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New York State Department of Health
Bureau of Emergency Medical Services

EMT-Critical Care Standard Curriculum



Course Guide

April 2001

New York State Department of Health Bureau of Emergency Medical Services

EMT-Critical Care Technician Course Guide

Curriculum Goal and Approach

A curriculum is only one component of the educational process. Alone, it cannot assure competence of the students it was designed for. The goal of this curriculum is to be an integral part of an educational system that produces a competent entry level EMT-Critical Care Technician. For the purpose of this course guide, competence is defined relative to the Description of the Profession.

Description of the Profession

The first step in the design phase of the curriculum development process was to define the profession in terms of the general competencies and expectations of the EMT-Critical Care technician. The Description of the Profession was drafted and subsequently underwent extensive community and peer review. It was designed to be practical, visionary and dynamic as to not limit the growth and evolution of the profession. Ultimately it served as the guiding document for the curriculum development project. The Description of the Profession also provided the philosophical justification of the depth and breadth of coverage of material. The Description of the Profession for the EMT-Critical Care Technician is attached. (Appendix A)

Educational Model

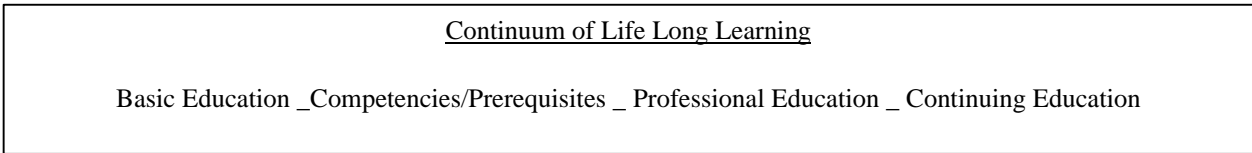
From the Description of the Profession, an educational model was developed to achieve the goals of the course. This educational model also went through extensive community and peer review, and is a graphical representation of the major components of the curriculum. The EMT-Critical Care Technician educational model was designed to be consistent with, and was built upon, the educational model for the EMT-Basic.

The educational model is not intended to imply a rigid order or to sequence the presentation of the material. Course planners and educators should adapt and modify the order and sequencing of the material to best meet their needs and those of their students.

The material in the preparatory module prepares the students for the rest of the course. Although there is no requirement to adhere to the order of the educational model, most educators agree that this information should be presented early in the course. Additionally, "Airway and Ventilation" and "Patient Assessment" are fundamental skills and knowledge areas of this curriculum and should be presented toward the beginning

of the course of study. In the educational model, the “Medical” and “Trauma” modules appear on either side of the “Patient Assessment” module. In general, it is assumed that most EMT-Critical Care course sponsors will cover this material after the “Preparatory,” “Airway,” and “Patient Assessment” material.

The Model is also designed to emphasize the role of continuing education as part of life long learning (fig. 1).



The New York State EMT-Critical Care Technician course is adapted from, and exceeds the standards of the US:DOT EMT-Intermediate: National Standard Curriculum (1998). A Diagram of Educational Model is attached. (Appendix B)

Competencies

EMT-Critical Care course sponsors often comment that the poor basic academic skills of students who enroll in their courses becomes problematic when attempting to teach many parts of the EMT-Critical Care Original course. Deficiencies in English and math skills are difficult to overcome during the course, this become most evident when teaching medical-legal, communication skills, documentation, and pharmacology math skills. It is not the purpose of professional education to teach basic skills. Rather, professional education must build on an existing base of academic competencies at the high school graduate level. The EMT-Critical Care curriculum assumes that the course applicants are competent in English and math prior to beginning the course.

Documentation skills rely heavily on spelling, grammar, vocabulary and syntax. If, through course evaluation, a course sponsor identifies less than satisfactory results in documentation skills, it should consider raising the prerequisite level of English competence. Similarly, if students in a course have difficulty with pharmacology math skills, it is suggested that the prerequisite level of math competence be increased, rather than attempting to remediate these basic skills within the context of EMT-Critical Care professional education.

Because of the variability in the roles and responsibilities of the Advanced EMT level technicians throughout the country, no Functional Job Analysis was conducted for this level of EMS provider. It is suggested, however, that EMT-Critical Care course sponsors assess each applicant’s basic academic skills prior to entry into an EMT-Critical Care Original course. If the competence of one or more applicants is below the minimum established level, those students should be encouraged to remediate the deficiency prior to pursuing EMT-Critical Care certification. If the course sponsor chooses to enroll students with less than acceptable basic academic skill levels, it is the

sponsor's responsibility to provide individual tutoring or increase the course time. A less attractive alternative is to provide concomitant remedial education, or require co-requisite course work to improve the applicants' basic academic skills prior to graduation.

Course Length

The emphasis of EMT-Critical Care technician education should be the competence of the graduate, not the amount of education that s/he receives. The time involved in educating an EMT-Critical Care technician to an acceptable level of competence depends on many variables. Based on the experience in the pilot and field testing of the EMT-Intermediate National Standard Curriculum (which is similar in many respects to the NYS EMT-Critical Care curriculum), it is expected that the "average" program, with "average" students, will achieve "average" results in approximately 300-400 total hours of instruction (175-225 classroom/practical laboratory, 50-75 clinical, 75-100 field internship). The length of the EMT-Critical care Original course will vary according to a number of factors, including, but not limited to:

- students' basic academic skills competence;
- faculty-to-student ratio;
- students' motivation levels;
- the students' prior emergency/health care experience;
- prior academic achievements of the students;
- clinical and academic resource availability and quality; and
- quality of the overall educational program.

The time listed in this document are meant only as a guide to help in course planning. EMT-Critical Care course sponsors **MUST** adjust these times based on their individual needs, goals and objectives. These times are only recommendations, and should **NOT** be interpreted as minimums or maximums. Those agencies responsible for oversight of EMT-Critical Care courses are cautioned against using these hours as a measure of course quality or having satisfied minimum standards. The competence of the graduate, not adherence to arbitrary time frames, is the only measure of course quality.

Prerequisites

Current EMT-Basic or EMT-Intermediate certification is the only prerequisite for the EMT-Critical Care original course. **Students must maintain New York State EMT-Basic or EMT-Intermediate certification throughout the duration of the course.**

Life-Long Learning/Continuing Education

Continuing education is an integral component of any professional education process and the EMT-Critical Care Technician must be committed to life-long learning. The EMT-Critical Care curriculum must fit within the context of a continuing professional education system. This is necessary due to the continually changing dynamics and evolution of medical knowledge base.

This curriculum is designed to provide the student with the essentials to serve as an entry level EMT-Critical Care Technician. It is recognized that enrichment and continuing education will be needed to achieve and maintain full competency. Employers and EMS operations chiefs are strongly encouraged to integrate new EMT-Critical Care graduates into service-specific orientation training programs using carefully selected technicians with desirable field experience to serve as mentors.

EMT-CRITICAL CARE EDUCATION

The continuing trend in professional education is to demonstrate, in quantitative ways, the value and quality of an educational program. Simply adhering to a set of standards is no longer adequate to convince the communities of interest that educational programs are satisfying their needs. Government, society, and professions are demanding that educational programs be held accountable for the quality of the product that they are producing. This section of the curriculum briefly describes critical components of, and the need for adherence to the EMT-Critical Care curriculum. By using this curriculum as a model for an EMT-Critical Care course, a course sponsor will be able deliver courses that objectively demonstrate their value and quality to the communities of interest.

Sponsorship

Conducting advanced courses is considerably more complex than those at the basic level. **It is the responsibility of the course sponsor to assure that all students in original advanced EMT courses possess a current New York State EMT certification that will be valid throughout the entire advanced EMT course.** This is important because the students who appear at clinical sites and participate in a field internship are not merely “observers.” They are participants in the care of injured and ill patients and are required to provide advanced procedures on actual patients under the supervision of a preceptor. Many advanced EMT course sponsors require students to carry either personal or ambulance service malpractice insurance. They also require the appropriate health physicals and inoculations that are consistent with the requirements of the clinical sites that participate in the students’ clinical education.

EMT-Critical Care education should take place in an academic environment. For the purposes of this course guide, an academic environment has services such as a library, student counseling (education, academic, psychological, career, crisis intervention), admissions, financial aid, learning skills centers, student health services, etc. Additionally, an academic environment offers such advantages as admissions screening, standardized student selection criteria, registrar, record keeping, bursar, student activities, a collegial environment, formal academic credit, remedial resources, and considerable institutional resources.

The financial resources of the course sponsor should be adequate for the continued operation of the educational program to ensure that each EMT-Critical Care course is sufficiently funded to permit the complete delivery of the course. The course budget

should reflect sound educational priorities including those related to the improvement of the educational process.

The admission of students should be made in accordance with the clearly defined and published practices of the course sponsor, the policies of the Department of Health and the rules and regulations of the State of New York. Specific academic, health related, and/or technical requirements for admission shall be clearly defined and published. The standards and /or prerequisites for admission must be made known to all potential applicants by the course sponsor.

Accurate information regarding program requirements, tuition and fees, institutional and program policies, procedures, and supportive services shall be available to all prospective students and provided to all enrolled students. There shall be a descriptive synopsis of the current curriculum on file and available to applicants and enrolled students. There shall be a statement of course objectives, copies of course outlines, class and laboratory schedules, clinical and field internship experience schedules, and teaching plans on file and available to anyone with a desire to review them.

Student and faculty recruitment, student admission, and faculty employment practices shall be non-discriminatory with respect to race, color, creed, sex, age, disabling conditions, and national origin. The course sponsor and the sponsoring institution should have a defined and published policy and procedure for processing student and faculty grievances.

Policies and processes for students who withdraw from a course, and for refunds of tuition and fees, shall be set by the course sponsor and published and made known to all applicants. Policies for clinical and field internships must be published and made known to all concerned in order to avoid practices in which students are substituted for regular staff.

The course sponsor shall maintain student records for student admissions, attendance, academic counseling and evaluation. Grades and credits for courses shall be recorded and permanently maintained by the course sponsor.

Program Planning/Communities of Interest

As with all professional education, it is critically important that EMT-Critical Care education courses are planned, executed and evaluated according to a continuous quality improvement model. Only through a thorough assessment of the needs of the community, the development of goals to meet those needs, and course evaluation relative to those goals, will course sponsors be able to demonstrate the quality and value of their courses.

Every successful professional education program is designed and conducted to serve a number of communities of interest. Typically, the communities of interest include directors, managers, and medical directors who hire or supervise graduates and most

importantly, the patient. Other communities of interest might include: colleagues, governmental officials, hospital administrators and insurance companies. For an EMT-Critical Care course, it is incumbent on the course sponsor's administrators and medical director to identify who is being served by the program, and adapt the program to best meet those needs. The course goal statement should help to clarify the communities that the course serves. Although students are the consumer of the educational program, the graduates are not the consumer of the educational product. Ultimately, the program serves the patient's of the graduates, not the graduates themselves.

As part of the educational planning process, the course sponsor should regularly assess the needs of the communities of interest, and establish objectives that best serve them. One way to survey the communities of interest is to establish an advisory board consisting of representatives from the various communities of interest and regularly survey them as to their expectations of entry level EMT-Critical Care Technicians. The course sponsor would use this information for ongoing course planning. Specifically, the course sponsor should use this information to clarify how to achieve its course goals and objectives.

Course Goal

Each EMT-Critical Care course should have a course goal. The course goal is a statement of the desired outcome of the course, and typically references graduating competent entry-level providers. By design, course goals are broad-based, but establish the parameters by which the effectiveness of the course will be evaluated. A program may have multiple goals, but most sponsors use one for clarity. For example, a typical course's goal statement might read:

The goal of the ABC EMT-Critical Care Original course is to produce competent, entry-level EMT-Critical Care technicians to serve in career and volunteer positions in XYZ county.

If the course sponsor provides additional training that is clearly not within the definition of an entry-level practitioner, then additional information should be included in the goal. Education planning should be based on the course goal, the mission of the sponsoring institution, and the expectations of the communities of interest. The goal should be made known to all members of the communities of interest, especially the students and faculty.

The course goal will be used to select the appropriate faculty, curricular materials, clinical experiences, and many other aspects of course planning.

Course Objectives

Objectives are more specific statements of the outcomes of the course. They are derived from the course goal in consultation with the communities of interest. The course sponsor can establish as many objectives as it deems appropriate to accurately

reflect the course goal. Often, course sponsors find it useful to establish objective along the three domains of learning. Examples might include:

Course Cognitive Objective:

At the completion of the program, the graduate of the ABC EMT-Critical Care Original course will demonstrate the ability to comprehend, apply, and evaluate the clinical information relative to his/her role as an entry-level EMT-Critical Care technician to a minimum of 75% on a comprehensive written examination.

Course Psychomotor Objective:

At the completion of the EMT-Critical Care Original course, the student will demonstrate technical proficiency in all skills necessary to fulfil the role of an entry-level EMT-Critical Care by achieving a passing score on the New York State EMT-Critical Care Practical Skills Examination.

Course Affective Objective:

At the completion of the EMT-Critical Care Original course, the student will demonstrate personal behaviors and values consistent with the expectations of the communities of interest for an entry-level EMT-Critical Care technician.

Goals and objectives must be consistent with the needs of the communities of interest. There may be some goals that are important institutional goals that are not useful program goals, e.g. an overall profit margin of 10%. The only goals that are considered program goals are those that relate specifically to the competencies attained by the students enrolled in the program.

Use of the Goals and Objectives in Course Evaluation

Course goals and objectives form the basis for course assessment. Once the goals and objectives are established, they serve as a mechanism to evaluate the effectiveness of the course. By utilizing a variety of evaluation methodologies (performance of graduates on certification exams, graduate surveys, employer surveys, medical director surveys, patient surveys) course sponsors can evaluate their effectiveness at achieving each objective. For example: if graduates consistently perform poorly on the cardiac section of certification exams, and graduates, employers, and medical directors all state that students are weak in cardiology, the course sponsor should critically evaluate this section of its curriculum. This is especially important if experienced EMT-Critical Care technicians in the same EMS system perform the same skills at an acceptable level. Investigators should use caution to consider other EMS system components prior to placing responsibility for performance with the training course. **Training should not be used as the “whipping boy” for all performance problems.**

Course sponsors are encouraged to evaluate each objective in as many ways as possible. For example, graduate cognitive skills could be evaluated by performance on standardized tests, certification exams, graduate surveys, employer surveys, and medical director surveys. This provides significantly more information than using one source of data.

Course Design

The EMT-Critical Care course should consist of four components of instruction: didactic instruction, psychomotor skills laboratory, clinical education, and field internship. The first three typically occur concurrently, while the field internship serves as a verification that the student is capable of serving as a competent, entry-level practitioner.

Didactic Instruction

The didactic instruction primarily represents the delivery of cognitive material. Although this material is often delivered by the lecture method, instructors are strongly encouraged to utilize alternate delivery methods (video, discussion, demonstration, simulation, etc.) as an adjunct to traditional classroom instruction. The continued development and increased sophistication of computer-aided instruction offers many options for the creative instructor. It is not the responsibility of the faculty to cover all of the material in a purely didactic format. It is the responsibility of the course instructor/coordinator, however, to assure that all students successfully learn the material identified by the declarative section of the curriculum.

Psychomotor Skills Laboratory

The psychomotor skills laboratory is the section of the curriculum that provides the student with opportunities to develop the practical skills of an EMT-Critical Care technician. The skills laboratory should be integrated into the course in such a way as to present the skills in a sequential, building-block fashion. Skills are typically taught in isolation. Later in the course, when an acceptable level of rote skill development has been achieved skill sets may be integrated through simulated patient care scenarios. Toward the latter part of the course, the skills lab should be used to present instructional scenarios to emphasize the application and integration of didactic learning and psychomotor skills development into patient management.

Clinical Education

Clinical education represents the most important component of EMT-Critical Care education since this is where the student learns to synthesize cognitive and psychomotor skills. To be effective, clinical education should integrate and reinforce the didactic, affective and skills laboratory components of the program in a professional manner. Clinical instruction should follow sound educational principles, be logically sequenced to proceed from simple to complex tasks, have specific objectives, and be closely supervised, evaluated and documented. Students should not simply be sent to

clinical environments with poorly planned activities and be expected to benefit from the experience.

The ability to serve in the capacity of an entry-level EMT-Critical Care technician requires experience with actual patients in both controlled and uncontrolled environments. This process enables a student to build a database of patient experiences that serves to help in clinical decision making and pathological pattern recognition. A skilled clinical educator must point out pertinent physical findings and focus the beginner's attention on what is most important to the patient.

Course sponsors should be cautioned against using clock hours as the only criteria to determine the quantity of clinical education. More than in any other phase of EMT-Critical Care education, minimum amounts of patient contact and the frequency of skills performed must be established for clinical education. While it is acceptable to use a time-based system to help in course planning, a system must be used to assure that every student satisfies each and every clinical objective.

Typically, clinical education for the EMT-Critical Care Technician takes place in both the in-hospital and out-of-hospital environments.

Hospital Clinical - Because of the unpredictable nature of emergency medicine, the in-hospital environment offers three advantages in EMT-Critical Care education: volume, specificity and a controlled environment. In the hospital setting, the EMT-Critical Care student can see many more patients than is possible in the field. This is a very important component in the building of a "library" of patient care experiences to draw upon during clinical decision making.

The use of multiple departments within the hospital enables the student to see an adequate distribution of patient situations. In addition to emergency departments, which most closely approximate the types of patients that EMT-Critical Care Technicians typically see in their practice, clinical education should also take advantage of critical care units, OB/GYN, operating rooms/anesthesia, recovery, pediatrics, psychiatric, etc. This will help assure a variety of patient presentations and complaint categories. They also provide a more holistic view of health care and an appreciation for the care that the students' patients will receive throughout their recovery. These experiences help to place emergency medical care within the context of the total care the patient will receive.

EMT-Critical Care level programs throughout the country have created clinical learning experiences in many environments other than the hospital. There is application of emergency medical care in almost any patient care setting. When a particular course location lacks access to desired patient populations, some course sponsors have created innovative solutions. Course sponsors are encouraged to be creative and seek out clinical learning experiences in a variety of settings other than hospitals. Examples include: morgues, hospices, nursing

homes, primary care settings, doctor's offices, clinics, laboratories, pharmacies, day care centers, well baby clinics, and community and public health centers.

Field Clinical - It is unreasonable to expect students to derive benefit from simply being placed into a field training environment without any structure or oversight. Field clinical assignments represent the phase of instruction where the student learns how to apply cognitive knowledge, psychomotor skills developed in the skills laboratory, and hospital clinical education to the out-of-hospital EMS environment. In most cases, field clinical should be conducted concurrently with didactic and hospital clinical education.

Field instruction, as well as hospital clinical, should follow a logical progression. In general, students should progress from observer to participant to team leader. The amount of time that a student will have to spend in each phase will be variable and depend on many individual factors. One of the most significant factors will be the amount and quality of previous emergency medical care experience. With the trend toward less EMT-Basic experience prior to EMT-Critical Care education, course sponsors may find it necessary to adjust the amount of required field experience to the experience level of the students.

Clinical affiliations shall be established and confirmed in written affiliation agreements between course sponsors and clinical sites and must be conducted under appropriate medical direction and supervision. Students should have access to patients who present with common problems encountered in the delivery of advanced emergency medical care. Supervision should be provided by instructors or preceptors selected by the course sponsor's administrators and designated by the clinical site management. The clinical site should be evaluated periodically with respect to its continued appropriateness and efficacy in meeting the objectives of the course. Whenever possible, clinical affiliates (sites) should be accredited by the Joint Commission on Accreditation of Healthcare Organizations.

Field Internship (Summative Evaluation)

The final process of integrating all of the didactic, psychomotor skills, and clinical instruction into the ability to serve as an entry level EMT-Critical Care technician is conducted during the field internship phase of the course. **The field internship is not an instructional process, but an evaluative phase of the course.** The field internship should occur toward the end of the program, with enough of the internship occurring after the completion of all other instruction. This will help to assure that the student is able to serve as an entry level EMT-Critical Care. During the field internship the student must be under the close supervision of an evaluator approved by the course sponsor.

The field internship must occur within an emergency medical service system that demonstrates medical accountability. Medical accountability exists when there is visible evidence that EMS providers are properly credentialed by the medical authority having

jurisdiction. Moreover, interns must not operate as independent practitioners. EMS field personnel participating in field internships must be under the direct medical control of on-line physicians who practice within a system utilizing standing orders, and with timely medical audit and review to provide an opportunity for quality improvement.

Quality improvement is also a required component of EMT-Critical Care training. The role of medical direction is paramount in assuring the provision of the highest quality out-of-hospital emergency medical care. Course medical directors should work with individual students and committees to review out-of-hospital cases and strive to help students achieve a sound understanding of the continuous quality improvement process. During the field internship, the intern should participate as an active participant in an EMS quality improvement program.

Student Assessment

Any educational program must include several methods for assessing student achievement. Assessment of the cognitive and psychomotor domains should be provided on a regular basis. They should occur frequently enough to provide the students and the faculty with valid and timely indicators of the students' progress toward and the achievement of the competencies and objectives stated in the curriculum. Ultimately, the course sponsor is responsible for the design, development, administration and grading of all written and practical assessments. This task, however, is often delegated to persons not actively involved in the education of EMS students. Some EMS educational programs use an outside agency that develops or professionally publishes assessment and evaluation instruments. This does not relieve the course sponsor from the responsibility to assure the appropriateness of these assessment materials. All written examinations used within the course must be valid and reliable. They must also conform to currently accepted psychometric standards. EMS educational programs without the internal expertise to develop and/or validate their own assessment instruments are encouraged to use outside sources to validate examinations and/or as a source of classroom examination items.

The primary purpose of the EMT-Critical Care course is to meet the entry-level job expectations as indicated in the Description of the Profession. Each student, therefore, must demonstrate that s/he has attained the knowledge, attitude, and skills that are described in the objectives in each division of the course curriculum. There must be a shared responsibility among the course sponsor's administrator, the course instructor/coordinator, the course medical director, and the faculty to assure that students develop proficiency in all course content areas. Every reasonable attempt should be made to help each student achieve his/her educational goals. If however, after counseling and remediation, a student is unable to demonstrate the ability to learn specific knowledge, attitudes and skills, the instructor/coordinator should not hesitate to dismiss the student. The level of knowledge, attitudes and skills attained by a student in the course will be reflected in his/her performance on the job as an EMT-Critical Care. This is ultimately a reflection on the course sponsor, the instructor/coordinator, the medical director and the faculty. The course administrators must assure that each

student's performance is assessed on a continual basis. It is not the responsibility of the New York State Certifying Examination to assure competency and successful completion of the course. Instructor/coordinators should only recommend to the course medical director qualified candidates for certification.

Requirements for successful completion of the course are as follows:

Cognitive - Students must demonstrate competency of all content areas of the curriculum. This is most often accomplished using quizzes, regular topical exams, and some combination of comprehensive written exams (mid terms and finals). Cognitive evaluations must be valid and reliable. Programs should use psychometric principles when developing items for written examinations. For example, item analysis should be utilized to assure discrimination of discreet information on achievement tests. Scores on tests known to be valid and reliable should be correlated to instructor-made examinations. The medical director should provide content validity of all examinations by taking each exam and/or quiz. Examinations should be balanced to the various areas within the course and should be reflected on an exam blueprint. Pass/fail scores should be established with an understanding of standard setting. Decisions regarding the continuation of deficient students must be made following a pattern of unacceptable performance. One examination failure (with the exception of the final course exam) should not result in a student's dismissal from the course. Grading practices should be standardized to prevent bias by the instructional staff. Essay and open-ended questions should be clearly written and acceptable answers should be written on an answer key before the examination is administered. Exams must be kept secure and reviewed by students only during class time. Course administrators should investigate methods to administer and score exams electronically. Scoring of exams should be in accordance with accepted practices.

Affective - Students must demonstrate professionalism, conscientiousness and interest in learning the material contained in the course curriculum. The affective evaluation instruments contained within this curriculum (Appendix D) were developed using an accepted process; their use is strongly recommended. Just as with cognitive material, a course sponsor cannot hold a student responsible for professional behaviors unless the objectives were provided and the material was presented in manner that used the instructional staff as positive role models. The professional attributes that are evaluated using the above-mentioned evaluation instruments reference the material contained in the "Roles and Responsibilities" section of the EMT-Critical Care curriculum. These instruments can be incorporated into all four components of the program: didactic, practical laboratory, clinical and field internship. Students who fail to develop the professional attitudes expected of an EMT-Critical Care

technician should be counseled while the course is in progress in order to provide them with an opportunity to remediate this deficiency.

Psychomotor - Students must demonstrate proficiency in all psychomotor skills. A complete list of skill competencies that students are expected to complete within the EMT-Critical Care course should be available to each student at the beginning of the course. Students should know the pass/fail score of any assessment instrument utilized within the course. Whenever possible, multiple skills evaluators should evaluate and document the same performance of a student. Patient care scenarios should be medically accurate and progress as they would during a typical EMS call. In the hospital clinical and field internship settings all instructional staff must be familiar with the psychomotor skills of an EMT-Critical Care technician and the assessment instruments used by the course sponsor. The reliability of the assessment instruments used by various instructional staff must be monitored by the course sponsor. Clinical and field instructional and evaluation staff orientations help to resolve issues of inter-rater reliability.

Course summative skills examinations should be administered when all instruction has been completed. When required, special psychomotor skills remedial sessions may be utilized to assist in assuring that all students have successfully acquired the skills contained in a unit or module of instruction. Pass/fail scores should be in accordance with accepted and published practices. It is strongly recommended that program utilize the skills evaluation instruments provided with this curriculum. (Appendix E)

Students should be evaluated in all three domains during didactic presentations, practical skills laboratories, clinical education sessions and the field internship. For example, the students' cognitive knowledge can be evaluated in the clinical setting by direct questioning or discussions. Additionally, if an IV is started on a patient, the psychomotor skill associated with this procedure should be evaluated. Finally, for the affective domain, the students' professional behavior attributes can be assessed. This example of multi-domain assessment also applies to practical skills laboratories. In the skills lab, the cognitive domain can be measured by asking questions about the skill, and the affective domain can be measured by the students' attitude in learning and practicing the skills being performed. Care should be taken not to interrupt the skill performance with excessive questioning.

Course Personnel

There are typically many individuals involved in the planning and delivery of an EMT-Critical Care course. For clarity, the following terms are defined as they will be used throughout this document.

These identified roles and responsibilities are a necessary part of each EMT-Critical Care course. The individuals who perform them may vary from one course sponsor to another and from course to another as the specific roles and responsibilities may interface and overlap. In fact, one person, if qualified, may serve in multiple roles within the same course.

Course Sponsor Administrator

The administrator has the overall responsibility for the administrative and fiscal aspects of the training program. This person does not need to be EMS qualified or have a clinical background since s/he is rarely involved in actual instruction. The sponsor's administrator is the designated liaison between the sponsoring agency, faculty, students, and the Department of Health (DOH).

Typical course sponsor administrator duties include:

- Securing adequate teaching facilities for the course.
- Timely submission of paperwork described in the Policy and Procedure manual for EMS Educational Programs.
- Liaison between faculty, students, sponsoring agency, and DOH.
- Attends quarterly informational meetings with the DOH EMS field rep.
- Running the courses within the established budget.
- Accounting for all receipts and expenditures for the course and ensuring that the faculty get paid in a timely manner.
- Ordering equipment, supplies and maintaining inventory.
- Assure that the I/C and sponsorship complete their duties as spelled out in the learning contract.
- Adhering to the requirements of the sponsor's agreement and DOH policies.
- Keeping the faculty informed about new policies issued by DOH.

Certified Instructor/Coordinator (CIC)

The CIC is the person with the overall responsibility for the academic integrity of the course and the selection of the course faculty. The CIC must be knowledgeable in many aspects of prehospital care and certified at the level of the course being conducted or higher. The CIC needs to be clinically competent and field active to maintain credibility with the students. The CIC must be present during all course sessions to ensure the program continuity and that course objectives are met. The CIC is an employee of the sponsor and accountable to the sponsor's administrator.

Typical duties of the CIC include:

- Providing a liaison between the students, the course sponsor, the local medical community and DOH.
- Conducting courses in compliance with the state-published curriculum, policies and procedures as they appear in the Policy and Procedure manual for EMS Educational Programs or updates
- Ensuring that all learning and skill objectives are presented and met.
- Selecting faculty to teach the course and orienting them to the curriculum objectives.
- Administering the entire interim skills and didactic examinations. Assisting the DOH proctor, if needed, with verifying identification of students at the written examination.
- Being present at all class sessions, including final written exam, to take attendance, counsel students, provide feedback to students on their performance throughout the course, and assure that each student completes his/her commitment spelled out in the learning contract.
- Assure that each student receives the New York State EMS Student Reference Manual and the policies of the sponsor.
- Prepares required course paperwork in a timely manner.
- Prepares the interim exams with the review of the course medical director.

Program Director

The program director is the individual with the responsibility for course planning, organization, administration, periodic review, program evaluation, continued development, quality improvement and overall educational effectiveness. The program should have a full-time program director while the program is in progress, whose primary responsibility is the quality of the educational process. The program director must contribute an adequate amount of time to assure the success of each course conducted by the sponsor. The program director shall actively solicit and promote the cooperative involvement of the course medical director of record.

The program director must have appropriate education, training and experience to fulfill the role. They should have at least equivalent academic training and preparation and hold all credentials for which the students are being prepared, or hold comparable credentials which demonstrate at least equivalent training and experience.

The program director should have training and education in the processes of education and its assessment. The program director must also be knowledgeable in the administration of EMT-Critical Care educational programs and the related legislative and regulatory issues. The program director assumes the ultimate responsibility for the administration of the didactic, clinical, and field internship phases of the course. It is the program director's responsibility to monitor all phases of the course and assure that they are appropriate and successful.

Course Faculty

The depth and breadth of EMT-Critical Care education has evolved through the years and expanded considerably from the early days of out-of-hospital emergency medicine. It is no longer reasonable to assume that one individual possesses the required depth of knowledge to be able to present the entire program. As a result the course sponsor's administrator and/or course instructor/coordinator should use content area experts extensively through the program.

Course Medical Director

The ALS course sponsor must employ or contract with a course medical director. In an advanced EMT course the course medical director plays a very important role and, therefore, must be familiar with prehospital care and EMS education. This is not just a physician who is "willing to sign off!" Besides assuring the medical accuracy of the information being taught to the students, the course medical director needs to review the exams, authorize the preceptors to supervise interns and students in clinical setting, review agreements with clinical and preceptor sites, assist the course CIC as needed with counseling students, teach some segments of the course, assist in the practical skills exam and other duties depending on the specific course sponsor. **The most important role of the course medical director in an original EMT-I, EMT-CC or EMT-P course is to certify to the New York State Department of Health that each individual student has fulfilled all course requirements and is ready to sit for the state certifying ALS practical skills exam.**

The medical direction of the EMT-Critical Care Original course is an essential component of course planning and delivery. Physician involvement should be in place for all phases of the course. The course medical director of an EMT-Critical Care course should be a local physician with experience in emergency medicine who will serve as the ultimate medical authority regarding course content, procedures, and protocols. The course administrative personnel and faculty must work closely with the medical director during the preparation and presentation of the course.

The course medical director can assist in recruiting other qualified physicians to present didactic materials in class, answer questions of medical protocol and serve as liaisons between the students and faculty of a course and the medical community. During the duration of the course the medical director will be responsible for reviewing the quality of care rendered by the EMT-Critical Care student in the clinical and field environments. The course medical director should review all course content material, evaluation instruments and examinations for medical accuracy. The course medical director should periodically observe lectures and practical laboratories, field and clinical internships. The medical director should participate in clinical instruction, student counseling, psychomotor and oral examinations, and summative evaluation.

Most importantly, the course medical director is responsible for the verification of student competence in the cognitive, affective and psychomotor domains. A student should not be awarded course completion certificates unless the medical director and course instructor/coordinator can assure that, through documented completion of all

terminal competencies, each student has completed the full complement of education. Documentation of EMT-Critical Care competencies should be affixed to the individual student files with the signatures of the medical director and the instructor/coordinator at the completion of the course and prior to the student's entry to the New York State Practical Skills Exam.

Clinical/Internship Preceptor

The preceptor guides the student through the clinical and internship portions of the course. Sometimes students just do not know exactly what to pay attention to or they need instant feedback on their clinical performance. The preceptor should be a person with a mastery level of clinical skills who is clinically active and competent and very familiar with the objectives of the course. They must also have knowledge of the clinical objectives that must be mastered by the students. The preceptors must be selected by the course medical director and must be oriented prior to serving in the role of preceptor. The preceptor is an employee of the course sponsor and accountable to the CIC. It is not uncommon for preceptors to be nurses in the clinical setting who are working in their role in the emergency department and also receiving financial incentive to complete evaluations of students assigned to their facility.

Course Evaluation

On-going course evaluation must be initiated to identify instructional or organizational deficiencies that affect student performance. The evaluation process should include both objective and subjective methods. The primary methods of objective evaluation are: 1) graduates' performance on standardized examinations, and 2) graduates' performance in their practice as EMT-Critical Care Technicians in accordance with established standards of care and the Description of the Profession. Group and individual deficiencies may indicate problems in planning and conducting the course.

Subjective evaluation should be conducted at regular intervals by providing students with written surveys on their opinions of the course's strengths and weaknesses. Students should be given the opportunity to comment on the instruction, instructional presentation style and overall effectiveness of the course as it relates to their personal educational goals and expectations of the EMT-Critical Care course. Students should also be asked to comment on the course's compliance with the specified course of instruction, the quality and quantity of psychomotor skills labs, clinical rotations, and the validity of the assessment instruments and examinations.

The purpose of this evaluation process is to strengthen future educational efforts. All information obtained from the subjective evaluation should be reviewed for legitimacy and possible implementation in successive courses. Due to the important nature of an EMT-Critical Care Original course, every effort should be made to ensure consistent high quality instruction.

Facilities

The physical environment for the delivery of the EMT-Critical Care course is a critical component of the overall success of the course. The instructional facility should contain sufficient space to seat all students comfortably. Adequate space should be made available for demonstration during the presentation of the course material. Additional rooms or adequate space should be available to serve as a skills practice area. The facility should be well lighted for adequate viewing of various types of visual aids and demonstrations. Heating and ventilation systems should assure student and instructor comfort and the seats should be comfortable with availability of desk tops or tables for taking notes and exams. There should be a suitable number of tables for the display of equipment, medical supplies, and training aids. A chalkboard (flip chart, dry marker board) should be in the main lecture room. A projection screen and appropriate audio-visual equipment should be located in the primary presentation room. Skill practice areas should be carpeted and large enough to accommodate six students, one instructor, and the necessary equipment and medical supplies. Tables should be available in the practice areas, with appropriate and sufficient equipment and medical supplies.

Equipment and Supplies

Sufficient quantities of supplies and equipment used in the delivery of instruction shall be available, consistent with the needs of the curriculum, and adequate for the number of students enrolled. The equipment must be in proper working order and appropriate for the demonstration of practical skills for patients in various age groups. It is recommended that all the required equipment for the course be stored at the instructional facility to assure the availability of its use.

HOW TO USE THE CURRICULUM

There are seven modules of instruction in the core content. There are thirty-one (31) units within the seven (7) modules. Each section has the following components:

Unit Terminal Objective

The unit terminal objective represents the desired student outcome at the completion of a block of instruction. This global objective represents the desired competency following completion of a unit of instruction. Although this objective may be viewed as the aggregate of a number of lower level objectives, in many cases the whole is greater than the sum of the parts. Therefore, integration of the individual unit objectives is essential for successful completion of the unit.

Objectives

These are the individual objectives of the curriculum. Mastery of each of these objectives provides the foundation for the higher order learning that is expected of the entry-level EMT-Critical Care technician. The faculty and students should strive to understand the complex interrelationships between the objectives. These objectives are not discrete, disconnected bits of knowledge. Rather, they fit together collectively in a mosaic that is inherently interdependent. The objectives are classified in three categories: Cognitive, Affective, and Psychomotor.

Cognitive

mental process--
perception
reasoning
intuition

Affective

emotional process--
feelings
attitudes

Psychomotor

physical process--
muscular activity
kinesthesia

To assist with the design and development of a specific unit, each objective is identified by a number, e.g., 3-2.1. The first number is the module of instruction, followed by a hyphen and the number of the specific unit. For example, 3-2.1 is:

Module 3:	Patient Assessment
Unit 3-2:	Techniques of Physical Examination
Objective 3-2.1	Describe the techniques of inspection, palpation, percussion, and auscultation. (C-1)

At the end of each objective is a letter for the type of objective:

C = Cognitive; A = Affective; and P = Psychomotor. (The example above is cognitive).

The number following the type of objective represents the level of objective:

1 = Knowledge; 2 = Application; and 3 = Problem Solving. (The example above is knowledge).

Declarative

This material is designed to provide course planners and faculty with clarification on the depth and breadth of material expected of the entry level EMT-Critical Care. **The curriculum's declarative material is not all-inclusive. The declarative section of the curriculum lacks much of the specific course information that must be added by the faculty.** The declarative information represents the bare minimum that should be covered. Therefore, the faculty must elaborate on the material in the outline. Every attempt has been made in the development of the declarative material to avoid specific treatment protocols, drug dosages or other material that changes over time and has regional variation. It is the responsibility of the faculty to provide this specific information.

Specifically, the declarative material is used to help the faculty develop lesson plans and instructional strategies. It is also designed to assist examination developers and instructional media publishers in developing appropriate evaluation and instructional support materials. **It is of utmost importance to note that the declarative material is not designed to be used as a lesson plan, but rather it should be used by the faculty to help develop their own lesson plans.**

Some higher level objectives (C-2 and C-3) do not have specific corresponding declarative material. These higher level objectives are included to help the faculty understand the appropriate depth of coverage. The prudent instructor will use both the objectives and declarative material to develop individual lesson plans and learning activities that support the terminal objectives at the EMT-Critical Care level.

Objectives and declarative material identified by **bold underlined** text is enhanced material added to the U.S. DOT EMT-Intermediate curriculum for use in New York State. This material may not be adequately covered in all EMT-Intermediate level textbooks.

Clinical Rotations

The clinical rotations that appear in the EMT-Critical Care curriculum represent a stark departure from previous clinical education recommendations. In the past, clinical competence was determined simply by the number of hours spent in various clinical environments. As there is no assurance that time produces an adequate number of clinical exposures resulting in entry level clinical competence, a different approach was taken with this version of the curriculum.

In the list of clinical objectives, items presented by **bold** text are those considered essential and, therefore, must be completed by each student enrolled in the course.

Items represented by underlined text are recommendations that, when completed, achieve an optimal level of clinical experience.

The required clinical patient exposures cover a wide range of skills, pathologies, complaints and ages and they may be achieved in either the clinical rotation or field internship setting. For example, a student may demonstrate the ability to perform a comprehensive assessment, and formulate and implement a treatment plan for patients with chest pain in either a hospital critical care unit or during an encounter in the field internship. If the patient in this example was not experiencing chest pain at the time the student evaluated the patient, but had experienced chest pain that resulted in admission to the critical care unit, interaction with this patient would satisfy the clinical rotation for one chest pain patient encounter. During this supervised experience the student would complete a physical examination, a history based upon the initial and present condition of the patient and the formulation of a treatment plan for the patient based upon initial field or admission findings. This same principle of encountering patients who have identified pathologies or complaints within the past 48 hours will suffice for meeting the clinical rotation requirement.

Some patient encounter categories may be counted more than once. For example, if a student in the field internship setting encountered a 68-year-old patient with chest pain and started an IV, the student would obtain credit for a complaint category, an age group and a skill. The chest pain assessment, established IV, and treatment and implementation plan must be evaluated and the patient age group credit must be documented. Encounters without supervised evaluation and documentation should not be awarded credit.

Ideally, the most desirable educational experience will occur in a field internship setting that most closely approximates the Description of the Profession. Recognizing that an extensive amount of time in the field internship component would be necessary to see the recommend variety of patient conditions and skills, the curriculum permits students to obtain these experiences during either hospital clinical education or field internship. Team leader skills, however, cannot be satisfied during hospital rotations.

Additionally, a student will only obtain credit for one patient for each encounter. If, for example, a patient has both chest pain and a syncopal episode, the student can utilize this experience for either a chest pain patient or a syncope patient, but not for both. The course sponsor must develop a clinical patient tracking system in order to assure that each student encounters the recommended number of skills, age groups, pathologies, complaints and team leader skills.

The course sponsor, in cooperation with the communities of interest, should use feedback loops that are part of the course evaluation process to either increase or decrease the number of patient exposures based upon valid measurement instruments utilized in after-graduation surveys. If employers or graduates indicate the need for increased patient encounters in order to bring current students to the desired level of competency, then the program should increase the number of encounters to satisfy this

need. Likewise, if graduates and employers indicate some clinical rotations provided more than experience than is needed, the program administrators may reduce the number of patient encounters within the identified category.

The course sponsor, the course medical director or a community of interest may recommend the addition of different encounters in order to meet identified community needs. For example, if a course is located in an area with a large geriatric population, the program may increase the number of encounters with geriatric patients to correspond to an actual need identified by one of the above-mentioned persons or entities.

EDUCATING PROFESSIONALS

It has long been recognized that EMT-Critical Care Technicians, as integral members of the health care team, are health care professionals. As such, the education of EMT-Critical Care Technicians should follow a professional, rather than purely technical, model of instruction. Employers and patients are significantly increasing their expectations of EMT-Critical Care Technicians. To meet these expectations in the future, the formal EMS educational system will have to respond through a more dynamic curriculum revision process.

In Responsive Professional Education, Stark, Lowther, and Hagerty (1986) propose that professional education is a combination of developing both professional competence and professional attitudes.

Historically, most EMS education has focused primarily on technical competence of the individual provider. Technical competence, however, is only one component of professional competence. Professional competence includes six subcategories:

Conceptual competence - Understanding the theoretical foundations of the profession

Technical competence - Ability to perform tasks required of the profession

Interpersonal competence - Ability to use written and oral communications effectively

Contextual competence - Understanding the societal context (environment) in which the profession is practiced

Integrative competence - Ability to meld theory and technical skills in actual practice

Adaptive competence - Ability to anticipate and accommodate changes (e.g. technological changes) important to the profession.

The main areas of focus of the National Standard Curriculum are on conceptual and technical competence. This revision of the EMT-Critical Care curriculum is the first to address the strategies of interpersonal and therapeutic communication. Unfortunately, conceptual, technical, and interpersonal competencies are only part of the competencies required for “reflective” practice.

It is incumbent on the EMT-Critical Care course administrators to keep contextual, integrative and adaptive competence in mind throughout the entire course not just at its end. These are not discreet topic areas and they do not easily lend themselves to written behavioral objectives. Course sponsor administrators and faculty members must constantly integrate these issues into the conceptual and technical components of the course.

“Contextual competence” is an appreciation for how the professional’s practice at a particular level fits into the larger picture. Professional practice is not conducted in a vacuum. It impacts, and is impacted upon, by many external forces. To this end, entry-level EMT-Critical Care technicians must be taught to understand how their practice affects individual patients in the continuum of care, not only while the patient is in his/her care. Moreover, they must appreciate how their actions impact the EMS system where they work, the EMS profession, the health care system, and society in general.

Instructional methods used by the faculty must be designed to improve contextual competence. This requires constant reinforcement of the interdependent nature of professional practice. Faculty must have a clear understanding of the relationship that EMS has with the health care system, the environment, and society in general. The faculty must strive to repeatedly emphasize the “big picture” and guard against the tendency of considering the individual practitioner, or the EMS profession, as a separate entity.

“Integrative competence” is generally developed by having mastered the theoretical foundations of the content material of a professional curriculum. Students can often memorize treatment protocols without having a true understanding of the underlying pathophysiology. In the short term, this enables them to pass a test, but this knowledge deficit will result in EMS providers who are unable to integrate the course material with actual patient presentations. Eventually, this shortfall manifests itself as poor decision making and problem solving skills. Medical education must balance theory and practice and constantly emphasize the relationship between the two. Theory and practice are not discreet, mutually exclusive concepts, but rather the opposite sides of the same coin.

Another way to improve integrative competence is to broaden the base of educational exposures provided to the student. It has been repeatedly demonstrated that a broad distribution of course work, typical in a liberal studies educational approach, increases integrative competence. Although not always possible, administrators of educational programs who are not satisfied with their graduates’ ability to integrate theory and

practice may find that adding additional courses from other disciplines not within the student's major field of study will improve their students' higher level cognitive skills.

Although their importance cannot be overstated, it is effectively impossible for a centrally developed curriculum to identify specific objective and declarative material for contextual, integrative and adaptive competence. Individual course sponsor's administrators and faculty must keep these competencies in mind as they are developing instructional strategies that build entry-level competence. Contextual, integrative and adaptive competencies are often the result of leadership, mentoring, role modeling, a focus on high level cognition, motivation and the other more subtle instructional skills of the faculty.

Professional attitudes, in large part, are represented as the affective objectives of the program. Unfortunately, the development of true professional attitudes is much more than the aggregate sum of the individual objectives. These attitudes represent the current social climate and the moral and ethical identity of the individual and the profession. They are influenced and shaped through role modeling, mentoring, and leading by example. It is quite difficult to "teach" in a didactic manner as this is often interpreted by students as preaching. Generally, professional attitudes are best nurtured through leadership and mentoring. The faculty is encouraged to provide positive role modeling for the development of professional attitudes in all interactions with students. EMT-Critical Care course sponsors should take seriously their responsibility to help students develop the following professional attitudes:

Professional identity - The degree to which a graduate internalized the norms of a

professional (as stated in the Description of the Profession)

Ethical standards - The degree to which a graduate internalizes the ethics of a

profession

Scholarly concern for improvement - The degree to which a graduate recognizes

the need to continually increase knowledge in the profession through

research

Motivation for continued learning - The degree to which a graduate desires to

continue to update knowledge and skills.

Career marketability - The degree to which a graduate becomes marketable as a

result of acquired competencies

Out-of-hospital emergency medicine, like all professions, has a professional culture, personality, behavioral norms and attitudes that society considers acceptable. The opinion that others have about EMS as a profession is profoundly influenced by the professional identity of each of its members. It is very important that emergency medial

professionals shape their identity consciously, or risk being misunderstood by others. The degree to which new EMT-Critical Care graduates adopt and display the behaviors and attitudes that the profession considers acceptable is one measure of the success an educational program can claim in shaping each student's professional identity.

Ethical behavior is one of the cornerstones of professional attitudes. Ethics involves the critical evaluation of complex problems and decision making that takes into account the ambiguity that is most often present in professional decisions. Ethical behavior and decision making involves the ability to consider the greater social ramifications of a professional person's actions while upholding the standards of the profession.

It is becoming increasingly important to collect and record empirical data to validate clinical decisions made by health care providers. This need is significantly increasing the role of research in medicine. Every medical professional must understand and appreciate the role of research in the future of health care. Of course, not all healthcare providers will conduct research directly, but each must be committed to the concept of research as the foundation for improved decision making. Indirectly, almost all healthcare providers participate in research if, by no other means, through their documentation of patient encounters.

Primary professional education is just the beginning of a life-long journey. The art and science of medicine has changed over time and will continue to do so. This positive change requires that the professional adopt, from the beginning of his/her practice, a sincere commitment to personal growth and continual improvement.

The last professional attitude is actually a collection of all that has been discussed to this point. An individual's effectiveness as an EMT-Critical Care technician and his/her career marketability is a result of the ability to integrate professional competencies and professional attitudes into his/her own practice and work habits. Not only will this affect the ability to gain initial employment, it will significantly impact his/her potential for professional advancement. It is a very real and practical responsibility of education to prepare professionals for the work place and help position them to be able to progressively ascend a career ladder. Among motivated individuals, this helps keep them intellectually stimulated, professionally challenged, and financially satisfied so they will not feel a need to leave the profession.

Professional education is a journey; not a destination. It is impossible and fruitless to dissect professionalism into increasingly smaller objectives. Mastery of hundreds or even thousands of individual objectives does not assure that a graduate of a professional education program will convert these objectives into professional behaviors. Like Humpty Dumpty, all of the parts may be impossible to reassemble into a meaningful whole. There are many people who have mastered various parts of professional competence, but they are unable to integrate and synthesize the acquired skills into the effective practice of a profession. This is the art of medicine, and although it is developed specifically in the later stages of the course, it must be nurtured and

allowed to grow through the creation of a supportive and positive educational environment from the first day of class.

Appendix A

EMT-Critical Care Technician: Description of the Profession

Description of the Profession
EMT-Critical Care Technician

EMT-Critical Care Technicians have fulfilled prescribed requirements by a credentialing agency to practice the art and science of out-of-hospital medicine in conjunction with medical direction. Through performance of assessments and providing medical care, their goal is to prevent and reduce mortality and morbidity due to illness and injury for emergency patients in the out-of-hospital setting.

EMT-Critical Care Technicians possess the knowledge, skills and attitudes consistent with the expectations of the public and the profession. EMT-Critical Care Technicians recognize that they are an essential component of the continuum of care and serve as a link for emergency patients to acute care resources.

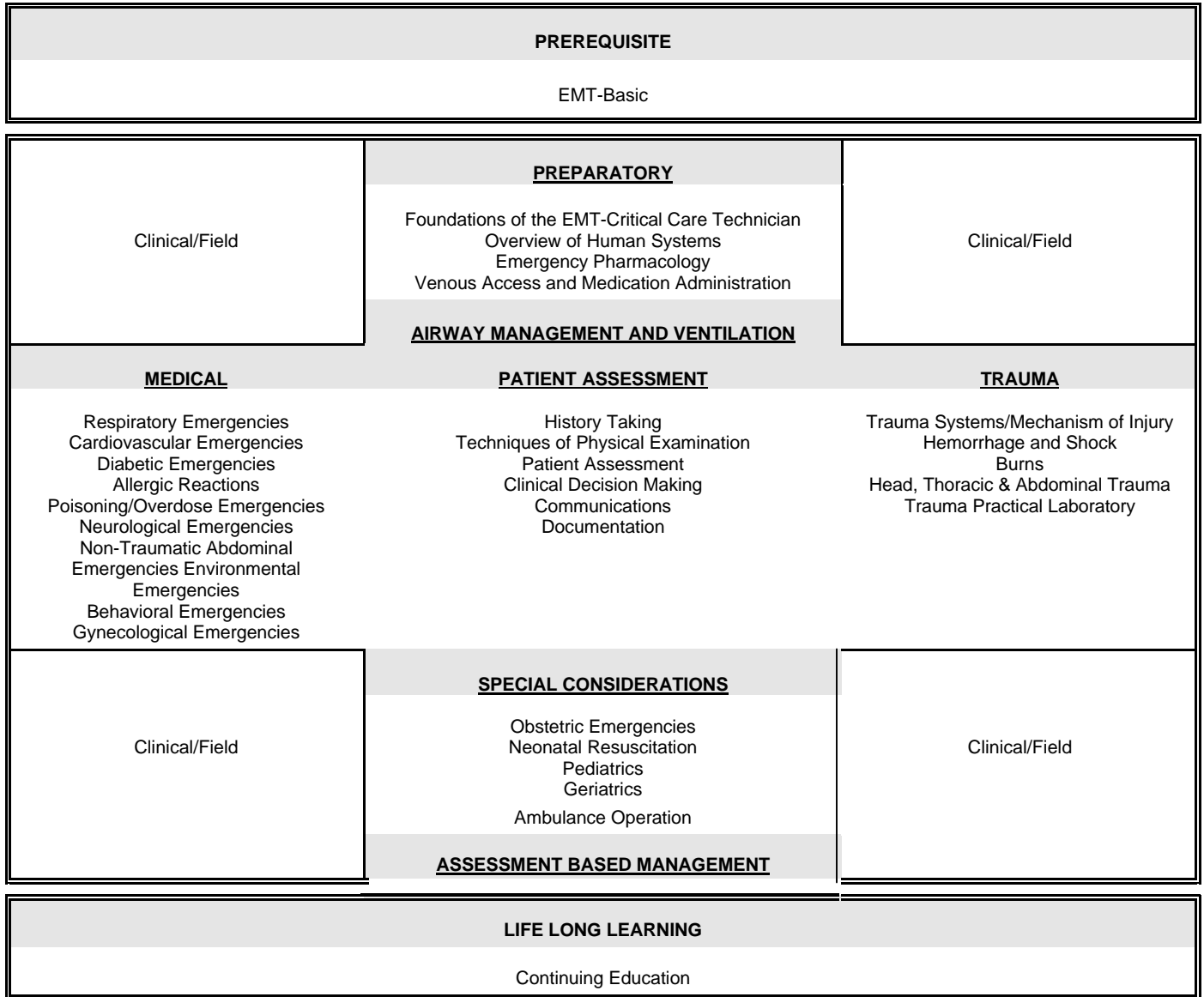
The primary roles and responsibilities of EMT-Critical Care Technicians are to maintain high quality, out-of-hospital emergency care. Ancillary roles of the EMT-Critical Care Technician may include public education and health promotion programs as deemed appropriate by the community.

EMT-Critical Care Technicians are responsible and accountable medical direction, the public, and their peers. EMT-Critical Care Technicians recognize the importance of research. EMT-Critical Care Technicians seek to take part in life-long professional development, peer evaluation, and assume an active role in professional and community organizations.

Appendix B

EMT-Critical Care Technician: Educational Model

EMT-CRITICAL CARE TECHNICIAN CURRICULUM
DIAGRAM OF EDUCATIONAL MODEL



Appendix C

Estimated Program Length

EMT-Critical Care Technician Curriculum

ESTIMATED COURSE HOURS

These time frames are meant only as a guide to help in program planning. Training institutes MUST adjust these times based on their individual needs, goals and objectives. These times are only recommendations, and should NOT be interpreted as minimums or maximums. Those agencies responsible for program oversight are cautioned against using these hours as a measure of program quality or having satisfied minimum standards. Competence of the graduate, not adherence to arbitrary time frames, is the only measure of program quality.

Based on these recommendations, it is suggested that the course be planned for approximately 300-400 total hours of instruction (175-225 classroom/practical laboratory, 50-75 clinical, 75-100 field internship.)

	Estimated didactic time (hours)	Estimated practical laboratory time (hours)
Preparatory		
Found. of the EMT-I Paramedic	5	
Overview of Human System/Roles & Responsibilities	6	
Emergency Pharmacology	12	
Medication Administration	3	8
<i>Module Totals</i>	26	8
Airway Management & Ventilation		
Airway and Ventilation	9	9
<i>Module Totals</i>	9	9
Patient Assessment		
History Taking	1	
Technique of Physical Examination	3	3
Patient Assessment	2	6
Clinical Decision Making	1	
Communications	1	1
Documentation	1	1
<i>Module Totals</i>	9	11
Trauma		
Trauma Systems/ Mechanism of Injury	2	
Hemorrhage and Shock	2	
Burns	1	
Head, Thoracic & Abdominal Trauma	5	
Practical Laboratory		8
<i>Module Totals</i>	10	8
Medical		
Respiratory Emergencies	9	3

	Estimated didactic time (hours)	Estimated practical laboratory time (hours)
Cardiac Emergencies	28	25
Diabetic Emergencies	2	
Allergic Reaction	1	
Poisoning/OD Emergencies	1	
Neurological Emergencies	3	
Abdominal Emergencies	1	
Environmental Emergencies	2	
Behavioral Emergencies	1	
Gynecological Emergencies	2	
<i>Module Totals</i>	<i>50</i>	<i>28</i>
Special Considerations		
Obstetric Emergencies	2	1
Neonatology	2	2
Pediatrics	8	4
Geriatrics	2	
Operations	2	
<i>Module Total</i>	<i>16</i>	<i>7</i>
Assessment Based Management		
Assessment Based Management		12
<i>Module Totals</i>		<i>12</i>

Clinical and Field	
Clinical	50
Field	75

Note: These guidelines do not consider any miscellaneous classroom time (i.e. exams, review, program administrative time, breaks, etc.)

Appendix D

Affective Evaluations

INSTRUCTIONS FOR AFFECTIVE STUDENT EVALUATIONS

There are two primary purposes of an affective evaluation system: 1) to verify competence in the affective domain, and 2) to serve as a method to change behavior. Although affective evaluation can be used to ultimately dismiss a student for unacceptable patterns of behavior, that is not the primary purpose of these forms. It is also recognized that there is some behavior that is so serious (abuse of a patient, gross insubordination, illegal activity, reporting for duty under the influence of drugs or alcohol, etc) that it would result in immediate dismissal from the educational program.

In attempting to change behavior it is necessary to identify, evaluate, and document the behavior that you want. The eleven affective characteristics that form the basis of this evaluation system refer to content in the Roles and Responsibilities of the EMT-Critical Care Technician unit of the curriculum. Typically, this information is presented early in the course and serves to inform the students what type of behavior that is expected of them. It is important that the instructor is clear about these expectations.

Cognitive and psychomotor objectives are relatively easy to operationalize in behavioral terms. Unfortunately, the nature of the affective domain makes it practically impossible to enumerate all of the possible behaviors that represent professional behavior in each of the eleven areas. For this reason, the instructor should give examples of acceptable and unacceptable behavior in each of the eleven attributes, but emphasize that these are examples and do not represent an all-inclusive list.

The affective evaluation instruments included in this curriculum take two forms: A Professional Behavior Evaluation and a Professional Behavior Counseling Record. The Professional Behavior Evaluation should be completed regularly (i.e. every other week, once a month, etc.) by faculty and preceptors about each student. It is recommended that this form be completed by as many people as practically possible and that it becomes part of the students record. The more independent evaluations of the student, the more reliable are the results.

The only two options for rating the student on this form are "competent" and "not yet competent." For each attribute, a short list of behavioral markers is listed that indicates what is generally considered a demonstration of competence for entry level EMT-Critical Care Technicians. This is not an all-inclusive list, but serves to help the evaluator in making judgements. Clearly there are behaviors which warrant a "not yet competent" evaluation that are not listed. Any ratings of "not yet competent" require explanation in the space provided.

Establishing a cut score to use in conjunction with the Professional Behavior Evaluation instrument is important. A cut score can be established by judgement of the local program's community of interest. The question the community should ask is, what percent score do we expect of graduates of our education program to achieve in the affective domain in order to demonstrate entry-level competency for a (first month, second semester, graduate, etc.) level student?

When the cut score judgement is made on acceptability or deviation of competent behavior for each characteristic a percent score can be achieved. For example, a student may received 10 competent checks out of 11 (10 of 11 = 91%), or 5 of 7 (because 4 areas were not evaluated) for a score of 71%. This student may then continue to obtain scores of 91%, 91% 82%, etc and have a term grade of 86% in the affective domain. Each student in the program would receive an average score. Results of multiple evaluations throughout the program would indicate if the score set by the community of interest was too high or too low. When a number of evaluations had evolved adjustments in acceptable score would yield a standard for the community. This standard coupled with community of interest judgements based upon graduate student and employer survey feedback would identify additional validity evidence for the cut score each year. A valid cut score based upon years of investigation could then be used as a determining factor on future participation in the education program.

For all affective evaluations, the faculty member should focus on patterns of behavior, not isolated instances that fall outside the students normal performance. For example, a student who is consistently on time and prepared for class may have demonstrated competence in time management and should not be penalized for an isolated emergency that makes him late for one class. On the other hand, if the student is constantly late for class, they should be counseled and if the behavior continues, rated as "not yet competent" in time management. Continued behavior may result in disciplinary action.

The second form, the Professional Behavior Counseling form is used to clearly communicate to the student that their affective performance is unacceptable. This form should be used during counseling sessions in response to specific incidents (i.e. cheating, lying, falsification of documentation, disrespect/insubordination, etc.) or patterns of unacceptable behavior. As noted before, there is some behavior that is so egregious as to result in immediate disciplinary action or dismissal. In the case of such serious incidents, thorough documentation is needed to justify the disciplinary action. For less serious incidents, the Professional Behavior Counseling form can serve as an important tracking mechanism to verify competence or patterns of uncorrected behavior.

On the Professional Behavior Counseling form, the evaluator checks all of the areas that the infraction affects in the left hand column (most incidents affect more than one area) and documents the nature of the incident(s) in the right hand column. Space is provided to document any follow-up. This should include specific expectations, clearly defined positive behavior, actions that will be taken if the behavior continues, and dates of future counseling sessions.

Using a combination of these forms helps to enable the program to demonstrate that graduating students have demonstrated competence in the affective domain. This is achieved by having many independent evaluations, by different faculty members at different times, stating that the student was competent. These forms can also be used to help correct unacceptable behavior. Finally, these forms enable programs to build a strong case for dismissing students following a repeated pattern of unacceptable behavior. Having numerous, uncollaborated evaluations by faculty members documenting unacceptable behavior, and continuation of that behavior after remediation, is usually adequate grounds for dismissal.

PROFESSIONAL BEHAVIOR EVALUATION

Student's

Name: _____

Date of

evaluation: _____

1. INTEGRITY	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Consistent honesty; being able to be trusted with the property of others; can be trusted with confidential information; complete and accurate documentation of patient care and learning activities.		
2. EMPATHY	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Showing compassion for others; responding appropriately to the emotional response of patients and family members; demonstrating respect for others; demonstrating a calm, compassionate, and helpful demeanor toward those in need; being supportive and reassuring to others.		
3. SELF - MOTIVATION	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Taking initiative to complete assignments; taking initiative to improve and/or correct behavior; taking on and following through on tasks without constant supervision; showing enthusiasm for learning and improvement; consistently striving for excellence in all aspects of patient care and professional activities; accepting constructive feedback in a positive manner; taking advantage of learning opportunities		
4. APPEARANCE AND PERSONAL HYGIENE	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Clothing and uniform is appropriate, neat, clean and well maintained; good personal hygiene and grooming.		
5. SELF - CONFIDENCE	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Demonstrating the ability to trust personal judgement; demonstrating an awareness of strengths and limitations; exercises good personal judgement.		
6. COMMUNICATIONS	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Speaking clearly; writing legibly; listening actively; adjusting communication strategies to various situations		
7. TIME MANAGEMENT	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Consistent punctuality; completing tasks and assignments on time.		
8. TEAMWORK AND DIPLOMACY	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Placing the success of the team above self interest; not undermining the team; helping and supporting other team members; showing respect for all team members; remaining flexible and open to change; communicating with others to resolve problems.		
9. RESPECT	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Being polite to others; not using derogatory or demeaning terms; behaving in a manner that brings credit to the profession.		

10. PATIENT ADVOCACY	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Not allowing personal bias to or feelings to interfere with patient care; placing the needs of patients above self interest; protecting and respecting patient confidentiality and dignity.		
11. CAREFUL DELIVERY OF SERVICE	Competent []	Not yet competent []
Examples of professional behavior include, but are not limited to: Mastering and refreshing skills; performing complete equipment checks; demonstrating careful and safe ambulance operations; following policies, procedures, and protocols; following orders.		

Use the space below to explain any "not yet competent" ratings. When possible, use specific behaviors, and corrective actions.

_____ - Faculty Signature

PROFESSIONAL BEHAVIOR COUNSELING RECORD

Student's Name: _____

Date of counseling: _____

Date of incident: _____

	Reason for Counseling	Explanation (use back of form if more space is needed):
	Integrity	
	Empathy	
	Self - Motivation	
	Appearance/Personal Hygiene	
	Self - Confidence	
	Communications	
	Time Management	
	Teamwork and Diplomacy	
	Respect	
	Patient Advocacy	
	Careful delivery of service	

Follow-up (include specific expectations, clearly defined positive behavior, actions that will be taken if behavior continues, dates of future counseling sessions, etc.):

_____ -Faculty signature

I have read this notice and I understand it.

_____ -Student signature

_____ -Administrative or Medical Director Review

Appendix E

Psychomotor Skills Evaluations

insert PATIENT ASSESSMENT - TRAUMA

insert PATIENT ASSESSMENT - MEDICAL

insert VENTILATORY MANAGEMENT (ET)

insert DUAL LUMEN AIRWAY DEVICE (COMBITUBE OR PTL)

insert DYNAMIC CARDIOLOGY

insert STATIC CARDIOLOGY

insert INTRAVENOUS THERAPY

insert PEDIATRIC VENTILATORY MANAGEMENT

insert PEDIATRIC INTROSSEOUS INFUSION

insert SPINAL IMMOBILIZATION (SEATED)

insert SPINAL IMMOBILIZATION (LYING)

insert BLEEDING CONTROL

Appendix F

Module and Unit Objective Summary

EMT-Critical Care Technician Course

Module and Unit Objective Summary

- 1 At the completion of this module, the EMT-Critical Care Technician student will understand the roles and responsibilities of a EMT-Critical Care Technician within an EMS system, apply the basic concepts of anatomy and physiology to the assessment and management of emergency patients, and safely use and administer emergency medications.
 - 1-1 At the completion of this unit, the EMT-Critical Care Technician student will: understand his or her roles and responsibilities within an EMS system, and how these roles and responsibilities differ from other levels of providers; understand the role of medical direction in the out-of-hospital environment; understand and value the importance of personal wellness in EMS and serve as a healthy role model for peers; be able to identify the importance of primary injury prevention activities as an effective way to reduce death, disabilities and health care costs; understand the legal issues that impact decisions made in the out-of-hospital environment; and value the role that ethics plays in decision making in the out-of-hospital environment.
 - 1-2 At the completion of this unit, the EMT-Critical Care Technician student will be understand basic anatomy and physiology and how it relates to the foundations of medicine.
 - 1-3 At the completion of this unit, the EMT-Critical Care Technician student will be able to understand the basic principles of pharmacology and be able to develop a drug profile for common emergency medications.
 - 1-4 At the completion of this unit, the EMT-Critical Care Technician student will be able to safely and precisely access the venous circulation and administer medications.
- 2 At the completion of this module, the EMT-Critical Care Technician student will be able to establish and/ or maintain a patent airway, oxygenate, and ventilate a patient.
 - 2-1 At the completion of this unit, the EMT-Critical Care Technician student will be able to establish and/ or maintain a patent airway, oxygenate, and ventilate a patient.
- 3 At the completion of this module, the EMT-Critical Care Technician student will be able to take a proper history and perform an advanced physical assessment on an emergency patient, and communicate the findings to others.
 - 3-1 At the completion of this unit, the EMT-Critical Care Technician student will be able to use the appropriate techniques to obtain a medical history from a patient.
 - 3-2 At the completion of this unit, the EMT-Critical Care Technician student will be able to explain the significance of physical exam findings commonly found in emergency situations.
 - 3-3 At the end of this unit, the EMT-Critical Care Technician student will be able to integrate the principles of history taking and techniques of physical exam to perform a patient assessment on an emergency patient.
 - 3-4 At the end of this unit, the EMT-Critical Care Technician student will be able to apply a process of clinical decision making to use the assessment findings to help form a field impression.
 - 3-5 At the completion of this unit, the EMT-Critical Care Technician student will be able to follow an accepted format for the dissemination of patient information in verbal form, either in person or over the radio.
 - 3-6 At the completion of this unit, the EMT-Critical Care Technician student will be able to effectively document the essential elements of patient assessment, care and transport.
- 4 At the completion of this module, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the trauma patient.

- 4-1 At the completion of this unit, the EMT-Critical Care Technician student will be able to apply the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.
 - 4-2 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with hemorrhage or shock.
 - 4-3 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the management plan for the patient with a burn injury.
 - 4-4 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement a treatment plan for a patient with a thoracic injury.
 - 4-5 At the completion of this unit, the EMT-Critical Care Technician student will be able to demonstrate the practical skills of managing trauma patients.
- 5 At the completion of this module, the EMT-Critical Care Technician student will be able to formulate a field impression and implement the treatment plan for the medical patient.
- 5-1 At the end of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with respiratory emergencies.
 - 5-2 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression, implement and evaluate the management plan for the patient experiencing a cardiac emergency.
 - 5-3 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement a treatment plan for the patient with a diabetic emergency.
 - 5-4 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction.
 - 5-5 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement a treatment plan for the patient with a toxic exposure.
 - 5-6 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with a neurological emergency.
 - 5-7 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize the assessment findings to formulate a field impression and implement the treatment plan for the patient with non-traumatic abdominal pain.
 - 5-8 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement the treatment plan for the patient with an environmentally-induced or exacerbated emergency.
 - 5-9 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement a management plan for patients with behavioral emergencies.
 - 5-10 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency.
- 6 At the completion of this module, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement the treatment plan for obstetric, neonatal, pediatric, and geriatric patients.

- 6-1 At the completion of this unit, the EMT-Critical Care Technician student will be able utilize the assessment findings to formulate a field impression and implement the management of a normal or abnormal labor.
 - 6-2 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement the treatment plan for the resuscitation of a neonatal patient.
 - 6-3 At the completion of this unit, the EMT-Critical Care Technician student will be able to utilize assessment findings to formulate a field impression and implement the treatment plan for a pediatric patient.
 - 6-4 At the completion of this unit, the EMT-Critical Care Technician student will be able to use assessment findings to formulate a management plan for the geriatric patient.
- 7 At the completion of this module, the EMT-Critical Care Technician student will be able to integrate the principles of assessment based management to perform an appropriate assessment and implement the management plan for patients with common complaints.
- 7-1 At the completion of this unit, the EMT-Critical Care Technician student will be able to integrate the principles of assessment based management to perform an appropriate assessment and implement the management plan for patients with common complaints.