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WILDERNESS INSTRUCTOR

Medical Student Electives in Wilderness Medicine: Curriculum Guidelines

Stephanie A. Lareau, MD; Michael J. Caudell, MD; Kiran B. Pandit, MD, MPH; Brian C. Hiestand, MD, MPH

From the Department of Emergency Medicine, Georgia Regents University, Augusta, GA (Drs Lareau and Caudell); the Department of Emergency Medicine, Virginia Tech–Carilion Clinic, Roanoke, VA (Dr Lareau); the Department of Emergency Medicine, Columbia University, New York, NY (Dr Pandit); and the Department of Emergency Medicine, Wake Forest University School of Medicine, Winston-Salem, NC (Dr Hiestand).

Wilderness medicine has been a part of medical student education for many years and is becoming more popular. To help standardize and improve the student experience, we surveyed current elective directors to gain an understanding of what experts in the field thought were priority elements in a wilderness medicine elective. Although there is a diversity of opinion among leaders in the field, there are multiple topics on which there is concordance on inclusion or exclusion.

Key words: wilderness medicine electives, medical student elective, curriculum, wilderness medicine curriculum

Introduction

Wilderness medicine has been a part of medical student education for many years and is becoming more popular. According to standards established by the Liaison Committee on Medical Education (LCME), medical education curricula must include electives not only to gain exposure to various medical specialties but also to "provide opportunities for medical students to pursue individual academic interests."[1] In 2005, there were 8 medical student electives offered in the United States.[2] There are now at least 26 active student electives, with several more in the planning stages. The electives are offered by a mix of individual medical schools, wilderness medicine companies, and the Wilderness Medical Society (WMS). Intended participants vary from 1st- to 4th-year medical students. Some courses also are open to residents and PA students. Courses range in length from 2 to 4 weeks. Currently, unlike many other student clerkships such as emergency medicine[3] or internal medicine, there is no standardized curriculum for wilderness medicine student electives.

The Accreditation Council for Graduate Medical Education (ACGME) is a private professional organization that accredits residency programs. The ACGME establishes educational objectives for residency programs that are often reflected in medical school curriculum development, covering domains such as patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice. These same competencies are used by the American Board of Medical Specialties (ABMS) for maintenance of certification for practicing physicians.

Given that there is no current established core curriculum, student educational experiences may be variable. To help standardize and improve the student experience, we surveyed current elective directors to gain an understanding of what experts in the field thought were priority elements in a wilderness medicine elective. Another goal of this project is to assist elective directors with curriculum design by providing a consensus of basic topics that should be covered in an introductory elective, and ideas for other topics that can be covered. It is not meant to limit topics covered or elective experiences.

Methods

Through searching lists on the WMS and American College of Emergency Physician (ACEP) websites and e-mailing the WMS Education Committee and the American College of Emergency Physicians (ACEP) Wilderness Medicine Section, a list of all the current and recent wilderness medicine electives was created.

Corresponding author: Stephanie Lareau, MD, Carilion Clinic, Department of Emergency Medicine, 1906 Bellview Avenue, Roanoke, VA 24014 (e-mail: stephlareau@gmail.com).

Each course director was contacted and curricula or schedules were requested. All of the topics from these schedules were then compiled into a list, which was consolidated by the authors to represent all of the topics covered in current electives.

A list of experts in medical student wilderness education was compiled. Experts were defined as all of the current wilderness medicine student elective directors as well as persons who were nominated by members of the WMS Education Committee or members of the ACEP Wilderness Medicine Section as experts in student wilderness medicine education. Fifty-four people were nominated as experts.

These experts were sent a survey with the following instructions: "This survey is intended to help create a consensus statement regarding topics that 'can, should or must' be included in a 4-week wilderness medicine elective for medical students. The topics listed below have all been pulled from current curricula and syllabi. There is significant overlap between some topics while other topics are meant to be included under umbrella terms. Even if not specified, each topic is intended to be geared toward a wilderness environment with inclusion of improvisational techniques where appropriate. This survey is intended to create guidelines to help establish new electives and provide a resource for collaboration among elective directors. It is not intended to discount or discourage improvisation and flexibility which are vital in wilderness medicine."

We chose the words "should" and "must" to be in accordance with the standards set forth by the LCME: "Use of the word 'must' indicates that the LCME considers meeting the standard to be absolutely necessary for the achievement and maintenance of accreditation. Use of the word 'should' indicates that compliance with the standard is expected in the absence of extraordinary and justifiable circumstances that preclude full compliance."[1] Although the LCME context of these words applies to accreditation of medical programs, we used similar terminology for the context of a medical student elective, with the addition of the words "can" and "should not" to assess and codify expert opinion on the subject matter.

We asked the surveyed experts to rank each topic on a Likert scale as 0, should not; 1, can; 2, should; and 3, must. Data were compiled in an Excel (Microsoft Corp, Redmond, WA) worksheet. Using Stata (v.11.0; StataCorp, College Station, TX) the mean scores and standard deviation were calculated for each topic. We also established the set of all topics that at least one expert ranked as a "must" and also created a list of topics that at least one expert ranked as a "should not" be taught. The ACGME core competencies in each topic were also determined by the authors.

Data

Of the group of 54 experts, 35 responded to the survey. It was clear based on comments from one respondent that he or she did not understand the instructions so his or her responses were excluded as outlier data, leaving 34 sets of responses available for analysis. Seventeen were current or past elective directors with an average experience of 5.7 years, ranging from 1 year to 15 years. Thirty-one of the respondents were WMS members, 18 of whom were also ACEP Wilderness Medicine Section members. Twenty-eight of the respondents were associated with academic institutions, and 6 were associated with private wilderness medicine organizations.

Table 1 shows the number of respondents who chose "should not," "can," "should," and "must" and the average and standard deviation of each topic. With the exception of swift water rescue, cave rescue, high angle rescue, and wildland fire, every topic was rated as a "must" by at least one respondent. These exceptions are considered to be nonmedical wilderness skills, which might be why some respondents said they should not be taught.

Conversely, the following topics were rated as "should not" be taught by at least one respondent: high angle rescue; wildland fires; cave rescue; hyperbaric medicine; swift water rescue; avalanche; natural disaster; low angle rescue; seafood toxidromes; mass casualty; dive injuries; environmental ethics; trip planning; medical futility; clothing gear selection; orienteering, maps, and global positioning systems; ear, nose, and throat; and gynecology and genitourinary. Unfortunately, based on the design of the survey, reasons for ratings were not obtained.

Each topic was also evaluated and assessed for relevance to the ACGME Accreditation Council for Graduate Medical Education core competencies (Table 2). There are 6 core ACGME competencies.

1) Patient Care: "Identify, respect, and care about patients' differences, values, preferences, and expressed needs; listen to, clearly inform, communicate with and educate patients; share decision making and management; and continuously advocate disease prevention, wellness, and promotion of healthy lifestyles, including a focus on population health."
2) Medical Knowledge: "established and evolving biomedical, clinical, and cognate (eg, epidemiological and social behavioral) sciences and the application of knowledge to patient care."
3) Practice-Based Learning and Improvement: "involves investigation and evaluation of one's own patient care, appraisal and assimilation of scientific evidence, and improvements in patient care."