Prevalence of the “Screaming Barfies” Among North American Ice Climbers

Alexander Beyer; Arun Ganti; Brendan Byrne
University of Michigan, Ann Arbor, MI, USA

Introduction.—Ice climbers endure severe cold to scale vertical walls of rock and ice by gripping tools for prolonged periods with hands overhead. Seasoned ice climbers have described a phenomenon known in North America as the “screaming barfies,” consisting of hand pain, nausea, vomiting, hearing loss, vision loss, and/or dizziness. The exact cause is unknown.

Objective.—Previously described in the United Kingdom, we aimed to estimate the prevalence of localized and systemic symptoms among North American climbers.

Methods.—Data were collected by online and paper surveys. Online surveys were distributed via Facebook and American Alpine Club regional e-mail listservs. Paper surveys were distributed at an ice climbing gym in Michigan. Microsoft Excel was utilized for descriptive statistics.

Results.—One hundred forty-six surveys were completed. Respondent age ranged from 19 to 67 years (median 35). The average ice climbing experience was 6.3 years, averaging 29 climbs per year. Eighty-one percent of respondents reported developing symptoms; 61% reported hand pain, 58% numbness, 52% tingling, 68% throbbing, 56% aching, 41% nausea, 5% vomiting, 11% dizziness, 18% irritability, and 7% muffled hearing. The average symptom severity score was 5/10. Symptoms lasted 1 to 5 minutes in 73% of subjects, with 6% reporting symptoms >10 minutes in duration. Sixty percent reported symptoms occurring during the first climb of the day. Respondents reported symptoms occurring less than once a day 48% of the time, with 19% reporting daily symptoms.

Conclusions.—Based on these results, a large percentage of ice climbers develop symptoms while climbing. Symptoms typically are localized, with a lower percentage of respondents reporting constitutional symptoms, the most frequent being nausea and dizziness. Only 5% of subjects reported vomiting, suggesting that the original term, “screaming barfies,” is a misnomer. This syndrome appears highly prevalent, suggesting that further investigation is warranted to discover the etiology and subsequent prevention strategies.

Preparedness and Reliance on Technology Among Climbers and Skiers in White Mountain National Forest

Brian Lentz, MS¹; Damian Stobierski, MS¹; Eva Szymanski¹; Megan Hadley¹; Ryan Mason, MD²; Lisa Hile, MD¹; David Hile, MD¹

¹Johns Hopkins University School of Medicine, Baltimore, MD, USA, ²University of Washington School of Medicine, Seattle, WA, USA

Background.—White Mountain National Forest (WMNF) attracts nearly 1.7 million visitors annually and contains New Hampshire’s tallest mountain, Mount Washington 1917 m (6288 feet), which has claimed over 140 lives. Despite educational campaigns that aim to increase the preparedness of outdoor recreationalists, numerous search and rescue (SAR)

missions costing over \$250,000 are required annually in New Hampshire.

Objective.—Describe the preparedness of winter recreationalists in WMNF, focusing on level of experience, use of emergency gear, and reliance on technology, with the aim of better targeting interventions to reduce injury and SAR events.

Methods.—A cross-sectional convenience survey was administered in March 2017 at Pinkham Notch in WMNF. It contained 32 items relating to demographics, wilderness/medical experience, emergency gear, and reliance on technology. Adult skiers, splitboarders, hikers, and climbers comprised the study group.

Results.—One hundred forty-eight individuals completed the survey (88% response rate). The majority (57%) were skiers, and the most common age group was 20 to 29 years old (51%). Fourteen percent of individuals carried all 10 essential items, and 63% carried 7 or more essential items. The most common reasons for omitting these essentials were as follows: deemed not necessary (62%), others group members carried them (26%), or forgotten (10%). Eighty-seven percent of individuals carried technological devices, including 72% with cell phones, 27% with avalanche transceivers, and 7% with satellite messengers. Twenty-three percent had previously used a technological device for rescue, and 60% had no backup plan if their technological devices failed.

Conclusions.—Although the preparedness of winter recreationalists in WMNF is highly variable, on average it remains low. Most notably, many individuals rely heavily on technological devices and lack essential gear for emergencies. Although limited experience and high cost of equipment are likely partly responsible for this, aiming educational interventions at these groups may help increase preparedness and reduce SAR events in the future.

The Epidemiology and Medical Morbidity of Long-Distance Backpackers in the Sierra Nevada

Philip Stalcup¹; Susanne Spano²

¹Schumacher Group, Lafayette, LA, USA, ²University of California San Francisco Fresno, Fresno, CA, USA

Background.—The John Muir Trail (JMT) is a 355-km (220-mile) trail in the Sierra Nevada Mountains. There are few reports on long-distance backpackers, and none in the Sierra Nevada.

Objectives.—To survey medical issues and demographics of JMT hikers.

Methods.—Using online and onsite recruitment, hikers completing the JMT in 2014 were directed to an online 83-question survey.

Results.—Of 771 respondents, 92.8% completed all medical and demographic questions. The majority (59.3%) of respondents were men. The average age was 43 years (SD=14), and ranged between 13 and 76 years. Hikers completed their trips in an average of 15.2 days (SD=7.6) and travelled an average of 273±130 km (169±80 miles; mean±SD). Hikers lost an average of 3.5 kg (7.7 lbs), with an average drop in body mass index of 1.1. Weight gain (3.6 kg [8 lbs]) was reported in 12% of respondents. Blisters (67%), sleep problems (57%), and pack

strap pain (46%) were the most prevalent symptoms. More than 10% of respondents rated experiences as “significant to severe” for blisters (n=103), knee and ankle issues (n=89), and sleep problems (n=75). The most common environmental illness reported was altitude sickness (37%). Hypothermia (7%) and heat stroke (5%) were uncommon. Constitutional complaints including headache (33%), excessive fatigue (41%), and excessive shortness of breath (37%) were frequent. Falls were reported in 16% of hikers; 1.3% reported some form of fracture. Of respondents, 8.1% required medical attention, and 18.8% reported a medical problem that persisted for at least 2 weeks after the conclusion of their trips. Thirty hikers were forced to leave the trail for medical issues; 4 of these required emergency medical services assistance, including 3 helicopter evacuations.

Conclusions.—JMT hikers experienced medical issues similar to those reported on other national trails. Weight loss and altitude sickness were prevalent. A majority of hikers had medical complaints with a small percentage requiring medical attention.

Technical Rescue Call Analysis of Roanoke County EMS for Creating WEMS Protocols

Nathan Moore; Joshua Nichols; Stephanie Lareau
Virginia Tech Carilion, Roanoke, VA, USA

Introduction.—Roanoke County Emergency Medical Services (EMS) technical rescue team operates in southwest Virginia. Their operating area includes a variety of terrain, and they respond to approximately 30 technical rescue calls per year. The number of wilderness calls continues to increase as Roanoke becomes an outdoor destination. Roanoke County EMS does not have specialized wilderness protocols or standard equipment.

Objectives.—This study aims to evaluate the location, call type, and equipment used for Roanoke County technical search and rescue calls from 2014 to 2016 to develop standard equipment and protocols for wilderness rescue.

Methods.—Data for technical rescue calls between 2014 and 2016 were analyzed for global positioning system coordinates, call type (trauma, lost, animal injury), and whether patient transport was required. An analysis of standard equipment carried by team members was conducted.

Results.—From 2014 to 2016, Roanoke County EMS deployed on 90 technical rescue calls. A majority of calls took place at popular mountainous hiking areas along the Appalachian Trail, at either McAfee’s Knob (38%) or Dragon’s Tooth (26%), difficult locations to access by road. Based on the high percentage of incidents at these 2 locations, we further subdivided the data looking at Dragon’s Tooth and McAfee’s Knob. Of the total number of incidents (n=59) occurring at McAfee’s Knob and Dragon’s Tooth, 40.6% (n=24) involved trauma, 55.9% (n=33) involved lost hikers, and 0% (n=0) involved animal injury. Victim transport was required in 20.3% (n=12) of calls. Response teams consisted of 7 to 10 EMS personnel, typically equipped with basic life support EMS kits.

Conclusions.—Most technical rescue calls for Roanoke County EMS take place at 2 popular locations along the

Appalachian trail, and many patients require transport. These data will be used to create standard wilderness equipment bags and protocols as well as training to more safely and efficiently respond to calls in our area.

Apostle Islands National Lakeshore: a Review of Search and Rescue and Emergency Medical Services Operations, 2006–2015

Elan Small¹; Sarah Burbank¹; Jeanette Lorme¹; Karl Karlson²; Timothy Erickson³; David Young¹

¹Rush University, Chicago, IL, USA, ²Apostle Islands National Lakeshore, Bayfield, WI, USA, ³Brigham & Women’s Hospital, Boston, MA, USA

Objective.—Apostle Islands National Lakeshore (APIS) lies at the northern tip of Wisconsin and is home to a network of 21 islands along Lake Superior. The goal of this report is to investigate emergency medical services (EMS) and search-and-rescue (SAR) trends at APIS in an effort to improve visitor safety and resource allocation.

Methods.—This study is a retrospective analysis reviewing APIS SAR Reports and Annual EMS Summary Reports from January 1, 2006 to December 31, 2015. Information related to incident type, incident time, individual demographics and activities, injury/illness type, cost, and contributing factors were recorded and analyzed in frequency tables. EMS analysis was limited to incident type.

Results.—From 2006 to 2015, APIS SAR conducted 133 total missions assisting 261 individuals: 57 injured/ill, 200 not injured/ill, 4 fatalities, and 25 documented saves. SAR incidents cost \$3439 on average, most frequently occurred during August and on Saturdays. Nonmotorized boating was the most common activity resulting in SAR incidents. Hypothermia/cold exposure accounted for over half of all injuries/illnesses (45.0%). The most frequently reported contributing factor was wind. EMS responded to a total of 85 incidents with the majority of the EMS incidents involving first aid (40.0%).

Conclusions.—Overall, this study highlights the hazards associated with the frigid, rough, and unpredictable conditions of Lake Superior. The results of this report will allow APIS personnel to more saliently convey risks to visitors in an effort to decrease the need for future rescues.

Mushroom Poisoning

William Brandenburg

Family Medicine Residency of Idaho, Boise, Idaho, USA

Objective.—To analyze mushroom poisoning epidemiologic data in the United States. Additionally, to review the types of mushroom poisoning, causative organisms, and available treatments.

Methods.—Mushroom exposures and fatalities between 1999 and 2015 were obtained from the National Poison Data System. This information was compiled and statistically analyzed. Primary literature, textbooks, and field guides were