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National EMS Scope of Practice Model 2019: Including Change Notices 1.0 and 2.0

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16. Abstract <p>The National EMS Scope of Practice Model supports a system of Emergency Medical Services personnel licensure—permission granted to a person by the State to perform certain restricted activities—and is a guide for States in developing their Scope of Practice legislation, rules, and regulations. The Practice Model is a consensus document, guided by data and expert opinion, that reflects the skills representing the <i>minimum</i> competencies of the levels of EMS personnel. The Practice Model has been used by States as a means to increase uniformity in EMS for more than a decade. This version includes updates from Change Notices 1.0 and 2.0 issued on March 29, 2021.</p>			
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1200 New Jersey Avenue SE.
Washington, DC 20590

Date: March 29, 2021

To: State EMS Directors

From: Jon R. Krohmer, M.D., FACEP
Director, Office of Emergency Medical Services

RE: 2019 National EMS Scope of Practice Model, Change Notices

The National EMS Scope of Practice Model (model) was first published in February 2007 by the National Highway Traffic Safety Administration's (NHTSA's) Office of Emergency Medical Services (EMS). The most recent version of the model was published by NHTSA in February 2019. The model was developed by the National Association of State EMS Officials (NASEMSO) with funding provided by NHTSA and the Health Resources and Services Administration (HRSA). Over the past 14 years, the model has provided guidance for States in developing their EMS Scope of Practice legislation, rules, and regulation. While the model provides national guidance, each State maintains the authority to regulate EMS within its border, and determine the scope of practice of State-licensed EMS clinicians.

Recognizing that the model may impact States' ability to urgently update their Scope of Practice rules, in 2016 the National EMS Advisory Council (NEMSAC) recommended that NHTSA develop a standardized urgent update process for the model. The Rapid Process for Emergent Changes to the National EMS Scope of Practice Model (rapid process) was developed by NASEMSO and published by NHTSA in September 2018.

Using the rapid process, in March 2021 NHTSA convened a subject matter expert panel (panel) to respond to the following questions: 1) Should immunizations via the intramuscular (IM) route be added to the emergency medical responder (EMR) and emergency medical technician (EMT) scope of practice levels?; 2) Should monoclonal antibody (MCA) infusion be added to the advanced EMT (AEMT) and paramedic scope of practice levels?; and 3) Should specimen collection via nasal swabbing be added to the EMR, EMT, AEMT, and paramedic scope of practice levels?

The panel considered the ability of EMRs and EMTs to perform the psychomotor skill of medication administration via the IM route and recommended that IM medication administration be added only to the EMT scope of practice as part of their common daily practice.

The panel considered the ability of EMRs and EMTs to administer medical director approved immunizations and recommended that immunizations during a public health emergency be added only to the EMT scope of practice.

The panel considered the ability of EMRs, EMTs, AEMTs, and Paramedics to perform the psychomotor skill of specimen collection via nasal swab and recommended that specimen collection via nasal swab be added only to the EMT, AEMT, and Paramedic scopes of practice as part of their common daily practice.

The panel did not issue a recommendation on MCA infusion.

Based on the panel's recommendations NHTSA used the rapid process to develop the two attached change notices on IM medication administration, vaccinations during a public health emergency, and specimen collection via nasal swab.

It should be noted that, although the recommendations address the psychomotor skills associated with these specific activities, the assumption of the panel in making the recommendations was that all associated educational activities, knowledge of indications and potential contraindications, other potential skills (e.g.: drawing the appropriate dose of medication up from an ampule or vial [single or multi-dose], supervised assessment of skill competency, and quality improvement activities) would be components of the entire program.

I hope you find these change notices useful to you in meeting the urgent needs of your patients and the practitioners you regulate. In the very near future we will publish a revised version of the model which incorporates these change notices. Please feel free to contact me should you have any questions.

2019 NATIONAL EMS SCOPE OF PRACTICE MODEL CHANGE NOTICES

Change Notice 1.0

March 29, 2021

The following changes to the National EMS Scope of Practice Model (February 2019) DOT HS 812 666 are effective immediately:

Page 35. Emergency Medical Technician Skill – Medication Administration - Route. The following has been added: **Intramuscular.**

Page 36. Emergency Medical Technician Medical Director Approved Medications. The following has been added: **Immunizations during a public health emergency.** *

*Note: the addition of this Medical Director Approved Medication to the Emergency Medical Technician level scope of practice also applies to the Advanced Emergency Medical Technician and Paramedic level scopes of practice.

BACKGROUND: At the request of the National Highway Traffic Safety Administration's (NHTSA's) Office of Emergency Medical Services (OEMS) a subject matter expert panel (the panel) considered the following questions to facilitate urgent changes to the 2019 National EMS Scope of Practice Model (Model) to add the intramuscular (IM) administration of immunizations to the Emergency Medical Responder (EMR) and Emergency Medical Technician (EMT) scopes of practice:

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or medication as used by EMS clinicians will promote access to quality healthcare or improve patient outcomes?
3. Should the new skill or administration be specific to a public health emergency versus common daily practice?

METHODS: NHTSA convened the panel over the course of three meetings to review and discuss the available evidence.

DISCUSSION: The Food and Drug Administration (FDA) has issued emergency use authorizations (EUAs) for COVID-19 vaccines. Currently authorized COVID-19 vaccines are administered intramuscularly (IM). All COVID-19 vaccines currently available in the United States are effective at preventing severe illness or hospitalization from COVID-19.

The panel considered the ability of EMRs and EMTs to perform the psychomotor skill of medication administration via the IM route and recommended that IM medication administration be added only to the EMT scope of practice as part of their common daily practice.

The panel considered the ability of EMRs and EMTs to administer medical director approved immunizations and recommended that immunizations during a public health emergency be added only to the EMT scope of practice. EMTs shall only undertake this practice if they possess the necessary educational preparation, experience and knowledge to properly administer a medical director approved vaccine during a declared public health emergency. The execution of the procedures shall include the ability to identify an allergic reaction and the post-treatment management of administering a vaccine.

Information on current state EMS scopes of practice regarding vaccination can be accessed through a report published by the National Association of State EMS Officials, *EMS Personnel as Vaccinators: Status by State*, available at: <https://nasemso.org/wp-content/uploads/COVID-Vaccination-Report.pdf>.

2019 NATIONAL EMS SCOPE OF PRACTICE MODEL CHANGE NOTICES

Change Notice 2.0

March 29, 2021

The following changes to the National EMS Scope of Practice Model (February 2019) DOT HS 812 666 are effective immediately:

Page 37. Emergency Medical Technician Skill - Miscellaneous. The following has been added: **Specimen Collection via Nasal Swab.** *

*Note: the addition of this skill to the Emergency Medical Technician level scope of practice also applies to the Advanced Emergency Medical Technician and Paramedic level scopes of practice.

BACKGROUND: At the request of the National Highway Traffic Safety Administration's (NHTSA's) Office of Emergency Medical Services (OEMS) a subject matter expert panel (the panel) considered the following questions to facilitate urgent changes to the 2019 National EMS Scope of Practice Model (Model) to add specimen collection via nasal swabbing to the Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic level scopes of practice:

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or medication as used by EMS practitioners will promote access to quality healthcare or improve patient outcomes?
3. Should the new skill or administration be specific to a public health emergency versus common daily practice?

METHODS: NHTSA convened the panel over the course of three meetings to review and discuss the available evidence.

DISCUSSION: The panel considered the ability of EMRs, EMTs, AEMTs, and Paramedics to perform the psychomotor skill of specimen collection via nasal swab and recommended that specimen collection via nasal swab be added only to the EMT, AEMT, and Paramedic scopes of practice as part of their common daily practice.

EMTs shall only undertake the practice if they possess the necessary educational preparation, experience and knowledge to properly conduct specimen collection via nasal swab.

Information on anterior nasal swab specimen collection for COVID-19 testing can be accessed through the Centers for Disease Control and Prevention (CDC) at: <https://www.cdc.gov/coronavirus/2019-ncov/testing/How-To-Collect-Anterior-Nasal-Specimen-for-COVID-19.pdf>.

Information on nasal mid-turbinate specimen collection for COVID-19 testing can be accessed through the CDC at <https://www.cdc.gov/coronavirus/2019-ncov/testing/How-To-Collect-NMT-Specimen-for-COVID-19.pdf>.

Table of Contents

Executive Summary	xi
I. Background.....	1
Overview of the EMS Profession	1
The Evolution of the EMS Agenda for the Future.....	2
Implementation of the 2007 National EMS Scope of Practice Model.....	3
Approach to Revising the National EMS Scope of Practice Model	5
The Role of State Government	6
II. Understanding Professional Scope of Practice	7
Overview	7
The Interdependent Relationship Between Education, Certification, Licensure, and Credentialing	7
Scope of Practice Versus Standard of Care	13
A Comprehensive Approach to Safe and Effective Out-of-Hospital Care	13
III. Special Considerations	14
Liability in EMS Licensing and Oversight	14
Scope of Practice for Special Populations	14
Scope of Practice During Disasters, Public Health Emergencies, and Extraordinary Circumstances	15
Scope of Practice for EMS Personnel Functioning in Nontraditional Roles	15
Specialty Care Delivered by Licensed EMS Personnel	15
Military to Civilian EMS Transition	16
IV. Description of Levels	18
Emergency Medical Responder	18
Emergency Medical Technician	19
Advanced Emergency Medical Technician	20
Paramedic.....	21
V. Depth and Breadth of Knowledge.....	24
VI. Interpretive Guidelines	25
I. Skill – Airway/Ventilation/Oxygenation.....	25
II. Skill – Cardiovascular/Circulation	26
III. Skill – Splinting, Spinal Motion Restriction, and Patient Restraint	27
IV. Skill – Medication Administration – Routes	28
V. Medical Director Approved Medications	29
VI. Skill – IV Initiation/Maintenance Fluids	30
VII. Skill – Miscellaneous	30
VII. Definitions	32
Appendix A: History of Occupational Regulation in EMS	A-1
Appendix B: Changes and Considerations From the 2007 Practice Model	B-1
Nomenclature	B-2
Academic Degree Requirements for Paramedics	B-2
Attendant Qualifications for Ambulance Transport	B-2

Portable Technologies	B-3
Deletions/Updates	B-3
Additions to the Interpretive Guidelines	B-4
Appendix C: Legal Differences Between Certification and Licensure.....	C-1
Appendix D: Acknowledgements	D-1
Subject Matter Expert Panel	D-1
Contributors	D-3
Technical Writers	D-3
Project Manager	D-3
Project Coordinator and Graphic Designer	D-3
Executive Staff	D-3
Appendix E: References	E-1

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Executive Summary

The National EMS Scope of Practice Model (NHTSA, 2007) is a continuation of the commitment of the National Highway Traffic Safety Administration and the Health Resources and Services Administration (HRSA) to the implementation of the EMS Agenda for the Future (“EMS Agenda,” NHTSA, 1996). It is part of an integrated, interdependent system, first proposed in the *EMS Education Agenda for the Future: A Systems Approach* (“Education Agenda,” NHTSA, 2000) that endeavors to maximize efficiency, consistency of instructional quality, and student competence. It supports a system of EMS personnel licensure that is common in other allied health professions and is a guide for States in developing their scope of practice legislation, rules, and regulations.

Scope of practice—Defined parameters of various duties or services that may be provided by a person with specific credentials. Whether regulated by rule, statute, or court decision, it represents the limits of services a person may legally perform.

State policymakers play a critical and longstanding role in occupational licensing policies, dating back to the late 19th century when the U. S. Supreme Court decision in *Dent v. West Virginia* (1889) established States’ rights to regulate certain professions. Shortly after, States began developing their own systems of occupational regulation and licensing. Most recently (2015), in *North Carolina State Board of Dental Examiners v. Federal Trade Commission*, the U.S. Supreme Court held that when a controlling number of decision makers on an occupational licensing board are market participants, it has immunity from antitrust law only when it is actively supervised by the State. Since the legal authority to practice can be obtained only from the State, the State licensure process provides a means for States to stop unlawful practice by unlicensed people. This affords title protection to EMS personnel that comply with State regulations, and protection of the public from people who have not met minimum standards.

The *Practice Model* has been used as a model by States to increase regulatory uniformity in EMS for over a decade. Core to this document and the practice of every licensed health professional is compliance with four domains intended to serve the legal and ethical obligation of States to ensure the public is protected from unqualified people.

A person may only perform a skill or role for which that person is:
EDUCATED (has been trained to perform the skill or role), **AND**
CERTIFIED (has demonstrated competence in the skill or role), **AND**
LICENSED (has legal authority issued by the State to perform the skill or role), **AND**
CREDENTIALLED (has been authorized by medical director to perform the skill or role).

While many users of the 2018 *Practice Model* may be more interested in the list of psychomotor skills that appear as interpretive guidelines in Section VI of this report, this list is neither prescriptive nor finite. What is more important are the fundamental principles that underlie any professional scope of practice model as explained throughout the document. To be clear: Licensed practitioners are not permitted to perform any skill if they fail to conform with any of

the four domains related to that particular skill, including the demonstration of ongoing competency.

A panel of subject matter experts was selected to revise the *Practice Model* in 2017. Comprised of representatives from several national EMS organizations and the EMS public including experienced field personnel, EMS educators, EMS medical directors, EMS agency administrators, and State EMS regulators, the expert panel used the Grades of Recommendation Assessment, Development and Evaluation (GRADE) process to consider evidence and establish consensus on many topics. When the scientific literature was inconclusive, expert opinion was used to improve descriptions, roles, and attributes of each level that would support changes in practice by addressing two fundamental questions.

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or technique as used by EMS personnel will promote access to quality health care or improve patient outcomes?

It is important to note that the expert panel was tasked to define recommended entry-level expectations to ensure a level of national consistency. In other words, the *Practice Model* suggests the minimum recommended practice requirements in advance of gaining field experience prior to supervised or individual work experience at the levels of an emergency medical responder (EMR), emergency medical technician (EMT), advanced emergency medical technician (AEMT), or paramedic.

National EMS Program Accreditation was identified in the *Education Agenda* as the means to “provide minimum program requirements for sponsorship, resources, students, operational policies, program evaluation, and curriculum” at all EMS levels. The Commission on Accreditation of Allied Health Education Programs (CAAHEP), the largest programmatic accreditor in the health sciences field, currently accredits more than 2,200 education programs in 30 health sciences fields including 611 at the paramedic level across all 50 States. The expert panel considered the evidence related to the value of National EMS Program Accreditation toward student and patient outcomes and encourages collaboration among stakeholder groups for full implementation of national EMS program accreditation at the AEMT level by 2025.

Finally, the United States is transforming its health care system to provide quality care leading to improved health outcomes achieved through interdisciplinary collaboration. EMS personnel are key to this transformation through innovative approaches in a variety of practice settings. The expert panel strongly supports the national call for the elimination of barriers for all professions to practice to the full extent of their education, training, and competence with a focus on collaborative teamwork to maximize and improve care throughout the health care system (Institute of Medicine of the National Academies, 2010).

I. Background

Overview of the EMS Profession

The *Practice Model* provides a resource for defining the practice of EMS personnel. EMS clinicians are atypical health care professionals in that they provide medical care in many environments, locations, and situations. Much of this care occurs in out-of-hospital settings with little onsite supervision. Physician medical directors provide medical oversight to ensure and maintain safe EMS practices. This is occasionally performed in-person by medical directors in the field or through electronic communications, but more commonly is accomplished through protocol development and quality improvement based on evidence-based treatment standards and resources such as this *Practice Model*. EMS personnel are not independent clinicians, but are expected to execute many treatment modalities based on their assessments and protocols in challenging situations. They must be able to exercise considerable judgment, problem-solving, and decision-making skills.

In the vast majority of communities, residents call for EMS by dialing 9-1-1 when they need emergency medical care, and the appropriate resources are dispatched. EMS personnel respond and provide care to the patient in the setting in which the patient became ill or injured, including the home, field, recreational, work, and industrial settings. Many of these are in high-risk situations such as on highways and freeways, in violent scenarios, and other unusual or atypical settings.

Many EMS personnel provide medical transportation services for patients requiring medical care while enroute to or between medical facilities, in both ground and air ambulance entities. These transport situations may originate from emergency scenes, or may be scheduled transports moving patients from one licensed facility to another. The complexity of care delivered by EMS personnel can range from very basic skills to exceptionally complex monitoring and interventions for very high-acuity patients.

Medical care at mass gatherings such as concerts or sporting events and high-risk activities like fireground¹ operations or law enforcement tactical operations are a growing expectation of EMS personnel. EMS personnel sometimes serve in emergency response or primary care roles combined with occupational settings in remote areas (off-shore oil rigs and wildland fires, etc.). EMS personnel also work in more traditional health care settings in hospitals, urgent care centers, doctor's offices, and long-term care facilities. Finally, EMS personnel are involved in numerous community and public health initiatives, such as working with health care systems to provide non-emergent care and follow-up to certain patient populations as well as providing immunizations, illness and injury prevention programs, and other health initiatives.

EMS is a local function and organized several ways. These include agencies that are volunteer, career, or a combination; agencies that are operated by government, health care system, or private entities; and agencies that are stand-alone fire-based or law enforcement-based EMS. Common models are municipal government (fire-based or third-service) or a contracted service with a private (profit or nonprofit) entity. Levels of licensure exist for EMS personnel, each offering different scopes of practice. EMS personnel provide medical care to those with

¹ Any place fire-fighting operations are being carried out.

emergent, urgent, and in some cases chronic medical needs. EMS is a component of the overall health care system, and delivers care as part of a system intended to reduce the morbidity and mortality associated with illness and injury. EMS care is enhanced through the linking with other community health resources and integration within the health care system.

The Evolution of the EMS Agenda for the Future

The original *Practice Model* was developed in 2007 as one part of the NHTSA and HRSA's commitment to the *EMS Agenda*. Released in 1996, the *EMS Agenda* established a long-term vision for the future of EMS in the United States:

“EMS of the future will be community-based health management that is fully integrated with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and follow up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing health care resources and it will be integrated with other health care professionals and public health and safety agencies. It will improve community health and result in a more appropriate use of acute health care resources. EMS will remain the public's emergency medical safety net.”

NOTE: The 1996 EMS Agenda was revised in 2018 (www.ems.gov/projects/ems-agenda-2050.html).

As a follow-up to the *EMS Agenda*, the 2000 *EMS Education Agenda* called for the development of a system to support the education, certification and licensure of entry-level EMS personnel that facilitates national consistency:

“The *Education Agenda* established a vision for the future of EMS education, and called for an improved structured system to educate the next generation of EMS personnel. The *Education Agenda* built on broad concepts from the 1996 [*EMS*] *Agenda* to create a vision for an educational system that will result in improved efficiency for the national EMS education process. This was to enhance consistency in education quality ultimately leading to greater entry-level graduate competence.”

The *Education Agenda* proposed an EMS education system with five integrated components: National EMS Core Content, National EMS Scope of Practice Model, National EMS Education Standards, National EMS Certification, and National EMS Education Program Accreditation. The *National EMS Core Content* (NHTSA, 2005), released in 2004, defined the domain of out-of-hospital care. The 2007 *Practice Model* divided the core content into levels of practice, defining the minimum corresponding skills and knowledge for each level. Our nation has made great progress in implementing these documents over the preceding decade.

Several forces have combined to revise the *Practice Model*:

1. As States have widely implemented the *Practice Model*, many have chosen to add skills to their authorized scopes of practice beyond the floor called for in the national model.

2. EMS research is providing new evidence about the effectiveness of interventions in the out-of-hospital setting.
3. Our Nation is facing new health problems including explosive growth in opiate abuse, threats of violence and terrorism, and new challenges related to a growing population over age 65.
4. The National EMS Information System (NEMSIS) is maturing to provide information about what levels of EMS personnel are performing which skills and interventions.

The development and publication of the *Practice Model* represents a transition from the historical connection between scope of practice and the EMS National Standard Curricula. The *Practice Model* is a consensus document, guided by data and expert opinion, that reflects the skills representing the *minimum* competencies of the levels of EMS personnel.

This update of the *Practice Model* is a natural and expected activity in ensuring that our EMS personnel are prepared to meet the needs and expectations of the communities they serve.

Implementation of the 2007 National EMS Scope of Practice Model

EMS crews today are better equipped than ever for the worst kinds of emergencies, from cardiac arrests and gunshot victims to car crashes and other life-threatening emergencies. In its *Future of Emergency Care* series, the National Academies of Science, Engineering, and Medicine (formerly known as the Institute of Medicine) envisioned high integration of the emergency and trauma care systems to function effectively. “Operationally,” the NASEM reported, “this means that all of the key players in a given region...must work together to make decisions, deploy resources, and monitor and adjust system operations based on performance feedback.”

A system that attracted a generation of emergency care personnel depicted in the popular 1970’s television series, “Emergency,” is now faced with the realities of providing care in a fragmented health care system with limited resources, overcrowded emergency departments, inadequate mental health resources, a nationwide opioid epidemic, escalating domestic and street violence, hazardous material risks and exposures, high consequence infectious disease, and an aging population with complex needs. Moreover, there are increasing threats from terrorism and other mass casualty events that require 24/7 operational readiness along with constant non-urgent social, medical, and transport requests that were not fully contemplated in the 2007 *Practice Model*. These competing concerns illustrate a crucial need to find innovative strategies to improve EMS care delivery inside and outside the boundaries of an ambulance. The licensure of EMS personnel, like that of other health care licensure systems, is part of an integrated and comprehensive system to improve patient care and safety and to protect the public. The challenge facing the EMS community including regulators is to develop a system that establishes national standards for personnel licensure and their minimum competencies while remaining flexible enough to meet the unique needs of State and local jurisdictions.

According to the 2011 National EMS Assessment (Mears et al., 2012), 826,111 licensed EMS personnel encounter nearly 37 million patients a year in the United States and reflect a multi-billion-dollar enterprise. Implementing the 2007 *Practice Model* required consideration of funding, reimbursement, transition courses, grandfathering of current personnel, development of educational and instructional support material, workforce issues, labor negotiations, impact on volunteerism, and other important issues. Most States required legislative and rulemaking

changes but the effort resulted in four nationally recognized levels of EMS clinicians as described by the 2007 *Practice Model*, compared to at least 44 different levels of EMS personnel certification reported in the United States in 1996.

According to data collected by the National Association of State EMS Officials (NASEMSO) in 2013 and published in 2014, 100 percent of States use the *Practice Model* as the minimum allowable psychomotor skill set at the EMT and paramedic levels. Thirty-eight States are using the *Practice Model* as the minimum allowable psychomotor skill set at the EMR level and 44 States are using the *Practice Model* as the minimum allowable psychomotor skill set at the AEMT level. Several States have completed the transition of the Intermediate-85 level to AEMT. In December 2017, the National Registry of Emergency Medical Technicians (NREMT) announced plans to permanently retire the Intermediate-99 exam used by a handful of States as a State assessment exam. The effective date for this transition to be complete is December 31, 2019.

According to data collected by NASEMSO in 2014, 90 percent of States effectively require National EMS Program Accreditation at the Paramedic level.

As of March 31, 2018, CAAHEP lists accredited EMS programs at the paramedic level in all 50 States. There are 611 paramedic programs that have successfully completed the accreditation process and are fully accredited, a 92 percent increase in the number of nationally accredited paramedic programs from 2007. Another 78 paramedic programs each hold a Letter of Review from the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions, meaning that they are actively engaged in the accreditation process.

According to real-time data (National Registry of Emergency Medical Technicians, 2017) available from the NREMT:

- 23 States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the EMR level. An additional 4 States use National EMS Certification as an optional or alternate entry process at the EMR level. There are 22 States that do not license EMRs.
- 42 States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the EMT level. An additional 4 States use National EMS Certification as an optional or alternate entry process at the EMT level. Four States maintain a State-based or combination process for certification and licensure at this level.
- 36 States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the AEMT level. An additional 4 States use National EMS Certification as an optional or alternate entry process at the AEMT level. Ten States do not license AEMT's.
- 45 States and the District of Columbia require National EMS Certification as a basis for initial State licensure at the paramedic level. An additional 3 States use National EMS Certification as an optional or alternate entry process at the paramedic level. Two States maintain State-based processes for certification and licensure at this level.

Approach to Revising the National EMS Scope of Practice Model

Since the original 2007 *Practice Model* document, the evidence for which interventions and treatments are useful and effective in EMS settings has expanded significantly. Similarly, growing interest in EMS research is putting a sharper focus on how specific interventions are affecting the care and outcomes of patients in out-of-hospital settings.

This 2018 document makes use of a “Patient, Population, or Problem, Intervention, Comparison, and Outcome” (PICO) model to examine five clinical topics relevant to EMS treatment. The topics were selected for a systematic review of literature for consideration as high-priority issues requiring analysis due to the frequency or need of the interventions being provided at different levels from the 2007 *Practice Model* in some States. These are:

1. Use of opioid antagonists by all levels of EMS personnel;
2. Therapeutic hypothermia in cardiac arrest (i.e., targeted temperature management);
3. Pharmacological pain management following an acute traumatic event;
4. Hemorrhage control (i.e., tourniquets and hemostatic dressings); and
5. CPAP/BiPAP at the EMT level.

Two constraints on using evidence to establish an EMS scope of practice are the following.

1. While evidence may tell us what is or is not effective, it generally does not suggest what levels of EMS personnel are appropriate to perform specific interventions.
2. There are still limitations on the evidence available for much of what is included in an EMS scope of practice.

Several suggestions were received during the national revision process to increase the EMS scope of practice at all levels. To address each of these suggestions, therapeutic benefits to the overall patient care and expected clinical outcomes were considered with the level of risk to patients, the economic burdens of additional hours of education, requirements to maintain competency, and level of supervision needed to complete the task/skill. Clinical acts that were viewed by the expert panel to require experience and additional training beyond the basic education program required for licensure while not providing significant measurable benefit were not adopted as a national model.

In 2017, NHTSA considered the administration of an opioid antagonist and hemorrhage control including tourniquets and wound packing to be urgent and published a change notice to add these skills at all levels. This information has been added to the *Practice Model*.

As the 2018 *National EMS Scope of Practice Model* has been developed it has relied upon extensive literature review, systematic analysis of policy documents regarding health care licensing and patient safety, the input of an expert panel, and extensive public input.

Analysis and research on patient safety, scope of practice, and EMS personnel competency must remain a priority among the leadership of national associations, Federal agencies, and research institutions. When EMS data collection, subsequent analysis, and scientific conclusions are published and replicated, later versions of the *Practice Model* should be driven by those findings.

The Role of State Government

Each State has the authority and responsibility to regulate EMS within its borders and to determine the scope of practice of State-licensed EMS personnel. The *Practice Model* is a consensus-based document that was developed to improve the consistency of EMS personnel licensure levels and nomenclature among States; it does not have regulatory influence unless adopted by a State. However, the widespread use and adoption of the *Practice Model* suggests that it represents an accepted national standard. Any State that adopts a scope of practice that significantly deviates below or above this national model should be guided by a collaborative process that analyzes the potential benefit, safety risks, costs, and required training specific to the structure of the EMS system within that State.

The *Practice Model* identifies the psychomotor skills and knowledge necessary for the minimum competence of each nationally identified level of EMS personnel. This competence is assured by completion of a nationally accredited educational program and national certification. This model will be used to revise the National EMS Education Standards (NHTSA, 2009), national EMS certification exams, and national EMS educational program accreditation. Under this model, to be eligible for State licensure EMS personnel must be educated and verifiably competent in the minimum cognitive, affective, and psychomotor skills needed to ensure safe and effective practice at that level. Eligibility to practice is dependent on education, certification, State licensure, and credentialing by the physician medical director.

While each State has the right to establish its own levels of EMS personnel and their scopes of practice, staying as close to this model as possible, *and especially not going below it for any level*, will increase the consistency of the nomenclature and competencies of EMS personnel, facilitate reciprocity, improve professional mobility, standardize professional recognition, and decrease the necessity of each State developing its own education and certification materials. The *Education Standards*, national certification, national educational program accreditation, and publisher-developed instructional support material provide States with essential infrastructure support for each nationally defined EMS licensure level.

Some States permit licensed EMS personnel to perform skills and roles beyond the minimum skill set as they gain knowledge, additional education, experience, and (possibly) additional certification (See also Section III Specialty Care Delivered by Licensed EMS Personnel). Care must be taken to consider the level of cognition and critical thinking necessary to perform a skill safely. For instance, some skills may be simple to perform, but require considerable clinical judgment to know when they should or should not be performed.

The *Practice Model* will continue to serve EMS in the future as it is revised and updated to include changes in medical science, new technology, and research findings.

II. Understanding Professional Scope of Practice

Overview

“Scope of practice” is a legal description of the distinction between licensed health care personnel and the lay public as well as among the different levels of licensed health care professionals. It describes the authority vested by a State in people who are licensed in that State. In general, scopes of practice focus on activities regulated by law (for example, starting an intravenous line, administering a medication, etc.). This includes technical skills that if done improperly represent a significant hazard to the patient and therefore must be regulated for public protection. Scope of practice establishes which activities and procedures that would represent illegal activity if performed without a license and restricts the use of professional titles to people who are authorized by the State. In addition to drawing the boundaries between professionals and laypeople, scope of practice also defines the boundaries among professionals, creating either exclusive or overlapping domains of practice.

Scope of practice is a description of what a licensed person legally can and cannot do.

This *Practice Model* should be used by the States to develop scope of practice legislation, rules, and regulations. The specific mechanism that each State uses to define the State’s scope of practice for EMS personnel varies. State scopes of practice may be more specific than those included in this model and may specifically identify both the minimum and maximum skills and roles of each level of EMS licensure.

Generally, changing a law is more difficult than changing a regulation; changing a regulation is more difficult than changing a policy.

Scopes of practice are typically defined in law, regulations, and/or policy documents. Some States include specific language within the law, regulation, or policy, while others refer to separate documents using a technique known as “incorporation by reference.” The *Practice Model* provides a mechanism to implement comparable EMS scopes of practice between States.

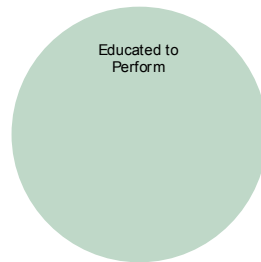
Scopes of practice need not define every activity of a licensed person (for example, lifting and moving patients, taking a blood pressure, direct pressure for bleeding control, etc.). The *Practice Model* includes suggested verbiage for the State scopes of practice in the section titled “EMS Personnel Scopes of Practice.” The interpretive guidelines include a more detailed list of skills discussed by the expert panel. These skills, which generally should not appear in scope of practice regulatory documents, are included to provide the user with greater insight as to the deliberations and discussion of the group and are not intended to serve as a comprehensive list of permitted skills.

The Interdependent Relationship Between Education, Certification, Licensure, and Credentialing

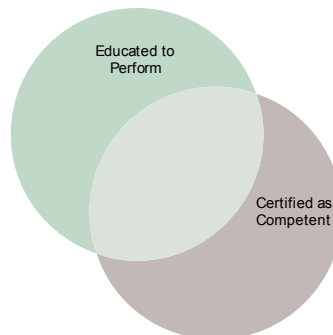
The *Practice Model* establishes a framework that ultimately determines the range of skills and roles that a person possessing a State EMS license is authorized to do on a given day in a given

EMS system. It is based on the notion that education, certification, licensure, and credentialing represent four separate but related activities.

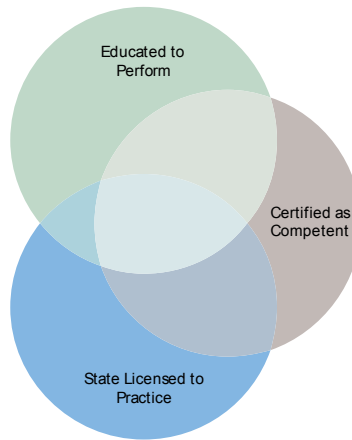
Education includes all the cognitive, psychomotor, and affective learning that people have undergone throughout their lives. This includes entry-level education, continuing professional education, and both formal and informal learning. Clearly, many people have extensive education that in some cases exceeds their EMS skills or roles.



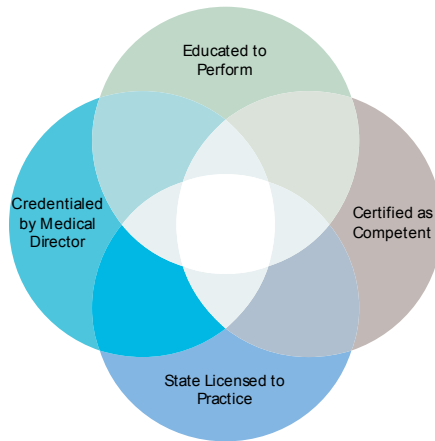
Certification is an external verification of the competencies that a person has achieved and typically involves an examination process. While certification exams can be set to any level of proficiency, in health care they are typically designed to verify that a person has achieved minimum competency to assure safe and effective patient care.



Licensure represents legal authority granted to a person by the State to perform certain restricted activities. Scope of practice represents the legal limits of the licensed person's performance. States have mechanisms to define the margins of what a person is legally permitted to perform. This authority granted by the State is defined as licensure in this document, but some States still use "certification" to describe the same granting of authority to practice for EMS personnel. In these cases, this State authority should not be confused with certification to verify competency as described in the preceding paragraph. Throughout this document, licensure will refer to the authority of the State to grant a person the ability to practice at a certain level of EMS practitioner, whether or not a State refers to this process as certification.



Credentialing is a clinical determination that is the responsibility of a physician medical director. It is the employer or affiliating organization's responsibility to act on the clinical credentialing status of EMS personnel in making employment and deployment decisions.



For every person, these four domains are of slightly different relative sizes. However, one concept remains constant: a person may only perform a skill or role for which that person is:

- educated (has been trained to perform the skill or role), AND
- certified (has demonstrated competence in the skill or role), AND
- licensed (has legal authority issued by the State to perform the skill or role), AND
- credentialed (has been authorized by medical director to perform the skill or role).

This relationship is represented graphically in Figure 1.

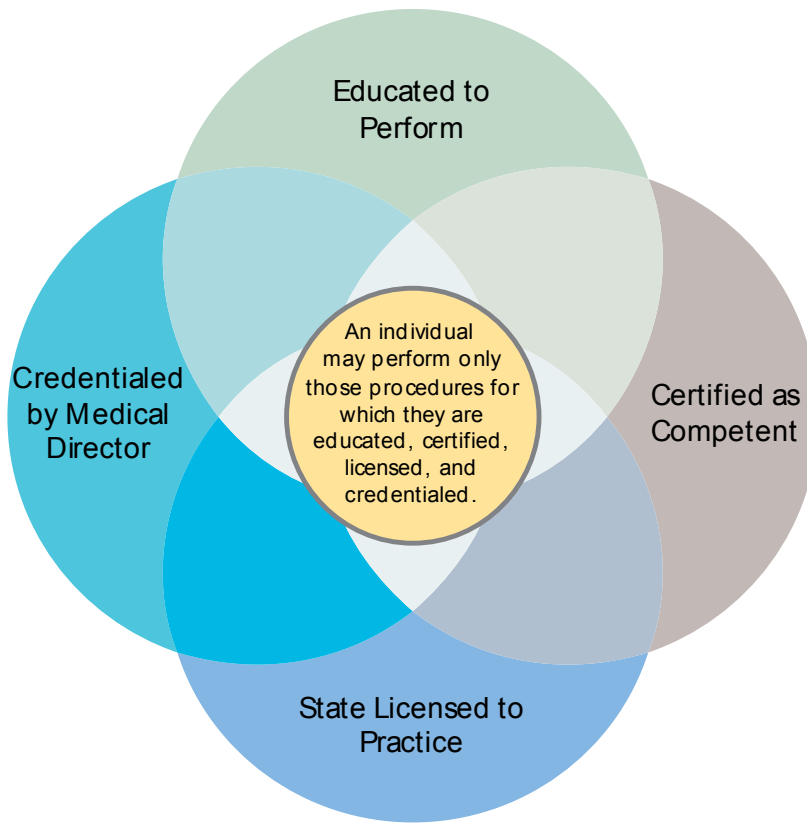


Figure 1. The relationship among education, certification, licensure, and credentialing

The center of Figure 1, where all the four elements overlap, represents skills and roles for which a person has been educated, certified, licensed by a State, and credentialed. This is the only acceptable region of performance, as it entails four overlapping and mutually dependent levels of public protection: education, certification, licensure, and credentialing. People may perform those roles and skills for which they are educated, certified, licensed, AND credentialed.

A significant risk to patient safety occurs when EMS personnel are placed into situations and roles for which they are not experientially or educationally prepared. It is the shared responsibility of medical oversight by a physician, clinical and administrative supervision, regulation, and quality assurance to ensure that EMS personnel are not placed in situations where they exceed the State's scope of practice. For the protection of the public, regulation must assure that EMS personnel are functioning within their scope of practice, level of education, certification, and credentialing process. Figure 2 illustrates the interconnections among education, certification of baseline competency, licensing by a regulating body, and credentialing by the medical director.

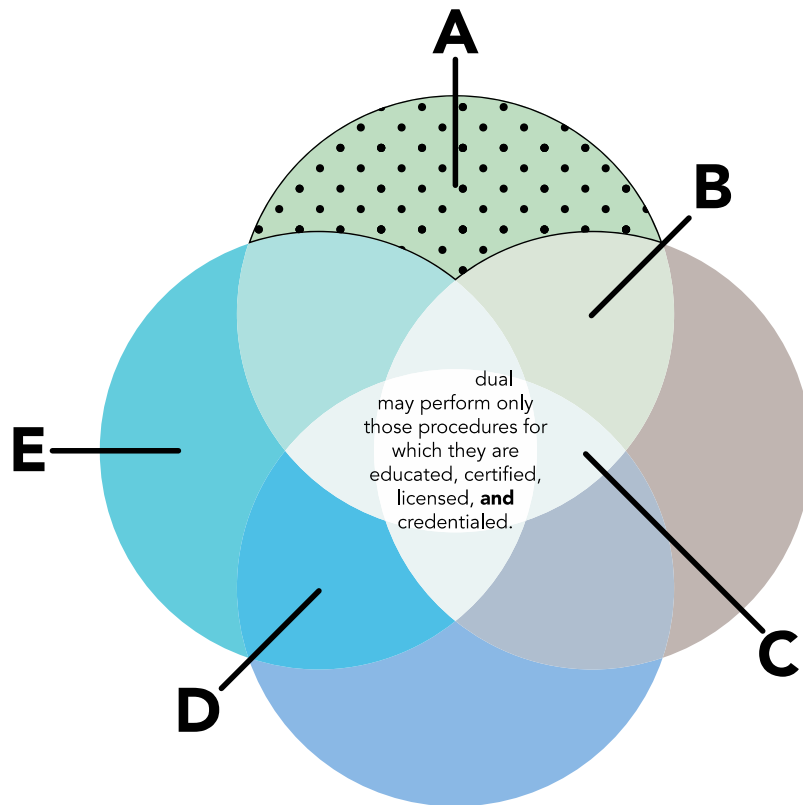
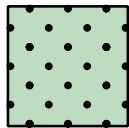


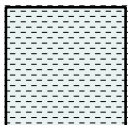
Figure 2. Skill and role situations not covered by all four elements for protection of the public



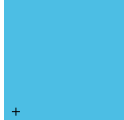
Region A: represents skills and roles for which a person has received education, but is neither certified, licensed, nor credentialed. For example, an EMT in a paramedic class is taught paramedic level skills; despite being trained, the EMT cannot perform those skills until such time that the person is certified, licensed, and credentialed by the local EMS medical director.



Region B: represents skills and roles in which a person has been educated and certified, but are not part of the State license and credentialing. For example, a paramedic who trained as a corpsman is educated and certified in basic suturing; however, the skill is not considered “core” in the civilian sector. It would now be out of that person’s scope of practice, and cannot be performed without special review and authorization by the State and medical director.



Region C: represents skills and roles for which a person is educated, certified, and licensed, but has no local/jurisdictional credentialing. For example, an off-duty paramedic arriving at the scene of an incident outside of his jurisdiction usually is not credentialed to perform advanced skills. In this case, performing an advanced skill would represent a violation of his scope of practice.



Region D: represents skills or roles the State has authorized (licensed) but are not addressed by initial education programs or certification processes. These skills require local entities to assure the education and competency verification in addition to local credentialing. For example, rapid sequence induction for intubation (RSI) in some States is legally permitted, but usually not taught as part of the initial education, nor is it part of the certification process. Some people (for example, flight paramedics) may be authorized to perform RSI; however, this is only permissible if the local entity assumes the responsibility for satisfying the requirements of education and certification of competency. Credentialing remains mandatory, and additional processes may be needed to satisfy local physician medical direction that skills in this region are safe and appropriate. Nonetheless, all four domains must be accomplished before any skill or role can be authorized.



Region E: represents skills or roles that a medical director wants people to perform but for which they have not yet been educated, certified, or licensed to perform. Typically, skills and roles in this region are new or emerging interventions that have the potential to drive the future of EMS practice based on evolving evidence. Innovations such as waveform capnography, CPAP, and the use of naloxone by EMRs have all originated in this region. There is considerable State-to-State variability in dealing with this situation. Some States have regulations that restrict licensed people from functioning beyond their scope of practice. In others, regulatory mechanisms exist that enable local physicians to assume responsibility for the performance of new skills and roles performed by EMS providers. Most States fall somewhere between these extremes and have mechanisms by which local medical directors can obtain expansion/variance of a scope of practice if they can demonstrate the need and appropriate mechanism to reasonably assure patient safety. In these circumstances, if no process exists to obtain State level authorization for additional skills or roles, then items that fall in Region E cannot be practiced. Therefore, it is important that States recognize the need for innovation and progression within the field, and establish processes for Region E interventions to be performed; appropriate education, evaluation and certification under the medical director's oversight must occur prior to implementation. Only then can these new interventions work their way into the standardized education, certification, and licensing domains to become part of the ever-evolving standard of care.

In many States, day-to-day clarification of scopes of practice, management of an appeal process, or otherwise assuring the adequacy of medical direction is the role of the State EMS medical director. Some States have licensure boards, often consisting of medical directors, administrators, peers, and public representatives who help adjudicate and clarify scope of practice issues.

Scope of Practice Versus Standard of Care

Scope of practice does not define a standard of care, nor does it define what should be done in a given situation (i.e., it is not a practice guideline or protocol). It defines what is legally permitted to be done by some or all the licensed people at that level, not what must be done. Table 1 describes some of the differences between scope of practice and standard of care.

Table 1. Relationship between scope of practice and standard of care

	Scope of Practice	Standard of Care
Purpose	Deals with the question, “Are you/were you <i>allowed</i> to do it?”	Deals with the question, “Did you do the right thing and did you do it properly?”
Legal implications	Act of commission is a criminal offense.	Act of commission or omission not in conformance with the standard of care may lead to civil liability.
Variability	May vary from person to person. Does not vary based on circumstances.	Situational, depends on many variables.
Defined by	Established by statute, rules, regulations, precedent, and/or licensure board interpretations.	Determined by scope of practice, literature, expert witnesses, and juries.
Miscellaneous	It is difficult to regulate knowledge through scope of practice.	Used to evaluate the totality of circumstances. What would a reasonable EMS person do in the same or similar circumstances?

A Comprehensive Approach to Safe and Effective Out-of-Hospital Care

Scope of practice is only one part of health care regulation and regulation is only one component of a comprehensive approach to improved patient care and safety. The primary goal of State regulation of EMS personnel is to protect the public from harm by ensuring EMS personnel possess a minimum level of competency and professional behaviors. Safe and effective EMS care is the cumulative effect of a cascade of many individual decisions involving every level of EMS leadership, medical direction, supervision, management, and regulation. Safe and effective patient care is the first priority and shared responsibility of everyone in an EMS agency and the EMS system. Safe and effective care cannot be accomplished through any single activity, but is best accomplished with an integrated system of checks and balances. All components of this comprehensive approach to safe and effective patient care are mutually supportive of and dependent upon each other.

III. Special Considerations

Liability in EMS Licensing and Oversight

A license is the official or legal permission to engage in or perform a regulated activity. In the United States, State governments generally hold the authority to issue licenses including EMS licenses. This is important because States ultimately need to be able to halt EMS personnel from performing in ways that are dangerous or harmful to the public.

Licensing differs from certification in that certification is an affirmation of competence while licensing is the authorization to perform the regulated health care activity. EMS personnel most commonly function on behalf of some volunteer or career organization that acts in a supervisory relationship as their employer.

EMS personnel have functioned under the supervision of physician medical directors since the 1960s. This physician oversight has been invaluable in assuring and improving the quality of care provided by EMS personnel. The close relationship of EMS personnel and physicians in this evolving health care discipline and descriptions of medical direction in early EMS curricula has led to the impression and belief by some that medical direction physicians are extending their licenses to authorize EMS practice. The logic of that belief would be that if an EMS person acted incompetently or dangerously, the State would take an action on the physician medical director's license. Not only would that be ineffective in halting the EMS practitioner's practice, it would put at risk the physician who might be able to help correct whatever problem exists with the EMS practitioner's practice.

The concept that EMS personnel are somehow practicing "under the physician's license" is simply not accurate. The umbrella of physician supervision and collaboration can never be used to replace the certification, scope of practice and individual responsibility of licensed EMS personnel. EMS personnel hold their own licenses and the relevant State authority can restrict or remove those licenses to stop incompetent or dangerous practice.

EMS personnel do, however, practice under the oversight of physician medical directors, who are expected to provide appropriate supervision in the interest of public safety and are obligated to revoke or restrict local credentialing as appropriate. Failure to provide appropriate oversight can be determined to be inadequate supervision and expose the physician to professional liability. In this respect, physician medical directors can be accountable, not for individual acts of EMS personnel, but for their larger oversight role.

Scope of Practice for Special Populations

EMS personnel are expected to meet the urgent health care needs of all patients with consideration to age, race, gender, cultural, religious, and ethnic considerations consistent with their defined scope of practice. Recognized special populations include, but may not be limited to, children; older patients; lesbian, gay, bisexual, transgender, and questioning (LGBTQ) patients; bariatric patients; patients with disabilities; and patients with limited access to health care due to geographic, demographic, socioeconomic, or other reasons.

Scope of Practice During Disasters, Public Health Emergencies, and Extraordinary Circumstances

The *Practice Model* is intended to cover a range of situations and circumstances where EMS personnel may provide emergency care. It is virtually impossible to create a scope of practice that considers every unique situation, extraordinary circumstance, and possible practice situation. In some cases, EMS personnel may be the only medically trained people at the scene of a disaster when other health care resources are overwhelmed. This document cannot account for every situation, but rather is designed to establish a system that works for entry-level personnel under normal circumstances. States may wish to modify or expand the scope of practice of EMS personnel in times of disaster or crisis with proper education, medical oversight, and quality assurance to reasonably protect patient safety.

Scope of Practice for EMS Personnel Functioning in Nontraditional Roles

The delivery of health care has been transformed over the last half-century by exponential and significant advances in medicine, research, and technology. The increasing portability and affordability of diagnostic and treatment equipment and the demand to increase care quality while reducing the cost of providing it has changed the demand for health care services in ways that were not envisioned with the passage of the National Traffic and Motor Vehicle and Safety Act of 1966 (Pub. L. No. 89-563, 80 Stat. 718). EMS personnel are identifying volunteer and career opportunities in a range of nontraditional settings that fulfill an important public health, public safety, and patient care need, such as large-scale concerts, sporting events and festivals, industrial, frontier and wilderness environments, wildland fire settings, community health, and more. Enabled by progressive rulemaking, occupational partners and innovative health care systems have been successfully using educated, experienced, and licensed EMS personnel in patient care settings, such as health clinics and hospitals for the past several years and they have become recognized as an invaluable member of the health care team. States with practice restrictions based on location, vehicle use, agency type, or transport provisions are encouraged to review existing laws, regulations, and policies to identify barriers that prevent EMS personnel from functioning in any setting at a level to the full extent of their education, certification, licensure, and credentialing.

Specialty Care Delivered by Licensed EMS Personnel

Specialization of EMS personnel continues to be an evolving area of interest to the national EMS community. This reflects a broader specialization trend that has occurred in medicine for over a century as well ongoing specialization in nursing and other allied health fields. In general, specialization occurs in response to an identified need for an expanded body of knowledge and skills that are best served by a formal supplemental educational and credentialing process. In many instances throughout health care the development and oversight of a specialty recognition process is led by health professionals through specialty boards and implemented in conjunction with State regulators. This approach effectively combines national consistency achieved through the specialty certification process with the legal authority to practice.

Specialty recognition, credentialing, or endorsement is the outcome of a formally defined process and mechanism for actively assessing that a person possesses and has mastered a unique body of knowledge *over and above entry-level* cognitive, affective, and psychomotor domains of learning and that the person can apply this knowledge and related skill set to improve care provided for

patients. Numerous health care and non-health care professions regulated by States have one or more specialty certification areas that have been defined, in part, by members of the profession itself. Several EMS specialties have emerged since the 2000 release of the *Education Agenda*.

Integration of specialty care requires appropriate educational preparation, a rigorous certification process, integration with State scope of practice and licensure regulations, and local credentialing by the medical director and EMS agency.

The legal authority for personnel to practice is established by State legislative action. Licensure authority prohibits anyone from practicing a profession unless they are licensed and authorized by the State, regardless of whether or not the person has been certified by a nongovernmental or private organization.

States often approach specialization policy through two mechanisms. The first is development of an additional licensure level beyond those described in this model. The second is to enact scope of practice regulations at the State level that allow for additional practice, often called an endorsement, in addition to an existing license level. This second approach is used extensively in the medical and nursing professions. Both approaches benefit from ongoing cooperation and coordination with nongovernmental specialty boards.

Military to Civilian EMS Transition

Military medics and corpsmen treat combat wounds in some of the harshest conditions that most civilian EMS personnel will likely never see and they are undoubtedly well qualified to serve domestic missions to achieve zero preventable deaths in the “war on trauma.” While support for military-to-civilian EMS transition is broad, the cognitive, affective, and psychomotor coursework for military medical trainees is variable depending on the individual service member’s military assignment, which makes determining related equivalency and awarding experiential credit for military service across five military branches somewhat complex. Much work has been done to identify pathways for military corpsmen to transition to civilian EMS positions.

- The U.S. Department of Defense has consolidated nearly all health care specialist training across the armed services branches to the operational center at the Medical Education and Training Campus (METC) at Fort Sam Houston, Texas.² METC is working to ensure that more service-required education and training programs satisfy the ever-increasing course completion requirements of the civilian sector.
- EMS programs are increasingly providing “advanced placement” evaluation and assistance to separating service members, particularly at the AEMT and paramedic levels.
- Over the next several years, health science training programs at METC will transition to the METC Branch Campus of the College of Allied Health Sciences at the Uniformed Services University (Bethesda, Maryland) so all military students will receive consistent and recognizable transcripts from a regionally accredited, degree-granting institution of higher education.

² Fort Sam Houston is one of four elements, along with Randolph Air Force Base, Lackland Air Force Base, and Martindale Army Airfield, that were merged in 2010 to create Joint Base San Antonio.

- States have developed updated models for conducting EMS personnel licensure evaluations including the integration of EMS licensees from other States and from the military setting.

Course completion of a program that meets or exceeds the *Education Standards* signifies that a person has fulfilled entry-level education requirements that lead to National EMS Certification provided by the National Registry of Emergency Medical Technicians. Active NREMT certification has been demonstrated to be the most expeditious path for military personnel to seek EMS licensure with the States.

IV. Description of Levels

Emergency Medical Responder

Description

The EMR is an out-of-hospital practitioner whose primary focus is to initiate immediate lifesaving care to patients while ensuring patient access to the emergency medical services system. EMRs possess the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and rely on an EMS or public safety agency or larger scene response that includes other higher-level medical personnel. When practicing in less populated areas, EMRs may have a low call volume coupled with being the only care personnel for prolonged periods awaiting arrival of higher levels of care. An EMR may assist, but should not be the highest-level person caring for a patient during ambulance transport. EMRs are often the first to arrive on scene. They must quickly assess patient needs, initiate treatment, and request additional resources.

Emergency medical responders:

- Function as part of a comprehensive EMS response, community, health, or public safety system with clinical protocols and medical oversight.
- Perform basic interventions with minimal equipment to manage life threats, medical, and psychological needs with minimal resources until other personnel can arrive.
- Are an important link in the 9-1-1 and emergency medical services systems.

Other Attributes

The focused and limited scope of this level makes it suitable for employee cross-training in settings where emergency medical care is not the EMR's primary job function. Examples include firefighters, law enforcement, lifeguards, backcountry guides, community responders, industrial workers, and similar jobs. EMRs advocate health and safety practices that may help reduce harm to the public.

Education Requirements

Successful completion of an EMR training program that is:

- Compliant with a uniform national standard for quality, and
- Approved by the State or U.S. Territory.

Primary Role

Initiate patient care within the emergency medical services system.

Type of Education

Vocational/technical setting:

- Certificate awarded for successful completion.

Critical Thinking

Within a limited set of protocol-driven, clearly defined principles.

Level of Supervision

General medical oversight required. Assist higher-level personnel at the scene and during transport.

Emergency Medical Technician

Description

An EMT is a health professional whose primary focus is to respond to, assess, and triage emergent, urgent, and non-urgent requests for medical care, apply basic knowledge and skills necessary to provide patient care and medical transportation to/from an emergency or health care facility. Depending on patient's needs and/or system resources, EMTs are sometimes the highest level of care patients will receive during ambulance transport. An EMT is often paired with higher levels of personnel as part of an ambulance crew or other responding group. With proper supervision, an EMT may serve as a patient care team member in a hospital or health care setting to the full extent of the EMT's education, certification, licensure, and credentialing. In a community setting, an EMT might visit patients at home and make observations reported to a higher-level authority to help manage a patient's care. When practicing in less populated areas, EMTs may have low call volume coupled with being the only care personnel during prolonged transports. EMTs may provide minimal supervision of lower level personnel. EMTs can be the first to arrive on scene; they are expected to quickly assess patient conditions, provide stabilizing measures, and request additional resources, as needed.

Emergency medical technicians:

- Function as part of a comprehensive EMS response, community, health, or public safety system with defined clinical protocols and medical oversight.
- Perform interventions with the basic equipment typically found on an ambulance (Recommended Essential Equipment for Basic Life Support and Advanced Life Support Ground Ambulances 2020: A Joint Statement Position Statement, 2021) to manage life threats, medical, and psychological needs.
- Are an important link within the continuum of the emergency care system from an out-of-hospital response through the delivery of patients to definitive care.

Other Attributes

The majority of personnel in the EMS system are licensed at the EMT level. EMTs play many important roles and possess the knowledge and skill set to initially manage any emergency until a higher level of care can be accessed. In areas where AEMT or paramedic response is not available, the EMT may be the highest level of EMS personnel a patient encounters before reaching a hospital. EMTs advocate health and safety practices that may help reduce harm to the public.

Education Requirements

Successful completion of an EMT training program that is:

- Compliant with a uniform national standard for quality, and
- Approved by the State or U.S. Territory.

Primary Role

Provide basic patient care and medical transportation within the emergency care system.

Type of Education

Vocational/Technical setting:

- Diploma or certificate awarded for successful completion.

Critical Thinking

Within a limited set of protocol-driven, clearly defined principles that:

- Engages in basic risk versus benefit analysis.
- Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments.

Level of Supervision

General medical oversight required. Some autonomy at basic life support level, assist higher-level personnel at the scene and during patient transport.

Advanced Emergency Medical Technician

Description

The AEMT is a health professional whose primary focus is to respond to, assess, and triage non-urgent, urgent, and emergent requests for medical care, apply basic and focused advanced knowledge and skills necessary to provide patient care and/or medical transportation, and facilitate access to a higher level of care when the needs of the patient exceed the capability level of the AEMT. The additional preparation beyond EMT prepares an AEMT to improve patient care in common emergency conditions for which reasonably safe, targeted, and evidence-based interventions exist. Interventions within the AEMT scope of practice may carry more risk if not performed properly than interventions authorized for the EMT/EMR levels. With proper supervision, an AEMT may serve as a patient care team member in a hospital or health care setting to the full extent of their education, certification, licensure, and credentialing. In a community setting an AEMT might visit patients at home and make observations that are reported to a higher-level authority to help manage a patient's care.

Advanced emergency medical technicians:

- Function as part of a comprehensive EMS response, community, health, or public safety system with medical oversight.

- Perform interventions with the basic and advanced equipment typically found on an ambulance.
- Perform focused advanced skills and pharmacological interventions that are engineered to mitigate specific life-threatening conditions, medical, and psychological conditions with a targeted set of skills beyond the level of an EMT.
- Function as an important link from the scene into the health care system.

Other Attributes

The learning objectives and additional clinical preparation for AEMTs exceed the level of EMTs. In areas where paramedic response is not available, the AEMT may be the highest level of EMS personnel a patient encounters before reaching a hospital. AEMTs advocate health and safety practices that may help reduce harm to the public.

Education Requirements

Successful completion of a nationally accredited or CAAHEP-accredited AEMT program that meets all other State/Territorial requirements. (The target for full implementation of AEMT program accreditation is January 1, 2025.)

Primary Role

Provide basic and focused advanced patient care; determine transportation needs in the health care system.

Type of Education

Vocational/technical or academic setting:

- Diploma, certificate, or associates degree awarded for successful completion.

Critical Thinking

Within a limited set of protocol-driven, clearly defined principles that:

- Engages in basic risk versus benefit analysis.
- Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments.

Level of Supervision

Medical oversight required. Minimal autonomy for limited advanced skills. Provides some supervision of lower level personnel. Assist higher-level personnel at the scene and during transport.

Paramedic

Description

The paramedic is a health professional whose primary focus is to respond to, assess, and triage emergent, urgent, and non-urgent requests for medical care, apply basic and advanced knowledge and skills necessary to determine patient physiologic, psychological, and

psychosocial needs, administer medications, interpret and use diagnostic findings to implement treatment, provide complex patient care, and facilitate referrals and/or access to a higher level of care when the needs of the patient exceed the capability level of the paramedic. A paramedic often serves as a patient care team member in a hospital or other health care setting to the full extent of the paramedic's education, certification, licensure, and credentialing. Paramedics may work in community settings where they take on additional responsibilities monitoring and evaluating the needs of at-risk patients, as well as intervening to mitigate conditions that could lead to poor outcomes. Paramedics help educate patients and the public in the prevention and/or management of medical, health, psychological, and safety issues.

Paramedics:

- Function as part of a comprehensive EMS response, community, health, or public safety system with advanced clinical protocols and medical oversight.
- Perform interventions with the basic and advanced equipment typically found on an ambulance, including diagnostic equipment approved by an agency medical director.
- May provide specialized interfacility care during transport.
- Are an important link in the continuum of health care.

Other Attributes

Paramedics commonly facilitate medical decisions at emergency scenes and during transport. Paramedics work in a variety of specialty care settings including ground and air ambulances, and in occupational, hospital, and community settings. Academic preparation enables paramedics to use a wide range of pharmacology, airway, and monitoring devices as well as use critical thinking skills to make complex judgments such as the need for transport from a field site, alternate destination decisions, the level of personnel appropriate for transporting a patient, and similar judgments. Due to the complexity of the paramedic scope of practice and the required integration of knowledge and skills, many training programs are moving towards advanced training at the Associate degree or higher level.

Education Requirements

Successful completion of a nationally accredited paramedic program that meets all other State requirements.

Primary Role

Provide advanced care in a variety of settings; interpretive and diagnostic capabilities; determine destination needs within the health care system; specialty transport.

Type of Education

Academic setting:

- Diploma, certificate, associate or bachelors/baccalaureate degree awarded for successful completion.

Critical Thinking

Within a set of protocol-driven, clearly defined principles that:

- Engages in complex risk versus benefit analysis
- Participates in making decisions about patient care, transport destinations, the need for additional patient care resources, and similar judgments

Level of Supervision

Paramedics operate with collaborative and accessible medical oversight, recognizing the need for autonomous decision-making. Frequently provides supervision and coordination of lower level personnel.

V. Depth and Breadth of Knowledge

“Breadth of learning refers to the full span of knowledge of a subject. Depth of learning refers to the extent to which specific topics are focused upon, amplified, and explored. Within any area of study, there will be both breadth and depth of learning, which increase as students advance their knowledge” (SUNY Empire State College, 2018).

It is important to note that the *Practice Model* and *Education Standards* assume a progression of the three domains of learning (cognitive, affective, and psychomotor) that affect EMS practice from the EMR level through the paramedic level. That is, licensed personnel at each level are responsible for all knowledge, judgments, and skills at their level and all levels *preceding* their level. The *Practice Model* also assumes that EMS personnel not only receive requisite knowledge, but they can comprehend data, apply knowledge, analyze and synthesize information, and evaluate the outcomes of their actions.

Typically, scope of practice refers to the tasks and roles that licensed personnel are legally authorized to perform. In general, it does not describe the requisite knowledge necessary to perform those tasks and roles competently. As outlined in the *Education Agenda*, the responsibility for determining the knowledge necessary to safely perform skills, tasks, and roles falls to the EMS educators.

The increasing depth and breadth of cognitive, affective, and psychomotor material envisioned across each level of EMS licensure is graphically represented in Figure 3.

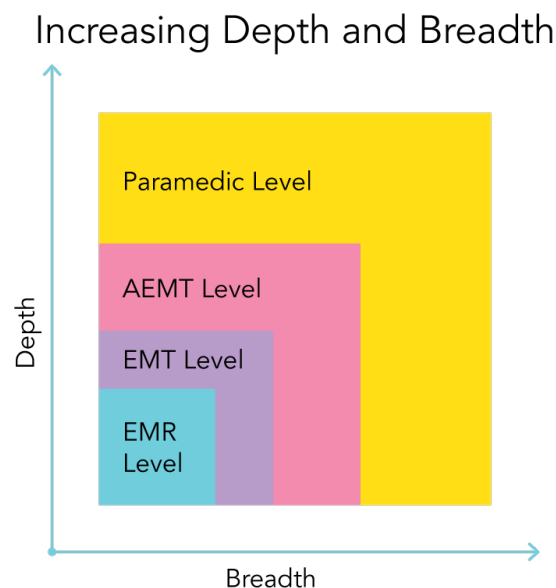


Figure 3. Increasing depth and breadth of knowledge from EMR through paramedic

VI. Interpretive Guidelines

The interpretive guidelines are used to help guide the users of this document by providing additional insight into the discussions and deliberations that revolved around the decisions of the expert panel. These interpretive guidelines represent the collective opinions of the expert panel in June 2018 prior to incorporation of Change Notices 1.0 and 2.0 from March 29, 2021.

The interpretive guidelines are included to allow future users to apply similar methodology in deciding appropriateness of new interventions at each personnel level. They are illustrative and NOT all-inclusive.

I. Skill – Airway/Ventilation/Oxygenation

I. Skill – Airway/Ventilation/Oxygenation	EMR	EMT	AEMT	Paramedic
Airway – nasal		X	X	X
Airway – oral	X	X	X	X
Airway – supraglottic			X	X
Bag-valve-mask (BVM)	X	X	X	X
CPAP		X	X	X
Chest decompression - needle				X
Chest tube placement – assist only				X
Chest tube – monitoring and management				X
Cricothyrotomy				X
End tidal CO ₂ monitoring and interpretation of waveform capnography			X	X
Gastric decompression – NG Tube				X
Gastric decompression – OG Tube				X
Head tilt - chin lift	X	X	X	X
Endotracheal intubation				X
Jaw-thrust	X	X	X	X

I. Skill – Airway/Ventilation/ Oxygenation	EMR	EMT	AEMT	Paramedic
Mouth-to-barrier	X	X	X	X
Mouth-to-mask	X	X	X	X
Mouth-to-mouth	X	X	X	X
Mouth-to-nose	X	X	X	X
Mouth-to-stoma	X	X	X	X
Airway obstruction – dislodgement by direct laryngoscopy				X
Airway obstruction – manual dislodgement techniques	X	X	X	X
Oxygen therapy – High flow nasal cannula				X
Oxygen therapy – Humidifiers		X	X	X
Oxygen therapy – Nasal cannula	X	X	X	X
Oxygen therapy – Non-rebreather mask	X	X	X	X
Oxygen therapy – partial rebreather mask		X	X	X
Oxygen therapy – simple face mask		X	X	X
Oxygen therapy – Venturi mask		X	X	X
Pulse oximetry		X	X	X
Suctioning – Upper airway	X	X	X	X
Suctioning – tracheobronchial of an intubated patient			X	X

II. Skill – Cardiovascular/Circulation

II. Skill – Cardiovascular/ Circulation	EMR	EMT	AEMT	Paramedic
Cardiopulmonary resuscitation (CPR)	X	X	X	X

II. Skill – Cardiovascular/ Circulation	EMR	EMT	AEMT	Paramedic
Cardiac monitoring – 12-lead ECG acquisition and transmission		X	X	X
Cardiac monitoring – 12-lead electrocardiogram (interpretive)				X
Cardioversion – electrical				X
Defibrillation – automated / semi-automated	X	X	X	X
Defibrillation – manual				X
Hemorrhage control – direct pressure	X	X	X	X
Hemorrhage control – tourniquet	X	X	X	X
Hemorrhage control – wound packing	X	X	X	X
Transvenous cardiac pacing – monitoring and maintenance				X
Mechanical CPR device		X	X	X
Telemetric monitoring devices and transmission of clinical data, including video data		X	X	X
Transcutaneous pacing				X

III. Skill – Splinting, Spinal Motion Restriction, and Patient Restraint

III. Skill – Splinting, Spinal Motion Restriction (SMR), and Patient Restraint	EMR	EMT	AEMT	Paramedic
Cervical collar	X	X	X	X
Long spine board		X	X	X
Manual cervical stabilization	X	X	X	X
Seated SMR (KED, etc.)		X	X	X
Extremity stabilization - manual	X	X	X	X
Extremity splinting	X	X	X	X

III. Skill – Splinting, Spinal Motion Restriction (SMR), and Patient Restraint	EMR	EMT	AEMT	Paramedic
Splint – traction		X	X	X
Mechanical patient restraint		X	X	X
Emergency moves for endangered patients	X	X	X	X

IV. Skill – Medication Administration – Routes

IV. Skill – Medication Administration – Routes³	EMR	EMT	AEMT	Paramedic
Aerosolized/nebulized		X	X	X
Endotracheal tube				X
Inhaled		X	X	X
Intradermal				X
Intramuscular		X ⁴	X	X
Intramuscular – auto-injector	X	X	X	X
Intranasal			X	X
Intranasal - unit-dosed, premeasured	X	X	X	X
Intraosseous – initiation, peds or adult			X	X
Intravenous			X	X
Mucosal/sublingual		X	X	X
Nasogastric				X
Oral		X	X	X

³ Limited to Medical Director Approved Medications.

⁴ Medical direction should ensure appropriate clinical experience and education, including the separate skills of medication preparation, medication dilution, filling a syringe from a multi-dose vial, and changing the needle on a syringe.

IV. Skill – Medication Administration – Routes³	EMR	EMT	AEMT	Paramedic
Rectal				X
Subcutaneous			X	X
Topical				X
Transdermal				X

V. Medical Director Approved Medications

V. Medical Director Approved Medications	EMR	EMT	AEMT	Paramedic
Use of epinephrine (auto-injector) for anaphylaxis (supplied and carried by the EMS agency)		X	X	X
Use of auto-injector antidotes for chemical/hazardous material exposures	X	X	X	X
Use of opioid antagonist auto-injector for suspected opioid overdose	X	X	X	X
Immunizations			X	X
Immunizations during a public health emergency		X	X	X
Inhaled – beta agonist/bronchodilator and anticholinergic for dyspnea and wheezing		X	X	X
Inhaled – monitor patient administered (i.e., nitrous oxide)			X	X
Intranasal - opioid antagonist for suspected opioid overdose	X	X	X	X
Intravenous			X ⁵	X
Maintain infusion of blood or blood products				X
Oral aspirin for chest pain of suspected ischemic origin		X	X	X
Oral glucose for suspected hypoglycemia		X	X	X

⁵ Limited to analgesia, antinausea/antiemetic, dextrose, epinephrine, glucagon, naloxone, and others defined by State/local protocol.

V. Medical Director Approved Medications	EMR	EMT	AEMT	Paramedic
Oral over-the-counter (OTC) analgesics for pain or fever		X	X	X
OTC medications, oral and topical				X
Parenteral analgesia for pain			X	X
Sublingual nitroglycerin for chest pain of suspected ischemic origin – limited to <i>patient's own prescribed medication</i>		X		
Sublingual nitroglycerin for chest pain of suspected ischemic origin			X	X
Thrombolytics				X

VI. Skill – IV Initiation/Maintenance Fluids

VI. Skill – IV Initiation/Maintenance Fluids	EMR	EMT	AEMT	Paramedic
Access indwelling catheters and implanted central IV ports				X
Central line – monitoring				X
Intraosseous – initiation, peds or adult			X	X
Intravenous access			X	X
Intravenous initiation - peripheral			X	X
Intravenous – maintenance of non-medicated IV fluids			X	X
Intravenous – maintenance of medicated IV fluids				X

VII. Skill – Miscellaneous

VII. Skill – Miscellaneous	EMR	EMT	AEMT	Paramedic
Assisted delivery (childbirth)	X	X	X	X
Assisted complicated delivery (childbirth)		X	X	X

VII. Skill – Miscellaneous	EMR	EMT	AEMT	Paramedic
Blood chemistry analysis				X
Blood pressure automated		X	X	X
Blood pressure – manual	X	X	X	X
Blood glucose monitoring		X	X	X
Eye irrigation	X	X	X	X
Eye irrigation –hands free irrigation using sterile eye irrigation device				X
Patient transport		X	X	X
Specimen collection via nasal swab ⁶		X	X	X
Venous blood sampling			X	X

⁶ Medical direction should ensure appropriate clinical experience to obtain an acceptable specimen in order to minimize inaccurate results.

VII. Definitions

academic—Based on formal education; scholarly; conventional.

academic institution—A body or establishment instituted for an educational purpose and providing college credits or awarding degrees.

accreditation—The granting of approval by an official review board after specific requirements have been met. The review board is non-governmental 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, is more difficult to attain and maintain competency in, and requires significant background knowledge in basic and applied sciences. These include invasive and pharmacological interventions.

administered medication—The act of giving a medication to a patient that has been stocked and carried by EMS personnel. The patient may not have previously been determined by a physician to be an appropriate recipient of the medication.

certification—An external verification of the competencies that a person has achieved that typically involves an examination process.

continuing education—The continual process of life-long learning.

competence—The application of knowledge and the interpersonal, decision-making and psychomotor skills expected for the practice role, within the context of public health, safety and welfare.

core content—The central elements of a professional field of study. The core content does not specify the course of study.

credentialing—A clinical determination that is the responsibility of a physician medical director that authorizes a practitioner to perform a skill or role.

curriculum—A particular course of study, often in a special field. For EMS education, it has traditionally included detailed lesson plans. (The responsibility for EMS curriculum has shifted to EMS educators and EMS programs based on the *Education Standards*.)

educational affiliation—An association with a learning institution (academic), the extent to which can vary greatly from recognition to integration.

entry-level competence—The level of competence expected of a person who is about to begin a career. Entry-level competence is sometimes defined as the minimum competence necessary to practice safely and effectively.

EMS system—Any specific arrangement of emergency medical personnel, equipment, and supplies designed to function in a coordinated fashion. May be local, regional, State, or national.

licensure—The legal authority granted to a person by the State to perform certain restricted activities. A license is generally considered a privilege and not a right.

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

National EMS Education Program Accreditation—The national accreditation process for institutions that sponsor EMS educational programs identified by the *Education Agenda*.

nationally recognized accrediting agency—An accrediting agency that the U.S. Secretary of Education recognizes under Title 34 CFR Part 602—The Secretary's Recognition of Accrediting Agencies.

National EMS Education Standards—The document that defines the terminal learning objectives for each Nationally defined EMS licensure level.

National EMS Scope of Practice Model—The document that defines scope of practice for each Nationally defined EMS licensure level.

outcome—The short-, intermediate-, or long-term consequence or visible result of treatment, particularly as it pertains to a patient's return to societal function.

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

registration—A listing of people who have met the requirements of the registration service.

registration agency—Agency traditionally responsible for the delivery of 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—Either a rule or a statute that prescribes the management, governance, or operating parameters for a given group; tends to be a function of administrative agencies to which a legislative body has delegated authority to promulgate rules/regulations to "regulate a given industry or profession." Most regulations are intended to protect the public health, safety, and welfare.

scope of practice—Defined parameters of various duties or services that may be provided by a person with specific credentials. Whether regulated by rule, statute, or court decision, it represents the limits of services a person may legally perform.

testing agency—Agency traditionally responsible for delivering a contracted examination. The responsibility of interpreting the results and defending the validity of those judgments is placed on the contractor.

vocational/technical—Refers to schools or programs specializing in the skilled trades, applied sciences, technology, and career preparation.

Appendix A: History of Occupational Regulation in EMS

The development of modern civilian EMS stems largely from lessons learned in providing medical care to soldiers injured in military conflict.

Building on these lessons, many rescue squads and ambulance services emerged in the civilian sector, often community-based in nature. Hospitals and funeral homes were also common sources of nascent response and transportation systems. While well-intentioned, most of these personnel were untrained, poorly equipped, unorganized, and unsophisticated. The systems were unregulated, and no State or national standards existed. By the 1960s, prehospital care in the United States had evolved into a patchwork of well-intentioned but uncoordinated efforts. This all changed in the mid-1960s.

In 1960, the President's Committee for Traffic Safety recognized the need to address "Health, Medical Care and Transportation of the Injured" to reduce the nation's highway fatalities and injuries.

In 1966, the National Academy of Sciences published a "white paper" report titled *Accidental Death and Disability: The Neglected Disease of Modern Society* (Committee on Trauma & Committee on Shock, 1966) that called for improved training of ambulance personnel. This report quantified the magnitude of traffic-related death and disability while vividly describing the deficiencies in prehospital care in the United States. The white paper made many recommendations regarding ambulance systems, including a call for ambulance standards, State-level policies and regulations, and adopting methodology for providing consistent ambulance services at the local level.

The Highway Safety Act of 1966 ((P.L. 89-564, 80 Stat. 731) required each State to have a highway safety program that complied with uniform Federal standards, including "emergency services." This provided the impetus for NHTSA's early leadership role in EMS system improvements. Initial NHTSA EMS efforts were focused on improving the education of prehospital personnel such as the writing of the National Standard Curricula (NSC). Funding was also provided to assist States with the development of State EMS offices. Subsequent NHTSA efforts were oriented toward comprehensive EMS system development and included, for instance, model State EMS legislation (Weingroff & Seabron, 2003).

The genesis of State EMS systems can also be traced to the early 1970s, when an unprecedented level of funding from the Federal Government and the Robert Wood Johnson Foundation prompted the establishment of regional EMS systems and demonstration projects throughout the country. The Emergency Medical Services Systems Act of 1973 (enacted by Congress as Title XII of the Public Health Service Act), yielded 8 years and over \$300 million of investment in EMS systems planning and implementation. The availability of EMS personnel and their training were two components that eligible entities were required to focus on, resulting in the first generation of legislation and regulation of EMS personnel levels (NHTSA, 1996).

Beginning in 1971, NHTSA published the first 81-hour curriculum for training EMT-Ambulance personnel. Other NSC initiatives followed for EMT-paramedics and EMT-intermediates. These propelled EMS systems forward in terms of standardizing the preparation of people filling roles

in providing prehospital emergency care. The NSC gave detailed “how to teach this course” guidance down to the minute in how much time to spend on specific learning objectives. It was initially helpful to instructors who had never taught anyone to care for patients in the prehospital environment. The NSC became functionally synonymous with the *scope of practice* that EMS personnel could perform. EMS textbooks were published to align with the NSC. Many States referenced the NSC in their statutes and rules.

The practical effect of the NSC for EMS personnel was that an EMS person could generally do what they were taught to do. The practice and educational preparation of most other allied health professions begins with agreement on what a person in the job can do (i.e., a scope of practice) and then developing the education resources to prepare a qualified person to do that role. For EMS, education was driving practice and for all other professions, practice drives education.

As EMS systems began to mature, limitations of the NSC became increasingly evident. A few examples of these limitations included:

- **Integration of new technologies and evidence.** When automated external defibrillators (AEDs) became available and proved to be both reliable and effective for cardiac arrest resuscitation, there had to be an update to the NSC before use of AEDs could be widely taught to EMS personnel. The opposite was also true as EMS devices or practices began to be shown as harmful. The only way to remove content from teaching and practice was to revise the NSC.
- **The professionalism of EMS educators.** EMS courses began to be taught in many areas by experienced adult educators. These educators questioned the constraints of the NSC when they found they needed more or less time than what was called for. The NSC provided no flexibility for how to deliver EMS courses.
- **State EMS Office role conflict.** States have the responsibility of setting scopes of practice for all levels of health care personnel and those who adopted the NSC functionally handed off this responsibility to a national document. There was no effective way structurally for States to reference the NSC and make local adaptations to both teaching and practice.

As a practical matter, the NSC also proved difficult and expensive to update. Controversy on periodic revisions stemmed from debate about EMS practice rather than updates to the education program.

The development of the *EMS Agenda for the Future* and the follow-on *EMS Education Agenda for the Future: A Systems Approach* called for a new model of EMS education. Central to the new model was a National EMS Scope of Practice Model (SoPM) setting a floor on expectations for what people would be prepared to do in their roles. Once the SoPM was established, National EMS Education Standards were developed to guide instructors in the depth and breadth of content to be taught. The development of curricula on how best to teach the courses at each level is now left to individual instructors. EMS publishers provide an array of texts and other educational support material.

One function of State EMS offices was to ensure the competence of the State’s EMS personnel. States employed many strategies to help assure safe and effective EMS practice, including

licensure and certification. Unfortunately, these terms developed multiple connotations in EMS. In some cases, the meanings differed from other disciplines, causing confusion and inconsistency at the national level.

In 1981, the Omnibus Budget Reconciliation Act (OBRA) eliminated the categorical Federal funding to States established by the 1973 EMS Systems Act in favor of block grants to States for preventive health and health services. This change shifted responsibility for EMS from the Federal to the State level (Committee on the Future of Emergency Care in the United States Health System, Board on Health Care Services, 2007). By 1990 EMS in the United States had enjoyed many successes. Not only did EMS systems grow, but EMS became a career and volunteer activity for hundreds of thousands of talented, committed, and dedicated people. Emergency medical care was available to virtually every person in the country by simply dialing 9-1-1 from any telephone. Despite this progress, EMS was affected by many factors in the broader health care system.

In 1992, the National Association of EMS Physicians and the National Association of State EMS Directors saw a need for a long-term strategic direction for EMS, and the *EMS Agenda for the Future* was initiated with support from NHTSA and the Maternal and Child Health Bureau of the Health Resources and Services Administration. Published in 1996, the *EMS Agenda for the Future* proposed a bold vision for greater integration of EMS into the U.S. health care system.

In 1993, the National Registry of EMTs released the *National Emergency Medical Services Education and Practice Blueprint* (Brown et al., 1993). The *Blueprint* defined an EMS educational and training system that would provide both the flexibility and structure needed to guide the development of national standard training curricula and guide the issuance of licensure and certification by the individual States.

In 1998, the Pew Health Professions Commission Taskforce on Health Care Workforce Regulation published *Strengthening Consumer Protection: Priorities for Health Care Workforce Regulation* (Finocchio et al., 1998). The report recommended that a national policy advisory board develop standards, including model legislative language, for uniform scopes of practice authority for the health professions. The report emphasized the need for States to enact and implement scopes of practice that are nationally uniform and based on the standards and models developed by the national policy advisory body.

Also in 1998, demonstrating their commitment to the *EMS Agenda*, NHTSA and HRSA jointly supported a two-year project to develop an integrated system of EMS regulation, education, certification, licensure, and educational program accreditation. The result was the *EMS Education Agenda for the Future: A Systems Approach* (NHTSA, 2000), which recognized the need for a systematic approach to meet the needs of the current EMS system while moving toward the vision proposed in the 1996 *EMS Agenda for the Future*. The *EMS Education Agenda* called for a more traditional approach to licensing EMS personnel.

A coordinated national EMS system continues to be in the best interest of States, EMS personnel, and the public. State EMS offices, while working in cooperation with their stakeholders, should implement scope of practice regulations that are as close as possible to those described in the *National EMS Scope of Practice Model*. This will help with professional

recognition of EMS personnel, facilitate reciprocity, decrease confusion, and enable the development of high quality support systems to benefit the entire system.

Appendix B: Changes and Considerations From the 2007 Practice Model

The 2018 version of the *Practice Model* represents one frame of a motion picture of evolving EMS practice. Research and technology are constantly evolving and will continue to drive changes to EMS education and practice. Having the context for what did or did not change from the 2007 *Practice Model* may be useful in understanding some of the content in this document. The entire revision team deeply appreciates the thoughtful input received from the EMS community during multiple public reviews. While not every comment or suggestion was ultimately incorporated in the revision, all of them were considered and collectively played an important role in shaping the *2018 National EMS Scope of Practice Model*.

Much of the effort in updating the 2018 *Practice Model* was focused on describing the interdependence between education, certification, licensure and credentialing, and the narrative descriptions of each level, while attempting to more clearly document expectations in a way to minimize scope “creep” between the levels. While it is tempting to look at the specific list of skills included in the Interpretive Guidelines section, that list cannot be used to provide a complete understanding of the 2018 *Practice Model* for any level. The Interpretive Guidelines included in this document are intended to illustrate the kinds of skills and interventions personnel at various levels are educated, certified, licensed, and otherwise qualified to do. This does not mean that every person at a particular level will routinely do every skill on the Interpretive Guideline list. One example of this is the obtaining and transmitting 12-lead electrocardiograms (ECG) at the EMT level. The expert panel recognized the strong research evidence to support the value of this skill for improving patient outcomes, especially in rural settings; however, some systems have readily available paramedics and EMTs might not be used to provide this technology in such systems. The expert panel also recognized that the cost of technology might be prohibitive for some EMT level agencies. Accordingly, this is one example of a skill EMTs (and other levels of EMS personnel) will routinely be educated and tested about, but that preparation does not imply that the technology must or even should be available in every practice setting where EMTs function. In other words, such a task should be valued and permitted but not required if the necessary equipment and resources to complete the task are not available to personnel.

Scope of practice is not a clinical description of what should be done or how it should be done. These elements are a combination of education and medical direction. Each state has the authority and responsibility to establish the scopes of practice for their state. The increasing depth and breadth of cognitive, affective, and psychomotor material envisioned across each level of EMS licensure are used to help states define acceptable practice parameters.

The COVID-19 national public health emergency led to a reevaluation of the ability of EMTs to participate in the administration of disease countermeasures, such as the IM administration of vaccines. Educational programs should communicate and coordinate with their state EMS office prior to using the *National EMS Education Standards* to ensure that:

- the state has adopted the scope of practice levels consistent with the revised *Scope of Practice Model*.
- a transition process for existing EMS clinicians has been identified.

- adequate instruction, procedural, written, and/or digital support materials are in place for educational content delivery.
- certification is based on the *National EMS Education Standards*.
- a process has been identified for credentialing by an EMS medical director.
- supervisory capabilities are available to support the activity, intervention, and role.

As community needs evolve, states maintain the regulatory flexibility to permit licensees to exceed the *Practice Model* but they do so along with the need to develop learning objectives, educational content, competency measures, and a credentialing process to ensure safe practice.

Nomenclature

The expert panel considered a recommendation (Innovative Practices of the EMS Workforce, 2017) from the National EMS Advisory Council (NEMSAC) to recognize and use the term “paramedicine” to describe the professional discipline that is currently recognized as EMS. Because the national discussion on this important topic has just begun, the group ultimately did not support a change to nomenclature for the 2018 *Practice Model* revision. When greater consensus among national EMS organizations and other EMS stakeholders is achieved, the recommendation could be considered during the next revision cycle.

Academic Degree Requirements for Paramedics

Consideration was given by the expert panel to calling for an associate degree as an entry-level education requirement for paramedics. Arguments in favor of this change include recognition of the complexity and sometimes ambiguity inherent to paramedic practice, increasing the professional recognition of paramedics, a logical pathway towards better compensation, and comparability with other health care professions. Arguments against this change include the challenges of integrating associate degree academic preparation into fire, hospital or other non-academic institution based programs. Concerns were voiced that increasing academic preparation requirements could increase the cost of education, shrink the hiring pool of paramedics for employers and threaten existing paramedic level service delivery programs. The expert panel considers this topic as a subject worthy of further national debate and exploration. While the group clearly recognizes education as the foundation of any profession’s scope of practice, the difficulty of considering transitional variables, such as grandfathering existing personnel and programs, workforce recruitment, and retention, was beyond the scope of this project.

Attendant Qualifications for Ambulance Transport

The expert panel was asked to evaluate the practice of EMRs serving as part of an ambulance crew, and more specifically as the primary care giver during ambulance transport; meaning an EMR attending to the patient in the back of an ambulance en route to a medical facility without a higher level of licensed EMS practitioner physically present in the same compartment as the patient.

While defining ambulance crew composition is outside the scope of this document, the expert panel did consider the lack of scientific evidence to support the use of EMRs to fulfill clinical staffing requirements during the transport phase of EMS care when it developed the description for an EMR in Section IV of this document. Considering the education, certification, licensing,

and credentialing processes pertaining to EMS practice, the expert panel reaffirms that while an EMR may be used to assist patient care in an ambulance, an EMT or higher level personnel must be physically present in the patient compartment and assume responsibility for the delivery of care during transport.

Patients transported by ambulance require ongoing assessment and treatment that is intended to ensure their continued safety and positive clinical outcomes. Patient condition during transport can decompensate quickly, requiring a greater depth and breadth of knowledge that enables EMS personnel to anticipate and interpret subtle physiologic changes and provide interventions that are not taught at the EMR level.

States are encouraged to help communities identify resources to ensure licensed practitioners at the EMT or higher levels are available to care for patients that require transport by an ambulance.

Portable Technologies

Exponential improvements and availability of portable technologies, such as left ventricular assist devices (LVAD), patient-controlled analgesia pumps, transport ventilators, etc., creates complex challenges for education and credentialing that did not exist a decade ago. Such patient care needs may be encountered by all levels of personnel in community and 9-1-1 settings and with patients originating in health care facilities during transfers. Even when the patient's condition would not require EMS interaction with a device or intervention during transport, the variability of circumstances under which EMS delivery systems will likely encounter these patients steered the expert panel away from a call for specific levels of EMS personnel to be qualified in managing complex technologies, including non-invasive diagnostic equipment (e.g., ultrasound.) The actions of EMS personnel regarding portable equipment and technologies have intentionally been left to local medical director credentialing.

Deletions/Updates

Evolution and fine-tuning of the Interpretive Guidelines to eliminate redundancy resulted in changes that may be perceived as certain skills being eliminated from the *Practice Model*. The only “true” deletions include military anti-shock trousers (MAST)/pneumatic anti-shock garment (PASG), spinal “immobilization” (this terminology has been revised), demand valves, carotid massage, automated transport ventilators at the EMT level (deferred to a decision by the medical director), and modified jaw thrust for trauma. Newer evidence suggests that these references are antiquated and/or no longer recommended. Spinal immobilization was amended to reflect current thinking on spinal motion restriction and additional skills were incorporated at all levels. The topic of “assisting” patients with their own prescribed medications was also revisited. The mechanical task of opening bottles or providing a drink of water aside, aid associated with placing a tablet in the patient's mouth, activating an inhaler, or delivering a dose of medication via autoinjector is clearly an act of medication administration. Administration of medication requires a thorough understanding of the drug, including how it moves through the body, when it needs to be administered, possible side effects and dangerous reactions, proper storage, handling, and disposal, and an entire process for confirming patient identification (for the prescription), route, dose, timing, expiration dates, and that the container contains the medication the label says is intended. Medication errors happen all too often in the United States, even when drugs are

given by professionals. In fact, medication errors are the cause of 1.3 million injuries each year. These errors are due to the wrong drug, dose, timing, or route of administration. Preparing, giving, and evaluating the effectiveness of prescription and non-prescription medication is not in the scope of practice for EMS personnel, with the exceptions described in the Interpretive Guidelines and those authorized by the State and physician medical director. References to “assist patients in taking their own prescribed medications” have been identified as confusing by educators and practitioners and the expert panel has advised they be removed from the *Practice Model*.

Other elements that were removed from the 2007 Interpretive Guidelines were intended to minimize redundancy and not intended to reflect removal from the *Practice Model*. Examples include cricoid pressure (considered to be a component of airway management) and therapeutic PEEP (considered to be a component of ventilator management at the paramedic level).

Additions to the Interpretive Guidelines

The expert panel considered several proposed additions to the Interpretive Guidelines and an NREMT Practice Analysis was used to evaluate the frequency and level of skills. Sensitive to the impact of increased didactic and psychomotor instruction that effectively translates to added course time and potential monetary expense to programs and student candidates, the expert panel considered changes in practice by addressing the following questions:

1. Is there evidence that the procedure or skill is beneficial to public health?
2. What is the clinical evidence that the new skill or technique as used by EMS personnel will promote access to quality health care or improve patient outcomes?
3. What is the appropriate level of education, certification, licensure, and credentialing needed to safely perform the task/skill?

Several suggestions received by the expert panel were felt to be above the level of entry-level personnel and were not included. In particular, interventions that are regularly performed by the lay public, such as self-administered medications, blood glucose monitoring, and pulse oximetry were considered at length. It is noted that patients receive health education and training from their primary care providers to perform activities that are tailored to their personal medical histories and response to prescribed interventions over time. The expert panel maintains that licensed people at all levels are highly accountable for the medical care they provide as well as the maintenance and calibration of medical equipment used during patient encounters. Health professionals are not only educated to provide interventions, they receive education in the associated risks and potential complications, related pharmacology (when medications are involved), and they are able to analyze the effectiveness of treatment. Perhaps the most critical difference between the lay public and EMS personnel assuming responsibility for a particular task/skill is that licensed people are taught to assimilate information and apply critical thinking skills to know when and when not to apply an intervention in particular scenarios. In the example of blood glucose monitoring, it is also important to note that the use of such devices by EMS personnel invokes the Federal-level Clinical Laboratory Improvement Amendments (42 CFR 493, Laboratory Requirements, 2011)) to the Public Health Services Act. In regard to pulse oximeters (that can be purchased inexpensively at discount stores), there is no evidence to support an assertion that a pulse oximeter in the hands of an EMR (or other level of EMS practitioner) is more effective than hands-on patient assessment in determining the need for

supplemental oxygen, although false readings from a variety of causes have resulted in undetected patient compromise and a false sense of security by users. Such equipment are adjuncts that should be used judiciously in conjunction with sound clinical judgment. Of the remaining tasks and skills, the expert panel deliberated which level was most appropriate to implement the task or skill.

The expert panel concluded that spinal motion restriction using cervical collars and basic splinting for suspected extremity fractures were appropriate additions to the *Practice Model* at the EMR level.

At the EMT level, the expert panel agreed on the administration of beta agonists and anticholinergics, oral over-the-counter (OTC) analgesics for pain or fever, blood glucose monitoring, continuous positive airway pressure (CPAP) devices, and pulse oximetry. The expert panel also agrees that there will be instances of lower-level personnel aiding higher levels, assisting with skills of the high-level personnel when the higher-level personnel does the key portion of the procedure, the assistance is authorized by the medical director, the assistance is in the direct presence and supervision of the higher-level personnel, and the assistance is permitted by the State.

The use of supraglottic airways (SGA) and waveform capnography at the EMT level was extensively debated. Several public commenters expressed lack of support on draft language that proposed to add them to the interpretive guidelines for EMTs during the national engagement period. The expert panel was evenly divided on the topic. Several “pros” and “cons” for adding SGA and waveform capnography for EMTs at the national level were considered. It was noted that several jurisdictions are already using SGA as a more definitive airway than the BVM although some panelists added that the BVM is not taught well or used effectively in many cases. Major “cons” point to a critical patient safety concern if an SGA is not placed properly or is not verified using waveform capnography. Many felt the education for SGA and waveform capnography would add significant time and increase expense to the EMT program, a consideration that was worrisome and expressed by the public and members of the expert panel. Others suggested that BVM ventilation may not be done well, but a misplaced advanced airway could lead to no ventilation and patient detriment or demise. Finally, a limited review of the literature highlights the fact there is a general lack of evidence that SGA improves outcomes in cardiac arrest or other etiologies over BVM ventilation. The expert panel concluded that while SGA and waveform capnography could successfully be taught and measured at the EMT level, it is an intervention that should be reserved for an experienced practitioner and therefore, is not a prudent addition as an entry-level skill to the *Practice Model* for an EMT now. Some States currently allow licensed EMTs to use SGA and/or waveform capnography although this activity is dependent on strict oversight by a physician medical director and is not permitted in all jurisdictions.

Additions to the AEMT level include monitoring and interpretation of waveform capnography, additional intravenous medications (such as epinephrine during cardiac arrest and ondansetron), and parenteral analgesia for pain.

The paramedic scope of practice was considered most in alignment with current practice, however, the expert panel recommended the addition of high-flow nasal cannula, and expanded use of OTC medications.

None of these changes should be considered “in effect” until officially adopted by the State licensing authority and medical director.

Appendix C: Legal Differences Between Certification and Licensure

Used with permission from the National Registry of Emergency Medical Technicians:
www.nremt.org/rwd/public/document/certification_licensure

Although the general public continues to use the terms interchangeably, there are important functional distinctions between certification and licensure.

Certification

The federal government has defined “certification” as the process by which **a non-governmental organization grants recognition to an individual who has met predetermined qualifications specified by that organization.**⁷ Similarly, the National Commission for Certifying Agencies defines certification as “a process, often voluntary, by which individuals who have demonstrated the level of knowledge and skill required in the profession, occupation, role, or skill are identified to the public and other stakeholders.”

Accordingly, there are three hallmarks of certification (as functionally defined). Certification is:

1. a voluntary process;
2. done by a private organization; and
3. a way to provide the public information on those individuals who have successfully completed the certification process (usually entailing successful completion of educational and testing requirements) and demonstrated their ability to perform their profession competently.

Nearly every profession certifies its members in some way, but a prime example is medicine. Private certifying boards certify physician specialists. Although certification may assist a physician in obtaining hospital privileges, or participating as a preferred provider within a health insurer’s network, it does not affect his legal authority to practice medicine. For instance, a surgeon can practice medicine in any state in which he is licensed regardless of whether or not he is certified by the American Board of Surgery.

Licensure

Licensure, on the other hand, is the state’s grant of legal authority, pursuant to the state’s police powers, to practice a profession within a designated scope of practice. Under the licensure system, states define, by statute, the tasks and function or scope of practice of a profession and provide that these tasks may be legally performed only by those who are licensed. As such, licensure prohibits anyone from practicing the profession who is not licensed, regardless of whether or not the individual has been certified by a private organization.

What if My State Certifies, Not Licenses, EMS Professionals?

Confusion between the terms “certification” and “licensure” arises because many states call their licensure processes “certification,” particularly when they incorporate the standards and requirements of private certifying bodies in their licensing statutes and require that an individual

⁷ 34 U.S.C. § 602. The Secretary’s Recognition of Accrediting Agencies (2014). Available at www.govinfo.gov/content/pkg/CFR-2014-title34-vol3/pdf/CFR-2014-title34-vol3-part602.pdf

be certified in order to have state authorization to practice. The use of certification by the NREMT by some states as a basis for granting individuals the right to practice as EMTs and calling the authorization granted “certification” is an example of this practice. Nevertheless, certification by the National Registry, by itself, does not give an individual the right to practice.

Regardless of what descriptive title is used by a state agency, if an occupation has a statutorily or regulatorily defined scope of practice and only individuals authorized by the state can perform those functions and activities, the authorized individuals are licensed. It does not matter if the authorization is called something other than a license; the authorization has the legal effect of a license.

In summary, the NREMT is a private certifying organization. The various State EMS Offices or like agencies serve as the state licensing agencies. Certification by the NREMT is a distinct process from licensure; and it serves the important independent purpose of identifying for the public, state licensure agencies and employers, those individuals who have successfully completed the Registry’s educational requirements and demonstrated their skills and abilities in the mandated examinations. Furthermore, the NREMT’s tracking of adverse licensure actions and criminal convictions provides an important source of information, which protects the public and aids in the mobility of EMS providers.

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