RED Text is language that is new/different from the current Standards version (2012) and has been approved by the AC-PE for inclusion in the new Standards;

Starred items * notate CAAHEP template language changes and have also been approved by the AC-PE for inclusion.

Commission on Accreditation of Allied Health Education Programs

Standards and Guidelines

for the Accreditation of Educational Programs in Perfusion

Essentials/Standards initially adopted in 1980; revised in 1989, 1994, 2000, 2005, 2012, and 20XX by the:

American Academy of Cardiovascular Perfusion
American Association for Thoracic Surgery
American Board of Cardiovascular Perfusion
American Society of Extracorporeal Technology
Perfusion Program Directors' Council
Society of Cardiovascular Anesthesiologists
Society of Thoracic Surgeons
Accreditation Committee – Perfusion Education
and
Commission on Accreditation of Allied Health Education Programs

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Accreditation Committee – Perfusion Education (AC-PE).

These accreditation **Standards and Guidelines** are the minimum standards of quality used in accrediting programs that prepare individuals to enter the Perfusion profession. Standards are the minimum requirements to which an accredited program is held accountable. Guidelines are descriptions, examples, or recommendations that elaborate on the Standards. Guidelines are not required, but can assist with interpretation of the Standards.

Standards are printed in regular typeface in outline form. *Guidelines* are printed in italic typeface in narrative form.

Preamble

The Commission on Accreditation of Allied Health Education Programs (CAAHEP), the Accreditation Committee-Perfusion Education, the American Academy of Cardiovascular Perfusion, the American Association for Thoracic Surgery, the American Board of Cardiovascular Perfusion, the American Society of Extracorporeal Technology, the Perfusion Program Directors' Council, the Society of Cardiovascular Anesthesiologists, and the Society of Thoracic Surgeons cooperate to establish, maintain and promote appropriate standards of quality for educational programs in perfusion and to provide recognition for educational programs that meet or exceed the minimum standards outlined in these accreditation **Standards and Guidelines**. Lists of accredited programs are published for the information of students, employers, educational institutions and agencies, and the public.

These **Standards and Guidelines** are to be used for the development, evaluation, and self-analysis of perfusion programs. On-site review teams assist in the evaluation of a program's relative compliance with the accreditation **Standards**.

Description of the Profession

A perfusionist is a skilled allied health professional trained and educated specifically as a member of an open-heart, surgical team responsible for the selection, setup, and operation of a mechanical device commonly referred to as the heart-lung machine. During open heart surgery, when the patient's heart is immobilized and cannot function in a normal fashion while the operation is being performed, the patient's blood is diverted and circulated outside the body through the heart-lung machine and returned again to the patient. In effect, the machine assumes the function of both the heart and lungs. The perfusionist is responsible for operating the machine during surgery, monitoring the altered circulatory process closely, taking appropriate corrective action when abnormal situations arise, and keeping both the surgeon and anesthesiologist fully informed. In addition to the operation of the heart-lung machine during surgery, perfusionists often function in supportive roles for other medical specialties in operating mechanical devices to assist in the conservation of blood and blood products during surgery, and provide extended, long-term support of patients' circulation outside of the operating room environment.

I. Sponsorship

A. Sponsoring Institution

A sponsoring institution must be at least one of the following:

1. A post-secondary academic institution accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education, and authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of a certificate at the completion of the program.
2. A hospital, clinic or medical center accredited by a healthcare accrediting agency or equivalent that is recognized by the U.S. Department of Health and Human Services and authorized under applicable law or other acceptable authority to provide healthcare, which awards a minimum of a certificate at the completion of the program.
3. A branch of the U.S. Armed Forces which awards a minimum of a certificate at the completion of the program.
4. A foreign post-secondary academic institution acceptable to CAAHEP that is authorized under applicable law or other acceptable authority to provide a postsecondary program, which awards a minimum of a baccalaureate degree equivalent to a United States degree at the completion of the academic program.

B. Consortium Sponsor

1. A consortium sponsor is an entity consisting of two or more members that exists for the purpose of operating an educational program. In such instances, at least one of the members of the consortium must meet the requirements of a sponsoring institution as described in I.A.

2. The responsibilities of each member of the consortium must be clearly documented in a formal affiliation agreement or memorandum of understanding, which includes governance and lines of authority.

C. Responsibilities of Sponsor

1. The Sponsor must ensure that the provisions of these **Standards** are met.

2. The Sponsor must ensure that the graduates of the program have obtained or will obtain a baccalaureate degree upon completion of the program.

The Sponsor is encouraged to award a Master's degree as entry-level into the profession.

II. Program Goals

A. Program Goals and Outcomes

There must be a written statement of the program's goals and learning domains consistent with and responsive to the demonstrated needs and expectations of the various communities of interest served by the educational program. The communities of interest that are served by the program must include, but are not limited to, students, graduates, faculty, sponsor administration, employers, physicians, and the public.

Program-specific statements of goals and learning domains provide the basis for program planning, implementation, and evaluation. Such goals and learning domains must be compatible with the mission of the sponsoring institution(s), the expectations of the communities of interest, and nationally accepted standards of roles and functions. Goals and learning domains are based upon the substantiated needs of health care providers and employers, and the educational needs of the students served by the educational program.

B. Appropriateness of Goals and Learning Domains

The program must regularly assess its goals and learning domains. Program personnel must identify and respond to changes in the needs and/or expectations of its communities of interest.

An advisory committee, which is representative of at least each of the communities of interest named in these Standards, must be designated and charged with the responsibility of meeting at least annually, to assist program and sponsor personnel in formulating and periodically revising appropriate goals and learning domains, monitoring needs and expectations, and ensuring program responsiveness to change.

****Advisory committee meetings may include participation by synchronous electronic means.***

C. Minimum Expectations

The program must have the following goal defining minimum expectations: "To prepare competent entry-level perfusionists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains."

Programs adopting educational goals beyond entry-level competence must clearly delineate this intent and provide evidence that all students have achieved the identified basic competencies prior to entry into the field.

Nothing in this Standard restricts programs from formulating goals beyond entry-level competence.

III. Resources

A. Type and Amount

Program resources must be sufficient to ensure the achievement of the program's goals and outcomes. Resources must include, but are not limited to: faculty; clerical/support staff; curriculum; finances; offices; classroom, laboratory, and ancillary student facilities; clinical affiliates; equipment; supplies; computer resources; instructional reference materials; and faculty/staff continuing education.

B. Personnel

The sponsor must appoint sufficient faculty and staff with the necessary qualifications to perform the functions identified in documented job descriptions and to achieve the program's stated goals and outcomes.

1. Program Director

a. Responsibilities

The program director must be responsible for the organization, administration, periodic review, continued development and general effectiveness of the program. The clinical assignment of the program director must allow adequate time for administrative and teaching responsibilities.

b. Qualifications

The program director must possess at a minimum, the following:

(1) a baccalaureate degree;
(2) five years of professional experience as a perfusionist;
(3) two years of experience as an instructor in an accredited educational program in perfusion; and
(4) proficiency in instructional methodology, curriculum design, program planning and counseling.

The program director should hold an advanced degree.

2. Clinical Coordinator

a. Responsibilities

The clinical coordinator must be responsible for evaluating and assuring clinical education effectiveness including a schedule of regular contact with the clinical affiliates. Documentation of all contact must be maintained.

The clinical coordinator must assist the program director and other program officials regarding perfusion education.

Contact with clinical affiliates may include, but is not limited to, clinical visits, teleconferences, and written correspondence.

b. Qualifications

The clinical coordinator must possess at a minimum, the following:

(1) Current certification as a perfusionist;
(2) The clinical activity requirements as defined by the American Board of Cardiovascular Perfusion (ABCP) for recertification;
(3) Five years of professional experience as a perfusionist; and
(4) Two years of experience as an instructor in an accredited educational program in perfusion.

The program director may also serve as the clinical coordinator provided the qualifications of both are met.

The clinical coordinator may serve up to five (5) years after discontinuation of certification, as long as the Program Director is appropriately certified.

3. Medical Advisor

a. Responsibilities

The medical advisor must participate in planning, organizing, conducting, revising, and evaluating the perfusion education program.

b. Qualifications

The medical advisor of the program must be a physician, currently licensed in the United States, holding a credential in an appropriate medical specialty.

The medical advisor should be board-certified or eligible for certification by the American Board of Thoracic Surgery or the American Board of Anesthesiology.

4. Clinical Perfusion Faculty

a. Responsibilities

The clinical instructor(s) must be knowledgeable of the program goals, clinical objectives, and clinical evaluation system. The clinical instructor(s) must provide students with appropriate and adequate clinical instruction/supervision and must evaluate student clinical competence.

During clinical instruction in which the student is operating extracorporeal circulation equipment, there must be direct one-to-one supervision by a clinical instructor. The clinical instructor and physician in charge of the procedure must be responsible for patient safety.

Sufficient time for accomplishing the clinical objectives must be provided. The clinical instructor(s) must communicate regularly with the program officials.

At least one clinical instructor must be designated as site coordinator at each clinical affiliate to facilitate communication and appropriate site orientation/training, and summary student evaluation.

b. Qualifications

(1) All clinical faculty must be knowledgeable and effective in teaching the subjects assigned.

(2) To supervise students operating extracorporeal circulation equipment, clinical instructors must be certified as perfusionists by a United States certifying body.

Clinical instructors should participate in ongoing teaching methodology continuing education.

Certification by the American Board of Cardiovascular Perfusion satisfies the certification requirement.

5. Didactic Faculty

a. Responsibilities

Didactic faculty must be responsible for teaching each course assigned by the program director, evaluating students and reporting their progress as required by the sponsor, and cooperating with the program director in periodic review and revision of course materials.

b. Qualifications

Didactic faculty must be individually qualified and must be effective in teaching the subject(s) assigned.

C. Curriculum

The curriculum must ensure the achievement of program goals and learning domains. Instruction must be an appropriate sequence of classroom, laboratory, and clinical activities **that include simulated clinical experiences.** Instruction must be based on clearly written course syllabi that include course description, course objectives, methods of evaluation, topic outline, and competencies required for graduation.

High fidelity extracorporeal simulation is recommended.

1. AC-PE Approved Cardiovascular Perfusion Curriculum

The program must demonstrate by comparison that the curriculum offered meets or exceeds the content requirements of the latest edition of the perfusion curriculum approved by the AC-PE (see Appendix B).

2. Curriculum Requisites

The following curriculum requisites must either be met prior to the perfusion education program or be presented as course work; they must include but are not limited to college level content in the following:

a. Anatomy and pathology
b. Physiology
c. Chemistry
d. Pharmacology
e. Mathematics
f. Physics

Biochemistry should be incorporated into the curriculum.

Tests used to assess prerequisite knowledge or advanced standing should be nationally recognized and accepted.

3. Clinical Cases

Clinical case availability must be adequate to support the number of students admitted to the program. A minimum of 75 clinical cases at AC-PE approved clinical affiliates requiring cardiopulmonary bypass must be the performed by each student prior to graduation. A minimum of 10 clinical pediatric cases requiring cardiopulmonary bypass must be observed or performed prior to graduation.

There should be an equitable distribution of available clinical cases among the students. A student's involvement in cardiopulmonary bypass should include but not be limited to the following:

a. preoperative preparation
b. perfusion equipment selection and assembly
c. perfusion management and decision making

D. Resource Assessment

The program must, at least annually, assess the appropriateness and effectiveness of the resources described in these Standards. The results of resource assessment must be the basis for ongoing planning and appropriate change. An action plan must be developed when deficiencies are identified in the program resources. Implementation of the action plan must be documented and results measured by ongoing resource assessment.

IV. Student and Graduate Evaluation/Assessment

A. Student Evaluation

1. Frequency and purpose

Evaluation of students must be conducted on a recurrent basis and with sufficient frequency to provide both the students and program faculty with valid and timely indications of the students' progress toward and achievement of the competencies and learning domains stated in the curriculum.

The program should demonstrate appropriate strategies for communicating with each individual student his or her standing in the program. The demonstration should include a plan for routine

communication, a copy of all forms used in communicating, a description of how the department and institution handles problem or failing students, a description of the appeals process, and student evaluation of the communication process. Each student file should contain copies of all communication regarding standing.

2. Clinical Documentation

Records of student **clinical** evaluations **and competencies** must be maintained in sufficient detail to document learning progress and achievements.

B. Outcomes

1. Outcomes Assessment

The program must periodically assess its effectiveness in achieving its stated goals and learning domains. The results of this evaluation must be reflected in the review and timely revision of the program.

Outcomes assessments must include, but are not limited to: national credentialing examination(s) performance, programmatic retention/attrition, graduate satisfaction, employer satisfaction, job (positive) placement, and programmatic summative measures, including: cardiopulmonary bypass; mechanical circulatory support; autotransfusion/blood conservation/product management; and performance of laboratory analysis of blood gases, electrolytes, hematocrit/hemoglobin. The program must meet the AC-PE outcomes assessment thresholds.

"Positive placement" means that the graduate is employed full or part-time in a related field; and/or continuing his/her education; and/ or serving in the military. ****A related field is one in which the individual is using cognitive, psychomotor, and affective competencies acquired in the educational program.***

2. Outcomes Reporting

The program must periodically submit to the AC-PE the program goal(s), learning domains, evaluation systems (including type, cut score, and appropriateness), outcomes, its analysis of the outcomes, and an appropriate action plan based on the analysis.

Programs not meeting the established thresholds must begin a dialogue with the AC-PE to develop an appropriate plan of action to respond to the identified shortcomings.

V. Fair Practices

A. Publications and Disclosure

1. Announcements, catalogs, publications, and advertising must accurately reflect the program offered.
2. At least the following must be made known to all applicants and students: the sponsor's institutional and programmatic accreditation status as well as the name, mailing address, web site address, and phone number of the accrediting agencies; admissions policies and practices, including technical standards (when used); policies on advanced placement, transfer of credits, and credits for experiential learning; number of credits required for completion of the program; tuition/fees and other costs required to complete the program; policies and processes for withdrawal and for refunds of tuition/fees.
3. At least the following must be made known to all students: academic calendar, student grievance procedure, criteria for successful completion of each segment of the curriculum and for graduation, and policies and processes by which students may perform clinical work while enrolled in the program.
4. The sponsor must maintain, and make available to the public, current and consistent summary information about student/graduate achievement that includes the results of one or more of the outcomes assessments required in these Standards.

The sponsor should develop a suitable means of communicating to the communities of interest the achievement of students/graduates (e.g. through a website or electronic or printed documents).

B. Lawful and Non-discriminatory Practices

All activities associated with the program, including student and faculty recruitment, student admission, and faculty employment practices, must be non-discriminatory and in accord with federal and state statutes, rules, and regulations. There must be a faculty grievance procedure made known to all paid faculty.

C. Safeguards

The health and safety of patients, students, faculty, ***and other participants** associated with the educational activities of the students must be adequately safeguarded.

All activities in the program must be educational and students must not be substituted for staff.

Duty hours must follow AmSECT's Standards and Guidelines for Perfusion Practice.

D. Student Records

Satisfactory records must be maintained for student admission, advisement, counseling, and evaluation. Grades and credits for courses must be recorded on the student transcript and permanently maintained by the sponsor in a safe and accessible location.

E. Substantive Changes

The sponsor must report substantive change(s) as described in Appendix A to CAAHEP/AC-PE in a timely manner. **Additional substantive changes to be reported to AC-PE within the time limits prescribed include:**

1. **Change in certification status of the Program Director**
2. **Change in certification status of the Clinical Coordinator**

F. Agreements

There must be a formal affiliation agreement or memorandum of understanding between the sponsor and all other entities that participate in the education of the students describing the relationship, roles, and responsibilities of the sponsor and that entity. Clinical Affiliates must be accredited by recognized agencies or meet equivalent standards.

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