

Emergency Ultrasound Fellowship Guidelines

an Information Paper

A Consensus Document Developed by the
ACEP Emergency Ultrasound Section

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I. Introduction:

The American College of Emergency Physicians (ACEP), Emergency Ultrasound Section has been the primary organization representing emergency physicians who perform ultrasound in their practice. Since 1996, ACEP's Ultrasound Section has established policies and guidelines that have become a voice for the specialty.

The Emergency Ultrasound Fellowship Guidelines are a consensus document that will serve to assist departments and individuals who seek training in programs that offer innovative post-residency training in emergency ultrasound. As the numbers of emergency ultrasound fellowships proliferate, we believe these guidelines will serve to assist potential fellows, fellowship directors, and emergency physicians who seek the expertise of such graduates. A large number of emergency ultrasound fellowships now operating follow different curricula, use different teaching methods, and have fellowship directors with varying training backgrounds. The Emergency Ultrasound Fellowship Guidelines submitted are an attempt to assure quality education in emergency ultrasound fellowships. The outline includes minimum equipment, resources, support required, and minimum types of ultrasound applications that must be taught in order to have an emergency ultrasound fellowship. This revision reflects the growth of the subspecialty and the ever increasing number of ultrasound applications performed in the emergency department.

These guidelines are not a substitute for, nor are intended to replace any hospital medical staff application and/or privileging process. The Emergency Ultrasound Fellowship Guidelines are not policy or mandates from any legislative, judicial, or regulatory body, or ACEP.

II. Site Qualification Requirements:

1. The ultrasound machine(s) utilized for fellowship training must be owned or controlled by the emergency department (ED) and must be available on a 24 hour/7 days per week basis.
2. The ultrasound machine utilized by the fellow must be able to perform endovaginal ultrasound, linear ultrasound, and cardiac and abdominal ultrasound applications with high quality. At least three ultrasound transducers (probe) types must be available at all times: linear, endovaginal/endocavity

and either curved linear for abdomen and separate one (microconvex or phased array) for cardiac or microconvex that can be used for both abdominal and cardiac.

3. Hospital credentialing must be available and formal diagnostic reports that appear as part of the patient medical record must be issued by the emergency physicians in the department.
4. At least one other emergency medicine faculty aside from the fellowship director must be hospital credentialed for emergency ultrasound at the primary facility for all of the applications listed.
5. Quality assurance (QA) review of all ultrasound examinations performed by the emergency ultrasound fellow(s) must be documented.
6. A quality assurance log of all ultrasound examinations performed in the ED should be maintained by the ultrasound director for the ED.
7. The type of emergency ultrasound examinations taught and performed at the primary fellowship site should at a minimum be consistent with the most current ACEP Emergency Ultrasound Guidelines <http://www.acep.org/WorkArea/DownloadAsset.aspx?id=32878>. The program, ideally would model its content after any consensus curriculum set forth by ACEP and the Society for Academic Emergency Medicine (SAEM).
8. All teaching for emergency ultrasound applications must be available from the fellowship director or other faculty members with credentials in emergency ultrasound and designated by the fellowship director. All aspects of emergency ultrasound education should take place under the auspices of the emergency ultrasound fellowship faculty. It is understood that supplemental education outside the department may take place especially for advanced or novel applications, however, this time should be minimal and only supplemental to the basis of the fellowship
9. The emergency ultrasound fellow should not work more than 20 clinical hours per week (seeing patients in the ED/urgent care/fast track/triage, etc. as the attending or other), the remainder of the time should be academic/research hours.
10. The emergency ultrasound fellow should be a full time equivalent employee of the group or ED where he or she is enrolled in the fellowship. The fellowship should be at least 12 consecutive months.
11. Video (dynamic media) quality assurance is considered ideal for all ultrasound examinations utilized for teaching of fellow(s). It is understood that this form of QA is not possible for all departments and still image quality assurance is an acceptable alternative.
12. Emergency ultrasound fellows should have at least five scanning (on average) shift equivalents per month. A scanning shift is a shift that a fellow is not working clinically and spends the majority of the scanning shift scanning patients in the ED directly with the fellowship director or other credentialed faculty member intimately involved in the education of ultrasound within the department. The fellowship director or said designee must be present for a majority of scans during that shift in order to give appropriate hands on training to the ultrasound fellow. This close supervision is integral to the fellows' education early in the fellowship year and this time should be reduced as the director feels that such intense supervision becomes low yield for the fellow. As the fellowship progresses, scanning shifts may be substituted for scanning shift equivalents that might include research, administrative or teaching activities at the discretion and under the mentorship of the fellowship director or faculty designee.
13. A formal evaluative feedback process should exist, and the fellowship director and fellow should meet at least three times during the year. This evaluation should be both of the fellow by the fellowship director, and of the fellowship by the fellow.

III. Minimum Criteria to be a Fellowship Director:

1. If not fellowship trained, the director should have at least three years of ultrasound use in clinical practice after residency training.
2. A fellowship-trained person should not direct a fellowship for one year following completion of their fellowship. A fellowship-trained physician should not start a new program from the ground up for at least two years post fellowship.
3. Publish at least three peer reviewed emergency ultrasound articles in Medline indexed journals.
4. At least two of the above mentioned publications must be original ultrasound research with the emergency ultrasound director as first author on one of them.
5. The third ultrasound publication can be a review article for a Medline indexed journal.
6. The emergency ultrasound fellowship director must utilize all of the clinical ultrasound applications listed in the most recent ACEP Emergency Ultrasound Guidelines <http://www.acep.org/WorkArea/DownloadAsset.aspx?id=32878> and have experience in more advanced applications.
7. The emergency ultrasound fellowship director must have at least four regional and national abstract research presentations at meetings conducted by organizations such as ACEP, SAEM, American Institute of Ultrasound in Medicine (AIUM) or similar meetings over a three-year period, or must be intimately involved in advancing emergency ultrasound by actively participating or leading one of the previously mentioned nationally recognized organizations in regard to emergency ultrasound.
8. The fellowship director should have a record of excellence in teaching. This ability can be demonstrated by teaching awards, consistently favorable evaluations by residents and/or fellows, or the like.
9. The criteria to be a fellowship director are intended to be used for emergency ultrasound fellowship guidelines only, and are not intended to be standards for teaching residents. These criteria should not affect resident teaching programs.

IV. Fellowship Minimum Criteria for Graduation:

1. A minimum of 1000 ultrasound examinations must be performed by the emergency ultrasound fellow per year by him or herself. Quality assurance review of other's ultrasound examinations or observing actual ultrasound examinations performed by others will not count toward this number. This number serves more as a minimum guide as it is understood that with more hands-on experience one becomes more proficient. It is preferable however to utilize an objective tool to assure competence in all aspects of emergency ultrasound upon completion of the fellowship program. Supplemental written and practical exams might be considered.
2. The emergency ultrasound fellow should design at least one research project to be submitted to the home site institutional review board and start on it during the course of the fellowship.
3. At least one abstract should be submitted with the fellow's name as first author and presenter to a national meeting such as ACEP, SAEM, or AIUM during their fellowship.
4. The emergency ultrasound fellow should be involved with at least one other ultrasound research project (does not have to be one he/she designed and implemented from the ground up) during their fellowship for which publication is planned with the fellow as an author.

5. The emergency ultrasound fellow must be involved with the various administrative and quality assurance duties involving emergency ultrasound. Such duties include but are not limited to internal billing audits, interdepartmental meetings, and monitoring the credentialing process of colleagues.
6. The emergency ultrasound fellow must prepare and deliver lectures on at least four separate topics on the basic emergency ultrasound applications to their department (residents and faculty). The emergency ultrasound fellow should be encouraged to prepare and deliver at least one lecture on an advanced or novel application.
7. The emergency ultrasound fellow must show at least 20 hours per month of hands-on teaching of residents and/or other faculty in bedside emergency ultrasound. This includes but is not limited to didactic lectures, bedside teaching, research involvement of residents or faculty, and QA education.
8. The emergency ultrasound fellow must attend one national emergency ultrasound organization meeting during the year.