

# ACGME Program Requirements for Graduate Medical Education in Undersea and Hyperbaric Medicine

*Common Program Requirements are in BOLD*

*Effective: February, 2002*

## I. Introduction

### I.A. Definition and scope of the specialty

I.A.1. The subspecialty of Undersea and Hyperbaric Medicine is a discipline that deals with the prevention of injury and illness due to exposure to environments in which the ambient pressure is increased, such as in diving or Hyperbaric chamber exposure, and the therapeutic use of high environmental pressure and the delivery of oxygen under high pressure to treat disease. The scope of the subspecialty emphasizes the occupational, environmental, safety, and clinical aspects of diving, hyperbaric chamber operations, compressed air work and hyperbaric oxygen therapy. A program in undersea and hyperbaric medicine must provide a broad educational experience and a sound basis for the development of physician practitioners, educators, researchers, and administrators capable of practicing in academic and clinical settings.

I.A.2. Training in Undersea and Hyperbaric Medicine must teach the basic skills and knowledge that constitute the foundations of Hyperbaric Medicine practice and must provide progressive responsibility for and experience in the application of these principles to the management of clinical problems. It is expected that the resident will develop a satisfactory level of clinical maturity, judgment, and technical skill that will, on completion of the program, render the resident capable of independent practice in Undersea and Hyperbaric Medicine.

I.A.3. Programs must offer a broad education in Undersea and Hyperbaric Medicine to prepare the resident to function as a specialist capable of providing comprehensive patient care.

### I.B. Duration and Scope of Education

I.B.1. The length of the educational program shall consist of 12 months. The program must be associated with an ACGME-accredited residency program in emergency medicine, or preventive medicine.

I.B.2. Prior to entry into the program, each prospective resident must be notified in writing of the required length of the program.

## II. Institutions

### II.A. Sponsoring Institution

**One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to resident assignments at all participating institutions.**

- II.A.1. The sponsoring institution must provide sufficient faculty, financial resources, clinical, research, and library facilities to meet the educational needs of the residents and enable the program to comply with the requirements for accreditation. It is highly desirable that the program structure include the participation of a medical school.
- II.A.2. The program should be based at a primary hospital (hereafter referred to as the primary clinical site). More of the didactic and clinical experiences should take place at the primary clinical site than at any other single site. Educationally justified exceptions to this requirement will be considered.
- II.A.3. The following services must be organized and provided at the primary clinical site
  - II.A.3.a) Twenty-four-hour availability of hyperbaric medicine services with at least 100 consultations and 1000 patient treatments per year
  - II.A.3.b) An emergency service for both adult and pediatric patients, adult and pediatric inpatient facilities, and adult and pediatric surgical and intensive care facilities
  - II.A.3.c) Inpatient and outpatient facilities with staff who consult the hyperbaric medicine service

### II.B. Participating Institutions

- II.B.1. **Assignment to an institution must be based on a clear educational rationale, integral to the program curriculum, with clearly-stated activities and objectives. When multiple participating institutions are used, there should be assurance of the continuity of the educational experience.**
- II.B.2. **Assignment to a participating institution requires a letter of agreement with the sponsoring institution. Such a letter of agreement should:**
  - II.B.2.a) **identify the faculty who will assume both educational and supervisory responsibilities for residents;**
  - II.B.2.b) **specify their responsibilities for teaching, supervision, and formal evaluation of residents, as specified later in this document;**

- II.B.2.c) **specify the duration and content of the educational experience; and**
- II.B.2.d) **state the policies and procedures that will govern resident education during the assignment.**
- II.B.3. All participating institutions must provide appropriate support services to ensure an adequate educational experience. This includes support personnel and physical resources to ensure that residents have sufficient time and space to carry out their clinical and educational functions.
- II.B.4. The program must develop an institutional affiliation with a clinical facility to provide residents with clinical experience in critical care areas should this experience not be provided at the sponsoring institution.
- II.B.5. Approval of participating institutions will be based on the presence of sufficient opportunities for residents to manage as appropriate either as primary physicians or consultants, the entire course of therapy including critically ill patients in both adult and pediatric categories.
- II.B.6. Programs using multiple participating institutions must ensure the provision of a unified educational experience for the residents. Each participating institution must offer significant educational opportunities to the overall program that do not duplicate experiences otherwise available within the program. An acceptable educational rationale must be provided for each participating institution.
- II.B.7. Participating institutions must not be geographically distant from the sponsoring institution unless special resources are provided that are not available at the primary clinical site.
- II.B.8. The number and geographic distribution of participating institutions must not preclude all residents' participation in conferences and other educational exercises.
- II.B.9. A letter of agreement with each institution participating in the program must be developed to include:
  - II.B.9.a) The educational objectives and the method to accomplish and to evaluate each objective;
  - II.B.9.b) The resources and facilities in the institution(s) that will be available to each resident including but not limited to library resources;
  - II.B.9.c) The resident's duties, responsibilities and duty hours for the assignment; and,
  - II.B.9.d) The relationship that will exist between Undersea and Hyperbaric Medicine residents and the faculty in other programs.

II.B.10. Participation by any institution that provides 3 months or more of education in a program must be approved by the RRC.

### III. Program Personnel and Resources

#### III.A. Program Director

III.A.1. **There must be a single program director responsible for the program. The person designated with this authority is accountable for the operation of the program. In the event of a change of either program director or department chair, the program director should promptly notify the executive director of the Residency Review Committee (RRC) through the Web Accreditation Data System of the Accreditation Council for Graduate Medical Education (ACGME).**

III.A.2. **The program director, together with the faculty, is responsible for the general administration of the program, i and for the establishment and maintenance of a stable educational environment. Adequate lengths of appointment for both the program director and faculty are essential to maintaining such an appropriate continuity of leadership.**

III.A.2.a) The program director, together with the faculty, is responsible for activities related to the recruitment, selection, instruction, supervision, counseling, evaluation, and advancement of residents and the maintenance of records related to program accreditation.

III.A.3. **Qualifications of the program director are as follows:**

III.A.3.a) **The program director must possess the requisite specialty expertise, as well as documented educational and administrative abilities.**

III.A.3.b) **The program director must be certified in Undersea and Hyperbaric Medicine by the American Board of Emergency Medicine or the American Board of Preventive Medicine, or possess qualifications judged to be acceptable by the RRC.**

III.A.3.c) **The program director must be appointed in good standing and based at the primary teaching site.**

III.A.3.d) Licensure to practice medicine in the state where the institution that sponsors the program is located. (Certain federal programs are exempted.)

III.A.4. **Responsibilities of the program director are as follows:**

III.A.4.a) **The program director must oversee and organize the activities of the educational program in all institutions that**

**participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate resident supervision at all participating institutions.**

**III.A.4.b) The program director is responsible for preparing an accurate statistical and narrative description of the program as requested by the RRC, as well as updating annually both program and resident records through the ACGME's Accreditation Data System.**

**III.A.4.c) The program director must ensure the implementation of fair policies, grievance procedures, and due process, as established by the sponsoring institution and in compliance with the Institutional Requirements.**

**III.A.4.d) The program director must seek the prior approval of the RRC for any changes in the program that may significantly alter the educational experience of the residents. Such changes, for example, include:**

**III.A.4.d).(1) the addition or deletion of a participating institution;**

**III.A.4.d).(2) a change in the format of the educational program;**

**III.A.4.d).(3) a change in the approved resident complement for those specialties that approve resident complement.**

**On review of a proposal for any such major change in a program, the RRC may determine that a site visit is necessary.**

**III.A.4.e) Preparation of a written statement outlining the educational goals of the program with respect to knowledge, skills, and other attributes of residents at each level of training and for each major rotation or other program assignment. This statement must be distributed to residents and faculty. It should be readily available for review.**

**III.A.4.f) Selection of residents for appointment to the program in accordance with institutional and departmental policies and procedures.**

**III.A.4.g) Selection and supervision of the faculty and other program personnel at each institution participating in the program.**

**III.A.4.h) Supervision of residents through explicit written descriptions of supervisory lines of responsibility for the care of patients. Such guidelines must be communicated to all members of the program staff.**

- III.A.4.i) Regular evaluation of residents' knowledge, skills, and overall performance, including the development of professional attitudes consistent with being a physician.
- III.A.4.j) The program director, with participation of the faculty, shall
  - III.A.4.j).(1) at least quarterly evaluate the knowledge, skills, and professional growth of the residents, using appropriate criteria and procedures;
  - III.A.4.j).(2) communicate each evaluation to the resident in a timely manner;
  - III.A.4.j).(3) advance residents to positions of higher responsibility only on the basis of evidence of their satisfactory progressive scholarship and professional growth;
  - III.A.4.j).(4) maintain a permanent record of evaluation for each resident and have it accessible to the resident and other authorized personnel; and
  - III.A.4.j).(5) provide a written final evaluation for each resident who completes the program. The evaluation must include a review of the resident's performance during the final period of training and should verify that the resident has demonstrated sufficient professional ability to practice competently and independently. This final evaluation should be part of the resident's permanent record maintained by the institution.
- III.A.4.k) Implement fair procedures, as established by the sponsoring institution, regarding academic discipline and resident complaints or grievances.
- III.A.4.l) Monitor resident stress, including mental or emotional conditions inhibiting performance or learning and drug- or alcohol-related dysfunction. Program directors and faculty should be sensitive to the need for timely provision of confidential counseling and psychological support services to residents. Situations that consistently produce undesirable stress on residents must be evaluated and modified.
- III.A.4.m) Notify the RRC regarding major programmatic changes.

**III.B. Faculty**

- III.B.1. At each participating institution, there must be a sufficient number of faculty with documented qualifications to instruct and supervise adequately all residents in the program.**

- III.B.2.** The faculty, furthermore, must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. They must demonstrate a strong interest in the education of residents, and must support the goals and objectives of the educational program of which they are a member.
- III.B.2.a) The faculty must demonstrate sound clinical and teaching abilities, a commitment to their own continuing medical education, and participation in scholarly activities
- III.B.3.** **Qualifications of the physician faculty are as follows:**
- III.B.3.a)** The physician faculty must possess the requisite specialty expertise and competence in clinical care and teaching abilities, as well as documented educational and administrative abilities and experience in their field.
- III.B.3.b)** The physician faculty must be certified in the specialty by the **American Board of Emergency Medicine** or the **American Board of Preventive Medicine**, or **possess qualifications judged to be acceptable by the RRC.**
- III.B.3.c)** The physician faculty must be appointed in good standing to the staff of an institution participating in the program.
- III.B.4.** The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included in each program. *Scholarship* is defined as the following:
- III.B.4.a)** the scholarship of *discovery*, as evidenced by peer-reviewed funding or by publication of original research in a peer-reviewed journal;
- III.B.4.b)** the scholarship of *dissemination*, as evidenced by review articles or chapters in textbooks;
- III.B.4.c)** the scholarship of *application*, as evidenced by the publication or presentation of, for example, case reports or clinical series at local, regional, or national professional and scientific society meetings.
- Complementary to the above scholarship is the regular participation of the teaching staff in clinical discussions, rounds, journal clubs, and research conferences in a manner that promotes a spirit of inquiry and scholarship (e.g., the offering of guidance and technical support for residents involved in research such as research design and statistical analysis); and the provision of support for residents' participation, as appropriate, in scholarly activities.

III.B.4.d) Graduate medical education must take place in an environment of inquiry and scholarship in which residents participate in the development of new knowledge, learn to evaluate research findings, and develop habits of inquiry as a continuing professional responsibility.

III.B.4.e) While not all of the faculty must be investigators, the faculty as a whole must demonstrate broad involvement in scholarly activity.

**III.B.5. Qualifications of the nonphysician faculty are as follows:**

**III.B.5.a) Nonphysician faculty must be appropriately qualified in their field.**

**III.B.5.b) Nonphysician faculty must possess appropriate institutional appointments.**

III.B.6. A member of the faculty of each participating institution must be designated to assume responsibility for the day-to-day activities of the program at that institution, with overall coordination by the program director.

III.B.7. Consultants from appropriate medical subspecialties should be available for consultation and didactic teaching including those with experience and understanding of such fields of medicine as preventive medicine, infectious disease, orthopaedics, vascular surgery, plastic surgery, anesthesiology, critical care, emergency medicine, ophthalmology, rehabilitative medicine and other disciplines as they pertain to the comprehensive treatment of the clinical hyperbaric patient.

**III.C. Other Program Personnel**

**Additional necessary professional, technical, and clerical personnel must be provided to support the program.**

**III.D. Resources**

**The program must ensure that adequate resources (e.g., sufficient laboratory space and equipment, computer and statistical consultation services) are available.**

III.D.1. Space and equipment

III.D.1.a) Adequate space must be available for faculty to perform their educational, research and administrative functions. A library containing hyperbaric texts and journals must be readily available. Adequate conference and teaching space must be available for didactic and case conferences.

III.D.2. Inpatient, ambulatory care, laboratory, and other clinical facilities

A hyperbaric chamber must be available that is capable of treatment of the full range of conditions amenable to hyperbaric oxygen therapy. A full service clinical laboratory must be available at all times that is capable of measurement of chemistry, blood indices, and microbiology of patients needing hyperbaric therapy. Radiologic services must be available within the institution at all times. Inpatient and outpatient facilities including intensive care units capable of addressing the needs of patients with respiratory poisons, gas forming infections, wound healing problems, gas embolism and other conditions requiring hyperbaric treatment must be available.

III.D.3. Patient population

There must be a sufficient number of patients of all ages and both sexes with medical and surgical conditions requiring hyperbaric therapy. Patients with necrotizing infections, carbon monoxide and cyanide poisoning, diving problems, gas embolism and osteomyelitis must be present in the patient population.

III.D.4. Support services

Support services must include physical therapy, social services, occupational medicine, psychologic and psychological testing services.

**IV. Resident Appointments**

**IV.A. Eligibility Criteria**

**The program director must comply with the criteria for resident eligibility as specified in the Institutional Requirements.**

IV.A.1. Prerequisite training for entry to an undersea and hyperbaric medicine program is contingent upon completion of an ACGME-accredited residency program involving a minimum of 12 months of preventive, primary, surgical and/or critical care training.

**IV.B. Number of Residents**

**The RRC will approve the number of residents based upon established written criteria that include the adequacy of resources for resident education (e.g., the quality and volume of patients and related clinical material available for education), faculty-resident ratio, institutional funding, and the quality of faculty teaching.**

IV.B.1. The Residency Review Committee (RRC) will approve the number of Undersea and Hyperbaric Medicine residents in the program. Approval will be based on the number, qualifications, and scholarly activity of the faculty; the volume and variety of the patient population available for education purposes; and the institutional resources available to the

program.

**IV.C. Resident Transfers**

**To determine the appropriate level of education for residents who are transferring from another residency program, the program director must receive written verification of previous educational experiences and a statement regarding the performance evaluation of the transferring resident prior to their acceptance into the program. A program director is required to provide verification of residency education for residents who may leave the program prior to completion of their education.**

**IV.D. Appointment of Fellows and Other Students**

**The appointment of fellows and other specialty residents or students must not dilute or detract from the educational opportunities available to regularly appointed residents.**

**V. Program Curriculum**

**V.A. Program Design**

**V.A.1. Format**

**The program design and sequencing of educational experiences will be approved by the RRC as part of the review process.**

V.A.1.a) The program director and teaching staff of a program must prepare and comply with written educational goals for the program. All educational components of a residency should be related to the program goals. Clinical, basic science, and research conferences as well as seminars and critical literature review activities pertaining to the subspecialty must be conducted regularly and as scheduled.

**V.A.2. Goals and Objectives**

**The program must possess a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of residents for each major assignment and for each level of the program. This statement must be distributed to residents and faculty, and must be reviewed with residents prior to their assignments.**

**V.B. Specialty Curriculum**

**The program must possess a well-organized and effective curriculum, both didactic and clinical. The curriculum must also provide residents with direct experience in progressive responsibility for patient management.**

V.B.1. The curriculum must include the following academic and clinical content:

- V.B.1.a) History of undersea and hyperbaric medicine
- V.B.1.b) Decompression theory and physiology, including theory and application of decompression tables
- V.B.1.c) Oxygen physiology in normobaric, hyperbaric and hypobaric environments, oxygen toxicity
- V.B.1.d) Pathophysiology of decompression illness and arterial gas embolism, including iatrogenic gas embolism
- V.B.1.e) Diving operations and human performance in the hypo/hyperbaric environments
- V.B.1.f) Medical examination/standards for divers and personnel working in hypo/hyperbaric environments
- V.B.1.g) Effects of hyperbaric oxygenation on infectious disease
- V.B.1.h) Principles of treatment of toxic gas exposures, such as carbon monoxide poisoning
- V.B.1.i) Effects of hyperbaric oxygenation on irradiated tissues and ischemic wounds
- V.B.1.j) Tissue oxygen measurement
- V.B.1.k) Multiplace and monoplace hyperbaric chamber operations, including safety considerations, management of critically ill patients in the hyperbaric environment, clinical monitoring and mechanical ventilation
- V.B.1.l) Evaluation of the patient for clinical hyperbaric treatment, including contraindications and side effects
- V.B.1.m) Hazards of standard electrical therapies in hyperbaric environment, e.g., electrical defibrillation and precautions.
- V.B.1.n) Emergency procedures for both monoplace and multiplace installations.
- V.B.1.o) Saturation diving covering air quality standards and life support requirements, including the physiology and practical (medical) issues associated with heliox, trimix, and hydrogen/oxygen/helium mixtures.
- V.B.1.p) Systems management, including administrative aspects of chamber operations, such as billing issues, quality assurance, and peer review.

- V.B.2. Residents must have a minimum of ten months of clinical experience as the primary or consulting physician responsible for providing direct/bedside patient evaluation and management. A maximum of two elective months can be offered in appropriate related areas.
- V.B.3. Residents must have opportunities to evaluate and manage patients with both acute and non-emergency indications for hyperbaric oxygen therapy. The resident should have the opportunity to evaluate and manage 100 or more patients, including responsibility for providing bedside evaluation and management. This experience should be organized for a minimum of 10 months or its full-time equivalent and cover IV.C.1 through 8. Up to two months of elective time may be allowed for additional training in areas of relevance to undersea and hyperbaric medicine, such as critical care, surgery, submarine medicine, toxicology or radiation oncology. Competencies that will be attained at the end of the 12 month training period must include:
- V.B.3.a) Assessment of prospective divers for fitness to dive
  - V.B.3.b) Assessment of hyperbaric chamber personnel for fitness to participate as a tender in a multiplace hyperbaric chamber
  - V.B.3.c) Assessment of patients with suspected decompression sickness or iatrogenic gas embolism and prescription of treatment
  - V.B.3.d) Assessment of patients with specific problem wounds with respect to indications for hyperbaric oxygen therapy, fitness for hyperbaric treatment and prescription of treatment
  - V.B.3.e) Assessment and management of patients with complications of hyperbaric therapy
  - V.B.3.f) Management of critically ill patients in the hyperbaric environment
  - V.B.3.g) Knowledge of the indications for hyperbaric oxygen therapy
  - V.B.3.h) Assessment of patients with toxic gas exposure (e.g., carbon monoxide)
- V.B.4. Planned Educational Conferences
- Each program must offer to its residents an average of at least 5 hours per week of planned educational experiences (not including change-of-shift reports) . These educational experiences should include presentations based on the defined curriculum, morbidity and mortality conferences, journal review, administrative seminars, and research methods. They may include but are not limited to problem-based learning, laboratory research, and computer-based instruction, as well as joint conferences cosponsored with other disciplines.

V.B.5. Additional Clinical and Educational Experiences

The program should provide the opportunity for the residents to maintain their primary board skills during training, but it may not require that residents provide more than 12 hours per week of clinical practice not related to hyperbaric medicine as a condition of the educational program.

V.B.6. Teaching and Research Experience

Residents must have progressive experience and responsibility for the teaching of undersea and hyperbaric medicine to health care trainees and professionals, including medical students, interns, residents and nurses. Residents should participate in the formal didactic teaching program. Research leading to publication should be encouraged.

V.C. Residents Scholarly Activities

**Each program must provide an opportunity for residents to participate in research or other scholarly activities, and residents must participate actively in such scholarly activities.**

V.D. ACGME Competencies

**(N.B.: Section V. D. does not apply to certain subspecialties)**

**The residency program must require its residents to obtain competence in the six areas listed below to the level expected of a new practitioner. Programs must define the specific knowledge, skills, behaviors, and attitudes required, and provide educational experiences as needed in order for their residents to demonstrate the following:**

V.D.1. ***Patient care* that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health;**

V.D.2. ***Medical Knowledge* about established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care;**

V.D.3. ***Practice-based learning and improvement* that involves the investigation and evaluation of care for their patients, the appraisal and assimilation of scientific evidence, and improvements in patient care;**

V.D.4. ***Interpersonal and communication skills* that result in the effective exchange of information and collaboration with patients, their families, and other health professionals;**

V.D.5. ***Professionalism*, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to patients of diverse backgrounds;**

V.D.6. **Systems-based practice**, as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

## VI. Resident Duty Hours and the Working Environment

Providing residents with a sound didactic and clinical education must be carefully planned and balanced with concerns for patient safety and resident well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on residents to fulfill service obligations. Didactic and clinical education must have priority in the allotment of residents' time and energy. Duty hour assignments must recognize that faculty and residents collectively have responsibility for the safety and welfare of patients.

### VI.A. Supervision of Residents

VI.A.1. All patient care must be supervised by qualified faculty. The program director must ensure, direct, and document adequate supervision of residents at all times. Residents must be provided with rapid, reliable systems for communicating with supervising faculty.

VI.A.1.a) Supervising faculty with appropriate experience for the severity and complexity of patient conditions and treatments must be available at all times.

VI.A.2. Faculty schedules must be structured to provide residents with continuous supervision and consultation.

VI.A.3. Faculty and residents must be educated to recognize the signs of fatigue, and adopt and apply policies to prevent and counteract its potential negative effects.

### VI.B. Duty Hours

VI.B.1. Duty hours are defined as all clinical and academic activities related to the residency program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities such as conferences. Duty hours do *not* include reading and preparation time spent away from the duty site.

VI.B.2. Duty hours must be limited to 80 hours per week averaged over a four-week period, inclusive of all in-house call activities.

VI.B.3. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. *One day* is defined as 1 continuous 24-hour period free from all clinical, educational, and administrative duties.

**VI.B.4. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.**

**VI.B.5. It is desirable that residents' work schedules be designed so that on the average, excluding exceptional patient care needs, residents have at least 1 day out of 7 free of routine responsibilities and be on-call in the hospital no more often than every third night.**

**VI.C. On-call Activities**

**The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. *In-house call* is defined as those duty hours beyond the normal work day, when residents are required to be immediately available in the assigned institution.**

**VI.C.1. In-house call must occur no more frequently than every third night, averaged over a 4-week period.**

**VI.C.2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6 additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.**

**VI.C.3. No new patients may be accepted after 24 hours of continuous duty.**

**VI.C.4. *At-home call* (or *pager call*) is defined as a call taken from outside the assigned institution.**

**VI.C.4.a) The frequency of at-home call is not subject to the every-third-night limitation. At-home call, however, must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.**

**VI.C.4.b) When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.**

**VI.C.4.c) The program director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.**

**VI.D. Moonlighting**

**VI.D.1. Because residency education is a full-time endeavor, the program director must ensure that moonlighting does not interfere with the**

ability of the resident to achieve the goals and objectives of the educational program.

**VI.D.2.** The program director must comply with the sponsoring institution's written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements.

**VI.D.3.** Any hours a resident works for compensation at the sponsoring institution or any of the sponsor's primary clinical sites must be considered part of the 80-hour weekly limit on duty hours. This refers to the practice of *internal moonlighting*.

**VI.E.** Oversight

**VI.E.1.** Each program must have written policies and procedures consistent with the Institutional and Program Requirements for resident duty hours and the working environment. These policies must be distributed to the residents and the faculty. Duty hours must be monitored with a frequency sufficient to ensure an appropriate balance between education and service.

**VI.E.2.** Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create resident fatigue sufficient to jeopardize patient care.

**VI.F.** Duty Hours Exceptions

An RRC may grant exceptions for up to 10% of the 80-hour limit to individual programs based on a sound educational rationale. Prior permission of the institution's GMEC, however, is required.

**VII.** Evaluation

**VII.A.** Resident

**VII.A.1.** Formative Evaluation

The faculty must evaluate in a timely manner the residents whom they supervise. In addition, the residency program must demonstrate that it has an effective mechanism for assessing resident performance throughout the program, and for utilizing the results to improve resident performance.

**VII.A.1.a)** Assessment should include the use of methods that produce an accurate assessment of residents' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.

**VII.A.1.b)** Assessment should include the regular and timely performance feedback to residents that includes at least semiannual written evaluations. Such evaluations are to be communicated to each resident in a timely manner, and maintained in a record that is accessible to each resident.

**VII.A.1.c)** Assessment should include the use of assessment results, including evaluation by faculty, patients, peers, self, and other professional staff, to achieve progressive improvements in residents' competence and performance.

**VII.A.2. Final Evaluation**

The program director must provide a final evaluation for each resident who completes the program. This evaluation must include a review of the resident's performance during the final period of education, and should verify that the resident has demonstrated sufficient professional ability to practice competently and independently. The final evaluation must be part of the resident's permanent record maintained by the institution.

**VII.B. Faculty**

The performance of the faculty must be evaluated by the program no less frequently than at the midpoint of the accreditation cycle, and again prior to the next site visit. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. This evaluation must include annual written confidential evaluations by residents.

**VII.C. Program**

The educational effectiveness of a program must be evaluated at least annually in a systematic manner.

**VII.C.1.** Representative program personnel (i.e., at least the program director, representative faculty, and one resident) must be organized to review program goals and objectives, and the effectiveness with which they are achieved. This group must conduct a formal documented meeting at least annually for this purpose. In the evaluation process, the group must take into consideration written comments from the faculty, the most recent report of the GMEC of the sponsoring institution, and the residents' confidential written evaluations. If deficiencies are found, the group should prepare an explicit plan of action, which should be approved by the faculty and documented in the minutes of the meeting.

**VII.C.2.** The program should use resident performance and outcome assessment in its evaluation of the educational effectiveness of the residency program. Performance of program graduates on the certification examination should be used as one measure of

**evaluating program effectiveness. The program should maintain a process for using assessment results together with other program evaluation results to improve the residency program.**

**VIII. Experimentation and Innovation**

**Since responsible innovation and experimentation are essential to improving professional education, experimental projects along sound educational principles are encouraged. Requests for experimentation or innovative projects that may deviate from the program requirements must be approved in advance by the RRC, and must include the educational rationale and method of evaluation. The sponsoring institution and program are jointly responsible for the quality of education offered to residents for the duration of such a project.**

**IX. Certification**

**Residents who plan to seek certification by the American Board of Preventive Medicine in Undersea and Hyperbaric Medicine should communicate with the office of the board regarding the full requirements for certification.**

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