Wilderness Emergency Medical Services Systems

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KEYWORDS

• Wilderness • Emergency medical services • Medical direction

KEY POINTS

- Wilderness emergency medical services (EMS) programs should be integrated with local emergency response programs.
- Wilderness EMS programs should function with the oversight of a qualified physician medical director.
- Wilderness EMS providers should function with defined scopes of practice as determined by their education, certification of that education, licensure, and local medical director credentialing. These scopes of practice should include provisions to use operationally specific protocols that are approved by the local medical director and the appropriate EMS regulatory authority.

INTRODUCTION

Although one could argue that the history of emergency medical services (EMS) dates back to the Napoleonic Wars or perhaps the US Civil War, when organized systems were developed to move injured soldiers off the battle field, formal wilderness EMS (WEMS) programs in the United States can be traced to 1938 with the work of Charles Minot Dole and the formation of a ski rescue committee with the National Ski Association.[1]

Over the past 75 years, wilderness medicine and EMS have both evolved greatly in their own rights. With the development of the Wilderness Medical Society (WMS), the National Association of EMS Physicians (NAEMSP), and their respective scientific journals, these 2 disciplines have established themselves as bona fide practices of medicine. This is an exciting time as the practice of WEMS is in evolution,

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combining the creativity of wilderness medicine with the structure of formal EMS systems.

Definition of Emergency Medical Services

The National Association of State EMS Officials (NASEMSO) defines EMS as an "Integrated system of medical response… that includes the full spectrum of response from recognition of the emergency to access of the healthcare system, dispatch of appropriate response, pre-arrival instructions, direct patient care by trained personnel, and appropriate transport or disposition."[2]

Further, in their statement defining EMS, the NASEMSO medical directors council states that anyone participating in any of the activities of EMS, regardless of the environment, is by definition engaging in the practice of EMS medicine, which requires the oversight of a qualified physician.[2]

To those who are not directly involved in their operations, EMS systems may look very different throughout the United States and even the world. These differences become quite pronounced when comparing traditional frontcountry EMS programs to backcountry WEMS programs. Yet, despite these differences, the fundamental elements of EMS systems remain the same.

With the 1964 publication of *Accidental Death and Disability: The Neglected Disease of Modern Society*, the public and Congress began to take notice of the importance of improving the system of emergency care in the United States.[3] This publication identified a fractured emergency care system, beginning with poor quality care provided to patients in the out-of-hospital milieu and a disorganized system of getting patients to acute care hospitals.

In 1973, Congress passed the EMS Act, appropriating federal resources to the development of regional EMS systems.[4] The EMS Act of 1973 identified 15 essential components to an EMS system: personnel, training, communications, transportation, facilities, critical care units, public safety agencies, consumer participation, access to care, patient transfer, coordinated patient record-keeping, public information and education, review and evaluation, disaster planning, and mutual aid. Interestingly, the original development of EMS systems did not stipulate physician involvement, an oversight that would be corrected in future years.

Given the essential components of an EMS system as identified by the 1973 EMS Act and the more recently published definition of EMS by NASEMSO, perhaps the following scenario will clarify the general structure and purpose of an EMS system:

It's a bright sunny day and Mr Jones is out for a bike ride with a bunch of friends. Without notice or a precipitating event, Mr Jones falls off his bike and lies on the ground unresponsive. One of Mr Jones' fellow bike riders recently completed a bystander hands-only cardiopulmonary resuscitation (CPR) course offered by the local fire department and recognized that Mr Jones was having agonal respirations. He quickly began chest compressions and another friend called 9-1-1. The dispatcher mobilized appropriate resources and continued to assist the friends on the telephone. Within minutes the fire department arrived with an automated external defibrillator. Mr Jones was shocked out of ventricular fibrillation, transferred to a hospital where he had emergent percutaneous coronary intervention showing a 100% left anterior descending artery lesion. He was discharged from the hospital 2 days later, neurologically intact, to follow-up with cardiac rehab.

This scenario highlights many important components to an EMS system. Through community engagement, the EMS system was able to educate Mr Jones' friends in the technique of hands-only CPR and how to access the emergency care system. The firefighters that arrived acted on protocols that were developed by an EMS