2021

NATIONAL EMERGENCY MEDICAL SERVICES

EDUCATION STANDARDS

NHTSA
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

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Executive Summary

In 2009, the EMS community came together to create the original *National EMS Education Standards (*the *Standards)*. This represented a major step toward realizing the vision put forth in the 1996 *EMS Agenda for the Future* and further outlined in the *EMS Education Agenda for the Future: A Systems Approach* four years later. Following the recent release of a new *National EMS Scope of Practice Model* and *EMS Agenda 2050*, this revision of the *Standards* builds on this quarter-century of advancing EMS systems nationwide.

The *National EMS Education Standards* outline the minimal competencies for entry-level EMS clinicians to perform their roles as outlined in the 2019 *National EMS Scope of Practice Model*. The *Standards*, while a national effort, were intentionally created in a way that allows for diverse implementation methods to meet local needs and evolving educational practices. This less prescriptive format of the *Standards* allows for ongoing revision of EMS educational content consistent with scientific evidence, educational practices, and community standards of care.

When applying the *Standards* to individual programs and classes, EMS educators have the freedom to develop their own curricula or use any of the wide variety of lesson plans and instructional resources that are available at each licensure level. This ensures that each program can specifically address individual and community needs.

The *National EMS Education Standards* are not meant to stand as a comprehensive document guiding the entire development of EMS clinicians, but rather one part of a comprehensive system. EMS education programs will incorporate each element of the education system proposed in the *Education Agenda*.

These elements include:

- National EMS Core Content
- National EMS Scope of Practice Model
- National EMS Education Standards
- National EMS Certification
- National EMS Program Accreditation

This integrated system approach to EMS education is essential to achieving the goal of developing EMS clinicians across the country who are competent in the appropriate knowledge, skills, and abilities for their licensure level.

Noteworthy revisions found in the 2021 edition of the *National EMS Education Standards* are based upon inputs and considerations obtained from numerous sources. These include stakeholder comments, public comments, previous and related governmental resource documents (the original 2009 *National EMS Education Standards, EMS Agenda 2050,* and the newly revised 2019 *National Scope of Practice Model*), NREMT's practice analysis, technological advances, known and evolving best practices, and evidence-based medicine.

The following areas within the *Standards* had notable revisions: public health, pediatrics, geriatrics, behavioral/psychiatric, cultural humility, EMS operations, pharmacology, and EMS safety, wellness and resilience. Input was provided and every suggestion or recommendation was evaluated. Revision and adjustments were based on a team discussion (with expert consultation, when needed). Numerous revisions were made; not all comments required alteration. Three differing public comment periods were utilized for further input and transparency.

Introduction and Historical Development of EMS in the United States

EMS has evolved and grown immensely since the first organized, national effort to develop EMS systems began in the 1960s. Compared to colleagues in healthcare and public safety, EMS remains a young profession and continues to advance as we further define and enhance our structure, oversight, and organization.

As EMS system operations have developed, so has EMS education. In the early 1970s, registered nurses and physicians taught most EMS programs. Few student and instructor resources related directly to prehospital emergency care. No standards existed to define what EMS clinicians should know and what they should be able to do. By the early 2000s, most of this original framework was being replaced, and national education standards and a scope of practice were defined for the first time. Today, the profession has become more sophisticated, and community expectations have increased. With healthcare, technology and science evolving faster than ever, it is also important to revisit these topics and update these guidelines more frequently.

EMS Agenda for the Future

In August 1996, the *EMS Agenda for the Future* was published. Developed with funding from the National Highway Traffic Safety Administration and the Health Resources and Services Administration, and led by the National Association of EMS Physicians and the National Association of State EMS Directors, the *Agenda for the Future* brought together stakeholders from throughout EMS to create a unifying vision for emergency medical services in the United States.

The *Agenda for the Future* was designed to guide government and private organizations in EMS planning, development, and policymaking at the national, state, and local levels. It addressed 14 attributes of EMS, including the EMS education system. The *Agenda* defined a vision for EMS education "based on research," "conducted by qualified instructors" and while employing "sound educational principles.

EMS Education Conference

Soon after publication of the *Agenda,* representatives of 30 EMS-related organizations met at an EMS Education Conference sponsored by NHTSA to identify the necessary steps for implementing that vision.

The EMS Education Conference resulted in several recommendations, including:

- *The National EMS Education and Practice Blueprint* (the *Blueprint*) is a valuable component of the EMS education system. A multidisciplinary panel, led by NHTSA, to identify core educational content more explicitly for each licensure level, should revise it.
- National EMS Education Standards are necessary but need not include specific declarative material or lesson plans. NHTSA should support and facilitate the development of national EMS Education Standards.
- The *Blueprint* and national EMS Education Standards should be revised periodically, with major revisions occurring every 5 to 7 years, and minor updates made every 2 to 3 years.

EMS Education Agenda for the Future

In 1998, NHTSA convened a group of educators who developed a document titled the *EMS Education Agenda for the Future: A Systems Approach* (the *Education Agenda*). The EMS education system envisioned in the *EMS Agenda for the Future* was further defined and articulated in the *Education Agenda*

(see Figure 1). The *Education Agenda's* authors also stated that, to be most effective, each component in the EMS education system should be structured, coordinated, and interdependent. articulated in the *Education Agenda.*

National EMS Core Content

The National EMS Core Content was published in 2005. Core Content defines the entire domain of out-of-hospital practice and identifies the universal body of knowledge and skills for EMS clinicians who do not function as independent practitioners.

Funded by NHTSA and HRSA, this project was led by the National Association of EMS Physicians and the American College of Emergency Physicians.

EMS Education Agenda for the Future: A Systems Approach

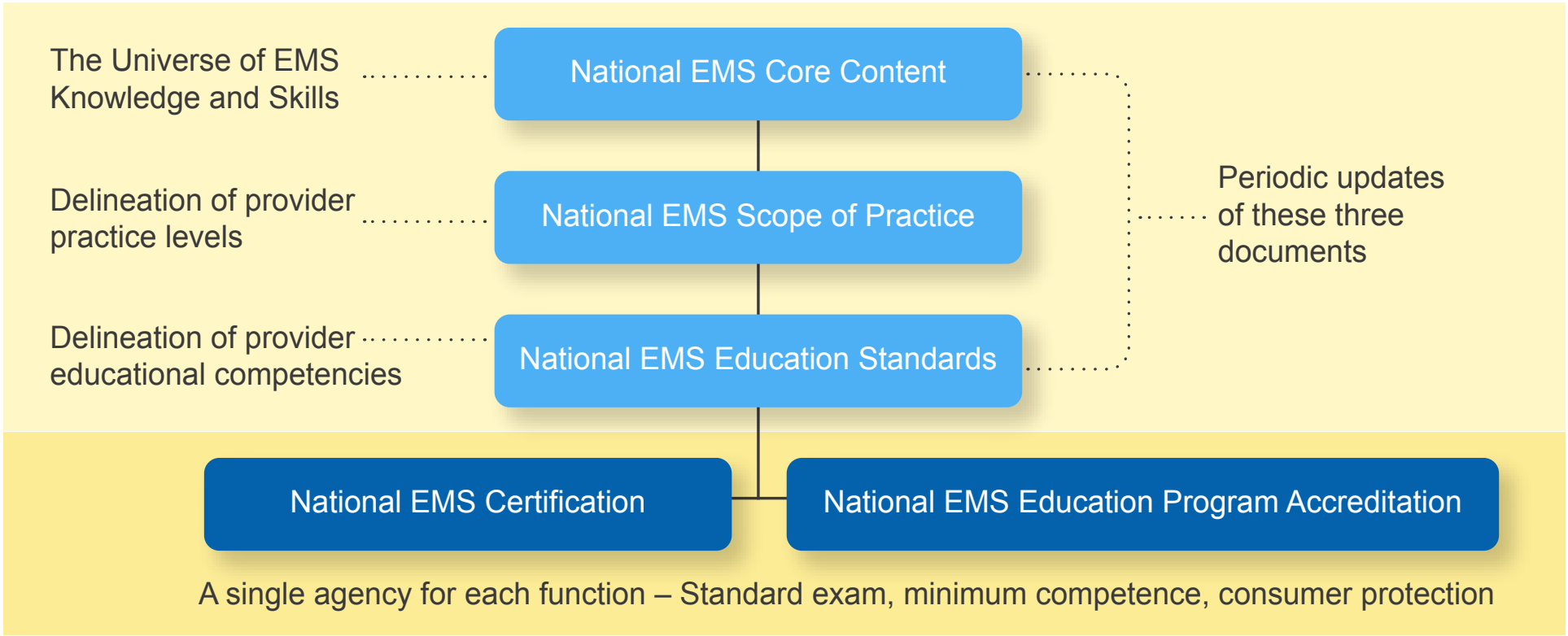


Figure 1: Model EMS System

National EMS Scope of Practice

The *National EMS Scope of Practice Model* (*Scope of Practice*) is a consensus document that was published in 2007 and revised in 2019. This document defines four levels of EMS licensure—emergency medical responder (EMR), emergency medical technician (EMT), advanced emergency medical technician (AEMT), and paramedic—and delineates the practices and minimum competencies for each level. The *Scope of Practice* does not have regulatory authority but provides guidance to States. Adherence to the *Scope of Practice* would increase uniformity in EMS practice throughout the U.S. and facilitate reciprocity between States. Leadership for this project was delegated to the National Association of State EMS Officials and funded by NHTSA and HRSA.

The *Scope of Practice* further defines practice, suggests minimum educational preparation, and designates appropriate psychomotor skills at each level of licensure. Further, the document describes each level of licensure as distinct and distinguished by unique "skills, practice environment, knowledge, qualifications, services provided, risk, level of supervisory responsibility, and amount of autonomy and judgment/critical thinking/decision-making."

National EMS Education Standards

The *National EMS Education Standards*, led by the National Association of EMS Educators, replaced the NHTSA National Standard Curricula at all licensure levels when first published in 2009. The *Standards* define the competencies, clinical behaviors, and judgments that must be met by entry-level EMS clinicians to meet practice guidelines defined in the *National EMS Scope of Practice Model*. Content and concepts defined in the *National EMS Core Content* are also integrated within the *Standards*. This 2021 update of the *National EMS Education Standards* was spearheaded by a team of educators tasked with updating the 2009 standards to be consistent with the most recent *National EMS Scope of Practice Model* and current evidence-based practice. With input from a large number of stakeholders, the team chose not to update the separate Instructional Guidelines for each clinician level originally published as companion documents to the 2009 Standards. Instead, the instructional guidelines have been incorporated within the *Standards*, replacing the need for those supplemental materials.

National EMS certification and national EMS education program accreditation are the "bookends" that support the other key elements of the system. The *Education Agenda* recommended an individual must graduate from a nationally accredited EMS education program to be eligible for National EMS Certification. Essential components of the *EMS Agenda* include a single National EMS Accreditation Agency and a single National EMS Certification Agency to ensure consistency and quality of EMS personnel.

The National EMS Education Standards

Each statement in the *Standards* presumes that the expected knowledge and behaviors are within the scope of practice for that EMS licensure level, as defined by the *National EMS Scope of Practice Model.* Each competency applies to patients of all ages.

The *Standards* also assume there is a progression in practice from the emergency medical responder level to the paramedic level. That is, licensed personnel at each level are responsible for all knowledge, judgments, and behaviors at their level and at all levels preceding their level. For example, a paramedic is responsible for the knowledge and tasks described for the paramedic as well as the other three levels of licensure.

The National EMS Education Standards is comprised of four components (Table 2):

1. **Competency** (designated in yellow) – This statement represents the minimum competency required for entry-level clinicians at each licensure level.
2. **Knowledge Required to Achieve Competency** (designated in blue) – This represents an elaboration of the knowledge within each competency (when appropriate) that entry-level clinicians would need to master to achieve competency.
3. **Clinical Behaviors/Judgments** (designated in green) – This section describes the clinical behaviors and judgments essential for entry-level EMS clinicians at each licensure level.
4. **Educational Infrastructure** (designated in gray) – This section describes the support standards necessary for conducting EMS training programs at each licensure level.

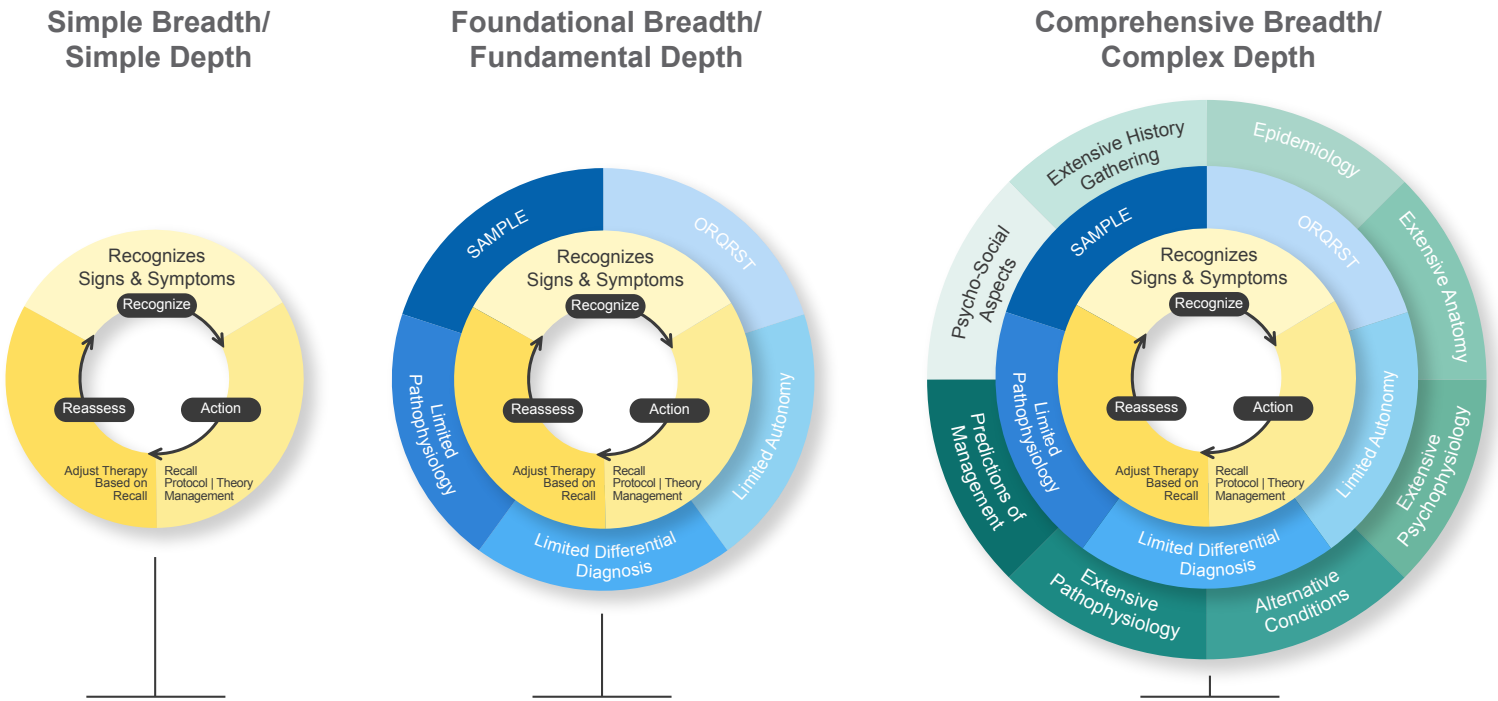
Table 2: Format of National EMS Education Standards

	EMR	EMT	AEMT	Paramedic
Content Area	Competency	Competency	Competency	Competency
Elaboration of Knowledge	Additional knowledge related to the competency	Additional knowledge related to the competency	Additional knowledge related to the competency	Additional knowledge related to the competency
	Clinical behaviors and judgments	Clinical behaviors and judgments	Clinical behaviors and judgments	Clinical behaviors and judgments
	Educational Infrastructure	Educational Infrastructure	Educational Infrastructure	Educational Infrastructure

The descriptors used to illustrate the increasing complexity of knowledge and behaviors through the progression of licensure levels originate, in part, from the *National EMS Scope of Practice Model*. These terms reflect the differences in the breadth, depth, and actions required at each licensure level (Figures 2 and 2.1).

The *depth* of knowledge is the amount of detail a student needs to know about a particular topic. The *breadth* of knowledge refers to the number of topics or issues a student needs to learn in a particular competency. For example, EMS instructors need to ensure the emergency medical responder has a thorough understanding of how to use the bag valve mask (BVM) safely and effectively. The amount of detail the instructor provides about how to use that BVM represents the depth of knowledge. Some instructors might adjust their specific curriculum to provide slightly more information about the BVM compared to other instructors, but every graduating EMR will know how to use the device.

Figure 2: Depth/Breadth Terminology



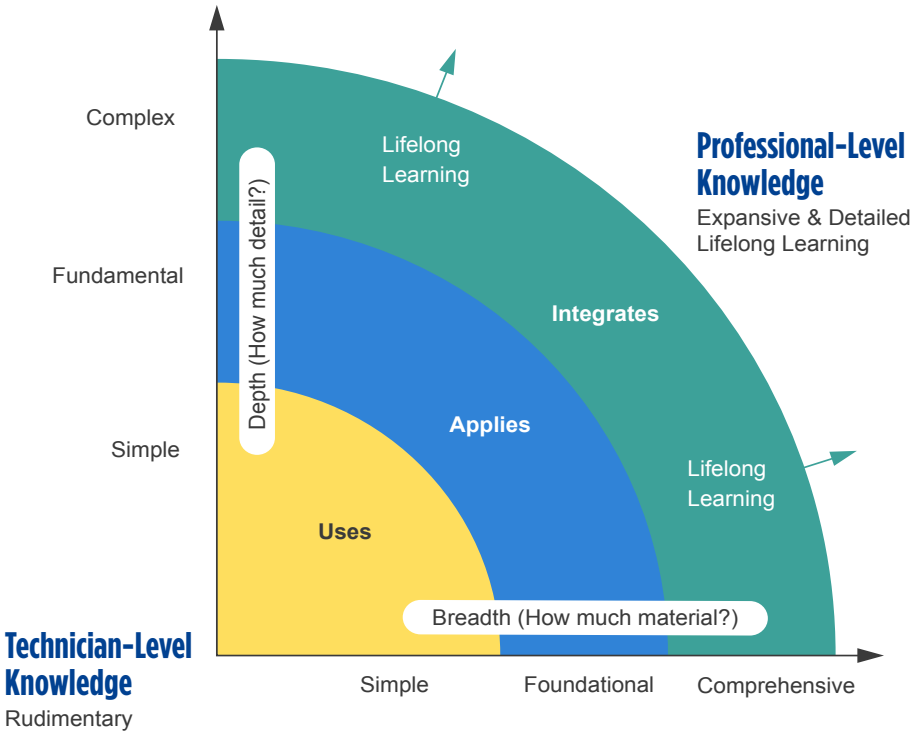
- Minimal Knowledge
- Minimal Range of Skills or Tasks

- Elemental Knowledge
- Increased Range of Skills or Tasks

- Deep Level of Knowledge
- Wide-Ranging, Broad and Extensive Skills or Tasks
- Lifelong Learning

Because of the limited scope of practice for the EMR (fewer tools in the airway box), the instructor may supplement BVM education with a few additional concepts (breadth) surrounding management of a patient's airway, such as airway anatomy and assessment. Supplementing the education with additional concepts adds to the breadth of the material, with each concept having its own level of detail (depth) limited only by the amount of the time the instructor has to teach the material. As more airway management tools are added to the toolbox for each licensure level (EMT, AEMT, paramedic), the level of detail will also change, and curriculum time will need to reflect this increased depth.

Figure 2.1: Depth/Breadth Terminology



To describe the intended depth of knowledge of a particular concept within a provider level, the revision team uses the terms *simple, fundamental,* and *complex*. These terms can seem ambiguous and confusing when used in isolation (e.g., learning to correctly use a BVM is not a "simple" task). Instead, the meaning of each term is relative to the other terms. For example, knowledge that is categorized as "simple" is only simple relative to another curriculum that provides more detail, such as when comparing EMT to AEMT. EMT students may need a greater level of airway anatomy detail because the scope of practice is different. Scope of practice is even more different for the AEMT and paramedic student, who will need increasingly greater levels of airway anatomy detail (complex). Course directors, instructors, medical directors, and local stakeholders can decide the precise level of detail, based on community and student needs, rather than establishing a single prescriptive curriculum for the entire nation.

Similarly, the intended breadth of knowledge surrounding a concept is reflected in the terms *simple, foundational,* and *comprehensive*. As curricula include an increasing level of detail about the use of the BVM, airway assessment, and airway anatomy, the increasing size of the toolbox reflected by the increased scope of practice necessitates a broader list of related subjects. For example, the addition of CPAP, nasopharyngeal airway, and oxygen delivery devices at the EMT level broadens the curriculum for the EMT instructor. For instructors teaching paramedic students, the increased scope of practice broadens the knowledge base even more. Clearly, the use of CPAP requires the EMT to have an increased depth and more complex breadth of knowledge that the EMR, but not nearly as much as the paramedic.

From the National EMS Scope of Practice Model: EMS Personnel Licensure Levels

Each educational level assumes mastery of previously stated competencies. Every clinician must demonstrate each competency within their scope of practice and for patients of all ages.

Emergency Medical Responder	Emergency Medical Technician	Advanced Emergency Medical Technician	Paramedic
The primary focus of the emergency medical responder is to initiate immediate lifesaving care to critical patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response, and to assist higher level clinicians at the scene and during transport. EMRs function as part of a comprehensive EMS response, under medical oversight. EMRs perform basic interventions with minimal equipment.	The primary focus of the emergency medical technician is to provide basic emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. EMTs function as part of a comprehensive EMS response, under medical oversight. EMTs perform interventions with the basic equipment typically found on an ambulance. The EMT is a link from the scene to the emergency health care system.	The primary focus of the advanced emergency medical technician is to provide basic and limited advanced emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Advanced EMTs function as part of a comprehensive EMS response, under medical oversight. Advanced EMTs perform interventions with the basic and advanced equipment typically found on an ambulance. The Advanced EMT is a link from the scene to the emergency health care system.oversight. Paramedics perform interventions with the basic and advanced equipment typically found on an ambulance. The paramedic is a link from the scene into the health care system.	The paramedic is an allied health professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients who access the emergency medical system. This individual possesses the complex knowledge and skills necessary to provide patient care and transportation. Paramedics function as part of a comprehensive EMS response, under medical oversight. Paramedics perform interventions with the basic and advanced equipment typically found on an ambulance. The paramedic is a link from the scene into the health care system.

Description, Explanation, and Rationale Related to the Update

2019 National EMS Scope of Practice Model Relationship

The recently released 2019 *National EMS Scope of Practice Model* assembled experts to evaluate the scope of EMS practice for each of the four national practitioner levels (EMR, EMT, AEMT and paramedic). The 2019 *Scope of Practice Model* is the launching pad and guide for this revision of the *National EMS Education Standards*. The *Education Standards* reflect the 2019 edition of the scope of practice and ensure practitioners receive the education and training they need to perform within their scopes and best serve their patients and communities. The revision of the *National EMS Scope of Practice Model* and *National EMS Education Standards* are naturally interrelated, as one informs the other.

As such, the team brought together to lead the revision of the *National EMS Education Standards* included 10 proven and renowned EMS educators. The *National EMS Scope of Practice Model,* recommendations from *EMS Agenda 2050*, known best practices, emerging technology, evidence-based medicine, information from the National EMS Database, and societal issues were all considered. EMS stakeholder input and public comment were solicited and received multiple times throughout the revision process. The National Registry of EMTs also provided their Practice Analysis findings.

NREMT Practice Analysis

Several members of the EMS Education Standards Revision Team were involved in the NREMT's practice analysis working group. This process has informed the team regarding the most encountered EMS emergencies, according to the National EMS Database, made possible by the National EMS Information System (NEMSIS). In addition, the project revision team has reached out to NREMT throughout the revision project to obtain input and feedback. NREMT's practice analysis has been one of many critical resources consulted by the revision team.

Domains of EMS: Learning, Competency, Authorization, and Operational/Local Qualification

The 2019 *National EMS Scope of Practice Model* identifies four domains within the "Professional Scope of Practice" and provides a structure for the differences between education, certification, licensure, and credentialing (see definitions below). The EMS Education Standards Revision Team focused on education, or the learning domain.

- **Education, the learning domain** – This domain includes all didactic, psychomotor, and affective learning that an EMS learner should be taught during an EMS course to become an entry-level apprentice.

- **Certification, the competency verification domain** – This domain includes all external evaluation and verification processes that are led by an outside entity to ensure that a learner has achieved competency to be safe and effective when conducting their duties as an entry-level EMS clinician. In most states, National Registry certification is used to verify competency.

- **Licensure, the legal authorization domain** – Licensure refers to the legal authority, granted by a State, to an individual to perform certain defined and restricted duties. The clinical duties usually vary from one state to the next. The term is not to be confused or referred to as "certification." As defined in the 2019 *Scope of Practice*

Model, certification and licensure are independent yet related processes. When State requirements are met, a State license is issued along with the legal authority to perform a role at the appropriate level of licensure.

- **Credentialing, the operational/local qualification domain** – Credentialing is the responsibility of the individual EMS organization and, in most cases, the medical director. Being that a learner has been educated, certified, and licensed, the duty falls to the organization and local community to ensure that the EMS clinician is able to operate safely by following appropriate clinical and operational guidelines and philosophies set forth by the physician EMS medical director. Typically, this involves orientation courses, with an evaluation, and structured operational and clinical training programs. Credentialed providers have been taught and assessed on skills and actions that are beyond the entry-level education and training of an EMS school. For instance, if allowed by the State, ultrasound may be a role performed after proper credentialing by the local EMS medical director and jurisdiction, even though ultrasound is not included in the *National EMS Scope of Practice Model* or the *National EMS Education Standards*.

Because most EMS education programs teach students who will not all practice in the same organization, communities or even states, a one-size-fits-all education is not possible. The writing of a detailed national curricula for each of the four levels would be problematic. No educational institution can teach a learner every possible clinical or operational guideline, nor can an educational entity train an individual about every clinical device used by EMS services across the nation. As a result, the credentialing process is a critical piece of preparing EMS clinicians to practice in their respective organizations after the completion of initial education and certification.

Common comments and recommendations that were received by the revision team addressed content areas that clearly did not apply to the entry-level education of an apprentice EMS clinician. Many suggestions fit within the credentialing domain and are not appropriate for national adoption at this time. The team worked hard to stay within the education domain for entry-level EMS clinicians.

Education Standards vs. Instructional Guidelines vs. Curriculum

The *National EMS Education Standards* outline the minimal competencies for entry-level EMS clinicians to achieve within the parameters outlined in the 2019 *Scope of Practice Model*. Education programs should contemplate the *Standards* when developing curricula, for national consistency. The *Standards'* format will allow diverse implementation methods to meet local needs and evolving education practices. The less prescriptive format of the *Standards* will also allow for ongoing revision of content consistent with scientific evidence, advances in technology, known "best practices" and community standards of care.

In general, the content of *Education Standards* can range from largely non-prescriptive to detailed and very prescriptive.

Non-Prescriptive *Education Standards*:

- increase teacher autonomy
- increase instructional flexibility
- increase responsiveness to student learning needs
- increase responsiveness to local needs and situations
- increase responsiveness to national trends

Prescriptive Education Standards:

- improve education consistency
- protect from societal harm that may result from low education expectations and/or low-quality instruction
- have been labelled as “burdensome checklists” by some educators and are problematic in medicine due to rapid changes in technology, scientific evidence, and best practices

The *National EMS Education Standards* are not meant to stand as a comprehensive document guiding all of the development of EMS clinicians, but rather one part of a comprehensive system (Figure 3). EMS education programs will incorporate each element of the education system proposed in the *Education Agenda*. These elements include:

- National EMS Core Content
- National EMS Scope of Practice
- National EMS Education Standards
- National EMS Certification
- National EMS Program Accreditation

This integrated system is essential to achieving the goals of program efficiency, consistency of instructional quality, and student competence as outlined in the *Education Agenda*.

While the *Education Standards* are developed at the national level, each State retains the right to wholly adopt the *Standards* or adopt and modify the *Education Standards* to fit a state’s unique needs. The *National EMS Education Standards* have been created to provide States with a vetted, consensus-driven foundation for EMS education. They also benefit clinicians by paving the way for national certification and easier transition from one locality or state to another.

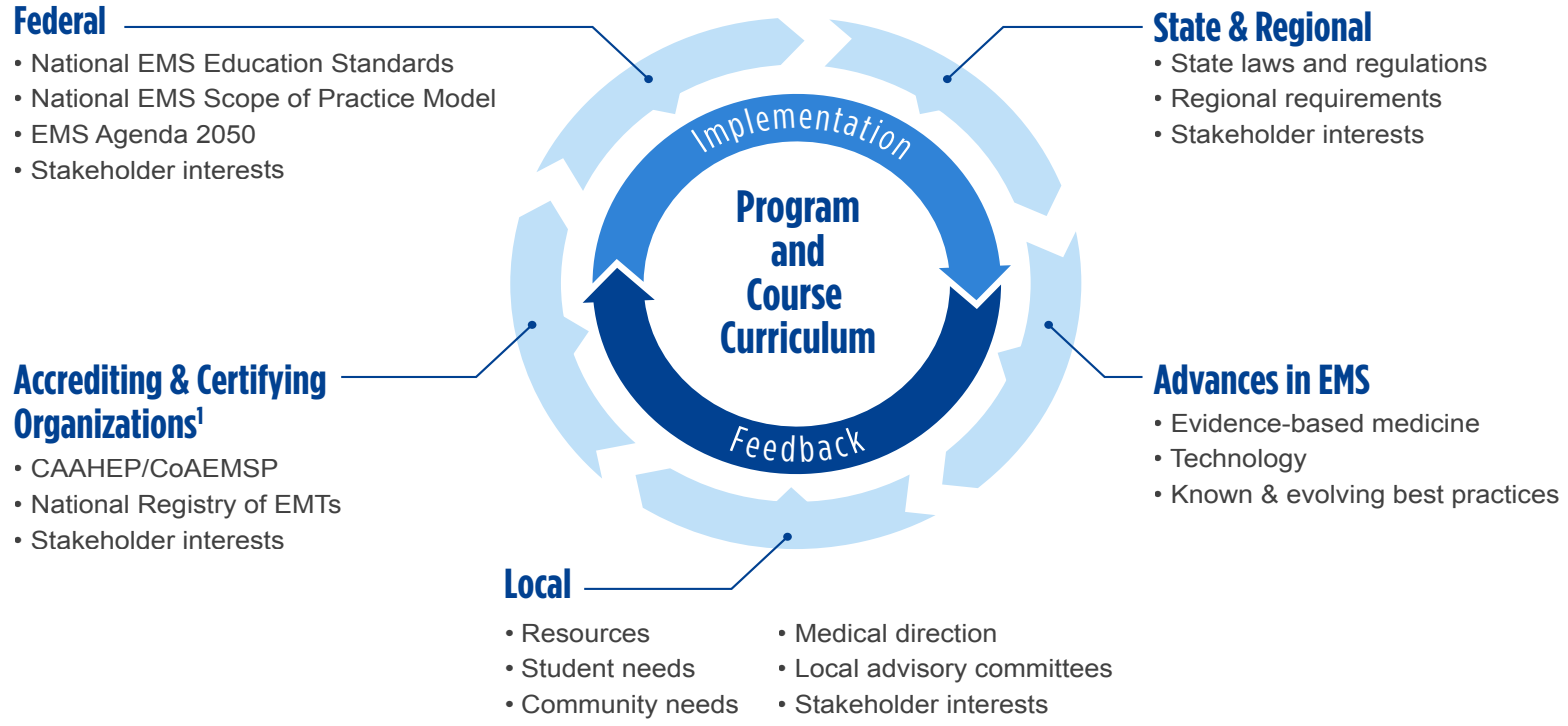
Individual EMS educators and local communities select or create curricula based on a multitude of curriculum influencers. These influencers can also be strong mechanisms for education program accountability. Regional needs, accreditation standards, and State and local policies and regulations are a few examples. Curricula design, implementation, and adjustment are complex processes. Specific curricular content, instructional strategies, and competency evaluation processes should be resolved at the education program level through implementation and feedback. Regulatory rules must be adhered to as well. Decisions on curriculum implementation are based on local situations, students’ needs, and available resources. The following graphic illustrates numerous inputs and points for accountability when curricula are designed, implemented, and adjusted. Program directors, faculty, and education institutions would be wise to consider each influence.

Influences on EMS Education Curriculum Development

The *National EMS Education Standards* are one of many resources and factors that influence the development of course curricula by EMS education institutions and faculty.

As such, they served a useful purpose; however, as States, publishers and educators adapted their materials, the IGs became increasingly obsolete.

Figure 3: Influences on EMS Education Curriculum Development



1 CAAHEP: Commission on Accreditation of Allied Health Education Programs, CoAEMSP: Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions

Where are the Instructional Guidelines?

The 2009 instructional guidelines (IGs) were originally designed to help educators transition from the *National Standard Curricula* developed in the 1990s to the 2009 *Education Standards*.

When the revision team met, a discussion ensued regarding the ongoing usefulness of the IGs in their current form. It was agreed that the addition of the existing four IGs (EMR, EMT, AEMT and paramedic) to the *Education Standards* made the documents too cumbersome to be easily useful.

It was also evident that, while much of the IGs remained relevant, several sections had become outdated because of changes in evidence-based medicine, best practices, or technology. Simultaneously it was felt that it would be useful to have a level of specificity within the *Education Standards,* rather than require educators to look in multiple places when seeking guidance to create curricula.

The resulting document combined elements of the IGs with the overarching principles of the *Education Standards*. A level of knowledge depth and breadth is provided for each section of the *Standards*. At a glance, the trained educator will be able to determine the extent of information to be provided to their students. The result is an enriched blueprint of the education and training of today's EMS clinicians.

Beyond the Scope of the Project

There are four areas that were frequently brought up by stakeholders but not part of the project. Specialty certification education (e.g., critical care paramedic, community paramedic, tactical medic), degree requirements at any clinician level, nomenclature of the EMS profession and clinicians, and continuing education requirements were beyond the scope of this effort. Instead, the focus was to align the *Education Standards* with the newly released 2019 *Scope of Practice Model*.

Degree Requirements

The revision team heard numerous comments regarding degree requirements. Clearly, some parties strongly desire degree requirements for paramedics. Others strongly oppose them. Currently, there is not an industry consensus for degree requirements for EMS personnel. In many cases, several significant EMS stakeholders and the "larger" EMS community take a more neutral position. Time will allow for further discussion and debate on the topic. Early in the process, the team was advised that the debate for or against degrees was beyond the scope of the project as the 2021 *National EMS Education Standards* do not address degree requirements.

The team also received recommendations for education related to deeper clinical subject matter, leadership and management, public health, education, social work, research, and other areas related to EMS systems. One national stakeholder called for courses in health systems science and value-based care. Suggested courses included:

- Healthcare system structure and processes
- Healthcare policy, economics, and management
- Clinical informatics and health information technology
- Public/population health
- Health system improvement and person-centered care
- Structure and processes beyond EMS
- Healthcare reimbursement and finance
- Healthcare quality and safety

AEMT Accreditation

The 2019 *National EMS Scope of Practice Model* subject matter expert panel recommended requiring AEMT program accreditation by January 1, 2025. The panel deliberated and came to a consensus on the matter with the involvement of 13 stakeholders and various independent contributors. The *Education Standards* revision team supports this recommendation. The revision team deliberated the topic and concluded that accreditation is an identified goal of the 2000 *EMS Education Agenda* as well. Program accreditation helps ensure clinical and educational excellence, the use of proven practices for establishing sound EMS education programs, and adequate resources and services for educators and their students. Finally, accreditation requires EMS education

programs to collaborate with the community by establishing an external advisory board.

Portable Technologies

During the public comment periods, many participants identified the need for education standards that covered new and emerging technologies. There were specific and repeated recommendations for Point-of-Care Ultrasound (POCUS); the 2019 *Scope of Practice Model* subject matter experts directly addressed this skill and have determined that "portable technology" (which includes POCUS) has been left to the "credentialing" process of the EMS organization and medical director. The *Standards* revision team believes that the ideal time for use of these technologies is when a person has been educated, deemed competent, licensed, and credentialed with knowledge and skill. The local EMS medical director should be involved in the selection of technologies. Widespread education based on specific technologies should be decided at the local or state level. Only after national adoption and inclusion in a practice analysis should technologies be included in the *National EMS Education Standards* and *National EMS Scope of Practice Model.*

Instructional Practices: Simulation, Shadowing & Interprofessional Education

Because these are education standards and not a curriculum, the instructional strategies of simulation, shadowing, and interprofessional education are addressed here but not in the *Standards* themselves. The team does believe that an education program should implement numerous instructional techniques to accommodate the diversity of student learning needs inside and outside the EMS classroom. Using numerous instructional strategies will help reach every learner. A heavy reliance on the traditional lecture is not ideal and is not equitable, as some students learn better in different settings and every student benefits from experiencing other methods of instruction. Three types of instructional practices were identified by the public and various stakeholders: simulation, shadowing, and interprofessional education. The team believes that each practice has merit and must be considered as an additional instructional strategy.

Simulation

EMS simulation begins in the classroom with educators creating realistic scenarios to train all levels of EMS personnel. The days of allowing students to memorize and verbalize a check sheet is no longer acceptable and must be changed. Simulation has proven to increase critical thinking skills and reduce medical errors in our health care system. Simple to complex simulation comes in many forms, from table-top exercises and practicing intramuscular injections on an orange to standardized live patients and high-fidelity manikins. Cost will vary, but simulation does not have to be expensive to be successful. Simulation in EMS will achieve:

- Freedom for students to make mistakes and learn from them
- Higher success rates on the NREMT psychomotor exams
- Increased understanding and therapeutic communications on the affective learning domain
- Improvement in critical thinking skills of entry level personnel
- Improved safety, effectiveness, and efficiency of services
- Substitution for infrequent or unattainable clinical scenarios

Shadowing

Shadowing a practicing clinician offers students experiential, hands-on learning opportunities, and many learners have a special affinity for it. Shadowing affords a prospective EMS professional the chance to be immersed in the actual

job environment, making it possible to see an experienced worker apply the skills and traits needed to accomplish the work.

Interprofessional Education

Healthcare is best when delivered in a cooperative team environment; collaboration can result in improved communications, thus reducing medical errors, reducing costs for patients, and improving patient outcomes. Interprofessional Education is a proven instructional method, which results in positive outcomes in clinical preparation, healthcare profession education, and public safety. Interprofessional Education helps a learner realize how EMS fits into the larger "continuum of care" and plays a role in critical "systems of care." Learning how patients move through the healthcare system, from dispatch to discharge to follow-up care, plays a critical role in patient safety. Interaction with other healthcare providers and first responders during initial education will mutually enhance an understanding of everyone's roles in the system.

Out-of-hospital care is becoming more diverse and complex; as a result, individual EMS instructors may not possess the expertise or knowledge to teach all subjects within the revised *Standards*. When this occurs, a subject matter expert should be enlisted for the given topic. For instance, the public health section has been expanded and it would be a "best practice" to bring in a qualified content expert to cover the topic. Many areas related to EMS operations would also require a qualified content expert. Rescue operations have become extremely broad and specialized. Bodies of knowledge such as incident command, hazardous materials, and other unique topics require experience and specialized knowledge for quality instruction. The instructor should have a proper background, relevant knowledge, and obtained a degree or a recognized and credible credential in the topic. It is recommended that the EMS educator work with the subject matter experts to ensure relevance of the content to the practice of prehospital medicine.

Sequence of Instruction

The order of the *National EMS Education Standards* does not imply any particular sequence of instruction. For example, some topics, such as public health, could be taught early on or later in a course, despite appearing early in these *Standards*. Other topics, such as basic assessment skills, would likely come early in the clinician's education and precede concepts that build upon them. Curricular flow should be determined by the education program director, with input from faculty, medical direction, and advisory committees.

Locally Identified Topics

The revision team recognized and heard numerous comments regarding clinical content that is of great local need and yet may not be essential as an item for the entire nation. As a result, the team believed it would be best to include a statement that some content should be locally determined and developed at the simple depth, simple breadth level (or higher when desired). This content should be identified, developed, and implemented using a program medical director, advisory boards, the larger medical community, or faculty judgement.

Implicit Expectations

For a given illness, condition, or traumatic injury, the implicit expectation is that an educational program will include instruction of the relevant anatomy, physiology, pathophysiology, assessments, and accepted treatments. The team determined that this expectation is known by educators and repeating the statement in each section of the document is not required or desired.

Additional Resources

It is impossible for EMS instructors to know everything about the profession, and trying to stay up to date on the latest evidence-based guidelines, best practices, industry standards and research is a very difficult task. The resources found in Appendix A are intended as tools for educators to use as needed to remain current on changes in the field. Sites such as the EMS for Children, NHTSA (ems.gov) are invaluable resources for EMS instructors, but not limited to these.

Two critical sources that educators should consider referencing as they create learning content are the *National Model EMS Clinical Guidelines*, maintained by the National Association of State EMS Officials (NASEMSO), and pre-hospital evidence-based guidelines, many of which are produced through the efforts of The Prehospital Guidelines Consortium. The guidance provided by these sources is a result of collaboration among many national EMS stakeholders intent on promoting consensus and evidence to inform a general standard of prehospital care.

Summary of Significant Changes to the Education Standards

Behavioral/Psychiatric

Many, if not most EMS systems have seen a steady rise in behavioral emergencies and patients experiencing acute and chronic manifestations of psychiatric illnesses. Moreover, a lack of available in-patient beds at mental health facilities has resulted in EMS clinicians needing to manage these patients for longer periods of time and over longer distances.

As a result, the behavioral/psychiatric section of the *Education Standards* was revised to include more information regarding acute behavioral crisis and mental health disorders. Greater depth and breadth of knowledge were recommended for areas involving potential safety hazards to patients and EMS clinicians. Conversely, certain psychiatric disease and syndrome areas were revised and simplified.

Cultural Humility

Throughout healthcare and related fields, there has been a recognition of the importance of maintaining an awareness of the assumptions and biases related to cultural issues and how they may affect our patients, co-workers and students. Cultural humility is a lifelong, ongoing process of self-reflection and self-critique in which one learns about others' cultural identities and looks at how one's own background and social environment have shaped the individual. Cultural humility in EMS should address:

- **Education:** Are our EMS educators diverse? Does our student population reflect the community and are our classrooms free of stereotypes? Do we understand our own biases and the differences between all of our students?
- **EMS workforce:** Are we creating a diversified and equitable workforce reflective of our population? Promoting cultural humility can help strengthen relationships among staff, leadership, patients and families and other healthcare personnel we interact with on a daily basis.
- **Patient care:** Are we teaching cultural competency and humility to our EMS students? After graduation can our students provide culturally competent, equitable and medically appropriate prehospital care to each and every patient no matter their background? Cultural humility leads to higher quality care and better communication and trust between patients and clinicians.

EMS Operations

EMS operations, while extremely important, are determined by a variety of factors, including but not limited to the setting, the clinician's role, and the EMS system design. Therefore,

it is not possible to provide strict and straightforward training requirements that would be appropriate across these diverse settings. Below is a summary of the intent of each section of the EMS operations education standards. EMS educators and EMS institutions need to be able to work with local and state agencies to determine the appropriate level of knowledge that providers need to perform their duties safely and efficiently.

- **Principles of Safely Operating EMS Emergency Response Vehicles**

  The intent of this section is to give an overview of emergency response to ensure the safety of EMS personnel, patients, and others during EMS response vehicle operations. This does not prepare the entry level student to be an experienced and competent driver. Appropriate driver training designed for the entry level provider should be completed as required by State and local regulations, and is not intended to be part of a requirement to achieve national certification as an emergency medical responder. Information related to the clinical management of the patient during emergency response is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

- **Incident Management**

  Information related to the clinical management of the patient within components of the Incident Management System is found in the clinical sections of the *National EMS Education Standards* for each licensure level. The material presented in this section must be delivered by an individual who has been trained and has the proper credentials to educate students in these areas. The material may be obtained in-person or through distance learning as determined by State and local requirements.

- **Mass Casualty Incidents**

  The intent of this section is to give an overview of operating during a mass casualty incident when a multiple casualty incident plan is activated. Information related to the clinical management of the patients during a multiple casualty incident is found in the clinical sections of the *National EMS Education Standards* for each licensure level. The depth and breadth of training that must be achieved by clinicians at each level should be determined by State and local requirements.

- **Landing Zone Operations**

  The intent of this section is to give an overview of operating safely in and around a landing zone during air medical operations and transport. The safety considerations of setting up and operating in a landing zone should be taught by properly trained experts who have the proper knowledge and experience in the area of air medical transportation. The depth and breadth of information that is needed by each level of clinicians should be determined by State and local regulations. Information related to the clinical management of the patient being cared for during air medical operations is found in the clinical sections of the *National EMS Education Standards* for each licensure level.

- **Rescue Operations**

  The intent of this section is to provide an overview of rescue operations including, but not limited to, vehicle extrication, low/high angle, water, trench, and confined space to ensure the safety of EMS personnel and patients during these events. This does not prepare the entry-level student to become competent or qualified to work in these rescue environments. Information related to the clinical management of the patient being cared for during rescue incidents is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

- **Hazardous Materials**

  Information related to the clinical management of the patient exposed to hazardous materials is found in the clinical sections of the *National EMS Education Standards* for each personnel level. This information may be done as a Corequisite or Prerequisite or as Part of the Entry-Level Course as determined by State and local requirements.

  Training in this area should only be done by those that are properly trained and credentialed to provide the required training. Federal regulations require that at a minimum EMS personnel should be trained at the Hazardous Materials Awareness level. State and local regulations may have additional requirements that are above and beyond federal regulations. EMS educators should work in collaboration with local fire or emergency management authorities to determine proper training level required and assuring that properly credentialed instructors are providing the training. The information contained in the hazardous materials awareness programs are above and beyond the scope of national EMS programs for the entry-level provider.

- **Mass Casualty Incidents Due to Active Threats and Disaster**

  The intent of this section is to give an overview of operating during a terrorist event or during a natural or manmade disaster. Instruction in this area should be done by properly trained and knowledgeable individuals in this area. State and local regulations may have additional requirements that are above and beyond federal regulations. Information related to the clinical management of patients exposed to a terrorist event or involved in a disaster is found in the clinical sections of the *National EMS Education Standards* for each personnel level.

Public Health

Since the release of the original *National EMS Education Standards* in 2009, EMS has made substantial progress from being viewed as simply a provider of medical transport to a true out-of-hospital healthcare resource. The changes to the public health section of the *Standards* reflect this evolution in EMS. Public health prevention and pandemic preparedness efforts are essential functions in the future as EMS continues to be at the crossroads between healthcare, public health and public safety. The EMS clinician of the future will be expected to integrate into pandemic plans, assist in vaccinations, and act as the initial point of entry into robust community health programs.

The new standards are intended to prepare the entry-level provider to work alongside and collaboratively with specially trained community paramedics, social workers, public health organizations, healthcare entities, emergency management agencies, and non-governmental organizations in their day-to-day duties, and lay the foundation for advancement into specialized roles.

Pharmacology

An EMS culture of safety is a universal goal within the industry. A key area for safety is the administration of medications in the prehospital setting. The lack of desired pharmacology competency among EMS program graduates was identified by the *EMS Scope of Practice* subject matter experts, in EMS evidenced-based literature, and numerous other sources. When it comes to pediatric populations, EMS for Children identified a significant need for additional training in this area and called for specific teaching for pediatric dosing and troubleshooting abnormal situations. As a result, the pharmacology section has been expanded for EMR, EMT, AEMT, and paramedics. It is not enough to solely teach pharmacology in a traditional didactic manner. This skill must include didactic, psychomotor, and affective instruction. There must be significant opportunities

to practice the skill before leaving the education program. Simulation and, ideally, actual patient encounters must be offered to students. Emphasis and specific focus must be given to psychomotor practice of adult, pediatric, and geriatric medication administration due to the complexity of drug dosing and the chance of error.

EMS Safety, Wellness, and Resilience

Workforce safety and wellness has been expanded to reflect principles of stress management, responder mental health, resilience, and suicide prevention across all levels. With greater number of responders reporting thoughts of suicide, and suicide rates among first responders significantly exceeding those of the general population, a foundational level of knowledge is crucial to addressing this professional and occupational crisis. An overall greater emphasis on mental health resources is also recommended.

Standard safety precautions, use of personal protective equipment, illness and injury prevention, and lifting and moving patients continue to be emphasized at all levels of emergency responders. Other areas that have been added include crew resource management across all levels and disease transmission in the EMT, AEMT, and paramedic curricula

Pediatric and Geriatric Content Competencies

Individual sections for pediatrics and geriatrics have been removed, with education content addressing these special populations now incorporated throughout the education standards. This change is based on recommendations from pediatric-focused stakeholders, scientific evidence, and consensus among clinical partners.

Concepts related to geriatric and pediatric patients deserve equitable attention and should be taught repeatedly throughout every section of a course resulting in an earlier assimilation of the content. Pediatric stakeholders reported that anxiety, unfamiliarity with pediatric patients and equipment, and discomfort on the part of rescuers calls for aggressive remedies. These findings may be associated with the low frequency and high acuity of pediatric encounters.

The need for better EMS assessment, diagnosis, treatment, safe medication administration, airway management, and appropriate pain management has been identified. In every aspect of education, trouble shooting and critical thinking are required when clinical situations are confusing or problematic. As students acquire knowledge, skills, and abilities, opportunities to compare and contrast pediatric, adult, and geriatric populations will enhance and deepen learning.

During each individual section of the *Standards*, relevant pediatric and geriatric content should be discussed in detail as it is not covered in a separate section. Incorporation of this special population information into the general content should improve the comfort level of students by making the care of these patients part of everyday operations.

EMS education should include knowledge from the cradle to the grave. Pediatric and geriatric topics should no longer be minimized, in comparison to “adult” topics, or relegated to an isolated component of an EMS course, which can create a perception that the content is somehow less important.

EMS education and care should be family-centered. Family-centered care is a clinical methodology for the planning, delivery, and evaluation of health care which is established in an affirming partnership that collaboratively involves patients, families and the health care providers. Family-centered care represents a significant transition away from paternalistic medicine to what that is founded on pillars of respect, collaboration, information sharing, and shared decision-making.

While family-centered care is often taught as an area of focus for children with special needs, it should be integrated into the care of all patients. In the case of children with special healthcare needs, the family's knowledge of a child's condition can be immensely valuable. Yet, even among children with simple, acute medical emergencies, families and children often experience high levels of stress. Family-centered care seeks to help patients and families retain a sense of control. This includes providing opportunities for family members to be present during medical transport and invasive procedures. The approach recognizes that each family is unique, integral, and essential for health care safety and quality. The values of collaboration, responsiveness, and united decision-making are at the forefront of treatment. The beliefs, desires, and values from cultural backgrounds of the family and patient are considered and respected. Healthcare workers communicate with complete information and in an unbiased and respectful manner. When choices are made, decision-making involves all parties as coequal parts and decision-makers are known and informed, and health care clinicians listen to and honor patient and family choices. When family-centered care is optimal there is high quality care with safety, and family and patient satisfaction are achieved.

The reader will find phrases such as "include age-related variations in pediatric and geriatric patients" and "include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients." These phrases are intended to remind and direct EMS educators to elevate the importance of geriatric and pediatric education within each section.

		EMR	EMT	AEMT	Paramedic
Preparatory	**Preparatory**	**Uses knowledge of the EMS system, safety/well-being of the EMR, medical/legal issues and ethical issues at the scene of an emergency while awaiting a higher level of care.**	**Applies knowledge of the EMS system, safety/well-being of the EMT, medical/legal and ethical issues to the provision of emergency care.**	**Applies knowledge of the EMS system, safety/well-being of the AEMT, medical/legal and ethical issues to the provision of emergency care.**	**Integrates knowledge of EMS systems, the safety/well-being of the paramedic, and medical/legal and ethical issues which is intended to improve the health of EMS personnel, patients, and the community.**
	EMS Systems	• EMS systems (S,S) • Roles, responsibilities, and professionalism of EMS personnel (S,S) • Quality improvement vs. quality assurance (S,S) • Role of medical oversight (S,S) • Culture of safety / patient safety (S,S) • Continuum of care (S,S)	• EMS systems (S,F) • Roles, responsibilities, and professionalism of EMS personnel (F,F) • Quality improvement vs. quality assurance (S,F) • Role of medical oversight (S,S) • Culture of safety / patient safety (S,F) • Continuum of care (S,F) • History of EMS (S,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (S,F) • MIH/CP and other EMS related specialty roles (S,S)	• EMS systems (S,F) • Roles, responsibilities, and professionalism of EMS personnel (F,F) • Quality improvement vs. quality assurance (F,F) • Role of medical oversight (F,F) • Culture of safety / patient safety (F,F) • Continuum of care (F,F) • History of EMS (S,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (F,F) • MIH/CP and other EMS related specialty roles (F,F)	• EMS systems (C,C) • Roles, responsibilities, and professionalism of EMS personnel (C,C) • Quality improvement vs. quality assurance (C,C) • Role of medical oversight (C,C) • Culture or safety / patient safety (C,C) • Continuum of care (F,F) • History of EMS (F,F) • Systems of care, e.g., Stroke, STEMI, Trauma, Pediatrics (C,C) • MIH/CP and other EMS related specialty roles (F,F)

		EMR	EMT	AEMT	Paramedic
Preparatory	Workforce Safety and Wellness	• Standard safety precautions (S,S) • Personal protective equipment (S,S) • Lifting and moving patients (S,S) • Crew resource management (S,S) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (S,S)	• Standard safety precautions (F,F) • Personal protective equipment (F,F) • Lifting and moving patients (F,F) • Crew resource management (F,F) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (F,F)	• Standard safety precautions (F,F) • Personal protective equipment (F,F) • Lifting and moving patients (F,F) • Crew resource management (F,F) • Stress management (F,F) • Prevention of work-related injuries and illnesses (F,F) • Responder mental health, resilience and suicide prevention (F,F) • Wellness principles (F,F) • Disease transmission (F,F)	• Standard safety precautions (C,C) • Personal protective equipment (C,C) • Lifting and moving patients (C,C) • Crew resource management (F,F) • Stress management (C,C) • Prevention of work related injuries and illnesses (C,C) • Responder mental health, resilience and suicide prevention (C,C) • Wellness principles (C,C) • Disease transmission (C,C)
	Research	• Impact of research on EMR care (S,S) • Data collection (S,S)	• Impact of research on EMT care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S)	• Impact of research on AEMT care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S)	• Impact of research on Paramedic care (S,S) • Data collection (S,S) • Evidence-based decision making (S,S) • Research principles to interpret literature and advocate evidence-based practice (F,F)
	Documentation	• Recording patient findings (S,S)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (F,F)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (C,F)	• Recording patient findings (S,S) • Principles of medical documentation and report writing (C,C)
	EMS System Communication	• Call for resources (S,S) • Transfer care of the patient (S,S) • Interact within the team structure (S,S)	• EMS communication system (S,S) • Communication with other health care professionals to include cohesive and organized patient handoff (S,S) • Team communication and dynamics (S,S) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)	• EMS communication system (F,F) • Communication with other health care professionals to include cohesive and organized patient handoff (F,F) • Team communication and dynamics (F,F) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)	• EMS communication system (C,C) • Communication with other health care professionals to include cohesive and organized patient handoff (C,C) • Team communication and dynamics (C,C) • Telemetric monitoring devices and transmission of clinical data, including video data (S,S)

		EMR	EMT	AEMT	Paramedic
Preparatory	Therapeutic Communication	• Healthcare literacy (S,S) • Interviewing techniques (S,S) • Verbal defusing strategies (S,S) • Managing communication challenges (S,S) • Family centered care (S,S)	• Healthcare literacy (S,S) • Interviewing techniques (F,F) • Verbal defusing strategies (F,F) • Managing communication challenges (F,F) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (S,S) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (S,S)	• Healthcare literacy (F,F) • Interviewing techniques (F,F) • Verbal defusing strategies (F,F) • Managing communication challenges (F,F) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (S,S) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (S,S)	• Healthcare literacy (C,C) • Interviewing techniques (C,C) • Verbal defusing strategies (F,F) • Managing communication challenges (C,C) • Family centered care (F,F) • Adjusting communication strategies for age, stage of development, patients with special needs (C,C) • Non-discriminatory communication that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome (C,C)
	Medical/Legal and Ethics	• Consent/refusal of care (S,S) • Confidentiality (S,S) • Advanced directives (S,S) • Tort and criminal actions (S,S) • Evidence preservation (S,S) • Statutory responsibilities (S,S) • Mandatory reporting (S,S) • Ethical principles/moral obligations (S,S) • End of life issues (S,S)	• Consent/involuntary consent/ refusal of care (F,F) • Confidentiality (F,F) • Advanced directives (F,F) • Tort and criminal actions (F,F) • Evidence preservation (F,F) • Statutory responsibilities (F,F) • Mandatory reporting (F,F) • Ethical principles/moral obligations (F,F) • End of life issues (S,S)	• Consent/involuntary consent/ refusal of care (F,F) • Confidentiality (F,F) • Advanced directives (F,F) • Tort and criminal actions (F,F) • Evidence preservation (F,F) • Statutory responsibilities (F,F) • Mandatory reporting (F,F) • Ethical principles/moral obligations (F,F) • End of life issues (S,S)	• Consent/involuntary consent/ refusal of care (C,C) • Confidentiality (C,C) • Advanced directives (C,C) • Tort and criminal actions (C,C) • Evidence preservation (F,F) • Statutory responsibilities (C,C) • Mandatory reporting (C,C) • Ethical principles/moral obligations (C,C) • End of life issues (C,C) • Health care regulation (C,C) • Patient rights/advocacy (C,C) • Ethical tests and decision making (C,C)

	EMR	EMT	AEMT	Paramedic
Anatomy and Physiology	Uses knowledge of the anatomy and function of the upper airway, heart, vessels, blood, lungs, skin, muscles, and bones as the foundation of emergency care.	Applies knowledge of the anatomy and function of all human systems to the practice of EMS.	Integrates knowledge of the anatomy and physiology of the airway, respiratory and circulatory systems to the practice of EMS.	Integrate knowledge of the anatomy and physiology of all human systems

	EMR	EMT	AEMT	Paramedic
Medical Terminology	Uses medical and anatomical terms.	Uses anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health care professionals.	Same as EMT Level	Integrates anatomical and medical terminology and abbreviations into the written and oral communication with colleagues and other health care professionals.

	EMR	EMT	AEMT	Paramedic
Pathophysiology	Uses knowledge of shock and respiratory compromise to respond to life threats.	Applies knowledge of the pathophysiology of respiration and perfusion to patient assessment and management.	Applies knowledge of the pathophysiology of respiration and perfusion to patient assessment and management.	Integrates knowledge of pathophysiology of major human systems.

	EMR	EMT	AEMT	Paramedic
Life Span Development	Uses knowledge of age-related differences to assess and care for patients.	Applies knowledge of life span development to patient assessment and management.	Same as EMT Level	Integrates knowledge of life span development.

		EMR	EMT	AEMT	Paramedic
Public Health	**Public Health**	**Has an awareness of local public health resources and their role in public health.**	**Applies knowledge of the principles of public health epidemiology including public health emergencies, public health monitoring, health promotion, and illness and injury prevention.**	**Same as EMT level**	**Applies knowledge of principles of public health and epidemiology including public health emergencies, health promotion, and illness and injury prevention.**
	Public Health Overview	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S).	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric, and special populations public health concerns (S,S)	• EMS roles in public health (S,S) • Infection prevention and control (S,S) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric, and special populations public health concerns (S,S) • Impacts of political, social and economic issues (F,F) • Screenings and immunizations (F,F) • Infectious disease (F,F)	• EMS roles in public health (C,F) • Infection prevention and control (F,F) • Human trafficking (S,S) • EMS EHR reporting and data collection (S,S) • Governmental/nongovernmental roles & resources (S,S) • Public health mission and goals (S,S) • Social, geographic, economic, demographic determinants of health (S,S) • Patient and community education (S,S) • Injury prevention and wellness (S,S) • Unique pediatric, geriatric, and special populations public health concerns (S,S) • Impacts of political, social and economic issues (F,F) • Screenings and immunizations (C,F) • Infectious disease (C,F) • Patient disposition, selecting destination, and ambulance transport (C,F) • Bioinformatics (C,F)

		EMR	EMT	AEMT	Paramedic
Pharmacology	**Pharmacology**	**Uses knowledge of the medications that the EMR may administer in an emergency.**	**Applies knowledge of the medications the EMT may administer to a patient during an emergency and chronic or maintenance medications the patient may be taking.**	**Applies (to patient assessment and management) knowledge of the medications carried by AEMTs that may be administered to a patient during an emergency and chronic or maintenance medications the patient may be taking.**	**Integrates knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient.**
	Principles of Pharmacology	• Medication safety (S,S) • Kinds of medications used during an emergency (S,S)	• Medication safety (F,F) • Medication legislation (F,F) • Naming (F,F) • Classifications (F,F) • Storage and security (F,F) • Medication interactions (S,S) • Adverse drug reactions (S,S) • Metabolism and excretion (F,F) • Mechanism of action (F,F) • Medication response relationships (F,F)	• Medication safety (C,C) • Medication legislation (C,C) • Naming (C,C) • Classifications (C,C) • Storage and security (C,C) • Medication interactions (C,C) • Adverse drug reactions (C,C) • Pharmacokinetics (C,C) • Pharmacodynamics (C,C) • Schedules (C,C)	• Medication safety (C,C) • Medication legislation (C,C) • Naming (C,C) • Classifications (C,C) • Storage and security (C,C) • Medication interactions (C,C) • Adverse drug reactions (C,C) • Pharmacokinetics (C,C) • Pharmacodynamics (C,C) • Schedules (C,C)
	Medication Administration	• Use a Medication Cross Check procedure (S,S) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Use of tools/resources to facilitate safe administration of weight-based dosing.	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (F,F) • Provide pain management, including ethical and safety considerations (F,F) • Use of tools/resources to facilitate safe administration of weight-based dosing.	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (C,C) • Provide pain management, including ethical and safety considerations (C,C) • Routes of administration (C,C) • Use of tools/resources to facilitate safe administration of weight-based dosing.	• Use a Medication Cross Check procedure (F,F) • Use an autoinjector (S,S) • Use a unit-dose, premeasured intranasal device (S,S) • Administer medications to a patient (C,C) • Provide pain management, including ethical and safety considerations (C,C) • Routes of administration (C,C) • Use of tools/resources to facilitate safe administration of weight-based dosing.

		EMR	EMT	AEMT	Paramedic
Pharmacology	Acute Medications	• Names (S,S) • Effects (S,S) • Indications (S,S) • Contraindications (S,S) • Side effects (S,S) • Routes of administration (S,S) • Dosages (S,S)	• Names (F,S) • Effects (S,S) • Indications (F,S) • Contraindications (F,S) • Side effects (F,S) • Routes of administration (F,S) • Dosages (F,S) • Actions (F,S) • Complications (F,S) • Interactions (F,S)	• Names (C,C) • Effects (C,C) • Indications (C,C) • Contraindications (C,C) • Side effects (C,C) • Routes of administration (C,C) • Dosages (C,C) • Actions (C,C) • Complications (C,C) • Interactions (C,C)	• Names (C,C) • Effects (C,C) • Indications (C,C) • Contraindications (C,C) • Side effects (C,C) • Routes of administration (C,C) • Dosages (C,C) • Actions (C,C) • Complications (C,C) • Interactions (C,C)
	Chronic or Maintenance Medications	No knowledge related to this competency is applicable at this level.	Specific medication classes to be determined locally • Class Names (S,S) • Class Indications (S,S) • Class Complications (S,S) • Class Side effects (S,S) • Polypharmacy (S,S)	Specific medication classes to be determined locally • Class Names (S,S) • Class Indications (S,S) • Class Complications (S,S) • Class Side effects (S,S) • Polypharmacy (S,S)	Specific medication classes and examples to be determined locally • Class Names (F,S) • Class Indications (F,S) • Class Complications (F,S) • Class Side effects (F,S) • Polypharmacy (F,S)

		EMR	EMT	AEMT	Paramedic
Airway Management, Respiration and Ventilation	**Airway Management, Respiration and Ventilation**	**Applies knowledge of anatomy and physiology to assure a patent airway, adequate mechanical ventilation, and respiration while awaiting additional EMS response for patients of all ages.**	**Applies knowledge of anatomy and physiology to patient assessment and management in order to assure a patent airway, adequate mechanical ventilation, and respiration for patients of all ages.**	**Applies knowledge of upper airway anatomy and physiology to patient assessment and management in order to assure a patent airway, adequate mechanical ventilation, and respiration for patients of all ages.**	**Integrates knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate mechanical ventilation, and respiration for patients of all ages.**
	Airway Management (Include age-related variations in pediatric and geriatric patients)	• Airway anatomy (F,S) • Airway assessment (F,S) • Techniques of assuring a patent airway (F,S)	• Airway anatomy (F,F) • Airway assessment (F,F) • Techniques of assuring a patent airway (F,F)	• Airway anatomy (F,F) • Airway assessment (F,F) • Techniques of assuring a patent airway (F,F)	• Airway anatomy (C,C) • Airway assessment (C,C) • Techniques of assuring a patent airway (C,C)
	Respiration (Include age-related variations in pediatric and geriatric patients)	• Anatomy of the respiratory system (F,S) • Physiology and pathophysiology of respiration (F,S) o Pulmonary ventilation o Oxygenation o Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,S) • Supplemental oxygen therapy (F,S)	system (F,F) • Physiology and pathophysiology of respiration (F,C) o Pulmonary ventilation o Oxygenation o Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,C) • Supplemental oxygen therapy (F,C)	• Anatomy of the respiratory system (C,F) • Physiology and pathophysiology of respiration (F,C) o Pulmonary ventilation o Oxygenation o Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (F,C) • Supplemental oxygen therapy (F,C)	• Anatomy of the respiratory system (C,C) • Physiology and pathophysiology of respiration (C,C) o Pulmonary ventilation o Oxygenation o Respiration • External • Internal • Cellular • Assessment and management of adequate and inadequate respiration (C,C) • Supplemental oxygen therapy (C,C)
	Ventilation (Include age-related variations in pediatric and geriatric patients)	• Assessment and management of adequate and inadequate ventilation (F,S) • Effect of ventilation on cardiac output (F,S)	• Assessment and management of adequate and inadequate ventilation (F,F) • Effect of ventilation on cardiac output (F,F)	• Assessment and management of adequate and inadequate ventilation (C,F) • Effect of ventilation on cardiac output (C,F)	• Assessment and management of adequate and inadequate ventilation (C,C) • Effect of ventilation on cardiac output (C,C)

		EMR	EMT	AEMT	Paramedic
Assessment	**Assessment**	**Use scene information and patient assessment findings to identify and manage immediate life threats and injuries within the scope of practice of the EMR.**	**Applies scene information and patient assessment findings (scene size up, primary and secondary assessment, patient history, and reassessment) to guide emergency management.**	**Same as EMT Level**	**Integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. This includes developing a list of differential diagnoses through clinical reasoning to modify the assessment and formulate a treatment plan.**
	Scene Assessment	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (F,F) • Impact of the environment on patient care (F,F) • Addressing hazards (F,F) • Violence (F,F) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (F,F)	• Scene safety/situational awareness (C,C) • Scene management (C,C) • Impact of the environment on patient care (C,C) • Addressing hazards (C,C) • Violence (C,C) • Need for additional or specialized resources (F,F) • Standard precautions (F,F) • Multiple patient situations (C,C)
	Primary Assessment (Include age-related variations in pediatric and geriatric patients)	• Primary assessment (S,S) • Begin interventions needed to preserve life (S,S)	• Primary assessment (F,S) • Integration of treatment/procedures needed to preserve life (F,S)	• Primary assessment (F,F) • Integration of treatment/procedures needed to preserve life (F,F)	• Primary assessment (C,C) • Integration of treatment/procedures needed to preserve life (C,C)

		EMR	EMT	AEMT	Paramedic
Assessment	History Taking (Include age-related variations in pediatric and geriatric patients)	• Determining the chief complaint (S,S) • Mechanism of injury/ nature of illness (S,S) • Associated signs and symptoms (S,S)	• Investigation of the chief complaint (F,F) • Mechanism of injury/nature of illness (F,F) • Associated signs and symptoms (F,F) • Past medical history (F,F) • Pertinent negatives (F,F)	• Investigation of the chief complaint (F,F) • Mechanism of injury/nature of illness (F,F) • Associated signs and symptoms (F,F) • Past medical history (F,F) • Pertinent negatives (F,F)	• Investigation of the chief complaint (C,C) • Mechanism of injury/nature of illness (C,C) • Associated signs and symptoms (C,C) • Past medical history (C,C) • Pertinent negatives (C,C) • Interviewing techniques (C,C) • Therapeutic communication and adaptive interview techniques (C,C)
	Secondary Assessment (Include age-related variations in pediatric and geriatric patients)	• Assessment of vital signs (S,S) • Assessment of pain (S,S) • Performing a rapid full body scan (S,S)	• Assessment of vital signs (F,F) • Assessment of pain (F,F) • Techniques of physical examination (F,F) o Respiratory system including breath sound quality o Cardiovascular system o Neurological system o Musculoskeletal system o Major anatomical regions	• Assessment of vital signs (C,F) • Assessment of pain (C,F) • Techniques of physical examination (C,F) o Respiratory system including breath sound quality o Cardiovascular system o Neurological system o Musculoskeletal system o Major anatomical regions	• Assessment of vital signs (C,C) • Assessment of pain (C,C) • Techniques of physical examination (C,C) o Respiratory system including breath sound quality o Cardiovascular system o Neurological system o Musculoskeletal system o Major anatomical regions
	Monitoring Devices	No knowledge related to this competency is applicable at this level.	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (S,S) • Blood glucose determination (S,S)	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (S,S) • Blood glucose determination (S,S) • End tidal CO2 monitoring and interpretation of waveform capnography (S,S) • Venous blood sampling (S,S)	• Pulse oximetry (S,S) • Non-invasive blood pressure (S,S) • Cardiac monitoring – 12 lead ECG acquisition and transmission (F,F) • Blood glucose determination (S,S) • End tidal CO2 monitoring and interpretation of waveform capnography (F,F) • Venous blood sampling (S,S) • 12-lead ECG interpretation (F,F) • Blood chemistry analysis (F,F)
	Reassessment (Include age-related variations in pediatric and geriatric patients)	• How and when to reassess patients (S,S)	• How and when to reassess patients (F,F)	• How and when to reassess patients (F,F)	• How and when to reassess patients (C,C)

		EMR	EMT	AEMT	Paramedic
Medicine	**Medicine**	**Recognizes and manages life threats based on assessment findings of a patient with a medical emergency while awaiting additional emergency response.**	**Applies knowledge to provide basic emergency care and transportation based on assessment findings for an acutely ill patient.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for an acutely ill patient.**	**Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a treatment/ disposition plan for a patient with a medical complaint.**
	Medical Overview (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Assessment and management of a medical complaint (S,S)	• Pathophysiology, assessment, and management of a medical complaints to include (S,F) o Transport mode o Destination decisions	• Pathophysiology, assessment, and management of a medical complaints to include (F,F) o Transport mode o Destination decisions	• Pathophysiology, assessment, and management of a medical complaints to include (C,C) o Transport mode o Destination decisions
	Abdominal and Gastrointestinal Disorders (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Anatomy, presentations and management of shock associated with gastrointestinal bleeding (S,S)	• Acute and chronic gastrointestinal hemorrhage (F,F) • Other gastrointestinal disorders to be determined locally (S,S)	• Acute and chronic gastrointestinal hemorrhage (F,F) • Other gastrointestinal disorders to be determined locally (S,S)	• Acute and chronic gastrointestinal hemorrhage (C,C) • Bowel obstruction (C,C) • Liver and biliary tract disorders (F,F) • Pancreatitis (S,S) • Inflammatory disorders (S,S) • Peritonitis (S,S) • Other gastrointestinal disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	Cardiovascular (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Chest pain (S,S)	• Acute coronary syndrome (F,F) • Hypertensive emergencies (S,S) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (F,F) • Other cardiovascular disorders to be determined locally (S,S)	• Acute coronary syndrome (C,F) • Hypertensive emergencies (F,S) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (F,F) • Other cardiovascular disorders to be determined locally (S,S)	• Acute coronary syndrome (C,C) • Hypertensive emergencies (C,C) • Aortic aneurysm/dissection (F,F) • Thromboembolism (F,F) • Heart failure (C,C) • Non-traumatic cardiac tamponade (C,C) • Cardiogenic shock (C,C) • Vascular disorders (C,C) • Cardiac rhythms (C,C) • Conditions that predispose patients to cardiac rhythm disturbances including WPW, Brugada, long QT syndrome, and others (C,C) • Infectious diseases of the heart: endocarditis, myocarditis, pericarditis (F,F) • Congenital heart disease (F,F) • Hypertrophic cardiomyopathy (F,F) • Other cardiovascular disorders to be determined locally (S,S)
	Disorders of the Eyes, Ears, Nose, and Throat (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Epistaxis (S,S)	• Epistaxis (S,S) • Other eye, ear, nose, and throat disorders to be determined locally (S,S)	• Epistaxis (F,F) • Post-surgical oropharyngeal hemorrhage (F,F) • Other eye, ear, nose, and throat disorders to be determined locally (S,S)	• Epistaxis (F,F) • Post-surgical oropharyngeal hemorrhage (F,F) • Common or major diseases of the eyes, ears, nose, and throat (F,F) • Other eye, ear, nose, and throat disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	Endocrine Disorders (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Awareness that diabetic emergencies cause altered mental status (S,S)	• Diabetic emergencies (F,F) • Other endocrine disorders to be determined locally (S,S)	• Diabetic emergencies (C,F) • Other endocrine disorders to be determined locally (S,S)	• Diabetic emergencies (C,C) • Chronic diabetes (C,C) • Adrenal disease (S,S) • Pituitary and thyroid disorders (S,S) • Inborn errors of metabolism (S,S) • Other endocrine disorders to be determined locally (S,S)
	Genitourinary/Renal (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blood pressure assessment in hemodialysis patients (S,S)	• Complications related to renal dialysis (S,S) • Complications related to urinary catheter management (not insertion) (S,S) • Kidney stones (S,S) • Sexual assault (Female and Male) (F,F) • Other GI/Renal to be determined locally (S,S)	• Complications related to renal dialysis (F,S) • Complications related to urinary catheter management (not insertion) (S,S) • Kidney stones (F,S) • Sexual assault (Female and Male) (F,F) • Other GI/Renal to be determined locally (S,S)	• Complications of dialysis (C,C) • Complications related to urinary catheter management (not insertion) (S,S) • Renal calculi (C,C) • Sexual assault (Female and Male) (C,C) • Acute/chronic renal failure (C,C) • Acid base disturbances (C,C) • Fluid and electrolytes (C,C) • Infection (F,F) • Male genital tract conditions (F,F) • Other GI/Renal to be determined locally (S,S)
	Hematology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	No knowledge related to this competency is applicable at this level.	• Sickle cell crisis (S,S) • Clotting disorders (S,S) • Other hematologic disorders to be determined locally (S,S)	• Sickle cell crisis (F,F) • Clotting disorders (S,S) • Other hematologic disorders to be determined locally (S,S)	• Sickle cell disease (C,C) • Coagulopathies (F,F) • Blood transfusion complications (F,F) • Hemostatic disorders (F,F) • Red blood cell disorders (F,F) • White blood cell disorders (F,F) • Other hematologic disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Immunology** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Anaphylactic reactions (S,S)	• Allergic and anaphylactic reactions (F,F) • Other immunological disorders to be determined locally (S,S)	• Allergic and anaphylactic reactions (C,C) • Systemic Inflammatory Response Syndrome (SIRS) (C,C) • Other immunological disorders to be determined locally (S,S)	• Allergic and anaphylactic reactions (C,C) • Systemic Inflammatory Response Syndrome (SIRS) (C,C) • Hypersensitivity (C,C) • Anaphylactoid reactions (C,C) • Collagen vascular disease (F,F) • Transplant related problems (F,F) • Immunodeficiency Syndromes (Acquired or congenital) (F,F) • Other immunological disorders to be determined locally (S,S)
	Infectious Diseases (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Awareness of patient who may have an infectious disease (S,S) • How to disinfect and decontaminate equipment after treating a patient (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (S,S) • Other infectious diseases to be determined locally (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (F,F) • HIV (F,F) • Hepatitis B (F,F) • Antibiotic resistance (F,F) • Current infectious diseases prevalent in the community (F,F) • Vaccine-preventable diseases (F,F) • Other infectious diseases to be determined locally (S,S)	• Assessment and management of a patient who may have an infectious disease (S,S) • How to decontaminate the ambulance and equipment after treating a patient (S,S) • Sepsis and septic shock (C,C) • HIV-related disease (C,C) • Hepatitis (C,C) • Meningitis (C,C) • Antibiotic resistance (F,F) • Current infectious diseases prevalent in the community (F,F) • Vaccine-preventable diseases (C,C) • Viral diseases: RSV, Herpes zoster (F,F) • Sexually transmitted infections (F,F) • Tetanus (S,S) • Vector-borne diseases (S,S) • Tuberculosis (S,S) • Emerging infectious disease (S,S) • Other infectious diseases to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	Neurology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Decreased level of responsiveness (S,S) • Seizure (S,S) • Stroke (S,S)	• Decreased level of responsiveness (S,S) • Seizure (F,F) • Stroke (F,F) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (F,F) • Brief Resolved Unexplained Event (BRUE) (F,F) • Other neurological disorders to be determined locally (S,S)	• Decreased level of responsiveness (S,S) • Seizure (C,F) • Stroke (F,F) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (F,F) • Brief Resolved Unexplained Event (BRUE) (F,F) • Other neurological disorders to be determined locally (S,S)	• Decreased level of responsiveness (S,S) • Seizure (C,C) • Stroke (C,C) • Dementia vs. delirium (S,S) • Alzheimer's disease (S,S) • Headache (C,C) • Brief Resolved Unexplained Event (BRUE) (F,F) • Hydrocephalus – CSF diversion devices or shunts (F,F) • Other neurological disorders to be determined locally (S,S)
	Non-Traumatic Musculoskeletal Disorders (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Non-traumatic fractures (S,S)	• Non-traumatic fractures (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)	• Non-traumatic fractures (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)	• Non-traumatic fractures (F,F) • Disorders of the spine (F,F) • Joint abnormalities (F,F) • Muscle abnormalities (F,F) • Overuse syndromes (F,F) • Rhabdomyolysis (F,F) • Other non-traumatic musculoskeletal disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	Psychiatric or Behavioral Emergencies (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/ or emergencies associated with pediatric and geriatric patients)	• Recognition of behaviors that pose a risk to the EMR, patient, or others • Recognition of suicide risk	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse, and neglect (S,S) • Acute psychosis (F,F) • Suicide ideation (F,F) • Excited delirium (F,F) • Anxiety (F,F) • Depression (F,F) • Medical fear (F,F) • Substance use disorder (F,F) • PTSD (F,F) • Other psychiatric/behavioral disorders to be determined locally (S,S)	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse, and neglect (S,S) • Acute psychosis (F,F) • Suicide ideation (C,C) • Excited delirium (F,F) • Anxiety (F,F) • Depression (F,F) • Medical fear (F,F) • Substance use disorder/ addictive behavior (C,C) • PTSD (F,F) • Other psychiatric/behavioral disorders to be determined locally (S,S)	• Basic principles of the mental health system (S,S) • Patterns of violence, abuse, and neglect (C,C) • Acute psychosis (F,F) • Suicide ideation (C,C) • Excited delirium (C,C) • Anxiety (C,C) • Depression (C,C) • Medical fear (F,F) • Substance use disorder/ addictive behavior (C,C) • PTSD (C,C)) • Acute psychosis (C,C) • Cognitive disorders (F,F) • Thought disorders (F,F) • Mood disorders (F,F) • Neurotic disorders (F,F) • Somatoform disorders (F,F) • Factitious disorders (F,F) • Personality disorders (F,F) • Other psychiatric/behavior disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Medicine	**Respiratory** (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Upper airway obstruction (S,S) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (S,S) • Respiratory distress/ failure/arrest (S,S)	• Upper airway obstruction (F,F) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (F,F) • Respiratory distress/failure/arrest (S,S) • Spontaneous pneumothorax (F,F) • Pulmonary edema (F,F) • Other respiratory disorders to be determined locally (S,S)	• Upper airway diseases: foreign body, croup, epiglottitis (C,F) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD) (C,F) • Respiratory distress/failure/arrest (S,S) • Spontaneous pneumothorax (F,F) • Pulmonary edema (C,F) • Other respiratory disorders to be determined locally (S,S)	• Upper airway diseases: foreign body, croup, epiglottitis (C,C) • Lower airway disease: Asthma, bronchiolitis, pneumonia, chronic obstructive pulmonary disease (COPD), bronchopulmonary dysplasia (C,C) • Respiratory distress/failure/arrest (S,S) • Spontaneous pneumothorax (C,C) • Pulmonary edema (C,C) • Other respiratory disorders to be determined locally (S,S)
	Toxicology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Carbon monoxide poisoning (S,S) • Nerve agent poisoning (S,S) • Opioid toxicity (S,S) • How and when to contact a poison control center (S,S)	• Carbon monoxide poisoning (S,S) • Nerve agent poisoning (S,S) • Opioid toxicity (S,S) • How and when to contact a poison control center (S,S) • Poisons (inhaled, ingested, injected, absorbed) (F,F) • Alcohol intoxication and withdrawal (F,F) • Other toxicological disorders to be determined locally (S,S)	• Carbon monoxide poisoning (S,S) • Nerve agent poisoning (S,S) • Opioid toxicity (F,F) • How and when to contact a poison control center (S,S) • Poisons (inhaled, ingested, injected, absorbed) (F,F) • Alcohol intoxication and withdrawal (F,F) • Other toxicological disorders to be determined locally (S,S)	• Carbon monoxide poisoning (C,C) • Nerve agent poisoning (S,S) • Opioid toxicity (F,F) • How and when to contact a poison control center (S,S) • Poisons (inhaled, ingested, injected, absorbed) (F,F) • Alcohol intoxication and withdrawal (C,C) • Toxidromes (C,C) o Cholinergic o Anticholinergic o Sympathomimetic o Sedative/hypnotics o Opioid o Corrosive o Knockdown • Chronic or maintenance medications (C,C) • Drugs of abuse (C,C) • Non-FDA approved medications and supplements (C,C) • Serotonin Syndrome (C,C) • Malignant Hyperthermia (C,C) • Other toxicological disorders to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Shock and Resuscitation	**Shock and Resuscitation**	**Uses assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.**	**Applies knowledge of the causes, pathophysiology, and management of shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts, and post resuscitation management.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for a patient in shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts, and post resuscitation management.**	**Integrates knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states.**
	Shock (Include psychosocial aspects of age-related assessment and treatment modifications for pediatric and geriatric patients)	• Definition (S,S) • Physiologic response (S,S)	• Essential components in normal perfusion (F,S) • Physiologic response (S,S) • Types of shock (S,S) • Treatment of shock (S,S)	• Essential components in normal perfusion (F,F) • Physiologic response (F,F) • Types of shock (F,F) • Treatment of shock, hypoperfusion, and dehydration (C,C) • Complications of shock (F,F) • Circulatory assist devices (F,F)	• Essential components in normal perfusion (C,C) • Physiologic response (C,C) • Types of shock (C,C) • Treatment of shock, hypoperfusion, and dehydration (C,C) • Complications of shock (C,C) • Circulatory assist devices (C,C)
	Resuscitation from Cardiac Arrest (Include psychosocial aspects of age-related assessment and treatment modifications for pediatric and geriatric patients)	• Ethical issues in resuscitation (S,S) • CPR physiology (S,S) • Resuscitation system components (S,S) • Special arrest and peri-arrest situations (S,S)	• Ethical issues in resuscitation (C,C) • CPR physiology (F,F) • Resuscitation system components (F,F) • Special arrest and peri-arrest situations (F,F) • Postresuscitation support (F,F)	• Ethical issues in resuscitation (C,C) • CPR physiology (F,F) • Resuscitation system components (F,F) • Special arrest and peri-arrest situations (F,F) • Postresuscitation support (F,F)	• Ethical issues in resuscitation (C,C) • CPR physiology (C,C) • Resuscitation system components (C,C) • Special arrest and peri-arrest situations (C,C) • Postresuscitation support (C,C) • Premorbid conditions (C,C)

		EMR	EMT	AEMT	Paramedic
Trauma	**Trauma**	**Uses assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based on assessment findings and manages the emergency while awaiting additional emergency response.**	**Applies knowledge of the causes, pathophysiology, and management of shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts, and post resuscitation management.**	**Applies knowledge to provide basic and selected advanced emergency care and transportation based on assessment findings for a patient in shock, respiratory failure or arrest, cardiac failure or arrest, termination of resuscitative efforts, and post resuscitation management.**	**Integrates knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states.**
	Trauma Overview (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	No knowledge related to this competency is applicable at this level.	• Trauma scoring (F,F) • Transport and destination issues (F,F) • Transport mode (F,F)	• Trauma scoring (F,F) • Transport and destination issues (F,F) • Transport mode (F,F)	• Trauma scoring (C,C) • Transport and destination issues (C,C) • Transport mode (F,F)
	Abdominal and Genitourinary Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blunt versus penetrating mechanisms (S,S) • Evisceration (S,S) • Impaled object (S,S)	• Blunt versus penetrating mechanisms (F,S) • Evisceration (F,S) • Impaled object (S,S) • Solid and hollow organ injuries (F,S) • Injuries to the internal or external genitalia (F,S)	• Blunt versus penetrating mechanisms (F,F) • Evisceration (F,F) • Impaled object (S,S) • Solid and hollow organ injuries (F,F) • Injuries to the internal or external genitalia (F,F) • Vascular injury (F,F) • Retroperitoneal injuries (F,F)	• Blunt versus penetrating mechanisms (C,C) • Evisceration (C,C) • Impaled object (S,S) • Solid and hollow organ injuries (C,C) • Injuries to the internal or external genitalia (C,C) • Vascular injury (C,C) • Retroperitoneal injuries (C,C)
	Bleeding (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Bleeding (S,S)	• Bleeding (F,F)	• Bleeding (F,F) • Fluid resuscitation (C,C)	• Bleeding (C,C) • Fluid resuscitation (C,C)

		EMR	EMT	AEMT	Paramedic
Trauma	Chest Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Blunt versus penetrating mechanisms (S,S) • Open chest wound (S,S) • Impaled object (S,S)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Blunt versus penetrating (F,S) • Hemothorax (F,S) • Pneumothorax (F,S) • Cardiac tamponade (F,S) • Rib fractures (F,S) • Flail chest (F,S) • Commotio cordis (F,S)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Blunt versus penetrating (F,S) • Hemothorax (F,F) • Pneumothorax (F,F) • Cardiac tamponade (F,F) • Rib fractures (F,F) • Flail chest (F,F) • Commotio cordis (F,S) • Traumatic aortic disruption (F,F) • Pulmonary contusion (F,F) • Blunt cardiac injury (F,F) • Traumatic asphyxia (F,F)	• Blunt versus penetrating mechanisms (F,S) • Open chest wound (S,S) • Impaled object (S,S) • Blunt versus penetrating (F,S) • Hemothorax (C,C) • Pneumothorax (C,C) • Cardiac tamponade (C,C) • Rib fractures (C,C) • Flail chest (C,C) • Commotio cordis (F,S) • Traumatic aortic disruption (C,C) • Pulmonary contusion (C,C) • Blunt cardiac injury (C,C) • Traumatic asphyxia (C,C) • Tracheobronchial disruption (C,C) • Diaphragmatic rupture (C,C)
	Environmental Emergencies (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Drowning (S,S) • Temperature-related illness (S,S) • Bites and envenomations (S,S) • Lightning injury (S,S) • Other environmental emergencies to be determined locally (S,S)	• Drowning (F,F) • Temperature-related illness (F,F) • Bites and envenomations (F,F) • Lightning injury (F,F) • Other environmental emergencies to be determined locally (S,S)	• Drowning (F,F) • Temperature-related illness (F,F) • Bites and envenomations (F,F) • Lightning injury (F,F) • Other environmental emergencies to be determined locally (S,S)	• Drowning (C,C) • Temperature-related illness (C,C) • Bites and envenomations (C,C) • Lightning injury (C,C) • Other environmental emergencies to be determined locally (S,S)

		EMR	EMT	AEMT	Paramedic
Trauma	Head, Facial, Neck, and Spine Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Life threats (S,S) • Spine trauma (S,S)	• Life threats (S,S) • Spine trauma (F,F) • Penetrating neck trauma (F,F) • Laryngotracheal injuries (F,F) • Shaken Baby Syndrome (F,F) • Facial fractures (S,S) • Skull fractures (S,S) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S)	• Life threats (S,S) • Spine trauma (F,F) • Penetrating neck trauma (F,F) • Laryngotracheal injuries (C,F) • Shaken Baby Syndrome (F,F) • Facial fractures (C,F) • Skull fractures (S,S) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S)	• Life threats (S,S) • Spine trauma (C,C) • Penetrating neck trauma (C,C) • Laryngotracheal injuries (C,C) • Shaken Baby Syndrome (F,F) • Facial fractures (C,F) • Skull fractures (C,C) • Foreign bodies in the eyes (S,S) • Globe rupture (S,S) • Dental trauma (S,S) • Severe epistaxis (S,S) • Unstable facial fractures (F,F) • Orbital fractures (F,F) • Perforated tympanic membrane (F,F) • Mandibular fractures (C,C)
	Multi-System Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Multi-system trauma (S,S)	• Multi-system trauma (F,F) • Blast injuries (F,F)	• Multi-system trauma (C,F) • Blast injuries (F,F)	• Multi-system trauma (C,C) • Blast injuries (C,C)
	Nervous System Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Traumatic brain injury (S,S)	• Traumatic brain injury (F,F) • Spinal cord injury (F,F)	• Traumatic brain injury (C,F) • Spinal cord injury (F,F)	• Traumatic brain injury (C,C) • Spinal cord injury (C,C) • Spinal shock (C,C) • Cauda equina syndrome (F,F) • Nerve root injury (F,F) • Peripheral nerve injury (F,F)

		EMR	EMT	AEMT	Paramedic
Trauma	Orthopedic Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Open fractures (S,S) • Closed fractures (S,S) • Dislocations (S,S) • Amputations (S,S)	• Open fractures (F,F) • Closed fractures (F,F) • Dislocations (F,F) • Amputations/replantation (F,F) • Upper and lower extremity orthopedic trauma (F,F) • Sprains/strains (F,F) • Pelvic fractures (F,F)	• Open fractures (F,F) • Closed fractures (F,F) • Dislocations (F,F) • Amputations/replantation (C,F) • Upper and lower extremity orthopedic trauma (F,F) • Sprains/strains (F,F) • Pelvic fractures (C,F)	• Open fractures (C,C) • Closed fractures (C,C) • Dislocations (C,C) • Amputations/replantation (C,F) • Upper and lower extremity orthopedic trauma (C,C) • Sprains/strains (F,F) • Pelvic fractures (C,F) • Pediatric fractures (F,F) • Tendon laceration/ transection/ rupture (Achilles and patellar) (F,F)
	Soft Tissue Trauma (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Wounds (avulsion, bite, laceration, puncture, incision) (S,S) • Burns (electrical, chemical, thermal) (S,S) • Chemicals in the eye and on the skin (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (F,F) • Burns (electrical, chemical, thermal, radiation) (F,F) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (S,S) • High-pressure injection injury (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (F,F) • Burns (electrical, chemical, thermal, radiation) (F,F) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (F,S) • High-pressure injection injury (S,S)	• Wounds (avulsion, bite, laceration, puncture, incision) (C,C) • Burns (electrical, chemical, thermal, radiation) (C,C) • Chemicals in the eye and on the skin (S,S) • Crush/compartment syndrome (C,C) • High-pressure injection injury (S,S)
	Special Considerations in Trauma	• Pregnant patient (S,S) • Pediatric patient (S,S) • Geriatric patient (S,S)	• Pregnant patient (F,F) • Pediatric patient (F,F) • Geriatric patient (F,F) • Cognitively impaired patient (F,F)	• Pregnant patient (C,F) • Pediatric patient (C,F) • Geriatric patient (C,F) • Cognitively impaired patient (C,F)	• Pregnant patient (C,C) • Pediatric patient (C,C) • Geriatric patient (C,C) • Cognitively impaired patient (C,C)

		EMR	EMT	AEMT	Paramedic
Special Patient Populations	**Special Patient Populations**	**Recognizes and manages life threats based on simple assessment findings for a patient with special needs while awaiting additional emergency response.**	**Applies knowledge of growth, development, and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.**	**Applies knowledge of growth, development, and aging and assessment findings to provide basic and selected advanced emergency care and transportation for a patient with special needs.**	**Integrates assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a treatment/disposition plan for patients with special needs.**
	Gynecology (Include psychosocial aspects of age-related assessment and treatment modifications for the major or common diseases and/or emergencies associated with pediatric and geriatric patients)	• Shock associated with vaginal bleeding (S,S)	• Vaginal bleeding (F,F) • Infections (S,S) • Other gynecological disorders to be determined locally (S,S)	• Vaginal bleeding (F,F) • Infections (S,S) • Other gynecological disorders to be determined locally (S,S)	• Vaginal bleeding (C,C) • Infections (F,F) • Ovarian emergencies (F,F) • Vaginal foreign body (F,F) • Other gynecological disorders to be determined locally (S,S)
	Obstetrics	• Normal delivery (S,S) • Vaginal bleeding in the pregnant patient (S,S)	• Normal delivery (F,F) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (F,F) • Pathophysiology of complications of pregnancy (F,F) • Assessment of the pregnant patient (F,F) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (F,F) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/ miscarriage (F,F) • Ectopic pregnancy (F,F) • Preeclampsia/eclampsia (F,F) • Postpartum complications (S,S)	• Normal delivery (F,F) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (F,F) • Pathophysiology of complications of pregnancy (F,F) • Assessment of the pregnant patient (F,F) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (F,F) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/miscarriage (F,F) • Ectopic pregnancy (F,F) • Preeclampsia/eclampsia (F,F) • Postpartum complications (C,C)	• Normal delivery (C,C) • Vaginal bleeding in the pregnant patient (S,S) • Normal pregnancy (anatomy and physiology) (C,C) • Pathophysiology of complications of pregnancy (C,C) • Assessment of the pregnant patient (C,C) • Abnormal delivery (nuchal cord, prolapsed cord, breech, shoulder dystocia, prematurity, multiparity) (C,C) • Third trimester and antepartum bleeding (placenta previa. placental abruption) (F,F) • Spontaneous abortion/miscarriage (C,C) • Ectopic pregnancy (C,C) • Preeclampsia/eclampsia (C,C) • Postpartum complications (C,C) • High risk pregnancy (C,C) • Complications of labor (fetal distress, premature rupture of membranes, rupture of uterus) (C,C) • Hyperemesis gravidarum (S,S) • Postpartum depression (S,S)

		EMR	EMT	AEMT	Paramedic
Special Patient Populations	Neonatal Care	• Newborn stabilization (S,S) • Neonatal resuscitation (S,S)	• Newborn stabilization (F,F) • Neonatal resuscitation (F,F)	• Newborn stabilization (F,F) • Neonatal resuscitation (F,F)	• Newborn stabilization (C,C) • Neonatal resuscitation (C,C) • Anatomy and physiology of neonatal circulation (C,C)
	Pediatrics	The Education Standards now integrate assessment, diagnostic, treatment, and disposition modifications for pediatric-specific diseases and emergencies into each section of the document.			
	Geriatrics	The Education Standards now integrate assessment, diagnostic, treatment, and disposition modifications for geriatric-specific diseases and emergencies into each section of the document			
	Patients with Special Challenges	• Recognizing and reporting abuse and neglect (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (S,S) • Neglect (S,S) • Child Maltreatment (S,S) • Homelessness (S,S) • Poverty (S,S) • Bariatrics (S,S) • Technology dependent (locally determined) (S,S) • Hospice/ terminally ill (S,S) • Tracheostomy care/dysfunction (S,S) • Homecare (S,S) • Sensory deficit/loss (S,S) • Developmental disability (S,S) • Autism Spectrum Disorder (S,S) • Orthotics/prosthetics (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (F,F) • Neglect (F,F) • Child Maltreatment (F,F) • Homelessness (F,F) • Poverty (F,F) • Bariatrics (F,F) • Technology dependent (locally determined) (F,F) • Hospice/ terminally ill (F,F) • Tracheostomy care/dysfunction (F,F) • Homecare (F,F) • Sensory deficit/loss (F,F) • Developmental disability (F,F) • Autism Spectrum Disorder (F,F) • Orthotics/prosthetics (S,S)	• Recognizing and reporting abuse and neglect (S,S) • Abuse/Intimate partner violence (C,C) • Neglect (C,C) • Child Maltreatment (C,C) • Homelessness (F,F) • Poverty (C,C) • Bariatrics (C,C) • Technology dependent (vagal nerve stimulators, CSF diversion devices or shunts, VAD, pacemakers, gastric tubes, and others to be locally determined) (C,C) • Hospice/ terminally ill (C,C) • Tracheostomy care/dysfunction (C,C) • Homecare (F,F) • Sensory deficit/loss (F,F) • Developmental disability (F,F) • Autism Spectrum Disorder (F,F) • Orthotics/prosthetics (S,S)

		EMR	EMT	AEMT	Paramedic
EMS Operations	**EMS Operations**	**Knowledge of operational roles and responsibilities to ensure patient, public, and personnel safety**	**Same as EMR Level**	**Same as EMR Level**	**Same as EMR Level**
	Emergency Response Vehicles	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (S,F) • Risks and responsibilities of transport (S,F)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (S,F) • Risks and responsibilities of transport (S,F)	• Risks and responsibilities of emergency response and radio communications (S,S) • Risks and responsibilities of operating emergency vehicles (S,S) • Pediatric transport considerations (S,F) • Risks and responsibilities of transport (S,F)
	Incident Management (The extent of information presented in this area will vary at the regional and local level.)	• Establish and work within the incident management system (S,S)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)	• Establish and work within the incident management system (F,F) • Understand the principles of Crew Resource Management (F,F)
	Multiple Casualty Incidents (The extent of information presented in this area will vary at the regional and local level.)	• Operational goals (F,F) • Field triage (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)	• Operational goals (F,F) • Field triage (F,F) • Destination determination (F,F) • Treatment principles (F,F)
	Air Medical (The extent of information presented in this area will vary at the regional and local level.)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (S,S)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)	• Safe air medical operations (S,S) • Criteria for utilizing air medical response (S,S) • Medical risks/needs/advantages (F,F)

		EMR	EMT	AEMT	Paramedic
EMS Operations	Rescue Operations (The extent of information presented in this area will vary at the regional and local level.)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)	• Safety principles of rescue operations (S,S)
	Hazardous Materials (The extent of information presented in this area will vary at the regional and local level.)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)	• Risks and responsibilities of operating on the scene of a hazardous materials incident (S,S)
	Mass Casualty Incidents due to Terrorism and Disaster (The extent of information presented in this area will vary at the regional and local level.)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)	• Risks and responsibilities of operating on the scene of a natural or man-made disaster (F,F)

Clinical Behavior/Judgment

	EMR	EMT	AEMT	Paramedic
Assessment	• Perform a simple assessment to identify life threats, identify injuries requiring spinal motion restriction and conditions requiring treatment within the scope of practice of the EMR:	• Perform a basic history and physical examination to identify acute complaints and monitor changes. • Formulate a field diagnosis based upon an actual and/or potential illness or injury.	• Perform a basic history and physical examination to identify acute complaints and monitor changes. • Formulate a field diagnosis based upon an actual and/or potential illness or injury.	• Perform a comprehensive history and physical examination to identify factors affecting the health and health needs of a patient. • Relate assessment findings to underlying pathological and physiological changes in the patient's condition. • Integrate and synthesize the multiple determinants of health and clinical care. • Formulate a field diagnosis based on an analysis of comprehensive assessment findings, anatomy, physiology, pathophysiology, and epidemiology. • Perform health screening and referrals.
Therapeutic Communication and Cultural Humility	• Effectively communicates in a non-discriminatory manner that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome.	Same as EMR level	Same as EMR level	Same as EMR level
Psychomotor Skills	• Safely and effectively perform all psychomotor skills within the National EMS Scope of Practice Model AND state Scope of Practice at this level.	Same as EMR Level	Same as EMR Level	Same as EMR Level
				Anticipate and prospectively intervene to improve patient outcome.

Clinical Behavior/Judgment

	EMR	EMT	AEMT	Paramedic
Professionalism	• Demonstrate professional behavior including: but not limited to, integrity, empathy, self-motivation, appearance/ personal hygiene, self-confidence, communications, time-management, teamwork/ diplomacy, respect, patient advocacy, careful delivery of service, and life-long leaning	Same as EMR Level	Same as EMR Level	• Is a role model of exemplary professional behavior including: but not limited to, integrity, empathy, self-motivation, appearance/ personal hygiene, self-confidence, communications, time-management, teamwork/ diplomacy, respect, patient advocacy, careful delivery of service, and life-long learning
Decision Making	• Initiates simple interventions based on assessment findings.	• Initiates interventions based on assessment findings intended to provide symptom relief (within the provider's scope of practice) while providing access to definitive care • Evaluates the effectiveness of interventions and modifies treatment plan accordingly.	Same as EMR Level	• Performs interventions as part of a treatment plan intended to provide symptom relief and improve the overall health of the patient. • Evaluates the effectiveness of interventions and modifies treatment plan accordingly. • Evaluates decision making strategy for cognitive errors to enhance future critical thinking skills (metacognition)
Record Keeping	• Report and document assessment findings and interventions performed.	• Report and document assessment findings, interventions performed, and clinical decision making	Same as EMR Level	Same as EMR Level
Team Dynamics	• Manage the scene until care is transferred to an EMS team member licensed at a higher level arrives.	• The entry-level clinician serves as a team member, while gaining the experience necessary to function as the team leader.	Same as EMR Level	Same as EMR Level
Safety	• Ensure the safety of the rescuer, other public safety personnel, civilians, and the patient.	Same as EMR Level	Same as EMR Level	Same as EMR Level

Educational Infrastructure

	EMR	EMT	AEMT[2]	Paramedic
Educational Facilities	• Perform a simple assessment to identify life threats, identify injuries requiring spinal motion restriction and conditions requiring treatment within the scope of practice of the EMR:	Same as EMR Level	Same as EMR Level	Reference Committee on Accreditation for EMS Professions *(CoAEMSP) Standards and Guidelines (www.coaemsp.org)*[1]
Student Space	• Effectively communicates in a non-discriminatory manner that addresses inherent or unconscious bias, is culturally aware and sensitive, and intended to improve patient outcome.	Same as EMR Level	Same as EMR Level	
Instructional Resources	• Safely and effectively perform all psychomotor skills within the National EMS Scope of Practice Model AND state Scope of Practice at this level.	Same as EMR Level	Same as EMR Level	
Instructor Preparation Resources	• Provide space for instructor preparation • Provide support equipment for instructor preparation	Same as EMR Level	Same as EMR Level	
Storage Space	• Provide adequate and secure storage space for instructional materials	Same as EMR Level	Same as EMR Level	

[1] *The National EMS Education Agenda for the Future*: A Systems Approach (2000) calls for national accreditation of Paramedic programs. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). CAAHEP is the only national agency that offers Paramedic educational programmatic accreditation and is used or recognized by most states. Recognition of national accreditation remains the responsibility of each state.

[2] The 2018 National Scope of Practice Model calls for national accreditation of AEMT programs. The target for full implementation of AEMT program accreditation is January 1, 2025. Until that date, AEMT programs should reference the existing infrastructure suggestions within this document. The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).CAAHEP is the only national agency that offers EMS programmatic accreditation and is used or recognized by most states. Recognition of national accreditation remains the responsibility of each state.

Educational Infrastructure

	EMR	EMT	AEMT	Paramedic
Sponsorship	Sponsoring organizations shall be one of the following: • Accredited educational institution, or • Public safety organization, or • Accredited hospital, clinic, or medical center, or • Other state approved institution or organization	Same as EMR Level	Same as EMR Level	
Programmatic Approval	• Sponsoring organization shall have programmatic approval by authority having jurisdiction for program approval (State)	Same as EMR Level	Same as EMR Level	
Faculty	Course primary instructors should • be educated at a level higher than they are teaching; however, as a minimum, they must be educated at the level they are teaching • have completed an approved instructor training program or equivalent	Same as EMR Level	Same as EMR Level	
Medical Director Oversight	• Provide medical oversight for all medical aspects of instruction	Same as EMR Level	Same as EMR Level	
Hospital/Clinical Experience	• None required at this level	• The student must demonstrate the ability to perform an adequate assessment and implement an adequate treatment plan. • These can be performed in an emergency department, ambulance, clinic, nursing home, doctor's office, etc., or on standardized patients when clinical settings are not available.	• The student must demonstrate the ability to perform an adequate assessment and implement an adequate treatment plan.	

Educational Infrastructure

	EMR	EMT	AEMT	Paramedic
Field Experience	• None required at this level	• The student should participate in and document patient contacts in a field experience approved by the medical director and program director. o This should occur in an ambulance or simulated ambulance experience, when ambulance internships are not available.	• The student must participate in and document both patient contacts and team leadership roles in a field experience approved by the medical director and program director.	
Course Length	• Instructors may use a variety of formats to deliver content including but not limited to: o Independent student preparation o Synchronous or asynchronous instruction o Face-to-face instruction o Pre- or co-requisites • Course length should be based on competency, not hours o Consensus opinion is that students should need a minimum of 48 didactic and laboratory clock hours to cover the material.	• Instructors may use a variety of formats to deliver content including but not limited to: o Independent student preparation o Synchronous or asynchronous instruction o Face-to-face instruction o Pre- or co-requisites • Course length should be based on competency, not hours o Consensus opinion is that students should need a minimum of 150 clock hours including the four integrated phases of education (didactic, laboratory, clinical and field) to cover the material	• Instructors may use a variety of formats to deliver content including but not limited to: o Independent student preparation o Synchronous or asynchronous instruction o Face-to-face instruction o Pre- or co-requisites • Course length should be based on competency, not hours o Consensus opinion is that students should need a minimum of 200 clock hours beyond EMT requirements including the four integrated phases of education (didactic, laboratory, clinical and field) to cover the material	
Course Design	• Provide the following components of instruction: o Didactic instruction o Skills laboratories	• Provide the following components of instruction: o Didactic instruction o Skills laboratories o Hospital/clinical experience o Field experience	Same as EMT Level	
Student Assessment	• Perform knowledge, skill, and professional behavior evaluation based on educational standards and program objectives • Provide several methods of assessing achievement • Provide assessment that measures, as a minimum, entry level competency in all domains	Same as EMT Level	Same as EMT Level	
Program Evaluation	• Provide evaluation of program instructional effectiveness • Provide evaluation of organizational and administrative effectiveness of program	Same as EMT Level	Same as EMT Level	

Glossary

Academic institution – Body or establishment instituted for an educational purpose that provides college credit or awards degrees.

Accreditation – The granting of approval by an official review board after meeting specific requirements. The review board is nongovernmental and the review is collegial and based on self-assessment, peer assessment and judgment. The purpose of accreditation is student protection and public accountability.

Advanced-level care – Care that has greater potential benefit to the patient, but also greater potential risk to the patient if improperly or inappropriately performed. It is more difficult to attain and maintain competency in and requires significant background knowledge in basic and applied sciences. This level of care includes invasive and pharmacological interventions.

Affective domain – Describes learning in terms of feelings/emotions, attitudes and values. (NAEMSE, 2005, p. 306)

Asynchronous instruction/learning – An instructional method that allows the learner to use a self-directed and self-paced learning format to move through the content of the course. In this type of instruction, learner-to-learner and learner-to-instructor interactions are independent of time and place. Communications and submission of work typically follow a schedule while learners and instructors do not interact at the same time.

Certification – The issuing of a certificate by a private agency based upon competency standards adopted by that agency and met by the individual.

Cognitive domain – Describes learning that takes place through the process of thinking—it deals with facts and knowledge. (NAEMSE, 2005, p. 306)

Competency – Expected behavior or knowledge to be achieved within a defined area of practice.

Credential – Generic term referring to all forms of professional qualification.

Credentialing – The umbrella term that includes the concepts of accreditation, licensure, registration and professional certification. Credentialing can establish criteria for fairness, quality, competence, and/or safety for professional services provided by authorized individuals, for products, or for educational endeavors. Credentialing is the process by which an entity, authorized and qualified to do so, grants formal recognition to or records the recognition status of individuals, organizations, institutions, programs, processes, services, or products that meet predetermined and standardized criteria. (NOCA, 2006)

Credentialing agency – An organization that certifies an institution's or individual's authority or claim of competence in a course of study or completion of objectives.

Curriculum – A particular course of study, often in a specialized field. For EMS education, it has traditionally included detailed lesson plans.

Didactic – The instructional theory, the lesson content. (NAEMSE, 2005, p. 307)

Distributive education – A generic term used to describe a variety of learning delivery methods that attempt to accommodate a geographical separation (at least for some of the time) of the instructor and learners. Distributed education includes computer and web-based instruction, distance learning through television or video, web-based seminars, video conferencing, and electronic and traditional educational models.

Domains – A category of learning. (See Affective domain, Cognitive domain, and Psychomotor domain.) (NAEMSE, 2005, p. 307)

Entry-level competence – The level of competence expected of an individual who is about to begin a career. The minimum competence necessary to practice safely and effectively.

Health Screening – A test or exam performed to find a condition before symptoms begin. Screening tests may help find diseases or conditions early when they may be easier to treat. (Medline Plus definition)

Instructional Guidelines – A resource document that provides initial guidance for content within the *National EMS Education Standards.* It is not a curriculum and should not be adopted by States.

Licensure – The act of granting an entity permission to do something that the entity could not legally do without such permission. Licensing is generally viewed by legislative bodies as a regulatory effort to protect the public from potential harm. In the health care delivery system, an individual who is licensed tends to enjoy a certain amount of autonomy in delivering health care services. Conversely, the licensed individual must satisfy ongoing requirements that ensure certain minimum levels of expertise. A license is generally considered a privilege, not a right.

Medical oversight – Physician review and approval of clinical content and matters relevant to medical authority.

National EMS Core Content – The document that defines the domain of out-of-hospital care.

National EMS Education Program Accreditation – The accreditation process for institutions that sponsor EMS educational programs.

National EMS Education Standards – The document that defines the terminal objectives for each licensure level.

National EMS Scope of Practice Model – The document that defines the scope of practice of the various levels of EMS licensure.

Patient simulation – An alternative to a human patient to help students improve patient assessment and management skills; a high-fidelity patient simulator provides realistic simulation that responds physiologically to student therapies. These simulators have realistic features such as chests that rise and fall with respirations, pupils that react to light, pulses that can be palpated, etc.

Post-graduate internship and/or experience – Experience gained after the student has completed and graduated from school.

Practice analysis – A study conducted to determine the frequency and criticality of the tasks performed in practice.

Preceptor – A clinical teacher or instructor who is responsible for evaluating and ensuring student progress during hospital and field experiences. This individual typically has training to be able to function effectively in the role.

Primary instructor – A person who possesses the appropriate academic and/or allied health credentials and understanding of the principles and theories of education, and the required instructional experience necessary to provide quality instruction to students. (NAEMSE, 2005, p. 309)

Program director – The individual responsible for an educational program or programs.

Psychomotor domain – Describes learning that takes place through the attainment of skills and bodily, or kinesthetic, movements. (NAEMSE, 2005, p. 309)

Registration agency – An agency that is traditionally responsible for providing a product used to evaluate a chosen area. States may voluntarily adopt this product as part of their licensing process. The registration agency is also responsible for gathering and housing data to support the validity and reliability of their product.

Regulation – A rule or a statue that prescribes the management, governance, or operation parameters for a given group; tends to be a function of administrative agencies to which a legislative body has delegated authority to promulgate rules and regulations to "regulate a given industry or profession." Most regulations are intended to protect the public health, safety and welfare.

Scope of practice – The description of what a licensed individual legally can and cannot perform.

Standardized patient – An individual who has been thoroughly trained to accurately simulate a real patient with a medical condition; a standardized patient plays the role of a patient for students learning patient assessment, history taking skills, communication skills, and other skills.

Standard of care – The domain of acceptable practice, as defined by scope of practice, current evidence, industry consensus and experts. Standard of care can vary depending on the independent variables of each situation.

Synchronous instruction – Instructional method whereby learners and instructors interact at the same time, either in the classroom or via a computer-driven course. This method allows for more immediate learner guidance and feedback using face-to-face, instant text-based messaging, or real-time voice communications.

Team leader – Someone who leads the call and provides guidance and direction for setting priorities, scene, and patient assessment and management. The team leader may not actually perform all the interventions but may assign others to do so.

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Acknowledgements and Stakeholder Input

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Stakeholder Organizations Invited to Provide Input

Academy of International Mobile Health Integration
American Academy of Pediatrics – NRP Steering Committee
American Ambulance Association
American College of Emergency Physicians
American College of Surgeons Committee on Trauma
Association of Air Medical Services
Association of Critical Care Transport
Commission on Accreditation of Ambulance Services
Commission on Accreditation of Medical Transport Systems
Committee on Accreditation of Educational Programs for the EMS Professions/Commission on Accreditation of Allied Health Education Programs
EMS for Children (Health Resources and Services Administration, Maternal Child and Health Bureau)
EMS for Children Innovation & Improvement Center
Emergency Nurses Association
International Association of EMS Chiefs
International Association of Fire Chiefs
International Association of Fire Fighters
International Association of Flight & Critical Care Paramedics
State of Minnesota EMS Regulatory Board
National Association of EMS Physicians
National Association of EMTs
National Association of State EMS Officials
National EMS Management Association
National Fire Protection Agency
National Registry of EMTs
National Volunteer Fire Council
US Army
US Air Force

Project Meetings

- First Development Meeting – May 2-3, 2019, Pittsburgh, PA
- Association Liaison/Stakeholder Call – July 15, 2019
- Second Development Meeting – October 3-4, 2019, Washington, DC
- Revision Meeting – January 30-February 1, Hurst, TX
- Association Liaison/Stakeholder Call – August 11, 2020
- Revision Meeting (virtual) – October 9, 2020
- Third Development Meeting (virtual) – January 2021 (dates TBD)

Public Comment Periods

- August 16-September 20, 2019
- February 17-March 17, 2020
- November 13-December 14, 2020

Appendix A: Resources for Curriculum Development

Preparatory	
EMS System	NAEMT, National EMS Safety Council: https://naemt.org/initiatives/ems-safety/national-ems-safety-council National EMS Quality Alliance: http://www.nemsqa.org/ National EMS Advisory Council 911.gov: https://www.ems.gov/911-system.html EMS.gov: https://www.ems.gov/ EMS.gov, EMS History: https://www.ems.gov/OEMShistory.html U. S. Fire Administration, Quality Assurance in EMS: https://www.usfa.fema.gov/training/coffee_break/062617.html National EMS Museum: https://emsmuseum.org/
Workforce Safety and Wellness	National EMS Advisory Council, EMS Health and Psychological Wellbeing: A Paradigm, 2019 EMS.gov, EMS Safety: https://www.ems.gov/safety.html EMS World, Crew Resource Management in EMS: https://www.emsworld.com/article/10319135/crew-resource-management-and-ems U. S. Fire Administration, Quality Assurance in EMS: https://www.usfa.fema.gov/training/coffee_break/062617.html NAEMT, National EMS Safety Council: http://www.naemt.org/docs/default-source/ems-health-and-safety-documents/nemssc/ems-safety-program-guide-10-11-17.pdf National Association of State EMS Officials NASEMSO, Fatigue in EMS: https://nasemso.org/projects/fatigue-in-ems/ CDC, National Institute of Occupational Health and Safety: https://www.cdc.gov/niosh/index.htm National Association of EMS Physicians, COVID-19 Resources: https://naemsp.org/resources/covid-19-resources/

Research	EMS.gov; EMS Research: https://www.ems.gov/research.html National Association of EMTs, Research: https://www.naemt.org/initiatives/ems-research NREMT: https://www.nremt.org/rwd/public/document/research UCLA, Prehospital Care Research Forum: https://www.cpc.mednet.ucla.edu/pcrf EMS.gov, Prehospital Evidence-Based Guidelines: https://www.ems.gov/projects/evidence-based-guidelines.html Prehospital Guidelines Consortium: http://prehospitalguidelines.org/ National Association of State EMS Officials: https://nasemso.org/
Documentation	EMS.gov, EMS Data: https://www.ems.gov/emsdata.html NEMSIS: https://nemsis.org/ NIH, EMS Documentation: https://www.ncbi.nlm.nih.gov/books/NBK448107/
EMS System Communication	EMS.gov; 911 System: https://www.ems.gov/911-system.html EMS1.com: https://www.ems1.com/ems-products/communications/
Therapeutic Communication	Registered Nursing, Therapeutic Communication Techniques: https://www.registerednursing.org/nclex/therapeutic-communication/ National Association of EMS Educators, The Impact of Cultural Humility in Prehospital Healthcare Delivery and Education: https://cdn.ymaws.com/naemse.org/resource/resmgr/docs/position_paper/the_impact_of_cultural_humil.pdf Quizlet.com; Client Education, Therapeutic Communication, Culture and Ethnicity, Spirituality: https://quizlet.com/167137793/client-education-therapeutic-communication-culture-and-ethnicity-spirituality-flash-cards/ EMS World, The ABCs of LGBT: Creating a Positive Space in the Ambulance: https://www.emsworld.com/220931/ce-article-abcs-lgbt-creating-positive-space-ambulance
Medical/Legal and Ethics	EMS1.com: https://www.ems1.com/legal/ Quizlet.com: *Legal issues in EMS*: https://quizlet.com/2435743/legal-issues-in-ems-flash-cards/

Anatomy and Physiology	Human Anatomy and Physiology Society: https://www.hapsweb.org/ American Association for Anatomy: https://www.anatomy.org/
Medical Terminology	Merck Manual, *Understanding Medical Terminology*: https://www.merckmanuals.com/home/resourcespages/medical-terms
Pathophysiology	EMS1.com, *Pathophysiology*: https://www.ems1.com/pathophysiology/
Life Span Development	Quizlet.com: https://quizlet.com/246424281/emt-chapter-8-lifespan-development-flash-cards/ Lumen, Introduction to Psychology: https://courses.lumenlearning.com/wmopen-psychology/chapter/what-is-lifespan-development/
Public Health	American Public Health Communication: https://apha.org/what-is-public-health Rural Health Information Hub, Community Paramedicine: https://www.ruralhealthinfo.org/topics/community-paramedicine#:~:text=Community%20paramedicine%20is%20a%20relatively,underserved%20populations%20in%20the%20community EMS.gov; Addressing Public Health Issues with EMS Date: https://www.ems.gov/projects/addressing-public-health-issues-ems-data.html Health Affairs, Community Paramedicine: A Simple Approach to Increasing Access to Care, With Tangible Results: https://www.healthaffairs.org/do/10.1377/hblog20171027.424417/full/ EMS1.com, What EMS leaders need to know about public health: ems1.com/ems-management/articles/what-ems-leaders-need-to-know-about-public-health-lOKjSWsmoXXyA4rv/ EMS.gov, Opioid Crisis: https://www.ems.gov/projects/opioid-crisis.html CDC; Pandemic Influenza: https://www.cdc.gov/flu/pandemic-resources/index.htm

Pharmacology

Principles of Pharmacology **Medical Administration** **Acute Medications** **Chronic or Maintenance Medications**	Sage Journals, Medication Safety in EMS: https://journals.sagepub.com/doi/pdf/10.1177/2042098618821916 NIH, U.S. National Library of Medicine: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6351968/ Center for Public Safety, Reducing Preventable Harm: https://www.centerforpatientsafety.org/ NASEMSO National Model EMS Clinical Guidelines medication list (current version) American Heart Association (current Guidelines) EMS1.com, Pharmacology: https://www.ems1.com/pharmacology/ Pharmacology Education Project, Clinical Pharmacokinetics: https://www.pharmacologyeducation.org/clinical-pharmacology/clinical-pharmacokinetics Pharmacology Education Project, Clinical Pharmacodynamics: https://www.pharmacologyeducation.org/clinical-pharmacology/clinical-pharmacodynamics

Airway Management, Respirations, and Ventilations

Airway Management **Respiration** **Ventilation**	American Heart Association American Heart Association ECC guidelines NAEMT Geriatric Education for EMS NAEMT PHTLS and AMLS texts

Assessment

Scene Assessment	Quizlet.com, EMS Scene Size-up: https://quizlet.com/287694060/ems-scene-size-up-flash-cards/ EMS1.com, 5 Scene Size-up Tips for EMS: https://www.ems1.com/safety/articles/5-scene-size-up-tips-for-ems-providers-T3cYoQlmWWsF1RlQ/

Primary Assessment **History Taking** **Secondary Survey**	NREMT, Paramedic Portfolio and Scenario Based Exam: https://www.nremt.org/rwd/public/document/paramedic-portfolio EMS1.com, 8 Patient Assessment Tips for New EMS Providers: https://www.ems1.com/ems-products/education/articles/8-patient-assessment-tips-for-new-ems-providers-8ZrqVk3ODgdPfB8f/ EMS World, Patient Assessment: Why the Basics Matter: https://www.emsworld.com/article/11224733/patient-assessment-why-basics-matter
Monitoring Device	WebMD, High-Tech Glucose Monitoring: https://www.webmd.com/diabetes/glucometers-features-guidelines#1 EMS1.com, Capnography: https://www.ems1.com/capnography/ Journal of EMS, The How, What and Why of EMS Pulse Oximetry: https://www.jems.com/2017/05/09/the-how-what-and-why-of-ems-pulse-oximetry/ JEMS, Waveform Capnography video: https://emsairway.com/2019/08/14/video-waveform-capnography/ Journal of EMS, Why Collect Blood Samples Prehospital: https://www.jems.com/2019/11/19/why-collect-blood-samples-prehospital/

Medicine

Medical Overview	NAEMT Advanced Medical Life Support (AMLS)
Neurology	American Stroke Association: Prehospital Stroke Resources: https://www.stroke.org/en/professionals/stroke-resource-library/pre-hospitalems/prehospitalems-resources Epilepsy Foundation, EMS/First Responder Training: https://www.epilepsy.com/living-epilepsy/our-training-and-education/ems-first-responder-training Epilepsy Foundation, EMS Training: https://www.epilepsy.com/sites/core/files/atoms/files/603EMS-PARTICIPANT_store%20ready.pdf Merck Manual, Disorders in infants and Children: https://www.merckmanuals.com/professional/pediatrics/miscellaneous-disorders-in-infants-and-children/alte-and-brue Vermont Health Care, Trachs and Tubes and Shunts: http://www.vtemsconference.com/uploads/7/4/3/6/74368907/ebright__trach_tube_shunts__1_.pdf CDC, Epilepsy: https://www.cdc.gov/dotw/epilepsy/index.html

Abdominal and Gastrointestinal Disorders	YouTube, Abdominal Emergencies for EMTs: https://www.youtube.com/watch?v=s4bnRccNvwI PubMed, Abdominal Emergencies in Peds: https://www.ncbi.nlm.nih.gov/pubmed/27041066 International Journal of Emergency Medicine, Abdominal Emergencies in Geriatrics: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4306086/ Academy Life in Emergency Medicine, 10 Tips in Approaching Abdominal Pain in the Elderly: https://www.aliem.com/ten-tips-for-approaching-abdominal-pain-in-the-elderly/ EMS World, Abdominal Pain: https://www.emsworld.com/article/10319892/abdominal-pain
Immunology	eLife, Immunology and Inflammation: https://elifesciences.org/subjects/immunology-inflammation?msclkid=d14ca50c44461ebf6990fb35c0dac5e4&utm_source=bing&utm_medium=cpc&utm_campaign=FP%20-%20United%20States&utm_term=Immunology&utm_content=FP%20-%20US%20-%20RESEARCH%20-%20Immunology EMS World, The Impaired Immune System: https://www.emsworld.com/article/11227096/impaired-immune-system Quizlet.com, Immunology Emergencies: https://quizlet.com/48733579/emt-chapter-18-immunology-emergencies-flash-cards/
Infectious Diseases	Center for Disease Control: https://www.cdc.gov/ EMS1.com, Sepsis: 10 Things You Need to Know to Save Lives: https://www.ems1.com/sponsored-article/articles/sepsis-10-things-you-need-to-know-to-save-lives-CwhpS0ttm2FRrVty/ EMS.gov, Infectious Disease Playbook: https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf eLife, Microbiology and Infectious Disease: https://elifesciences.org/subjects/microbiology-infectious-disease?msclkid=366cfd4ae4c51ab78baca373624a744d&utm_source=bing&utm_medium=cpc&utm_campaign=FP%20-%20United%20States&utm_term=Infectious%20Disease&utm_content=FP%20-%20US%20-%20RESEARCH%20-%20Infectious%20Disease CDC, Ending HIV Transmission: https://www.cdc.gov/vitalsigns/test-treat-prevent/index.html CDC, HIV/AIDS: https://www.cdc.gov/dotw/hiv-aids/index.html CDC, Respiratory Syncytial Virus (RSV): https://www.cdc.gov/dotw/rsv/index.html JEMS, What EMS Providers Need to Know about the Novel Coronavirus (2019-nCoV): https://www.jems.com/2020/02/10/what-ems-providers-need-to-know-about-the-novel-coronavirus-2019-ncov/

Endocrine Disorders	EB Medicine, An Evidence-Based Assessment of Pediatric Endocrine Emergencies: https://www.ebmedicine.net/topics/endocrine/pediatric-endocrine-disorders Post Graduate Medical Journal, Endocrine Emergencies: https://pmj.bmj.com/content/80/947/506 Quizlet.com, Endocrine Emergencies: https://quizlet.com/17102854/endocrine-emergencies-flash-cards/ The Endocrine Society, Education & Training: https://www.endocrine.org/education-and-training The Endocrine Society, Clinical Practice Guidelines: https://www.endocrine.org/clinical-practice-guidelines The Endocrine Society, Treatment of Diabetes in Older Adults Guideline Resources: https://www.endocrine.org/clinical-practice-guidelines/diabetes-in-older-adults Endocrine Society, Primary Adrenal Insufficiency Guideline Resources: https://.endocrine.org/clinical-practice-guidelines/primary-adrenal-insufficiency Endocrine Society, Diagnosis of Cushing's Syndrome Guidelines Resources: https://www.endocrine.org/clinical-practice-guidelines/diagnosis-of-cushing-syndrome CDC, Diabetes: https://www.cdc.gov/dotw/diabetes/index.html
Behavioral Emergencies	EMS1.com, Expert Tips for Handling of Behavioral Emergencies: https://www.ems1.com/assault/articles/expert-tips-for-ems-handling-of-behavioral-emergencies-FEB0mKmFYqBIiOWX/ EMS World, Beyond the Basics: Behavioral Emergencies: https://www.emsworld.com/article/10322372/beyond-basics-behavioral-emergencies JEMS, Evaluation and Management of Psychiatric Emergencies in the Prehospital Setting: https://www.jems.com/2014/07/10/evaluation-and-management-psychiatric-em/ ACPHD.org, Meeting the Challenge of Pediatric Behavioral, Emergencies: http://www.acphd.org/media/109325/meeting_challenges_pediatric_behavioral_emergencies.pdf Merck Manual, Behavioral Emergencies: https://www.merckmanuals.com/professional/psychiatric-disorders/approach-to-the-patient-with-mental-symptoms/behavioral-emergencies PsycheGuides.com, Behavioral Emergencies: https://www.psychguides.com/behavioral-disorders/emergencies/ Quizlet.com, Behavioral Emergencies: https://quizlet.com/16502486/behavioral-emergencies-flash-cards/ NCBI, Psychiatric Emergencies: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4923517/ Psychiatric Times, Managing a Psychiatric Emergency: https://www.psychiatrictimes.com/special-reports/managing-psychiatric-emergency NAEMT, Psychological Trauma in EMS Patients: http://www.naemt.org/education/ptep

Cardiovascular	CDC, Heart Disease: https://www.cdc.gov/heartdisease/ EMS1.com, Quiz: Test Your Knowledge of Cardiac Emergencies: https://www.ems1.com/ems-products/education/articles/quiz-test-your-knowledge-of-cardiac-emergencies-WKGkECbd11Y3s6mA/ Medic Test, EMS Pharmacology: Drugs that Affect the Cardiovascular System: https://legacy.medictests.com/ems-pharmacology-drugs-affect-cardiovascular-system/ ILCOR, ECC Guidelines: https://www.ilcor.org/ AHA, CPR and ECC Guidelines: https://eccguidelines.heart.org/circulation/cpr-ecc-guidelines/ CDC, Diabetes and Your Heart: https://www.cdc.gov/diabetes/library/features/diabetes-and-heart.html
Toxicology	HHS CHEMM: https://chemm.nlm.nih.gov/toxicsyndromes.htm EMS.gov, EMS and the Opioid Crisis: https://www.ems.gov/projects/opioid-crisis.html NASEMSO, Naloxone Evidence-Based Guidelines: https://nasemso.org/projects/naloxone-evidence-based-guidelines/ CDC, Life-Saving Naloxone from Pharmacies: https://www.cdc.gov/vitalsigns/naloxone/index.html
Respiratory	CDC, COPD: https://www.cdc.gov/copd/index.html CDC, Pneumonia: https://www.cdc.gov/dotw/pneumonia/index.html
Hematology	CDC, Hemophilia: https://www.cdc.gov/dotw/hemophilia/index.html CDC, Sickle Cell Disease: https://www.cdc.gov/dotw/sickle-cell-disease/index.html Bleedingdisorders.com, In this Together: https://www.bleedingdisorders.com/?utm_source=bing&utm_medium=ppc&utm_campaign=Brand&utm_content=Takeda-Care&msclkid=8784665852091dc115e43819d01057b9
Genitourinary/ Renal	Relias Media, Genitourinary Emergencies in Male Children: Recognition and Management: https://www.reliasmedia.com/articles/28300-genitourinary-emergencies-in-male-children-recognition-and-management ScienceDirect, Genitourinary Emergencies: https://www.sciencedirect.com/journal/emergency-medicine-clinics-of-north-america/vol/37/issue/4 Bing.com videos: Genitourinary emergencies: https://www.bing.com/videos/search?q=genitourinary+emergencies&qpvt=genitourinary+emergencies&FORM=VDRE

Gynecology	CDC, Sexually Transmitted Diseases: https://www.cdc.gov/std/ U.S. National Library of Medicine, Gynaecological Emergencies in the Tropics: Recent Advances in Management: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4110985/ Intechipen.com, Overview of Gynaecological Emergencies: https://www.intechopen.com/books/contemporary-gynecologic-practice/overview-of-gynaecological-emergencies Science Direct, Gynecologic Emergencies: https://www.sciencedirect.com/science/article/pii/S0039610907001867
Non-Traumatic Musculoskeletal Disorders	Bing.com, NTMD videos: https://www.bing.com/videos/
Disorders of the Eyes, Ears, Nose, and Throat	verywellhealth.com, 4 Common Ears, Nose and Throat Problems: https://www.verywellhealth.com/symptoms-of-ent-disorders-1191842 Relias Media, Common Ear, Nose, and Throat Disorders Encountered in Emergency Practice: Expeditious Evaluation and Definitive Management: https://www.reliasmedia.com/articles/5217-common-ear-nose-and-throat-disorders-encountered-in-emergency-practice-expeditious-evaluation-and-definitive-management
Trauma	
Shock and Resuscitation	AHA, CPR & ECC Guidelines: https://eccguidelines.heart.org/circulation/cpr-ecc-guidelines/ AMA Journal of Medicine, Medical Futility: Legal and Ethical Analysis: https://journalofethics.ama-assn.org/article/medical-futility-legal-and-ethical-analysis/2007-05 National Library of Medicine, Clinical review: Hemorrhagic Shock: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1065003/ Joint Trauma System, Department of Defense, Committee on Tactical Combat Casualty Care: https://jts.amedd.army.mil/index.cfm/committees/cotccc JEMS, EMS May Not be Prepared to Treat Children for Sepsis: https://www.jems.com/2020/02/07/ems-may-not-be-prepared-to-treat-children-for-sepsis/

Trauma Overview	NAEMT, Prehospital Trauma Life Support (PHTLS) NAEMT, Psychological Trauma in EMS Patients: http://www.naemt.org/education/ptep Rural Health Information Hub, Rural EMS and Trauma: https://www.ruralhealthinfo.org/topics/emergency-medical-services Integrated Listening, What is Trauma: https://integratedlistening.com/what-is-trauma/?utm_source=bing&utm_medium=cpc&utm_campaign=what-is-trauma&utm_term=trauma&msclkid=fde00df9211e1373466953b8a0281e3c Modern Healthcare, Trauma in EMS: https://www.modernhealthcare.com/article/20120512/MAGAZINE/305129910/trauma-in-ems
Bleeding	EMS.gov, Stop the Bleed: https://www.ems.gov/projects/stop-the-bleed.html Bleedingdisorders.com, In this Together: https://www.bleedingdisorders.com/?utm_source=bing&utm_medium=ppc&utm_campaign=Brand&utm_content=Takeda-Care&msclkid=8784665852091dc115e43819d01057b9 Journal of EMS, The Role of Tranexamic Acid in EMS & Preoperative Trauma Management: https://www.jems.com/2013/03/27/role-tranexamic-acid-ems-preoperative-tr/ NAEMT, Bleeding Control for the Injured Lesson: https://www.naemt.org/docs/default-source/education-documents/b-con/bleeding_control_lesson_01_handout.pdf?sfvrsn=2 Bing.com, Bleeding videos: https://www.bing.com/videos/search?q=bleeding+in+ems&qpvt=bleeding+in+ems&FORM=VDRE
Chest Trauma	verywellhealth.com, The Different Types of Chest Trauma and Injuries: https://www.verywellhealth.com/chest-trauma-3913241 Medscape.com, Blunt Chest Trauma: https://emedicine.medscape.com/article/428723-overview Bing.com, Chest Injury Trauma images: https://www.bing.com/images/search?q=chest+injury+trauma&qpvt=chest+injury+trauma&FORM=IGRE Medic Tests, EMT Management of Chest Injury: https://medictests.com/units/emt-management-of-chest-injury YouTube, Chest Injuries and Pneumothorax: https://www.youtube.com/watch?v=lBvfuaIXLkI Bing.com, Chest Injury Trauma videos: https://www.bing.com/videos/search?q=chest+injury+trauma&qpvt=chest+injury+trauma&FORM=VDRE

Abdominal and Genitourinary Trauma	EMS World, Abdominal Trauma: https://www.emsworld.com/article/10319768/abdominal-trauma Merck Manual, Overview of Abdominal Trauma: https://www.merckmanuals.com/professional/injuries-poisoning/abdominal-trauma/overview-of-abdominal-trauma Bing.com, Abdominal Trauma videos: https://www.bing.com/videos/search?q=abdominal+trauma&qpvt=abdominal+trauma&FORM=VDRE
Orthopedic Trauma	EMS1.com, Orthopedic Surgeon Discusses Importance of EMS Care: https://www.ems1.com/trauma/articles/orthopedic-surgeon-discusses-importance-of-ems-care-1bR7ycpRMKSn6D8I/ Bing.com, Orthopedic Trauma videos: https://www.bing.com/videos/search?q=orthopedic+trauma+for+ems&qpvt=orthopedic+trauma+for+ems&FORM=VDRE EMS World, Managing Unstable Musculoskeletal Injuries: https://www.emsworld.com/article/10613724/managing-unstable-musculoskeletal-injuries
Soft Tissue Trauma	Johns Hopkins Medicine, Soft Tissue Injuries: https://www.hopkinsmedicine.org/health/conditions-and-diseases/softtissue-injuries Bing.com, Soft Tissues Trauma videos: https://www.bing.com/videos/search?q=soft+tissue+trauma+for+ems&qpvt=soft+tissue+trauma+for+ems&FORM=VDRE
Head, Facial, Neck, and Spine Trauma	CDC, Traumatic Brain Injury & Concussion: https://www.cdc.gov/traumaticbraininjury/index.html National Association of Emergency Physicians, Spinal Motion Restriction in the Trauma Patient - A Joint Position Statement: https://naemsp.org/home/news/spinal-motion-restriction-in-the-trauma-patient-–/ NREMT, National Registry of EMT's Resource Document on Spinal Motion Restriction/Immobilization: https://www.nremt.org/rwd/public/document/news-spinal-11-11-16 Quizlet.com, Head, Face, Neck, Spine Trauma flashcards: https://quizlet.com/28175875/head-face-neck-spinal-trauma-flash-cards/ Mayo Clinic, Traumatic Brain Injury: https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557 TraumaticBrainInjury.com, Traumatic Brain Injury: https://www.traumaticbraininjury.com/ Bing.com, TBI videos: https://www.bing.com/videos/search?q=traumatic+brain+injury&qpvt=traumatic+brain+injury&FORM=VDRE JEMS, Recognizing and Managing Traumatic Neck Injuries: https://www.jems.com/2014/04/02/recognizing-and-managing-traumatic-neck/

Nervous System Trauma	Science Direct, Nervous System Trauma: https://www.sciencedirect.com/topics/neuroscience/nervous-system-trauma Bing.com, Nervous System Trauma videos: https://www.bing.com/videos/search?q=nervous+system+trauma&qpvt=nervous+system+trauma&FORM=VDRE EMS World, The Nervous System: https://www.emsworld.com/article/10305336/nervous-system
Special Consideration in Trauma	EMS World, Beyond the Basics, Trauma During Pregnancy: https://www.emsworld.com/article/10320626/beyond-basics-trauma-during-pregnancy Medscape, Pregnancy Trauma Treatment & Management: https://emedicine.medscape.com/article/796979-treatment Journal of Emergency Nursing, Hemorrhage in the Pregnant Trauma Patient: https://www.jenonline.org/article/S0099-1767(18)30303-9/fulltext JEMS, Prehospital Providers Must Use Caution in Treating Pregnant Trauma Patients: https://www.jems.com/2011/08/31/prehospital-providers-must-use-caution-t/ Journal of American Academy of Pediatrics, Management of Pediatric Trauma: https://pediatrics.aappublications.org/content/121/4/849 Bing.com, Pediatric Trauma videos: https://www.bing.com/videos/search?q=pediatric+trauma+in+ems&qpvt=pediatric+trauma+in+ems&FORM=VDRE JEMS, Complexities of Geriatric Trauma Patients: https://www.jems.com/2015/11/02/complexities-of-geriatric-trauma-patients/ Eastern Association for the Surgery of Trauma, Triage of Geriatric Trauma: https://www.east.org/education/practice-management-guidelines/geriatric-trauma-triage-of Journal of Trauma and Acute Care Surgery, One-year mortality in geriatric trauma patients: https://journals.lww.com/jtrauma/Abstract/2019/11000/One_year_mortality_in_geriatric_trauma_patients_.20.aspx Drugs.com, Cognitive Disorders after Traumatic Brain Injury: https://www.drugs.com/cg/cognitive-disorders-after-traumatic-brain-injury.html Nursing Times, Assessing pain in patients with cognitive impairment in acute care: https://www.nursingtimes.net/clinical-archive/pain-management/assessing-pain-in-patients-with-cognitive-impairment-in-acute-care-11-09-2017/ Good Therapy, Study Confirms Link Between PTSD, Cognitive Impairment: https://www.goodtherapy.org/blog/study-confirms-link-between-ptsd-cognitive-impairment-0901161

Environmental Trauma	EMS World, Environmental Emergencies: https://www.emsworld.com/article/10287438/environmental-emergencies Bing.com, Environmental Trauma videos: https://www.bing.com/videos/search?q=environmental+trauma+in+ems&qpvt=environmental+trauma+in+ems&FORM=VDRE Quizlet.com, Environmental Emergencies: https://quizlet.com/381930807/environmental-emergencies-swank-h-flash-cards/ YouTube, Environmental Emergencies: https://www.youtube.com/watch?v=qWiMTTbMRww EMS World, Diving Emergencies: https://www.emsworld.com/article/10287444/diving-emergencies Bing.com, Diving Emergencies videos: https://www.bing.com/videos/search?q=diving+emergencies+in+ems&qpvt=diving+emergencies+in+ems&FORM=VDRE EMS1.com, Lighting Strike Injuries: https://www.ems1.com/ems-products/ambulances/articles/lightning-strike-injuries-FDVLIeoWwVDNPcM7/ JEMS, Treating Sickness & Edema Caused by High Altitude: https://www.jems.com/2016/06/01/treating-sickness-edema-caused-by-high-altitude/ eMedicineHealth.com, Altitude Sickness: https://www.emedicinehealth.com/mountain_sickness/article_em.htm Healthline.com, Heat Emergencies: https://www.healthline.com/health/heat-emergencies EMS1.com, How to Recognize, Treat Heat Illness: https://www.ems1.com/heat-related-illness/articles/how-to-recognize-treat-heat-illness-v8HwImSZOr0EAEdU/
Multi-System Trauma	NAEMT, Prehospital Trauma Life Support course: https://www.naemt.org/education/PHTLS/ Access Emergency Medicine, The Multisystem Trauma Patient: https://accessemergencymedicine.mhmedical.com/content.aspx?bookId=1934&sectionId=142838535 EMS1.com, Clinical Scenario: Patient with Multiple Trauma: https://www.ems1.com/patient-assessment/articles/clinical-scenario-patient-with-multiple-trauma-IZrHAFDEO54os5o6/ Bing.com, Multisystem Trauma videos: https://www.bing.com/videos/search?q=multisystem+trauma+for+ems&qpvt=multisystem+trauma+for+ems&FORM=VDRE EMS World, Understand the Trauma Triad of Death: https://www.emsworld.com/article/10565011/understand-trauma-triad-death EMS1.com, Blast Injuries: 4 Types EMS Providers Need to Know: https://www.ems1.com/ems-training/articles/blast-injuries-4-types-ems-providers-need-to-know-kZROn8iPonrbJBYn/

Special Patient Populations

Obstetrics	Bing.com, Obstetrics Emergency videos: https://www.bing.com/videos/search?q=obstetrics+emergencies+in+EMS&qpvt=obstetrics+emergencies+in+EMS&FORM=VDRE EMS World, Beyond the Basics: Obstetric Emergencies: https://www.emsworld.com/article/10322266/beyond-basics-obstetric-emergencies YouTube, Obstetrical Emergencies: https://www.youtube.com/watch?v=DPLFO_D7IrM Better Health.com, Pregnancy - Obstetric Emergencies: https://www.betterhealth.vic.gov.au/health/healthyliving/pregnancy-obstetric-emergencies EMS1.com, Quiz: How Well Do You Know the APGAR Score? https://www.ems1.com/pediatric-care/articles/quiz-how-well-do-you-know-the-apgar-score-68pTaZSi7ifdcdZM/ EMS1.com, OB/GYN Group Recommends Delayed Umbilical Cord Clamping: https://www.ems1.com/neonatal/articles/obgyn-group-recommends-delayed-umbilical-cord-clamping-5zTFdg0sIh56w7sN/
Neonatal Care	EMS1.com, Quiz: How Well Do You Know the APGAR Score? https://www.ems1.com/pediatric-care/articles/quiz-how-well-do-you-know-the-apgar-score-68pTaZSi7ifdcdZM/ EMS World, Prehospital Stabilization of Unstable Neonates: https://www.emsworld.com/article/12088865/prehospital-stabilization-of-unstable-neonates Creighton University, Neonatal Emergencies and Transport: http://www.creighton.edu/fileadmin/user/EMS/docs/Neonatal_cAre_for_Parmedics.pdf American Medical Forensics Specialist, Neonatal Emergencies: https://www.amfs.com/neonatal-emergencies/ EMS World, Newborn Resuscitation: The Gold Minute: https://www.emsworld.com/article/10318737/newborn-resuscitation-golden-minute

Patients with Special Challenges

Autism Speaks, EMS: https://www.autismspeaks.org/emergency-medical-services-ems
Autism Awareness, Autism Awareness Training for First Responders and Caregivers: http://www.autismalert.org/
EMS1.com, Homeless patients pose unique problems for EMS: https://www.ems1.com/ems-expo-2011/articles/homeless-patients-pose-unique-problems-for-ems-KqZr92oDAA5XcARj/
Edutopia, 5 Ways to Help Students Affected by Generational Poverty: https://www.edutopia.org/discussion/5-ways-help-students-affected-generational-poverty
Lumen, Palliative Care and Hospice: https://courses.lumenlearning.com/lifespandevelopment2/chapter/palliative-care-and-hospice/
CDC, Cancer: https://www.cdc.gov/cancer/
Quizlet, Patients with Special Challenges EMT: https://quizlet.com/169292208/chapter-36-patients-with-special-challenges-emt-flash-cards/
EMS1.com, EMS World Expo Quick Take: Assessing, Treating And Transporting Patients With Special Needs: https://www.ems1.com/special-needs-patients/articles/ems-world-expo-quick-take-assessing-treating-and-transporting-patients-with-special-needs-DSuDCpnKJZswH8MO/
YouTube, Patients with Special Challenges: https://www.youtube.com/watch?v=1FoM-rU0VnE
Vermont Health Care, Trachs and Tubes and Shunts: http://www.vtemsconference.com/uploads/7/4/3/6/74368907/ebright__trach_tube_shunts__1_.pdf
EMS World, Considerations for EMS Response to Autistic Patients: https://www.emsworld.com/article/11362588/considerations-ems-response-autistic-patients
EMS World, Managing and Moving the Very Large EMS Patient: https://www.ems1.com/ems-products/bariatric-patient-transport/articles/managing-and-moving-the-very-large-ems-patient-8296CeX9j0gstz9D/
JEMS, Treating an Transporting Bariatric Patients: https://www.jems.com/2010/01/01/treating-and-transporting-bari/
Firehouse, EMS: Responding to Emergencies Involving Bariatric Patients: https://www.firehouse.com/operations-training/ems/article/10683991/fire-service-ems-with-bariatric-patients
Bing.com, Tracheostomy Care in EMS videos: https://www.bing.com/videos/search?q=tracheostomy+care+in+ems&qpvt=tracheostomy+care+in+ems&FORM=VDRE
EMS World, Palliative Care & EMS: https://www.emsworld.com/article/10321662/palliative-care-ems
EMS World, Hospice and DNR Care: https://www.emsworld.com/article/10319396/hospice-and-dnr-care

EMS Operations	
Principles of Safely Operating a Ground Ambulance	National Highway Institute, The National Traffic Incident Management Responder Training: https://www.nhi.fhwa.dot.gov/course-search?course_no=133126A State approved Emergency Response vehicle training programs National Fire Protection Administration: Standard 1451 Fire and Emergency Services Vehicle Operations Training Programs
Incident Management	NHTSA, EMR: https://www.ems.gov/pdf/education/National-EMS-Education-Standards-and-Instructional-Guidelines/MUCC_Addendum_EMR.pdf NHTSA EMT: https://www.ems.gov/pdf/education/National-EMS-Education-Standards-and-Instructional-Guidelines/MUCC_Addendum_EMT.pdf NHTSA, AEMT: https://www.ems.gov/pdf/education/National-EMS-Education-Standards-and-Instructional-Guidelines/MUCC_Addendum_AEMT.pdf NHTSA, Paramedic: https://www.ems.gov/pdf/education/National-EMS-Education-Standards-and-Instructional-Guidelines/MUCC_Addendum_Paramedic.pdf EMS.gov, Preparedness: https://www.ems.gov/preparedness.html
Multiple Casualty Incidents	Department of Transportation National Highway Traffic Safety Administration Model Uniform Core Criteria for Mass Casualty Incident Triage: Addendum to the Emergency Medical Responder Instructional Guidelines
Air Medical	
Rescue Operations	State Fire programs State Rescue programs State and local emergency management National Fire Administration National Fire Protection Administration Standard 1670 Operations and Training for Technical Search and Rescue Operations Standard 1006 Rescue Technician Professional Qualifications

Hazardous Materials Awareness	State Fire Programs State Emergency Management Agency National Fire Protection Administration Standards NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents NFPA 473: Standard for Competencies for EMS Personnel Responding to Hazardous Materials/Weapons of Mass Destruction Incidents, NFPA 475: Recommended Practice for Organizing, Managing, and Sustaining a Hazardous Materials/ Weapons of Mass Destruction Response Program NFPA 1072: Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
Mass Casualty Incidents due to Terrorism and Disaster	National Fire Protections Administration Standard 3000 EMS1.com, How to practice the EMS response to an MCI: https://www.ems1.com/ems-products/wmd-response-supplies/articles/how-to-practice-the-ems-response-to-an-mci-RLbgNGnAqWIs9U50/ Department of Homeland Security, Active Shooter Preparedness: https://www.dhs.gov/cisa/active-shooter-preparedness CDC, Caring for Children in a Disaster: https://www.cdc.gov/childrenindisasters/ CDC, Natural Disasters, Severe Weather and COVID-19: https://www.cdc.gov/disasters/index.html

Pediatric Resources	DC.gov, EMS for Children: https://dchealth.dc.gov/service/ems-children AHA, Pediatric Advance Life Support (PALS) Provider Course: https://international.heart.org/en/our-courses/pediatric-advanced-life-support EMS Innovation and Improvement Center: https://emscimprovement.center/ American Academy of Pediatrics, PEPP Course: https://www.aap.org/en-us/continuing-medical-education/life-support/Pediatric-Education-for-Prehospital-Professionals/Pages/PEPP.aspx Merck Manual, Pediatric ALTE and BRUE: https://www.merckmanuals.com/professional/pediatrics/miscellaneous-disorders-in-infants-and-children/alte-and-brue EB Medicine, An Evidence-Based Assessment of Pediatric Endocrine Emergencies: https://www.ebmedicine.net/topics/endocrine/pediatric-endocrine-disorders CDC, Caring for Children in a Disaster: https://www.cdc.gov/childrenindisasters/ CDC, Cerebral Palsy: https://www.cdc.gov/dotw/cerebral-palsy/index.html Relias Media, Genitourinary Emergencies in Male Children: Recognition and Management: https://www.reliasmedia.com/articles/28300-genitourinary-emergencies-in-male-children-recognition-and-management Journal of American Academy of Pediatrics, Management of Pediatric Trauma: https://pediatrics.aappublications.org/content/121/4/849 Bing.com, Pediatric Trauma videos: https://www.bing.com/videos/search?q=pediatric+trauma+in+ems&qpvt=pediatric+trauma+in+ems&FORM=VDRE JEMS, EMS May Not be Prepared to Treat Children for Sepsis: https://www.jems.com/2020/02/07/ems-may-not-be-prepared-to-treat-children-for-sepsis/ Creighton University, Neonatal Emergencies and Transport: http://www.creighton.edu/fileadmin/user/EMS/docs/Neonatal_cAre_for_Parmedics.pdf
Geriatric Resources	National Association of State EMS Officials: https://nasemso.org/ NAEMT, Geriatric Education for EMS: https://www.naemt.org/education/gems International Journal of Emergency Medicine, Abdominal Emergencies in the Geriatric Patient: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4306086/ Academy Life in Emergency Medicine, 10 Tips in Approaching Abdominal Pain in the Elderly: https://www.aliem.com/ten-tips-for-approaching-abdominal-pain-in-the-elderly/ The Endocrine Society, Treatment in Diabetes in Older Adults Guideline Resources: https://www.endocrine.org/clinical-practice-guidelines/diabetes-in-older-adults CDC, Alzheimer's Disease: https://www.cdc.gov/dotw/alzheimers/index.html Journal of Clinical Imaging, Musculoskeletal Disorders in the Elderly: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3424705/


NHTSA