THE WILDERNESS INSTRUCTOR

Wilderness Expo 2001: Educating the General Public on Wilderness Medicine and Outdoor Safety

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Introduction

Every year, more and more people participate in potentially dangerous activities in the wilderness. The majority of these adventurers are tourists and laypersons not adequately trained to deal with the emergencies that every expedition, no matter how large or small, might encounter: hypothermia, burns, snake and insect bites, traveler's diarrhea, hemorrhage, fractures, poisoning, drowning, high-altitude cerebral edema, and cardiac arrest, just to name a few. Emergency departments in the region of Dayton, OH, have been experiencing dramatic increases in annual patient census. This includes larger and larger numbers of people who are injured in wilderness-related activities such as camping, hiking, biking, boating, canoeing, and hunting. The goal of the *Wilderness Expo 2001* project was to organize an event that would educate members of the general public on topics related to wilderness and survival medicine and outdoor safety.

Course description

The general public in the region of Dayton, OH, was invited to participate in *Wilderness Expo 2001*, a free educational symposium on wilderness and survival medicine. The 6-hour event was sponsored primarily by Wright State University Department of Emergency Medicine, Wright State University School of Medicine Inte-

grated Residency in Emergency Medicine, and Wright State University School of Medicine Office of Public Relations. This inaugural event was developed and implemented by an emergency medicine postgraduate year II resident and an emergency medicine faculty advisor from Wright State University.

The target audience was age 10 and up, with a total attendance goal of 100. The on-campus venue consisted of a large lecture hall with multimedia capability and seating for 100. Surrounding the lecture hall were 5 interdisciplinary teaching labs, each with Internet access and seating for 20. The venue had lobby space for sponsor merchandise displays and food service, as well as adjacent free parking. The atmosphere upon entering the venue was also considered (eg, tents and other camping gear were displayed throughout the lobby).

The event was held in February to attract participants anxiously awaiting the end of the Midwestern winter and the arrival of spring. Seminars were conducted by emergency medicine resident physicians on topics including, but not limited to, basic first aid, hypothermia, hyperthermia, snake and insect bites, poisonous/edible plants, climbing safety, mountain sickness, SCUBA diving and water safety, severe weather, travel medicine, head injuries, fracture care, sprains and strains, and blister care. Each seminar consisted of a 30- to 60-minute multimedia presentation in the large lecture hall, followed by a hands-on display/demonstration and question/answer session in the teaching labs. For example, the teaching lab demonstrations included a splinting lab, a water purification station with taste testing, and a basic first aid station with an automatic external defibrillator and a "resuscitation Annie" mannequin. Participants were free to attend any number of lectures or small groups at their leisure. Small group attendance was not recorded. All multimedia lectures were videotaped.

Sponsorship, beyond the university-affiliated sources listed above, was difficult to obtain. Recruitment of national sponsorship (Nike, Gatorade, and Powerbar) was

Formal presentations of this work: 1) Dayton Area Graduate Medical Education Consortium Resident Research Forum, April 16, 2001, Wright State University, Fairborn, OH; and 2) Helen L. Popoway Resident Research Forum, May 15, 2001, Kettering Medical Center, Kettering, OH.

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unsuccessful. Mass mailings to 35 local sporting goods stores and 3 regional medical centers were followed up with phone contact of each. Only 3 sporting goods stores offered sponsorship in the form of merchandise. No money was donated. A private practice sports medicine and physical therapy group volunteered speakers and literature, as did a local hyperbaric medicine practice. Those sponsors who did offer merchandise, speakers, or literature were allowed a display table at the event.

Advertising was also a challenge, given the lack of financial support from our sponsors. The Wright State University Department of Emergency Medicine paid for a 1-day newspaper advertisement. The medical school office of public relations issued a press release through the university and placed the event on the official university calendar. Several local television news interviews were generated from the press release. These interviews aired 2 days before the event. Medical students from the Wright State University Emergency Medicine and Outdoor Clubs were recruited to distribute flyers throughout the Dayton area. Flyers were distributed and placed in sporting goods stores, exercise clubs, local emergency department waiting rooms, high schools, hospital nursing break rooms, and fire departments, just to name a few. Local clubs (running, SCUBA, climbing, biking, Boy Scouts, and Girl Scouts) were all contacted by phone to extend a personal invitation to attend. An Internet web page (www.med.wright.edu/em/expo01.html) was also created specifically for the event and was linked to the university home page and to the department of emergency medicine residency home page. The web page not only listed the date, time, location, and content of the event, but also had flyers and maps to download, as well as preregistration capability. After the event, all lectures available on computer were downloaded onto the Internet web page for public access.

Preregistration for the event was encouraged either through the Internet web page or by phone. An automated phone line was set up through the university with touch-tone features linked to event date, time, location, and content, as well as directions to the university and voice mail to record registration information. Eighty-one percent of participants preregistered. Approximately 50% preregistered via the Internet. The goal of preregistration was to gauge the number of participants for food purchasing, printing, and seating purposes. On the day of the event, participants were asked to register their address information. Each person was given a registration packet consisting of an itinerary, a map of the building, an evaluation form, and a research survey. Medical student volunteers were present to direct participants to the seminars. Participants were also encouraged to enter a "free" raffle by completing the research survey prior

to attending the seminars. The prizes were donated by our sponsors and consisted of tents, camp chairs, bike helmets, first aid kits, flashlights, and various gift certificates.

The attendees were surveyed regarding their medical background, previous first aid or outdoor safety training, frequency of participation in outdoor activities, and source of knowledge on these topics. Multiple-choice questions were used to assess participants' knowledge of basic first aid and wilderness medicine. The survey contained at least 1 question on each of the topics covered in the seminars. The gold standards for correct answers to the survey questions were Auerbach's reference text *Wilderness Medicine: Management of Wilderness and Environmental Emergencies*¹ and the *American Heart Association: 2000 Handbook of Emergency Cardiovascular Care for Healthcare Providers*.² Medical student volunteers were present to ensure that surveys were complete and were collected prior to the start of the conference. Answers to the survey questions were provided during the seminars and were posted on the Internet Web site after the event.

One hundred twenty-two people attended the conference. Ages ranged from 7 to 80 years old. The mean age was 38 years, and 54% were ≤ 40 years old. Fifty-four percent were male. The majority (75%) were not employed in a medical profession; however, 61.8% reported that they had previously taken a course in first aid or outdoor safety. Medical professions listed by participants included emergency medical technician, paramedic, registered nurse, physician assistant, respiratory therapist, sports trainer, medical administrator, medical student, and emergency medicine resident physician. The most frequently reported outdoor activities were hiking (65.5%), camping (42.7%), biking (38.2%), walking (20.0%), and skiing (18.2%). Other common activities included fishing (12.7%), climbing (9.1%), running (8.2%), hunting (7.3%), canoeing (7.3%), and SCUBA diving (6.4%). Most respondents reported participating in outdoor activities either weekly (34.9%) or monthly (39.6%). Participants reported that their knowledge of wilderness and outdoor safety came from formal education courses (68.0%), books on outdoor safety (30.1%), television/movies/Internet (25.2%), and family members (16.5%). Statistically significant results regarding participants' awareness of basic principles of first aid and survival knowledge were obtained. These will be presented in a separate manuscript.

Approximately 85% of participants turned in evaluation forms (see Table). Lectures voted most interesting and informative on the evaluations included snake/insect bites, basic first aid, travel medicine, and hypo/hyperthermia. Small group demonstrations evaluated as best

Wilderness Expo 2001 Evaluation Form

How would you rate the Wilderness Expo 2001? Please take a moment to fill out this form.

1. I found this presentation to be interesting and informative. (Please rate only those you attended.)

Presentation & Workshop Title Strongly Agree (1) Agree (2) Neutral/No Opinion (3) Disagree (4) Strongly Disagree (5)

Breaks, Bruises, Sprains, Strains _____

Hot/Cold: When the Extremes

Become Dangerous _____

When It Stings, Bites, Poisons Or

Blisters _____

Altitude Adventure: Tips for

Climbers _____

Travel Medicine _____

Basic First Aid _____

Down Under: SCUBA Tips _____

2. Which presentation/workshop did you like the most and why?

3. Which presentation/workshop did you like least and why?

4. Would you recommend Wilderness Expo 2001 to others? ____ Yes ____ No

5. How did you learn about Wilderness Expo 2001? ____ News Story ____ Ad ____ Handout/Flyer

____ Mailing ____ Friend/Family ____ Other (please specify): _____

6. How old are you? ____ 18 or younger ____ 19–24 ____ 25–35 ____ 51–65 ____ Over 65

7. What are your suggestions for topics to be covered in future programs of this kind?

liked were basic first aid, splinting, and water purification. Lectures and small groups evaluated as least liked were sprains/strains/blisters and SCUBA/water safety. Ninety-three percent of respondents reported that they would participate in future wilderness medicine conferences and that they would recommend the conference to others. Attendees' recommendations for future conferences included adding lectures on transporting sick and injured victims from the wilderness, evaluating an accident scene for safety, and providing nutrition in the wilderness. Other suggestions included using less medical jargon, adding handouts from all speakers, and increasing the length of the event to "all day" (≥ 8 hours). Nearly 10 months after the event, the university's office of public relations reported that the *Wilderness Expo* Internet web page was one of the most visited pages on its Web site.

Conclusions and future plans

Overall, this inaugural event was considered a success. A well-publicized, free wilderness medicine symposium can attract many people who participate in wilderness activities. Potentially, it can educate the general public on topics related to wilderness medicine. Planning for an annual *Wilderness Expo* is in progress. Future direction for the event includes evaluating the conference as a teaching tool, expanding the audience and venue, increasing sponsorship and funding, and lengthening the

event to a full-day experience (≥ 8 hours). Under consideration is a taped broadcast of the event in local emergency department waiting rooms and hospital closed-circuit television. Future evaluation forms will include areas to evaluate topic relevance to the participants and effectiveness of the speakers/demonstrators. Potential topics to include in the next event are disaster medicine, biological and chemical warfare/terrorism, and patient evacuation/transport.

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