

National EMS Education Standards Transition Template

A Comparison of EMS Knowledge and Skills to Assist the Transition and Implementation of the National EMS Education Standards for the

EMT Intermediate 99 to Paramedic

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Background:

In 1996, the National Highway Traffic Safety Administration (NHTSA) and the Health Resources and Services Administration (HRSA) published the national consensus document titled *EMS Agenda for the Future (Agenda)*. The intent of the *Agenda* is to create a common vision for the future of EMS and is designed for use by government and private organizations at the national, state and local levels to help guide EMS planning, decision making, and policy. In 2000, the *Agenda* was followed by the *EMS Education Agenda for the Future: A Systems Approach (Education Agenda)*. Since the release of the *Agenda*, the *National EMS Core Content (Core Content)*, *National EMS Scope of Practice Model (Scope of Practice Model)*, and the *National EMS Education Standards (Education Standards)* have been completed and published along with Instructional Guidelines geared to each practitioner level. States license EMS personnel and EMS agencies as a means of ensuring public health and safety. Because of this common and important function, the National Association of State EMS Officials (NASEMSO) has taken the lead in coordinating implementation of the *Education Agenda*. Because states may need to revise or develop processes to facilitate a smooth transition from the U.S. Department of Transportation National Standard Curricula (NSC) to the new *Education Standards*, the National Association of State EMS Officials (NASEMSO) collaborated with a panel of experts and several national stakeholder groups to establish a *Gap Analysis Template* in 2009. States were encouraged to consider several important factors to implement of the *Education Standards*:

- Individual states are encouraged to use the *National EMS Scope of Practice Model* as a foundation to establish state EMS practitioner levels.
- Individual states are encouraged to use the *Gap Analysis Template* to help define system processes that support the transition of EMS practitioners to the state-adopted scope of practice.
- The *Education Standards* promotes increased flexibility, encourages creativity within each EMS education program and encourages alternative delivery methods. The *Education Standards* do not represent a prescriptive sequence or content grouping for a class presentation. States and/or educational programs will need to determine the sequence for teaching the materials.
- Course outcome evaluations should be based on student competency, not the time to course completion, as this may vary. Time estimates may be provided to guide the *planning* for presentation of course materials.
- States and/or education programs should re-evaluate student qualifications, co-requisites, or pre-requisites for all EMS practitioner levels.
- States and/or programs should consider co-requisites or pre-requisites for transition courses to help establish the depth and breadth of new content.
- Individuals transitioning within a level (i.e. EMT-P to Paramedic) are responsible for the knowledge and skills that are implicit to all previous levels.

States retain the authority to credential individual practitioners in a way that best meets the needs of the state. Some states have already identified state-based learning objectives and educational priorities that exist both above and below the *Education Standards* making it difficult to establish a “national curriculum” for transition. Because a transition course per se would have a limited shelf life as the *Education Standards* are implemented, available resources have been focused on developing materials that will support implementation of the new practitioner levels and pre-packaged educational materials geared specifically *to the changes* are generally unavailable. To assist this effort, NASEMSO has utilized the Gap Analysis Template to help identify the generic “Gap Content” that can be used to enhance the knowledge and skills of existing practitioners that desire certification/licensure at the level of the *Education Standards*. Proper learning objectives should be developed by end users and accompany an identification of methods (i.e. medical literature, publisher materials, in-service programs, and Learning Management Systems) that can be used to achieve educational goals. Page guides have been

included to cross reference content with the *Education Standards* and more detail regarding content can be found within the Instructional Guidelines. Time frames (rough estimates) have been provided to assist in planning and are not intended to serve as a mandate. For the purposes of the Transition Templates:

- **“Essential Content”** is content or material that has been identified by an expert panel as having significantly changed (including expanded) from the NSC with sufficient clinical relevance that review and/or instruction during the transition process is **strongly recommended**.
- **“Supplemental Content”** is content or material that has been highlighted by the panel as changed (including expanded) from the NSC with sufficient clinical relevance that review and/or instruction **should be considered**.

Content areas that do not include time frames likely contain content changes that were felt to be insufficient to warrant updating. These content areas should, at a minimum, be reviewed by the state and added to transition learning requirements if deemed appropriate. Proper learning objectives should be developed by end users and accompany an identification of methods (i.e. medical literature, publisher materials, in-service programs, and Learning Management Systems) that can be used to achieve educational goals. Page guides have been included to cross reference content with the *Education Standards* and more detail regarding content can be found within the Instructional Guidelines. Declarative time frames (rough estimates) have been provided to assist planning efforts and are not intended to serve as a mandate. In addition, the *Education Standards* recognize the National Incident Management System (NIMS) and Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 as pre- or co-requisite training requirements. Additional time may be needed to accommodate this content.

States will need to determine which content and/or skills must be tested and/or verified to complete state-based transition processes and communicate this information to stakeholders.

A list of EMS publisher materials that support the implementation of the Education Standards is maintained by NASEMSO on our web site at www.nasemso.org. *Education Standards* and *Instructional Guidelines* listed in this document serve as an example for convenience of the reader. Official documents published by NHTSA are available at www.ems.gov.

The NASEMSO Implementation Team is available to provide technical assistance to states with *Education Agenda* implementation efforts. State officials that desire additional information can contact NASEMSO via info@nasemso.org or call NASEMSO Program Advisor Kathy Robinson at (703) 538-1799 ext 1708.

Transition of EMT Intermediate 99 to Paramedic

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
Preparatory	Integrates comprehensive knowledge of EMS systems, the safety/well-being of the paramedic, and medical/legal and ethical issues which is intended to improve the health of EMS personnel, patients, and the community. (P 11)			Total for Section E = 95 min. S = 25 min.	
EMS Systems	Fundamental depth, foundational breadth - History of EMS - Complex depth, comprehensive breadth - EMS systems - Roles/ responsibilities/professionalism of EMS personnel - Quality improvement - Patient safety (P. 11)	More detailed discussion on patient safety issues, strategies to decrease medical errors	II. Patient Safety A. Significant – One of the Most Urgent Health Care Challenges B. Incidence C. High-Risk Activities D. How Errors Happen E.. Preventing Errors (P. 8)	15 min.	Essential
Research	Fundamental depth, foundational breadth Research principles to interpret literature and advocate evidence-based practice (P. 11)	The section is primarily focused on evidence based decisions and how to interpret research; the section on conducting research is gone.	I. Research Principles to Interpret Literature and Advocate Evidence-Based Practice G. Relating Research to EMS H. Evidence-based decision making (P. 9)	5 min.	Essential
Workforce Safety and Wellness	Complex depth, comprehensive breadth - Provider safety and wellbeing - Standard safety precautions - Personal protective equipment - Stress management - Dealing with death and dying - Prevention of work related injuries - Lifting and moving patients - Disease transmission - Wellness principles (P. 12)	Emphasizes the difference between body substance isolation and personal protective equipment; brief discussion on bariatric issues, neonatal isolettes and medical restraint. The 1998 EMT-P National Standard Curriculum mentioned CISM. The new standards do not use that term instead focusing more on stress management issues.	II. Standard Safety Precautions III. Personal Protective Equipment IV. Stress Management VI. (Selected Topics in) Lifting and Moving Patients (P.12)	10 min.	Supplemental
Documentation	Complex depth, comprehensive breadth Principles of medical documentation and report writing (P. 13)	The Health Insurance Portability and Accountability Act (HIPAA) did not exist when the 1998 EMT-P National Standard Curriculum was authored.	See Medical/Legal and Ethics for HIPAA overview. (P. 26)	15 min.	Essential
EMS System Communication	Complex depth, comprehensive breadth - EMS communication system - Communication with other health care professionals - Team communication and dynamics (P. 13)		(P. 8)	0	
Therapeutic Communications	Complex depth, comprehensive breadth Principles of communicating with patients in a manner	Increased depth of cultural competence issues.	I. Principles of Communicating With Patients in a Manner That Achieves a Positive Relationship	15 min.	Supplemental

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	that achieves a positive relationship • Factors that affect communication • Interviewing techniques • Dealing with difficult patients • Adjusting communication strategies for age, stage of development, patients with special needs, and differing cultures (P. 13)		E. Adjusting Communication Strategies (P. 20)		
• Medical/Legal Ethics	Complex depth, comprehensive breadth • Consent/refusal of care • Confidentiality • Advanced directives • Tort and criminal actions • Statutory responsibilities • Mandatory reporting • Health care regulation • Patient rights/advocacy • End-of-life issues • Ethical principles/moral obligations • Ethical tests and decision making (P. 13)	Health Insurance Portability and Accountability Act (HIPAA) did not exist when the 1998 EMT-P National Standard Curriculum was authored; increased depth of discussion regarding advance directives; the term "end-of-life" was not previously used; there is an increased emphasis on end of life issues; increased depth and breadth on ethics	II. Confidentiality A. Obligation to Protect Patient Information B. Health Information Portability and Accountability Act (HIPAA) C. Responsibility Arising From Physician – Patient Relationship D. Privileged Communications E. Breach of Confidentiality III. Advanced Directives A. Patient Self-Determination Act I. Consent/Refusal of Care IX. End of Life Issues X. Ethical Principles/Moral Obligations XI. Ethical Tests and Decision Making (P. 25)	60 min.	Essential
Anatomy and Physiology	Integrates a complex depth and comprehensive breadth of knowledge of the anatomy and physiology of all human systems (P. 14)	The current recommendation calls for more comprehensive coverage of A&P than provided in the previous 1998 EMT-P National Standard Curriculum. Programs should evaluate their current A&P program to see how much upgrade they need to reach a comprehensive and complex understanding, especially in the cardiovascular, respiratory, and neurological systems.	(P. 31)	Total for Section E = 60 min. S = 0 min.	
Medical Terminology	Integrates comprehensive anatomical and medical terminology and abbreviations into the written and oral communication with colleagues and other health care professionals. (P. 14)	Although not detailed, this content is new to this level.	(P. 54)	Total for Section E = 0 min. S – 5 min.	
Physiology	Integrates comprehensive knowledge of pathophysiology of major human systems. (P. 14)	The current recommendation calls for more comprehensive coverage of pathophysiology than provided in the previous 1998 EMT-P National Standard Curriculum. Programs should evaluate their current pathophysiology program to see how much upgrade they need to reach a comprehensive and complex understanding, especially in the cardiovascular,	(P. 55)	Content integrated into appropriate sections	

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		respiratory, and neurological systems.			
Life Span Development	Integrates comprehensive knowledge of life span development. (P. 14)	New information at this level	(P. 72)	0	
Public Health	Applies fundamental knowledge of principles of public health and epidemiology including public health emergencies, health promotion, and illness and injury prevention.. (P. 15)	Consistent with <i>the EMS Agenda for the Future</i> , there is a greater emphasis on public health issues	I. Basic Principles of Public Health (P. 76)	Total for Section E = 0 min. S =10 min.	
Pharmacology	Integrates comprehensive knowledge of pharmacology to formulate a treatment plan intended to mitigate emergencies and improve the overall health of the patient. (P. 15)			Total for Section E = 95 min. S = 0 min.	
Principles of Pharmacology	Complex depth, comprehensive breadth) - Medication safety - Medication legislation - Naming - Classifications - Schedules - Pharmacokinetics - Storage and security - Autonomic pharmacology - Metabolism and excretion - Mechanism of action - Phases of medication activity - Medication response relationships - Medication interactions - Toxicity (P. 15)	Programs should evaluate their current pharmacology program to see how much upgrade they need to reach a comprehensive and complex understanding	I. Medication Safety II. Medication Legislation III. Naming IV. Classifications V. Schedules VI. Drug Storage and Security VII. Phases of Medication Activity VIII. Medication Interactions IX. Toxicity X. Drug Terminology XI. Sources of Drugs XII. Pharmacological Concepts (P. 78)	45 min.	Essential
Medication Administration	Complex depth, comprehensive breadth - Routes of administration - Within the scope of practice of the paramedic, administer medications to a patient (P. 16)	Programs should evaluate their current pharmacology program to see how much upgrade they need to reach a comprehensive and complex understanding	(P. 85)	5 min.	Essential
Emergency Medications	Complex depth, comprehensive breadth Within the scope of practice of the paramedic - Names - Actions - Indications - Contraindications - Complications - Routes of administration - Side effects	In the 1998 EMT-P National Standard Curriculum, there was no list of medications; the list in the IGs represents medications commonly used in numerous EMS systems and is a minimum list that all paramedics should know. States and programs are encouraged to add to the list, but should not delete. This list may become dated quickly.	I. Specific Medications (P. 87)	45 min.	Essential

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	- Interactions - Dosages for the medications administered (P. 16)				
Airway Management, Respiration, and Artificial Ventilation	Integrates complex knowledge of anatomy, physiology, and pathophysiology into the assessment to develop and implement a treatment plan with the goal of assuring a patent airway, adequate respiration for patients of all ages. (P. 17)			Total for Section E = 120 min. S = 0 min.	
Anatomy and Physiology	Complex depth, comprehensive breadth Within the scope of practice of the paramedic - Airway anatomy - Airway assessment - Techniques of assuring a patent airway (P. 17)	Confusion exists about the differences between oxygenation, ventilation, and respiration. The <i>Education Standards</i> were organized to attempt to highlight the differences between the concepts. There is a greater emphasis on ventilation and respirations and the importance of artificial ventilation. Research suggests that EMS can make a difference in this area.	I. Airway Anatomy II. Airway Assessment (P. 89)	30 min.	Essential
Airway Management	Complex depth, comprehensive breadth Within the scope of practice of the paramedic - Airway anatomy - Airway assessment - Techniques of assuring a patent airway (P. 17)	Confusion exists about the differences between oxygenation, ventilation, and respiration. The <i>Education Standards</i> were organized to attempt to highlight the differences between the concepts. There is a greater emphasis on ventilation and respirations and the importance of artificial ventilation. Research suggests that EMS can make a difference in this area.	III. Techniques of Assuring a Patent Airway IV. Consider Age-Related Variations in Pediatric and Geriatric Patients (P.91)	30 min.	Essential
Respiration	(See also Anatomy and Physiology) Complex depth, comprehensive breadth - Anatomy of the respiratory system - Physiology, and pathophysiology of respiration - Pulmonary ventilation - Oxygenation - Respiration - External - Internal - Cellular - Assessment and management of adequate and inadequate respiration - Supplemental oxygen therapy (P. 18)	Confusion exists about the differences between oxygenation, ventilation, and respiration. The <i>Education Standards</i> were organized to attempt to highlight the differences between the concepts. There is a greater emphasis on ventilation and respirations and the importance of artificial ventilation. Research suggests that EMS can make a difference in this area.	I. Anatomy of the Respiratory System II. Physiology of Respiration III. Pathophysiology of Respiration IV. Assessment of Adequate and Inadequate Respiration V. Management of Adequate and Inadequate Respiration VI. Supplemental Oxygen Therapy VII. Age-Related Variations in Pediatric and Geriatric Patients (P. 93)	30 min.	Essential

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Artificial Ventilation	Complex depth, comprehensive breadth Assessment and management of adequate and inadequate ventilation - Artificial ventilation - Minute ventilation - Alveolar ventilation - Effect of artificial ventilation on cardiac output (P. 18)	Confusion exists about the differences between oxygenation, ventilation, and respiration. The <i>Education Standards</i> were organized to attempt to highlight the differences between the concepts. There is a greater emphasis on ventilation and respirations and the importance of artificial ventilation. Research suggests that EMS can make a difference in this area.	I. Comprehensive Ventilation Assessment II. Review of ventilation devices used by EMRs, EMTs and AEMTs III. Assisting patient ventilations IV. Age Related Variations in Pediatric and Geriatric Patients (P.99)	30 min.	Essential
Patient Assessment	Integrate scene and patient assessment findings with knowledge of epidemiology and pathophysiology to form a field impression. This includes developing a list of differential diagnoses through clinical reasoning to modify the assessment and formulate a treatment plan. (P. 19)			Total for Section E = 90 min. S = 0 min.	
Scene Size Up	Complex depth, comprehensive breadth - Scene management - Impact of the environment on patient care - Addressing hazards - Violence - Multiple patient situations (P. 19)	No new information here but a re-emphasis on the need for scene safety for everyone present	(P. 101)	5 min.	Essential
Primary Assessment	Complex depth, comprehensive breadth - Primary assessment for all patient situations - Initial general impression - Level of consciousness - ABCs - Identifying life threats - Assessment of vital functions - Integration of treatment/procedures needed to preserve life (P. 20)	New terminology that more closely mimics other health care professionals	(P. 104)	10 min.	Essential
History-Taking	Complex depth, comprehensive breadth - Components of the patient history - Interviewing techniques - How to integrate therapeutic communication techniques and adapt the line of inquiry based on findings and presentation (P. 20)	New terminology that more closely mimics other health care professionals	(P. 106)	5 min.	Essential
Secondary Assessment	Complex depth, comprehensive breadth Techniques of physical examination for all major - Body systems - Anatomical regions (P. 20)	New terminology that more closely mimics other health care professionals; more thorough than in the previous curriculum	(P. 117)	10 min.	Essential
Monitoring Devices	Fundamental depth, foundational breadth		I. Continuous ECG monitoring	60 min.	Essential

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	Within the scope of practice of the paramedic - Obtaining and using information from patient monitoring devices including (but not limited to): - Continuous ECG monitoring 12 lead ECG interpretation - Carbon dioxide monitoring - Basic blood chemistry (P. 21)	Includes capnography, chemistry analysis, arterial blood gas interpretation	II. 12-Lead ECG Interpretation III. Carbon Dioxide Monitoring IV. Basic Blood Chemistry V. Other Monitoring Devices (P. 130)		
Reassessment	Complex depth, comprehensive breadth How and when to perform a reassessment for all patient situations (P. 21)	New terminology that more closely mimics other health care professionals; more thorough than in the previous curriculum	(P. 132)	0	
Medicine	Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression and implement a comprehensive treatment/disposition plan for a patient with a medical complaint. (P. 22)			Total for Section E = 295 min. S = 30 min.	
Medical Overview	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of medical complaints to include - Transport mode - Destination decisions (P. 22)	Re-use of the new assessment terminology; emphasis on pathophysiologic basis; updated destination decisions for some medical conditions such as stroke and acute coronary syndrome	I. Assessment Factors II. Major components of the patient assessment III. Forming a Field Impression (P. 134)	30 min.	Essential
Neurology	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Stroke/intracranial hemorrhage/transient ischemic attack - Seizure - Status epilepticus - Headache Fundamental depth, foundational breadth - Dementia - Neoplasms - Demyelinating disorders - Parkinson's disease - Cranial nerve disorders - Movement disorders - Neurologic inflammation/infection - Spinal cord compression - Hydrocephalus - Wernicke's encephalopathy (P. 23)	The term "demyelinating" was not used in the 1998 EMT-P National Standard Curriculum; more detailed information on stroke assessment and management	V. Neurological conditions (P. 137)	15 min.	Essential

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Abdominal and Gastrointestinal Disorders	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Acute and chronic gastrointestinal hemorrhage - Liver disorders - Peritonitis - Ulcerative diseases Fundamental depth, foundational breadth - Irritable bowel syndrome - Inflammatory disorders - Pancreatitis - Bowel obstruction - Hernias - Infectious disorders - Gall bladder and biliary tract disorders Simple depth, simple breadth - Rectal abscess - Rectal foreign body obstruction - Mesenteric ischemia (P. 24)	In the 1998 EMT-P National Standard Curriculum, the topic was gastroenterology; new section on mesenteric ischemia, rectal foreign body obstructions and rectal abscess	III. Specific Injuries/ illness: causes, assessment findings and management for each condition (P. 142)	30 min.	Essential
Immunology	Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of common or major immune system disorders and/or emergencies Complex depth, comprehensive breadth - Hypersensitivity - Allergic and anaphylactic reactions - Anaphylactoid reactions Fundamental depth, foundational breadth - Collagen vascular disease - Transplant related problems (P. 25)	The term anaphylactoid is used here; that term was not used in the 1998 EMT-P National Standard Curriculum; transplant related problems and collagen vascular disease added	IV. Anaphylactoid Reaction VI. Collagen vascular disease VII. Transplant-related problems (P. 148)	20 min.	Essential
Infectious Diseases	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, reporting requirements, prognosis, and management of - HIV-related disease - Hepatitis - Pneumonia - Meningococcal meningitis Fundamental depth, foundational breadth - Tuberculosis - Tetanus - Viral diseases - Sexually transmitted disease	This section should include updated infectious disease information, for Example methicillin-resistant Staphylococcus aureus, hepatitis, and Acquired Immune Deficiency Syndrome update; should include a discussion on cleaning and sterilizing equipment and decontaminating the ambulance	III. Standard Precautions, personal protective equipment, and cleaning and disposing of equipment and supplies. IV. Specific diseases and conditions VII. Transport decisions including special infection control procedures (P. 150)	15 min.	Essential

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	- Gastroenteritis - Fungal infections - Rabies - Scabies and lice - Lyme disease - Rocky Mountain Spotted Fever - Antibiotic resistant infections (P. 26)				
Endocrine Disorders	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Acute diabetic emergencies - Diabetes Fundamental depth, foundational breadth - Adrenal disease - Pituitary and thyroid disorders (P. 27)	Added long term effects of diabetes and how the disease impacts other conditions	II. Pathophysiology, causes, incidence, morbidity, and mortality, assessment findings, management for endocrine conditions (P. 162)	10 min.	Essential
Psychiatric	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Acute psychosis - Agitated delirium Fundamental depth, foundational breadth - Cognitive disorders - Thought disorders - Mood disorders - Neurotic disorders - Substance-related disorders /addictive behavior - Somatoform disorders - Factitious disorders - Personality disorders - Patterns of violence/abuse/neglect - Organic psychoses (P. 28)	Includes new material on excited delirium; other psychiatric conditions are re-categorized with an increase in depth and breadth	IV. Acute psychosis V. Agitated delirium VI. Specific Behavioral/Psychiatric Disorders (P. 165)	15 min.	Essential
Cardiovascular	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Acute coronary syndrome - Angina pectoris - Myocardial infarction - Heart failure - Non-traumatic cardiac tamponade - Hypertensive emergencies	Increased emphasis on anatomy, physiology and pathophysiology; acute coronary syndrome, 12-lead interpretation; updated information on heart failure	I. Anatomy of the Cardiovascular System II. Physiology III. Electrophysiology IV. Epidemiology VIII. Electrocardiographic (ECG) monitoring X. Acute coronary syndrome XII. Heart failure (P. 168)	60 min.	Essential

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	• Cardiogenic shock • Vascular disorders - o Abdominal aortic aneurysm - o Arterial occlusion - o Venous thrombosis • Aortic aneurysm/dissection, • Thromboembolism • Cardiac rhythm disturbances Fundamental depth, foundational breadth • Infectious diseases of the heart - o Endocarditis - o Pericarditis • Congenital abnormalities (P. 29)				
• Toxicology	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of the following toxidromes and poisonings: • Cholinergics • Anticholinergics • Sympathomimetics • Sedative/hypnotics • Opiates • Alcohol intoxication and withdrawal • Over-the-counter and prescription medications • Carbon monoxide • Illegal drugs • Herbal preparations (P. 30)	Includes section on over-the-counter medication toxicology	VI. Medication overdose-- Introduction-- Pathophysiology, incidence, toxic agents, risk factors, complications (P. 207)	15 min.	Essential
• Respiratory	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, management of • Acute upper airway infections • Spontaneous pneumothorax • Obstructive/restrictive lung diseases • Pulmonary infections Fundamental depth, foundational breadth • Neoplasm • Pertussis • Cystic fibrosis (P. 31)	More in-depth evaluation of a patient with respiratory problems	II. General system pathophysiology, assessment and management III. Specific illness/injuries: causes, assessment findings and management for each condition (P. 209)	45 min.	Essential

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Hematology	Complex depth, foundational breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of common or major hematological diseases and/or emergencies - Sickle cell disease Fundamental depth, foundational breadth - Blood transfusion complications - Hemostatic disorders - Lymphomas - Red blood cell disorders - White blood cell disorders - Coagulopathies (P. 32)	Reorganized with added section on blood transfusion reactions	V. Hematological conditions VI. Blood Transfusion Complications (P. 216)	30 min.	Essential
Genitourinary/Renal	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of - Complications of - o Acute renal failure - o Chronic renal failure - o Dialysis - Renal calculi Fundamental depth, foundational breadth - Acid base disturbances - Fluid and electrolyte - Infection - Male genital tract conditions (P. 33)	More detailed discussion of this organ system; urinary catheter management (not insertion)	I. Introduction A. Review of genitourinary System (P. 219)	10 min.	Essential
Gynecology	Complex depth, comprehensive breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of common or major gynecological diseases and/or emergencies - Vaginal bleeding - Sexual assault	Includes brief discussion of sexually transmitted diseases and pelvic inflammatory disease	REVIEW: I. Introduction II. Physiology III. Symptoms and Assessment Findings IV. General Management (P. 225)	15 min.	Supplemental

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	Fundamental depth, foundational breadth • Infections • Pelvic Inflammatory Disease • Ovarian cysts • Dysfunctional uterine bleeding • Vaginal foreign body (P. 34)				
• Non-traumatic Musculoskeletal Disorders	Fundamental depth, foundation breadth Anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, and management of common or major non-traumatic musculoskeletal disorders • Disorders of the spine • Joint abnormalities • Muscle abnormalities • Overuse syndromes (P. 34)	Added section on disorders of the spine, joint abnormalities, muscles abnormalities, and overuse syndromes	I. Introduction B. Anatomy and physiology review IV. Non-traumatic musculoskeletal conditions (P. 228)	5 min.	Supplemental
• Diseases of the Eyes, Ears, Nose, and Throat	Fundamental depth, foundational breadth Knowledge of anatomy, physiology, epidemiology, pathophysiology, psychosocial impact, presentations, prognosis, management of • Common or major diseases of the eyes, ears, nose, and throat, including nose bleed (P. 35)	New section emphasizing major eye, ear, nose, and throat disease	I. Introduction II. General assessment findings and symptoms III. General Management IV. Diseases of the eyes, ears, nose, and throat. V. Consider age-related variations in pediatric and geriatric patients VI. Patient education and prevention (P. 230)	10 min.	Supplemental
Shock and Resuscitation	Integrates comprehensive knowledge of causes and pathophysiology into the management of cardiac arrest and peri-arrest states. Integrates a comprehensive knowledge of the causes and pathophysiology into the management of shock, respiratory failure or arrest with an emphasis on early intervention to prevent arrest. (P. 35)	Reorganized for emphasis, more pathophysiology	(P. 232)	Concepts integrated throughout Trauma and Medical sections	
Trauma	Integrates assessment findings with principles of epidemiology and pathophysiology to formulate a field impression to implement a comprehensive treatment/disposition plan for an acutely injured patient. (P. 35)	Programs should evaluate their current trauma program to see how much upgrade they need to reach a comprehensive and complex understanding.		Total for Section E = 285 min. S = 15 min.	
• Trauma Overview	Complex depth, comprehensive breadth Pathophysiology, assessment and management of the trauma patient • Trauma scoring • Transport and destination issues (P. 35)	Discussion on the Centers for Disease Control (CDC) Field Triage Decision Scheme: The National Trauma Triage Protocol and trauma scoring	I. Identification and Categorization of Trauma Patients (P. 243)	15 min.	Essential
• Bleeding	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of	More detailed discussion	III. Pathophysiology IV. Assessment consideration in Shock	60 min.	Essential

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	Bleeding (P. 35)		V. Shock Management strategies and considerations VI. Bleeding considerations (P. 247)		
Chest Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of - Traumatic aortic disruption - Pulmonary contusion - Blunt cardiac injury - Hemothorax - Pneumothorax - Open - Simple - Tension - Cardiac tamponade - Rib fractures - Flail chest - Comotio cordis - Tracheobronchial disruption - Diaphragmatic rupture - Traumatic asphyxia (P. 37)	More detailed discussion-- Programs should evaluate their current trauma program to see how much upgrade they need to reach a comprehensive and complex understanding.	(P. 254)	45 min.	Essential
Abdominal and Genitourinary Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of - Vascular injury - Solid and hollow organ injuries - Blunt versus penetrating mechanisms - Evisceration - Retroperitoneal injuries - Injuries to the external genitalia (P. 38)	More detailed discussion--- Programs should evaluate their current trauma program to see how much upgrade they need to reach a comprehensive and complex understanding.	(P. 261)	15 min.	Essential
Orthopedic Trauma	Fundamental depth, foundational breadth Pathophysiology, assessment, and management of - Pediatric fractures - Tendon laceration/transection/ rupture (Achilles and patellar) - Compartment syndrome Complex depth, foundational breadth - Upper and lower extremity orthopedic trauma - Open fractures - Closed fractures - Dislocations (P. 39)	More detailed discussion--- Programs should evaluate their current trauma program to see how much upgrade they need to reach a comprehensive and complex understanding.	(P. 266)	15 min.	Supplemental
Soft Tissue Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of Wounds	Programs should evaluate their current trauma program to see how much upgrade they need to reach a comprehensive and complex understanding.	(P. 271)	0	

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
	- o Avulsions - o Bite wounds - o Lacerations - o Puncture wounds • Burns - o Electrical - o Chemical - o Thermal • High-pressure injection • Crush syndrome (P. 40)				
• Head, Facial, Neck and Spine Trauma	Fundamental depth, foundational breadth Pathophysiology, assessment, and management of • Unstable facial fractures • Orbital fractures • Perforated tympanic membrane Complex depth, comprehensive breadth • Skull fractures • Penetrating neck trauma • Laryngeotracheal injuries • Spine trauma - o Dislocations/subluxations - o Fractures - o Sprains/strains • Mandibular fractures (P. 41)	More detail about neck eye, oral and brain injuries; emphasizes the harm of over ventilation in most situations	(P. 278)	30 min.	Essential
• Nervous System Trauma	Fundamental depth, foundational breadth Pathophysiology, assessment, and management of • Cauda equina syndrome • Nerve root injury • Peripheral nerve injury Complex depth, comprehensive breadth • Traumatic brain injury • Spinal cord injury • Spinal shock (P. 42)	More detail on brain anatomy; emphasizes the harm of hyperventilation; references the Brain Trauma Foundation; increased emphasis on neurological assessment	V. Traumatic brain injury (P. 282)	45 min.	Essential
• Special Considerations in Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of trauma in the • Pregnant patient • Pediatric patient • Geriatric patient • Cognitively impaired patient (P. 42)	All section new or increased emphasis	I. Trauma in Pregnancy II. Pediatric Trauma III. Geriatric Trauma IV. Cognitively impaired patient (P. 287)	45 min.	Essential
• Environmental Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of	All material at this level represents the same depth and breadth as at the EMT level	(P. 292)	0	

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
	- Near-drowning - Temperature-related illness - Bites and envenomations - Dysbarism - High-altitude - Diving injuries - Electrical injury - High altitude illness (P. 43)				
Multi-System Trauma	Complex depth, comprehensive breadth Pathophysiology, assessment, and management of - Multi-system trauma - Blast injuries (P. 43)	New material at this level; includes discussion of kinematics and blast injury	I. Kinematics of trauma III. Specific injuries related to multi system trauma (P. 298)	30 min.	Essential
Special Patient Populations	Integrates assessment findings with principles of pathophysiology and knowledge of psychosocial needs to formulate a field impression and implement a comprehensive treatment/disposition plan for patients with special needs. (P. 44)			Total for Section E = 55 min. S = 45 min.	
Obstetrics	Complex depth, comprehensive breadth - Anatomy and physiology of pregnancy - Pathophysiology of complications of pregnancy - Assessment of the pregnant patient Psychosocial impact, presentations, prognosis, and management of - Normal delivery - Abnormal delivery - Nuchal cord - Prolapsed cord - Breech - Spontaneous abortion/miscarriage - Ectopic pregnancy - Eclampsia - Antepartum hemorrhage - Pregnancy induced hypertension - Third trimester bleeding - Placenta previa - Abruptio placenta - High risk pregnancy - Complications of labor - Fetal distress - Pre-term - Premature rupture of membranes - Rupture of uterus - Complication of delivery	More detailed discussion on complications of pregnancy; uses the terms preeclampsia, eclampsia and premature rupture of membranes which do not require a lengthy presentation	(P. 302)	10 min.	Essential

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
	- Post-partum complications Foundational depth, foundational breadth - Hyperemesis gravidarum - Post-partum depression (P. 44)				
Neonatal Care	Complex depth, comprehensive breadth - Anatomy and physiology of neonatal circulation - Assessment of the newborn Presentation and management - Newborn - Neonatal resuscitation (P. 45)	This section is much more detailed than in the previous version	(P. 307)	30 min.	Supplemental
Pediatrics	Age-related assessment findings, age-related anatomic and physiologic variations, age related and developmental stage related assessment and treatment modifications of the pediatric specific major or common diseases and/or emergencies: Complex depth, comprehensive breadth - Foreign body (upper and lower) airway obstruction - Bacterial tracheitis - Asthma - Bronchiolitis - Respiratory Syncytial Virus (RSV) - Pneumonia - Croup - Epiglottitis - Respiratory distress/failure/arrest - Shock - Seizures - Sudden Infant Death Syndrome (SIDS) - Hyperglycemia - Hypoglycemia Fundamental depth, foundational breadth - Pertussis - Cystic fibrosis - Bronchopulmonary dysplasia - Congenital heart diseases - Hydrocephalus and ventricular shunts (P. 46)	This section is much more detailed than in the previous version	(PP. 326)	30 min.	Essential
Geriatrics	Normal and abnormal changes associated with aging, pharmacokinetic changes, psychosocial and economic aspects of aging, polypharmacy, and age-related assessment and treatment modifications for the major or common geriatric diseases and/or emergencies	All new section for this level	I. Normal and Abnormal Changes associated with aging II. Sensory changes III. Pharmacokinetic change IV. Polypharmacy	15 min.	Supplemental

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
	Complex depth, comprehensive breadth • Cardiovascular diseases • Respiratory diseases • Neurological diseases • Endocrine diseases • Alzheimer's • Dementia • Delirium o Acute confusional state Fundamental depth, foundational breadth • Herpes zoster • Inflammatory arthritis (P. 47)		V. Psychosocial and economic aspects VI. Specific conditions that occur more frequently in the elderly (P. 344)		
• Patients With Special Challenges	Complex depth, comprehensive breadth Healthcare implications of • Abuse • Neglect • Poverty • Bariatrics • Technology dependent • Hospice/ terminally ill • Tracheostomy care/dysfunction (P. 48)	Elder abuse, homelessness, poverty, bariatric, more technology dependent, hospice, sensory deficit, homecare, and developmental disabilities added	I. Abuse and Neglect II. Homelessness/Poverty III. Bariatric Patients IV. Technology Assisted/Dependent V. Hospice Care and Terminally Ill VI. Tracheostomy care/Dysfunction VII. Technology Assisted Patients VIII. Pediatrics Developmental Disabilities (P. 361)	15 min.	Essential
EMS Operations	Knowledge of operational roles and responsibilities to ensure safe patient, public, and personnel safety (P. 48)		(P. 139)	Total for Section E = 40 min.* S = 10 min.	*Does not include time for NIMS or HAZWOPER requirements
• Principles of Safely Operating a Ground Ambulance	Simple depth, foundational breadth • Risks and responsibilities of transport (P. 48)	All material at this level represents the same depth and breadth as at the EMT level	Refer to EMT Level Guidelines I. Risks and Responsibilities of Emergency Response A. Safety Issues During Transport (P. 200)	10 min.	Essential
• Incident Management	Complex depth, comprehensive breadth • Establish and work within the incident management system (P. 49)	All material at this level represents the same depth and breadth as at the EMT level	I. Establish and Work Within the Incident Management System A. Entry-Level Students Need to Be Certified in 1. ICS-100: Introduction to ICS, or equivalent 2. FEMA IS-700: NIMS, An Introduction (P. 377)	This Can Be Done as a Co requisite or Prerequisite or as Part of the Entry-Level Course	Essential
• Multiple Casualty Incidents	Simple depth, foundational breadth • Triage • Performing • Re-Triage	All material at this level represents the same depth and breadth as at the EMT level	Refer to EMT Level Guidelines II. Triage (P. 203)	10 min.	Essential

Section Title	EMS Education Standard	Gap Analysis of NSC to Education Standards	EMT Instructional Guidelines	Declarative E = Essential S = Supplemental	Essential Content
	• Destination Decisions • Post Traumatic and Cumulative Stress (P. 49)				
• Air Medical	Complex depth, comprehensive breadth • Medical risks/needs/advantages (P. 49)	All material at this level represents the same depth and breadth as at the EMT level	I. Medical Risks/Needs/Advantages (P. 379)	10 min.	Supplemental
• Vehicle Extrication	Simple depth, simple breadth • Safe vehicle extrication • Use of simple hand tools (P. 49)	All material at this level represents the same depth and breadth as at the EMT level	I. Safe Vehicle Extrication (P. 380)	0	
• Hazardous Materials Awareness	Simple depth, simple breadth • Risks and responsibilities of operating in a cold zone at a hazardous material or other special incident (P. 49)	All material at this level represents the same depth and breadth as at the EMT level	I. Risks and Responsibilities of Operating in a Cold Zone at a Hazardous Material or Other Special Incident 1. Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120 (q)(6)(i) -First Responder Awareness Level (P. 383)	This can be done as a Co requisite or Prerequisite or as Part of the Entry-Level Course	Essential
• Mass Casualty Incidents Due to Terrorism and Disaster	Simple depth, simple breadth • Risks and responsibilities of operating on the scene of a natural or man-made disaster (P. 50)	All material at this level represents the same depth and breadth as at the EMT level	I. Risks and Responsibilities of Operating on the Scene of a Natural or Man-Made Disaster (P. 384)	20 min.	Essential

For a current 1999 EMT-Intermediate (based on 1999 EMT-I National Standard Curriculum) transitioning to 2009 Paramedic, the following skills are no longer taught:

- Pressure points and elevation for hemorrhage control

For a current 1999 EMT-I transitioning to 2009 AEMT, the following skills are now taught in the 2009 EMR, 2009 EMT or 2009 AEMT and are to be considered new:

- Self or peer use of an auto-injector (introduced at the EMR level)
- Use of mechanical CPR devices (introduced at EMT level)

The following restraint technique has been determined to be harmful and is no longer permitted: forceful restraint in a prone position, with wrists & ankles tightly tied together ("hobbled") behind the back.

For a current 1999 EMT- Intermediate transitioning to Paramedic, the following skills are new:

- Use of BiPAP/CPAP, Monitoring and management of a chest tube, performing a percutaneous cricothyrotomy (not a surgical airway), interpretation and monitoring of end-tidal carbon dioxide (including waveform capnography), nasotracheal intubation, use of therapeutic positive end-expiratory pressure (PEEP), multi-lead ECG interpretation, performing electrical synchronized cardioversion, performing carotid massage, central line monitoring, initiation of intraosseous (IO) infusion in all patients (previously used IOs on children)

only), initiation and maintenance of intravenous medication drips, intranasal medication administration, nasogastric medication administration, oral medication administration, eye irrigation with the Morgan® lens, initiation and monitoring of thrombolytic medication, obtaining venous blood samples, blood chemistry analysis (this includes the psychomotor skills involved with collection of blood for analysis [point of care testing] and the cognitive material necessary to understand the implications of the results), assist in the insertion of a chest tube, and accessing indwelling catheters and implanted central IV ports.

Summary of proposed time for planning purposes: Essential content = 18.9 hrs. Supplemental = 2.25 hrs.

These projections do not include a time allotment for NIMS and HAZWOPER requirements or performance of clinical skills.