WILDERNESS INSTRUCTOR

Wilderness Emergency Medical Services Medical Director Course: Core Content Developed With Delphi Technique

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The National Association of Emergency Medical Services Physicians' (NAEMSP) position on the role of medical oversight within an operational Emergency Medical Service (EMS) program highlights the importance of integrating specially trained medical directors within the structure of these programs. In response, the NAEMSP Wilderness EMS (WEMS) Committee recognized the need for the development of an educational curriculum to provide physicians with the unique skills needed to be a medical director for a WEMS agency. This paper describes the Delphi process used to create the subject matter core content, as well as the actual core content developed. This core content was the foundation for the development of a specific WEMS medical director curriculum, the Wilderness EMS Medical Director Course.

Key words: wilderness, Delphi technique, EMS, medical director, core content

Introduction

Aside from local ad hoc teams dating back to the colonial era, the origin of “modern” wilderness emergency medical services (WEMS) can be dated to World War II.¹ The US Army 10th Mountain Division, developed with the support of the National Ski Association and the American Alpine Club, returned to the United States with specialized alpine/ski-based wilderness medical skills.¹ These new military veterans were instrumental in the creation of the National Ski Patrol, which continues to train ski patrollers who provide medical services to outdoor enthusiasts at ski areas across the United States and in many countries in Europe.

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As interest in recreation in the outdoors has increased, a need for specialized rescue services has been recognized. From this need, a number of private wilderness educators have developed programs for training and certification of rescuers in the skills and techniques of wilderness medical care at various levels. The most common levels are Wilderness First Aid, Outdoor Emergency Care, Wilderness First Responder, Wilderness EMT, and Wilderness Paramedic. The graduates of these programs then often work as rescuers with ski patrols and wilderness search and rescue (SAR) organizations across the United States.

Regardless of their intended role, persons with training in wilderness medical care, while functioning within the structure of a rescue team, are apt to use this training when engaged with an actual patient in the wilderness. However, as has been defined by the National EMS Scope of Practice document,² the scope of practice for any EMS provider, including a wilderness EMS provider, is determined by not only training and certification, but also by state regulations and medical director oversight.

Recognizing that wilderness EMS operations often require unique circumstances in oversight as compared

to standard EMS agencies, the National Association of EMS Physicians (NAEMSP) and the National Association of State EMS Officials (NASEMSO) passed a joint position statement in 2010, which stated that “Operational EMS programs...including ski patrols, wilderness search and rescue teams...fast or open water rescue teams, and wild land fire crews...should function within and not outside the mainstream healthcare system...[and] it is important that their...providers...have a qualified medical director...”³

WEMS physicians generally work in a supervisory capacity, overseeing the medical care provided by WEMS providers functioning at a variety of skill levels. Despite the skills taught to a provider in a WEMS training program, the actual scope of practice, defined by what a provider is allowed to do by the state regulatory authority, is dependent on these skills being approved by the state and overseen by a credentialing physician. Thus, WEMS physicians often help facilitate the training and oversight of operational specific skills and protocols as needed for the specific environmental conditions, and as approved by a state regulatory authority. As noted in the NAEMSP position statement, should a WEMS provider use advanced operational specific skills without the oversight of a recognized medical director, then they are indeed functioning outside of the established healthcare system, which is dangerous to the patient and often in violation of state regulations.

Despite the recognized need for ski patrols and SAR teams to have operational oversight provided by a qualified WEMS medical director, however,⁴ there is still a gap in WEMS training. Although there are many available courses teaching WEMS as a practitioner, no courses have been available that teach the skills of WEMS medical direction. This discrete skill set, generally self-taught by combining expertise and interests in both wilderness medicine and EMS, has been possessed by only by a limited number of providers in the country. In an effort to fill the gap between the need for a WEMS program to have a qualified medical director and the reality that few physicians possess these professional skills, the Wilderness EMS Medical Director Course was developed.⁵ This paper describes the process used to develop the core content for the course and outlines this core content for the reader.

The Delphi Process

To minimize bias and create a core content for the training of WEMS medical directors using an established scientific process, the Delphi technique was utilized. The Delphi technique develops consensus among identified experts by having each expert answer the study question

without communicating with the other experts participating in the process,^{6,7} thereby minimizing the potential for a study expert to be influenced by the opinions of other participants in the study. A study coordinator then looks for common themes and sends out the study question as many times as needed until the group reaches consensus.

A group of 5 WEMS physician experts were identified through the NAEMSP Operational Medical Direction Committee. All 5 experts (S.H., J.B., H.M., T.D., G.S.) either have experience working as a WEMS medical director or were physician educators of WEMS providers. In addition, the project lead (M.M.), serving in the capacity of study coordinator, also has experience working as a WEMS medical director and educator.

In round 1 of the Delphi process, the study participants were asked to develop a model core content for an educational program to train a physician to be a medical director for a WEMS program. The participants were instructed to design the program as a 16-hour course, keeping in mind what makes WEMS different from traditional EMS. For example, compared with traditional EMS, which are typically supported by some type of ambulance that is able to carry extensive medications and equipment and have the capacity to easily reach physician support by phone or radio, WEMS are typically provided with minimal equipment (that can be carried by a provider in addition to personal survival equipment), are usually limited to only oral/intranasal medications, and often have prolonged out-of-hospital times with less access to direct physician support. These differences in WEMS, compared with traditional EMS, require more creativity in managing patients, stronger indirect oversight programs with extensive training and protocol development, processes to involve physicians in field training exercises, and improved real-time support through physician response to the field during actual patient care activities.

The study participants were also instructed to keep in mind that the course would serve physicians who were interested in WEMS medical direction or who, by default, were in the position of being a WEMS medical director, who have either 1) extensive EMS experience and minimal wilderness experience or 2) extensive experience working in the wilderness environment but no experience with EMS medical direction. Although the curricular needs for these 2 groups may be different—as the one group would need more training in providing wilderness medicine and less time spent on the structure of EMS systems, and the other group would need less time spent on wilderness medicine and more time on EMS systems issues—the intent of this first stage in the development of the curriculum, the development of the core content of this educational program, was to identify

Table. Wilderness Emergency Medical Services Medical Director Course Core Content*Introduction*

- I. Introduction to the course
- II. Introduction to EMS/Wilderness Medicine/WEMS/WEMS medical direction
 - A. Role of medical director
 - B. Introduction to EMS systems
 - C. Physician in field vs other roles for physician
 - D. System financing
- III. WEMS system design
 - A. Types of systems
 - B. Organization of WEMS programs
 - C. Multiple jurisdiction/multiple team integration
 - D. Integration with local healthcare resources, including other EMS programs
 - E. Incident command system
 - F. Types of WEMS providers
 - G. Scopes of practice
 - H. Appropriate utilization of different levels of providers and scopes of practice

Medical direction

- IV. Direct medical direction
 - A. Communication
 - B. Radios
 - C. Direct physician care in the field
- V. Indirect medical direction
 - A. Quality Improvement
 - B. Education
 - C. Protocols
- VI. Documentation
 - A. Medical record
 - B. Refusals
- VII. Legal considerations
 - A. Legal
 - B. Liability
 - C. Ethical

Specific situations

- VIII. Discussion of medical direction for specific medical situations
 - A. Airway
 - B. Respiratory compromise
 - C. Shock
 - D. Head injury/spinal injury
 - E. Environmental—hypothermia/hyperthermia
- IX. Logistics
 - A. Access
 - B. Equipment
 - C. Evacuation
 - D. Packaging/movement
 - E. Transfer of care

Putting it all together

- X. Potpourri
 - A. Catastrophic events
 - B. Psychological first aid
 - C. Research in WEMS

Table (continued)

D. Practice opportunities
E. Special environments—eg, desert, mountain, fast water
F. Related environments—eg, cruise ship
G. Occupational health
XI. Panel discussion
XII. Course wrap-up

EMS, emergency medical services; WEMS, wilderness emergency medical services.

essential elements so that all students taking the course would complete the program having mastered the same information.

In round 2 of the Delphi process, the study participants were given a list of all the answers provided from round 1. The participants were then asked to rank the choices by noting how much time they thought should be given to a specific topic, again keeping in mind a total of 16 hours for the course. The choices available were 0 minutes, 30 minutes, 60 minutes, 90 minutes, and 120 minutes. Choosing 0 minutes meant the participant thought that the topic should not be included in the final core content.

On receipt of participant answers from round 2, the project coordinator was able to create a model core content that demonstrated consensus from the participant experts. In round 3, the participants were sent the proposed core content and were asked to either vote to end the project, because they thought it was complete, or continue to either add or delete topics. In addition, the project participants were asked to provide explanation for 2 of the proposed topics, Advanced Topics and Panel Discussion. After round 3 was complete, consensus had been reached and the Delphi process was closed.

In the final stage of the development of the core content, the members of the expert group were revealed, and a meeting was convened of the study participants at the January NAEMSP meeting in 2010. During this meeting, all participants had the opportunity to give any final recommendations, and a discussion developed regarding next steps for the project.

Core Content

The WEMS Medical Director Course core content is provided in the [Table](#).

Future Direction

Since the completion of the core content document, a subgroup including 2 members of the core content workgroup (M.M. and S.H.) plus 1 additional WEMS

medical director (W.S.), an active member of the Wilderness Medical Society (WMS) and NAEMSP, further developed the core content into a complete curriculum.⁵ The curriculum, supported by the initial core content as outlined here, is shaped in real time during each course based on the educational needs of the students in the course, while also ensuring that all students complete the course with consistent and practical tools needed to serve as a qualified medical director for a WEMS program.

Now that the core content has been identified and a curriculum developed, a number of further steps can be envisioned to improved WEMS medical direction: 1) collaboration with WEMS programs to facilitate the integration of ski patrols, lifeguarding services, wilderness rescue agencies, and other field providers into state and local EMS systems with the involvement and oversight of a WEMS trained medical director; 2) expansion of the curriculum, remaining based in the core content identified by the Delphi process consensus; 3) expansion of availability of the curriculum through continued presentation of the Wilderness EMS Medical Director Course as a CME activity available to health-care providers; and 4) consideration of the role of midlevel providers functioning as an associate medical director for a WEMS program, and potential recruitment of these providers to take the course and receive formal training in WEMS medical oversight.

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