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**Upcoming
Courses:**

[Wilderness EMT | Near
Glacier National Park, MT
| April 21-May 16, 2008.](#)

[Wilderness First
Responder | Ashford, WA
| June 14 - 21, 2008](#)

[Wildernes EMT | West
Yellowstone, MT | July 14
- August 8, 2008](#)

Avalanche Awareness

by Dave McEvoy, Director

Many outdoor injuries occur when our guard is down, whether at the end of the day or end of the season. For this reason, as we head out for our last runs of backcountry Spring skiing, it is worth reviewing the basics of avalanche injury prevention and treatment.

Remember that early access to a buried victim is your top treatment priority. Safety and prevention are your overriding concerns, but we will keep our attention here to post-avalanche concerns. We know by training with everything from defibrillators to transceivers that the worst time to familiarize yourself with your equipment is during the rapidly waning moments of your patient's survivability. This is a rare time in a backcountry emergency when both seconds count and technology matters. Although exact statistics vary by region and even country, asphyxia, secondary to rebreathing CO₂, is often the most common cause of death from avalanche burials¹. By the time an organized rescue arrives, patients are often not salvageable.



Statistically, 15 minutes is often the most-discussed time frame for positive outcome secondary to a burial. Survivability drops from 90% at 15 minutes to 30% after 30 minutes. Being able to locate, access and treat a patient in this amount of time, at a moment of extreme stress, takes considerable practice and presence. It is not the time to review the instructions. We know that patients with the best outcomes from burial include, among other factors, those that are buried for brief periods of time, in shallow burials, those buried with an air pocket and those buried face up. To a greater or lesser extent, these factors allow rescuers quick access to their patients, limit compression of the patient's chest, allowing them to breathe, and provide an air pocket in front of the patient's face. There are exceptions to all of these factors, but most point to the need for rapid access and immediate ABC management.

Trauma.

While debilitating trauma, including to the spine, is possible, concern for spinal injury should not preclude or significantly delay accessing the patient and providing ABC support. Typically, a fairly small percentage of avalanche deaths are caused by trauma. This does not mean that we should discount trauma or do anything to exacerbate underlying injuries, but it should be put into the context of probabilities, which for avalanche victims favors airway and breathing problems over traumatic injury. Good training enables us to do both.

Hypothermia.

I think most of us are surprised to discover how slowly a body covered in snow will actually cool at its core. We often worry about hypothermia as a cause of death or injury in an avalanche, and this is reasonable given the fact that victims are typically tightly packed in snow, but ironically in most burial situations hypothermia does not set in quickly enough to confer any protection to the brain or heart. In most cases, this is a hypercarbic and hypoxic event, and so time to rescue is of the essence. Cooling rates vary significantly between studies and depend upon a number of factors, including clothing ..

Like trauma, hypothermia should be considered but should not override concerns for ABC management. We expect patients to cool at 1-9 ° F/ hour, which means that even at the highest rates of cooling we don't anticipate that a patient who is buried and either found alive or resuscitated in the field (which in most cases means a short burial) will be profoundly hypothermic. Interestingly, fairly recent studies have shown that rates of cooling actually *increase* , by as much as 50%, after a patient is removed from the snow. So, while hypothermia is often not a problem for a brief burial, it can easily become one after the patient is removed from the snow. Good patient packaging, including hypothermia-wraps, can be invaluable.

Conclusion.

Proper care of an avalanche burial victim involves intense attention to ABC management. Beyond that, it requires immediate identification and access to the patient, which are best accomplished after significant pre-planning, practice and training. If the data are correct, most of our avalanche victims are alive after the snow has stopped moving. Keeping your priorities for scene safety, scene management and rapid ABC intervention provide them with significant opportunities for survival.

References

1. McIntosh, SE, Grissom, CK, Olivares, CR, Han, SK, Temper, T. Cause of Death in Avalanche Fatalities. Wilderness and Environmental Medicine, 2007; 18; 293-297.

Aerie's Work with Missoula Emergency Services and Missoula County Search and Rescue: Backcountry Emergency Response Team

by Trenton Harper, Aerie Lead Instructor & BERT member

This winter saw the creation of Missoula Emergency Service's Backcountry Emergency Response Team (BERT), which is comprised of a number of Aerie instructors and Missoula Emergency Services employees. As Western Montana's largest ALS ambulance services, Missoula Emergency Services has worked closely with Missoula County Search and Rescue (MCSAR) to create a team of wilderness-medicine trained providers who are eager to travel into the region's backcountry to provide ALS-level care during SAR operations. Since our inception, BERT members have participated in numerous winter trainings with MCSAR, Snowbowl Ski Patrol and Missoula Smokejumpers. Supported by our Medical Director, Dr. Greg Moore and MCSAR Medical Director Dr. Mike Kremkau, we are moving forward in creating this first time resource for our regions' backcountry travelers.

Instructor Training Update

by Peter Anderson, Training Officer & Senior Lead Instructor

As Aerie's Training Officer, I have primarily focused on hiring new instructors and coordinating their training and mentorship process. I am proud to say that every lead instructor we send to a course (even a 4 hours CPR class) is at or above the level of Wilderness EMT. Almost all are professional care providers,

experienced outdoor leaders. Aerie recently brought on board a Flight Nurse/ Nurse Practitioner and Intensive Care Nurse. While we have worked hard to attract and retain well- *qualified* instructors, we are also determined to bring *experience* to the classroom. I am proud to say that Aerie instructors bring a wide variety of experiences, from Smoke-jumping to mountaineering to running 911 calls as Paramedics, to our courses. We try to staff our courses with a mix of experienced instructors that can meet our students' varied needs.

One area that distinguishes Aerie is the time we commit to training and mentoring our staff. While we travel and work around the world, the vast majority of our staff are from Montana. Those who are not travel to Missoula to augment their training. This allows us a consistency of message and delivery unique in the field. Aerie has recently completed the majority of its instructor hiring and training for the spring and summer. This year, instructors gathered on the University of Montana campus for intensive training and the opportunity to come together as a cohesive team. This, combined with Aerie's monthly staff trainings focus on Aerie's commitment to outstanding education and customer service while providing our instructors with the latest information regarding wilderness medicine issues and improved teaching techniques.

Our last trainings focused on topics such as cold and hot environmental emergencies, special considerations for our cooperating agencies, and teaching from our new 10 th Edition Aerie course manual. As other outdoor leaders, EMTs, and Nurses join Aerie's experienced staff, we rely heavily upon mentorship of instructors to help improve our continuity and consistency. We also attain this improved continuity and consistency through our apprenticeship program for new instructor applicants. Without the continued mentorship and commitment of our current instructors to teaching great courses, Aerie would be unable to continue its exceptionally high level of education from basic first aid to Wilderness EMT courses and Advanced Wilderness Life Support. For more information regarding Aerie training or joining the Aerie team please contact me at peter@aeriamed.com.

Aerie and the Advanced Wilderness Life Support Program

by Dave McEvoy, Director

Aerie recently teamed up with the University of Utah School of Medicine's Advanced Wilderness Life Support program. AWLS courses are taught to medical professionals including MD, RNs and paramedics for approved continuing education credits. We are very proud to be a part of the AWLS program. Aerie's AWLS courses focus on small-group, field-intensive learning experiences. In the upcoming year, we have an AWLS course on the Alibon Gorge outside of Missoula (with particular emphasis on swiftwater rescue and water-related emergencies), at Chico Hot Springs outside of Yellowstone, and on the Pacuare River in Costa Rica (with an emphasis on travel medicine and Spanish for the medical provider).

In-House Job Sharing and Outreach

by Dave McEvoy, Director

Our goal is to provide our students with the most knowledgeable instructors in the medical, outdoor and risk management fields. Aerie lead instructor Darcy

and professional development opportunities for our staff. With our job-sharing program, employees regularly participate in the professional care providing duties of their fellow instructors. This includes riding along on the ambulance with our paramedics, shadowing in the Emergency Departments with our ER RNs, and observing orthopedic surgeries with our surgery RNs. The goal is to increase our instructors' knowledge of all areas of medical care so that we can better inform our students. To compliment this, Darcy is also coordinating opportunities for Aerie staff to head into the backcountry with rescue organizations, such as rescue teams in national parks, and groups working outdoors such as backcountry crews for the Student Conservation Association in Kenai Fjords National Park in Alaska. Again, our goal is to get our instructors as wide an experience base as possible to help educate their teaching.

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