



Standards and Guidelines for the Accreditation of Educational Programs in Respiratory Care

Essentials/Standards initially adopted in 1962;
revised in 1972, 1977, 1986, 2000, 2003, 2019; 2022 and effective February 2022.

Developed by
Joint Review Committee on Education in Respiratory Care

Endorsed by
American Association for Thoracic Surgery
National Association for Associate Degree Respiratory Care
National Network of Health Careers in Two-Year Colleges

and

Approved by the
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 Joint Review Committee on Education in Respiratory Care.

These accreditation **Standards** are the minimum standards of quality used in accrediting programs that prepare individuals to enter the respiratory care 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.*

Preamble

The Commission on Accreditation of Allied Health Education Programs (CAAHEP), Joint Review Committee on Education in Respiratory Care, American Association for Thoracic Surgery, National Association for Associate Degree Respiratory Care, and National Network of Health Careers in Two-Year Colleges cooperate to establish, maintain and promote appropriate standards of quality for educational programs in respiratory care and to provide recognition for educational programs that meet or exceed the minimum standards outlined in these accreditation **Standards and Guidelines for the Accreditation of Educational Programs**. CAAHEP encourages innovation and quality education programs throughout the CAAHEP accreditation process, consistent with the CAAHEP policy on institutional autonomy. These **Standards and Guidelines** are designed to ensure the integrity of the CAAHEP accreditation process. Directories of accredited programs are published for the information of students, employers, educational institutions and organizations, credentialing bodies, and the public.

These **Standards and Guidelines** are to be used for the development, evaluation, and self-analysis of respiratory care programs. Site visit teams assist in the evaluation of a program's compliance with the accreditation standards.

Description of the Profession

Respiratory therapists are members of a team of health care professionals working in a wide variety of clinical settings to evaluate, treat, and manage patients of all ages with respiratory illnesses and other cardiopulmonary disorders. As members of this team, respiratory therapists should exemplify the standards and ethics expected of all health care professionals.

In addition to performing respiratory care procedures, respiratory therapists are involved in clinical decision-making and patient education. The scope of practice for respiratory therapy includes, but is not limited to:

- acquiring and evaluating clinical data;
- assessing the cardiopulmonary status of patients;
- performing and assisting in the performance of prescribed diagnostic studies such as: obtaining blood samples, blood gas analysis, pulmonary function testing, and polysomnography;
- evaluating data to assess the appropriateness of prescribed respiratory care;
- establishing therapeutic goals for patients with cardiopulmonary disease;
- participating in the development and modification of respiratory care plans;
- case management of patients with cardiopulmonary and related diseases;
- initiating prescribed respiratory care treatments, evaluating and monitoring patient responses to such therapy and modifying the prescribed therapy to achieve the desired therapeutic objectives;
- initiating and conducting prescribed pulmonary rehabilitation;
- providing patient, family, and community education;
- promoting cardiopulmonary wellness, disease prevention, and disease management;
- participating in life support activities as required; and
- promoting evidence-based medicine; research; and clinical practice guidelines.

I. Sponsorship

A. Program Sponsor

A program sponsor 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 must be authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of an associate degree at the completion of the program.
2. A post-secondary academic institution outside of the United States and its territories that is authorized under applicable law or other acceptable authority to provide a post-secondary program, which awards a minimum of an associate degree or equivalent at the completion of the program.
3. A branch of the United States Armed Forces, or a federal or state governmental agency, which awards a minimum of an associate degree at the completion of the program.
4. A consortium, which is a group made up of two or more education providers, that operate an educational program through a written agreement that outlines the expectations and responsibilities of each of the partners. At least one of the consortium partners must meet the requirements of a program sponsor set forth in I.A.1.- I.A.3.

Consortium does not refer to clinical affiliation agreements with the program sponsor.

B. Responsibilities of Program Sponsor

The program sponsor must:

1. Ensure that the program meets the Standards;
2. Award academic credit for the program or have an articulation agreement with an accredited post-secondary institution; and
3. Have a preparedness plan in place that assures continuity of education services in the event of an unanticipated interruption.

Examples of unanticipated interruptions may include unexpected departure of key personnel, natural disaster, public health crisis, fire, flood, power failure, failure of information technology services, or other events that may lead to inaccessibility of educational services.

II. Program Goals

A. Program Goals and Minimum Expectations

The program must have the following minimum expectations statement: "To prepare respiratory therapists who are competent in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains to enter the profession."

Programs that adopt educational goals beyond the minimum expectations statement must provide evidence that all students have achieved those goals prior to entry into the field.

Program goals must be compatible with the mission of the sponsoring institution(s), the expectations of the communities of interest, and accepted standards of roles and functions of a respiratory therapist. Goals are based upon the substantiated needs of health care providers and employers, and the educational needs of the students served by the educational program. Program goals must be written referencing one or more of the learning domains.

The program must assess its goals at least annually and respond to changes in the needs and expectations of its communities of interest.

B. Program Advisory Committee

The program advisory committee must include at least one representative of each community of interest and must meet annually. Communities of interest served by the program include, but are not limited to, students, graduates, faculty members, sponsor administrators, employers, physicians, and the public.

The program advisory committee advises the program regarding revisions to curriculum and program goals based on the changing needs and expectations of the program's communities of interest, and an assessment of program effectiveness, including the outcomes specified in these Standards.

Program advisory committee meetings may be conducted using synchronous electronic means.

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:

1. Faculty;
2. Administrative and support staff;
3. Curriculum;
4. Finances;
5. Faculty and staff workspace;
6. Space for confidential interactions;
7. Classroom and laboratory (physical or virtual);
8. Ancillary student facilities;
9. Clinical affiliates;
10. Equipment;
11. Supplies;
12. Information technology;
13. Instructional materials; and
14. Support for faculty professional development.

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.

At a minimum, the following positions are required.

1. Program Director

The sponsor must appoint a full-time Program Director.

a. Responsibilities

The program director must be responsible for all aspects of the program, including but not limited to:

- 1) Administration, organization, supervision of the program;
- 2) Continuous quality review and improvement of the program;
- 3) Academic oversight, including curriculum planning and development;
- 4) Effectiveness of the program, including instruction and faculty
- 5) Cooperative involvement with the medical director; and
- 6) Orientation/training and supervision of didactic faculty and clinical instructors/preceptors.

b. Qualifications

The program director must:

- 1) Be a registered respiratory therapist;
- 2) Hold such professional license or certificate as is required by the state in which he or she is employed;
- 3) Possess a minimum of a master's degree or the equivalent; and
- 4) Have documented education or experience in instructional methodology.

The program director should have a minimum of four (4) years' experience as a Registered Respiratory Therapist, of which at least two (2) years should have been spent in clinical respiratory care and at least two (2) years in a teaching position in an accredited respiratory care program. The program director should have formal education in curriculum development, implementation, and curriculum and student evaluation.

2. Clinical Coordinator

The sponsor must appoint a full-time Clinical Coordinator.

a. Responsibilities

The clinical coordinator must:

- 1) Coordinate clinical education;
- 2) Coordinate the assignment of students to clinical sites;
- 3) Ensure documentation of the evaluation and progression of clinical performance;
- 4) Ensure orientation to the program's requirements of the personnel who supervise or instruct clinical students at clinical sites; and
- 5) Ensure that clinical instructors/preceptors are trained in student evaluation, including inter-rater reliability.

b. Qualifications

The clinical coordinator must:

- 1) Be a registered respiratory therapist;
- 2) Hold such professional license or certificate as is required by the state in which he or she is employed;
- 3) Possess at least a baccalaureate degree;
- 4) Have documented experience in clinical respiratory care;
- 5) Possess knowledge of the curriculum;
- 6) Possess knowledge about the program's evaluation of student learning and performance; and
- 7) Have documented experience in instruction, supervision, evaluation, and student guidance.

The clinical coordinator should have a minimum of four (4) years' experience as a Registered Respiratory Therapist, of which at least two (2) years should have been spent in clinical respiratory care and at least two (2) years in a teaching position in an accredited respiratory care program. The clinical coordinator should have formal education in curriculum development, implementation, and curriculum and student evaluation.

3. Medical Director

a. Responsibilities

The medical director must:

- 1) Provide the input necessary to ensure that the medical components of the curriculum, both didactic and supervised practice, meets current standards of medical practice;
- 2) Engage in cooperative involvement with the program director; and
- 3) Assure physician instructional involvement in the education of respiratory therapists.

b. Qualifications

The medical director must:

- 1) Be a physician currently licensed and authorized to practice medicine in the United States or the country in which the program is located;
- 2) Hold board certification in the US or the country in which the program is located in a specialty relevant to respiratory care;
- 3) Have the requisite knowledge and skills to advise the program leadership about the clinical/academic aspects of the program; and
- 4) Be knowledgeable in teaching the subjects assigned, when applicable.

(The medical director should have board certification by either the American Board of Medical Specialties (ABMS) or American Osteopathic Association (AOA).

4. Faculty/Instructional Staff

a. Responsibilities

For all didactic, laboratory, and clinical instruction to which a student is assigned, there must be a qualified individual(s) clearly designated by the program to provide instruction, supervision, and timely assessments of the student's progress in meeting program requirements.

b. Qualifications

Faculty/instructional staff must be effective in teaching and knowledgeable in subject matter as documented by appropriate professional credential(s)/certification(s), education, and experience in the designated content area.

C. Curriculum

The curriculum content must ensure that the program goals are achieved. 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. Instruction must be delivered in an appropriate sequence of classroom, laboratory, and clinical activities.

The program must demonstrate that the curriculum offered meets or exceeds the competencies listed in Appendix B of these **Standards**.

CAAHEP supports and encourages innovation in the development and delivery of the curriculum.

D. Resource Assessment

The program must, at least annually, assess the appropriateness and effectiveness of the resources described in these **Standards**. The results of the resource assessment must be the basis for ongoing planning and change. An action plan must be developed when needed improvements 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 curriculum competencies in the required learning domains.

Validity means that the evaluation methods chosen are consistent with the learning and performance objectives being tested.

2. Documentation

Student evaluations must be maintained in sufficient detail to document learning progress and achievements.

B. Outcomes

The program must meet the established outcomes thresholds.

1. Assessment

The program must periodically assess its effectiveness in achieving established outcomes. The results of this assessment 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, graduate satisfaction, employer satisfaction, and placement in full or part-time employment in the profession or in a related profession.

A related profession is one in which the individual is using cognitive, psychomotor, and affective competencies acquired in the educational program.

Graduates pursuing academic education related to progressing in health professions or serving in the military are counted as placed.

A national certification examination program should be accredited by the National Commission for Certifying Agencies (NCCA), American National Standards Institute (ANSI), or under International Organization for Standardization (ISO.)

Results from an alternative examination may be accepted as an outcome, if designated as equivalent by the organization whose credentialing examination is so accredited.

2. Reporting

At least annually, the program must submit to the Joint Review Committee on Education in Respiratory Care the program goal(s), outcomes assessment results, and an analysis of the results.

If established outcomes thresholds are not met, the program must participate in a dialogue with and submit an action plan to the Joint Review Committee on Education in Respiratory Care that responds to the identified deficiency(ies). The action plan must include an analysis of any deficiencies, corrective steps, and timeline for implementation. The program must assess the effectiveness of the corrective steps.

V. Fair Practices

A. Publications and Disclosure

1. Announcements, catalogs, publications, advertising, and websites must accurately reflect the program offered.
2. At least the following must be made known to all applicants and students
 - a. Sponsor's institutional and programmatic accreditation status;
 - b. Name and website address of CAAHEP;
 - c. Admissions policies and practices;
 - d. Technical standards;
 - e. Occupational risks;
 - f. Policies on advanced placement, transfer of credits and credits for experiential learning;
 - g. Number of credits required for completion of the program;
 - h. Availability of articulation agreements for transfer of credits;
 - i. Tuition/fees and other costs required to complete the program;
 - j. Policies and processes for withdrawal and for refunds of tuition/fees; and
 - k. Policies and processes for assignment of clinical experiences.
3. At least the following must be made known to all students
 - a. Academic calendar;
 - b. Student grievance procedure;
 - c. Appeals process;
 - d. Criteria for successful completion of each segment of the curriculum and for graduation; and
 - e. Policies by which students may perform clinical work while enrolled in the program.

4. The sponsor must maintain and make accessible to the public on its website a current and consistent summary of student/graduate achievement that includes one or more of these program outcomes: national credentialing examination(s), programmatic retention, and placement in full or part-time employment in the profession or a related profession as established by the Joint Review Committee in Respiratory Care.

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/clients, students, faculty, and other participants associated with the educational activities of the students must be adequately safeguarded. Respiratory Care students must be readily identifiable as students.

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

D. Student Records

Grades and credits for courses must be recorded on the student transcript and permanently maintained by the program sponsor in an accessible and secure location. Students and graduates must be given direction on how to access their records. Records must be maintained for student admission, advisement, and counseling while the student is enrolled in the program.

E. Substantive Change

The sponsor must report substantive change(s) as described in Appendix A to the Joint Review Committee on Education in Respiratory Care in a timely manner. Additional substantive changes to be reported to the Joint Review Committee on Education in Respiratory Care within the time limits prescribed include:

1. Changes in the curriculum that result in a change of 10% or more of the program credits;
2. Changes in the degree awarded; and
3. Changes in the organizational structure or mission of the sponsoring institution, including changes in other departments (e.g., general education) that have an impact on the program.

F. Agreements

There must be a formal affiliation agreement or memorandum of understanding between the program sponsor and all other entities that participate in the education of the students describing the relationship, roles, and responsibilities of the program sponsor and that entity.

APPENDIX A

Application, Maintenance and Administration of Accreditation

A. Program and Sponsor Responsibilities

1. Applying for Initial Accreditation

- a. The chief executive officer or an officially designated representative of the sponsor completes a “Request for Accreditation Services” form and returns it electronically or by mail to:

Joint Review Committee on Education in Respiratory Care
1449 Hill Street
Whitinsville, MA 01588

The “Request for Accreditation Services” form can be obtained from the [CAAHEP website](#).

Note: There is **no** CAAHEP fee when applying for accreditation services; however, individual committees on accreditation may have an application fee.

- b. The program undergoes a comprehensive review, which includes a written self-study report and an on-site review.

The self-study instructions and report form are available from the Joint Review Committee on Education in Respiratory Care (JRC-RC). The on-site review will be scheduled in cooperation with the program and JRC-RC once the self-study report has been completed, submitted, and accepted by the JRC-RC.

2. Applying for Continuing Accreditation

- a. Upon written notice from the JRC-RC, the chief executive officer or an officially designated representative of the sponsor completes a “Request for Accreditation Services” form, and returns it electronically or by mail to:

Joint Review Committee on Education in Respiratory Care
1449 Hill Street
Whitinsville, MA 01588

The “Request for Accreditation Services” form can be obtained from the [CAAHEP website](#).

- b. The program may undergo a comprehensive review in accordance with the policies and procedures of the JRC-RC.

If it is determined that there were significant concerns with the conduct of the on-site review, the sponsor may request a second site visit with a different team.

After the on-site review team submits a report of its findings, the sponsor is provided the opportunity to comment in writing and to correct factual errors prior to the JRC-RC forwarding a recommendation to CAAHEP.

3. Administrative Requirements for Maintaining Accreditation

- a. The program must inform the JRC-RC and CAAHEP within a reasonable period of time (as defined by the committee on accreditation and CAAHEP policies) of changes in chief executive officer, dean of health professions or equivalent position, and required program personnel (Refer to Standard III.B.).
- b. The sponsor must inform CAAHEP and the JRC-RC of its intent to transfer program sponsorship. To begin the process for a Transfer of Sponsorship, the current sponsor must submit a letter (signed by the CEO or designated individual) to CAAHEP and the JRC-RC that it is relinquishing its sponsorship of the program. Additionally, the new sponsor must submit a "Request for Transfer of Sponsorship Services" form. The JRC-RC has the discretion of requesting a new self-study report with or without an on-site review. Applying for a transfer of sponsorship does not guarantee that the transfer will be granted.
- c. The sponsor must promptly inform CAAHEP and the JRC-RC of any adverse decision affecting its accreditation by recognized institutional accrediting agencies and/or state agencies (or their equivalent).
- d. Comprehensive reviews are scheduled by the JRC-RC in accordance with its policies and procedures. The time between comprehensive reviews is determined by the JRC-RC and based on the program's on-going compliance with the Standards, however, all programs must undergo a comprehensive review at least once every ten years.
- e. The program and the sponsor must pay JRC-RC and CAAHEP fees within a reasonable period of time, as determined by the JRC-RC and CAAHEP respectively.
- f. The sponsor must file all reports in a timely manner (self-study report, progress reports, probation reports, annual reports, etc.) in accordance with JRC-RC policy.
- g. The sponsor must agree to a reasonable on-site review date that provides sufficient time for CAAHEP to act on an JRC-RC accreditation recommendation prior to the "next comprehensive review" period, which was designated by CAAHEP at the time of its last accreditation action, or a reasonable date otherwise designated by the JRC-RC.

Failure to meet any of the aforementioned administrative requirements may lead to administrative probation and ultimately to the withdrawal of accreditation. CAAHEP will immediately rescind administrative probation once all administrative deficiencies have been rectified.

4. Voluntary Withdrawal of a CAAHEP- Accredited Program

Notification of voluntary withdrawal of accreditation from CAAHEP must be made by the Chief Executive Officer or an officially designated representative of the sponsor by writing to CAAHEP indicating: the desired effective date of the voluntary withdrawal, and the location where all records will be kept for students who have completed the program.

5. Requesting Inactive Status of a CAAHEP- Accredited Program

Inactive status for any accredited program may be requested from CAAHEP at any time by the Chief Executive Officer or an officially designated representative of the sponsor writing to CAAHEP indicating the desired date to become inactive. No students can be enrolled or matriculated in the program at any time during the time period in which the program is on

inactive status. The maximum period for inactive status is two years. The sponsor must continue to pay all required fees to the JRC-RC and CAAHEP to maintain its accreditation status.

To reactivate the program the Chief Executive Officer or an officially designated representative of the sponsor must provide notice of its intent to do so in writing to both CAAHEP and the JRC-RC. The sponsor will be notified by the JRC-RC of additional requirements, if any, that must be met to restore active status.

If the sponsor has not notified CAAHEP of its intent to re-activate a program by the end of the two-year period, CAAHEP will consider this a “Voluntary Withdrawal of Accreditation.”

B. CAAHEP and Committee on Accreditation Responsibilities – Accreditation Recommendation Process

1. After a program has had the opportunity to comment in writing and to correct factual errors on the on-site review report, the JRC-RC forwards a status of public recognition recommendation to the CAAHEP Board of Directors. The recommendation may be for any of the following statuses: initial accreditation, continuing accreditation, transfer of sponsorship, probationary accreditation, withhold of accreditation, or withdrawal of accreditation.

The decision of the CAAHEP Board of Directors is provided in writing to the sponsor immediately following the CAAHEP meeting at which the program was reviewed and voted upon.

2. Before the JRC-RC forwards a recommendation to CAAHEP that a program be placed on probationary accreditation, the sponsor must have the opportunity to request reconsideration of that recommendation or to request voluntary withdrawal of accreditation. The JRC-RC’s reconsideration of a recommendation for probationary accreditation must be based on conditions existing both when the committee arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors’ decision to confer probationary accreditation is not subject to appeal.

3. Before the JRC-RC forwards a recommendation to CAAHEP that a program’s accreditation be withdrawn or that accreditation be withheld, the sponsor must have the opportunity to request reconsideration of the recommendation, or to request voluntary withdrawal of accreditation or withdrawal of the accreditation application, whichever is applicable. The JRC-RC’s reconsideration of a recommendation of withdraw or withhold accreditation must be based on conditions existing both when the JRC-RC arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors’ decision to withdraw or withhold accreditation may be appealed. A copy of the CAAHEP “Appeal of Adverse Accreditation Actions” is enclosed with the CAAHEP letter notifying the sponsor of either of these actions.

At the completion of due process, when accreditation is withheld or withdrawn, the sponsor’s Chief Executive Officer is provided with a statement of each deficiency. Programs are eligible to re-apply for accreditation once the sponsor believes that the program is in compliance with the accreditation Standards.

Note: Any student who completes a program that was accredited by CAAHEP at any time during his/her matriculation is deemed by CAAHEP to be a graduate of a CAAHEP-accredited program.

APPENDIX B
Core Curriculum for Respiratory Therapists
2021 Curriculum Requirements

1. Content Area 1. General Education

a.	Mathematics Upon completion of an educational program in respiratory care, the student will
	1) Demonstrate knowledge of basic math calculations;
	2) Apply mathematical computations to solve equations; and
	3) Explain appropriate strategies/procedures when solving mathematical problems.
b.	Written and oral communications Upon completion of an educational program in respiratory care, the student will
	1) Identify styles and types of verbal communication;
	2) Recognize elements of fundamental writing skills;
	3) Identify types of non-verbal communication;
	4) Recognize barriers to communication; and,
	5) Identify techniques to overcome communication barriers.
c.	Social and Behavioral Sciences Upon completion of an educational program in respiratory care, the student will
	1) Develop and understanding of self and the world by examining the dynamic interaction of individuals, groups, and societies as they change and are shaped by history, culture, institutions, and ideas; and
	2) Identify differences among and between individuals, cultures, or societies across space and time.
d.	Computer Science Upon completion of an educational program in respiratory care, the student will
	1) Use computer applications and evaluate their impact on individuals, organizations, and global society;
	2) Identify computer applications in management, education, research, and clinical care
	3) Describe the importance of computer applications in education, including simulation, distance education, and learning management systems.
e.	Critical Thinking Upon completion of an educational program in respiratory care, the student will
	1) Define critical thinking and identify the skills used in critical thinking;
	2) Describe ordinary thinking in relation to critical thinking
	3) Identify the barriers to critical thinking in terms of beliefs, attitudes, feelings, and behaviors;
	4) Identify and apply relevant information for problem solving;
	5) Recognize appropriate practices for analyzing ambiguous problems; and,
	6) Establish a reasoned framework for drawing conclusions and making decisions.
f.	Human Anatomy and Physiology Upon completion of an educational program in respiratory care, the student will
	1) Describe the structural organization of the human body;
	2) Identify body systems and describe body planes, directional terms, quadrants, and body cavities;
	3) List major organs and identify the anatomical location in each body system;
	4) Compare the structure and function of the human body across the life span; and,
	5) Describe the normal function of each body system.
g.	Chemistry Upon completion of an educational program in respiratory care, the student will
	1) Discuss the role of chemistry in our society, industry, research, health, and medicine;
	2) Demonstrate foundational knowledge of general inorganic and organic chemistry principles and concepts, and the application of this knowledge in solving problems related to respiratory care.

	3)	Apply problem solving, critical thinking, and analytical reasoning to scientific problems in life.
h.	Physics Upon completion of an educational program in respiratory care, the student will	
	1)	Demonstrate foundational knowledge of general physics principles and concepts, and the application of this knowledge in solving problems in respiratory care; and,
	2)	Identify gas laws and their application in respiratory care.
i.	Microbiology Upon completion of an educational program in respiratory care, the student will	
	1)	Discuss the role of microbiology and infection control in our society, industry, research, health, and medicine;
	2)	Identify the major types of pathogens;
	3)	Explain the relationship between microorganisms and the human host including normal flora, host resistance, pathogenicity and virulence, sources and modes of infection, and, portals of entry and exit;

2. Content Area 2: Foundations for Clinical Practice

The program should compare the curriculum to the National Board for Respiratory Care (NBRC) Therapist Multiple Choice (TMC) Examination Detailed Content Outline to determine the cognitive level required in each content area, and the NBRC Clinical Simulation Detailed Content Outline to prepare the graduates for the national credentialing examinations.

* Indicates a skill that the terminal competency assessment must occur in a clinical setting with a patient.

Upon completion of an educational program in respiratory care, the graduate will:

a. Cardiopulmonary Anatomy and Physiology								
	Cognitive (Knowledge)			Psychomotor (Skills)			Affective (Behavior)	
	1)	Identify the components and functions of the cardiovascular system.	9)	Illustrate the anatomical differences among blood vessels in the body, including how they supply blood to and from the heart.	14)		Reflect and promote the importance of a healthy heart and lungs.	
	2)	Describe the anatomy of the heart, including the cardiac cycle and conduction system.	10)	Calculate systemic vascular resistance, cardiac output, and ejection fraction.	15)		Show awareness of a patient's concerns related to diagnostic procedures being performed.	
			11)	Illustrate with a graph the different lung volumes and capacities, and the force vital capacity (FVC) maneuver.				
	3)	Distinguish between pulmonary, system, portal, and fetal circulation.	12)	Perform basic pulmonary function testing.				
	4)	Describe the characteristics and functions of blood;	13)	Calculate: a. minute volume b. dynamic compliance c. static compliance d. oxygen content e. resistance				
	5)	List and describe each component of blood, including normal values;						
	6)	Identify the components and functions of the respiratory system;						
	7)	Explain pulmonary ventilation and gas exchange;						
	8)	Identify lung volumes and capacities and explain how they are measured.						
b. Cardiopulmonary Pathophysiology								
	1)	Describe how the cardiovascular system coordinates its functions under normal and abnormal conditions.	5)	* Assess the cardiopulmonary status of a patient (e.g., observation, auscultation, percussion).	9)		Show awareness of a patient's concerns related to pathologic conditions and the associated functional changes.	

	2)	Identify the most common cardiovascular disorders and describe the functional changes that occur with each disorder.	6)	Identify pathologic changes commonly seen on a chest radiograph.		
	3)	Identify the most common pulmonary diseases and describe the functional changes that occur with each disorder.	7)	Perform a 12-lead EKG.		
	4)	Describe the clinical findings seen in patients with cardiopulmonary disease.	8)	* Evaluate diagnostic test results and develop or modify a plan of care.		
c.	Pharmacology					
	1)	Discuss the concepts of pharmacokinetics and pharmacodynamics as they relate to drug response and disposition in the body.	8)	*Perform patient assessment; monitor and evaluate patient response to aerosolized medication administration.	14)	*Demonstrate cultural awareness when working with patients.
	2)	Describe the mode of action of pharmacological agents used in the management of airway diseases.	9)	Select an appropriate device to administer an aerosolized medication based on the patient's age, cognitive status, and physical limitations.	15)	*Show awareness of a patient's concerns related to pathologic conditions and the associated functional changes.
	3)	Discuss responses of the autonomic nervous system.	10)	*Instruct a patient during the administration of an aerosol medication treatment		
	4)	Discuss the different routes of administration of medications.	11)	*Chart an aerosol medication treatment.		
	5)	Recommend use of the following pharmacologic agents: anti-infective, anti-inflammatories, bronchodilators, cardiac agents, diuretics, mucolytic/ proteolytic, narcotics, sedatives, surfactants and vasoactive agents.	12)	*Communicate with appropriate members of the medical team regarding patient responses to pharmacological therapy		
	6)	Discuss the indications, contraindications, and side effects of respiratory pharmacology agents.	13)	*Modify the respiratory care plan based on patient assessment and response to pharmacological therapy.		
	7)	Discuss the indications, advantages, disadvantages, limitations, contraindications, and hazards of aerosol delivery devices and the methods used for medication delivery.				
d.	Patient Assessment					
	1)	List and describe the key anatomic and physiologic differences between the neonate, child and adult.	11)	*Perform cardiopulmonary assessment on adult patients.	21)	*Demonstrate sensitivity to the needs of the patient or his/her family.

	2)	Recognize the signs associated with respiratory distress.	12)	*Respond to signs of respiratory distress.	22)	*Recognize how cultural or ethnic differences may affect the assessment of a patient.
	3)	Explain the technique for auscultation of the chest, including stating the significance of various chest landmarks.	13)	Locate various chest landmarks.		
	4)	Define terms associated with normal and abnormal breath sounds.	14)	*Identify normal and abnormal breath sounds.		
	5)	Explain the significance of sounds heard during cardiac auscultation.	15)	*Identify heart sounds.		
	6)	Describe various methods to determine oxygenation and ventilation.	16)	*Perform procedures to identify oxygenation and ventilation.		
	7)	Identify the components of a patient history and systematic examination.	17)	Obtain a patient history and perform a systematic examination.		
	8)	Explain the significance of measuring vital signs.	18)	Measure vital signs.		
	9)	Identify normal and abnormal vital signs.	19)	*Perform cardiopulmonary assessment.		
	10)	Recognize causes of abnormal vital signs.	20)	*Document respiratory care assessment in a patient's chart.		
e.	Medical Gas Therapy					
	1)	Discuss the use of bulk and portable oxygen therapy systems.	7)	Identify different gas cylinders, place regulators on them, and identify any hazards or risks associated with them.	10)	*Recognize safety protocols that apply to oxygen systems.
	2)	Identify indications for supplemental oxygen therapy based on patient history, clinical findings, and physiologic indices.	8)	*Select and assemble oxygen therapy devices.		
	3)	Develop a logical approach to the therapeutic application of medical gases, including equipment selection, dosage regulation, patient interface, and therapy outcome monitoring.	9)	Identify and take corrective action to solve problems with oxygen therapy devices.		
	4)	Identify variables that affect the delivered oxygen concentration with low-flow oxygen delivery devices.				
	5)	Recognize complications of supplemental oxygen therapy and methods to prevent or minimized untoward effects.				
	6)	Describe the use of arterial blood gas results and pulse oximetry monitoring for oxygen therapy.				
f.	Aerosol and Humidity Therapy					

	1)	List the goals of aerosol and humidity therapy.	6)	*Administer aerosol therapy.	11)	*Assures patient comfort during the administration of aerosol and humidity therapy.
	2)	Explain the principles of gas physics as they are related to aerosol and humidity therapy.	7)	*Select and prepare medication that may be used during an aerosol treatment.		
	3)	Describe the normal gas warming and humidification functions of the upper airway.	8)	Differentiate between the types of humidifiers, including their clinical uses, advantages and disadvantages.		
	4)	Compare heated and unheated humidifiers.	9)	*Select and use various aerosol delivery devices and adjunctive equipment required for specific clinical situations.		
	5)	Compare jet nebulizers, ultrasonic nebulizers, and mesh nebulizers.	10)	Identify and take corrective action to solve problems with humidity therapy devices.		
g.	Airway Management					
	1)	Identify key roles and responsibilities for the airway management team.	10)	Establish and maintain a patent airway.	18)	*Communicate effectively with patients who cannot verbalize because of the presence of an artificial airway.
	2)	Discuss therapeutic procedures used to maintain a patent airway.	11)	Insert oro and nasopharyngeal airways.		
	3)	Describe the procedure for oro- and nasotracheal intubation.	12)	Perform tracheostomy care.		
	4)	Describe procedures used to manage an artificial airway (e.g., oro- and nasopharyngeal airways, endotracheal tubes, tracheostomy tubes).	13)	*Secure an endotracheal and tracheostomy tube.		
	5)	Discuss methods used to evaluate and manage the difficult airway.	14)	*Assess cuff pressure. *Measure cuff pressure. *Perform minimal leak technique (MLT).		
	6)	Compare conventional and percutaneous tracheostomy.	15)	*Perform suctioning of the airway.		
	7)	Compare conventional and closed suction catheters.	16)	*Monitor, maintain, and troubleshoot suction equipment.		
	8)	Discuss protocols to prevent ventilator-associated pneumonia.	17)	*Select and apply the proper amount of humidification for artificial airways according to current clinical practice guidelines.		
h.	Lung Inflation and Bronchial Hygiene Therapy					
	1)	Describe the mechanism of normal mucus transport.	5)	*Select and implement bronchial hygiene therapy based on the patient's clinical condition.	8)	*Demonstrate empathy when treating patients with lung disease.

	2)	Describe bronchopulmonary hygiene procedures (e.g., vibratory PEP, IS, IPV, CPT, high-frequency chest wall oscillation).	6)	*Instruct a patient in the use of bronchopulmonary hygiene devices.		
	3)	Discuss the advantages and disadvantages of various airway clearance techniques.	7)	*Perform airway clearance and lung inflation therapy.		
	4)	Compare the following methods of sputum collection: a. assisted cough; b. induced sputum; c. tracheal aspiration; d. bronchoscopy; e. bronchoalveolar lavage; and, f. transtracheal aspiration.				
i.	Management of Mechanical Ventilation					
	1)	Discuss the indications for mechanical ventilation.	8)	*Prepare a mechanical ventilator for patient use.	18)	*Demonstrate sensitivity to the needs of the patient or his/her family.
	2)	Analyze the patient's cardiopulmonary status and select optimal ventilatory modes and settings.	9)	*Initiate and adjust mechanical ventilation settings.		
	3)	Discuss the indications for noninvasive ventilatory support.	10)	*Initiate PEEP/CPAP and various modes of mechanical ventilation		
	4)	Discuss strategies to minimize hypoxemia (e.g., patient position, suctioning, lung recruitment maneuvers).	11)	*Adjust or modify ventilatory settings based on clinical observations and assessment of oxygenation and ventilation studies.		
	5)	Explain the interdependence of the ventilatory settings.	12)	*Recognize and correct patient-ventilator desynchrony.		
	6)	Describe ventilatory settings adjustments that can be used to improve patient-ventilator synchrony.	13)	*Use wave-form analysis to improve ventilation and oxygenation.		
	7)	Discuss strategies used to liberate the patient from mechanical ventilation.	14)	Perform lung recruitment maneuvers.		
			15)	*Identify malfunctions of the patient ventilator system.		
			16)	*Evaluate a patient to prepare for liberation from mechanical ventilation.		
			17)	*Perform extubation.		
j.	Pediatrics and Neonatology					
	1)	Describe fetal lung development and impact of gestational age on extrauterine viability.	17)	Use the results of maternal and neonatal assessment to develop a respiratory care plan.	23)	*Use therapeutic communication when working with patients and families.

	2)	Discuss the role of surfactant in lung maturation.	18)	Evaluate a newborn and assign an APGAR score.		
	3)	Compare fetal circulation with adult circulation.	19)	*Select and apply respiratory equipment used to treat infants and children.		
	4)	Discuss how hypoxia in a neonate affects the pulmonary vasculature	20)	Initiate and modify mechanical ventilatory support for the neonate and pediatric patient.		
	5)	Explain the pathophysiology of cardiopulmonary diseases affecting the newborn and child.	21)	Obtain capillary and arterial blood samples to assess oxygenation and ventilation.		
	6)	Identify the signs and symptoms of cardiopulmonary disease affecting the newborn and child.	22)	Perform cardiopulmonary assessment of the a. pediatric patient b. neonatal patient		
	7)	Describe the pathological and clinical characteristics of neonatal respiratory distress syndrome.				
	8)	Discuss methods used to assess newborns (e.g., maternal history, factors impacting fetal development, gestational age, APGAR scoring).				
	9)	Discuss the use of pharmacologic agents, including exogenous surfactant and inhaled pulmonary vasodilators.				
	10)	Recognize the radiographic appearance of various cardiopulmonary diseases of the newborn and child.				
	11)	Discuss the treatment options for neonatal and pediatric cardiopulmonary disease, including oxygen therapy.				
	12)	Describe pediatric cardiopulmonary assessment.				
	13)	Describe methods used to monitor the neonate and pediatric patient.				
	14)	Identify and describe approaches to manage a patent airway.				
	15)	Identify and explain methods used to support oxygenation and ventilation in the neonate and pediatric patient.				
	16)	Discuss the indications, contraindications, and special equipment and techniques involved in applying				

		selected respiratory care modalities to infants and children.				
k.	Cardiopulmonary Resuscitation					
	1)	Describe conditions when each of the following may be used in patient care: a. BLS b. ACLS c. PALS d. NRP.	9)	Treat cardiopulmonary collapse according to the following protocols: a. BLS b. ACLS c. PALS d. NRP	12)	*Recognize how cultural or ethnic practices impact decisions to implement cardiopulmonary resuscitation or to accept life support.
	2)	Identify risk factors for sudden death.	10)	Assess a patient and select an appropriate airway.		
	3)	Explain techniques of basic life support for adults, children, and infants.	11)	Maintain effective ventilation using a manual resuscitator.		
	4)	Explain the chains of survival.				
	5)	Describe CABD sequence of applying basic life support.				
	6)	Explain patient care and support after resuscitation.				
	7)	Discuss ethical issues related to the implementation of CPR.				
	8)	Identify cardiac dysrhythmias that require ACLS and discuss the treatment.				
l.	Geriatrics					
	1)	Describe age-associated changes in pulmonary anatomy and physiology.	4)	*Perform cardiopulmonary assessment on geriatric patients.	6)	*Use therapeutic communication when working with aging patients and their caretaker(s)/family.
	2)	Discuss physical assessment of the aging patient.	5)	*Demonstrate monitoring and respiratory procedures for geriatric patients.		
	3)	Discuss adverse consequences of miscommunication with aging patients.				
m.	Evidence-Based Scientific Literature and Research					
	1)	Define evidence-based medicine and discuss its importance in respiratory care.	7)	Review peer-reviewed literature and identify evidence to support the practice of respiratory care.	8)	*Use sound judgment and clinical decision making to ensure safety and prevent errors.
	2)	Describe ways to identify valid sources of evidence.				
	3)	Describe the types of medical study reports.				
	4)	Explain the purpose of study design factors.				
	5)	Identify common errors when interpreting statistics used in research.				

	6)	Differentiate between a narrative review and a systematic review.			
n.	Use of Clinical Practice Guidelines				
	1)	Define evidenced based medicine.	4)	Within the context of a clinical case study implement the appropriate clinical practice guidelines.	5) Value the importance of evidence-based medicine.
	2)	Within the context of a clinical case study, identify the appropriate clinical practice guidelines.			
	3)	Use evidence-based medicine to evaluate the need for a diagnostic test and identify appropriate therapy.			
o.	Imaging Studies				
	1)	Describe the features on a normal chest radiograph, including the different projections and a systemic inspection.	5)	In the context of a case study, recommend a chest radiograph.	7) Observe safety practices and procedures when participating in imaging studies.
	2)	Explain the use of a chest radiograph in locating and quantifying abnormal air or fluid within the chest.	6)	*Use a chest radiograph to evaluate the placement of an endotracheal tube.	
	3)	Explain the use of a chest radiograph to verify proper positioning of <ul style="list-style-type: none"> a. catheters (monitoring, therapeutic) b. tubes c. other devices. 			
	4)	Explain the advantage of other imaging studies used to evaluate patients with cardiopulmonary disease (e.g., MRI, CT scan).			
p.	Survey of Polysomnographic Assessment				
	1)	Discuss the prevalence and pathogenesis of obstructive sleep apnea (OSA).	9)	Use the results of a sleep study to initiate and adjust CPAP or BiPAP.	10) Appreciate the impact of patient lifestyle on compliance with prescribed therapy.
	2)	Discuss the common approaches for diagnosis and treatment of sleep-disordered breathing in adults and children.			
	3)	Describe the clinical features of OSA.			
	4)	Describe the systemic effects of OSA.			
	5)	Define central sleep apnea (CSA).			
	6)	Compare OSA, CSA, and mixed apnea.			
	7)	Compare the advantages and disadvantages of various treatment strategies for OSA.			

	8)	Discuss the apnea/hypopnea index.			
q.	Tobacco Products and Smoking Cessation				
	1)	Describe the benefits of smoking cessation programs.	4)	Use patient assessment to recommend a smoking cessation program.	5) Recognize how cultural or ethnic practices impact decisions regarding the use of tobacco products.
	2)	Describe the pharmacological and nonpharmacological interventions for smoking cessation.			
	3)	Discuss the use of nicotine replacement therapy.			
r.	Patient and Care-Giver Education				
	1)	State the rationale for patient education in the practice of respiratory care.	6)	Identify and respond to factors that can adversely affect learner readiness.	9) *Appreciate factors that can affect learner readiness.
	2)	Discuss the evaluation phase of the patient education process.	7)	Create goals for patient education from the perspective of the patient and provider.	
	3)	Assess the patient's learning needs.	8)	Develop patient education plans that can be used for asthma education, pulmonary rehabilitation, or smoking cessation.	
	4)	Identify and explain various teaching strategies in patient education process.			
	5)	Explain the role of effective therapeutic communication, and the factors affecting the process of communication.			
s.	Health Promotion and Disease Prevention				
	1)	List and explain the basic principles of health promotion and disease prevention.	4)	Develop patient education plans that can be used for asthma education, pulmonary rehabilitation, or smoking cessation.	5) *Use therapeutic communication when working with patients and families.
	2)	Explain the development and implementation of disease prevention management programs.			
	3)	Describe the role of respiratory therapists in health promotion and disease management.			
t.	Cardiac and Pulmonary Rehabilitation				
	1)	Identify the goals of cardiac and pulmonary rehabilitation programs.	6)	Select and assure the proper function, operation and cleanliness of equipment used in cardiac and pulmonary rehabilitation.	8) *Use therapeutic communication when working with patients.
	2)	Describe the benefits of cardiac and pulmonary rehabilitation.	7)	Use therapeutic communication in cardiac and pulmonary rehabilitation.	9) *Work cooperatively with members of the rehabilitation team.
	3)	Describe therapeutic procedures that can be used to achieve long and short-term goals.			

	4)	Describe exercise assessment and the primary measurements obtained during exercise testing.				
	5)	Identify the team members who constitute a cardiac and pulmonary rehabilitation program and describe their roles.				
u.	Principles of Case Management					
	1)	Identify the stages of discharge planning.	7)	Complete forms required to order durable medical equipment and determine eligibility for insurance coverage.	10)	*Value the role of each member of the health care team during discharge planning.
	2)	Discuss the process of setting long and short-term goals.	8)	Establish long and short-term goals based on the patient's condition and prior treatment.		
	3)	Identify factors that contribute to the risk of readmission.	9)	Develop, implement, and document a respiratory care plan in a patient's chart.		
	4)	Identify common forms used in the discharge process.				
	5)	Discuss the importance of medication assistance.				
	6)	Discuss the rationale for root cause analysis and risk assessment.				
v.	Medical Record Documentation					
	1)	Describe how medical record documentation contributes to high-quality patient care.	5)	Identify the different sections of the record.	8)	*Show respect for confidentiality of the medical record.
	2)	Identify the CMS guidelines in ensuring the quality of medical record documentation.	6)	Enter data using a computerized patient care system.	9)	*Protect the integrity of the medical record.
	3)	Identify legal aspects of proper documentation.	7)	Amend or correct mistakes in a medical record.		
	4)	Discuss the importance of confidentiality and timeliness of data entry in the medical record.				
w.	Third Party Reimbursement					
	1)	Discuss third-party reimbursement, including: a. types of third-party plans; b. information required to file a claim; c. steps in filing a claim.	6)	Verify eligibility for services including documentation.	9)	*Interact professionally with third-party representatives.
	2)	Describe the processes used for eligibility verification, precertification, and preauthorization.	7)	Obtain precertification or preauthorization, including documentation	10)	*Display tactful behavior when communicating with medical

					providers regarding third party requirements.
	3)	Identify managed care requirements for patient referral.	8)	Complete an insurance claim form.	11) *Show sensitivity when communicating with patients regarding third party requirements.
	4)	Define a patient-centered medical home (PCMH)			
	5)	Discuss fraud and abuse.			
x.	Alternate Site Care				
	1)	Identify alternate care sites where respiratory care is administered.	5)	Conduct a home assessment to determine acceptable placement and safety.	9) *Recognize how cultural or ethnic practices impact the success of an alternate site placement.
	2)	Identify the roles of respiratory therapists at alternate care sites.	6)	Demonstrate the use of home care equipment, including mechanical ventilation and non-invasive technology.	
	3)	Explain patient-centered care and its effect on the delivery of respiratory care services.	7)	Demonstrate the use of in-home oxygen administration systems and identify key safety considerations.	
	4)	Differentiate between multi-competency and cross-training and discuss the importance of each to the respiratory care profession.	8)	Identify and correct equipment malfunctions.	
y.	Infection Control				
	1)	Define hospital acquired infection.	9)	*Demonstrate proper hand-washing techniques.	13) *Adhere conscientiously to required precautions.
	2)	Discuss different methods of transmitting infections.	10)	*Select PPE for various categories of precautions and isolations.	
	3)	Explain the importance of hand hygiene.	11)	*Demonstrate proper procedures for donning and doffing PPE.	
	4)	Define Standard Precautions.	12)	In the context of a case study, apply OSHA regulations and CDC guidelines.	
	5)	Discuss isolation procedures use to prevent transmission of infections.			
	6)	Identify personal protective equipment (PPE) used for specific barriers.			
	7)	Identify methods of disinfection and sterilization.			
	8)	Discuss biohazardous materials and physiologic samples, including how to dispose of them.			
z.	Disaster Response/Bioterrorism				

	1)	Discuss respiratory failure related to mass casualty.	5)	Demonstrate the role of a respiratory therapist in a mass casualty disaster.	7)	Perform within the scope of practice for the respiratory therapist.
	2)	List the most likely disaster scenarios that result in respiratory failure.	6)	Don and doff PPE equipment used for a disaster response.	8)	Demonstrate the ability to work within a team.
	3)	Discuss role of the respiratory therapist in a disaster.				
	4)	Describe the characteristics of devices required to provide ventilation in mass-casualty respiratory failure.				
aa.	Ethical and Legal Considerations in Respiratory Care					
	1)	Define ethics; Identify and describe the different theories and principles of ethics.	14)	Apply HIPAA rules regarding privacy and release of information.	17)	*Recognize the impact that personal ethics and morals have on the delivery of healthcare.
	2)	Differentiate between ethical and legal behavior.	15)	Apply patient's rights related to a. choice; b. consent; and, c. refusal of treatment.	18)	*Demonstrate respect for individual diversity including gender, race, age, religion, economic status and appearance.
	3)	Describe the role of ethics in respiratory care.	16)	Apply the principles of cultural competence in patient care.	19)	*Demonstrate professionalism when interacting with patients and their families, healthcare providers and other hospital staff.
	4)	Describe the elements of the Health Information Portability and Accountability Act of 1996 (HIPAA).				
	5)	Describe the relationship between professional obligations and patient rights.				
	6)	Identify the elements of the Patient Care Partnership established by the American Hospital Association.				
	7)	Differentiate between credentialing and licensure.				
	8)	Describe the value of credentialing and licensure as they relate to professional competence and the delivery of safe patient care.				
	9)	Identify and describe the professional organizations in respiratory care.				
	10)	Describe the importance of membership in professional organizations.				

11)	Explain the importance of effective and therapeutic communication in healthcare and the factors that affect it.				
12)	Define cultural competence and describe its importance in the practice of one's profession.				
13)	Identify common issues and problems that affect cultural barriers and how to address them.				