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Standard Guide for Training First Responders Who Practice in Wilderness, Delayed, or Prolonged Transport Settings[1]

This standard is issued under the fixed designation F1655; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers minimum training standards for first responders who may care for sick or injured persons in the specialized pre-hospital situations of the wilderness, delayed, or prolonged transport settings, including catastrophic disasters.

1.2 This guide establishes supplemental or continuing education programs that will be taught to individuals trained to the first responder level by an appropriate authority.

1.3 This guide does not provide training to be used, ordinarily, in the traditional EMS or ambulance transportation environments.

1.4 Included in this guide is a standard for the evaluation of the knowledge and skills defined within this guide.

1.5 Successful completion of a course based on this guide neither constitutes nor implies certification or licensure.

1.6 This guide does not establish medical protocols, nor does it authorize invasive procedures without specific authorization and medical control.

1.7 The values stated in inch-pound units are to be regarded as the standard.

1.8 Operating within the framework of this guide may expose personnel to hazardous materials or environments, procedures, and equipment or all of these.

1.9 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F1177 Terminology Relating to Emergency Medical Services

F1453 Guide for Training and Evaluation of First Responders Who Provide Emergency Medical Care

F1490 Terminology Relating to Search and Rescue (Withdrawn 2011)[3]

3. Terminology

3.1 *Definitions:*

3.1.1 *access, n*—the process of reaching the patient/subject and establishing physical contact.

3.1.2 *basic life support/cardiopulmonary resuscitation (BLS/CPR), n*—a set of skills that includes airway management, chest compressions, and others as defined by the American Heart Association.

3.1.3 *definitive care, n*—a level of therapeutic intervention capable of providing comprehensive health care services for a specific condition. (See Terminology F1177.)

3.1.4 *evacuation, n*—the process used between the time of extraction and transportation. (See Terminology F1490.)

3.1.5 *extraction, n*—the process of initial assessment, treatment, stabilization, and packaging of the patient as well as the removal of the patient/subject from the immediately hazardous environment. (See Terminology F1490.)

3.1.6 *first responder, n*—an individual trained in accordance with Guide F1453.

3.1.7 *transportation, n*—the use of a dedicated vehicle for the removal of the patient to a medical facility or definitive care facility.

[1] This guide is under the jurisdiction of ASTM Committee F30 on Emergency Medical Services and is the direct responsibility of Subcommittee F30.02 on Personnel, Training and Education.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *delayed or prolonged transport, n*—when time between patient injury and arrival to a definitive care facility is greater than 60 min.

3.2.2 *non-traditional EMS environment, n*—environments not readily accessible to a ground ambulance.

3.2.3 *wilderness first responder (WFR), n*—an individual trained to meet the requirements of this guide.

3.2.4 *wilderness setting, n*—situations in which EMS delivery is complicated by one or more of the following four factors: (*1*) remoteness as far as logistics and access; (*2*) a significant delay in the delivery of care to the patient; (*3*) an environment that is stressful to both patients and rescuers; and (*4*) a lack of equipment and supplies.

4. Significance and Use

4.1 Individuals will be initially or concurrently trained in accordance with U.S. D.O.T. Course Guide for First Responders[4] and Guide F1453.

4.2 This guide does not suggest a particular training sequence.

4.3 This guide may be used by individuals developing training programs for non-traditional EMS environments.

4.4 This guide acknowledges the need to provide additional specific training for first responders who will practice in the wilderness, delayed or prolonged transport settings.

4.5 Individuals responsible for training first responders should identify those who will practice in the wilderness, delayed or prolonged transport settings and must ensure that such personnel are competent in all skills needed for the unique settings.

5. Illustrative Examples

5.1 *Wilderness Settings:*

5.1.1 In May 1983, two climbers were at about 18 000 ft, near Denali Pass on Mount McKinley, Alaska. These climbers took a tumbling 800 ft fall before coming to rest. One of the climbers was only responsive to pain, with a lacerated face and the pick end of his ice axe impaled in the right side of his chest, just below the nipple line. A nearby climbing party responded. They first attempted to stabilize the ice axe in place as per standard EMS protocols. They improvised a rescue toboggan using two plastic sleds, but moving the patient was very difficult with the ice axe still in his chest. And, with temperatures ranging from – 50 to – 70 °F (in accordance with National Park Service reports), rescuers were unable to keep him from rapidly cooling. The danger of cold exposure and the difficulty with transportation created by the impaled ice axe led rescuers to remove it.

5.1.2 After removing the ice axe, the patient began to rewarm, the rescuers were able to evacuate him expeditiously, and he went on to make a full recovery.

5.2 *Rural (Delayed/Prolonged Settings)*—A man was driving along a gravel road in a remote rural area of Northern Idaho. He stooped to clear a fallen tree from the road, and in the attempt, he fell and dislocated his right shoulder. He managed to call for help with his CB radio. About 2 h later, an ambulance arrived. The EMTs on the ambulance checked the pulse and sensation in his right arm, and found them to be normal. The man pleaded with them to pull on his shoulder and relocate it; he had a similar dislocation of the left shoulder in the past, and he knew that it could be reduced with a little help. However the EMTs, mindful of their training, insisted on "splinting it in position" and drove him six hours to the nearest hospital, mostly along bumpy secondary roads. The patient was moaning and intermittently screaming the entire time, in severe pain. Later he wrote to various authorities criticizing the care provided to him.

5.3 *Disaster (Delayed/Prolonged Settings):*

5.3.1 It was rush hour, and the freeways were crowded, but otherwise the day was like any other. Suddenly the earth shook, and a freeway collapsed, entombing motorists in a mass of concrete and twisted metal.

5.3.2 For four days, rescuers attacked the mass of rubble with every tool available from pliers to massive construction equipment. They had given up hope of finding any one else alive when they found a 57 year old construction worker alive, his lower extremities being trapped and crushed.

5.3.3 No medical personnel were available to render care such as IV hydration, so the construction workers immediately extricated him. Despite later attempts at hydration, he later developed kidney failure and then sepsis; he died a few days later.

5.4 *Borderline Wilderness Settings:*

5.4.1 Several years ago, a light civil aircraft crashed near the top of Tinker Mountain in southwest Virginia. Atop Tinker Mountain's rugged, cliff-strewn ridgeline is the Appalachian Trail; the area is a favorite of hikers and climbers. The aircraft was located from the air, and a team responded to the site. The quickest way to reach the site was from a road near the bottom of the ridge. Those responding to the site fell into two groups: mountain rescue team members and "regular" fire/EMS personnel. Protocols for the fire/EMS personnel required them, when responding to an air crash, to wear full turnout gear and self-contained breathing apparatus, and to carry fire suppression equipment. The standard practice for the mountain rescue was to carry minimal lightweight equipment, to dress appropriately for the weather and brush, to drink plenty of fluids, and to pace themselves.

5.4.2 The Virginia summer weather was particularly hot and humid, and the mountainside very steep. Soon many of the fire/EMS personnel were disabled from heat exhaustion, and one even had to be evacuated. The mountain rescue personnel were able to handle all necessary extrication and fire suppression with what they had carried and whatever they could improvise at the scene.

5.4.3 Survivors were treated appropriately for burns and shock, evacuated and then transported to a local hospital.

[4] U.S. D.O.T. HS 900-025, *Course Guide, Emergency Medical Services*, First Responder Training Course, March 1979. Available from the Standardization Documents Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111–5098. Attn: NPODS.