

National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

Injury Patterns

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

Mental Status & Vital Signs

All Patients

- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/min
- Respiratory distress or need for respiratory support
- Room-air pulse oximetry < 90%

Age 0–9 years

- SBP < 70mm Hg + (2 x age in years)

Age 10–64 years

- SBP < 90 mmHg or
- HR > SBP

Age ≥ 65 years

- SBP < 110 mmHg or
- HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury

- High-Risk Auto Crash
 - Partial or complete ejection
 - Significant intrusion (including roof)
 - >12 inches occupant site OR
 - >18 inches any site OR
 - Need for extrication for entrapped patient
 - Death in passenger compartment
 - Child (age 0–9 years) unrestrained or in unsecured child safety seat
 - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS Judgment

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

OPEN

**National Guideline for the Field Triage of Injured Patients:
Recommendations of the National Expert Panel on Field Triage, 2021**

Craig D. Newgard, MD, MPH, FACEP¹, Peter E. Fischer, MD², Mark Gestring, MD³,
Holly N. Michaels, MPH⁴, Gregory J. Jurkovich, MD, FACS⁵, E. Brooke Lerner, PhD, FAEMS⁶,
Mary E. Fallat, MD⁷, Theodore R. Delbridge, MD, MPH⁸, Joshua B. Brown, MD, MSc, FACS⁹,
Eileen M. Bulger, MD¹⁰, For the 2021 National Expert Panel on Field Triage

¹Center for Policy and Research in Emergency Medicine, Department of Emergency Medicine,
Oregon Health & Science University, Portland, Oregon

²Department of Surgery, University of Tennessee Health Science Center, Memphis, Tennessee

³Department of Surgery, University of Rochester, Rochester, New York

⁴Committee on Trauma, American College of Surgeons, Chicago, Illinois

⁵Department of Surgery, UC Davis Health, Sacramento, California

⁶Department of Emergency Medicine, University at Buffalo, Buffalo, New York

⁷Department of Surgery, University of Louisville School of Medicine, Norton Children's
Hospital, Louisville, Kentucky

⁸Maryland Institute for Emergency Medical Services Systems, Baltimore, Maryland

⁹Division of Trauma & General Surgery, Department of Surgery, University of Pittsburgh
Medical Center, Pittsburgh, Pennsylvania

¹⁰Department of Surgery, University of Washington, Seattle, Washington

Additional authors: Jeffrey M. Goodloe, MD, FACEP, FAEMS¹¹, John H. Armstrong, MD¹², John M Gallagher, MD, FAEMS, FACEP¹³, Stewart C Wang, MD, PhD, FACS¹⁴, Brian J. Eastridge, MD, FACS¹⁵, N. Clay Mann, PhD, MS, MBA¹⁶, Ron R. Lawler, BUS, NRP¹⁷, Jeffrey P. Salomone, MD, FACS¹⁸, Roger Chou, MD, FACP¹⁹, Nathan A.M. Christopherson, DNP, MBA, MSN, RN, EMT-P²⁰, Jorie Klein, MSN, MHA, BSN, RN²¹, Scott M. Sasser, MD, FACEP²², Laura N. Godat, MD, FACS²³, Jeff Gilchrist, MHA, BA, RN, CEN, CPEN, NREMT-P, CCEMT-P²⁴, Joshua R. Lupton, MD, MPH, MPhil¹, Robert T. Russell, MD, MPH²⁵, Dennis Rowe, EMT-P²⁶, Melanie Neal, MS⁴, Mackenzie Dafferner, MPH⁴, Jimm Dodd, MS, MA⁴

Affiliations of additional authors: ¹¹Department of Emergency Medicine, University of Oklahoma School of Community Medicine, Tulsa, Oklahoma, ¹²University of South Florida Morsani College of Medicine, Tampa, Florida, ¹³Board of Directors, National Association of EMS Physicians, Overland Park, Kansas, ¹⁴Department of Surgery, University of Michigan, Ann Arbor, Michigan, ¹⁵Division of Trauma and Emergency General Surgery, Department of Surgery, University of Texas Health Science Center at San Antonio, San Antonio, Texas, ¹⁶Department of Pediatrics, University of Utah School of Medicine, Salt Lake City, Utah, ¹⁷Sanford Ambulance, Fargo, North Dakota, ¹⁸Banner Desert Medical Center, Mesa, Arizona, ¹⁹Departments of Medicine and Medical Informatics and Clinical Epidemiology, Oregon Health & Science University, Portland, Oregon, ²⁰Department of Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Northwell Health, Manhasset, New York, ²¹Texas Department of State Health Services, Austin, Texas, ²²Prisma Health Medical Group, Department of Emergency Medicine, University of South Carolina School of Medicine Greenville, Greenville, South Carolina, ²³Division of Trauma, Surgical Critical Care, Burns and Acute Care Surgery, Department of Surgery, UC San Diego Health, San Diego, California, ²⁴UnityPoint Health, Marshalltown, Iowa, ²⁵Pediatric Surgery, Department of Surgery, Children's of

Alabama, University of Alabama at Birmingham, Birmingham, Alabama, ²⁶Government and Industry Relations, Priority OnDemand, Priority Ambulance, Knoxville, Tennessee

Conflicts of Interest and Source of Funding: No author had conflicts of interest related to this project.

Funding Statement: The American College of Surgeons (ACS) was funded to perform an evidence-based revision of the Field Triage Guidelines as part of Cooperative Agreement # 693JJ91950007 between the ACS and the National Highway Traffic Safety Administration (NHTSA), Office of Emergency Medical Services (OEMS) funded in part by the Health Resources and Services Administration (HRSA), Maternal and Child Health Bureau (MCHB), Emergency Medical Services for Children Program (EMSC). The contents are those of the authors and do not necessarily represent the official views of, nor an endorsement, by the US Government. For more information, please visit EMS.gov and HRSA.gov.

Presentations: none.

Acknowledgements:

We would like to thank the Office of Emergency Medical Services at the National Highway Traffic Safety Administration for their support, guidance, and involvement in this project.

List of Organizations and Federal Agencies Endorsing the Field Triage Guidelines:

American College of Emergency Physicians

Emergency Medical Services for Children

Emergency Nurses Association

National Association of EMS Educators

National Association of Emergency Medical Technicians

National Association of State EMS Officials

Pediatric Trauma Society

Society of Trauma Nurses

National Registry of EMT's

National Association of EMS Physicians

American Academy of Pediatrics

American College of Surgeons Committee on Trauma

Address for Correspondence:

Craig D. Newgard, MD, MPH

Department of Emergency Medicine

Center for Policy and Research in Emergency Medicine

Oregon Health & Science University

3181 SW Sam Jackson Park Road, mail code CR-114

Portland, Oregon 97239-3098

Phone (503) 494-1668

newgardc@ohsu.edu

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

ACCEPTED

Expert Panel:

Eileen Bulger	ACS Steering Committee
Craig Newgard	ACS Steering Committee + Expertise-based
Mark Gestring	ACS Steering Committee
Greg Jurkovich	ACS Steering Committee
Joshua Brown	ACS Steering Committee + Expertise-based
Peter Fischer	ACS Steering Committee
E. Brooke Lerner	ACS Steering Committee
Mary Fallat	ACS Steering Committee + American Academy of Pediatrics
Clay Mann	ACS Steering Committee + Expertise-based
Brian Eastridge	ACS Steering Committee
Bellal Joseph	Expertise-based
Laura Godat	Expertise-based
John Armstrong	Past Guidelines
Jorie Klein	Past Guidelines
Scott Sasser	Past Guidelines
Stewart C. Wang	Past Guidelines
Jeff Goodloe	American College of Emergency Physicians (ACEP)
Lisa Gray	Emergency Medical Services for Children (EMSC)
Jeffrey Gilchrist	Emergency Nurses Association (ENA)
Ron Lawler	National Association of EMS Educators (NAEMSE)
Dennis Rowe	National Association of Emergency Medical Technicians (NAEMT)
Theodore Delbridge	National Association of State EMS Officials (NASEMSO)
Jon Krohmer	National Highway Traffic Safety Administration (NHTSA)
Robert Russell	Pediatric Trauma Society (PTS)
Nathan Christopherson	Society of Trauma Nurses (STN)
Jeffrey Salomone	National Registry of EMT's
John M. Gallagher	National Association of EMS Physicians

newgardc@ohsu.edu
lupton@ohsu.edu
pfischer@uthsc.edu
Mark_Gestring@URMC.Rochester.edu
hmichaels@facs.org
mdafferner@facs.org
jdodd@facs.org
mneal@facs.org
gjjurkovich@ucdavis.edu
lerner@buffalo.edu
mefall01@louisville.edu
tdelbridge@miemss.org
brownjb@upmc.edu
e.bulger@u.washington.edu
jeffreyygoodloe911@gmail.com
johnarmstrongmd@gmail.com
JGallagherEMS@gmail.com
stewartw@med.umich.edu
eastridge@uthscsa.edu
clay.mann@hsc.utah.edu
Ron.Lawler@SanfordHealth.org
Jeffrey.Salomone@bannerhealth.com
chour@ohsu.edu
nchristop1@northwell.edu
jorie.klein@dshs.texas.gov
scott.sasser@prismahealth.org
lgodat@health.ucsd.edu
gilly3403@gmail.com
Robert.Russell@childrensal.org
drowe@priorityambulance.com

BACKGROUND

In the United States, unintentional injury remains the leading cause of death and years of potential life lost among children and young adults, and the third most common cause of death overall.^{1,2} Injury is the most common reason for use of 9-1-1 emergency medical services (EMS) in the US,³ with EMS playing a critical role in the early evaluation and care of injured patients.⁴ An important aspect of EMS care is field triage - the process of identifying seriously injured patients in need of care in specialized trauma centers from among the larger number of patients with minor to moderate injuries who can be cared for in non-trauma hospitals. To accomplish this task quickly and efficiently, EMS clinicians use specific prehospital criteria known as the field triage guideline. The triage guideline was originally developed in 1976, with periodic revisions every 5 to 10 years.⁵ The most recent evidence-based revisions to the field triage guideline were completed in 2011.⁶

Concentrating the most seriously injured patients in trauma centers through field triage is predicated on the principle that patients have better outcomes in these hospitals. A landmark study demonstrated 20% lower in-hospital mortality and 25% lower 1-year mortality among seriously injured adults treated in Level I trauma centers compared to non-trauma hospitals.⁷ Other studies have shown that regionalized trauma systems are associated with reductions in mortality,⁸⁻¹¹ with the benefit driven primarily by Level I trauma centers.^{8,9} The benefits are similar for children, particularly when treated in pediatric trauma centers¹²⁻¹⁴ and in trauma centers with high emergency department (ED) pediatric readiness.^{15,16} For older adults, the benefit of tertiary trauma centers is less clear, with some studies showing reduced mortality^{17,18} and others no effect.^{7,19} Until

the evidence becomes clearer, the prevailing view is that seriously injured older adults should be managed in trauma centers.

The effectiveness of field triage is measured at the system level using metrics termed “under-triage” and “over-triage”. *Under-triage* is the percentage of seriously injured patients missed by field triage processes and transported to non-trauma hospitals, which is associated with increased mortality in adults and children.²⁰⁻²³ *Over-triage* is the percentage of patients with minor to moderate injuries identified by field triage criteria as having serious injuries and transported to trauma centers unnecessarily, representing overuse of limited resources and inefficiency in the system. Under- and over-triage are inversely related.²⁴ Trauma systems have prioritized the goal of minimizing under-triage and accepting a higher level of over-triage to avoid increased mortality, with targets set at $\leq 5\%$ and $\leq 35\%$, respectively.⁴ A systematic review of field triage performance across all ages showed 14% to 34% under-triage and 12% to 31% over-triage.²⁵ Under-triage of children is up to 51%²⁶ and has increased with recent triage guidelines.²⁷ Under-triage is highest among older adults,²⁸⁻³⁰ with half of seriously injured older adults treated in non-trauma centers nationally.³¹ Reducing under-triage was an important goal of the Panel for the current guideline revision.

The purpose of this report is to present the final 2021 field triage guideline and to describe the process of guideline development and the supporting evidence. The guideline is intended for use in civilian 9-1-1 EMS systems and is *not* intended to guide mass casualty events or in-hospital trauma team responses. The evidence to support the current guideline is based on civilian trauma

systems. The guideline is intended for patients in whom maximal resuscitative care is appropriate and does not apply to patients with limited goals of care.

METHODS

Study Design

We conducted an evidence-based revision of the field triage guideline using an interdisciplinary national Expert Panel and systematic reviews of the field triage literature. We used the Reporting Tool for Practice Guidelines in Health Care (RIGHT)³² to report the 2021 revision to the field triage guideline. A complete RIGHT checklist is included as supplemental on-line content (Supplemental Digital Content, <http://links.lww.com/TA/C515>).

Panel Participant Recruitment

The Expert Panel included EMS clinicians, EMS physicians, emergency physicians, trauma surgeons, pediatric surgeons, nurses, EMS medical directors, experts in EMS training and education, EMS and trauma system administrators, researchers, and representatives from stakeholder organizations. The function of the Panel was to review the evidence base, provide stakeholder feedback, assess usability and feasibility, and make informed decisions about revisions to the triage guideline.

Systematic Reviews & Evidence Base

We organized multiple systematic reviews in advance of the guideline revision. The reviews were targeted to controversial aspects of the guideline, opportunities for new or modified criteria, and to identify relevant literature published since the 2011 guideline, including assessment

of the quality of evidence and risk of bias. The systematic reviews included the predictive utility of out-of-hospital motor Glasgow Coma Scale (GCS) score versus total GCS,³³ circulatory measures,³⁴ respiratory measures,³⁵ mechanism of injury and special considerations criteria,³⁶ and the overall performance of the triage guideline.²⁵

An inherent challenge in field triage is defining a “seriously injured” patient, which has varied widely across studies. Most triage research has used one of the following categories to define “serious injury”: 1) anatomic injury severity (e.g., Injury Severity Score [ISS] \geq 16); 2) critical resource use (e.g., blood transfusion requirements, certain operative interventions, and specific “life-saving” procedures); 3) in-hospital mortality, or 4) a combination of categories.^{25,33-}

³⁶ We considered any of these definitions to represent “serious injury”.

Criteria for addition and removal of triage criteria

For the 2011 guideline, the threshold to add new triage criteria was a positive predictive value (PPV) of 20% or greater, with removal of criteria when predictive evidence was lacking.⁶ Because the PPV is dependent on the prevalence of disease (e.g., serious injury) and therefore not readily comparable across studies, we worked with experts in predictive analytics to identify rigorous statistical criteria to guide the addition and removal of triage criteria. Ultimately, we opted to use positive likelihood ratios (+LRs) and area under the receiver operating characteristic curves (AUROCs) because they combine sensitivity and specificity, are not influenced by disease prevalence, and provide more balanced metrics (Table 1). We used +LRs because individual triage criteria generally favor specificity over sensitivity; when all triage criteria are combined, the

collective sensitivity of the guideline is raised. We also considered ease-of-use in the field and quality of the evidence.

Process for generating the updated guidelines

We assembled a Steering Committee years in advance to develop key questions for the systematic reviews, organize, plan, and orchestrate the revision process. The Expert Panel met for two days in April 2021 to review the evidence base and discuss potential revisions to the guideline. Following the meeting, the Steering Committee drafted proposed revisions to the guideline and compiled additional data to address questions from the Panel. A second meeting with the Panel was held two months later to discuss the draft revisions, present additional data, and reach consensus on recommendations for the new guideline. Following the second meeting, the Steering Committee integrated the additional revisions and sent the draft guideline to stakeholder organizations for feedback. The Steering Committee integrated feedback from each of these organizations and again returned the updated guideline to the Expert Panel for review. This process was repeated until all comments, suggestions, and feedback had been addressed.

In parallel with preparations for revisions to the guideline, the EMS Subcommittee of the American College of Surgeons Committee On Trauma (ACS COT) developed and piloted a 40-question electronic end-user feedback tool in the fall of 2020. The tool was distributed to 29 national organizations to gather information about use of the field triage guideline directly from EMS clinicians. Responses from 3,958 EMS clinicians³⁷ were shared with the Expert Panel and integrated into the guideline revision process.

RESULTS

Overview

The 2021 field triage guideline includes important clarifications regarding nomenclature and terminology. The name has been revised to the “National Guideline for the Field Triage of Injured Patients,” reflecting the goal and intended function of the document. The name can be shortened to the “Field Triage Guideline” (FTG), as needed.

Format and Structure

There are substantive changes to the format and structure of the guideline. Because stakeholder feedback and research indicated that the step-wise algorithmic format of prior versions was overly complex for field use, the Expert Panel modified the structure to align with the flow of information to EMS and actual use of the guideline.³⁷⁻³⁹ The redesigned structure consolidates triage criteria into two main categories based on risk of serious injury: 1) *high risk criteria* (red box), including Injury Patterns (previously “Anatomic Criteria”) and Mental Status and Vital Signs (previously “Physiologic Criteria”); and 2) *moderate risk criteria* (yellow box), including Mechanism of Injury and EMS Judgment (previously “Special Considerations”). Each risk category is aligned with recommendations for a destination hospital. The guideline is intended to be read from top-to-bottom (risk) and left-to-right (flow of information to EMS).

Specific Field Triage Guideline Recommendations

The 2021 guideline is detailed in Figure 1. Changes from the 2011 field triage guideline are summarized in Table 2. The 2011 guideline is included in the on-line Supplement for reference (Supplemental Digital Content, <http://links.lww.com/TA/C516>).

Injury patterns (previously *Step 2 Anatomic Criteria*)

Injury patterns are highly specific, yet insensitive for identifying seriously injured patients.⁴⁰ We added one new criterion and revised 6 criteria for clarity. Two criteria remain unchanged. We also revised the order of criteria to align with a head-to-toe field-based rapid physical assessment.

New criteria

- New criterion: ***Active bleeding requiring a tourniquet or wound packing with continuous pressure***

Rationale: Research in military settings has shown that early field application of tourniquets is associated with improved survival and few complications.⁴¹⁻⁴³ Tourniquet use was not included in the 2011 guideline due to insufficient evidence in the civilian setting. Multiple civilian studies have since been published on the appropriate application of field tourniquets, safety, effectiveness, and specificity for serious injury. Among 306 civilian trauma patients with tourniquet application, 92% required surgical intervention within 8 hours and field application was associated with lower transfusion requirements and higher survival.⁴⁴ Additional studies showed similar results.⁴⁵⁻⁴⁷ The Panel added “wound packing with continuous pressure” to capture external bleeding requiring operative intervention in anatomic locations not amenable to tourniquet placement.

- Criterion clarified: ***Penetrating injuries to the head, neck, torso, and proximal extremities***

Rationale: This criterion was revised from “proximal to elbow or knee”⁶ to “proximal extremities” to simplify the criterion based on EMS feedback. This criterion includes impalement.

- Criterion clarified: ***Skull deformity, suspected skull fracture***

Rationale: This criterion was revised from “Open or depressed skull fracture” based on EMS feedback.

- Criterion clarified: ***Suspected spinal injury with new motor or sensory loss***

Rationale: This criterion was revised from “Paralysis” based on EMS feedback.

- Criterion clarified: ***Chest wall instability, deformity or suspected flail chest***

Rationale: This criterion was revised from “Chest wall instability or deformity (e.g., flail chest)” based on EMS feedback.

- Criterion clarified: ***Suspected pelvic fracture***

Rationale: This criterion was revised from “Pelvic fractures” based on EMS feedback. While field use of this criterion has shown lower predictive utility than other anatomic criteria, having a pelvic fracture by ICD9 diagnosis codes increased the +LR to 6.2.⁴⁰ The Panel felt this criterion should be retained, noting an opportunity for EMS training.

- Criterion clarified: ***Suspected fracture of two or more proximal long bones***

Rationale: This criterion was revised from “Two or more proximal long-bone fractures” based on EMS feedback.

Retained criteria (no changes):

- Retained criterion: ***Crushed, degloved, mangled, or pulseless extremity***
- Retained criterion: ***Amputation proximal to wrist or ankle***

Rationale: While the Panel debated changes to the level of amputation (e.g., hand, digit) based on the limited availability of hand surgeons in many regions, they ultimately decided to retain the criterion without changes.

Mental Status and Vital Signs (previously *Step 1 Physiologic Criteria*)

These criteria are highly specific, but insensitive, for identifying seriously injured patients. The Panel focused on expanding this category based on new evidence, with attention to feasibility of use in the field. There are five new criteria, three retained criteria, and three criteria removed.

New criteria

- New criterion: ***Unable to follow commands (motor GCS < 6)*** replaces total “Glasgow Coma Scale ≤ 13 ”.

Rationale: Twelve head-to-head studies compared total GCS to motor GCS, with high AUROCs for both measures (0.8-0.9).³³ The AUROC difference in predictive performance between the two measures was small and unlikely to have clinical impact,³³ particularly considering ease of use and the dichotomized cut-point used for field triage. Feedback from EMS and the Expert Panel indicated strong preference for simplifying the criterion for feasibility and EMS training. This measure also applies to young children,^{48,49} as lacking spontaneous or purposeful movements. Patients with language barriers who are unable to understand commands is a potential limitation of this criterion.

- New criterion: ***heart rate > SBP*** (adults and older adults).

Rationale: The systematic review of circulatory predictors identified 29 studies evaluating shock index (HR/SBP), most of which used a value of 1.0.³⁴ Among out-of-hospital studies, pooled estimates showed sensitivity 37%, specificity 85%, and an AUROC of 0.72 for identifying seriously injured patients.³⁴ Among five head-to-head studies comparing shock index to SBP, all favored shock index, although the quality of evidence was low.³⁴ Assessing if HR is greater than SBP achieves the goal of identifying patients with a shock index > 1.0 and facilitates EMS training.

Pediatric studies have used an age-adjusted shock index to predict serious injury,^{50,51} but the Panel felt that calculating an age-adjusted shock index would be cumbersome and non-feasible for field use. Therefore, this criterion only applies to adults and older adults.

- New criterion: ***SBP < 70mmHg + (2 x age)*** (children 0-9 years)

Rationale: Two studies showed that age-adjusted hypotension (calculated using this formula) in the ED is an independent predictor of mortality among injured children.^{12, 16} Inclusion of this criterion aligns the triage guideline with Advanced Trauma Life Support (ATLS) training⁵² and was viewed by the Panel as a pediatric-specific training opportunity for EMS. Children over 9 years reach the adult threshold of SBP < 90 mmHg using the formula. Because hypotension is a late finding of pediatric shock (decompensated shock), EMS training on the use of visual cues (e.g., pallor, mottling, cyanosis) is encouraged, as represented in the Pediatric Assessment Triangle.⁵³⁻⁵⁵

- New criterion: ***Respiratory distress or need for respiratory support*** replaces “need for ventilatory support” and “respiratory rate < 20 in infant aged < 1 year”.

Rationale: The criterion “need for ventilatory support” was added in 2011⁶ based on three studies showing that need for airway management and assisted ventilation were highly predictive of serious injury and death.⁵⁶⁻⁵⁸ There have since been four studies evaluating the need for respiratory support (variably defined as assisted ventilation, intubation, or need for mechanical ventilation), which showed sensitivity 8% to 53% and specificity 61% to 100% for patients with serious injury.³⁵ The Panel revised the wording to “need for respiratory support” based on EMS feedback. Because there is not a specific respiratory rate threshold for injured infants,⁵⁸ the “respiratory rate < 20 in infants” criterion was removed. The Panel included “respiratory distress” to facilitate EMS

training on important exam findings that precede the need for respiratory support, particularly in children..⁵³⁻⁵⁵

- New criterion: ***Room-air pulse oximetry < 90%***

Rationale: Pulse oximetry is widely available on portable monitors used by EMS and has been evaluated in 5 studies, with most using a cut-point of < 90%.³⁵ Pulse oximetry had AUROC values 0.59 to 0.76 for identifying patients with serious injury, similar to the respiratory rate criterion.³⁵ While most studies were conducted in adults, one study demonstrated the predictive utility of pulse oximetry in injured children⁵⁷ and another study showed the benefit of respiratory support and correction of hypoxia among young children with traumatic brain injury.⁵⁹ Therefore, this criterion applies to patients of all ages.

Retained criteria (no changes):

- Retained criterion: ***SBP < 90 mmHg***

Rationale: The predictive utility of hypotension is supported by 49 studies, most of which evaluated a cut-point of SBP < 90 mmHg.³⁴ A meta-analysis of 17 studies showed that prehospital SBP < 90 mmHg had a pooled sensitivity 19%, specificity 95%, and AUROC 0.67 for patients with serious injuries.³⁴ Higher thresholds for SBP modestly raised sensitivity, but lowered specificity,³⁴ and the Panel sought to preserve the specificity of this measure. This criterion applies to patients 10 years and older, with use of a higher threshold for older adults.

- Retained criterion: ***SBP < 110 for older adults***

Rationale: The criterion “SBP < 110 might represent shock after age 65 years” was added to the “Special Considerations” section in 2011 to address the issue of under-triage among older adults.⁶ Because SBP < 90 mmHg has sensitivity of 4-5% for identifying seriously injured older adults, a

higher SBP threshold improves sensitivity (13-29%), while preserving specificity (83-93%) in this population.³⁴ This criterion was moved from the Special Considerations section to Mental Status and Vital Signs for clarity and consistency.

- Retained criterion: *RR < 10 or > 29 breaths/minute*

Rationale: Respiratory rate is the most commonly studied respiratory triage criterion (25 studies), with RR < 10 or > 29 breaths/minute being the most studied parameters.³⁵ This criterion had a pooled sensitivity 13% and specificity 96% for identifying seriously injured patients, with an AUROC of 0.70.³⁵ While most studies were conducted in adults, a respiratory rate < 10 or > 29 breaths/minute demonstrated good predictive utility in children and older adults, yet with more variability in the accuracy estimates.³⁵ This criterion applies to patients of all ages.

Mechanism of Injury Criteria

Because anatomic and physiologic criteria identify less than half of patients with serious injuries,^{28, 60, 61} the mechanism criteria are important in the triage process. However, the mechanism criteria are less specific for serious injuries (lower +LR) and therefore are included in the “moderate risk” category. Based on high under-triage associated with previous versions of the guideline,^{25-27, 29} the Panel considered changes to reduce under-triage, particularly in children. There is one new criterion, three modified criteria, and 4 unchanged criteria.

New criteria

- New criterion: *Child (age 0-9 years) unrestrained or in unsecured child safety seat*

Rationale: Motor vehicle crashes (MVCs) are a common cause of pediatric injury. Lack of appropriate restraints is a consistent factor among seriously injured children.⁶²⁻⁶⁶ Unrestrained

children have higher injury severity, greater trauma resource needs, and are more likely to die than restrained children.⁶²⁻⁶⁴ Lack of restraint use also has been shown to predict seriously injured children involved in MVCs.⁶⁶ The Panel felt that this criterion was most pertinent for children 0 to 9 years, which provided consistency with the age range for pediatric blood pressure to simplify EMS training.

Modified criteria

- Modified criterion: ***Significant intrusion (including roof) > 12 inches occupant site or > 18 inches any site or need for extrication of the entrapped patient***

Rationale: As criteria already present in the guideline,^{6, 67} additional studies have confirmed the predictive utility of these criteria in adults and children.^{36, 60, 61, 68} Extrication > 20 minutes was removed from the 2006 guideline based on varying definitions of “prolonged extrication” in the literature and the belief that the intrusion criteria would capture patients requiring extrication.^{6, 67} However, a systematic review showed that extrication of any duration was a significant predictor of serious injury in adults and children³⁶ and that predictive utility was retained down to ≥ 5 minutes.⁶¹ Based on these studies, the Panel added the extrication criterion back to the guideline, without a specific time requirement. Because different studies used “extrication” and “entrapment” interchangeably, the Panel integrated these terms for the criterion.

- Modified criterion: ***Rider separated from transport vehicle with significant impact (e.g., Motorcycle, ATV, Horse, etc.)***

Rationale: Different versions of the motorcycle crash criterion have been present since the 1990 guideline,⁵ despite limited data. A study of adults not meeting physiologic or anatomic criteria showed that motorcycle crash > 20 mph or with rider separation had poor overall predictive utility

(+LR 1.0-1.2).⁶¹ With only a single study evaluating the motorcycle criterion in the past 10 years³⁶ and the speed component offering little predictive yield,⁶¹ the Panel removed the speed requirement and broadened the type of transport vehicle for greater application to children.⁶⁰

- Modified criterion: ***fall from height > 10 feet (all ages)***

Rationale: The 2011 guideline specified falls > 20 feet in adults and > 10 feet in children (or 2-3 times the height of the child).⁶ However, the > 10 feet criterion has good predictive utility for children⁶⁰ and adults.⁶¹ The criterion specifying 2-3 times the height of the child was based on research in young children falling from bunk beds,⁶⁹ but has not demonstrated improved prediction compared to a > 10 feet criterion.⁶⁰ For consistency and simplicity, the Panel opted to use the same fall height for children and adults and to remove the age-based height for children.

- Modified criterion: ***Pedestrian/Bicycle rider thrown, run over, or with significant impact***

Rationale: This triage criterion was included in the 1987 guideline, with slight modifications over time.^{5, 6} Six studies published since 2011 showed mixed results (+LR 0.4 – 2.8).³⁶ In a study of children not meeting physiologic or anatomic criteria, the pedestrian criterion was predictive for patients run over and with significant impact (> 20 mph).⁶⁰ Among adults, this criterion demonstrated predictive utility with higher speed of impact (+LR \geq 2.2).⁶¹ Because this criterion has long existed in the triage guidelines with reasonable predictive utility for children, the Panel retained the criterion and simplified the wording.

Retained criteria (no changes)

- Retained criterion: ***Ejection (partial or complete) from automobile***

Rationale: Among multiple studies published since 2011, most showed that ejection remains a significant predictor of serious injury and death in adults and children.^{36, 60, 61}

- Retained criterion: *Death in passenger compartment*

Rationale: In several studies published since 2011, death of another passenger in the same vehicle predicted serious injury in adults and children.^{36, 60, 61}

- Retained criterion: *Vehicle telemetry data consistent with severe injury*

Rationale: This criterion was added to the 2006 guideline based on promising developments in automated collision notification systems and retained in 2011 based on 6 studies demonstrating predictive utility and the potential for transmission to 9-1-1 dispatch centers.⁶ In five recent studies, crash algorithms had good predictive utility (+LR 4.7 to 22.2),³⁶ yet studies evaluating real-time use of vehicle telemetry for field triage are lacking.

Emergency Medical Services Judgement (previously *Step 4 Special Considerations*)

The “Special Considerations” step has changed over time to include special populations, unique triage factors, and EMS provider judgment.⁶ While some studies of EMS provider judgment have had mixed results,^{70, 71} others have shown judgment to be independently associated with serious injury.⁷² The Panel felt that EMS judgment plays an important role in field triage, but is dependent on training and experience. For the current guideline, the Panel created a category for “EMS Judgment” to replace “Special Considerations” and provided structured guidance on factors to consider in the decision-making process. The criteria in this section generally have less evidence and lower predictive utility, but remain important considerations in field triage. There are three new criteria, one modified criterion, and 3 unchanged criteria.

New criteria:

- New criterion: *Suspicion of Child Abuse*

Rationale: Child abuse can be difficult to diagnose and have subtle presentations, yet with potentially devastating consequences. Mortality is elevated among abused children, especially with recurrent episodes of abuse.⁷³ Abused children frequently require specialty care to address their injuries and the complex legal, logistical, social, and investigative aspects of these incidents. Trauma centers are required to have protocols in place to provide comprehensive evaluation of such children, with guidelines and best practices published by several national trauma organizations.⁷⁴⁻⁷⁶ Training EMS clinicians to recognize the signs of child abuse and integration of prehospital information into ED-based clinical decision support systems^{77, 78} are supported by multiple national organizations. Based on these considerations, the Panel added suspicion of child abuse.

- New criterion: *Special, high resource healthcare needs*

Rationale: Various comorbid conditions were in the triage guidelines from 1987 through 2006, but were removed in 2011 due to lack of evidence.^{5, 6} Among five recent studies evaluating the use of comorbidities for field triage,³⁶ some showed that comorbidities were independently associated with death and could reduce under-triage among older adults.³⁶ However, the predictive utility of comorbidities varied across studies (+LR 0.8 to 3.1).³⁶ The Panel recognized that injured patients with special healthcare needs related to comorbidities (e.g., ventilator dependence or ventricular assist devices) may require the resources and expertise of trauma centers.

Modified criteria:

- Modified criterion: ***Low level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact.***

Rationale: The Panel moved these criteria from the Mechanism and Special Considerations sections to EMS Judgment. Research has shown that some children incur serious injuries from low-height falls, including falls from standing,⁶⁰ and that such falls are a common cause of traumatic brain injury in young children.⁷⁹ For older adults, ground-level falls can cause serious injury and death,^{19, 80-82} which were the reasons for inclusion in the 2011 guideline.⁶ However, ground-level falls are common among older persons and therefore are relatively non-specific for serious injury (+LR 1.2 to 1.9).²⁵ Based on concerns that these criteria could result in over-triage, the Panel included these factors under EMS Judgment and added “with significant head impact”.

- Modified criterion: ***Anticoagulation use***

Rationale: “Coagulopathy” was added to the triage guideline in 1990⁵ and included in the 2011 guideline as “Anticoagulants and bleeding disorders – patients with head injury are at high risk for rapid deterioration.”⁶ Five recent studies evaluating anticoagulant use for triage showed relatively low predictive utility (+LR 0.73 - 1.8).³⁶ Some research suggests that such a criterion could help identify older adults with intracranial hemorrhage,⁸³ but other studies show otherwise.⁸⁴ In a prospective study of older adults transported by EMS, the incidence of brain hemorrhage was similar between patients taking versus not taking anticoagulants.⁸⁵ Based on these data, the Panel felt that use of anticoagulants (including anti-platelet agents) was best considered in the context of EMS Judgment.

Retained criteria (no changes):

- Retained criterion: ***Pregnancy > 20 weeks***

Rationale: The pregnancy criterion was added to the 1999 guideline⁵ and refined to “pregnancy > 20 weeks” in 2006.⁶⁷ While pregnancy does not necessarily increase the likelihood of serious injury, simultaneous management of the mother and unborn child can create complex clinical scenarios requiring trauma centers with obstetrics capabilities. Therefore, the Panel felt that this factor should be part of EMS Judgment.

- Retained criterion: ***Burns in conjunction with trauma***

Rationale: Consistent with ATLS teaching, when a burn patient has other injuries, the injuries should be evaluated and potentially prioritized over the burn. Trauma centers have the capability to quickly evaluate these patients to expedite care for both clinical conditions.

- Retained criterion: ***Children should be triaged preferentially to pediatric capable trauma centers***

Rationale: For injured children, research has demonstrated higher survival in pediatric trauma centers compared to adult or mixed trauma centers.¹² However, many regions do not have access to pediatric trauma centers.⁸⁶ While transport to a pediatric trauma center is preferable, the Panel felt that transport to pediatric versus adult trauma centers should be determined by local protocols and proximity. Based on stakeholder and expert feedback, the Panel chose not to use a specific age to define children, as there is insufficient evidence for a specific age limit and systems have established varying age limits based on local resources and practice patterns. Because high ED pediatric readiness has been associated with improved short- and long-term survival of children in US trauma centers,^{15, 16} all trauma centers are strongly encouraged to meet such criteria.

TRANSPORT RECOMMENDATIONS

Emergency Medical Services systems vary by geography, organization, resources, service levels, staffing, training, access to air medical services, travel times, oversight, and governance. Trauma centers are hospitals that are prepared to provide emergent care for seriously injured patients through resources, personnel, expertise, education, and quality improvement programs. There are national standards for adult and pediatric trauma centers, with trauma center designation (Levels I through V) typically made at the state level (Table 3). State trauma systems may be inclusive or exclusive, with inclusive systems categorizing most hospitals and demonstrating lower injury-related mortality.⁸⁷

Recognizing the variability in EMS and trauma systems, transport recommendations in the guideline allow local flexibility. There is not a “one size fits all” that will work for all systems. While the survival benefit of regionalized trauma care is driven primarily by Level I hospitals,⁷⁻⁹ there are large regions across the US that do not have immediate access to such trauma centers. Although 84% - 88% of US residents have access to a Level I or II trauma center within 60 minutes, these proportions are substantially lower when limited to ground travel and shorter time windows.^{88, 89} Access to pediatric trauma centers is even lower,⁸⁶ with widely variable proximity by state.⁹⁰ Rural regions have the most limited access to Level I-II trauma centers,^{86, 88, 89} resulting in higher under-triage, more inter-hospital transfers, and longer transfer distances compared to urban settings.⁹¹ The triage guidelines are intended to provide a template that can be adapted for use in all systems.

When feasible, patients meeting the “high risk” criteria should be triaged to the highest-level trauma center within the region, including consideration of air medical services. Injured patients meeting the physiologic criteria have lower mortality when cared for in Level I trauma centers.⁹² Air medical services may offer advanced care clinicians, access to additional interventions, and more rapid transport. EMS medical directors and trauma system managers are encouraged to evaluate the resources relevant to their systems to guide implementation of the field triage guideline. Because time is known to be crucial for certain trauma patients,⁹³ field triage favors short time intervals. However, the current evidence is insufficient to make specific recommendations regarding transport times and when air medical services should be activated.⁹⁴ Some EMS systems may opt to implement a closest hospital approach for patients with an unstable airway, severe shock, traumatic arrest, or other “extremis” conditions for initial stabilization, prior to higher level transport for definitive care.

IMPLEMENTATION AND ADHERENCE TO THE FIELD TRIAGE GUIDELINE

The triage guideline is not useful if not fully implemented into trauma systems and adopted by EMS clinicians. Following the 2006 triage guideline, only 17% of states had full adoption of the new guideline, with 61% using an older version or a different protocol altogether.⁹⁵ In a study of 6 metropolitan regions, only one region had adopted the most recent triage guideline within two years and 36% of triage criteria in use had been previously removed or never included.⁹⁶ Compliance with the field triage guideline varies widely, with lowest adherence for the physiologic criteria.⁹⁷ Strict adherence would reduce under-triage.⁹⁸ While there are many hurdles to implementing an updated guideline, translating the science into practice is arguably the most important step of realizing effective field triage practices. The 2021 guideline is organized to

facilitate ease of use, increase speed of decision-making, and promote adherence. We recommend adoption at the state level (similar to the trauma center designation process), allowing regional and local EMS and trauma systems to determine system-specific adaptations for hospital selection.

FUTURE RESEARCH

There is substantial need for future research to inform the triage guideline. Non-invasive monitor technology and point-of-care (POC) testing hold promise for field triage, particularly for seriously injured patients not meeting the high-risk criteria. Systematic reviews of circulatory and respiratory criteria identified several promising measures (e.g., POC lactate, end-tidal CO₂, and heart rate variability), but more research and technology are needed to facilitate field use.^{34, 35} Research on new criteria added to the 2021 guideline will be particularly important, as well as studies on the real-time use of automated collision notification systems for field triage.

The 2021 guideline includes changes in format, structure, and content. Research is needed to evaluate the usability, performance, adherence, and application of the new guideline (including the impact on health outcomes), particularly compared to the 2011 guideline. Research on efficient and effective training methods, including training frequency, are also needed. Understanding how and why EMS clinicians make triage decisions, including concordance versus discordance with the guideline, will be important in optimizing triage performance. Based on the slow and variable uptake of previous triage guidelines,^{95,96} creating new ways of disseminating, implementing, and monitoring adherence will be important to realizing the true potential of the guideline. Finally, there is a need for more system-based research to inform transport times, when air medical services should be activated, and the role of different provider levels.

CONCLUSIONS

The 2021 field triage guideline is based on the most current science, a national panel of interdisciplinary experts, direct feedback from EMS clinicians, and input from many stakeholders. This guideline presents an opportunity to improve the prehospital care of injured patients across the US. Effective field triage is foundational to trauma systems, concentrating the most seriously injured patients in trauma centers to improve survival after injury.

ACCEPTED

AUTHOR CONTRIBUTIONS

Study conception and design:	EMB, CDN, PEF, MG, HNM.
Systematic reviews:	RC, JL.
Literature search (systematic reviews and other):	RC, JL, EMB, CDN.
EMS feedback:	PEF, MG, HNM, EMB.
Steering Committee:	EMB, CDN, PEF, MG, HNM.
Administrative support:	HNM, MD, MN, JD.
Panel participation:	All authors.
Panel leadership:	EMB.
Interpretation of results:	All authors.
Obtained funding:	EMB.
Drafting of manuscript:	CDN.
Critical revision:	All authors.

REFERENCES

1. 10 Leading Causes of Death, United States 2019, Both Sexes, All Ages, All Races Atlanta, Georgia: Centers for Disease Control and Prevention; 2021 [Available from: <https://wisqars-viz.cdc.gov:8006/lcd/home>].
2. Borse NN, Rudd RA, Dellinger AM, Sleet DA. Years of potential life lost from unintentional child and adolescent injuries--United States, 2000-2009. *J Safety Res.* 2013;45:127-31.
3. Wang HE, Mann NC, Jacobson KE, Ms MD, Mears G, Smyrski K, et al. National characteristics of emergency medical services responses in the United States. *Prehosp Emerg Care.* 2013;17(1):8-14.
4. Resources for Optimal Care of the Injured Patient. 6th. ed. Trauma. Co, editor: American College of Surgeons.; 2014.
5. Mackersie RC. History of trauma field triage development and the American College of Surgeons criteria. *Prehosp Emerg Care.* 2006;10(3):287-94.
6. Sasser SM, Hunt RC, Faul M, Sugerman D, Pearson WS, Dulski T, et al. Guidelines for field triage of injured patients: recommendations of the National Expert Panel on Field Triage, 2011. *MMWR Recommendations and reports : Morbidity and mortality weekly report Recommendations and reports / Centers for Disease Control.* 2012;61(RR-1):1-20.
7. MacKenzie EJ, Rivara FP, Jurkovich GJ, Nathens AB, Frey KP, Egleston BL, et al. A national evaluation of the effect of trauma-center care on mortality. *N Engl J Med.* 2006;354(4):366-78.

8. Sampalis JS, Denis R, Lavoie A, Frechette P, Boukas S, Nikolis A, et al. Trauma care regionalization: a process-outcome evaluation. *J Trauma*. 1999;46(4):565-79; discussion 79-81.
9. Mullins RJ, Veum-Stone J, Helfand M, Zimmer-Gembeck M, Hedges JR, Southard PA, et al. Outcome of hospitalized injured patients after institution of a trauma system in an urban area. *JAMA*. 1994;271(24):1919-24.
10. Nathens AB, Jurkovich GJ, Cummings P, Rivara FP, Maier RV. The effect of organized systems of trauma care on motor vehicle crash mortality. *JAMA*. 2000;283(15):1990-4.
11. Nathens AB, Jurkovich GJ, Rivara FP, Maier RV. Effectiveness of state trauma systems in reducing injury-related mortality: a national evaluation. *J Trauma*. 2000;48(1):25-30; discussion -1.
12. Sathya C, Alali AS, Wales PW, Scales DC, Karanicolas PJ, Burd RS, et al. Mortality Among Injured Children Treated at Different Trauma Center Types. *JAMA Surg*. 2015;150(9):874-81.
13. Pracht EE, Tepas JJ, 3rd, Langland-Orban B, Simpson L, Pieper P, Flint LM. Do pediatric patients with trauma in Florida have reduced mortality rates when treated in designated trauma centers? *J Pediatr Surg*. 2008;43(1):212-21.
14. Wang NE, Saynina O, Vogel LD, Newgard CD, Bhattacharya J, Phibbs CS. The effect of trauma center care on pediatric injury mortality in California, 1999 to 2011. *J Trauma Acute Care*. 2013;75(4):704-16.
15. Newgard CD, Lin A, Goldhaber-Fiebert JD, Marin JR, Smith M, Cook JNB, et al. Association of Emergency Department Pediatric Readiness With Mortality to 1 Year Among Injured Children Treated at Trauma Centers. *JAMA Surg*. 2022:e217419.

16. Newgard CD, Lin A, Olson LM, Cook JNB, Gausche-Hill M, Kuppermann N, et al. Evaluation of Emergency Department Pediatric Readiness and Outcomes Among US Trauma Centers. *JAMA Pediatr.* 2021.
17. Pracht EE, Langland-Orban B, Flint L. Survival advantage for elderly trauma patients treated in a designated trauma center. *J Trauma.* 2011;71(1):69-77.
18. Garwe T, Stewart K, Newgard CD, Stoner J, Sacra JC, Cody P, et al. Survival Benefit of Treatment at or Transfer to a Tertiary Trauma Center among Injured Older Adults. *Prehosp Emerg Care.* 2019:1-18.
19. Staudenmayer KL, Hsia RY, Mann NC, Spain DA, Newgard CD. Triage of elderly trauma patients: a population-based perspective. *J Am Coll Surg.* 2013;217(4):569-76.
20. Haas B, Gomez D, Zagorski B, Stukel TA, Rubenfeld GD, Nathens AB. Survival of the fittest: the hidden cost of undertriage of major trauma. *J Am Coll Surg.* 2010;211(6):804-11.
21. Yoder A, Bradburn EH, Morgan ME, Vernon TM, Bresz KE, Gross BW, et al. An analysis of overtriage and undertriage by advanced life support transport in a mature trauma system. *J Trauma Acute Care.* 2020;88(5):704-9.
22. Haas B, Stukel TA, Gomez D, Zagorski B, De Mestral C, Sharma SV, et al. The mortality benefit of direct trauma center transport in a regional trauma system: a population-based analysis. *J Trauma Acute Care.* 2012;72(6):1510-5; discussion 5-7.
23. Hewes HA, Christensen M, Taillac PP, Mann NC, Jacobsen KK, Fenton SJ. Consequences of pediatric undertriage and overtriage in a statewide trauma system. *J Trauma Acute Care.* 2017;83(4):662-7.

24. Newgard CD, Hsia RY, Mann NC, Schmidt T, Sahni R, Bulger EM, et al. The trade-offs in field trauma triage: a multiregion assessment of accuracy metrics and volume shifts associated with different triage strategies. *J Trauma Acute Care*. 2013;74(5):1298-306; discussion 306.
25. Lupton JR, Davis-O'Reilly C, Jungbauer RM, Newgard CD, Fallat ME, Brown JB, et al. Under-triage and Over-triage Using the Field Triage Guidelines for Injured Patients: A Systematic Review. *Prehosp Emerg Care*. 2022. [epub before print]
26. van der Sluijs R, van Rein EAJ, Wijnand JGJ, Leenen LPH, van Heijl M. Accuracy of Pediatric Trauma Field Triage: A Systematic Review. *JAMA Surg*. 2018;153(7):671-6.
27. Lerner EB, Cushman JT, Drendel AL, Badawy M, Shah MN, Guse CE, et al. Effect of the 2011 Revisions to the Field Triage Guidelines on Under- and Over-Triage Rates for Pediatric Trauma Patients. *Prehosp Emerg Care*. 2017;21(4):456-60.
28. Newgard CD, Zive D, Holmes JF, Bulger EM, Staudenmayer K, Liao M, et al. A multisite assessment of the American College of Surgeons Committee on Trauma field triage decision scheme for identifying seriously injured children and adults. *J Am Coll Surg*. 2011;213(6):709-21.
29. Newgard CD, Fu R, Zive D, Rea T, Malveau S, Daya M, et al. Prospective Validation of the National Field Triage Guidelines for Identifying Seriously Injured Persons. *J Am Coll Surg*. 2016;222(2):146-58.
30. Garwe T, Stewart K, Stoner J, Newgard CD, Scott M, Zhang Y, et al. Out-of-hospital and Inter-hospital Under-triage to Designated Tertiary Trauma Centers among Injured Older Adults: A 10-year Statewide Geospatial-Adjusted Analysis. *Prehosp Emerg Care*. 2017;21(6):734-43.

31. Uribe-Leitz T, Jarman MP, Sturgeon DJ, Harlow AF, Lipsitz SR, Cooper Z, et al. National Study of Triage and Access to Trauma Centers for Older Adults. *Ann Emerg Med.* 2020;75(2):125-35.
32. Chen Y, Yang K, Marusic A, Qaseem A, Meerpohl JJ, Flottorp S, et al. A Reporting Tool for Practice Guidelines in Health Care: The RIGHT Statement. *Ann Intern Med.* 2017;166(2):128-32.
33. Chou R, Totten AM, Carney N, Dandy S, Fu R, Grusing S, et al. Predictive Utility of the Total Glasgow Coma Scale Versus the Motor Component of the Glasgow Coma Scale for Identification of Patients With Serious Traumatic Injuries. *Ann Emerg Med.* 2017;70(2):143-57 e6.
34. Newgard CD, Cheney TP, Chou R, Fu R, Daya MR, O'Neil ME, et al. Out-of-hospital Circulatory Measures to Identify Patients With Serious Injury: A Systematic Review. *Acad Emerg Med.* 2020;27(12):1323-39.
35. Daya MR, Cheney TP, Chou R, Fu R, Newgard CD, O'Neil ME, et al. Out-of-hospital Respiratory Measures to Identify Patients With Serious Injury: A Systematic Review. *Acad Emerg Med.* 2020;27(12):1312-22.
36. Lupton JR, Davis-O'Reilly C, Jungbauer RM, Newgard CD, Fallat ME, Brown JB, et al. Mechanism of Injury and Special Considerations as Predictive of Serious Injury: A Systematic Review. *Acad Emerg Med.* 2022. (In Press)
37. Fischer PE GM, Sagraves SG, Michaels HN, Patel B, Dodd J, Champion EM, Vander Kolk WE, Bulger EM. The national trauma triage protocol: how EMS perspective can inform the guideline revision. *Trauma Surg Acute Care Open.* 2022;7(1).

38. Jones CM, Cushman JT, Lerner EB, Fisher SG, Seplaki CL, Veazie PJ, et al. Prehospital Trauma Triage Decision-making: A Model of What Happens between the 9-1-1 Call and the Hospital. *Prehosp Emerg Care*. 2016;20(1):6-14.
39. Newgard CD, Nelson MJ, Kampp M, Saha S, Zive D, Schmidt T, et al. Out-of-hospital decision making and factors influencing the regional distribution of injured patients in a trauma system. *J Trauma*. 2011;70(6):1345-53.
40. Lerner EB, Roberts J, Guse CE, Shah MN, Swor R, Cushman JT, et al. Does EMS perceived anatomic injury predict trauma center need? *Prehosp Emerg Care*. 2013;17(3):312-6.
41. Kragh JF, Jr., Littrel ML, Jones JA, Walters TJ, Baer DG, Wade CE, et al. Battle casualty survival with emergency tourniquet use to stop limb bleeding. *J Emerg Med*. 2011;41(6):590-7.
42. Kragh JF, Jr., Walters TJ, Baer DG, Fox CJ, Wade CE, Salinas J, et al. Survival with emergency tourniquet use to stop bleeding in major limb trauma. *Ann Surg*. 2009;249(1):1-7.
43. Beekley AC, Sebesta JA, Blackburne LH, Herbert GS, Kauvar DS, Baer DG, et al. Prehospital tourniquet use in Operation Iraqi Freedom: effect on hemorrhage control and outcomes. *J Trauma*. 2008;64(2 Suppl):S28-37; discussion S.
44. Scerbo MH, Holcomb JB, Taub E, Gates K, Love JD, Wade CE, et al. The trauma center is too late: Major limb trauma without a pre-hospital tourniquet has increased death from hemorrhagic shock. *J Trauma Acute Care*. 2017;83(6):1165-72.
45. Inaba K, Siboni S, Resnick S, Zhu J, Wong MD, Haltmeier T, et al. Tourniquet use for civilian extremity trauma. *J Trauma Acute Care*. 2015;79(2):232-7;quiz 332-3.

46. Ode G, Studnek J, Seymour R, Bosse MJ, Hsu JR. Emergency tourniquets for civilians: Can military lessons in extremity hemorrhage be translated? *J Trauma Acute Care.* 2015;79(4):586-91.
47. Schroll R, Smith A, McSwain NE, Jr., Myers J, Rocchi K, Inaba K, et al. A multi-institutional analysis of prehospital tourniquet use. *J Trauma Acute Care.* 2015;79(1):10-4; discussion 4.
48. Acker SN, Ross JT, Partrick DA, Nadlonek NA, Bronsert M, Bensard DD. Glasgow motor scale alone is equivalent to Glasgow Coma Scale at identifying children at risk for serious traumatic brain injury. *J Trauma Acute Care.* 2014;77(2):304-9.
49. Cicero MX, Cross KP. Predictive value of initial Glasgow coma scale score in pediatric trauma patients. *Pediatr Emerg Care.* 2013;29(1):43-8.
50. Acker SN, Ross JT, Partrick DA, Tong S, Bensard DD. Pediatric specific shock index accurately identifies severely injured children. *J Pediatr Surg.* 2015;50(2):331-4.
51. Strutt J, Flood A, Kharbanda AB. Shock Index as a Predictor of Morbidity and Mortality in Pediatric Trauma Patients. *Pediatr Emerg Care.* 2019;35(2):132-7.
52. Trauma ACoSCo. ATLS Advanced Trauma Life Support 10th edition Student Course Manual. 10 ed: American College of Surgeons; 2018 January 1, 2018.
53. Dieckmann RA, Brownstein D, Gausche-Hill M. The pediatric assessment triangle: a novel approach for the rapid evaluation of children. *Pediatr Emerg Care.* 2010;26(4):312-5.
54. Gausche-Hill M, Eckstein M, Horeczko T, McGrath N, Kurobe A, Ullum L, et al. Paramedics accurately apply the pediatric assessment triangle to drive management. *Prehosp Emerg Care.* 2014;18(4):520-30.

55. Fuchs S, Terry M, Adelgais K, Bokholdt M, Brice J, Brown KM, et al. Definitions and Assessment Approaches for Emergency Medical Services for Children. *Pediatrics*. 2016;138(6).
56. Newgard CD, Rudser K, Hedges JR, Kerby JD, Stiell IG, Davis DP, et al. A critical assessment of the out-of-hospital trauma triage guidelines for physiologic abnormality. *J Trauma*. 2010;68(2):452-62.
57. Newgard CD, Rudser K, Atkins DL, Berg R, Osmond MH, Bulger EM, et al. The availability and use of out-of-hospital physiologic information to identify high-risk injured children in a multisite, population-based cohort. *Prehosp Emerg Care*. 2009;13(4):420-31.
58. Newgard CD, Cudnik M, Warden CR, Hedges JR. The predictive value and appropriate ranges of prehospital physiological parameters for high-risk injured children. *Pediatr Emerg Care*. 2007;23(7):450-6.
59. Gaither JB, Spaite DW, Bobrow BJ, Keim SM, Barnhart BJ, Chikani V, et al. Effect of Implementing the Out-of-Hospital Traumatic Brain Injury Treatment Guidelines: The Excellence in Prehospital Injury Care for Children Study (EPIC4Kids). *Ann Emerg Med*. 2021;77(2):139-53.
60. Lerner EB, Badawy M, Cushman JT, Drendel AL, Fumo N, Jones CMC, et al. Does Mechanism of Injury Predict Trauma Center Need for Children? *Prehosp Emerg Care*. 2021;25(1):95-102.
61. Lerner EB, Shah MN, Cushman JT, Swor RA, Guse CE, Brasel K, et al. Does mechanism of injury predict trauma center need? *Prehosp Emerg Care*. 2011;15(4):518-25.

62. Starnes M. Child Passenger Fatalities and Injuries, Based on Restraint Use, Vehicle Type, Seat Position, and Number of Vehicles in the Crash, DOT HS 809 784 Technical Report. Washington, DC; 2005.
63. Chan L, Reilly KM, Telfer J. Odds of critical injuries in unrestrained pediatric victims of motor vehicle collision. *Pediatr Emerg Care*. 2006;22(9):626-9.
64. Valent F, McGwin G, Jr., Hardin W, Johnston C, Rue LW, 3rd. Restraint use and injury patterns among children involved in motor vehicle collisions. *J Trauma*. 2002;52(4):745-51.
65. Benedetti M, Klinich KD, Manary MA, Flannagan CAC. Factors Affecting Child Injury Risk in Motor-Vehicle Crashes. *Stapp Car Crash J*. 2019;63:195-211.
66. Newgard CD, Lewis RJ, Jolly BT. Use of out-of-hospital variables to predict severity of injury in pediatric patients involved in motor vehicle crashes. *Ann Emerg Med*. 2002;39(5):481-91.
67. Sasser SM, Hunt RC, Sullivent EE, Wald MM, Mitchko J, Jurkovich GJ, et al. Guidelines for field triage of injured patients. Recommendations of the National Expert Panel on Field Triage. *MMWR Recommendations and reports : Morbidity and mortality weekly report Recommendations and reports / Centers for Disease Control*. 2009;58(RR-1):1-35.
68. Isenberg D, Cone DC, Vaca FE. Motor vehicle intrusion alone does not predict trauma center admission or use of trauma center resources. *Prehosp Emerg Care*. 2011;15(2):203-7.
69. Macgregor DM. Injuries associated with falls from beds. *Inj Prev*. 2000;6(4):291-2.

70. Mulholland SA, Cameron PA, Gabbe BJ, Williamson OD, Young K, Smith KL, et al. Prehospital prediction of the severity of blunt anatomic injury. *J Trauma*. 2008;64(3):754-60.
71. Mulholland SA, Gabbe BJ, Cameron P, Victorian State Trauma Outcomes R, Monitoring G. Is paramedic judgement useful in prehospital trauma triage? *Injury*. 2005;36(11):1298-305.
72. Newgard CD, Kampp M, Nelson M, Holmes JF, Zive D, Rea T, et al. Deciphering the use and predictive value of "emergency medical services provider judgment" in out-of-hospital trauma triage: a multisite, mixed methods assessment. *J Trauma Acute Care*. 2012;72(5):1239-48.
73. Deans KJ, Thackeray J, Askegard-Giesmann JR, Earley E, Groner JI, Minneci PC. Mortality increases with recurrent episodes of nonaccidental trauma in children. *J Trauma Acute Care*. 2013;75(1):161-5.
74. Rosen NG, Escobar MA, Jr., Brown CV, Moore EE, Sava JA, Peck K, et al. Child physical abuse trauma evaluation and management: A Western Trauma Association and Pediatric Trauma Society critical decisions algorithm. *J Trauma Acute Care*. 2021;90(4):641-51.
75. Escobar MA, Jr., Flynn-O'Brien KT, Auerbach M, Tiyyagura G, Borgman MA, Duffy SJ, et al. The association of nonaccidental trauma with historical factors, examination findings, and diagnostic testing during the initial trauma evaluation. *J Trauma Acute Care*. 2017;82(6):1147-57.
76. ACS Trauma Quality Programs Best Practices Guidelines for Trauma Center Recognition of Child Abuse, Elder Abuse, and Intimate Partner Violence.; 2019.

77. Berger RP, Saladino RA, Fromkin J, Heineman E, Suresh S, McGinn T. Development of an electronic medical record-based child physical abuse alert system. *J Am Med Inform Assoc.* 2018;25(2):142-9.
78. Rosenthal B, Skrbini J, Fromkin J, Heineman E, McGinn T, Richichi R, et al. Integration of physical abuse clinical decision support at 2 general emergency departments. *J Am Med Inform Assoc.* 2019;26(10):1020-9.
79. Haarbauer-Krupa J, Haileyesus T, Gilchrist J, Mack KA, Law CS, Joseph A. Fall-related traumatic brain injury in children ages 0-4years. *J Safety Res.* 2019;70:127-33.
80. Chisholm KM, Harruff RC. Elderly deaths due to ground-level falls. *Am J Forensic Med Pathol.* 2010;31(4):350-4.
81. Spaniolas K, Cheng JD, Gestring ML, Sangosanya A, Stassen NA, Bankey PE. Ground level falls are associated with significant mortality in elderly patients. *J Trauma.* 2010;69(4):821-5.
82. Newgard CD, Lin A, Yanez ND, Bulger E, Malveau S, Caughey A, et al. Long-term outcomes among injured older adults transported by emergency medical services. *Injury.* 2019;50(6):1175-85.
83. Nishijima DK, Gaona SD, Waechter T, Maloney R, Bair T, Blitz A, et al. Out-of-Hospital Triage of Older Adults With Head Injury: A Retrospective Study of the Effect of Adding "Anticoagulation or Antiplatelet Medication Use" as a Criterion. *Ann Emerg Med.* 2017.
84. Newgard CD, Lin A, Eckstrom E, Caughey A, Malveau S, Griffiths D, et al. Comorbidities, anticoagulants, and geriatric-specific physiology for the field triage of injured older adults. *J Trauma Acute Care.* 2019;86(5):829-37.

85. Nishijima DK, Gaona SD, Waechter T, Maloney R, Blitz A, Elms AR, et al. The Incidence of Traumatic Intracranial Hemorrhage in Head-Injured Older Adults Transported by EMS with and without Anticoagulant or Antiplatelet Use. *J Neurotrauma*. 2018;35(5):750-9.
86. Nance ML, Carr BG, Branas CC. Access to pediatric trauma care in the United States. *Arch Pediatr Adolesc Med*. 2009;163(6):512-8.
87. Utter GH, Maier RV, Rivara FP, Mock CN, Jurkovich GJ, Nathens AB. Inclusive trauma systems: do they improve triage or outcomes of the severely injured? *J Trauma*. 2006;60(3):529-35; discussion 35-37.
88. Branas CC, MacKenzie EJ, Williams JC, Schwab CW, Teter HM, Flanigan MC, et al. Access to trauma centers in the United States. *JAMA*. 2005;293(21):2626-33.
89. Carr BG, Bowman AJ, Wolff CS, Mullen MT, Holena DN, Branas CC, et al. Disparities in access to trauma care in the United States: A population-based analysis. *Injury*. 2017;48(2):332-8.
90. Pediatric Trauma Centers - Availability, Outcomes, and Federal Support Related to Pediatric Trauma Care. Washington, DC; 2017. Contract No.: GAO-17-334.
91. Newgard CD, Fu R, Bulger E, Hedges JR, Mann NC, Wright DA, et al. Evaluation of Rural vs Urban Trauma Patients Served by 9-1-1 Emergency Medical Services. *JAMA Surg*. 2017;152(1):11-8.
92. Hannan EL, Farrell LS, Cooper A, Henry M, Simon B, Simon R. Physiologic trauma triage criteria in adult trauma patients: are they effective in saving lives by transporting patients to trauma centers? *J Am Coll Surg*. 2005;200(4):584-92.

93. Newgard CD, Meier EN, Bulger EM, Buick J, Sheehan K, Lin S, et al. Revisiting the "Golden Hour": An Evaluation of Out-of-Hospital Time in Shock and Traumatic Brain Injury. *Ann Emerg Med.* 2015;66(1):30-41, e1-3.
94. Newgard CD, Braverman MA, Phuong J, Shipper ES, Price MA, Bixby PJ, et al. Developing a National Trauma Research Action Plan: Results from the prehospital and mass casualty research Delphi survey. *J Trauma Acute Care.* 2022;92(2):398-406.
95. Sasser SM, Ossmann E, Wald MM, Lerner EB, Hunt RC. Adoption of the 2006 field triage decision scheme for injured patients. *West J Emerg Med.* 2011;12(3):275-83.
96. Barnett AS, Wang NE, Sahni R, Hsia RY, Haukoos JS, Barton ED, et al. Variation in prehospital use and uptake of the national Field Triage Decision Scheme. *Prehosp Emerg Care.* 2013;17(2):135-48.
97. van Rein EAJ, van der Sluijs R, Raaijmakers AMR, Leenen LPH, van Heijl M. Compliance to prehospital trauma triage protocols worldwide: A systematic review. *Injury.* 2018;49(8):1373-80.
98. Newgard CD, Fu R, Lerner EB, Daya M, Jui J, Wittwer L, et al. Role of Guideline Adherence In Improving Field Triage. *Prehosp Emerg Care.* 2017:1-11.

Figure 1. 2021 National Guideline for the Field Triage of Injured Patients.

Supplemental Digital Content.

eFigure 1. 2011 Guideline for the field triage of injured patients.

ACCEPTED

Figure 1

National Guideline for the Field Triage of Injured Patients

RED CRITERIA *High Risk for Serious Injury*

Injury Patterns	Mental Status & Vital Signs
<ul style="list-style-type: none"> ▪ Penetrating injuries to head, neck, torso, and proximal extremities ▪ Skull deformity, suspected skull fracture ▪ Suspected spinal injury with new motor or sensory loss ▪ Chest wall instability, deformity, or suspected flail chest ▪ Suspected pelvic fracture ▪ Suspected fracture of two or more proximal long bones ▪ Crushed, degloved, mangled, or pulseless extremity ▪ Amputation proximal to wrist or ankle ▪ Active bleeding requiring a tourniquet or wound packing with continuous pressure 	<p>All Patients</p> <ul style="list-style-type: none"> ▪ Unable to follow commands (motor GCS < 6) ▪ RR < 10 or > 29 breaths/min ▪ Respiratory distress or need for respiratory support ▪ Room-air pulse oximetry < 90% <p>Age 0-9 years</p> <ul style="list-style-type: none"> ▪ SBP < 70mm Hg + (2 x age years) <p>Age 10-64 years</p> <ul style="list-style-type: none"> ▪ SBP < 90 mmHg or ▪ HR > SBP <p>Age ≥ 65 years</p> <ul style="list-style-type: none"> ▪ SBP < 110 mmHg or ▪ HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA *Moderate Risk for Serious Injury*

Mechanism of Injury	EMS Judgment
<ul style="list-style-type: none"> ▪ High-Risk Auto Crash <ul style="list-style-type: none"> - Partial or complete ejection - Significant intrusion (including roof) <ul style="list-style-type: none"> ▪ >12 inches occupant site OR ▪ >18 inches any site OR ▪ Need for extrication for entrapped patient - Death in passenger compartment - Child (Age 0-9) unrestrained or in unsecured child safety seat - Vehicle telemetry data consistent with severe injury ▪ Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.) ▪ Pedestrian/bicycle rider thrown, run over, or with significant impact ▪ Fall from height > 10 feet (all ages) 	<p>Consider risk factors, including:</p> <ul style="list-style-type: none"> ▪ Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact ▪ Anticoagulant use ▪ Suspicion of child abuse ▪ Special, high-resource healthcare needs ▪ Pregnancy > 20 weeks ▪ Burns in conjunction with trauma ▪ Children should be triaged preferentially to pediatric capable centers <p>If concerned, take to a trauma center</p>

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)

*For the RED CRITERIA transport recommendations, patients in extremis (e.g., unstable airway, severe shock, or traumatic arrest) may require transport to the closest hospital for initial stabilization, prior to transport to a level I-II trauma center for definitive care. Pediatric patients meeting the RED CRITERIA should be preferentially triaged to pediatric-capable trauma centers.

†The EMS Judgement criteria should be considered in the context of resources available in the regional trauma system, including consideration of on-line medical control for further direction.

‡Examples of patients with special, high resource healthcare needs include tracheostomy with ventilator dependence, cardiac assist devices, etc.

¶Patients with combined burns and trauma should be preferentially transported to a trauma center with burn care capability. If not available, then a trauma center takes precedence over a burn center.

#Specific age used to define “children” is based on local system resources and practice patterns.

ACCEPTED

Table 1. Statistical criteria used to add and remove individual triage criteria.

<ul style="list-style-type: none">• To <i>add</i> a new field triage criterion: $+LR \geq 2$ or $AUROC \geq 0.60$. Magnitude of predictive utility:<ul style="list-style-type: none">○ large effect: $+LR \geq 10$, $AUROC \geq 0.80$○ moderate effect: $+LR 5-9$, $AUROC 0.7-0.79$○ small effect: $+LR 2-4$, $AUROC 0.6-0.69$ • To <i>remove</i> a field triage criterion: <i>no evidence</i> or $+LR 1.0 - 1.5$ or $AUROC 0.50-0.55$ across multiple studies (triage criteria were not removed based on a single study)
--

*LR = likelihood ratio. AUROC = area under the receiver operating characteristic curve.

ACCEPTED

Table 2. Summary of changes to the field triage guidelines.

Type of change:	Changes in 2021 field triage guidelines	Age range	2011 field triage guidelines
Format and structure	Two categories of triage criteria, based on risk of serious injury - high risk versus moderate risk (from top to bottom organization)	All ages	4 categories of triage criteria, classified as “steps”
	Within each risk category, the groups of criteria are listed from left to right to follow the flow of information to EMS		No alignment with flow of information to EMS
	Injury Patterns criteria are organized from head-to-toe to align with rapid field assessment		No specific order
	<i>Mental Status and Vital Signs</i>	All ages	Physiologic criteria (step 1)
New criteria	Motor GCS < 6 (unable to follow commands)	All ages	GCS ≤ 13
	Heart rate > SBP	≥ 10 years	None
	SBP < 70 mmHg + (2 x age in years)	0-9 years	None
	Respiratory distress or need for respiratory support	All ages	Respiratory rate < 20 in infant aged < 1 year; ventilator support
	Room air pulse oximetry < 90%	All ages	None
Relocated criteria	SBP < 110 mmHg for older adults	≥ 65 years	SBP < 110 might represent shock after age 65 years (Special Considerations section)
	<i>Injury Patterns</i>	All ages	Anatomic criteria (step 2)
New criterion	Active bleeding requiring a tourniquet or wound packing with continuous pressure	All ages	None
Clarified criteria	Skull deformity, suspected skull fracture	All ages	Open or depressed skull fracture
	Suspected spinal injury with new motor or sensory loss	All ages	Paralysis
	Chest wall instability, deformity or suspected flail chest	All ages	Chest wall instability or deformity (e.g., flail chest)
	Suspected pelvic fracture	All ages	Pelvic fractures
	Suspected fracture of two or more proximal long bones	All ages	Two or more proximal long-bone fractures
	<i>Mechanism of Injury criteria</i>	All ages	Mechanism criteria (step 3)
New criterion	Child (age 0-9 years) unrestrained or in unsecured child safety seat	0-9 years	None

Modified criteria	Rider separate from transport vehicle with significant impact (e.g., motorcycle, ATV, horse, etc.)	All ages	Motor cycle crash > 20 mph
	Fall from height > 10 feet (all ages)	All ages	Adults: > 20 feet (one story is equal to 10 feet) Children: > 10 feet or two to three times the height of the child
Modified criterion	Pedestrian/bicycle rider thrown, run over, or with significant impact		Auto vs. pedestrian/bicyclist thrown, run over, or with significant (> 20 mph) impact
	EMS Judgment	All ages	Special considerations criteria (step 4)
New criteria	Low level falls in young children (≤ 5 years) or older adults (≥ 65 years) with significant head impact	0-5 years, ≥ 65 years	Older adults – low impact mechanisms (e.g., ground level falls) might result in severe injury.
	Suspicion of child abuse	Any child, with focus on ≤ 5 years	None
	Special, high resource healthcare needs	All ages	None
Modified criteria	Anticoagulation use	All ages	Anticoagulants and bleeding disorders – patients with head injury are at high risk for rapid deterioration
Transport recommendations	Patients meeting any of the high risk criteria (Injury Patterns and Mental Status & Vital Signs) “should be preferentially transported to the highest level trauma center available within the geographic constraints of the regional trauma system”.		Patients meeting any of the Step one (physiologic) or Step two (anatomic) criteria “should be transported preferentially to the highest level of care within the defined trauma system”.
	Patients not meeting high risk criteria, but meeting any of the moderate risk criteria “should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest level trauma center)”.		Patients not meeting Step one or two criteria, but meeting Step three criteria “transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center”. Patients not meeting Steps one, two, or three, but meeting Step four criteria “transport to a trauma center or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.”

Table 3. Characteristics of trauma centers.

Level	Criteria
I	<ul style="list-style-type: none"> • Regional resource center expected to manage large numbers of seriously injured patients • Admit $\geq 1,200$ trauma patients or have ≥ 240 admissions with ISS ≥ 16 per year • Attending trauma surgeon participates in major resuscitations in ED, present at operative procedures, and actively involved in critical care of all seriously injured patients (24-hour in-house availability) • Immediate availability of board-certified emergency physicians, general surgeons, anesthesiologists, neurosurgeons, and orthopedic surgeons • Maintain a surgically-directed critical care service • Participate in resident training • Be a leader in education and outreach activities • Conduct trauma research
II	<ul style="list-style-type: none"> • Regional resource center expected to manage large numbers of seriously injured patients • Same standards for provision of clinical care without the volume requirements • No requirement for resident training, education, outreach, trauma research, or surgically directed critical care service
III	<ul style="list-style-type: none"> • Capability to initially manage the majority of injured patients • Transfer agreements with Level I or II trauma centers for seriously injured patients • Continuous general surgical coverage
IV	<ul style="list-style-type: none"> • Often serve rural regions and supplement care within a larger trauma system • Initial evaluation and assessment of injured patients, with expected transfer of many patients to higher-level trauma centers • Transfer agreements with higher level trauma centers • 24-hour emergency coverage by a physician or midlevel provider • Frequently lack continuous surgical coverage

*From Resources for the Optimal Care of the Injured Patient, Committee on Trauma, American College of Surgeons, 2014. There is variation in state-to-state definitions and designations of trauma centers. There are separate processes and criteria for pediatric trauma centers.

CHAPTER 64J-1
EMERGENCY MEDICAL SERVICES

64J-1.001	Definitions
64J-1.002	Basic Life Support Service License – Ground
64J-1.003	Advanced Life Support Service License – Ground
64J-1.004	Medical Direction
64J-1.005	Air Ambulances
64J-1.006	Neonatal Transports
64J-1.007	Vehicle Permits
64J-1.008	Emergency Medical Technician
64J-1.009	Paramedic
64J-1.010	Voluntary Inactive Certification
64J-1.011	Involuntary Inactive Certification
64J-1.012	Examinations
64J-1.013	Drivers
64J-1.014	Records and Reports
64J-1.015	Emergency Medical Services Grants Procedures
64J-1.017	Convicted Felons Applying for EMT or Paramedic Certification or Recertification
64J-1.018	Inspections
64J-1.019	Emergency Treatment of Insect Stings
64J-1.020	Training Programs
64J-1.0201	EMS Instructor Qualifications
64J-1.0202	EMS Recertification Training Programs
64J-1.021	Security of Medications
64J-1.022	Cardiopulmonary and Advanced Cardiac Life Support Courses
64J-1.023	Guidelines for Automated External Defibrillators (AED) in State Owned or Leased Facilities

64J-1.001 Definitions.

In addition to the definitions provided in sections 395.4001, 401.107, and 401.23, F.S., the following definitions apply to these rules:

(1) “Application” – means a completed application form, as specified by the department, together with all documentation required by these rules and the required fee.

(2) “Certificate of Public Convenience and Necessity” (COPCN) means a written statement or document, issued by the governing board of a county, granting permission for an applicant or licensee to provide services authorized by a license issued under chapter 401, part III, F.S., for the benefit of the population of that county or the benefit of the population of some geographic area of that county. No COPCN from one county may interfere with the prerogatives asserted by another county regarding COPCN.

(3) “Certification Examination” – means an examination developed or adopted by the department to be used for the purpose of testing the ability to practice as a Florida licensed emergency medical technician or paramedic.

(4) “Controlled substances” – means those drugs listed in chapter 893, F.S., and the “designer drugs” referred to in section 893.035, F.S.

(5) “Convicted or conviction” – means a determination of guilt of a felony in any court of competent jurisdiction which is the result of trial of the entry of a plea of guilty or a plea of nolo contendere, regardless of whether adjudication is withheld.

(6) “Department” – means the Florida Department of Health (DOH), Bureau of Emergency Medical Services, 4052 Bald Cypress Way, Bin A22, Tallahassee, Florida 32399-1738.

(7) “Electronic Patient Care Record” means an incident level electronic record in accordance with the format specified in the Emergency Medical Services Tracking and Reporting System (EMSTARS) Data Dictionary Version 1.4.1, or in accordance with EMSTARS Data Standards, Version 3 (see, rule 64J-1.014, F.A.C.).

(8) “Emergency Medical Services Provider” or “EMS provider” – means any entity licensed in the state of Florida to provide air, or ground ambulance, whether basic life support (BLS) provider or an advanced life support (ALS) provider, and whether a non-transportation or a transportation service.

(9) “Glasgow Coma Scale Score” – as defined in rule 64J-2.001, F.A.C.

(10) “Neonatal Ambulance” – means an ALS vehicle permitted solely for Neonatal Transport.

(11) “Neonatal Transport” – means critical care interfacility transport of any neonate from a hospital licensed under chapter 395, F.S., to a hospital licensed under chapter 395, F.S., to deliver Level II or Level III neonatal intensive care services as defined in rule 59C-1.042, F.A.C., effective March 15, 2017, which is incorporated by reference and located at <https://www.flrules.org/Gateway/reference.asp?No=Ref-10235>.

(12) “Neonate” – means an infant less than 28 days of life or 5 kg in weight.

(13) “Out-of-state or military trained” means an applicant for certification as an EMT or paramedic in Florida who received his or her initial training either in the military or in a program located in another state.

(14) “Patient Care Record” – means an electronic or written record used by each EMS provider to document patient care, treatment and transport activities that at a minimum includes the information required under rules 64J-1.003(5)(a), (b), and 64J-1.014, F.A.C.

(15) “Skills Practice” means the practice of psychomotor skills and techniques by a student in the skill laboratory and clinical environment until the EMT student is proficient in basic life support techniques and a paramedic student is proficient in advanced life support techniques. The skills laboratory shall precede the clinical environment for each skill and technique.

(16) “Subject matter expert” means someone with specialized knowledge, education or experience in a particular area or topic, for example, a labor and delivery nurse teaching the childbirth section of a program or an attorney teaching the medical legal portion of a program.

(17) “Trained emergency medical technician or paramedic” means an emergency medical technician or paramedic who has successfully completed either of the United States Department of Transportation emergency medical technician or paramedic training curricula described at subparagraph 64J-1.008(1)(a)2., F.A.C. (for EMTs or subparagraph 64J-1.009(1)(a)2., F.A.C. (for paramedics).

(18) “Training Program” – means an educational institution having one designated program director, one designated medical director, and single budget entity; for the purposes of providing EMT or paramedic education programs, as approved by the department.

(19) “Training Program Medical Records” – means the medical records of the student.

(20) “Training Program Records” must include records of student participation and attendance in class, skills laboratory, hospital clinical, and field training; the hospital and field training records must include patient care reports completed by the student and preceptor evaluations of the student. Student records may be kept by hard copy or electronically and must be maintained for a minimum of five years.

(21) “Transfer or transport” – means air, land or water vehicle transportation, by vehicles not exempted under section 401.33, F.S., of sick or injured persons requiring or likely to require medical attention during such transportation.

(22) “Trauma” – as defined in rule 64J-2.001, F.A.C.

(23) “Trauma Alert Patient” – as defined in rule 64J-2.001, F.A.C.

(24) “Trauma Patient” – as defined in rule 64J-2.001, F.A.C.

(25) “Trauma Transport Protocols” (TTPs) – as defined in rule 64J-2.001, F.A.C.

Rulemaking Authority 395.405, 401.121, 401.35 FS. Law Implemented 381.0011, 395.4001, 395.4015, 395.402, 395.4025, 395.403, 395.404, 395.4045, 401.23, 401.25, 401.35, 401.435 FS. History—New 4-26-84, Amended 3-11-85, Formerly 10D-66.485, Amended 11-2-86, 4-12-88, 8-3-88, 8-7-89, 6-6-90, 12-10-92, 11-30-93, 10-2-94, 1-26-97, Formerly 10D-66.0485, Amended 8-4-98, 7-14-99, 2-20-00, 11-3-02, 6-9-05, 10-24-05, 4-22-07, Formerly 64E-2.001, Amended 1-12-09, 11-5-09, 2-16-10, 5-27-10, 1-28-19.

64J-1.002 Basic Life Support Service License - Ground.

(1) To obtain a license or renewal each applicant shall submit an application to the department on DH Form 631, 04/09, Ground Ambulance Service Provider License Application. This form is incorporated by reference and is available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.fl-ems.com>.

(2) The department shall issue a license to any applicant who:

(a) Furnished evidence of insurance coverage for claims arising out of injury or death of persons and damage to the property of others resulting from any cause for which the owner of said business or service would be liable. Each motor vehicle shall be insured for the sum of at least \$100,000.00 for injuries to or death of any one person arising out of any one accident; the sum of at least

\$300,000.00 for injuries to or death of more than one person in any one accident; and, for the sum of at least \$50,000.00 for damage to property arising from any one accident. Government operated service vehicles shall be insured for the sum of at least \$100,000.00 for any claim or judgment and the sum of \$200,000.00 total for all claims or judgments arising out of the same occurrence. Every insurance policy or contract for such insurance shall provide for the payment and satisfaction of any financial judgment entered against the operator and present insured, or any person driving the insured vehicle. All such insurance policies shall provide for 30-day cancellation notice to the department.

(b) Obtained a Certificate of Public Convenience and Necessity (COPCN).

(3) Each BLS provider shall ensure and document in its employee records that each of its EMTs and paramedics hold a current certification from the department.

(4) Every provider, except those exempted in paragraph 64J-1.006(1)(a), F.A.C., shall ensure that each EMS vehicle permitted by the department, when available for call, shall be equipped and maintained as approved by the medical director of the service in the vehicle minimum equipment list. The vehicle minimum equipment list shall include, at a minimum, one each of the items listed in Table I and shall be provided to the department upon request.

TABLE I GROUND VEHICLE BLS MEDICAL EQUIPMENT AND SUPPLIES	
ITEM	QTY.
1. Bandaging, dressing, and taping supplies:	
a. Adhesive, silk, or plastic tape – assorted sizes.	
b. Sterile 4 × 4 inch gauze pads.	
c. Triangular bandages.	
d. Roller gauze.	
e. ABD (minimum 5 × 9 inch) pads.	
2. Bandage shears.	
3. Patient restraints, wrist and ankle.	
4. Blood pressure cuffs: infant, pediatric, and adult.	
5. Stethoscopes: pediatric and adult.	
6. Blankets.	
7. Sheets (not required for non-transport vehicle.)	
8. Pillows with waterproof covers and pillow cases or disposable single use pillows (not required for non-transport vehicle).	
9. Disposable blanket or patient rain cover.	
10. Long spine board and three straps or equivalent.	
11. Short spine board and two straps or equivalent.	
12. Adult and Pediatric cervical immobilization devices (CID), approved by the medical director of the service.	
13. Padding for lateral lower spine immobilization of pediatric patients or equivalent.	
14. Portable oxygen tanks, “D” or “E” cylinders, with one regulator and gauge. Each tank must have a minimum pressure of 1000 psi, and liter flow at 15 liters per minute.	
15. Transparent oxygen masks; adult, child and infant sizes, with tubing.	
16. Sets of pediatric and adult nasal cannulae with tubing.	
17. Hand operated bag-valve mask resuscitators, adult and pediatric accumulator, including adult, child and infant transparent masks capable of use with supplemental oxygen.	
18. Portable suction, electric or gas powered, with wide bore tubing and tips which meet the minimum standards as published by the GSA in KKK-A 1822E specifications.	
19. Extremity immobilization devices. Pediatric and Adult.	
20. Lower extremity traction splint. Pediatric and Adult.	
21. Sterile obstetrical kit to include, at minimum, bulb syringe, sterile scissors or scalpel, and cord	

clamps or cord-ties.	
22. Burn sheets.	
23. Flashlight with batteries.	
24. Occlusive dressings.	
25. Oropharyngeal airways. Pediatric and Adult.	
26. Installed oxygen with regulator gauge and wrench, minimum “M” size cylinder (minimum 500 PSI) with oxygen flowmeter to include a 15lpm setting, (not required for non-transport vehicles.) (Other installed oxygen delivery systems, such as liquid oxygen, as allowed by medical director.)	
27. Gloves – suitable to provide barrier protection for biohazards.	Sufficient quantity, sizes, and material for all crew members.
28. Face Masks – both surgical and respiratory protective.	Sufficient quantity, sizes and material for all crew members.
29. Rigid cervical collars as approved in writing by the medical director and available for review by the department.	
30. Nasopharyngeal airways, pediatric and adult.	
31. Approved biohazardous waste plastic bag or impervious container per Chapter 64E-16, F.A.C.	
32. Safety goggles or equivalent meeting A.N.S.I. Z87.1 standard.	One per crew member.
33. Bulb syringe separate from obstetrical kit.	
34. Thermal absorbent reflective blanket.	
35. Multitrauma dressings.	
36. Pediatric length based measurement device for equipment selection and drug dosage.	

Rulemaking Authority 381.0011, 395.405, 401.121, 401.25, 401.35 FS. Law Implemented 381.0011, 395.401, 395.4015, 395.402, 395.4025, 395.403, 395.404, 395.4045, 401.23, 401.24, 401.25, 401.252, 401.26, 401.27, 401.281, 401.30, 401.31, 401.321, 401.34, 401.35, 401.41, 401.411, 401.414, 401.421 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.49, Amended 4-12-88, 8-3-88, 12-10-92, 10-2-94, 1-26-97, Formerly 10D-66.049, Amended 8-4-98, 1-3-99, 11-19-01, 12-18-06, Formerly 64E-2.002, Amended 9-2-09.

64J-1.003 Advanced Life Support Service License – Ground.

(1) To obtain a license or renewal each applicant for an ALS license shall submit to the department DH Form 631, 04/09, Ground Ambulance Service Provider License Application, which is incorporated by reference and available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.fl-ems.com>.

(2) Each ALS provider shall ensure and document in its employee records that each of its EMTs or paramedics hold a current certification from the department.

(3) Each ALS provider shall ensure that a current copy of all standing orders authorized by the medical director shall be available in each of the provider’s vehicles; for review by the department; to each of the provider’s paramedics; and supplied to each physician designated by the medical director to receive a copy.

(4) Each ALS permitted vehicle when available for call, shall be equipped and maintained as approved by the medical director of the service in the vehicle minimum equipment list. The vehicle minimum equipment list shall include, at a minimum, one each of the items listed in Tables I and II, and shall be provided to the department upon request, except those exempted in paragraph 64J-1.006(1)(a), F.A.C. Substitutions are allowed with signed approval from the medical director and written notification to the department.

(5) The medical director may authorize an EMT instead of the paramedic or licensed physician to attend a BLS patient on an ALS permitted ambulance under the following conditions:

(a) The medical director determines what type of BLS patient may be attended by an EMT and develops standing orders for use by the EMT when attending the type of BLS patients identified. The onscene paramedic shall conduct the primary patient assessment to determine if the patient’s condition meets the criteria in the standing orders for BLS care. This survey shall be

documented on the patient care record and shall identify the paramedic who conducted the survey.

(b) The patient care record for any patient care or transport shall clearly state whenever an EMT attends the patient.

(c) The provider shall maintain and have accessible for review by the department documentation of compliance with the above requirements.

(6) ALS Nontransport:

(a) Unless otherwise specifically exempted, each advanced life support nontransport vehicle, when personnel are providing advanced life support treatment or care, must be staffed with a certified paramedic or licensed physician.

(b) A permitted advanced life support nontransport vehicle may operate as a basic life support emergency vehicle when the vehicle is not staffed by a certified paramedic or licensed physician and only in lieu of placing the unit completely out of service. When such advanced life support nontransport vehicle is operating under this section, the vehicle must be staffed with at least one person who must be an emergency medical technician, and shall carry portable oxygen, airway adjuncts, supplies and equipment as determined by the medical director of the licensed service.

1. Each service provider having permitted vehicles operating pursuant to this section shall log changes in vehicle status.

2. Vehicles operating pursuant to this section shall not display markings indicating advanced life support (other than permit sticker) when responding as basic life support emergency vehicle.

(c) Unless otherwise specifically exempted, the following advanced life support non-transport vehicles when personnel are providing emergency treatment or care, must be staffed, at a minimum, with a certified paramedic or licensed physician:

1. Advanced life support vehicles that respond to requests to provide emergency treatment or care during special events or activities or in locations where access by permitted transport vehicles is restricted or limited.

2. Advanced life support vehicles that respond to requests to provide emergency treatment or care in vehicles that cannot accommodate two persons, due to design and construction of the vehicle.

3. Advanced life support vehicles under 13,000 pounds gross vehicle weight that respond to requests to provide emergency treatment or care and are met at the scene by other concurrently responding permitted vehicles. Examples include vehicles that respond to requests to provide emergency treatment or care within a gated or restricted community that is established pursuant to chapter 190, F.S.; vehicles that respond to requests to provide emergency treatment or care which are owned or operated by counties or municipalities established pursuant to chapter 125 or 166, F.S.; or vehicles that respond to requests to provide emergency treatment and care which are owned or operated by advanced life support services licensees. Vehicles staffed pursuant to this section shall operate in accordance with a certificate of public convenience and necessity.

4. Advanced life support non-transport vehicle over 13,000 pounds gross vehicle weight that respond to requests to provide emergency treatment or care. Vehicles staffed pursuant to this section shall operate in accordance with a certificate of public convenience and necessity.

(d) Vehicles staffed pursuant to paragraph 64J-1.003(6)(c), F.A.C., may respond to requests for medical assistance in accordance with section 252.40, F.S.

(e) Nothing herein shall prohibit an on duty certified EMT or paramedic who arrives on scene from initiating emergency care and treatment at the level of their certification prior to the arrival of other responding vehicles.

(7) Advanced life support non-transport vehicles, staffed pursuant to paragraph 64J-1.003(6)(c), F.A.C., are not required to carry the equipment and supplies identified in Table I or II. Such vehicles when personnel are providing advanced life support treatment or care, or when responding to calls in an ALS capacity shall at a minimum carry portable oxygen, defibrillation equipment, airway management supplies and equipment, and medications and fluids authorized by the medical director of the licensed service.

TABLE II
GROUND VEHICLE
ALS EQUIPMENT AND MEDICATIONS

MEDICATION	WT/VOL
1. Atropine Sulfate.	
2. Dextrose, 50 percent.	
3. Epinephrine HCL.	1:1,000
4. Epinephrine HCL.	1:10,000
5. Ventricular dysrhythmic.	

6. Benzodiazepine sedative/anticonvulsant.	
7. Naloxone (Narcan).	
8. Nitroglycerin.	0.4 mg.
9. Inhalant beta adrenergic agent with nebulizer apparatus, as approved by the medical director.	
I.V. SOLUTIONS	
1. Lactated Ringers or Normal Saline.	
EQUIPMENT	
(a) Laryngoscope handle with batteries.	
(b) Laryngoscope blades; adult, child and infant sizes.	
(c) Pediatric I.V. arm board or splint appropriate for I.V. stabilization.	
(d) Disposable endotracheal tubes; adult, child and infant sizes. Those below 5.5 mm shall be uncuffed. 2.5 mm – 5.0 mm uncuffed; 5.5 mm – 7.0 mm; 7.5 mm – 9.0 mm).	
(e) Endotracheal tube stylets pediatric and adult.	
(f) Magill forceps, pediatric and adult sizes.	
(g) Device for intratracheal meconium suctioning in newborns.	
(h) Tourniquets.	
(i) I.V. cannulae 14 thru 24 gauge.	
(j) Micro drip sets.	
(k) Macro drip sets.	
(l) I.V. pressure infuser.	
(m) Needles 18 thru 25 gauge.	
(n) Intraosseous needles and three way stop cocks.	
(o) Syringes, from 1 ml. to 20 ml.	
(p) D.C. battery powered portable monitor with defibrillation and pacing capabilities, ECG printout and spare battery. The unit shall be capable of delivering pediatric defibrillation (energy below 25 watts/sec and appropriate equipment).	
(q) Monitoring electrodes for adults and pediatrics.	
(r) Pacing electrodes. Pediatric and Adult.	
(s) Glucometer.	
(t) Approved sharps container per chapter 64E-16, F.A.C.	
(u) Flexible suction catheters.	
(v) Electronic waveform capnography capable of real-time monitoring and printing record of the intubated patient (effective 01/01/2008).	

Rulemaking Authority 381.0011, 395.405, 401.121, 401.265, 401.35 FS. Law Implemented 381.0011, 381.025, 395.401, 395.4015, 395.402, 395.4025, 395.403, 395.404, 395.4045, 395.405, 401.23, 401.24, 401.25, 401.26, 401.265, 401.27, 401.281, 401.30, 401.31, 401.321, 401.34, 401.35, 401.41, 401.411, 401.414, 401.421 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.50, Amended 4-12-88, 8-3-88, 8-7-89, 12-10-92, 11-30-93, 1-26-97, Formerly 10D-66.050, Amended 8-4-98, 1-3-99, 7-14-99, 2-20-00, 9-3-00, 4-15-01, 11-19-01, 6-3-02, 12-18-06, Formerly 64E-2.003, Amended 9-2-09.

64J-1.004 Medical Direction.

(1) Each ALS, BLS or air ambulance provider shall maintain on file for inspection and copying by the department its current contract for a medical director by which it procures the services of physician qualified pursuant to this section to be its medical director.

(2) Qualifications:

(a) A medical director shall be a Florida licensed M.D. or D.O.

(b) In addition to all other provisions applicable to medical directors in this rule, an air ambulance medical director shall be knowledgeable of the aeromedical requirements of patients and shall evaluate each patient in person or by written protocol prior to each interfacility transfer flight for the purpose of determining that the aircraft, flight and medical crew, and equipment meet the

patient's needs.

(3) The duties and responsibilities of the licensed EMS provider medical director include:

(a) Develop medically correct standing orders or protocols which permit specified ALS and BLS procedures when communication cannot be established with a supervising physician or when any delay in patient care would potentially threaten the life or health of the patient. The medical director shall issue standing orders and protocols to the provider to ensure that the provider transports each of its patients to facilities that offer a type and level of care appropriate to the patient's medical condition if available within the service region. The medical director or his appointee shall provide continuous 24-hour-per-day, 7-day-per-week medical direction which shall include in addition to the development of protocols and standing orders, direction to personnel of the provider as to availability of medical direction "off-line" service to resolve problems, system conflicts, and provide services in an emergency as that term is defined by section 252.34(3), F.S.

(b) Develop and implement a patient care quality assurance system to assess the medical performance of paramedics and EMTs. The medical director shall audit the performance of system personnel by use of a quality assurance program to include but not be limited to a prompt review of patient care records, direct observation, and comparison of performance standards for drugs, equipment, system protocols and procedures. The medical director shall be responsible for participating in quality assurance programs developed by the department.

(c) With the exception of BLS medical directors, each ALS or air ambulance service medical director shall possess proof of current registration as a medical director, either individually or through a hospital, with the U.S. Department of Justice, Drug Enforcement Administration (DEA), to provide controlled substances to an EMS provider. DEA registration shall include each address at which controlled substances are stored. Proof of such registration shall be maintained on file with each ALS or air ambulance provider and shall be readily available for inspection.

(d) Ensure and certify that security procedures of the EMS provider for medications, fluids and controlled substances are in compliance with chapters 499 and 893, F.S., and chapter 61N-1, F.A.C.

(e) Create, authorize and ensure adherence to, detailed written operating procedures regarding all aspects of the handling of medications, fluids and controlled substances by the provider.

(f) Notify the department in writing of each substitution by the EMS provider of equipment or medication.

(g) Assume direct responsibility for: the use of an automatic or semi-automatic defibrillator; the use of a glucometer; the administration of aspirin; the use of any medicated auto injector; the performance of airway patency techniques including airway adjuncts, not to include endotracheal intubation; and on routine interfacility transports, the monitoring and maintenance of non-medicated I.V.s by an EMT. The medical director shall ensure that the EMT is trained to perform these procedures; shall establish written protocols for the performance of these procedures; and shall provide written evidence to the department documenting compliance with provisions of this paragraph.

(h) An EMT employed by a licensed ALS provider is authorized to start a non-medicated IV under the following conditions:

1. A non-medicated IV is initiated only in accordance with department approved protocols of the licensed ALS provider's medical director. These protocols must include a requirement that the non-medicated IV be initiated in the presence of a Florida certified paramedic (of the same licensed provider) who directs the EMT to initiate the IV.

2. If the licensed ALS provider elects to utilize EMTs in this capacity, the licensed EMS provider shall ensure that the medical director provides IV Therapy training deemed sufficient by the medical director. The licensed EMS provider shall document successful completion of such training in each EMTs training file and make documentation available to the department upon request.

(i) Ensure that all EMTs and paramedics are trained in the use of the trauma scorecard methodologies as provided in Rule 64J-2.004, F.A.C., for adult trauma patients and Rule 64J-2.005, F.A.C., for pediatric trauma patients.

(j) Develop and revise when necessary TTPs for submission to the department for approval.

(k) Participate in direct contact time with EMS field level providers for a minimum of 10 hours per year. Notwithstanding the number of EMS providers served by the medical director, direct contact time shall be a minimum of 10 hours per year per medical director, not per provider.

(4) Medical directors of a training program shall:

(a) Be responsible for the instruction of the Department of Transportation (DOT) approved training programs for EMTs and paramedics that are adopted by subparagraphs 64J-1.008(1)(a)1. and 64J-1.009(1)(a)1., F.A.C., respectively.

(b) Have substantial knowledge of the qualifications, training, protocols, and quality assurance programs for the training facility.

(c) Maintain current instructor level training in Advanced Cardiac Life Support (ACLS), or equivalent, or Advanced Trauma Life Support (ATLS), maintain provider or instructor level training in International Trauma Life Support (ITLS), Prehospital Trauma Life Support (PHTLS), or Advanced Trauma Life Support (ATLS); and Advanced Pediatric Life Support (APLS), Pediatric Advanced Life Support (PALS), Pediatric Education for Prehospital Professionals (PEPP), or Emergency Pediatric Care (EPC).

(d) Act as a liaison between training centers, local EMS providers and hospitals.

(e) Participate in state and local quality assurance and data collections programs.

(f) Be available 4 hours per month for classroom teaching or review of student performance, and participate in direct contact time with EMS field level providers for a minimum of 10 hours per year. Notwithstanding the number of training centers or EMS providers served by the medical director, direct contact time shall be a minimum of 10 hours per year per medical director, not per training center.

(g) Provide written documentation to the department that confirms the medical director has reviewed and approved all policies, procedures, and methods used for the orientation of instructors and preceptors.

(h) Provide written documentation to the department that confirms the medical director has reviewed and approved all student testing procedures, evaluators and assessment tools used for each comprehensive final written (cognitive) and practical examination (psychomotor skills) for EMT and paramedic students. The medical director shall review each student's performance on the comprehensive final written (cognitive) and practical examination (psychomotor skills) before certifying a student has successfully completed all phases of the educational program and EMTs are proficient in BLS techniques and paramedics are proficient in ALS techniques.

(5) The medical director of a licensed EMS provider may authorize paramedics under his or her supervision to perform immunizations pursuant to a written agreement with a County Health Department in the county in which the immunizations are to be performed. Should the medical director elect to utilize paramedics in this capacity, he or she shall verify on DH Form 1256, Certification of Training, 06/17, incorporated by reference and available from the department at <http://www.flrules.org/Gateway/reference.asp?No=Ref-09950>, that each paramedic authorized to administer immunizations has received sufficient training and experience to administer immunizations, as determined by the medical director.

Rulemaking Authority 395.405, 401.265, 401.272, 401.35 FS. Law Implemented 401.23, 401.24, 401.25, 401.26, 401.265, 401.27, 401.2701, 401.272, 401.281, 401.2915, 401.30, 401.34, 401.35, 401.411, 893.02(23), 893.13(9) FS. History—New 8-7-89, Amended 6-6-90, 12-10-92, 1-26-97, Formerly 10D-66.0505, Amended 8-4-98, 1-3-99, 2-20-00, 4-15-01, 11-19-01, 10-24-05, 12-18-06, Formerly 64E-2.004, Amended 5-27-10, 1-28-19.

64J-1.005 Air Ambulances.

(1) Each applicant for an air ambulance license shall pay the required fee as specified in section 401.34(1)(j), F.S., and submit an application to the department on DH Form 1575, 04/09, Air Ambulance Service License Application which is incorporated by reference and available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.fl-ems.com>. The air ambulance license shall automatically expire 2 years from the date of issuance.

(2) Each air ambulance applicant or provider, pursuant to subsection 64J-1.014(1), F.A.C., shall maintain on site and make available to the department at license application, license application renewal, change of insurance carrier or policy renewal, and documentation of the following minimum insurance coverage:

(a) Each aircraft shall be insured for the sum of at least \$100,000.00 for injuries to or death of any one person arising out of any one accident and the sum of at least \$300,000.00 for injuries to or death of more than one person in any one accident. Any such policy on a leased aircraft must identify both the owner and the lessee of the aircraft.

(b) In lieu of the insurance required in paragraph (2)(a), the provider or applicant may furnish a certificate of self-insurance establishing that the provider or applicant has a self-insurance plan to provide coverage identical to what is required in paragraph (2)(a), and that the plan has been approved by the Department of Insurance.

(3) Each licensed air ambulance shall have emergency protocols which address at least, emergency procedures when the aircraft is overdue, when radio communications cannot be established, or when aircraft location cannot be verified. Each licensed rotary wing air ambulance shall document at least every 15 minutes of flight while en route to and from the patient's location.

(4) Each provider shall maintain in each paramedic's employment file documentation of successful completion of an initial air crew member (ACM) education program that was conducted in accordance with the 1988 United States (U.S.) Department of Transportation (DOT) Air Medical Crew-Advanced National Standard Curriculum (NSC), which is incorporated by reference and is

available for purchase from AAMS, 526 King Street, Suite 415, Alexandria, VA 22314, (703)836-8732. Each provider shall ensure and shall document in its employee records that each EMT and paramedic which it employs holds a current certification from the department.

(5) Each air ambulance provider shall establish a safety committee. The committee shall:

(a) Consist of a membership to include: one pilot, one flight medical crew member, the provider’s medical director, one hospital administrator if the provider is a hospital based program, and a representative of a quality assurance division if one exists;

(b) Develop safety procedures for the provider;

(c) Meet at least quarterly to review safety policies, procedures, unusual occurrences, safety issues, and audit compliance with safety policies and procedures:

(d) Communicate the results of the safety audit to all program personnel; and,

(e) Record minutes of the meeting and retain them on file for 2 years.

(6) Each prehospital air ambulance provider shall staff the aircraft with a minimum of one person who shall be a paramedic who meets the criteria in subsection 64J-1.005(4), F.A.C.

(7) Every air ambulance maintained by an air ambulance provider shall meet the structural, equipment and supply requirements listed in Table III.

(8) Each prehospital rotary wing air ambulance when available for call shall meet the structural requirements listed in Table III, and shall be equipped as approved by the medical director of the service in the aircraft minimum equipment list. The aircraft minimum equipment list shall include, at a minimum, one each of the items listed in Table IV and shall be provided to the department upon request.

TABLE III AIR AMBULANCE Structural, Equipment and Supply Requirements	
ITEM	
Aircraft Requirements	
1.	Entrance large enough to allow loading of a patient.
2.	Interior large enough for two medical crew members.
3.	Cabin illumination of 40 foot-candles at patient level.
4.	FAA approved stretcher system with 2 straps.
5.	Isolated aircraft cockpit to protect pilot from in-flight interference.
6.	Each aircraft shall be equipped with FAA approved communication equipment that operates on frequencies which allow the flight and medical crew to communicate with ground and landing zone medical support exclusive of the air traffic control system.
7.	No smoking sign.
8.	External search light with a minimum of 400,000 candle power illumination at 200 feet separate from the aircraft landing lights, movable 90 degrees longitudinally, 180 degrees laterally and capable of being controlled from inside the aircraft (Helicopter only).
Medical Equipment Requirements	
1.	Oxygen sufficient for duration of flight.
2.	Oxygen administration equipment.
3.	Oropharyngeal airways. Pediatric and adult.
4.	Hand operated bag-valve mask resuscitators, adult and pediatric accumulator, including adult, child and infant transparent masks capable of use with supplemental oxygen.
5.	Equipment suitable to determine blood pressure of the adult and pediatric patient during flight.
6.	Approved sharps container per Chapter 64E-16, F.A.C.
7.	Approved biohazardous waste plastic bag or impervious container per Chapter 64E-16, F.A.C.
8.	Portable suction unit with wide bore tubing and tips, electric or gas powered, which meets the minimum standards as published by the General Services Administration (GSA) in KKK-A-1822C specifications.
9.	Equipment suitable to determine blood pressure of the adult and pediatric patient during the flight.

TABLE IV
Prehospital Rotary Wing Air Ambulances

ITEM
Equipment
1. Laryngoscope handle with batteries.
2. Laryngoscope blades; adult, child and infant size.
3. Pediatric I.V. arm board or splint appropriate for I.V. stabilization.
4. Disposable endotracheal tubes; adult, child and infant sizes. Those below 5.5 mm shall be uncuffed. 2.5 mm-5.0 mm uncuffed; 5.5 mm-7.0 mm; 7.5 mm-9.0 mm
5. Endotracheal tube stylets pediatric and adult.
6. Magill forceps, pediatric and adult sizes.
7. Device for intratracheal meconium suctioning in newborns.
8. Tourniquets.
9. I.V. cannulae between 14 and 24 gauge.
10. Macro drip sets.
11. Micro drip sets.
12. I.V. pressure infuser.
13. Needles between 18 and 25 gauge.
14. Intraosseous needles and three way stop cocks.
15. Assorted syringes.
16. D.C. battery powered portable monitor with defibrillation and pacing capabilities, ECG printout and spare battery. The unit shall be capable of delivering pediatric defibrillation (energy below 25 watts/sec and appropriate equipment).
17. Monitoring electrodes for adults and pediatrics.
18. Glucometer.
19. Pediatric length based measurement device for equipment selection and drug dosage.
20. Flexible suction catheters assorted sizes.
21. Multitrauma dressings.
22. ABD pads.
23. Sterile gauze pads.
24. Adhesive tape assorted sizes.
25. Patient restraints, wrist and ankle.
26. Soft roller bandages.
27. Bandage shears.
28. Sterile obstetrical kit to include, at minimum, bulb syringe, sterile scissors or scalpel, and cord clamps or cord ties.
29. Burn sheets.
30. Flashlight with batteries.
31. Vaseline gauze.
32. Gloves – latex or other suitable material. For all crew members.
33. Face masks for all crew members.
34. Naso and oropharyngeal airways assorted sizes.
35. Safety goggles or equivalent meeting A.N.S.I. Z87.1 standard.
36. Bulb syringe separate from obstetrical kit.
37. Thermal, absorbent, reflective blanket.
38. Standing orders.
39. Electronic waveform capnography capable of real-time monitoring and printing record of the intubated patient (effective 01/01/2008).

MEDICATION	WT./VOL.
1. Atropine sulfate.	
2. Dextrose 50 percent.	
3. Epinephrine HCL.	1:1,000
4. Epinephrine HCL.	1:10,000
5. Ventricular dysrhythmic.	
6. Sodium Bicarbonate.	50 mEq. or 44.6. mEq.
7. Naloxone (Narcan).	1 mg./ml. 2 mg. amp.
8. Nitroglycerin.	0.4 mg.
9. Benzodiazepine sedative/anticonvulsant.	
10. Inhalant beta adrenergic agent of choice with nebulizer apparatus, as approved by the medical director.	

I.V. Solutions
Lactated Ringers or Normal Saline.

Rulemaking Authority 381.0011, 401.25, 401.251, 401.265, 401.35 FS. Law Implemented 381.0011, 395.405, 401.23, 401.24, 401.25, 401.251, 401.252, 401.26, 401.27, 401.30, 401.31, 401.321, 401.34, 401.35, 401.41, 401.411, 401.414, 401.421 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.51, Amended 4-12-88, 8-3-88, 8-7-89, 12-10-92, 11-30-93, 10-2-94, 1-26-97, Formerly 10D-66.051, Amended 1-3-99, 9-3-00, 5-15-01, 12-18-06, Formerly 64E-2.005, Amended 9-2-09.

64J-1.006 Neonatal Transports.

(1) A Neonatal Ambulance shall meet the requirements listed in Table V, paragraphs 64J-1.006(1)(c) and (d), and subsections 64J-1.006(2) and (3), F.A.C., and shall be exempt from meeting the equipment and medical supply requirements listed in rule 64J-1.002, F.A.C., Table I and in rule 64J-1.003, F.A.C., Table II.

(2) For any Neonatal transport, the Medical Director and the receiving neonatologist shall confirm that the level of care, staffing, and equipment is commensurate to the needs of the Neonate being transported.

(3) The Neonatal Ambulance shall have exterior wording or marking which identifies that the ambulance is only for Neonatal Transport. The wording shall be such that the public cannot mistake a neonatal vehicle as an ambulance for general patient care.

(4) Any EMS provider operating a Neonatal Ambulance shall have a Medical Director for all Neonatal Transports who meets the requirements of paragraphs 64J-1.004(1)-(4)(a)-(f), F.A.C., except as follows:

(a) The Medical Director shall be board certified and active in Neonatal-Perinatal Medicine, and shall demonstrate and have available for review by the department documentation of active participation on a national, regional or statewide physician group involved in Neonatal Transport;

(b) The Medical Director is not required to have prehospital care experience;

(c) All references to “patients” and “BLS and ALS procedures” shall be understood as referring to “neonates” and “neonatal advanced life support procedures” respectively;

(d) All references to “paramedics” and “EMTs” shall be understood as referring to persons staffing the Neonatal Transport as referenced in subsection (5), below; and

(e) The Medical Director shall participate in direct contact time with the transport staff while transporting a neonate for a minimum of 10 hours per year.

TABLE V (Reference Section 64J-1.006, F.A.C.) Neonatal Transports		
ITEM		QTY.
1. Direct two-way communications with the designated neonatologist or attending physician and or receiving ICU.		
2. A standby or backup power source other than the one contained in the isolette.		One

3. A source of electrical power sufficient to operate the isolette and ancillary electrically powered equipment.		One
4. A transport incubator with portable power supply, portable oxygen tanks or liquid oxygen, and a source of compressed air, including appropriate valves, meters, and fittings.		One
5. Portable heart rate monitor with visual or audible display and alarm system.		One per patient
6. Portable blood pressure monitor with assortment of cuff sizes suitable for infants.		One each
7. Battery powered mechanical I.V. pumps capable of delivering as low as 1 cc. increments for I.V. fluids.		Two
8. Battery or self-powered oxygen sensor and transcutaneous oxygen monitor or oxygen saturation monitor.		One
9. Oxygen delivery device and tubing capable of administering high concentrations of oxygen.		One
10. Temperature monitoring device.		One
11. Portable ventilator appropriate for neonatal patients.		One
12. Anesthesia and/or self-inflating bag with oxygen reservoir less than 750 ml and manometer (pressure gauge); premature, newborn and infant size clear masks.		
13. Laryngoscope handle.		One
14. Blades.		Miller 00, Miller 0
15. Bulbs and batteries.		Two each
16. Endotracheal tubes.		2.0, 2.5, 3.0, 3.5, 4.0
17. Stylet.		Two each
18. Adapters.		Assortment of sizes
19. Oral Airways.		Assortment of sizes
20. Suction equipment with low suction capabilities of less than 80 mm of hg.		One
21. Sterile Gloves assorted sizes.		Sufficient quantity for all crew members
22. Suction catheters.	Size 5.0, 6.0, 8, & 10	Two each
23. Syringes sizes 1 cc. through 60 cc.		Assortment of sizes
24. Medication access device.		Two each
25. Vascular access devices 23-27 gauge.		Assortment of sizes
26. I.V. extension tubing.		Sufficient length to administer I.V
27. Securing device.		Assorted sizes
28. I.V. filters.		Two
29. Umbilical catheters.	Size 3.5 & 5	Two
30. Antiseptic solution.		Ten
31. Blood sugar device.		One
32. Lancets.		Five
33. Neonatal stethoscope.		One
34. Flashlight.		One
35. Gauze pads.		Assortment of sizes
36. No. 5 & No. 8 French feeding tubes.		One each
37. High intensity light capable of transillumination.		One

38. Approved biomedical waste plastic bag or impervious container and used sharps container per chapter 64E-16, F.A.C.		One each
39. Gloves – latex or other suitable materials.		Sufficient quantity for all crew members
40. Respiratory face masks.		Sufficient quantity for all crew members
41. Special procedure tray or instruments with capability for performing umbilical catheterization, venous cutdown and thoracostomy.		One
42. Bulb syringe. (Additional to OB kit)		One
43. Cord clamp.		One
44. Chest tube evacuation device.		One
45. Needle aspiration device or chest tubes.		Appropriate sizes for neonate

MEDICATION	WT/VOL	QTY.
1. Atropine Sulfate.	1 mg./10 ml	One
2. Injectable Vitamin K.	1 mg./0.5 ml	One
3. Antibiotics, to be determined by medical director.		
4. Calcium Gluconate.	10% - 10- ml	One
5. Digoxin ped.	0.1 mg./ml	One
6. Anticonvulsant as required by medical director.		
7. Dextrose.	50% 50 cc	One
8. Dopamine or dobutamine.	Depends on medication	One
9. Epinephrine.	1:10,000	One
10. Eye prophylaxis.		One
11. Furosemide (Lasix).	20 mg./2 ml	One
12. Heparin.		One
13. Lidocaine.	1%/2 mg	One
14. Naloxone (Narcan).	1.0 mg./ml or .4 mg./ml	One
15. Paralyzing agent.		One
16. Phenobarbital.		One
17. Prostin VR. (available for transport)	500 mcg/ml	One
18. Sodium Bicarbonate.	4.2% soln	One
19. Sedative as determined by the medical director.		One
20. Volume expander.		One
21. I.V. fluid.	Bags of D5W and D10W	One each
22. Injectable non-preservative sterile water.		One
23. Injectable non-preservative normal saline.		One

(5) Each Neonatal Transport shall be staffed with a minimum of two persons, excluding the driver or pilot. One person shall be a Registered Nurse (RN), the second person shall be either an RN, a respiratory therapist (RT), or a paramedic. Physicians may be substituted by the Medical Director for either of the two persons. The staffing for each Neonatal Transport shall be determined by the Medical Director. The Medical Director shall confirm that the staffing for each Neonatal Transport is capable of performing neonatal advanced life support procedures, as referenced by the American Academy of Pediatrics in *Guidelines for Air and Ground Transport of Neonatal and Pediatric Patients, 3rd ed, 2007*, which is incorporated by reference and available at <http://www.aap.org>.

(a) The Medical Director shall confirm the RN is licensed in accordance with Chapter 464, F.S.; has a minimum of 4,000 hours RN experience, which includes 2,000 hours of Level II or Level III Neonatal Intensive Care Unit (NICU) nursing experience; has an American Heart Association (AHA) Neonatal Resuscitation Program (NRP) Certification and has accompanied a minimum of six Neonatal Transports prior to staffing a Neonatal Transport as the only RN in attendance.

(b) The Medical Director shall confirm the RT is registered by the National Board of Respiratory Care with a minimum of 2,000 hours of Level II or Level III NICU experience or is certified as a RT with a minimum of 3,000 hours of Level II or Level III NICU experience. The Medical Director shall also confirm that the RT has:

1. An AHA NRP Certification; and,
2. Accompanied a minimum of six Neonatal Transports prior to staffing a transport as the only RT in attendance.

(c) The Medical Director shall confirm the paramedic is a Florida-licensed paramedic with a minimum of 5,000 hours experience and has an AHA NRP Certification.

(d) The Medical Director may make medical staff substitutions with individuals of comparable skills when the condition of the neonate warrants such substitution.

(6) Treatment protocols for the management of the neonate from the receiving neonatologist shall accompany each Neonatal Transport.

Rulemaking Authority 381.0011, 383.19, 395.405, 401.251(6), 401.35 FS. Law Implemented 381.001, 383.15, 395.405, 401.24, 401.25, 401.251, 401.252, 401.26, 401.265, 401.27, 401.30, 401.31, 401.35, 401.41, 401.411, 401.414, 401.421 FS. History—New 11-30-93, Amended 1-26-97, Formerly 10D-66.0525, Amended 8-4-98, 9-3-00, 12-18-06, Formerly 64E-2.006, Amended 2-16-10.

64J-1.007 Vehicle Permits.

(1) Each application for a ground vehicle permit shall be on DH Form 1510, 04/09, Application for Vehicle Permit(s). Each application for an aircraft permit shall be on DH Form 1576, 4/09, Application for Air Ambulance Permit. These forms are incorporated by reference and available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.fl-ems.com>. All applications shall be accompanied by the required fee as specified in section 401.34(1)(c), (k), F.S.

(2) When it is necessary for a permitted vehicle to be out of service for routine maintenance or repairs, a substitute vehicle meeting the same transport capabilities and equipment specifications as the out-of-service vehicle may be used for a period of time not to exceed 30 days. If the substitute vehicle needs to be in service for longer than 30 days, the agency must seek written approval from the department. An unpermitted vehicle cannot be placed into service, nor can a BLS vehicle be used at the ALS level, unless it is replacing a vehicle that has been temporarily taken out of service for maintenance. When such a substitution is made, the following information shall be maintained by the provider and shall be accessible to the department:

- (a) Identification of permitted vehicle taken out of service.
- (b) Identification of substitute vehicle.

(c) The date on which the substitute vehicle was placed into service and the date on which it was removed from service and the date on which the permitted vehicle was returned to service.

(3) All transport vehicles permitted to licensed services must meet the vehicle design specifications, except for color schemes and insignias, as listed in United States General Services Administration (GSA)-KKK-1822, Federal Specifications for Ambulances as mandated by section 401.35(1)(d), F.S., applicable to the year of the manufacture of the vehicle.

(4) All licensed providers applying for an initial air ambulance aircraft permit after January 1, 2005, shall submit to the department a valid airworthiness certificate (unrestricted), issued by the Federal Aviation Administration, for each permitted aircraft, prior to issuance of the initial permit. Aircraft replacements are subject to the initial application process.

(5) For purposes of section 401.26(1), F.S.:

(a) Water vehicles with a total capacity of two persons or less are neither transport vehicles nor advanced life support transport vehicles.

(b) Water vehicles with a total capacity of three or more persons are neither transport vehicles nor advanced life support transport vehicles, if:

1. Staffed and equipped per the Licensee Medical Director's protocols consistent with the certification requirements of chapter 401, F.S.; and,
2. Reported to the department with sufficient information to identify the water vehicle and to document compliance with subparagraph 1., above. Such report shall be updated with each license renewal.

(c) A transport vehicle or advanced life support transport vehicle that has explicit staffing, equipment and permitting requirements under Chapter 401, F.S., and other rules of the department cannot fall under paragraph (a) or (b), above.

Rulemaking Authority 381.0011, 401.23, 401.26, 401.35 FS. Law Implemented 381.001, 381.0205, 401.23, 401.24, 401.25, 401.251, 401.26, 401.27, 401.30, 401.31, 401.34, 401.35, 401.41, 401.411, 401.414 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.53,

Amended 4-12-88, 12-10-92, 11-30-93, 1-26-97, Formerly 10D-66.053, Amended 1-3-99, 12-18-06, 10-16-07, Formerly 64E-2.007, Amended 9-2-09.

64J-1.008 Emergency Medical Technician.

(1) Qualifications and Procedures for Certification pursuant to section 401.27, F.S. To be qualified for EMT certification, an individual must:

(a)1. Successfully complete an initial Florida EMT training program conducted in accordance with the January 2009 U.S. DOT National EMS Education Standards, which are incorporated by reference and available at <https://www.ems.gov/education.html> and <http://www.flrules.org/Gateway/reference.asp?No=Ref-09951>, or

2. If out of state or military trained in accordance with either the 1994 U.S. DOT EMT-Basic National Standard Curriculum or the January 2009 U.S. DOT National EMS Education Standards, currently hold a valid EMT certification from the National Registry of Emergency Medical Technicians (NREMT). The 1994 U.S. DOT EMT-Basic: National Standard Curriculum is incorporated by reference and available at <https://www.ems.gov/education.html> and <http://www.flrules.org/Gateway/reference.asp?No=Ref-09952>.

(b) Each applicant must submit to the department DH Form 1583, 04/2017, Application for EMT/Paramedic Certification, incorporated by reference and available from the department, as defined by subsection 64J-1.001(6), F.A.C., or at <http://www.flhealthsource.gov> and <http://www.flrules.org/Gateway/reference.asp?No=Ref-09953>.

(c) Applicants who are subject to subparagraph (1)(a)1. must take the department-required EMT Certification examination within 2 years of completing the initial Florida training program. The department will accept a passing score for this exam if taken within the 2-year period, whether the exam is taken before or after the application is filed.

(2) Renewal Certification – To maintain an active certificate, the EMT shall pay the recertification fee and affirm continued compliance with all applicable requirements contained in paragraph 64J-1.008(2)(a), (b) or (c), F.A.C.; complete and submit the applicable certification renewal notice, “Recertification Notice and Application,” DH-MQA 1212, 06/17, incorporated by reference and mailed by the department; or apply for renewal online at www.flhealthsource.gov, where the form may also be obtained as well as at <http://www.flrules.org/Gateway/reference.asp?No=Ref-09954>; and within 2 years prior to the expiration date of his or her EMT certification complete one of the following:

(a) Complete 30 hours of EMT refresher training based on criteria in the January 2009 U.S. DOT National EMS Education Standards to include adult and pediatric education with a minimum of 2 hours in pediatric emergencies, maintain a current CPR card as described in section 401.27(4)(e)2., F.S., CPR training may be included in the 30 hours of refresher training, provided that the CPR training is taken with a continuing education provider recognized by the department pursuant to section 401.2715, F.S. The department shall accept either the affirmation of a licensed EMS provider’s medical director; or a certificate of completion of refresher training from a department approved Florida training program or a department approved continuing education provider as proof of compliance with the above requirements;

(b) Successfully pass EMT certification examination required by the department during the current certification cycle and maintain a current CPR BLS card for the professional rescuer;

(c) Satisfactorily complete the first semester of the paramedic training course at a department approved Florida training center pursuant to section 401.2701, F.S., within the current 2-year certification cycle and maintain a current CPR card for the professional rescuer; or

(d) An individual must provide to the department, upon request, proof of compliance with the requirements in this section.

(3) In the event an applicant or certified EMT changes the mailing address he or she has provided the department, the applicant or certified EMT shall notify the department within 10 days of the address change.

Rulemaking Authority 381.0035, 401.23, 401.27, 401.35, 456.013 FS. Law Implemented 401.23, 401.27, 401.2715, 401.273, 401.34, 401.35, 456.013(1), 456.017 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.56, Amended 11-2-86, 4-12-88, 8-3-88, 12-10-92, 11-30-93, 12-10-95, 1-26-97, Formerly 10D-66.056, Amended 8-4-98, 1-3-99, 9-3-00, 4-15-01, 6-3-02, 11-3-02, 10-24-05, 1-11-06, 1-23-07, 10-16-07, Formerly 64E-2.008, Amended 11-22-09, 5-27-10, 1-28-19.

64J-1.009 Paramedic.

(1) Qualifications and Procedures for Certification pursuant to section 401.27, F.S. To be qualified for paramedic certification, an individual must:

(a)1. Successfully complete an initial Florida paramedic training program that was conducted in accordance with the January

2009 U.S. DOT National EMS Education Standards incorporated by reference and is available at <https://www.ems.gov/education.html> and <http://www.flrules.org/Gateway/reference.asp?No=Ref-09951>, or

2. If out of state or military trained in accordance with the 1998 U.S. DOT EMT-Paramedic (EMT-P) NSC or the January 2009 U.S. DOT National EMS Education Standards, currently hold a valid paramedic certification from the National Registry of Emergency Medical Technicians (NREMT). The 1998 U.S. DOT EMT-Paramedic (EMT-P) NSC is incorporated herein by reference and available at <https://www.ems.gov/education.html> and <https://www.flrules.org/Gateway/reference.asp?No=Ref-10238> (Parts 1-2 of 4 parts) and <http://www.flrules.org/Gateway/reference.asp?No=Ref-10240> (Parts 3-4 of 4 parts).

(b) Each applicant must submit to the department DH Form 1583, 04/2017, Application for EMT/Paramedic Certification (see rule 64J-1.008, F.A.C.).

(c) For those applicants subject to subparagraph (1)(a)1., file the completed application form described in paragraph (1)(b) to apply for certification and pass the department-required paramedic certification examination within 2 years of completing the initial Florida training program. The department will accept a passing score for this exam if taken within the 2-year period, whether the exam is taken before or after the application is filed.

(2) Renewal Certification – To maintain an active certificate the paramedic shall pay the recertification fee and affirm continued compliance with all applicable requirements contained in paragraph 64J-1.009(2)(a) or (b), F.A.C., complete and submit the applicable certification renewal notice, “Recertification Notice and Application” DH-MQA 1212, 06/17, incorporated by reference in rule 64J-1.008, F.A.C., and the form may also be obtained or at <http://www.flrules.org/Gateway/reference.asp?No=Ref-09954>, and within 2 years prior to the expiration date of his or her paramedic certification complete one of the following:

(a) Complete 30 hours of paramedic refresher training based on criteria in the January 2009 U.S. DOT National EMS Education Standards, to include adult and pediatric education with a minimum of 2 hours in pediatric emergencies, maintain a current Advanced Cardiac Life Support (ACLS) card as provided in section 401.27(4)(e)2., F.S., and rule 64J-1.022, F.A.C. ACLS training may be included in the 30 hours of refresher training, provided that the ACLS training includes the continuing education criteria recognized by the department pursuant to section 401.2715, F.S. The department shall accept either the affirmation of a licensed EMS provider’s medical director, a certificate of completion of refresher training from a department approved Florida training program, or a department approved continuing education provider as proof of compliance with the above requirements; or

(b) Successfully pass a paramedic certification examination required by the department during the current certification cycle and maintain a current ACLS card.

(3) An individual must provide to the department, upon request, proof of compliance with the requirements in this section.

(4) In the event an applicant or certified paramedic changes the mailing address he or she has provided the department, the applicant or certified paramedic shall notify the department within 10 days of the address change.

Rulemaking Authority 381.0034, 381.0035, 401.27, 401.35, 456.013 FS. Law Implemented 381.001, 401.23, 401.27, 401.2715, 401.34, 401.35, 401.41, 401.411, 401.414, 456.013, 456.017 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.57, Amended 4-12-88, 8-3-88, 12-10-92, 11-30-93, 12-10-95, 1-26-97, Formerly 10D-66.057, Amended 8-4-98, 1-3-99, 9-3-00, 4-15-01, 6-3-02, 11-3-02, 10-24-05, 1-23-07, 10-16-07, Formerly 64E-2.009, Amended 11-22-09, 5-27-10, 1-28-19.

64J-1.010 Voluntary Inactive Certification.

An EMT or paramedic who is currently certified can place their certificate on inactive status by sending a written request to the department and paying a fee of \$50. Any EMT or paramedic whose certificate has been placed on inactive status shall not function as an EMT or paramedic until such time as he or she has completed the following requirements for reactivating the certificate:

(1) A certificate holder whose certificate has been on inactive status for 12 months or less can activate his or her certificate by submitting a written request to the department for activation and receiving written approval. The certificate holder must pay a late renewal fee of \$50.00.

(a) For an EMT, send verification of having a current American Heart Association Basic Life Support Course or an American Red Cross Professional Rescuer CPR course completion certificate and meet the continuing education requirements identified in paragraph 64J-1.008(2)(a), F.A.C.

(b) For a paramedic, send verification of a current American Heart Association Advanced Cardiac Life Support (ACLS) course completion certificate and meet the continuing education requirements identified in paragraph 64J-1.009(2)(a), F.A.C.

(2) An EMT whose certificate has been on inactive status for more than 1 year can activate his or her certificate by completing the following:

(a) 30 hours of EMT refresher training which shall meet the requirements of paragraph 64J-1.008(2)(a), F.A.C. The training:
1. Shall have been completed after the EMT certificate was placed on inactive status and have been completed no more than 2 years prior to the date of receipt of the request for return to active status; and,

2. Shall have been completed at a department approved EMT training program or have been approved by the medical director of a licensed EMS provider.

(b) Hold a current CPR card pursuant to section 401.27(4)(e)1., F.S., and rule 64J-1.022, F.A.C.

(c) Complete a field internship. The internship shall be completed under the auspices of an EMS training program or a licensed ambulance service's medical director. Upon completion of the field internship, the certificate holder must provide the department with a signed statement from the medical director attesting that the certificate holder completed a field internship program in which he or she demonstrated the ability to assume patient care responsibilities.

(d) Pass the EMT certification examination required by the department. Should the applicant fail the examination, he or she must meet requirements for initial certification.

(e) After completion of the above requirements, submit the required fee and affirmation of all applicable requirements contained in subsection 64J-1.010(2), F.A.C., to the department.

(3) A paramedic whose certificate has been on inactive status for more than 1 year can activate his or her certificate by completing the following:

(a) 30 hours of paramedic refresher training which shall meet the requirements of paragraph 64J-1.009(2)(a), F.A.C. The training:

1. Shall have been completed after the paramedic certificate was placed on inactive status and have been completed no more than 2 years prior to the date of receipt of the request for return to active status; and,

2. Shall have been completed at a department approved paramedic training program or have been approved by the medical director of a licensed EMS provider.

(b) Hold a current ACLS card.

(c) Complete a field internship. The internship shall be completed under the auspices of an EMS training program or a licensed ambulance service's medical director. Upon completion of the field internship, the certificate holder must provide the department with a signed statement from the medical director attesting that the certificate holder completed a field internship program in which he or she demonstrated the ability to assume patient care responsibilities.

(d) Pass the paramedic certification examination required by the department. Should the applicant fail the examination, he or she must meet the requirements for initial certification.

(e) After completion of the above requirements, submit the required fee and affirmation of all applicable requirements contained in subsection 64J-1.010(3), F.A.C., to the department.

Rulemaking Authority 401.27, 401.35, 456.036 FS. Law Implemented 401.27, 401.34, 401.35, 456.036 FS. History—New 8-4-98, Amended 1-3-99, 9-3-00, 4-21-02, 6-3-02, 11-3-02, 10-24-05, 1-23-07, 10-16-07, Formerly 64E-2.0094, Amended 11-22-09, 1-28-19.

64J-1.011 Involuntary Inactive Certification.

(1) An EMT or paramedic certificate that is not renewed at the end of the 2-year certification period shall automatically revert to an inactive status for a period of no more than two additional 2-year renewal cycles.

(2) EMT certificates may be reactivated if the applicant submits the renewal certification fee required by section 401.34, F.S., a late renewal fee of \$25 and:

(a) If applying for reactivation of the certificate within the first additional 2-year renewal cycle, verification of having met the recertification requirements contained in paragraph 64J-1.008(2)(a), F.A.C., or

(b) If applying for reactivation of the certificate within the second additional 2-year renewal cycle, the applicant must verify having met the recertification requirements contained in paragraph 64J-1.008(2)(a), F.A.C., including an additional 30 hours of the refresher course training described in that rule paragraph, and must pass the department approved certification examination before the end of the second additional 2-year renewal cycle.

(3) Paramedic certificates may be reactivated if the applicant submits the renewal certification fee required by section 401.34, F.S., a late renewal fee of \$25, and:

(a) If applying for reactivation of the certificate within the first additional 2-year renewal cycle, verification of having met the recertification requirements contained in paragraph 64J-1.009(2)(a), F.A.C., or

(b) If applying for reactivation of the certificate within the second additional 2-year renewal cycle, the applicant must verify having met the recertification requirements contained in paragraph 64J-1.009(2)(a), F.A.C., including an additional 30 hours of the refresher course training described in that rule paragraph, and must pass the department approved certification examination before the end of the second additional 2-year renewal cycle.

(4) All recertification training requirements required for reactivation of a certificate under this rule section must be completed before the application is filed.

(5) Application for reactivation of a certificate under this rule must be made on Form DH 5023-MQA, 06/2017, Request for EMT/Paramedic Reactivation of Expired Certification, incorporated by reference and available at www.flhealthsource.gov and <http://www.flrules.org/Gateway/reference.asp?No=Ref-09955>.

(6) An application for reactivation received by the department more than four years after the expiration date of the certificate shall be denied. Such applicant is ineligible for recertification or reactivation and must meet the requirements for initial certification.

Rulemaking Authority 401.27, 401.35 FS. Law Implemented 401.27, 401.34, 401.35 FS. History--New 8-4-98, Amended 1-3-99, 9-3-00, 4-15-01, 10-24-05, Formerly 64E-2.0095, Amended 11-22-09, 1-28-19.

64J-1.012 Examinations.

(1) Grade Notification – The department shall notify each candidate of the examination results. The department may post scores electronically on the internet in lieu of mailing the scores to the candidate. The date of receipt is the date the examination scores are posted electronically (official score release date).

(2) Post-Examination Review.

(a) A candidate who failed the examination shall notify the department or designee, in writing, that he or she desires a post-examination review within 21 days of the official score release date and include the required review fee of \$50.00 payable by cashier's check or money order to the department or designee. Upon receipt of payment, the department or designee shall notify the candidate of a review appointment.

(b) Each candidate, who has taken and failed the examination, shall have the right to post-examination review of those examination questions answered incorrectly and the correct answers to those examination questions only.

(c) The candidate's attorney may be present at the review.

(d) Examination reviews shall be conducted in the presence of a representative of the department or designee and scheduled at a location designated by the department or designee. The review shall be conducted between 8:00 a.m. and 5:00 p.m., Monday through Friday, excluding official state holidays. A candidate shall attend only one review per examination administration. If the candidate is scheduled for an examination review date and fails to appear, the review fee shall be forfeited.

(e) The candidate shall be allowed one-half the time allowed for the original administration of the examination to review the examination materials provided. Neither the candidate nor the attorney shall be allowed to bring any material for documenting or recording any test material into the review session.

(f) A representative of the department or designee shall remain with the candidate throughout the review process. The representative shall inform the candidate that the representative cannot defend the examination, attempt to answer or refute any question during the review.

(g) The candidate shall be instructed that he or she is exercising his or her right of review.

(h) Any candidate who fails the examination and attends an examination review, pursuant to this section, shall not be eligible for reexamination for at least 30 days after the examination review.

(3) Examination Requirements. The following grades are the minimum scores required to pass the below-listed examinations:

(a) Paramedic Certification Examination, 80 percent or higher.

(b) EMT-Basic Examination, 70 percent or higher.

(4) To be scheduled for a reexamination the requestor shall submit DH Form 1583, 12/08, Application for Examination for Emergency Medical Technician (EMT) & Paramedic Certification.

(5) An EMT candidate must document successful completion of 24 hours of department-approved refresher training based on the 1994 U.S. DOT EMT-Basic National Standard Curriculum prior to being scheduled for another attempt at the examination after three failures. An EMT applicant who has failed the examination six times is disqualified from certification and must successfully complete a full EMT training program, pursuant to paragraph 64J-1.008(1)(a), F.A.C., prior to being considered for subsequent examination and certification.

(6) A paramedic candidate must document successful completion of 48 hours of department-approved refresher training based on the 1998 U.S. DOT EMT-Paramedic National Standard Curriculum prior to being scheduled for another attempt at the certification examination after three failures. A paramedic applicant who has failed the examination six times is disqualified from certification and must successfully complete a full paramedic education program, pursuant to paragraph 64J-1.009(1)(a), F.A.C., prior to being considered for subsequent examination and certification.

(7) Persons with documented learning disabilities in the areas of reading decoding or reading comprehension or some form of documented disability or cognitive processing deficit specifically in the reading area which would negatively impact on the candidate's performance on the written or computer based examination may be eligible for special accommodations with the certification examination. The person requesting the accommodation must provide documentation of the diagnosis before any decision shall be made by the department or designee for accommodation in the administration of the paramedic examination.

(a) Individuals who qualify for special accommodation on the written or computer based examination due to a documented learning disability as described above shall be required to take the standard format of the examination, but shall receive additional time in which to complete the examination based on the department's or designee's assessment of the severity of the learning disability.

(b) Other types of accommodations to meet the needs of applicant's disabilities shall be granted with appropriate documentation of disability as determined by the department or designee.

Rulemaking Authority 381.0011, 401.27, 401.35 FS. Law Implemented 381.001, 401.27, 401.35 FS. History—New 4-26-84, Amended 3-11-85, Formerly 10D-66.575, Amended 4-12-88, 12-10-92, 12-10-95, 1-26-97, Formerly 10D-66.0575, Amended 8-4-98, 6-3-02, 11-3-02, 10-25-04, 10-24-05, Formerly 64E-2.010, Amended 11-22-09.

64J-1.013 Drivers.

(1) Each ALS and BLS provider shall ensure that each driver who operates a permitted vehicle meets the qualifications as listed in section 401.281, F.S. An ALS or BLS provider may consider current Florida EMT or Paramedic certification as the driver having met the oath requirement listed in section 401.281(b) and (c), F.S.

(2) Each BLS and ALS provider shall document that each driver has completed at least a 16-hour course of instruction on driving an authorized emergency vehicle, as defined by section 316.003(1), F.S., which includes, at a minimum, classroom and behind-the-wheel training as outlined below:

(a) Didactic.

1. Legal aspects of authorized emergency vehicle operators.
2. Selecting routes and reporting emergency operation.
3. The practice of defensive driving.
4. Accident avoidance.
5. Principles of vehicle control.
6. Routine safety checks of vehicle.

(b) Practical.

1. Braking and control braking.
2. Backing; road position, fender judgment and steering technique.
3. Slalom; steering technique and chassis set.
4. Steering technique during a skid; a skid pad is optional.
5. Turn-around-steering technique; fender judgment, road position, controlled braking, controlled acceleration, understeer, oversteer and chassis set.

Rulemaking Authority 401.35 FS. Law Implemented 401.27, 401.281, 401.35, 401.411 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.59, Amended 4-12-88, 12-10-92, Formerly 10D-66.059, Amended 12-18-06, Formerly 64E-2.012.

64J-1.014 Records and Reports.

(1) Each EMS provider shall be responsible for supervising, preparing, filing and maintaining records and for submitting reports to the department as requested. All records shall be handled in such a manner as to ensure reasonable safety from water and fire damage and to be safeguarded from unauthorized use. Any records maintained by the provider as required by these rules shall be accessible to authorized representatives of the department and shall be retained for a period of at least 5 years except as otherwise

specified in this rule. Each EMS provider shall maintain the following administrative records:

(a) Vehicle registration, copy of past department inspection reports, proof of current vehicle permit, and proof of current insurance coverage.

(b) Personnel records for each employee, to include date of employment, training records, employee application, documentation of current certification, and confirmation that each driver is in compliance with section 401.281, F.S.

(c) Copy of up-to-date department approved TTPs.

(2) The transporting vehicle personnel shall at a minimum provide an abbreviated patient record to the receiving hospital personnel at the time the patient is transferred that contains all known pertinent incident information as defined in subsection 64J-1.014(3), F.A.C. Documentation of known information in an abbreviated patient care record shall not delay response to requests for emergency medical assistance.

(3) The abbreviated patient care record shall include all known information listed below:

(a) Date of call;

(b) Time of call;

(c) The service name;

(d) Incident ID number;

(e) Lead crew signature or identification number;

(f) Service name for any other licensed service providing care;

(g) Name for first responder agency;

(h) The patient's full name or unique identification number if the name is unknown;

(i) The patient's age;

(j) Patient assessment information (e.g., airway, breathing, circulation, pupils, skin and vitals) taken on scene and en route with times taken for vitals;

(k) The initial vitals taken by a non-transport service before the arrival of the transport unit;

(l) The patient's medical history, current medications; allergies, and chief complaint;

(m) Interventions attempted (e.g., airway, breathing, circulation, and secondary interventions); and,

(n) Medication(s) administered including the time, medication, dose and route.

(4) Non-transporting vehicle personnel shall provide an abbreviated patient care record or oral report with known information pertinent to the patient's identification, patient assessment and care provided to the patient to the transporting vehicle personnel at the time the responsibility of the patient is transferred to the transporting service.

(5) Each EMS provider shall maintain a copy of the patient care record as defined in subsection 64J-1.001(18), F.A.C., for a period of at least 5 years. This copy is considered to be the copy of record, shall contain an original signature by the lead crew member or an identification number assigned to the lead crew member and is certifiable as a true copy.

(6) Each licensed EMS provider is responsible for quality review for completeness and accuracy of their own patient care records.

(7) Medication errors and reactions en route shall be reported to the physician who ordered the medication, the receiving physician, and the ALS medical director.

(8) Each provider shall maintain a written plan, available for review by the department, for the proper handling, storage, and disposal of biohazardous wastes in accordance with chapter 64E-16, F.A.C.

(9) Each provider shall return his license to the department within 15 calendar days after a change of name or ownership of the service or upon permanently ceasing to provide service.

(10) Each air ambulance provider shall maintain documentation describing the service rendered to the patient and cost as part of the patient's record in accordance with section 401.251(4)(c), F.S.

(11) A fixed wing air ambulance provider shall have an air medical crew member document the cabin altitude hourly. The cabin pressure shall be documented on the patient care record.

(12) Each EMS provider may document and submit to the department an electronic patient care record in accordance with the data format specified in the Emergency Medical Services Tracking and Reporting System (EMSTARS) Data Dictionary Version 1.4.1 (September 1, 2009), and as specified in Florida's Prehospital Emergency Medical Services Tracking & Reporting System Program Manual for Florida EMS Data Dictionary version 1.4.1, Version 2 (February 2, 2016), or an EMS provider may document and submit to the department an electronic patient care record in accordance with the EMSTARS Data Standards, Version 3

(October 16, 2015). Both EMSTARS versions and the manual are incorporated by reference and available from the department at http://www.floridaemstars.com/docs/FloridaEMSDDataDictionary_V_1_4.pdf, <http://www.floridaemstars.com/docs/flemstarsdatastandardsvers3.pdf> and <http://www.floridaemstars.com/docs/EMSTARSPROGRAM.pdf>; and also available at <http://www.flrules.org/Gateway/reference.asp?No=Ref-07083>, <http://www.flrules.org/Gateway/reference.asp?No=Ref-07084>, and <http://www.flrules.org/Gateway/reference.asp?No=Ref-07085>, respectively.

(13) If the provider fails to submit electronic patient care records in accordance with the format and time frame specified in the EMSTARS Version 1.4.1 or Version 3, the provider shall document and submit to the department the information contained on DH Form 1304, (May 2002), "EMS Aggregate Prehospital Report and Provider Profile Information Form." Terms in DH Form 1304 are defined and required as specified in DHP 150-445, (May 2002), "Department of Health, Emergency Medical Services (EMS) Section Instruction Manual for the: EMS Aggregate Pre-Hospital and Provider Profile Information Form (DH 1304)." Both documents are incorporated by reference and available from the department at http://www.floridahealth.gov/statistics-and-data/prehospital-data-collection-and-reporting-system/_documents/aggregate-pre-hospital-quarterly-report-form-1304.pdf and <http://www.floridaemstars.com/docs/DHP150-445052002.pdf>; and, also available at <http://www.flrules.org/Gateway/reference.asp?No=Ref-07086>, and <http://www.flrules.org/Gateway/reference.asp?No=Ref-07087>, respectively.

(a) Reports shall be submitted in accordance with the format and time frame specified in DHP 150-445. Reports received after the due date(s) specified in DHP 150-445 or not in the format specified in DHP 150-445, may not be included in reports published by the department.

(b) The transporting unit is required to include counts of all known critical treatments and interventions that were administered or attempted to be administered to the patient prior to their arrival as defined and required in DHP 150-445 as part of their required quarterly submission of DH Form 1304 to the department.

(14) A patient care record as defined in subsection 64J-1.001(18), F.A.C., or an electronic patient care record containing the same information shall be made available by the EMS provider to the receiving hospital upon request within 48 hours of the time the vehicle is originally dispatched in response to the request for emergency medical assistance.

Rulemaking Authority 381.0011, 395.405, 401.30, 401.35 FS. Law Implemented 381.001, 381.0205, 395.401-405, 401.23, 401.25, 401.27, 401.30, 401.35, 401.411 FS. History—New 11-29-82, Amended 4-26-84, 3-11-85, Formerly 10D-66.60, Amended 11-2-86, 4-12-88, 8-3-88, 12-10-92, 11-30-93, 12-10-95, 1-26-97, Formerly 10D-66.060, Amended 7-14-99, 2-20-00, 4-15-01, 11-3-02, 10-24-05, Formerly 64E-2.013, Amended 7-5-16.

64J-1.015 Emergency Medical Services Grants Procedures.

(1) In order to apply for a matching emergency medical services grant, applicants shall submit DH Form 1767, December 2008, EMS Matching Grant Application contained in the EMS Matching Grant Program Application Packet, December 2008. This application packet is incorporated by reference and available from the department. The application packet contains the following forms which are also incorporated by reference and available from the department: DH Form 1767, EMS Matching Grant Application, December 2008, DH Form 1767P, Request for Grant Fund Distribution, December 2008, DH Form 1684A, EMS Grant Program Expenditure Report, December 2008, DH Form 1684C, EMS Grant Program Change Request, December 2008, DH Form 1767G, Matching Grants Evaluation Worksheet, December 2008.

(2) The department shall advertise grant availability, at a minimum, on the Bureau of Emergency Medical Services website at <http://www.fl-ems.com/grants/grants.html>. Following the review by the grant review team and approval by the State Surgeon General, the department shall publish in the FAR the date, time, and location of the posting of the grant awards.

(3) All grant award decisions shall be posted on a date and time certain at a specific location in Tallahassee, Florida. All grant award notices shall be published on the Bureau of Emergency Medical Services website at www.fl-ems.com/grants/grants.html, at the date and time established in the FAR notice as outlined in subsection (2), above.

(4) All matching grant applications submitted to the department shall have the envelope or other container marked in large bold letters "EMS GRANT APPLICATION." Upon receipt of the completed application the department shall date stamp the application and it shall remain unopened until the official opening date published in the FAR.

(5) The grant review team for matching grant applications eligible for a grant of 75% of approved budgets shall consist of at least five persons appointed by the Chief. The Chief shall appoint a minimum of three department staff to review rural applications eligible for a grant of at least 90% of their approved budgets.

(6) In order to apply for a county award grant, applicants shall submit DH Form 1684, EMS County Grant Application, December 2008, contained in the EMS County Grant Program Application Package, December 2008. This application packet is incorporated by reference and available from the department. The application packet contains the following forms which are also incorporated by reference and available from the department: DH Form 1684, EMS County Grant Application, December 2008, DH Form 1684C, EMS Grant Program Change Request, December 2008, DH Form 1684A, EMS Grant Program Expenditure Report, December 2008, DH Form 1767P, Request for Grant Fund Distribution, December 2008.

Rulemaking Authority 401.121 FS. Law Implemented 401.111, 401.113, 401.121 FS. History—New 6-6-90, Amended 12-10-92, 1-26-97, Formerly 10D-66.205, Amended 8-4-98, 11-3-02, 6-10-03, 10-1-08, Formerly 64E-2.030.

64J-1.017 Convicted Felons Applying for EMT or Paramedic Certification or Recertification.

(1) An applicant for certification or recertification as an EMT or paramedic who has been convicted of or plead no contest, regardless of adjudication, to a felony and has complied with the requirements of chapter 940, F.S., and provides documentation of restoration of Civil Rights shall become certified provided that the requirements of section 401.27, F.S., and rule 64J-1.008, F.A.C., for EMT or rule 64J-1.009, F.A.C., for paramedic have been met and no other basis for denial exists.

(2) The department shall consider an applicant for certification or recertification as an EMT or paramedic with a felony conviction upon the submission of the following documentation:

(a) Copy of the judgement of the felony conviction.

(b) All probation documents, including the name and telephone number of the probation officer.

(c) Information regarding any additional convictions.

(d) Any and all information related to the conviction, or plea and any and all information in support of the application, which the department deems necessary to base a decision for approval or denial.

Rulemaking Authority 401.27, 401.35 FS. Law Implemented 401.27, 401.41, 401.411, 401.414, 401.421 FS. History—New 1-3-99, Amended 11-3-02, Formerly 64E-2.033.

64J-1.018 Inspections.

(1) Inspections of Emergency Services Providers shall be documented by the department. Neonatal vehicle inspections shall be documented on Neonatal Interfacility Vehicle Inspection Form; DH Form 1267, December 2008. This form is incorporated by reference and available from the department.

(2) Violation categories – All equipment, medical supplies, records and procedures required by Florida Statutes and rules are placed in one of three violation categories:

Category 1 – life-saving equipment, medical supplies, drugs, records, or procedures;

Category 2 – intermediate support equipment, medical supplies, drugs, records or procedures;

Category 3 – minimal support equipment, medical supplies records or procedures.

These categories shall be used to determine corrective action time frames for deficiencies noted during inspections. The violation categories for each required item are noted on the inspection documentation.

(3) Corrective Action:

(a) Corrective Action Time Frames – Based on the violation category definitions listed above, the following corrective action time frames and administrative action guidelines shall apply:

Category 1 – any item in this category found deficient shall require action by the service provider within 24 hours of the inspection to replace or correct the deficiency noted to avoid administrative action by the department;

Category 2 – any item in this category found deficient shall require action by the service provider within 5 working days (Monday – Friday) of the inspection to replace or correct the deficiency noted to avoid administrative action by the department;

Category 3 – any item in this category found deficient shall require action by the service provider within 10 working days (Monday – Friday) of the inspection to avoid administrative action by the department.

(b) Inspection Corrective Action statement – Upon completion of an inspection in which deficiencies were noted, the EMS provider shall be given DH Form 1831, December 2008 Inspection Corrective Action Statement, which is incorporated by reference and available from the department. This form documents the corrective action that must be taken by the EMS provider to correct the inspection deficiencies and the time frames within which the corrective action must be taken. The completed DH form 1831, December 2008, and documentation of the corrective action taken, must be received by the department within 14 working days of

the inspection. Failure of the EMS provider to submit the corrective action statement or correct identified deficiencies within the required time frames is grounds for disciplinary action under chapter 401, F.S.

(4) A copy of the Inspection Corrective Action Statement shall be maintained by the provider for a period of 3 years.

Rulemaking Authority 401.31, 401.35 FS. Law Implemented 401.31 FS. History—New 2-20-00, Amended 9-3-00, 12-18-06, Formerly 64E-2.034.

64J-1.019 Emergency Treatment of Insect Stings.

(1) An individual who desires to be certified to administer epinephrine to a person who suffers adverse reactions to insect stings must:

(a) Be 18 years of age or older;

(b) Have, or reasonably expect to have as a result of occupation or volunteer status, responsibility for at least one other person who has severe adverse reactions to insect stings; and,

(c) Have successfully completed, within the previous 2 years, a training program in the appropriate procedures for administration of epinephrine to persons who suffer adverse reactions to insect stings.

(2) Epinephrine administration training programs shall be conducted by a Florida licensed physician and shall include, at a minimum, 30 minutes of training on the following subjects:

(a) Definition of anaphylaxis;

(b) Agents which might cause anaphylaxis and the distinction between them, including insect stings, drugs, food and inhalants;

(c) Recognition of symptoms of anaphylaxis;

(d) Appropriate emergency treatment of anaphylaxis as a result of insect stings;

(e) Use of a method of administration of epinephrine, i.e., autoinjector, as a result of insect stings including demonstration verifying correct technique;

(f) Pharmacology of epinephrine including its indications, contraindications, and side effects;

(g) Instruction that administration of epinephrine shall be utilized only in the absence of the availability of a physician.

(3) The individual shall apply on DH Form 1882, December 2008, Application for Insect Sting Emergency Treatment Certification, which is incorporated by reference and available from the department, and submit documentation of successful completion of the training requirements as outlined in subsection 64J-1.019(1), F.A.C., with the required certification fee of \$25.00 to the department.

(4) Certificates of training expire on March 1 of each odd-numbered year. The requirements for and process for renewal of certification are the same as that for initial certification.

Rulemaking Authority 381.88(3) FS. Law Implemented 381.88 FS. History—New 9-3-00, Amended 4-15-01, Formerly 64E-2.035.

64J-1.020 Training Programs.

(1) Qualifications and procedures for EMT and paramedic training programs in addition to those contained in section 401.2701, F.S., are as follows:

(a) Each applicant shall demonstrate that EMT and paramedic students are not subject to call while participating in class, clinical or field sessions.

(b) Each applicant shall demonstrate that each EMT and paramedic student function under the direct supervision of an EMS preceptor and shall not be in the patient compartment alone during patient transport and shall not be used to meet staffing requirements.

(c) Paramedic training programs may allow up to 20% of the field internship experience to be done aboard an advanced life support permitted vehicle other than an ambulance.

(d) Each applicant shall receive a scheduled site visit by the department. Any paramedic training program that is accredited by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP) has the option to request that the department schedule its site visit to the institution in conjunction with the CoAEMSP site visit to avoid duplication of effort and unnecessary interruption of the student learning environment.

(e) Course directors shall submit a roster of students eligible to take the state certification examination to the department within 14 days after course completion but not before course completion. This roster shall be signed by the program director.

(2) To be approved as an EMT Training Program, an entity shall submit a completed DH Form 1698, 04/2017, Application for Approval of an Emergency Medical Services (EMS) Training Program, incorporated by reference and available from the

department, at www.floridahealth.gov and the <http://www.flrules.org/Gateway/reference.asp?No=Ref-09956>.

(3) To be approved as a Paramedic Training Program, an entity shall submit a completed DH Form 1698, 04/2017, Application for Approval of an Emergency Medical Services (EMS) Training Program.

(4) Any changes to the training program as approved by the department shall be submitted to the department for review within 30 days of the change.

(5) Approved training programs that wish to offer EMT or Paramedic training programs after their approval expiration date must apply to the department. An entity shall submit a completed DH Form 1698, 04/2017, Application for Approval of an Emergency Medical Services (EMS) Training Program. The application must be received by the department not less than 90 days before the training program approval expiration date and no earlier than 180 days prior to the approval expiration date.

(6) EMT training program course length shall be a minimum of 300 hours. EMT students shall not have less than five (5) patient contacts resulting in the student accompanying the patient to the hospital. Student-to-Instructor ratios shall not exceed 6:1 during the skills laboratory phase of the program.

(7) Paramedic training program course length shall be a minimum of 1,100 hours.

(8) Florida approved EMT and paramedic training programs must have, at a minimum, the equipment and supplies listed in DH Form 1698, 04/2017, Application for Approval of an Emergency Medical Services (EMS) Training Program.

(9) All equipment and supplies must be appropriate to the objective being taught, in good working order, and available in sufficient quantity for the students enrolled. There must be sufficient equipment so that not more than six students are required to learn on a single piece of equipment at any one time.

Rulemaking Authority 401.27, 401.2701, 401.2715 FS. Law Implemented 401.27, 401.2701, 401.2715 FS. History—New 9-3-00, Amended 4-15-01, 4-21-02, 11-3-02, 12-18-06, 10-16-07, Formerly 64E-2.036, Amended 8-12-10, 1-28-19.

64J-1.0201 EMS Instructor Qualifications

(1) To be eligible for approval as an EMS Training Program, an applicant must ensure, with supporting documentation, that each instructor has met the standards listed below for their instructor position(s) as listed in the school's Emergency Medical Services Training Program's DH Form 1698, December 2008, Application for Approval of an Emergency Medical Services (EMS) Training Program, which is incorporated by reference in subsection 64J-1.020(2), F.A.C., and is available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.fl-ems.com>.

(2) Any lead or adjunct instructor teaching in a Florida-approved EMS Training Program who does not qualify for an exemption at the time of implementation of this rule may continue in their role and will have two years to complete the required coursework for the level of instruction they are employed.

(3) Emergency Medical Services (EMS) Instructors.

(a) Program Directors, Levels A and B:

1. Must have successfully completed Levels A and B coursework listed in Table I and Table II as identified in the National Guidelines for Educating EMS Instructors, August, 2002 edition, which is incorporated by reference and available from the department, as defined by subsection 64J-1.001(9), F.A.C., or at <http://www.nhtsa.gov>; or has qualified for one of the exemptions in subsection 64J-1.0201(5), F.A.C.

2. Have a minimum of a Bachelor's degree from an institution whose accreditation is recognized by the United States Department of Education.

3. Program Directors who do not possess a Bachelor's degree and are employed by a Florida-approved EMS Training Program at time of implementation of this rule will have until July 1, 2014 to obtain their Bachelor's degree.

4. Be certified as a Florida paramedic, in good standing with the department, with at least four years field level provider experience in the prehospital environment with an Advanced Life Support (ALS) provider.

5. Must have a minimum of two years teaching experience as a Level B instructor.

(b) Lead Instructors, Program Coordinators, Levels A and B:

1. Has successfully completed the Levels A and B instructor coursework listed in Table I and Table II and as identified in the National Guidelines for Educating EMS Instructors, August, 2002 edition or has qualified for one of the exemptions in subsection 64J-1.0201(5), F.A.C.

2. Be certified as a Florida paramedic in good standing with the department, with at least four years field level provider experience in the pre-hospital environment with an ALS provider.

3. Have a minimum of an Associate's degree from an institution whose accreditation is recognized by the United States Department of Education.

4. Lead instructors who do not possess an Associate's degree and are teaching in a Florida-approved EMS Training Program at time of implementation of this rule will have until July 1, 2013 to obtain their Associate's degree.

5. Must have at least two years teaching experience in EMS education.

(4) Adjunct Faculty.

(a) Must have successfully completed the Level A coursework listed in Table I as identified in the National Guidelines for Educating EMS Instructors, August, 2002 edition, or has qualified for one of the exemptions in subsection 64J-1.0201(5), F.A.C.

(b) For First Responder or Emergency Medical Technician Training Programs, must be certified as a Florida Emergency Medical Technician-Basic, a paramedic or licensed Registered Nurse in good standing with the department and have at least three years of field provider experience with an ALS provider.

(c) For Paramedic Training Programs, must be certified as a Florida paramedic in good standing with the department or be a licensed Registered Nurse in good standing and have at least three years of field provider experience with an ALS provider.

(d) Adjunct instructors must possess a minimum of an Associate's degree from an institution whose accreditation is recognized by the United States Department of Education.

(e) Adjunct instructors who do not possess an Associate's degree and are employed by a Florida-approved EMS Training Program at time of implementation of this rule will have until July 1, 2013 to obtain their degree.

Table I EMS Instructor Course Curriculum	
EMS instructor course objectives will be consistent with the National Guidelines for Educating EMS Instructors, August, 2002 edition.	
Level A: Instructor Qualifications for Adjunct Faculty: Including Didactic, Laboratory, and Clinical Instructors.	
Course	Hours of Instruction
Introduction/Course Objectives	30 minutes
Module 2: Roles and Responsibilities	2 hours
Module 5: Ethics	2.5 hour
Module 6: The Learning Environment	2 hours
Module 7: Learning Styles	3 hours
Module 8: Domains of Learning	3 hours
Module 9: Goals and Objectives	3 hours
Module 11: Presentation Skills	2 hours
Module 12: Evaluation Techniques	3 hours
Module 15: Motivation	2 hours
Module 17: Teaching Psychomotor Skills	4 hours
Module 18: Affective/Cognitive Domains	3 hours
Module 20: Remediation (Practical exercises)	3 hours
Module 21: Cultural Awareness	2 hours
Practical Teaching Presentation	5 hours
Total Class Hours	40 Hours

Table II EMS Instructor Course Curriculum	
Level B: Instructor Qualifications for Program Coordinators and Lead Instructors	
Prerequisites: Completion of Level A Coursework or qualify for an exemption listed in subsection 64J-1.0201(5), F.A.C.	
Course	Hours of Instruction
Creating Learning Objectives & Lesson Plans	3 hours
Module 3: Administrative Issues	1 hour
Module 4: Legal Issues In EMS Education	1 hour
Module 10: Lesson Plans	1 hour

Module 13: Facilitation Techniques	1 hour
Module 14: Communication and Feedback	2 hours
Module 16: Teaching Thinking Skills (Critical)	2 hours
Module 19: Discipline	1 hours
Module 22: Teaching Resources	1 hour
Module 23: Research	1 hour
Module 26: Pediatric Education	1 hour
Total Class Hours	15 Hours

(5) Exemptions.

(a) Program Directors, Program Coordinators, Lead Instructors, Course Coordinators, and Adjunct faculty who have attained any of the following criteria prior to the implementation of this rule are exempt from both Levels A and B coursework:

1. Individuals with a Bachelor’s degree or higher from an institution whose accreditation is recognized by the United States Department of Education with 4 years teaching experience in EMS education and 2 years experience as a Program Coordinator/Director are exempt from Levels A and B coursework.

2. Individuals with an Associate of Science degree from an institution whose accreditation is recognized by the United States Department of Education with 8 years teaching experience in EMS education and a minimum of 5 years experience as a Program Coordinator are exempt from Levels A and B coursework.

3. Physicians licensed under chapter 458 or 459, F.S., are exempt from Levels A and B coursework.

4. Completion of Fire Service Instructor Course Delivery and Fire Service Instructor Course Design (80 hours) or Florida certification in Fire Instructor II or III with 2 years teaching experience in EMS education are exempt from Levels A and B coursework.

5. Individuals with current certification as a Florida Department of Law Enforcement (FDLE) Instructor (80 hour course) with 2 years teaching experience in EMS education are exempt from Levels A and B coursework.

(b) Program Directors, Program Coordinators, Lead Instructors, Course Coordinators, and Adjunct faculty who have attained any of the following prior to the implementation of this rule are exempt from Level A coursework:

1. Individuals with an Associate in Science Degree from an institution whose accreditation is recognized by the United States Department of Education with 6 years teaching experience in EMS education are exempt from Level A coursework.

2. Individuals with a Associate in Science Degree from an institution whose accreditation is recognized by the United States Department of Education with 20 contact hours of educational/instructor courses with 2 years teaching experience in EMS education are exempt from Level A coursework.

3. Individuals who have successfully completed the National Association of EMS Educator’s Instructor Course or obtained National Instructor Level I (National EMS Instructor certification) are exempt from Level A coursework. Individuals with National Instructor Level II are exempt from Level A and B coursework.

(c) Subject matter experts are exempt from all certification Levels provided they do not provide greater than five percent of the total hours of instruction in either the didactic, laboratory, or clinical portions of the programs contact hours.

(d) These exemptions will only remain in effect until July 1, 2013.

Rulemaking Authority 401.27(2), 401.35(1)(b), 401.35(1)(h) FS. Law Implemented 401.27, 401.27(4)(a)1., 401.27(4)(a)2., 401.2701(1)(a)5.a. FS. History–New 12-31-09.

64J-1.0202 EMS Recertification Training Programs.

(1) Commencing with the effective date of this rule and expiring December 1 of even numbered years thereafter, entities not licensed as an emergency medical services provider or a department approved Florida training program shall be approved to conduct EMT or paramedic recertification training providing they meet the requirements contained in section 401.2715, F.S., and this section. To be approved as an EMS Recertification Training Program, each applicant shall:

(a) Submit DH Form 1698C, February 2001, Application for Review of Continuing Education Offering which is incorporated by reference and available from the department.

(b) Submit a non-refundable fee of \$300.00 for approval of continuing education which is valid for a period of 2 years concurrently with the EMT and paramedic recertification cycle.

(c) Submit the following for each course offering:

1. Behavioral objectives:

a. Describe expected learner outcomes in terms that can be evaluated, are obtainable and are relevant to the January 2009 U.S. DOT National EMS Education Standards referenced in rule 64J-1.008, F.A.C., and to the January 2009 U.S. DOT National EMS Education Standards referenced in rule 64J-1.009, F.A.C.

b. Determine teaching methodology and plan for evaluation.

2. Subject matter:

a. Shall reflect the professional educational needs of the student.

b. Currency and accuracy will be documented by references/bibliography.

3. Faculty qualifications:

a. Provide evidence of academic credentials or expertise in the subject matter.

b. When the subject matter includes advanced life support, a physician, nurse or paramedic with expertise in the content area shall be involved in the planning and instruction.

4. Medical Direction:

a. Provide evidence of current contract with a physician who has experience in emergency medicine, trauma or appropriate certification in prehospital care.

b. Responsibilities of physician shall be clearly stated on contract.

5. Teaching strategies:

a. Learning experiences and teaching methods, relative to emergency medical services, are utilized to achieve the objectives.

b. Adult education principles are employed in teaching strategies.

c. Time is allowed for each activity to ensure opportunity for each student to meet the objectives.

6. Evaluation methods: Evidence shall be submitted that participants are given an opportunity to evaluate learning experiences, instructional methods, facilities and resources used.

7. Contact hour criteria:

a. All offerings shall be at least 50 minutes in length which is equivalent to 1 contact hour.

b. Increments of 25 minutes will be accepted if the offering extends beyond 1 contact hour.

(2) All training offered for the purpose of recertification of EMTs and paramedics shall be documented through a system of record keeping which shall include: program title, course outline, course objectives, dates offered, name of instructor, contact hours and roster of attendees. Each entity shall submit a roster of students that have completed training to the department within 14 days after completion but not before course completion. The course director shall sign this roster.

(3) Recertification Training Programs, which maintain current approval from the department, and have an assigned approval code, may submit additional courses for approval during the current recertification cycle without paying an additional fee. The training program shall comply with the other requirements contained in subsection 64J-1.020(5), F.A.C.

(4) The department shall periodically conduct monitoring site visits to entities conducting recertification training to verify that the training is being documented through record keeping that verifies compliance with the recertification requirements of rules 64J-1.008 and 64J-1.009, F.A.C., for all training conducted. These training records shall be retained for a minimum of 4 years, which shall include the 2 year period within each certification cycle and the immediate 2 year period following that certification cycle.

(5) A medical director's affirmation of completion of recertification training as provided in section 401.2715(3), F.S., is the physician's confirmation that the certificate holder has completed recertification training consisting of at least 30 hours, and is based on the requirements of paragraph 64J-1.008(2)(a) or 64J-1.009(2)(a), F.A.C.

Rulemaking Authority 401.27, 401.2715 FS. Law Implemented 401.27, 401.2715 FS. History—New 5-27-10, Amended 1-28-19.

64J-1.021 Security of Medications.

(1) Each ALS and air ambulance provider shall develop, implement, maintain, and have available for review by the department written operating procedures approved and signed by the medical director for procuring, storing, handling, dispensing, and disposal of all controlled substances, medications, and fluids.

(a) These procedures must address the provider's method for meeting applicable state and federal requirements.

(b) Security procedures which include the provider's method of ensuring against theft, tampering with or contamination of controlled substances, medications, and fluids and the identities and position titles of employees who have access to controlled

substances.

(c) The amount of each controlled substance, authorized by the medical director, to be in on-site storage.

(d) Documentation procedure for the distribution, disposal, and re-supply of controlled substances, medications, and fluids maintained on site. This procedure shall address on-site and shift change inventory procedures for all controlled substances stocked by the provider and identify a record keeping procedure, which includes inventory schedules for stocking of medical supplies and reporting and resolving any discrepancy found during an inventory.

(2) All operating procedures related to controlled substances, medications, and fluids shall be consistent with and meet the minimum federal requirements specified by the United States Department of Justice, Drug Enforcement Administration in Title 21, Code of Federal Regulations, Food and Drugs, Part 1300 to END, Chapter II, April 1, 2000, and minimum state requirements specified in chapters 499 and 893, F.S., and rules adopted there under.

Rulemaking Authority 401.26, 401.35 FS. Law Implemented 401.25, 401.26, 401.35(1) FS. History—New 9-3-00, Amended 11-24-02, Formerly 64E-2.037.

64J-1.022 Cardiopulmonary and Advanced Cardiac Life Support Courses.

(1) Cardiopulmonary resuscitation (CPR) or advanced cardiac life support (ACLS) courses which have been accredited by the Commission on Accreditation of Pre-Hospital Continuing Education (CAPCE) are defined as equivalent to CPR or ACLS courses conducted by the American Heart Association or American Red Cross.

(2) Any public or private entities desiring to conduct CPR or ACLS courses equivalent to those conducted by the American Heart Association or American Red Cross shall have those courses accredited by the CAPCE and shall maintain CAPCE accreditation of those courses at all times they are offered and conducted.

(3) Entities shall provide a copy of the letter of approval of accreditation from CAPCE for each CPR and ACLS course to be recognized and accepted as an equivalent by the Department. A copy of the letter of approval shall be submitted to the Department with a completed DH Form 1938, February 2002, Cardiopulmonary Resuscitation (CPR) or Advanced Cardiac Life Support (ACLS) Course Equivalency Form at least 90 days prior to the offering of the course. This form is incorporated by reference and available from the department. In addition to DH Form 1938 and a copy of the letter of approval each entity shall provide a sample completion card or certificate which shall be issued to students successfully completing the course.

(4) The entity shall provide the student with a course completion card or certificate which is the same as that submitted to the Department which includes: name of entity, course title, date of course, expiration date of the card, name of the instructor and name of the student.

(5) Department approval of the CPR and ACLS courses shall be concurrent with the CAPCE accreditation of the courses.

Rulemaking Authority 401.35 FS. Law Implemented 401.27 FS. History—New 4-21-02, Formerly 64E-2.038.

64J-1.023 Guidelines for Automated External Defibrillators (AED) in State Owned or Leased Facilities.

(1) Management of any state owned or leased facilities considering the placement of AEDs should seek cooperation of facility personnel and local training, medical, and emergency response resources.

(2) An AED is obtained by a prescription from a licensed physician. The prescription must accompany the order for the AED.

(3) Several elements should be considered to determine the appropriate number, placement, and access system for AEDs. Facility managers should consider:

(a) Physician oversight provided by either a facility's medical staff or contracted through a designated physician. A physician should be involved as a consultant in all aspects of the program.

(b) Response Time: The optimal response time is 3 minutes or less. This interval begins from the moment a person is identified as needing emergency care to when the AED is at the side of the victim. Survival rates decrease by 7 to 10 percent for every minute that defibrillation is delayed.

(c) Lay Responder or Rescuer Training.

1. Pursuant to section 401.2915(1), F.S., all persons who use an AED shall have the required training.

2. Overall effectiveness of AEDs shall be improved as the number of trained personnel increases. Where possible, facility managers should establish in-house training programs on a routine basis.

3. Cardiopulmonary resuscitation and AED training can be obtained from a nationally recognized organization.

4. In addition to training on use of the AED, it is important for lay responders or rescuers to be trained on the maintenance and

operation of the specific AED model in the facility.

5. Training is not a one-time event and formal refresher training should be conducted at least every 2 years. Computer-based programs and video teaching materials permit more frequent review. Facility management should make periodic contact with a training entity to assure that advances in techniques and care are incorporated into their program. In addition to formal annual recertification, mock drills and practice sessions are important to maintain current knowledge and a reasonable comfort level by lay responders or rescuers. The intervals for conducting these exercises should be established in consultation with the physician providing medical oversight.

(d) Demographics of the Facility's Workforce: Management should examine the make up of the resident workforce and consider the age profile of workers. Facilities hosting large numbers of visitors are more likely to experience an event, and an appraisal of the demographics of visitors should be included in an assessment. Facilities where strenuous work is conducted are more likely to experience an event. Specialty areas within facilities such as exercise and work out rooms should be considered to have a higher risk of an event than areas where there is minimal physical activity.

(e) Physical Layout of Facility: Response time should be calculated based upon how long it will take for a lay responder or rescuer with an AED and walking at a rapid pace to reach a victim. Large facilities and buildings with unusual designs, elevators, campuses with several separate buildings, and physical impediments all present unique challenges. In some larger facilities, it may be necessary to incorporate the use of properly equipped "golf cart" style conveyances to accommodate time and distance conditions.

(f) Suggestions for proper placement of AEDs:

1. A secure location that prevents or minimizes the potential for tampering, theft, and/or misuse, and precludes access by unauthorized users.

2. An easily accessible position (e.g., placed at a height so those shorter individuals can reach and remove, unobstructed access).

3. A location that is well marked, publicized, and known among trained staff. Periodic "tours" of locations are recommended.

4. A nearby telephone that can be used to call backup, security, or 911.

5. Written protocols addressing procedures for activating the local emergency medical services system. These protocols should include notification of EMS personnel of the quantity, brands, and locations of AEDs within the facility.

6. Equipment stored in a manner whereby the removal of the AED automatically notifies security, EMS, or a central control center. If such automatic notification is not possible, emphasis should be placed on notification procedures and equipment placement in close proximity to a telephone.

(g) It is recommended that additional items necessary for a successful rescue be placed in a bag and be stored with the AED. Following are items that may be necessary for successful utilization of the AED:

1. Simplified directions for CPR and use of the AED.

2. Non-latex protective gloves.

3. Appropriate sizes of CPR face masks with detachable mouthpieces, plastic or silicone face shields, one-way valves, or other type of barrier device that can be used in mouth to mouth resuscitation.

4. Pair of medium sized bandages.

5. Spare battery and electrode pads.

6. Two biohazard or medical waste plastic bags.

7. Pad of paper and pen for writing.

8. Absorbent towel.

Rulemaking Authority Chapter 2001-76, L.O.F., House Bill 1429. Law Implemented Chapter 2001-76, L.O.F., House Bill 1429. History—New 11-3-02, Formerly 64E-2.039.