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