core)

II.A.4.g) obtain department chair review and signature on all program application forms or correspondence submitted to EUFAC that address: (Core)

II.A.4.g).(1) program citations;

II.A.4.g).(2) request for changes in the program that would have a 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. (Core)

II.B. Core Fellowship Faculty

II.B.1. At each participating site, there must be at least one core fellowship faculty member with documented qualifications to instruct and supervise all fellows at that location. (Core)

The core fellowship faculty are responsible for collaborating closely with the program director to ensure the overall quality of education provided to the fellow(s).

Core fellowship faculty must hold a current Focused Practice Designation in AEMUS. If Core Fellowship Faculty are board-eligible to hold a Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, they must sit for the FPD exam at the earliest opportunity.

Non-FPD-eligible Core Fellowship Faculty must possess qualifications judged acceptable to EUFAC. (Core)

The core fellowship 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, (Core)

II.B.1.b) administer and maintain an educational environment conducive to educating fellows; (Core)

II.B.1.c) be readily available to the fellows for consultation of ultrasonography cases. (Core)

II.B.2. Core fellowship faculty must hold a current Focused Practice Designation in AEMUS. If Core Fellowship Faculty are board-eligible to hold a Focused Practice Designation in AEMUS by the American Board of Emergency Medicine, they must sit for the FPD exam at the earliest opportunity. Non-FPD-eligible Core Fellowship Faculty must possess qualifications judged acceptable to EUFAC. (Core)

II.B.3. There must be a minimum of one physician core fellowship faculty member (including the Program Director) for up to 3 fellow level trainees and thereafter, an additional physician faculty member for every 3 fellow level trainees, and; (Core)

IIB.3.a) one of the core fellowship faculty must include the fellowship program director; and, (Core)

IIB.3.b) together, all core fellowship faculty members must devote a minimum of 10 hours per calendar month of instruction to all fellows. (Core)

II.B.4. AEMUS fellowship core fellowship faculty members must have hospital credentialing to perform ultrasound.

II.B.5. Core fellowship 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. Core fellowship faculty members should participate in faculty development programs designed to enhance the effectiveness of their teaching, evaluation, and feedback. (Detail)

II.B.7. Core fellowship faculty members must supervise all fellows in their development of clinical, educational, research, advocacy, and administrative skills. (Detail)

II.B.8. The physician core fellowship faculty must possess current medical licensure and an appropriate medical staff appointment. (Core)

II.B.9. Any non-physician fellowship faculty must have appropriate qualifications in their field and hold appropriate institutional appointments. (Core)

II.B.10. The core fellowship faculty must establish and maintain an environment of inquiry and scholarship with an active research component.

II.B.10.a) The core fellowship faculty must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences.

II.B.10.b) At least one core fellowship faculty member must also demonstrate scholarship by one or more of the following: (Core)

II.B.10.b).(1) peer-reviewed funding; (Detail)

II.B.10.b).(2) publication of original research or review articles in peer-reviewed journals, or chapters in textbooks; (Core)

II.B.10.b).(2).(a) Case reports, podcasts, and letters to the editor are not accepted as substitutes for original ultrasound research as delineated in II.B.10.b).(2).

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, (Detail)

II.B.10.b).(3).(a) Core fellowship faculty as a group must publish an article or present at least one abstract or oral presentation over the prior three years. (Core)

II.B.10.b).(4) active participation within regional or national ultrasound-related committees. (Detail)

II.B.10.b).(4).(a) At least one core fellowship faculty member must demonstrate active participation within a regional, national, ultrasound organization or activity in an ultrasound section within a large emergency medicine organization of their specialty within the past three years. (Detail

II.B.10.b).(5) significant contributions to professional online or social media platforms where online content furthers fellow education in ultrasound or generates scholarly discussion focused on ultrasound. (Detail)

II.B.10.c) Core fellowship faculty should encourage and support fellows in scholarly activities. (Core)

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. (Core)

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. (Core)

II.D.1. Resources must be available to support the provision of clinical experience in adult and pediatric acute care areas. (Core)

II.D.2. The patient population must include patients of all ages and genders, with a wide variety of clinical problems, and must be adequate in number and variety to produce an AEMUS graduate with sufficient experience to care for a broad population using Advanced Emergency Medicine Ultrasound. (Core)

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 applications common in emergency medicine, including endocavitary, phased-array, curvilinear, and high-frequency linear transducers. (Core)

II.D.4. Fellows must work in a clinical environment where ultrasound equipment is owned or controlled by the department sponsoring the fellowship and available 24 hours a day, 7 days a week. (Core)

II.D.5 Fellows must work in a clinical environment where ultrasound imaging follows a discrete workflow process whereby ultrasound images are associated with a patient encounter, a report is generated, and images are archived for review in a PACS, VNA, or POCUS Manager; 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 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

Applicants must be notified of the fellowship eligibility requirements at the time of application and, separately, whether they would meet the eligibility requirements for the Focused Practice Designation in AEMUS, as defined by ABEM, upon successful completion of their AEMUS fellowship training. (Core)

The fellowship program director must comply with the criteria for fellow eligibility as specified by local 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, including 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), if:

III.A.1.b) the Institution, Graduate Medical Education Committee (GMEC) or Designated Institutional Official 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.A.3. Focused Practice Designation Eligibility Requirements
Questions regarding the eligibility criteria for the AEMUS Focused Practice Designation should be directed to the American Board of Emergency Medicine. Updated eligibility requirements can be obtained from the ABEM website <https://www.abem.org/public/become-certified/focused-practice-designation/advanced-em-ultrasonography>.

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 AEMUS 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)

III.C. Eligibility for Focused Practice Designation

Questions regarding eligibility criteria for the AEMUS Focused Practice Designation should be directed to the American Board of Emergency Medicine at www.abem.org/aemus or fpd@abem.org.

AEMUS fellowship programs may enroll individuals who have not completed a 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 eligibility requirements for the Focused Practice Designation at the time of application.

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. Such continuing education is important for all physicians throughout their careers 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 in written or electronic form; (Core)

IV.A.2. The program must distribute to fellows and faculty competency-based goals and objectives in either written or electronic form; (Core)

IV.A.2.a) All educational components of the fellowship must be related to program goals and objectives. (Detail)

IV.A.2.b) The curriculum must include ultrasound core content areas (see Appendix). (Core)

IV.A.3. Teaching of ultrasound content must be provided by core fellowship faculty or the Program 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 sponsoring institution, primary clinical site, or other site with sufficient resources. (Detail)

IV.A.4.a).(1) There must be at least 2.5 hours per week on average of planned educational experiences focused on ultrasound, directed toward fellow-level education. (Core)

IV.A.4.a).(2) Planned educational experiences should include presentations or other experiences (e.g., hands-on training or interactive sessions) based on the defined curriculum, morbidity and mortality conferences, journal review, administrative seminars, and research training. (Detail)

Of the planned educational experiences, no more than 20% may be asynchronous, or taught in a remote or virtual environment. Additional education is encouraged and should follow the same structure.

Asynchronous, remote, or virtual learning should meet the following criteria:

- The program director must monitor fellow participation and track attendance
- There must be an evaluation component
- There must be active core fellowship faculty oversight and interaction
- The activity must be monitored for effectiveness

Use of audio, video, or podcasts alone constitutes passive learning and is not considered interactive learning unless an individualized study plan has been created with faculty, there is oversight, and there is an evaluative component.

IV.A.4.a).(3) Each faculty member(s) must be present for more than 50% of planned didactic experiences. (Detail)

IV.A.4.b) Image review sessions for both quality assurance and education should occur regularly. (Core)

IV.A.4.b).(1) Faculty and fellows will review together a minimum of 750 total exams. (Core)

Faculty doing quality assessment (QA) in isolation does not meet this requirement. (Core)

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. (Core)

IV.A.4.d) Imaging review sessions must be documented. (Core)

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

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 the fellow's training. (Core)

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

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

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

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 four ultrasound image acquisition educational sessions on average per month, where they obtain ultrasound images, either in a clinical or educational setting. These sessions should average a minimum of 12 hours per month.

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

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. (Core)

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. (Core)

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. (Core)

IV.B.2. Fellows must participate in research or scholarly activity. (Core)

IV.B.2.a) The submitted project should start during the fellowship.

IV.B.2.a).(1) Fellows must complete at least 1 scholarly project; this may be a research project that can include a meta-analysis, systematic review, or other project type (Core)

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

IV.B.2.).(2).(a) If data is not publishable, presentation of data at the institution level, locally, regionally, or nationally.

IV.B.2.a).(3) with inclusion of the fellow as an author; or

IV.B.2.a).(4) at least one submission for presentation at local, regional, or national professional and scientific society meetings. (Core)

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

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. (Core)

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. (Core)

IV.C.2.(a) The fellow must deliver a minimum of four lectures on four separate topics related to AEMUS; (Core)

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. (Core)

IV.C.4. The fellow must attend at least one national ultrasound meeting during their fellowship. (Core)

V. EVALUATION

V.A. Fellow Evaluation

V.A.1. The program director must appoint an AEMUS fellowship–specific CCC comprised of a minimum of three program faculty, including the AEMUS fellowship director. The additional two representatives may include non-AEMUS faculty if there is 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 the fellow's performance with feedback; (Core) 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. (Core)

V.A.2. Formative Evaluation

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

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; (Core) 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. Core Fellowship Faculty Evaluation

V.B.1. At least annually, the fellowship director must evaluate or be involved in evaluating core faculty performance as it relates to the educational program. (Core)

V.B.2. These evaluations should include a review of the core fellowship faculty's clinical AEMUS knowledge, teaching abilities, commitment to the educational program, 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 activities related to AEMUS.

V.C.1.a) 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. (Core)

V.C.1.b) The Program Evaluation Committee must be composed of the program director and at least one core fellowship faculty member (at least one of whom is an AEMUS faculty member) and at least one AEMUS fellow. The additional representative may include Emergency Medicine (non-AEMUS) faculty if there is only one core faculty member who holds a Focused Practice Designation in AEMUS.

V.C.1.c) Program Evaluation Committee responsibilities must include:

V.C.1.b).(1) acting as an advisor to the program director, through program oversight; (Core)

V.C.1.b).(2) review of the program's self-determined goals and progress toward meeting them; (Core)

V.C.1.b).(3) guiding ongoing program improvement, including development of new goals, based upon outcomes; and, (Core)

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. (Core)

V.C.1.d) The Program Evaluation Committee should consider the following elements in its assessment of the program:

V.C.1.c).(1) curriculum; (Core)

V.C.1.c).(2) outcomes from prior Annual Program Evaluation(s); (Core)

V.C.1.c).(3) EUFAC letters of notification, including citations, areas for improvement, and comments; (Core)

V.C.1.c).(4) quality and safety of patient care; (Core)

V.C.1.c).(5) aggregate fellow and faculty scholarly activity; (Core)

V.C.1.c).(6) EUFAC Fellow and Faculty Surveys (where applicable); and, (Core)

V.C.1.c).(7) written evaluations of the program; (Core)

V.C.1.(7).(a) This evaluation must include annual written confidential evaluations by the fellows. (EUFAC)

V.C.1.c).(8) aggregate fellow:

V.C.1.c).(8).(a) board pass and certification rates; and (Core)

V.C.1.c).(8).(b) graduate performance. (Core)

V.C.1.c).(9) aggregate faculty:

V.C.1.c).(9).(a) evaluation; and, (Core)

V.C.1.c).(9).(b) professional development.(Core)

V.C.1.d). The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats (Core)

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 educational program's effectiveness 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) For programs that have graduated AEMUS fellows in the past seven years, the aggregate pass rate of those graduates on the FPD AEMUS certifying examination must be at least 75%.

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 the quality of patient care. Graduate medical education must prepare fellows to provide the highest level of clinical care with a 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 independent providers of care during their fellowship, 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, not the broader set of standards relevant to general 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: (Core)

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 in 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) Image Review for Quality Improvement

Image review for continuous quality improvement is an integral part of the 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 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 of activities related only to AEMUS.

VI.A.2.a) The program must demonstrate that the appropriate level of supervision is in place for all fellows, based on each fellow's level of training and ability. Supervision may be exercised through a variety of methods, as appropriate to the situation. (Core)

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. (Core)

VI.B. Professionalism

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

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 educating trainees about unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. (Core)

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 residencies and serving the role during their fellowship, providers of care, a fellow's clinical activities will fall under departmental, divisional, or GME policies for responsibilities and transition of care. Clinical responsibilities for each fellow must be based on the fellow's skill level and available support services. (Core)

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 the goal of supporting 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. (Core)

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. (Core)

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. (Core)

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. (Core)

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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 – Core Content of Advanced Emergency Medicine Ultrasonography

The curriculum for AEMUS Fellowships is based on the published Core Content of Advanced Emergency Medicine Ultrasonography. Current recommendations are based on the most up-to-date understanding of the core content areas. The curriculum may include additional topics that are more advanced, niche, or newly relevant in AEMUS.

Appendix – Scholarly Activity by Role

Program Director

The Program Director must demonstrate scholarly activity by serving as first, second, or senior author on five or more peer-reviewed publications (over a five-year period) in the field of ultrasonography. These may include journal articles or book chapters in core ultrasound or core Emergency Medicine textbooks, or a combination thereof.

Published abstracts do not qualify for this requirement. For peer-reviewed articles, a PMID must be available upon request. Acceptable electronic or web-based publications are limited to *MedEdPORTAL* and ACEP *Sonoguide*™. Other online publications or webpages do not qualify; however, additional electronic publications may be considered as peer-review standards evolve.

Core Fellowship Faculty

As a group, the core fellowship faculty must demonstrate ongoing scholarly productivity by publishing at least 1 article per year over the preceding 3 years. This requirement may be met through authorship—first, second, or senior—on a minimum of five peer-reviewed ultrasonography articles, ultrasonography book chapters, or an equivalent combination of both, published in recognized core ultrasound or core emergency medicine texts.

Published abstracts do not fulfill this requirement. For peer-reviewed articles, a PubMed Identifier (PMID) must be available upon request. Electronic and web-based publications are limited to those appearing in *MedEdPORTAL* or *Sonoguide*™. Other web-based publications and webpages do not qualify. The inclusion of additional electronic publications may be reconsidered as peer-review standards evolve.

Fellow

The curriculum must advance each fellow's understanding of the fundamental principles of research, including study design, evaluation, communication of findings to patients, and the application of research to clinical practice. Fellows are expected to engage in research or other scholarly activity and to complete at least one project initiated during the fellowship. Acceptable project types include, but are not limited to, meta-analyses, systematic reviews, or other original scholarly work. Each fellow should be listed as an author on a publication or other scholarly product and should submit at least one presentation for consideration at a local, regional, or national professional or scientific meeting.