

GUIDELINES FOR COMBINED TRAINING IN EMERGENCY MEDICINE AND AEROSPACE MEDICINE

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INTRODUCTION

The American Board of Emergency Medicine (ABEM) and the American Board of Preventive Medicine (ABPM) (individually as a “Board” and collectively as the “Boards”) offer certification in Emergency Medicine (EM) and Aerospace Medicine (ASM), respectively. A combined residency consists of four years of balanced education in the two disciplines, not five years, as would be necessary if these two residency programs were completed separately or sequentially. Upon completing this combined program, physicians will have met the training criteria for initial certification in Aerospace Medicine and in Emergency Medicine. Of note, for physicians training in the EM1-4 format, the combined residency would require five years of training.

These Guidelines are intended to assist the Boards in determining whether to approve a combined program request in ASM/EM. However, while these Guidelines set out a framework for consideration by the Boards, each combined program request must be considered individually, and no prior approval or denial will be precedential as to any future approval/denial.

Proposals for combined residency training programs must be submitted to, and approved by, ABEM and ABPM before a candidate can be accepted into this joint training and before any training can begin. In addition, both Boards will review these training requirements periodically. Both Boards must adhere to these Guidelines in administering combined programs and may not alter the Guidelines without the written consent of both Boards.

OBJECTIVES

Combined training in Emergency Medicine and Aerospace Medicine should promote the development of physicians who are fully qualified in both specialties. Physicians completing this training should be competent emergency physicians and aerospace physicians, capable of independent, professional activity in either discipline. The strengths of the residencies in Emergency Medicine and Aerospace Medicine should complement each other to provide an optimal educational experience to trainees.

General Requirements

Combined training includes the components of independent Emergency Medicine and Aerospace Medicine residencies, which are accredited respectively by the Review Committee for Emergency Medicine (RC-EM) and by Review Committee for Preventive Medicine (RC-PM), both of which function under the auspices of the Accreditation Council for Graduate Medical Education (ACGME).

To be eligible for dual certification, the resident must satisfactorily complete combined training in Aerospace Medicine and Emergency Medicine of at least 48 months of coherent training,

integral to residencies in the two disciplines, that meets the program requirements for accreditation by the RC-EM and the RC-PM. The 48 months of combined education must be verified by the Program Director, and Associate Program Director, if applicable, of both programs.

The duration of training would be increased to 60 months if the combined program involves an EM 1-4 program. Physicians cannot take final certifying examinations in Emergency Medicine or Preventive Medicine until they have successfully completed all four (or five) years of the program.

While combined training will not be independently accredited by the RCs and the ACGME, the continued approved accreditation status of the parent Emergency Medicine and Aerospace Medicine programs is essential for the stability and continued approval of the combined training program in Emergency Medicine and Aerospace Medicine. Thus, residents for combined training must not be recruited if the accreditation status of either core program is probationary or accreditation with warning. And, for training that occurs during a period of probationary accreditation, the eligibility criteria that ABEM and ABPM have in place for fellows in categorical fellowship training will likewise apply to fellows in the combined program.

Combined training must be conducted under the umbrella of the Committee on Graduate Medical Education within a single institution and its affiliated hospitals. Documentation of hospital, university, and faculty commitment to the program must be available in signed agreements. Affiliated institutions must be located close enough to facilitate cohesion among the house staff, attendance at continuity clinics and integrated conferences, and faculty exchanges of curriculum, evaluation, administration, and related matters.

Ideally, at least one resident should be enrolled in combined training each year. A combined training program with no trainees for a period of five consecutive years will no longer be approved and, if the program wishes to continue, must then submit the then-current combined program application to both ABEM and ABPM for their review and consideration.

THE RESIDENT

Residents should optimally enter a combined program at the start of the combined training program at the PGY-1 level.

Prior approval from each Board is required for any and all resident transfers, including a resident transferring from a combined training program to a categorical Emergency Medicine or Aerospace Medicine program or from a categorical Emergency Medicine or Aerospace Medicine program to a combined ASM/EM program. Any transfer that is completed without prior approval from each Board may result in an extension of training or loss of eligibility for certification by either ABEM, ABPM, or both.

A resident may enter a combined program at the PGY-2 level only if the first residency year was served in an accredited categorical residency in Emergency Medicine in the same institution. A transitional year of training will provide no credit toward the requirements of either Board.

THE TRAINING DIRECTOR(S)

The combined residency must have one designated Program Director who will be responsible for all administrative aspects of the program and who can devote substantial time and effort to the educational program. This individual can be the director of either the categorical residency program in Emergency Medicine or Aerospace Medicine; the Program Director of the other categorical residency program will be designated the Associate Program Director of this combined program. An exception to this requirement would be a single director who is certified in both specialties and has an academic appointment in each department.

The Program Director is responsible for ensuring that all aspects of the program requirements are met. This individual, along with the Associate Program Director, should submit the application for the program to both ABEM and ABPM. Once the combined program is approved, these individuals should notify both Boards if any significant changes occur in either of the associated categorical residency programs. Such notification should be sent to both ABEM and ABPM not later than 60 calendar days after the significant change occurs.

The Program Director and Associate Program Director are responsible for completing evaluation forms for all trainees in the combined program as required by their respective Boards, and both must verify satisfactory completion of the training program on the resident's final evaluation form.

As a general principle, the training of residents in Emergency Medicine is the responsibility of the Emergency Medicine faculty, and the training of residents in Aerospace Medicine is the responsibility of the Aerospace Medicine faculty.

Vacations, sick leave, and leave for meetings must be shared proportionally by both specialties.

There should be an adequate number of faculty members who devote sufficient time to provide leadership to the combined residency program and supervision of the residents. It is recommended that some faculty members have completed training in these two specialties. Since each component of the residency must be accredited by its respective discipline, the faculty must meet the requirements for their specialty.

Emergency Medicine faculty must be certified by ABEM. Aerospace Medicine faculty must be certified by ABPM or have equivalent educational qualifications in Preventive Medicine.

TRAINING

The training requirements for eligibility for the certification process of each Board can be fulfilled by the satisfactory completion of 48 months of approved combined training (60 months if the combined program involves an EM 1-4 program). A reduction of 12 months over that required for the two separate residencies is possible due to the overlap of curriculum and experience inherent in the training of each discipline. The reduction of six months of the standard 36 months of Emergency Medicine training is met by 30 months of training in the Emergency Medicine component of the combined residency and six months of credit granted for training appropriate to Emergency Medicine during the 18 months of Aerospace Medicine component of the combined residency. Aerospace Medicine will recognize the PGY-1 year of Emergency Medicine training as satisfying the requirement to complete a clinical PGY-1 year

prior to beginning the Aerospace Medicine Residency. The requirement of 24 months of training in Aerospace Medicine (PGY2 – PGY3) is met by the 18 months of training in the Aerospace Medicine component of the combined residency, and six months credit for training appropriate to Aerospace Medicine obtained during the remaining 30 months of residency in Emergency Medicine. This ensures an adequate distribution of the Emergency Medicine rotations. The working relationships developed among categorical and combined residency trainees will facilitate communication between the two specialties and increase the exposure of categorical residents to the other discipline.

During the combined residency, rotations such as Anesthesiology, Emergency Medical Services, Orthopedics, Trauma Surgery, Hyperbaric Medicine, Austere Medical Care, Toxicology and Trauma/Acute Care may qualify for meeting both the Aerospace Medicine and Emergency Medicine requirements. ABPM and ABEM must both approve the rotations receiving combined credit.

Training in each discipline must incorporate graded responsibility throughout the training period.

Prior to the completion of training, each fellow must demonstrate some form of acceptable scholarly activity. Scholarly activity may include, but is not limited to, original research, comprehensive case reports, or review of assigned clinical and research topics.

Vacations, sick leave, and leave for meetings must be shared proportionally by both specialties.

CURRICULAR REQUIREMENTS

A clearly described, written curriculum must be available for residents, faculty, ABEM, and ABPM. The curricular components must conform to the program requirements for accreditation in Emergency Medicine and Aerospace Medicine. This should include both the common and specialty-specific program requirements, addressing the six ACGME general competencies, incorporation of the ACGME Milestones for each specialty, and the duty hour and supervision standards. The curriculum must ensure a cohesive, planned, educational experience, and continuum of training, rather than providing an uncoordinated series of rotations in each specialty's program requirements.

Duplication of clinical experiences between the two specialties should be avoided. Periodic review of the combined program's curriculum must be performed to make recommendations for improvement and evaluate ongoing educational activities. This review must include the Program Director(s) from both departments, as well as faculty and residents. Combined training must not interfere with, or compromise the training of, the categorical residents in either field. For the purposes of this section, periodic review will not be longer than five years from the date of the conclusion of the last review of the program.

Joint educational conferences involving residents from Emergency Medicine and Aerospace Medicine are desirable and should specifically include the participation of all residents in the combined residency whenever possible.

REQUIREMENTS FOR EMERGENCY MEDICINE

Unless otherwise specified, all program and curricular requirements as described in the ACGME

Program Requirements for Graduate Medical Education in Emergency Medicine must be met, including those related to the education and evaluation of residents under the ACGME Milestones for Emergency Medicine. The emergency department experience must provide the resident the opportunity to manage an adequate number of patients of all ages, and both sexes, with a wide variety of clinical problems.

Training in Emergency Medicine must include the following experiences:

- a) At least three percent of the patient population must present with critical illness or injury. The curriculum must include four months of dedicated critical care experiences, including critical care of infants and children. At least two months of these experiences must be at the PGY-2 level or above.
- b) A pediatric experience, defined as care of patients less than 18 years of age, should be provided, consisting of five full-time equivalent months, or 20 percent of all emergency department encounters. At least 50 percent of the five months should be in an emergency setting. This experience should include the critical care of infants and children.
- c) Experience in performing invasive procedures, monitoring unstable patients, and directing major resuscitations of all types, in all age groups, must be provided. Each resident must maintain, in an accurate and timely manner, a record of all major resuscitations and procedures performed throughout the entire educational program.
- d) Residents must have experience in Emergency Medical Services (EMS), emergency preparedness, and disaster management. EMS experiences must include ground unit runs and direct medical command. This should also include participation in multi-casualty incident drills. Residents should have experience teaching out-of-hospital emergency personnel.

REQUIREMENTS FOR AEROSPACE MEDICINE

Specialty training for the physician in Aerospace Medicine must provide for the attainment of competencies relevant to the diagnosis, prevention, and treatment of disorders associated with the unique aerospace environments and with the adaptive systems designed to enhance performance and support life under such conditions.

Unless otherwise specified, all program and curricular requirements as described in the ACGME Program Requirements for Graduate Medical Education in Aerospace Medicine must be met, including those related to the education and evaluation of residents under the ACGME Milestones for Aerospace Medicine as well as general requirements related to all Preventive Medicine programs.

The general requirements for all Preventive Medicine training include Biostatistical principles and methodology; Epidemiological principles and methodology; Planning, administration, and evaluation of health and medical programs and outcomes of medical care; Principles of the recognition, assessment and control of environmental hazards to health including those of the occupational environment; Social, cultural and behavioral factors in medicine; Applications of primary, secondary, and tertiary prevention principles and measures in assessing population and individual needs, as well as medical administrative practice and The effect of work and the

work setting on the health of workers, their families, and communities, including behavioral, environmental, and toxicological considerations

Prior to completion of the Aerospace Medicine Residency, the Resident must have completed a course of study leading to the degree of Master of Public Health or equivalent degree (such as Master of Aerospace Medicine). This requires a minimum of one full academic year or its equivalent as determined by the Preventive Medicine residency review committee (RC-PM). The content will reflect the basic components of Preventive Medicine training. Emphasis will be on the particular field of the resident's choice for elective course work. In certain instances, individuals may come to the training program with an MPH degree. If the degree meets the requirements of the RC-PM Preventive Medicine RRC, the resident may receive credit for completion of the MPH degree at the discretion of the program directors. If the MPH degree meets substantial requirements, but lacks certain essential components, the resident may receive credit for the MPH degree and complete unmet requirements by completing equivalent graduate level courses outside the structure of a formal degree program.

All preventive medicine residents will complete a Practicum which is a year-long experience of continued learning and supervised application of knowledge, skills, and attitudes of Preventive Medicine in the specific field of special study (specifically Aerospace Medicine, for the purpose of these guidelines). The total practicum will be a minimum of 12 months full time, 6 months of which must additionally meet clinical requirements for Emergency Medicine (examples could include rotations in Hyperbaric Medicine, Austere Medical Care, EMS Management, Toxicology and Trauma/Acute Care). The Practicum shall offer both didactic and applied components. It is desirable that academic work proceed or at least be concurrent with activities of the Practicum which apply the principles in the body of the academic program.

An administrative component is also required to provide the resident with some administrative responsibilities; the specifics can be found in the special requirements for Aerospace Medicine.

Regardless of completion of the MPH, the Resident is expected to complete 24 months of training in Aerospace Medicine, within the guidelines described above (credit for six months of rotations with overlapping curriculum and dual oversight).

The development of the resident's skills in Aerospace Medicine will be fostered by rotations in Aerospace Medicine and its subspecialties. The training should be the same as described in the ACGME Program Requirements for Graduate Medical Education in Aerospace Medicine with the exceptions that follow.

Training in Aerospace Medicine must include the following experiences:

- a) Total of 24 months of Aerospace Medicine training
- b) Principals of Aviation and Space Medicine
- c) Travel and Tropical Medicine.
- d) Aircraft Mishap Investigation and Prevention
- e) Flight Training program (the focus of the flight training program should be specifics of aviation or space operations, such as flight school, flight controls or other aviation or space field operations).

- f) Advanced experiences can be in additional, focused Aerospace Medicine sub-specialties, related areas, or research.
- g) At least 8 months of direct patient care related to Aerospace Medicine (distributed evenly between the two Aerospace Medicine years).
- h) At least 15 credit hours of graduate level course work in biostatistics, epidemiology, social and behavioral health sciences, health services administration and environmental health sciences.
- i) Minimum experiences as defined by the Program Requirements for Aerospace Medicine must be met.

EVALUATION

The faculty must evaluate resident performance in a timely manner during each rotation or similar educational assignment, and document this evaluation at completion of the assignment. The evaluations must be accessible for review by the resident, as well as the RC site visitors. Written evaluation of each resident's knowledge, skills, professional growth, and performance, using appropriate criteria and procedures, must be accomplished at least semi-annually, and must be communicated to, and discussed with, the resident in a timely manner. Both ABEM and ABPM require documentation that candidates for certification are competent in (a) patient care and procedural skills, (b) medical knowledge, (c) practice-based learning and improvement, (d) interpersonal and communication skills, (e) professionalism, and (f) systems-based practice.

The Program Director must appoint the Clinical Competency Committee. At a minimum, the Clinical Competency Committee must be composed of three members of the program faculty from each core program. There must be a written description of the responsibilities of the Clinical Competency Committee. Each Clinical Competency Committee should (a) review all resident evaluations semi-annually, (b) prepare and ensure the reporting of milestones evaluations of each resident semi-annually to ACGME, and (c) advise the Program Director regarding resident progress, including promotion, remediation, and dismissal.

There must be a method of documenting the procedures that are performed by the residents. Such documentation must be maintained by the Program Director and/or Associate Program Director, be available for review by the RC-EM, RC-PM, ABEM, ABPM, and site visitors, and may be used to provide documentation for application for hospital privileges by graduates of these training programs.

Residents should be advanced to positions of higher responsibility only on the basis of evidence of their satisfactory progressive scholarship and professional growth.

The Program Director and Associate Program Director are responsible for the maintenance of a permanent record of each resident and must enable accessibility to the record by the resident and other authorized personnel. The Program Director, Associate Program Director, and faculty are responsible for provision of a written, final evaluation for each resident who completes the program. This evaluation must include specialty-specific milestones as one of the tools to

ensure that residents are able to practice core professional activities without supervision upon completion of the program, and that they are prepared to apply for the certification processes of both ABEM and ABPM. This final evaluation should be part of the resident's permanent record and should be maintained by the institution.

ELIGIBILITY FOR CERTIFICATION

The residents in a combined Emergency Medicine and Aerospace Medicine training program must satisfactorily complete the specific requirements of both ABEM and ABPM to be eligible for the examination by each Board. Clinical competency must be verified by both the Program Director and Associate Program Director of the combined program. Lacking this verification, the resident must satisfactorily complete, in its entirety, a fully-ACGME–accredited residency program in Emergency Medicine or Aerospace Medicine to qualifying for certification in either Emergency Medicine or Aerospace Medicine, respectively.

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