



Risk Management Plan Emergency/Crisis Plan

Risk management planning is the process of reviewing all the different aspects of a program or event or course and to determine what steps need to be taken to ensure safety and well-being of all the parties involved. Risk Management refers to those who plan it, those who sponsor it, and those who enjoy the activity as a participant. After identifying risks, it is necessary to determine how that risk will be managed. While working at Project ASCENT there are three ways to manage risk:

Reduce it.

Transfer it.

Avoid it.

The Project ASCENT Risk Management Plan is a road map of the steps to ensure that risks have been identified and a process has been established to manage the risks.

Risk Management and Safety

This section of the manual provides goals, outlines, and procedures for Project ASCENT to follow during each of its courses. The kinds of risks acceptable for an individual and individual travel are very different from the kinds of risks acceptable for a group and group travel. Project ASCENT offers our campers the opportunity to pursue outdoor pursuits, service learning projects, and travel by exploring recreational opportunities around the Northwest. Our courses are situated in challenging natural environments. Project ASCENT is committed to managing the risks we assume in order to meet the goals of our programs. The focus of our safety strategy is threefold:

- To create a culture of safety with our staff and campers through education, training, and information dissemination.

- To continually improve our safety support systems of information gathering, communication, contingency plans, protocols, training, and internal reviews.
- To foster excellent relationships in the communities where we travel.

General Overview

ASCENT places a high priority on the realistic management of risks. Because of the varied terrain including mountains, rock walls, water, and outdoor living components of our program, participation with ASCENT contains some elements of risk. Due to the risks inherent to this program, ASCENT cannot legitimately offer a guarantee of safety. However, our acute awareness of and focus on proper risk management decreases overall risk and enables us to operate within an acceptable level of risk.

The goal of keeping the group safe and healthy precedes any decision to go recreating under the guidance of Project ASCENT. It is important that each individual in the group also has this goal in mind throughout each course, taking responsibility for his or her own personal health and safety. As in other aspects of the program, an expedition mentality applies. Poor choices on the part of group members can unnecessarily put the rest of the group at risk; wise choices and the internalization of our Core Value decision-making makes the course smoother for everyone.

Risk Management Statement

Project ASCENT has been entrusted with the care and education of its campers while traveling. As such, the physical and emotional health and welfare of campers, as well as employees, is of highest priority to Project ASCENT. To that end our risk management plan includes several key components: quality staff, informed campers, contingency planning, and support services (i.e. transportation and emergency communication systems).

Quality Staff

Staff at Project ASCENT will be experienced and qualified educators, travelers, and outdoor people. Instructors have specific, relevant experience and training related to those subjects of which they are in charge. We prepare our lead instructors for various outdoor activities by requiring wilderness first aid (WFA), CPR, and other American Mountain Guide Association (AMGA) certifications when applicable for specific technical activities for quick and efficient response to emergency situations. Staffs are aware of camper medical histories, potential environmental hazards, and ASCENT safety and risk management protocols.

Informed Campers

Engaging in outdoor activities involves inherent and other risks-- many of which cannot be controlled. While Project ASCENT cannot guarantee safety, it can and does strive to manage the associated risks and inform its campers of those risks. Project ASCENT deliberately teaches campers how to adapt behavior, recognize and manage risks, and develop expertise to minimize potentially dangerous situations. Campers know they are expected to conduct themselves responsibly by promoting their own safety and well-being as well as that of

other participants and leaders within the program. Thus, campers play an important role in our risk management practices.

Contingency Planning

As a part of routine logistical planning, ASCENT staff must create contingency plans on both the small and large scales. Major contingency planning occurs at the beginning of each course during the pre-destination process when the Emergency Kit is prepared and destination/river/trail/mountain safety discussed. The Emergency Kit is with the group at all times and includes call sheets, compass, walkie talkies, and a phone (when applicable). Throughout the course minor contingency planning is an ongoing process which occurs during the pre-course check and before each river or adventure outing. During the pre-course check, individual maps may be consulted, local numbers for the cell phone and SPOT Locator Beacon, batteries checked, and group safety/risks discussed. While we carry walkie-talkies on applicable courses and a cell phone, the risk management plan needs to include contingencies in case technology fails.

Support Services

ASCENT carries medical kits with them at all times, as well as Outdoor Call Sheets with emergency contact numbers for local emergency services. A GPS / SPOT Emergency Beacon for emergency and non-emergency situation descriptions and locations is also carried on excursions that warrant possible emergency situations. This will facilitate communication with the department head during regular check-in/reports and for emergency situations when it may be necessary to notify parents, initiate evacuations, and/or begin insurance proceedings.

Risk Management Team

President/CEO/Camp Director of ASCENT - Rob Christensen

The Director of ASCENT provides oversight to the overall management and operation of Project ASCENT. The Director is responsible for producing the risk management manual and making revisions as needed.

Medical Advisor- Katie Miller

The Medical Advisor is the responsible medical advisor for Project ASCENT.

Director of Camps - Rob Christensen

The Director of Camps acts as department head for camp department, where Project ASCENT resides. He is acting director of the outdoor programs if the Camp Director is unable to be reached or perform his/her duties.

Field Specialist

The FS is the lead specialist in the field-facilitating group. This individual will have a vast array of technical and medical skills and acts in the field as the representative.

Vehicle Safety

Driving the vans/busses is one of the greatest responsibilities we have at Project ASCENT. Statistically, there is more danger of an accident on the road than anywhere else we are with the campers, including rivers. It is important to respect this responsibility and take it on with the utmost care. Drivers must pass the 15-passenger vehicle-training program operated by the vehicle coordinator for Project ASCENT, in order to operate vehicles. Additional certifications are required for trailer driving and driving in inclement conditions. A DMV background check is required to verify a clean driving record for each potential operator.

An equally important element of safety is vehicle maintenance. The vehicles and trailers fall in line with Project ASCENT's emphasis on providing a quality experience, and it is the responsibility of all staff members to make sure they are well maintained. Tires and fluids should be checked frequently and the vehicles must receive regular service. Problems and service should be documented and reported to the Camp Director and/or Vehicle Coordinator. The staff is also responsible for teaching the campers to respect and care for the equipment.

Program Environments

Project ASCENT views safety as an integral component to the success of its programs and is vigilant in its commitment to safety with all ASCENT destinations. If a destination is not acceptable in terms of security and group safety, ASCENT reserves the right to alter or cancel a program. Examples include flooding, volcanic eruptions, or forest fires.

Technical Activities

Rappelling

- An Field Specialist should directly monitor rappelling activities at all times.
- All gear should be inspected for excessive wear or damage.
- Helmets should be worn at all times while rappelling or belaying unless on an indoor or outdoor wall. It is advisable to designate specific areas within a climbing site where helmets are worn.
- A back-up belayer/rope handler should be employed unless the Field Specialist can ensure people have requisite skills, attention, and dedication for belaying one-on-one.
- All rappels should be set up with multiple, solid, independent anchors. The standard set-up includes at least three solid anchors independently linked to two opposing locking carabiners using separate pieces of 1" tubular webbing.
- If using bolts for top-rope anchors, these should be inspected thoroughly prior to use. If you doubt their integrity, pick another anchor or climb. A lower bolt may also be clipped for redundancy.
- A figure eight or ATC attached directly to the harness should be used for all rappellers.
- • Use good judgment! If you have a gut feeling or intuition that you should or should not be doing something, pay attention to that feeling. Please do not let the enthusiasm for the experience overshadow your independent good judgment.

Kayaking, Canoeing, and Other Water-Based Activities

- All Field Specialists must consult with the Camp Director to discuss the educational outcomes and risk management particular to their trip.
- All participants should wear fully fastened PFDs while on the water.
- All Field Specialists must wear a functional PFD, knife, and whistle.
- When practical, a swim assessment in a pool setting should be done prior to a trip or class that spends a good amount of time on or in water. This 150-yard swim generally is not used as an admission requirement, but gives the Specialist/s a good idea of a participant's comfort in water.
- If conditions such as water flow, wind, or surf height are substantially different than anticipated for a given activity, a thorough assessment should be done with regards to the viability of achieving the educational outcomes while managing the risk of the activity. The Field Specialists may decide to include the Camp Director in this decision-making.

One activity on the margins of being classified as water-based is fishing. Fly-fishing in slow moving current may be undertaken without a PFD provided the water level is not over the participant's knees and there is good run-out from the area in which they are standing.

Transportation

Project ASCENT recognizes that traveling between sites during the course contains an element of risk. Depending upon the various methods of transportation available, staff should select the safest mode of transportation at that time.

Public Transportation

To choose appropriate transportation, staff members must select the safest vehicle, driver, and route available. Project ASCENT strives to provide safe and dependable transportation.

Rented Vehicles

ASCENT may rent vehicles to transport campers. Rental vehicles are operated by approved ASCENT staff. Each staff member must have an approved driving record and must review and adhere to the applicable laws and conditions for the states in which travel will take place.

ASCENT Owned and Operated Vehicles

- Van occupancy will not exceed 14 campers.
- All passengers must wear seatbelts.
- Each vehicle must have a fire extinguisher, first aid kit, and emergency kit.

- All state laws and speed limits must be followed.
- All vehicle documents must be filled out pre- and post-trip.
- The vehicle must be safety checked prior to each use.

Risk Awareness

In adventure education programming, campers die each year from trauma and illness, and many campers are injured. The greatest number of deaths in adventure programming result from transportation and drowning.

Negligence

The number one liability you have as Field Specialists is negligence. The following four conditions must be present to prove negligence: (1) a duty to act, (2) an injury must have occurred, (3) a breach of duty, and (4) causation.

Due Diligence

Due Diligence is your number one protection as an Field Specialist with Project ASCENT. Due diligence means going the distance, doing your homework, and doing what anyone would expect of you during specific situations and conditions. If you have a question about this, call the ASCENT office to ask for advice. You can also picture yourself in court answering questions about your decision-making process and how you determined a situation was acceptable. Your biggest strength in reducing risk is to understand your hazard exposure, create plans to prevent hazard exposure, and mitigate consequence as effectively as possible.

Perform the following to the best of your ability when making decisions:

- Ask yourself what are you are doing (who, what, where, when, and how).
- Do your homework/research (due diligence). Define your hazards.
- Create risk-management strategies including objective hazard avoidance.
- Create support strategies (transportation, medical care, and communication).
- Establish effective contingency plans.

Who are your campers?

Campers between the ages of 13-17 are the typical population we serve. Know their medical, psychological, and discipline history.

Gather general information, understand regional hazards, river hazards/risks, snow conditions/risk, and updated trail conditions. Research and understand how these issues and related risks will affect and influence the camper group.

- ASCENT investigates these risks prior to departure. Field Specialists are expected to continually evaluate these risks during the course.

Program Analysis

As Field Specialists, you have the insight and the knowledge to help ASCENT make each course safer. Help ASCENT learn about opportunities to make things safer in terms of program philosophy, leadership structure, policies/procedure, staff hiring, staff training, operations, medical screening, gear malfunction/misuse, organizational culture, and/or miscommunications.

Discrimination and Harassment Policy

Project ASCENT is committed to creating and maintaining a community in which campers, faculty, and staff can work, live, and learn together in an environment free of discrimination or harassment based on race, gender, national origin, age, religion, sexual orientation, disability, or any other status or characteristic that is protected by law. This community extends beyond the program's physical boundaries and into the wilderness context. Membership in this community, as governed by the honor principle, imposes on campers, faculty, and staff an obligation to respect the dignity and autonomy of others and to treat one another civilly and without regard to factors irrelevant to participation in the life of the program.

Romantic or sexual relationships that might be appropriate in other contexts may, within the program community, create the appearance or fact of an abuse of power or of undue advantage. Sensitivity to possible conflicts of interest or to misuse of power is necessary in cases of other romantic or sexual relationships where one partner may be in a position of power or authority over another (which can occur between faculty and staff, staff and campers, or within the staff, campers, or faculty).

Procedures for the Resolution of Complaints:

The program has both principled reasons and a legal obligation to investigate possible violations of its antidiscrimination and harassment policy.

The honor principle and the traditions of Project ASCENT encourage the informal resolution of complaints. Informal resolution may occur through direct discussion, through mediation under the auspices of the honor council, or with advice obtained from a designated officer of the program (a list of such officers is published and may be obtained from the office of the president).

Complainants wishing advice about how to proceed with a complaint should consult a member of the honor council or a designated officer of the program.

ASCENT EMERGENCY SYSTEMS

Our program has had an excellent track record of managing risk effectively, and we want to keep the focus on managing and avoiding risk instead of responding to accidents. We strive to engage in adventurous activities where risk is limited. A Field Specialist should be able to articulate why a given activity was undertaken and what merit the activity has in light of any inherent risks that exist. If one's experience dictates that the group should be more conservative, the Field Specialist should give credence to his or her experience. If Field Specialists continue to manage risk well, the program should continue to thrive and expand.

Decision-Making, Taking Charge of the Situation

If an emergency occurs, the designated leadership should take direct control of the situation. It is proven that, in crisis situations, a direct hierarchy helps clarify what actions should be taken even if the Field Specialist chooses to share their decision-making responsibility. Please discuss this hierarchy and your comfort with handling emergencies with your co-leaders and, if appropriate, the Camp Director before the trip starts.

Using the Call Guide – Requesting Aid

When available, mobile phones should be carried on all outdoor trips. That said, there are many locations where it is difficult to call; you cannot assume a telephone will work as part of your risk management plan. As a leader you should familiarize yourself with both the mobile phone and the call guide before beginning the trip. Confirm the area to which you are traveling has resources listed in the call guide. If not, it is your responsibility to find the nearest hospital and sheriff locations and numbers before leaving home. If you call in to ask for help from the outdoor program manager, you should have clear information about the situation as well as your proposed plan of action.

Unscheduled Loss of Contact – Search and Rescue

If someone is thought or known to be lost, a quick search should be done immediately. If the trip's leaders are experienced with grid searches and if they decide they can do an initial set quickly and safely, this option may be entertained. After three hours of conducting any search or if otherwise considered appropriate by the leaders, the Camp Director at Project ASCENT should be contacted to determine if outside assistance is necessary. Once outside agencies are contacted to assist with a search the leaders should accept that they no longer have total control over the direction and nature of the search.

Create emergency plans for each course! Each course should have the following plans, as needed. staff needs to create an emergency procedure plan to think about what to do if the worst happens.

Emergency Procedures

- STOP and THINK!
- Plan: Make a plan
- Review: Review and evaluate the plan
- Act: Implement the appropriate plan (see below).

Generic Disaster Plans

Evacuation Plans

- Triggers
- Stages of preparation
- Task teams / leadership
- Multiple routes (river evacuation, political unrest)
- Designated vehicles
- Water, food, and fuel

- Communication
- Emergency medicine

“Hunker Down” Plans

- Triggers
- Stages of preparation
- Task teams / leadership
- Secure the area of debris or hanging dangers
- Water, food, fuel, shelter
- Communication
- Medical emergency

Initial Response

Responses to incidents vary with severity. Serious incidents are those that result in death, threaten limbs, or the long-term well-being of any individual. Minor incidents are those that do not threaten life, limb, or threaten the long-term well-being of any individual. Though less severe, minor incidents may still require a prompt response such as a visit to a physician.

Minor Incident: Inform the Camp Director to determine an appropriate course of action. Fill out an incident/accident report (within 3 days) and email to the ASCENT office.

Serious Incident: Stabilize the patient as per your training, notify the Camp Director immediately, and if possible, activate an emergency response system or transport patient to the best hospital available. All serious incidents must be recorded in an incident/accident report. Protocol for major incidents, serious injury, or death: Contact 911, then Camp Director of ASCENT, then community safety.

All incidents, major and minor, must be reported to the office as quickly as possible. Parents also need timely information. For minor incidents, a direct email to Camp Director’s office outlining the incident will suffice; the Camp Director will pass this information along to the parents. For major incidents, the Field Specialist must contact the Camp Director via telephone as quickly as possible. The Camp Director and Field Specialist will decide when/how to proceed.

Crisis Management Plan

A crisis is defined as an event that needs an immediate response and action. This event may present long-term challenges to ASCENT, it may be a life or limb situation, it may be a staff crisis, and/or it may be an environmental event.

Incident Command System

1. Incident Commander – Person in Charge TBA
2. Safety Official – On-site Person in Charge TBA
3. Public Information / Planning Official TBA
4. ASCENT Administration Official TBA

Division of Labor

Every emergency, no matter how large or small, requires that certain tasks or functions be performed. The organization can expand or contract depending on the size of the emergency and the number of staff available.

- Incident Commander – Responsible for development of ASCENT’s plan and overall management of emergency situations. Develops working knowledge of local/ regional agencies as the on-scene contact for outside agencies assigned to an incident, documenting activities as necessary.
- Safety Official – Monitors safety conditions of an emergency situation and develops measures for ensuring the safety of campers, staff, volunteers, and responders, documenting activities as necessary. Ensures everyone knows the plan, monitors medical, environmental, psychological first-aid, food and water needs, and ensures all needs are met.
- Public Information / Planning / Intelligence Official – Develops working knowledge of local media, prepares media releases, and coordinates information with the Incident Commander. Assists the Incident Commander in the collection and evaluation of information about an incident as it develops, assists with ongoing planning efforts, maintains incident time-log, and documents activities. Establishes/oversees communication center activities during an emergency by developing a phone tree for after-hours communication, documenting activities as necessary.

Media Response

"We are following organizational protocol.

Due to the emergency, we do not have time to discuss it with you. Please contact the office of public affairs for more information."

- Administration Official – Keeps all records and ensures there is a paper trail and written log of all activity.

Media

All staff must refer to the Camp Director. ASCENT assumes responsibility for issuing statements in an emergency.

- The Camp Director, in cooperation with the Public Information officer, may prepare a statement to be issued to the media.
- Update the media regularly. Do not say, "No comment."
- Do not argue with the media.
- Maintain a log of all telephone inquiries, and respond using script for inquiries.

Media Statement

- All media statements must come from the office of public affairs.

Risk Mitigation – Create Contingency Plans

(Including “triggers” for sending a camper home.)

- Lost camper: Immediately gather the entire group together, gather all information, create a search plan, and contact ASCENT department. Then, notify local authorities. Last, create a Communication Plan.

Trigger: camper sent home if they deliberately set out to leave the program; this creates a danger to their personal safety.

- Alcohol and Other Drug use: Immediately gather staff and all information, contact the ASCENT department.

Trigger: camper is sent home for using drugs/alcohol.

- Emergency Evacuation Guidelines: It is the policy of ASCENT to evacuate campers with any injury that could cause permanent damage if not treated with the proper medical care (i.e. facial lacerations, joint lacerations, or injuries to genitalia). campers should be evacuated to the nearest large city where a higher level of care can be administered.

- Car Accident: Check for safety and injuries of all O.S. and campers, and contact medical personnel if necessary. Contact local authorities, the ASCENT Office, and the insurance provider/car rental company.

Trigger: camper sent home for any injury listed in “emergency evacuation.”

- Misbehavior: Inform campers of Honor Principle prior to trips so that all information is known before hand. Document incidents of misbehavior, notify the ASCENT office, notify the camper and follow the guidelines for Honor Case investigations.

Trigger: camper sent home based upon breaking the Honor Principle.

- Psychological Emergency: Contact qualified personnel immediately. If local help is not available or qualified, contact the ASCENT office to find a qualified professional. The ASCENT office will immediately notify the health center. Ensure the camper is not a danger to himself/herself or others. Begin evacuation, if necessary.

Trigger: camper sent home if the level of psychological difficulty is beyond the qualifications or comfort of the Field Specialist.

- **Natural Disaster:** Create contingency plans before a disaster, examining physical safety, accommodation, food, transportation, and communication. If the disaster compromises the safety of the campers or Field Specialist, begin evacuation plans immediately. Share a copy of the contingency plan with the ASCENT office, which will communicate with parents.

Trigger: Send campers home if the natural disaster creates an environment or situation that is unsafe for the group. An alternative location for the program is another option.

- **Sexual Assault:** If assault occurs, immediately contact local authorities and director of ASCENT. Contact the director, as the ASCENT office will contact the appropriate agencies.

Trigger: Send camper home based on camper request.

- **Death:** Ensure physical and emotional safety for the group. Contact local authorities and the ASCENT office, and the ASCENT office will contact parents. Create a communication plan.

Trigger: Send other campers home if mental trauma exists, and/or by camper or parent request.

For these examples, it is important the staff work directly with the ASCENT office to ensure rapid response in order to work together to create an emergency action plan and a crisis management plan specific to each incident. ASCENT mitigates risk with plans, training, and expertise. This includes staff training, crisis simulations during staff orientation, incident/accident reporting, evacuation, and staff medical training. ASCENT also utilizes the expertise from an advisory physician, an advisory counselor, a legal counsel, and an insurance counsel.

Communication

Communication in the event of accidents, injuries, and illness is critical. In the event a camper is ill (i.e. unable to participate in activities for more than 2 days) or has an injury, which requires a visit to a physician, the office must be contacted. In order to do so, the Camp Director will initiate all communication to the health official regarding participant health based off field instructor's report.

Document Log/Records

ASCENT staff must always document incidents and near misses. Minor incidents and serious incidents must be recorded on an Incident/accident report form. The purpose of the supplemental forms are to document the objective facts associated with any given incident/accident. As such, only known, impartial, and objective facts should be recorded. Forms should be completed for significant accidents and the accompanying treatment, and turned in to the Camp Director.

Phone Log

Record phone calls (numbers, person(s), date, and time).

Witness Statements

Get description of "what, where, who, and when" by witnesses as soon as possible.

Section II

Treatment and Evacuation Guidelines

These Treatment and Evacuation Guidelines are the exclusive property of Project ASCENT and may be used only by ASCENT instructors while leading ASCENT courses in a wilderness context. The contents of this document are not to be copied or reproduced in any form without written permission from ASCENT. These protocols have been developed in consultation with _____, ASCENT Medical Advisor.

Medical Advisor Duties and Responsibilities

This serves to describe the duties and responsibilities of _____, who is/are serving as the Medical Advisor for Project ASCENT.

ASCENT Medical Advisor Duties and Responsibilities

The ASCENT Medical Advisor provides guidance and advises ASCENT regarding camper and staff medical issues related to participation on ASCENT courses or employment with ASCENT. Project ASCENT makes final decisions regarding camper participation, medical treatment and evacuation.

The ASCENT Medical Advisor:

1. Supports development of ASCENT field medical treatment and evacuation protocols used by ASCENT instructors during ASCENT programs.
2. Reviews protocols on a regular basis and evaluates their effectiveness.
3. Provides advice as needed as to the disposition of ill or injured campers or field staff during ASCENT courses.
4. Serves as a resource regarding medical screening of campers or staff for ASCENT programs.
5. Provides post-incident review. Routinely reviews field medical practices to ensure consistency with ASCENT protocols.

Using the ASCENT Wilderness Medicine Protocol Package

INTRODUCTION

ASCENT instructors and staff are expected to operate effectively in challenging environmental conditions with limited equipment and supplies. Frequently providers have little or no access to communication with a medical professional or Emergency Medical Services support systems. In addition to recognition, treatment and

prevention of medical emergencies in remote settings, any member of the ASCENT staff must understand how and when to make an evacuation decision. This document is intended to provide detailed recommendations on treatment and evacuation guidelines. These protocols should be administered by instructional staff with appropriate training in wilderness medicine. They should be utilized in a wilderness context or when medical support is not available. They should be utilized during sanctioned program activities. They should not substitute for definitive medical care when it is necessary and available. They are not a substitute for training.

These protocols contain information on the administration of both over-the-counter (non-prescription) and prescription medications. Typically the administration of over-the-counter, medication falls within the realm of simple first aid. The administration of over-the counter medication to minors requires parental approval, which are obtained through pre-trip authorization forms or by communicating with the parents on a case by case basis.

Administering prescription medications is usually restricted to licensed medical professionals or individuals acting within established Emergency Medical Services systems. Some remote courses may carry prescription medications as a component of their medical supplies. Frequently individuals will bring their own prescription medications on a trip, especially on an international trip. While staff may not be administering these medications, having information about their use can be very helpful.

One potential exception to the guideline of a licensed medical professional administering a prescription medication is the use of injectable epinephrine. There are increasing numbers of state laws that allow for the administration of epinephrine to an individual experiencing a life threatening allergic reaction by a “lay person”. Often the epinephrine administered is the patient’s. This is likely to be an area of continued discussion and evolving laws and regulations in the ensuing years.

These protocols should be modified in consultation with the ASCENT Medical Advisor. The protocol decision component of each protocol coaches you through potential modifications.

Disclaimer

These documents are not a substitute for professional medical care or advice.

Introduction

- Wilderness Medicine Overview
- The Role of a Medical Advisor
- Medical Advisor Job Description
- Protocol Use Statement

Protocols

- Abdominal
- Allergic Reactions and Anaphylaxis
- Altitude Illnesses
- Burns
- Cardiac Emergencies
- Cardiopulmonary Resuscitation
- Chest Trauma
- Dental Problems
- Diabetes
- Dislocations
- Eyes Ears Nose
- Female Gender Medical Illnesses
- Flulike Illness.doc
- Head Injuries
- Heat Illnesses
- Hypothermia
- Lightning
- Local Cold
- Male Gender Medical Illnesses
- Musculoskeletal Injuries
- Neurological Emergencies
- Poisoning
- Respiratory Emergencies
- Shock
- Skin
- Snakes and Lizards
- Spiders and Scorpions
- Spinal Injuries
- Submersion Incidents
- Wilderness Wound Management
- Zoonoses

Extras

- Drug Information
- First Aid Kit Contents
- SOAP Report Template

- Verbal SOAP Template

Evacuation

Wilderness Medical Training Center (WMTC) granted the following information. At times the evacuation of a patient may be necessary for their treatment. All evacuations in a wilderness environment carry some inherent risk to members of the rescue party and the decision to evacuate a patient should NOT be taken lightly. The need for evacuation depends on the severity of the patient's injury or illness and your resources. The type of evacuation depends on the mobility of the patient, the size of your party and its resources, the difficulty of terrain, the weather and the distance involved.

The TYPE of evacuation depends on:

- the severity of the patient's injury or illness and their mobility
- the size of your party and its resources
- the difficulty of terrain
- the weather

Levels of Evacuation

The following definitions for levels of evacuation are correlated to the severity of the patient's injury or illness and hence the urgency and speed of their evacuation. Every effort should be made to accurately diagnose the patient's current and anticipated problems since an incorrect diagnosis may lead to a false sense of urgency and a willingness on the part of the rescuers to accept more risk than the situation warrants. In general, rescuers should ONLY be willing to accept a level of risk they believe they can safely manage based on their skill and the foreseeable problems. Unfortunately, not all problems are foreseeable and the amount of risk any given rescuer is willing to accept tends to rise with the severity of the patient's injury or illness. Since it is impossible to legislate judgement, when in doubt rescuers must base their decisions on the "worst case" situation both in diagnosing the patient and evaluating the risk associated with the evacuation. That said, the risk of a minor injury or illness to a rescuer is generally present during most evacuations and unavoidable under the circumstances.

Level 1

The patient's injury or illness is immediately life threatening and the patient may die without rapid hospital intervention (e.g.: increased ICP, volume shock, severe respiratory distress, respiratory distress in a near drowning patient, advanced disease, moderate to severe hypothermia, HAPE/HACE etc.)

Level 2

The patient's injury or illness is potentially life threatening or will result in a permanent disability; the patient may develop a life threatening problem that requires hospital intervention

(e.g.: concussion that is getting worse, systemic infection, spine & cord injuries, near drowning (no respiratory distress), etc.)

Level 3

The patient's injury or illness is NOT life threatening, has little or no potential to become life threatening, and may be successfully treated in the field with no permanent disability; however, the patient is unable to resume normal activity within a reasonable length of time and/or requires advanced assessment. (E.g.:

concussion that is getting better, in unstable injuries with good CSM, reduced shoulder (dislocation) with good CSM, etc.)

Level 4 (no evacuation)

The patient's injury or illness is NOT life threatening, may be successfully treated in the field with no permanent disability, and the patient is able to resume normal activity within a reasonable length of time. (E.g.: minor wounds, minor stable injuries, minor environmental injuries, etc.)

WILDERNESS FIRST AID AND CPR

All Project ASCENT outdoor trips that travel to areas two hours or more away from "definitive care" are required to have a leader on the trip with WFA as well as CPR certification.

Such Trained Leaders are Expected to:

- Stay within the scope of their training, and if in doubt, follow the wilderness guidelines provided in their training.
- Keep all WFA and CPR certifications current and on file with Project ASCENT.
- Take universal precautions against bloodborne pathogens, making sure to use gloves and a CPR mask (when appropriate) when exposed to bodily fluids. Biohazards must be disposed of in an appropriate manner, tagging these items and giving them to Camp Director.

Emergency Care

All Project ASCENT trips that at any time are two hours or more from "definitive care" should have at least one Camp Leader or Field Specialist with current WFA, and Cardio Pulmonary Resuscitation certificates. Wilderness First AID training and certification is generally considered industry standard for those heading into the wilderness context; this is usually defined by being over two hours from clinic or hospital care. All Camp Leaders and Field Specialists are encouraged to play a proactive role in assessing emergency situations and providing care for illnesses and injuries, with the hope of avoiding as many major medical situations as possible. However, every emergency situation is unique and good judgment is critical. Whether and how to act in an emergency situation cannot be dictated.

Camp Leaders or Field Specialists responding as volunteer lay persons to emergency situations should use practices only within the scope of their training. One should always act thoughtfully with the best interest of the person having the emergency in mind. A Camp Leader or Field Specialist rendering volunteer emergency care should obtain verbal permission from the person having the emergency for actions that they intend to take including the specifics whenever possible.

Medical Kits

Medical kits should be well maintained by the Camp Leaders and Field Specialists. The contents should be checked both before and after a trip to make sure that they are complete. If there are missing items they should be listed carefully. A list of the items that we carry in medical kits can be found in the kits themselves. Medical kits with over-the-counter medications such as ibuprofen, acetaminophen, and antihistamines, may be used by leaders with proper parental consent form signed and at hand. Epinephrine for use in the event of anaphylaxis should be available to those who have obtained the required authorized certificate for lay persons.

EMERGENCY SYSTEMS

Our program has had an excellent track record of managing risk effectively, and we want to keep the focus on managing and avoiding risk instead of responding to accidents. We strive to engage in adventurous activities where risk is limited. A Field Specialist or Camp Leader should be able to articulate why a given activity was undertaken, and what merit the activity has in light of any inherent risks that exist. If one's experience dictates that the group should be more conservative, then the Camp Leader should give credence to his or her experience. If Field Specialists and Camp Leaders continue to manage risk well, the program should continue to thrive and expand.

Decision-Making and Taking Charge of the Situation

If an emergency occurs, the designated leadership should take direct control of the situation. It is proven that in crisis situations, a direct hierarchy helps clarify what actions should be taken, even if the Field Specialist chooses to share their decision-making responsibility. Please discuss this hierarchy and your comfort with handling emergencies with your co-leaders and, if appropriate, the Camp Director before the trip starts.

Using the Call Guide – Requesting Aid

When available, mobile phones should be carried on all outdoor trips. That said, there are many locations from which it is difficult to call; you cannot assume that a telephone will work as part of your risk management plan. As a leader, you should familiarize yourself with both the mobile phone and the call guide before beginning the trip. Confirm that the area to which you are traveling has resources listed in the call guide. If not, it is your responsibility to find the nearest hospital and sheriff locations and numbers before leaving home. If you call in to ask for help from the outdoor program manager, you should have clear information about the situation as well as your proposed plan of action.

Unscheduled Loss of Contact – Search and Rescue

If someone is thought or known to be lost, a quick search should be done immediately. If the trip's leaders are experienced with grid searches, and if they decide that they can do an initial set quickly and safely, this option may be entertained. After three hours of conducting any search, or if otherwise considered appropriate by the leaders, the Camp Director at Project ASCENT should be contacted to determine if outside assistance is necessary. Once outside agencies are contacted to assist with a search, the leaders should accept that they no longer have total control over the direction and nature of the search.

Accident and Incident Reports

All illnesses, injuries, or near misses must be documented on an Incident Reporting Form and submitted to the Camp Director. SOAP notes should be completed for significant accidents and the accompanying treatment.

Medical Protocols and Standing Orders

Standing Order: Abdominal Illness and Injury

General Comments

Generalized abdominal complaints are common and lead to challenging differential diagnoses. Course instructors must be diligent in the interview and examination of this patient focusing not on diagnosis, but on identifying critical evacuation triggers.

Treatment for Abdominal Illness and Injury

If the patient does not trigger the evacuation criteria:

1. Allow the patient to rest in a position of comfort.
2. Maintain hydration levels with clear fluids. Rehydrate with an electrolyte solution if the patient is dehydrated.
3. Bland diet. The BRAT diet works well: Bananas, rice, applesauce and toast.
4. Consider anti-diarrheals (e.g. Imodium AD[®] or Lomotil[®]) and/or anti-emetics (e.g. Compazine[®] or Phenergan[®]) as necessary to maintain hydration levels.
5. Consider prophylactic anti-motion sickness medication (e.g. meclizine, Dramamine[®]) to avoid nausea and vomiting.
6. If the patient is constipated, aggressively hydrate, avoid high fat foods and increase grains, vegetables and fruit, attempt to stimulate bowel movements with caffeine or alternating hot and cold liquids and consider a laxative (e.g. ExLax[®]). If treatment is unsuccessful consider manual removal of the hardened stools.
7. Monitor the patient for worsening signs and symptoms. If the patient does not show improvement in 12 -24 hours consider evacuation.
8. If evacuation is possible within a few hours, give nothing by mouth.

Evacuation Guidelines for Abdominal Injury or Illness

Evacuate Rapidly:

Any patient with...

Abdominal pain that:

- Persists greater than 12 hours, especially if constant.
- Is localized, especially with guarding, tenderness, distension or rigidity.
- Occurs with movement, jarring, or foot strike.

Or is associated with:

- Signs and symptoms of shock.
- Blood in the vomit, feces or urine.
- Persistent anorexia, vomiting or diarrhea greater than 24 hours.
- Fever above 102°F (39°C).
- Signs and symptoms of pregnancy (history of sexual activity, amenorrhea, excessive fatigue, breast tenderness, polyuria and nausea).

Evacuate:

- Any patient with abdominal pain that does not improve with treatment in 12-24 hours
- Any patient with abdominal pain who is unable to stay hydrated.

Protocol Decision:

Imodium AD[®] is an over-the-counter anti-diarrheal medication. ExLax[®] is an over-the-counter laxative. Meclizine and Dramamine[®] are over-the counter motion sickness medications. The administration of over-the-counter medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis. Your Medical Advisor should advise you on the use and dose of over-the-counter antidiarrheal, laxative medication and motion sickness medications for minors. If your program does not carry antidiarrheals, laxatives or motion sickness medications in the backcountry, delete these references from the treatment protocol.

Lomotil[®] is a prescription anti-diarrheal medication and Compazine[®] and Phenergan[®] are prescription antiemetic medications. The administration of a prescription anti-diarrheal medication or prescription antiemetic medication requires a physician. These medications may also be self-administered by patients with a prescription for them. Manual removal of hardened stools in a patient is an invasive procedure. Your Medical Advisor should advise you in choosing this procedure or in coaching a patient to attempt removal of their own stools.

Standing Order: Allergic Reactions and Anaphylaxis

General Comments

The incidence of true anaphylaxis is rare. Most allergic reactions can be managed with over-the-counter antihistamines.

Treatment for Allergic Reactions and Anaphylaxis

1. Remove the allergen or the patient from the offending environment.
2. Administer oral antihistamines (e.g. diphenhydramine 50mg PO every 4-6 hours).
3. If patient shows signs and symptoms of anaphylaxis (Swollen face, lips and tongue; systemic hives; respiratory distress; inability to speak in more than one or two word clusters; signs and symptoms of shock) administer epinephrine .3ml/1:1000 SQ or IM.
4. If reaction reoccurs or the epinephrine is ineffective, continue to administer epinephrine.

Evacuation Guidelines for Allergic Reactions and Anaphylaxis

Evacuate Rapidly:

- Any patient who continues to show respiratory compromise or signs and symptoms of shock after treatment with epinephrine and antihistamines.

Evacuate:

- Any patient who has received epinephrine. Continue to provide anti-histamines during evacuation.

Protocol Decision:

Diphenhydramine is an over-the-counter antihistamine medication. The administration of over-the counter medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis. Your Medical Advisor should advise you on the use and dose of over-the-counter antihistamine medication for minors. If your program does not carry antihistamines in the backcountry, delete this section from the treatment protocol.

Epinephrine is a prescription medication used to treat severe allergic responses. This medication is commonly packaged in an auto-injector intended to be self-administered by patients with a prescription for it. It is advisable that patients with a known history of anaphylaxis bring at least three to four doses of epinephrine when traveling in remote environments. Participants may also bring epinephrine in a vial or glass ampoule with an accompanying syringe.

The use of epinephrine to manage anaphylaxis is well established, however, the threshold for administration varies widely. Some physicians advocate administering epinephrine if the patient's only symptom is hives, others advocate waiting until definitive signs and symptoms of respiratory or cardiovascular compromise are evident.

The possession and administration of epinephrine by laypeople and outdoor programs is a complex issue. The law states you can only possess epinephrine that is prescribed to you, and, in general, you can only use it on yourself. There are, however, exceptions to this statement.

Standing Order: Burns

General Comments

Large burns are uncommon in the backcountry, but even small burns can be debilitating, painful and difficult to keep clean. Small burns are relatively common backcountry injuries, typically secondary to hot water spills.

Treatment for Burns

1. Ensure the scene is safe.
2. Immediately apply cool compresses or irrigate burns with cool water. Small areas of burn (<10%) may be soaked in cool water. Avoid hypothermia. Remove clothing and constricting objects (e.g. jewelry, watches, belts).
3. Assess and manage Airway, Breathing and Circulation problems.
4. Gauge the depth, extent and location of the burns.
5. Properly dress the burns with antibiotic ointment, burn gel or sheets, Silvadene[®] cream or 2nd Skin[®] covered loosely with clean dressings. In extended care situations debride dead skin around blisters that have self-drained and clean several times daily. Do not drain intact blisters.
6. Pain medication as needed (NSAIDs often recommended).
7. Aggressive hydration.
8. If snow blindness is suspected, provide cool water flushes of the eye and cool compresses. Rest and avoid sun exposure until symptoms resolve.

Evacuation Guidelines for Burns

Evacuate Rapidly:

- Any patient with signs and symptoms of an airway burn.
- Any patient with partial or full thickness burns covering more than 10% TBSA.
- Any patient with partial or full thickness circumferential burns.

Evacuate:

- Any patient with a full thickness burn.
- Any patient with burns to a special function area: face, neck, hands, feet, armpits, or groin.
- Any patient with a burn that cannot be managed effectively in the backcountry.

Protocol Decision:

Silvadene[®] cream is a prescription topical antibiotic that is effective for burns. The administration of an antibiotic requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with burns may benefit from over-the-counter pain medication. The administration of over-the-counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Oxygen is recommended for all patients with burns to the face and airway. The administration of oxygen requires a physician.

Standing Order: Cardiac Emergencies

General Comments:

Differential diagnosis of non-traumatic chest pain is challenging. Therefore any patient exhibiting signs and symptoms of chest pain that cannot be attributed to a non-cardiac origin, should be managed as if the origin is cardiac.

Treatment for Cardiac Emergencies:

1. Reduce anxiety and activity. Place patient in a position of comfort. Avoid walking if possible.
2. Administer oxygen, if available.
3. Assist patient with administration of his or her nitroglycerin, 0.4mg SL spray or tablet, may be repeated every 5 minutes for a total of three doses if the systolic BP remains above 100mmHg or the patient has a strong radial pulse, and the patient has not taken Viagra®, Levitra® or Cialis® for 48 hours.
4. Administer one-adult aspirin (325mg) or 3-4 baby aspirin (81mg each) every 24 hours.

Evacuation Guidelines for Cardiac Emergencies:**Evacuate Rapidly:**

- Any patient with chest pain that does not relieve as expected with rest and medication.

Evacuate:

- Any patient with non-traumatic chest pain that subsided with rest or medication.
- Any patient with chest pain that is not clearly musculoskeletal, pulmonary or gastrointestinal.

Protocol Decision:

Oxygen is recommended for all patients with cardiac chest pain. The administration of oxygen requires a physician. This medication may also be self-administered by patients with a prescription for it.

Nitroglycerin is a prescription medication commonly carried by patients with known cardiac history. Many patients are able to self-administer this medication. The contraindications vary, specifically the minimum systolic blood pressure.

Aspirin is recommended for all cardiac chest pain in a range of doses.

Standing Order: Chest Injuries**General Comments**

Isolated rib injuries are often evacuated due to patient discomfort. Lung injury is a primary concern secondary to a blow to the chest wall. Specific diagnosis is difficult, but signs and symptoms of difficulty breathing, especially at rest, should trigger evacuation. Spontaneous pneumothorax, without a blow to the chest, can occur and outdoor leaders should be attentive to sudden complaints of difficulty breathing.

Treatment for Chest Injuries

1. Place the patient in a position of comfort or on the injured side.
2. Stabilize any injuries. For a fractured rib sling and swathe or tape the affected side. For a flail segment splint with a bulky dressing.
3. For an open chest injury seal the wound with an occlusive dressing secured on all four sides.
4. Administer oxygen if available. Support respirations if necessary.
5. Pain management.
6. Periodically encourage the patient to breathe deeply.
7. Monitor for increasing Shortness of Breath (SOB) at rest and diminishing breath sounds.

Evacuation Guidelines for Chest Injuries

Evacuate Rapidly:

- Any patient with signs and symptoms of serious chest trauma or respiratory distress.
- Any patient exhibiting increasing shortness of breath, especially at rest.
- Any patient with diminished or abnormal lung sounds.

Evacuate:

- Any patient with a suspected rib or clavicle fracture.

Protocol Decision:

A patient with chest trauma may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it

A patient with chest trauma may benefit from over-the-counter pain medication. The administration of over-the-counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: Cardiopulmonary Resuscitation (CPR)

General Comments:

CPR can be an effective life sustaining intervention in the short-term; however there is no evidence that prolonged CPR is valuable. The standards for performing CPR are well established by the American Heart Association.

Contraindications to CPR in the Wilderness

There is no reason to initiate CPR if there is:

- Any sign of life in the patient.
- Danger to rescuers.
- Dependent lividity.
- Rigor mortis.
- Obvious lethal injury (e.g. decapitation, frozen).
- A well-defined Do Not Resuscitate (DNR) status.

Discontinuation of CPR in the Wilderness

Once initiated CPR should be continued until:

- Resuscitation is successful.
- The rescuers are exhausted.
- The rescuers are placed in danger.
- The patient is turned over to more definitive care.
- The patient is pronounced dead by a qualified person.
- The patient does not respond to prolonged resuscitative efforts, greater than 30 minutes.

Protocol Decision:

The standards for contraindications to CPR are well defined by the American Heart Association. In a wilderness context, severely hypothermic or "frozen" patients present an additional contraindication, unless death can be established with a cardiac monitor.

The standards for discontinuing CPR are well defined by the American Heart Association. In a wilderness context, it is recommended by the Wilderness Medical Society to cease resuscitative efforts after 30 minutes. Your Medical Advisor should advise you in this additional parameter.

While avalanches, lightning and submersion create additional mechanisms for traumatic cardiac arrest in a wilderness setting, they do not require additional guidelines for CPR. They may create circumstances requiring prolonged rescue breathing efforts.

Standing Order: Dental Emergencies

General Comments

Dental emergencies can be remarkably painful and debilitating and unfortunately common on wilderness trips. There are some simple tools and treatment guidelines that may allow a participant to finish a backcountry expedition in relative comfort.

Treatment for Dental Emergencies

1. Clean and rinse the mouth. Brush and floss the teeth if the patient can tolerate it.
2. If a crown or filling is lost or the tooth breaks, cover the "hole" with Cavit[®]. Cavit[®] may also be used to "glue" the crown or filling in place. If you do not have Cavit[®] try sugarless gum or wax.
3. If the tooth breaks and the pulp is exposed, apply a small piece of crushed aspirin to "cauterize" the pulp.
4. If the tooth is knocked out of the socket, irrigate the tooth with disinfected water and attempt to replace it in the socket. If tooth cannot be replaced, wrap in sterile gauze and have patient carry the tooth between their cheek and gum. Facility based programs might consider Save-a-tooth[®], a special fluid and container that may extend the life of a broken tooth.
4. Apply topical oil of clove for pain.
5. Pain medication as needed.
6. If a periodontal abscess is suspected, clean and floss teeth, gargle with warm salty water 3-4 times daily, and administer antibiotics and pain medication.

Evacuation Guidelines for Dental Emergencies

Evacuate:

- Any patient with a tooth knocked out of the socket.
- Any patient with a broken tooth with exposed pulp.
- Any patient with a periodontal abscess.

Protocol Decision:

A patient with dental problems may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with dental problems may benefit from over-the-counter pain medication, including oil of clove. The administration of over-the-counter pain medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

The use of aspirin to cauterize tooth pulp is aggressive, but may significantly reduce the patient's pain and willingness to stay fed and hydrated.

Antibiotics are recommended for a periodontal abscess. The administration of an antibiotic requires a physician. This medication may also be self-administered by patients with a prescription for it.

Standing Order: Diabetic Emergencies

General Comments

Well-controlled diabetics perform well in backcountry settings. Outdoor programs should develop a screening program for eligibility; this will vary on program type and location. Programs should also have a plan for medication storage and administration and the diabetic participant should bring adequate supplies (glucometer, spare batteries, duplicate medications such as insulin, glucagon hydrochloride, and glucose paste or tabs, syringes and ketone strips) and an established sick day plan.

Treatment for Diabetic Emergencies

1. Check blood sugar using the patient's glucometer.
2. If hypoglycemia is suspected, give the awake patient sugar (glucose paste or tabs, sweet liquids, table sugar in water) until they regain an adequate level of responsiveness. If the patient is not awake, place the patient on their side and rub sugar into their gums repeatedly until they regain an adequate level of responsiveness.
3. If the unresponsive, hypoglycemic patient does not regain responsiveness, administer glucagon hydrochloride IM.
4. If hyperglycemia is suspected, check ketone levels with ketone urine strips. Assist the patient to hydrate and adjust insulin dose in accordance with his or her sick day plan. If the hyperglycemic patient is unresponsive, do not administer insulin.
5. Check blood sugar frequently. Have the patient continue to eat and/or medicate until an adequate level (80-120mg/dl) is obtained.
6. If unknown whether a patient is suffering from hypoglycemia or hyperglycemia, give sugar to the patient.

Evacuation Guidelines for Diabetic Emergencies

Evacuate Rapidly:

- Any patient who is unresponsive due to a diabetic emergency.

Evacuate:

- Any diabetic patient who is unable to keep his or her sugar levels under control in a backcountry setting.
- Any diabetic patient who experiences: several days of illness, has vomiting or diarrhea for more than 6 hours, has moderate to large amounts of ketones in their urine, cannot moderate their blood sugar readings with additional insulin or feels a loss of control of blood sugar levels.

Protocol Decision:

Supporting a diabetic during an emergency may require staff to administer glucagon injections and assess blood sugar and ketone levels. Your diabetic participant and your Medical Advisor should advise you in these procedures.

Standing Order: Dislocations

General Comments

Dislocations of the shoulder, digit and patella are most common. Patients may have a history of chronic dislocations. The mechanism of injury may be direct or indirect, and the dislocation may be associated with

other injuries such as fractures. In general, the difficulty of reduction and the amount of long-term complications both increase with delay in reduction attempts.

Treatment for Dislocations

1. Assess circulation, sensation and motion (CSM).
2. Consider attempting to reduce dislocations of the shoulder if evacuation time exceeds one hour or CSM has been compromised by the dislocation. Treat all other dislocations as unusable musculoskeletal injuries.
3. Reduction is usually achieved by applying slow, steady and gentle traction-in-line (TIL). Relaxation is key. Slow down or discontinue your attempt if pain increases significantly or you meet resistance.
4. In unable to reduce after multiple attempts, splint in the position found.
5. After reduction, Rest, Ice, Compression and Elevation (RICE) therapy, pain medication and immobilization as needed.
6. Monitor circulation, sensation and motion (CSM) before and after reduction and/or immobilization.
7. Passive range of motion (ROM) 2-3 times per day, or to patient tolerance.

Evacuation Guidelines for Dislocations

Evacuate Rapidly:

- Any patient with an unreduced dislocation.
- Any patient with altered CSM after reduction.

Evacuate:

- Any patient with a first time dislocation.
- Any patient with altered CSM prior to reduction.
- Any patient unable to use the reduced joint.
- Any patient with persistent pain.

A patient with a dislocation may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it

A patient with a dislocation may benefit from over-the-counter pain medication. The administration of over-the counter pain medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: Eyes, Ears and Nose

Treatment for Eyes, Ears and Nose:

1. Black eyes can be treated with cool compresses and pain medication.
2. Objects in the eye should be flushed out with disinfected water or dabbed out with a clean cloth. If the object is embedded in the eye it should be stabilized and both eyes bandaged.
3. Objects in the ear may be drowned with oil, water or alcohol, if needed, and then flushed out with an irrigation syringe or grasped with tweezers if visible.
4. Outer ear infection can be treated by keeping the ear dry and flushing the ear with dilute solution of alcohol or vinegar daily.
5. Bloody noses can be managed by pinching the nose just below cartilage and leaning forward. If unable to control bleeding, consider packing the nose with gauze.

Evacuation Guidelines for Eyes, Ears and Nose:

Evacuate Rapidly:

- Any patient with an uncontrollable nose bleed.

Evacuate:

- Any patient with persistent vision changes, extraordinary and persistent sensitivity to light, or discharge of fluid other than tears, or an imbedded object in the eye.
- Any patient with an ear infection not responding to treatment.

Standing Order: Female Gender Medical Concerns**General Comments**

Most female gender medical concerns are manageable in a backcountry setting. It is important to create an environment that encourages participants to discuss these concerns with trip leaders. The decision to allow pregnant group members on the trip should be established ahead of time.

Treatment for Female Gender Medical Concerns

1. Both dysmenorrhea and mittelschmerz can be managed with analgesics, mild exercise and heat packs.
2. If vaginitis is suspected, wash the vaginal area thoroughly and air dry. Consider either an over-the-counter anti-fungal (e.g. Monistat[®]) or a prescription anti-fungal (e.g. Diflucan[®]).
3. If a urinary tract infection is suspected, rest the patient, provide aggressive hydration, a urinary tract analgesic (e.g. Pyridium[®]) and an antibiotic.
4. If an ectopic pregnancy is suspected, treat for shock.

Evacuation Guidelines for Female Gender Medical Concerns**Evacuate Rapidly:**

- Any patient with signs and symptoms of urinary tract infection who develops tenderness over the kidneys.
- Any patient with a suspected ectopic pregnancy (low abdominal/pelvic pain, abnormal vaginal bleeding, signs and symptoms of shock.)

Evacuate:

- Any patient suspected of being pregnant or with pregnancy complications.
- Any patient with vaginitis or a urinary tract infection that does not respond to treatment.

Protocol Decision

Anti-fungal medication (e.g. Monistat[®]) is recommended for treating vaginitis and a urinary tract analgesic (e.g. Pyridium[®]) is recommended for managing a urinary tract infection. The administration of over-the-counter antifungal and pain medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Prescription anti-fungal medication and antibiotics are recommended for treating vaginitis and urinary tract infections. The administration of prescription anti-fungal medication (e.g. Diflucan[®]) and antibiotics requires a physician. These medications may also be self-administered by patients with a prescription for them.

Standing Order: Flu-like Illness**General Comments:**

Viral "flu-like" illnesses are common on wilderness expeditions. They may include gastrointestinal symptoms (nausea, vomiting and diarrhea) or respiratory symptoms (cough, congestion, runny nose, sore throat). Viral illnesses also cause a viral headache, malaise, fatigue, low-grade fever, muscle aches, body aches, etc. Flu is

a medically distinct illness from the “common cold”. It usually has a more abrupt onset than a cold with a stronger overall impact on the patient. The illness can persist for several weeks. Management is focused on symptomatic relief for the patient.

Treatment for Flu-like Illness:

1. General management for flu-like illness is symptomatic treatment.
2. Rest and hydration.
3. Hand washing and hygiene.
4. Acetaminophen, aspirin or NSAIDs for fever, sore throat headache and muscle aches.
5. Decongestants (e.g. pseudoephedrine) for congestion.
6. Anti-cough medications as needed (e.g. Robitussin[®] or hydrocodone).
7. Bland diet for gastrointestinal distress.

Evacuation Guidelines for Flu-like Illness:

Evacuate Rapidly:

Any patient with signs and symptoms of flu-like illness who develops:

- Stiff neck, severe headache, difficult breathing or wheezing.
- Gastroenteritis with persistent or worsening abdominal pain over 24 hours, spiking fever, bloody diarrhea or dehydration.
- An inability to tolerate any oral fluids more than 48 hours, especially if accompanied by diarrhea volume losses, fever or vomiting.
- A headache that does not respond to treatment, sudden severe headaches, or a headache associated with altered mental status.

Evacuate:

Any patient with signs and symptoms of flu-like illness who develops:

- Fever persisting more than 48 hours or is high (>102°F/39°C).
- Signs or symptoms of pneumonia. This is usually associated with increasing shortness of breath, decreasing exercise tolerance, worsening malaise and weakness with a predominance of cough.
- An isolated sore throat with fever and a red throat with white patches.
- A sore throat in conjunction with inability to swallow water and maintain adequate hydration.

Protocol Decision:

A range of over-the-counter medications including decongestants, cough suppressants, pain medications and fever-reducing medications may help patients with flu-like illness. The administration of over-the counter decongestants, cough suppressants, pain medications and fever-reducing medications to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: Head Injuries

General Comments

Deciding whether to evacuate a patient who sustains a blow to the head and exhibits only minor symptoms can be challenging for outdoor leaders. Providing detailed guidance can be helpful.

Treatment for Mild Head Injuries

Conservative treatment with close observation for 24 hours in the field can be done if the patient was awake and alert (A+O x 3 or 4) or was only momentarily dazed or stunned, but recovered appropriately and the patient remains awake without negative change in mental status and has only transient nausea or vomiting.

1. Monitor the patient for developing signs of serious head injury.
2. Let the patient rest, but wake them up every few hours to monitor LOR.

Treatment for Serious Head Injuries

1. If the injury is open, use diffuse pressure with a bulky dressing to control bleeding.
2. Manage Airway, Breathing and Circulation. Consider positioning the patient on their side.
3. Administer oxygen if available.
4. Immobilize the spine and elevate the head at approximately 6-8" (15-20cm).

Evacuation Guidelines for Head Injuries

Evacuate Rapidly:

- Any patient who is not A + O x 3 or 4.
- Any patient with distinct changes in mental status (disoriented, irritable, combative).
- Any patient with persistent vomiting, lethargy, excessive sleepiness, ataxia (extreme uncoordination), seizures, worsening headache or vision disturbances.
- Any patient with signs of a skull fracture.

Evacuate:

- Any patient with a loss of responsiveness, who recovers to A + O x 3 or 4.
- Any patient whose signs and symptoms (headache, nausea/vomiting, irritability or other signs and symptoms of mild head injury) do not show improvement after 24 hours.

Observe for 24 Hours:

- Any patient who was assessed as A + O x 3 or 4.
- Any patient with signs and symptoms of mild head injury.

Protocol Decision

Having a loss of responsiveness protocol is essential for an organization.

Oxygen is recommended for all serious head injuries. The administration of oxygen requires a physician. This medication may also be self-administered by patients with a prescription for it.

Standing Order: Hypothermia

General Comments

Most mild-moderately hypothermic patients are managed effectively in the field and do not require evacuation.

Treatment for Hypothermia

1. Change the environment and find shelter. Replace wet clothing with dry clothing and add wind and waterproof layers. Treat gently.
2. Add insulation under and around the patient. Consider a hypothermia wrap for moderately and severely hypothermic patients. Add external heat sources and well-insulated heat packs at hands, feet, armpits, groin, and neck.
3. Encourage exercise if the patient is able and allow shivering in a dry, insulated environment.

4. Give warm, sweet, non-caffeinated, non-alcoholic liquids and encourage the patient to eat a meal, if they are able.
5. For a severely hypothermic patient, administer warm, humidified oxygen, if available. Assist ventilations for 515 minutes prior to movement.
6. Avoid chest compressions if there are any signs of life or the patient is rigid from the cold. Perform rescue breathing during evacuation.

Evacuation Guidelines for Hypothermia

Evacuate Rapidly:

- Any patient with severe hypothermia.

Protocol Decision:

The decision to withhold chest compressions is a wilderness protocol. Your Medical Advisor should advise you on the decision to withhold chest compressions.

Standing Order: Lightning

General Comments

Lightning strikes can cause a variety of injuries including death. The best defense is a strong prevention plan specific for your geographic area and group profile.

Treatment for Lightning Injuries

1. Scene safety: Lightning will strike twice in the same spot.
2. Aggressive Basic Life Support: Rescuers should be prepared to provide prolonged rescue breathing.
3. Thorough patient exam and treatment of any injuries found.
4. Monitor closely for cardiovascular, respiratory and neurological collapse.

Evacuation Guidelines for Lightning Injuries

Evacuate Rapidly:

- Any patient showing signs of cardiovascular, respiratory or neurological compromise.

Evacuate:

- Any patient struck by lightning even if they appear uninjured.

Standing Order: Local Cold Injuries

General Comments

It is possible to see both freezing and non-freezing local cold injuries in the wilderness setting. Both can cause injuries ranging from minor irritation to significant tissue loss and permanent disability.

Treatment for Local Cold Injuries

1. If not frozen: Warm the injury with skin-to-skin contact, do not massage or use radiant heat.
2. If frozen: If possible, warm the injury in a circulating warm water bath at 99-102°F (37-39°C), otherwise use skinto-skin contact. Do not massage or use radiant heat.
3. Protect blisters and damaged tissue, avoid constriction. Protect from re-freezing. Elevate.
4. Pain medication as needed.

Evacuation Guidelines for Local Cold Injuries

Evacuate Rapidly:

- Any patient with full thickness frostbite.

Evacuate:

- Any patient with more than a few, small, isolated clear fluid filled blisters formed after warming a local cold injury.
- Any patient unable to use the injured area.
- Any patient unable to protect the area from continued exposure to a cold wet environment or from re-freezing.
- Any patient whose pain cannot be managed in the field.

Protocol Decision:

A patient with local cold injury may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with local cold injury may benefit from over-the-counter pain medication. The administration of over-the counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: Male Gender Illness and Injury**General Comments**

It can be challenging to differentiate between traumatic and infectious problems with the male genitalia. Since delay in care can result in the loss of a testicle, treatment should error on the conservative side.

Male Gender Illness and Injury

1. Pain management as needed, NSAIDs often recommended.
2. Cool compresses.
3. Elevation/support of the testicles.
4. If testicular torsion is suspected consider self or assisted reduction of the affected testicle.
5. If epididymitis is suspected consider antibiotics.
6. If inguinal hernia is suspected, attempt reduction.

Evacuation Guidelines for Male Gender Illness and Injury**Evacuate Rapidly:**

- Any patient with suspected testicular torsion that does not reduce.
- Any patient with testicular pain of unknown origin.

Evacuate:

- Any patient with a suspected epididymitis.
- Any patient with an inguinal hernia that does not reduce or reappears after reduction.

Protocol Decision:

A patient with injury or illness to the male genitalia may benefit from over-the-counter pain medication. The administration of over-the counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Antibiotics are recommended for epididymitis. The administration of an antibiotic requires a physician. This medication may also be self-administered by patients with a prescription for it. If your program does not carry antibiotics in the backcountry, delete this section from the treatment protocol.

Standing Order: Musculoskeletal Injuries

General Comments

Treatment and evacuation decisions of musculoskeletal injuries are based on the patient's ability to use the injured area. Useable injuries are supported and can be kept in the field or evacuated non-urgently. Unusable injuries are immobilized and evacuated.

Treatment for Strains, Sprains, Tendonitis and Minor Fractures

1. Assess injury for stability and usability.
2. Assess circulation, sensation and motion (CSM).

RICE Therapy

- Rest: Get the pressure off of the injury site.
 - Ice: Cool the area for 20 minutes.
 - Compression: Elastic Wrap, distal to proximal.
 - Elevation: Above the patient's heart.
1. Pain medication as needed.
 2. Allow the injury site to passively warm.
 3. Assess again for usability.
 4. Support usable injuries with tape or other adjuncts.
 5. Continue RICE Therapy as needed.

1. Treatment for Obvious Fractures, Open Fractures and Unusable Injuries
2. Assess injury. Check circulation, sensation and motion (CSM).
3. If fracture is open, thoroughly irrigate and clean wound prior to manipulating injury.
4. If necessary, use gentle traction-in-line (TIL) to establish normal anatomical position. Slow down or discontinue your attempt if pain increases significantly or you meet resistance. If the bone ends do not reduce, protect from freezing or drying.
5. Dress wounds.
6. Splint in a position of function with a well-padded and rigid splint.
7. Traction splint mid-shaft femoral fractures.
8. RICE therapy. Pain medication as needed.
9. Monitor CSM before and after TIL and splinting.
10. Monitor wound site for infection and consider antibiotic therapy for open fractures.

Evacuation Guidelines for Athletic Injuries and Fractures

Evacuate Rapidly:

- Any patient with an open fracture.
- Any patient with altered CSM.

Evacuate:

- Any patient with an unusable musculoskeletal injury.

Protocol Decision:

The reduction of angulated fractures is within the scope of urban pre-hospital care providers, especially if the patient has altered CSM. Though this is not a wilderness protocol, it is potentially viewed as aggressive.

A patient with a musculoskeletal injury may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with musculoskeletal injury may benefit from over-the-counter pain medication. The administration of over-the-counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Antibiotics are recommended for open fractures. The administration of an antibiotic requires a physician. This medication may also be self-administered by patients with a prescription for it.

Standing Order: Neurological Emergencies

General Comments

Strokes are rare events in a backcountry setting, but when they do occur require immediate evacuation. Seizures are a more common occurrence, fortunately they are rarely life threatening.

Treatment for Neurological Emergencies

1. For a suspected stroke or transient ischemic attack (TIA), provide emotional reassurance. Place the patient in a position of comfort unless unresponsive, then place in stable side position with the affected airway side down to protect the airway. Administer oxygen, if available. Document precisely the time of onset of signs and symptoms.
2. For a patient with a seizure, protect from harm, but do not restrain. Do not place bite stick or any other object in mouth. Place the patient on side to maintain open airway during post-seizure recovery phase. Perform a complete patient assessment to check for injuries. Protect the patient's dignity. Administer oxygen, if available.
3. For an unresponsive patient of unknown origin, stabilize the spine, manage the airway, consider positioning the patient on their side and search for clues to the patient's unresponsive state. Consider administering oral sugar.

Evacuation Guidelines for Neurological Emergencies

Evacuate Rapidly:

- Any patient with signs and symptoms of a stroke or TIA.
- Any patient with multiple seizures in a short time period.
- Any patient with persistent unresponsiveness or altered mental status.

Evacuate:

- Any patient with a first time seizure.
- Any patient with a seizure that occurred in spite of medication (breakthrough seizure).
- Any patient with an isolated seizure of unknown origin.

Standing Order: Poisons

General Comments

When dealing with possible poisoning gather detailed information about what was ingested, how much, when, body size and age, what is in his or her stomach and was it intentional. Carbon monoxide poisoning from

stoves and lanterns in enclosed spaces and motor vehicle exhaust is common in outdoor recreation according to the Centers for Disease Control and Prevention. Poisoning is difficult to manage in the field and is best dealt with through prevention.

Treatment for Poisons

1. Call the poison control center (1-800-222-1222), if possible.
2. If poison is ingested and is non-corrosive, non-petroleum based and the patient is fully responsive: Induce vomiting manually.
3. If poison is inhaled, remove patient from exposure. Administer oxygen, if available. Assist ventilations if necessary.
4. If poison is absorbed, take universal precautions and remove contaminated clothing. Brush dry poison off, flush area with water and wash with soap.

Evacuation Guidelines for Poisoning

Evacuate Rapidly:

- Any poisoned patient who has an altered level of responsiveness or shows signs of respiratory distress.

Evacuate:

- Any patient who has ingested quantities of a potentially harmful substance. Contact the American Association of Poison Control Centers at 1-800-222-1222 for advice.

Protocol Decision:

Oxygen is recommended for all inhaled poison patients. The administration of oxygen requires a physician. This medication may also be self-administered by patients with a prescription for it. If your program does not carry oxygen in the backcountry, delete this section from the treatment protocol.

Standing Order: Respiratory Emergencies

General Comments:

The most commonly reported respiratory problems are upper respiratory infections associated with colds or flulike illness. Other respiratory emergencies range from minor episodes of hyperventilation and asthma to more serious infections, embolisms and severe asthma. A good patient history will help you determine the likely cause and create the most appropriate management plan. Cold, altitude, dehydration and fatigue can all be complicating factors.

Treatment for Respiratory Emergencies:

1. For suspected hyperventilation, calm the patient, be direct but reassuring. Assist the patient to slow his or her breathing. Oxygen is not indicated.
2. For suspected pulmonary embolism, administer oxygen, if available. Place the patient in a position of comfort and evacuate rapidly.
3. For a suspected Upper Respiratory Infection (URI) allow the patient to rest and hydrate. Consider over-the-counter decongestants and analgesics.
4. For suspected pneumonia, encourage patient to cough and breathe deeply. Ensure the patient stays hydrated. Give fever-reducing medications. Administer oxygen, if available. If evacuation is lengthy, administer oral antibiotics.
5. For a suspected asthma attack help calm the patient and change the environment. Assist the patient, if necessary, with his or her bronchodilators or Albuterol inhaler (2 puffs every 5 minutes up to 12 puffs) until attack abates. Continued maintenance treatment is usually 2 puffs every 4 hours and as needed.

Encourage pursed lip breathing. Administer oxygen, if available. Provide hydration and rest. A patient with severe asthma unresponsive to their normal medications may need treatment with steroids and epinephrine.

Evacuation Guidelines for Respiratory Emergencies:

Evacuate Rapidly:

- Any patient with suspected pulmonary embolus.
- Any patient with signs or symptoms of a severe asthma attack.

Evacuate:

- Any patient with suspected pneumonia.
- Any patient suffering from asthma who is unresponsive to medication or with increasing frequency and/or duration of attacks.

Protocol Decision:

Oxygen is recommended for all serious respiratory emergencies. The administration of oxygen requires a physician. This medication may also be self-administered by patients with a prescription for it. If your program does not carry oxygen in the backcountry, delete this section from the treatment protocol.

A range of over-the-counter medications including decongestants, pain medications and fever-reducing medications may help patients with respiratory emergencies. The administration of over-the counter decongestants, pain medications and fever-reducing medications to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Antibiotics are recommended for any patient with pneumonia. The administration of an antibiotic requires a physician. This medication may also be self-administered by patients with a prescription for it.

Albuterol is a prescription medication commonly carried by patients with a known asthma history. Many patients are able to self-administer this medication.

People with mild to moderate controlled asthma participate in outdoor programs.

The use of epinephrine to manage severe asthma is controversial and is not listed by the manufacturer as an indication for use of the auto-injector devices.

Standing Orders: Shock

General Comments:

Serious traumatic injury and large areas of significant burns are unusual in the outdoors. The more common risk for shock may be from loss of fluid volume from sweating, vomiting, diarrhea and inadequate hydration. Outdoor leaders should focus on early recognition and intervention to control fluid loss and maintain patients in the field.

Treatment for Shock:

1. Treat before serious signs develop.
2. Treat the cause. Keep the patient calm.
3. Keep the patient warm.
4. Keep the patient flat with legs elevated no more than 12 inches (30.5 cm)(Head or lower extremity injury may preclude this.)

5. Consider administering oral fluids in an extended care situation (If patient can tolerate the fluids, mental status is adequate to swallow and there is no abdominal injury.)
6. Administer oxygen, if available.
7. Monitor the patient closely for deteriorating vital signs.

Evacuation Guidelines Summary

Evacuate Rapidly:

- Any patient with decreased level of responsiveness or worsening vital signs.

Evacuate:

- Any patient whose vital signs do not stabilize or improve over time.

Protocol Decision:

Oxygen is recommended for all patients exhibiting signs and symptoms of shock. The administration of oxygen requires a physician.

Standing Order: Skin Irritation

General Comments:

Skin irritations can often be prevented through improved hygiene practices and appropriate clothing.

The active ingredient in poison ivy, oak and sumac is urushiol. This oil can be transferred to the skin regardless of whether or not the plant has its traditional shiny three leaves in bloom. Inhaled smoke from burning plants can also cause a significant reaction. There are barrier creams for hypersensitive individuals.

Treatment for Skin Irritation:

1. Fungal infections of the skin can be treated by washing the area thoroughly with soap and water, air drying and applying a thin layer of 1% hydrocortisone cream or a topical anti-fungal (e.g. Tinactin®). Consider prescription antifungals (e.g. Diflucan®) for severe infections.
2. For a suspected contact with poison ivy, oak or sumac, wash the area immediately after exposure with soap and cool water. For highly sensitive persons consider using Tecnu® or Zanafel® as a soap. Wash all clothes and equipment that may have been exposed. Once the rash appears, apply a thin layer of 1% hydrocortisone cream or calamine lotion to reduce itching. Oral antihistamines may help reduce itching.

Evacuation Guidelines for Skin Irritation:

Evacuate Rapidly:

- Any patient with respiratory distress after inhaling smoke from burning poison ivy, oak or sumac.

Evacuate:

- Any patient with a skin irritation that makes them too uncomfortable to continue.

Protocol Decision:

Anti-fungal medication (e.g. Tinactin®) is recommended for treating fungal infections of the skin. The administration of over-the counter anti-fungal medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Prescription anti-fungal medication may be useful in treating fungal infections of the skin. The administration of prescription anti-fungal medication (e.g. Diflucan®) requires a physician. This medication may also be self-administered by patients with a prescription for it

Over-the-counter antihistamines, topical hydrocortisone cream and calamine lotion may be helpful in managing the symptoms of poison ivy, oak and sumac. The administration of over-the counter medication to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: North American Pit Vipers, Coral Snakes and Poisonous Lizards

General Comments

Fatalities due to envenomation by snakes or lizards are extremely rare in North America, though tissue loss is a possibility. Venom will not be injected in all bites. The injury should be monitored closely for signs of envenomation. Anti-venom is available for most bites.

Treatment for Bites from North American Pit Vipers, Coral Snakes and Poisonous Lizards

1. Ensure the scene is safe. Remain calm and put the patient at rest. Avoid walking if possible.
2. Remove constricting clothing and jewelry from the bite site.
3. Wash and dress the wound.
4. Measure and monitor swelling and signs of envenomation. Do not apply ice.
5. Pain medications as needed.
6. A wide elastic bandage wrapped distal to proximal is recommended for coral snake bites.
7. Splint the extremity and keep it at the same level as the heart.
8. Monitor for shock and cardiac and respiratory depression.

Evacuation Guidelines for Bites from North American Pit Vipers, Coral Snakes and Poisonous Lizards

Evacuate Rapidly:

- Any patient exhibiting shock, or cardiac or respiratory depression.
- Any patient with signs or symptoms of envenomation.

Evacuate:

- Any patient bitten by a poisonous snake, ideally by carrying or slowly walking.

Protocol Decision:

A patient with a snake or lizard bite may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with a snake or lizard bite may benefit from over-the-counter pain medication. The administration of over-the counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: North American Spiders and Scorpions

General Comments

Many spider bites are initially painless making it difficult to identify the specific spider. Fatalities are rare. Scorpion stings are painful, but typically self-limiting. Systemic reactions are possible from scorpions in the extreme southwestern US.

Treatment for Bites and Stings from North American Spiders and Scorpions

1. Clean the bite/sting site. Continue to clean the site if wound does not heal.
2. Ice the bite site for pain and consider painkillers for abdominal cramps.
3. Monitor the bite site for necrosis.
4. Monitor the patient for systemic signs and symptoms.

Evacuation Guidelines for Bites and Stings from North American Spiders and Scorpions

Evacuate Rapidly:

- Any patient exhibiting slurred speech, difficulty swallowing, blurred vision, seizures, or respiratory or cardiovascular involvement.

Evacuate:

- Any patient with a suspected black widow spider bite.
- Any patient with a wound that will not heal.

Protocol Decision

A patient with a spider bite or scorpion sting may benefit from prescription level pain medication. The administration of prescription pain medication requires a physician. This medication may also be self-administered by patients with a prescription for it.

A patient with a spider bite or scorpion stings may benefit from over-the-counter pain medication. The administration of over-the counter pain medication to minors requires parental approval, which can be obtained through pre-trip authorization forms or on a case by case basis.

Standing Order: Spinal Injuries

General Comments:

The utilization of the focused spine assessment to determine presence or absence of spinal injury has been well studied in the clinical setting. Outdoor leaders should be attentive to suspicious mechanisms of injury, take early spinal precautions with patients and when appropriate use the focused spine assessment to make a careful decision about continued immobilization.

Focused Spine Assessment:

If the patient has a mechanism for spinal injury but does not exhibit signs and symptoms of spinal injury during the complete patient assessment; perform a focused spine assessment to determine whether further spinal immobilization is warranted.

Focused Spine Assessment

1. Patient must be reliable: A+O x 3 or 4, sober, and have no distractions.
2. Patient must have normal Circulation (warm, pink digits or good pedal/radial pulse), Sensation (no numbness, tingling or unusual hot or cold sensations) and Motion (unless otherwise explainable by another injury or illness) in all four extremities.
3. Patient must deny spinal pain and tenderness.

If patient meets all criteria further spinal immobilization is not warranted.

Treatment for Suspected Spinal Injury:

If the patient exhibits signs and symptoms of spinal injury during either the patient assessment or the focused spine assessment:

1. Stabilize the spine and control the head manually.
2. Check circulation, sensation and motion (CSM) in the extremities.
3. Establish neutral alignment of the spine.
4. Apply a cervical collar.
5. BEAM or log-roll the patient into a commercial litter or onto a backboard.
6. Secure the entire body to the litter or backboard with padding and straps.
7. Secure the head to the litter or backboard.
8. Recheck CSM in the extremities.
9. Evacuate.

Evacuation Guidelines for Spinal Injuries:

Evacuate Rapidly:

- Any patient who demonstrates signs and symptoms of neurological injury.

Evacuate:

- Any patient being treated for a spinal injury, ideally on a commercial litter or on a backboard.

Protocol Decision:

Though some urban EMS systems have adopted use of a focused spinal assessment allowing pre-hospital providers to make a decision about the need for spinal immobilization, this is still essentially a wilderness protocol and its use should be discussed with ASCENT Medical Advisor.

Standing Order: Submersion Incidents

General Comments

Rescuer safety is paramount when dealing with submersion events. It is common to underestimate the effects of water current and temperature on the ability of both rescuers and patients to avoid submersion.

Treatment for Submersion Injuries

1. Scene safety: Reach, Throw, Row, Tow, Go! Get the person onto a safe, firm surface. Do not enter the water to attempt rescue if you have not been trained.
2. Aggressive Basic Life Support with supplemental oxygen, if available.

Evacuation Guidelines for Submersion Injuries

Evacuate Rapidly:

- Any patient who develops: Wet lung sounds, productive cough, rapid, shallow, respirations, cyanosis, substernal burning, inability to take a deep breath, irregular and/or depressed heart rate, or a decreased level of responsiveness.

Evacuate:

- Any patient who was unresponsive at any time during the submersion.

Protocol Decision:

Oxygen is recommended for submersion victims. The administration of oxygen requires a physician. This medication may also be self-administered by patients with a prescription for it.

Standing Order: Wounds and Infection

General Comments

Wounds and infection are commonly reported medical problems in a wilderness setting. Established infection is challenging to manage so efforts should be directed at aggressive wound cleaning and effective dressing to prevent infection and promote healing.

Treatment for Wounds and Infection

1. Control bleeding using direct pressure and elevation, pressure dressings, and in extreme cases, tourniquets.
2. Properly clean the wound: Wash your hands and put on your gloves; Clean around the wound with soap and water, an abrasion may be aggressively scrubbed, and rinse with disinfected water; Remove any foreign matter with disinfected tweezers or by gently brushing it out of the wound; Pressure irrigate the wound with disinfected water (minimum ½ liter recommended).
3. Cover wound with the cleanest dressing available and bandage. Keep wound moist with a dressing coated with antibiotic ointment or a transparent film dressing. If the cut gapes open less than 1/2 inch (1.3 cm), approximate wound edges with wound closure strips. Monitor circulation, sensation and motion (CSM). Keep the dressings clean and dry. Change dressings at least every 24 hours. If using transparent film dressings, dressings may be left in place until wound heals.
4. If the cut causes gaping of more than 1/2 inch (1.3 cm) or wound is infected, pack the wound open wet-dry and keep the wound moist during evacuation.
5. In case of an amputation, wrap the part in a moist sterile dressing and seal in a plastic bag. Immerse the bag in cool water and transport rapidly to the hospital with the patient.
6. Consider removing an impaled object if it is through the cheek. In remote environments consider removal if the object is in an extremity and interferes with transport.
7. If the wound shows signs and symptoms of infection: Hot soaks for 20-30 minutes several times daily; clean the wound following the hot soak; keep the patient hydrated; consider packing the wound open (wet to dry) to allow drainage; consider antibiotic and fever reducing therapy.

Evacuation Guidelines for Wounds and Infection

Evacuate Rapidly:

- Any patient with an amputation.
- Any patient with an object still impaled.
- Any patient with a wound that: Is heavily contaminated, opens a joint space, involves underlying tendons or ligaments, was caused by an animal bite, is on the face, or was caused by a crushing mechanism.

- Any patient with a wound that shows signs and symptoms of serious infection.

Evacuate:

- Any patient with a wound that cannot be closed in the field.
- Any patient with an infection that does not improve within 12-24 hours.

Protocol Decision:

Tourniquets are used to manage severe bleeding uncontrolled by direct pressure. The decision to release a tourniquet in a wilderness environment is controversial. ASCENT Medical Advisor should advise you on the circumstances under which he or she is comfortable with a tourniquet being released in the backcountry.

Closing wounds is generally considered a clinical procedure. ASCENT Medical Advisor should advise you on the circumstances under which he or she is comfortable with wound closure in the backcountry using wound closure strips or butterfly bandages.

The removal of impaled objects is controversial. ASCENT Medical Advisor should advise you on the circumstances under which he or she is comfortable with the removal of an impaled object.

Antibiotics are recommended for all seriously infected wounds. The administration of an antibiotic requires a physician. These medications may also be self-administered by patients with a prescription for them.

Standing Order: Zoonoses

General Comments

There is a wide-range of diseases transmitted from animals to humans. The ones we worry about the most in the United States are: Tick Fevers, West Nile Virus, Hantavirus, Rabies and Plague. Field diagnosis can be extremely difficult and is unnecessary. The patient should be assessed for a history of a bite and in regards to the flu-like illness evacuation criteria. Educational efforts should focus on effective prevention.

Treatment for Zoonoses

1. Symptomatic management, e.g. fever reducing medication, pain medication, antihistamines and antibiotic therapy.
2. Treat all mammal bites as a potential rabies exposure. Clean wound thoroughly with soap and disinfected water.

Evacuation Guidelines for Zoonoses

Evacuate Rapidly:

- Any patient with a mammal bite for initiation of the rabies vaccine.

Evacuate:

- Any patient with a history of an embedded tick who develops fever, rash and flu-like symptoms.
- Any patient who triggers the flu-like illness evacuation criteria.

Protocol Decision:

A range of over-the-counter medications including antihistamines, pain medications and fever-reducing medications may help patients with a zoonosis. The administration of over-the counter antihistamines, pain medications and fever-reducing medications to minors requires parental approval which can be obtained through pre-trip authorization forms or on a case by case basis.

Antibiotics may be helpful for patients with a zoonosis. The administration of an antibiotic requires a physician. These medications may also be self-administered by patients with a prescription for them.

Project ASCENT Drug Kit

Administering prescription medications is usually restricted to licensed medical professionals or individuals acting within established Emergency Medical Services systems. Some courses may carry prescription medications as a component of their medical supplies including epinephrine.

Note to ASCENT staff: There are increasing numbers of state laws that allow for the administration of epinephrine to an individual experiencing a life threatening allergic reaction by a "lay person". Most commonly the epinephrine administered is the patient's, and the staff member assists the patient. This is likely to be an area of continued discussion and evolving laws and regulations in the ensuing years.

Frequently individuals will bring their own prescription medications on a trip, especially on an international course or trip. While you may not be administering these medications, having some basic information about their uses, doses, side effects and contraindications will be helpful.

Typically the administration of non-prescription, or over-the-counter, medication falls within the realm of simple first aid. Having some pain medications, anti-histamines, anti-fungals and antacids may help manage someone's symptoms and allow them to remain in the backcountry.

Before administering any medication read the protocols, confirm the dosage, read the label and confirm the medication, ask the patient about previous history with this medication and any known allergies, ask the patient if they are currently on any medication and if so, review the protocols for contraindications. The administration of over-the counter medication to minors requires parental approval which can be obtained through pre-trip authorization forms or by communicating with the parents on a case by case basis.

Please note that the following medication information is for medication available in the United States. Outside of the United States medication may carry different trade names. Some medication available only by prescription in the United States may be available without a prescription in other countries and may be prepared in different dosing. If you purchase medication outside of the United States you should be aware of quality control concerns in manufacturing these medications, and you should confirm classification, dose, indication, contraindication and possible side effects before administering it. All dosing is indicated for adults. Pediatric dosing should be dictated by a doctor prior to a trip.

Abbreviations:

PO: Oral

SQ: Subcutaneous injection

IM: Intramuscular injection

Drug Information Provided On

Analgesic (Painkillers)-Over-The-Counter

Acetaminophen (e.g. Tylenol)

Aspirin (e.g. Bayer, Ecotrin)

Ibuprofen (e.g. Advil, Motrin)

Ketoprofen (e.g. Orudis KT)

Naproxen (e.g. Aleve)

Phenazopyridine hydrochloride (e.g. Pyridium, Uristat)

Analgesics (Painkillers)-Prescription

Hydrocodone bitartrate/acetaminophen (e.g. Vicodin)

Oxycodone/acetaminophen (e.g. Percocet, Roxicet)

Anti-Allergy-Over-The-Counter

Phenylephrine (e.g. Neo-Synephrine)

Hydrocortisone acetate (e.g. Cortaid)

Diphenhydramine hydrochloride (e.g. Benadryl)

Pseudoephedrine hydrochloride (e.g. Sudafed)

Bronchodilator-Prescription

Albuterol

Epinephrine-Prescription

Epinephrine (e.g. Adrenalin or EpiPen)

Antibiotic-Over-The-Counter

Polymyxin B sulfate/bacitracin (e.g. Polysporin)

Antibiotic-Prescription

Erythromycin

Trimethoprim Sulfamethoxazole (e.g. Septra or Bactrim)

Cephalexin (e.g. Keflex)

Ciprofloxacin hydrochloride (e.g. Cipro)

Anti-Fungal-Over-The-Counter

Tolnaftate (e.g. Tinactin)

Miconazole nitrate (e.g. Monistat 3)

Anti-Fungal-Prescription

Fluconazole (e.g. Diflucan)

Anti-Emetics (Anti-Vomiting) and Anti-Acids-Over-The-Counter

Calcium carbonate (e.g. Tums, Maalox)

Bismuth subsalicylate (e.g. Pepto-Bismol)

Anti-Emetics (Anti-Vomiting) and Anti-Acids-Prescription

Prochlorperazine (e.g. Compazine)

Promethazine (e.g. Phenergan)

Anti-Vertigo (Anti-Motion Sickness)-Over-The-Counter

Meclizine (e.g. Antivert, Bonine)

Anti-Vertigo (Anti-Motion Sickness)-Prescription

Scopolamine (e.g. Trans-Derm Scop)

Anti-Diarrheal-Over-The-Counter

Loperamide hydrochloride (e.g. Imodium)

Anti-Diarrheal-Prescription

Diphenoxylate hydrochloride with atropine sulfate (e.g. Lomotil) Altitude Medications-Prescription

Acetazolamide (e.g. Diamox)

Dexamethasone (e.g. Decadron)

Nifedipine (e.g. Procardia)

Analgesics (Painkillers)-Over-The-Counter

Acetaminophen (e.g. Tylenol)

Classification: Non-narcotic analgesic, antipyretic

Dose: 650mg/4-6 hours PO (Regular strength), 1000mg/6 hours PO (Extra strength). Maximum dose 4g/24 hours PO.

Indications: For relief of pain due to headache, cold and flu discomfort, minor muscle and joint discomfort and menstrual cramps. For reduction of fever. Especially useful for those allergic to aspirin or aspirin-containing products. Does not control inflammation.

Contraindications: Hypersensitivity, active alcoholism, liver disease, hepatitis. Acetaminophen is a common ingredient in over-the-counter pain, cold and flu medicine. Be careful of accidental overdose in combination with other products.

Side Effects: Hypersensitivity is rare.

Aspirin (e.g. Bayer, Ecotrin)

Classification: Analgesic, Non-Steroidal Anti-Inflammatory Drug (NSAID), antipyretic, anticoagulant.

Dose: 325-650 mg/4 hours PO (Regular strength), 500-1000mg/4-6 hours PO (Extra strength), 162-325mg/24 hours

PO for cardiac chest pain. Maximum dose 4g/24 hours PO.

Indications: For relief of pain due to headache, cold and flu discomfort, minor muscle and joint discomfort and menstrual cramps. For reduction of fever. Controls inflammation. Can be used to "cauterize" exposed tooth pulp. For use with cardiac chest pain.

Contraindications: Allergic sensitivity. Gastrointestinal bleeding, bleeding disorders, impaired liver function. Do not give to children under 12.

Side Effects: Gastrointestinal distress, allergic reaction.

Ibuprofen (e.g. Advil, Motrin)

Classification: Analgesic, Non-Steroidal Anti-Inflammatory Drug (NSAID), antipyretic.

Dose: 400-800mg/4-8 hours PO. Maximum dose 2400mg/24 hours PO.

Indications: For symptomatic relief of pain associated with headache, colds, flu, frostbite, toothache, arthritis, burns and menstrual cramps. May be used to reduce fever. For pain of inflammation and reduction of inflammation associated with muscle, joint and over-use injuries.

Contraindications: Active peptic or gastrointestinal ulcer, gastrointestinal bleeding disorder, history of hypersensitivity to aspirin or other NSAIDs.

Side Effects: Nausea, epigastric pain, dizziness and rash.

Ketoprofen (e.g. Orudis KT)

Classification: Analgesic, Non-Steroidal Anti-Inflammatory Drug (NSAID).

Dose: 75mg/8 hrs PO

Indications: For symptomatic relief of pain associated with headache, colds, flu, frostbite, toothache, arthritis, burns and menstrual cramps. May be used to reduce fever. For pain of inflammation and reduction of inflammation associated with muscle, joint and over-use injuries.

Contraindications: Active peptic or gastrointestinal ulcer, gastrointestinal bleeding disorder, history of hypersensitivity to aspirin or other NSAIDs. Side Effects: Nausea, diarrhea and epigastric pain.

Naproxen (e.g. Aleve)

Classification: Analgesic, Non-Steroidal Anti-Inflammatory Drug (NSAID).

Dose: 550mg/12 hrs PO

Indications: For symptomatic relief of pain associated with headache, colds, flu, frostbite, toothache, arthritis, burns and menstrual cramps. May be used to reduce fever. For pain of inflammation and reduction of inflammation associated with muscle, joint and over-use injuries. .

Contraindications: Hypersensitivity to aspirin or other NSAIDs.

Side Effects: Nausea, constipation, abdominal pain, headache, dizziness and drowsiness.

Phenazopyridine hydrochloride (e.g. Pyridium, Uristat)

Classification: Urinary tract analgesic

Dose: 100-200mg/6-8 hrs PO

Indications: For symptomatic relief of burning, pain, urgency and frequency associated with urinary tract/bladder infections. Should be used concurrently with an antibiotic. Contraindications: Hypersensitivity. Renal/liver insufficiency.

Side Effects: Headache, gastrointestinal disturbance and rash. Dye stains clothing.

Analgesics (Painkillers)-Prescription

Hydrocodone bitartrate/acetaminophen (e.g. Vicodin)

Classification: Narcotic analgesic, antitussive.

Dose: 5-10mg/4-6 hours PO

Indications: For moderate to severe pain. Narcotic. Good for musculoskeletal and dental pain. Good for people allergic to codeine. Suppresses cough reflex.

Contraindications: Hypersensitivity.

Side Effects: Sedation, decrease in blood pressure, sweating and flushed face, drowsiness and dizziness.

Oxycodone/acetaminophen (e.g. Percocet, Roxicet)

Classification: Narcotic analgesic.

Dose: 5-10mg/ 4 hours PO

Indications: For severe pain.

Contraindications: Hypersensitivity. Caution with CNS depression, respiratory depression, seizures and shock.

Side Effects: Drowsiness, dizziness, hypotension, anorexia, nausea, vomiting and constipation.

Anti-Allergy-Over-The-Counter

Phenylephrine (e.g. Neo-Synephrine)

Classification: Nasal decongestant

Dose: Blow nose before medication is administered, tilt head back, apply 2-3 drops or 1-2 sprays in each nostril. Wait 5 minutes between nostrils.

Indications: For relief of nasal congestion that accompanies colds and allergies. May be useful to help stop nosebleed. May be useful to relieve sinus "squeeze" associated with diving.

Contraindications: Severe hypertension, ventricular tachycardia, pancreatitis, hepatitis, thrombosis, heart disease, narrow angle glaucoma.

Side Effects: Rebound nasal congestion due to overuse (>3 days), stinging, burning, drying of nasal mucosa.

Hydrocortisone acetate (e.g. Cortaid)

Classification: Glucocorticoid

Dose: Topical 1% cream, 2-4 times/day

Indications: For relief of pain and itching of nematocyst stings, poison ivy, oak and sumac, insect bites and other allergic skin reactions. May help dry up oozing rash of allergic skin reactions. Contraindications: Serious infections, viral, fungal or tubercular skin lesions. Side Effects: Itching, redness and irritation.

Diphenhydramine hydrochloride (e.g. Benadryl)

Classification: Antihistamine

Dose: 25-50mg per 4-6 hours

Indications: For temporary relief of respiratory allergy symptoms and cold symptoms. Helps relieve the itching of allergic skin reactions. Useful in treatment of moderate allergic and anaphylactic reactions. May be used as a mild sedative and for insomnia. May help alleviate seasickness. Can be used to treat dystonic reactions.

Contraindications: Hypersensitivity, acute asthma attack, glaucoma, peptic ulcer, hypertension and COPD. Side Effects: Drowsiness, dizziness, weakness, hypotension, dry mouth, thickening bronchial secretions and urinary retention.

Pseudoephedrine hydrochloride (e.g. Sudafed)

Classification: Nasal decongestant

Dose: 60mg per 4-6 hours

Indications: Decongestant useful in treating upper airway sinuses and nasal passages. Use of more than 5 days may cause reverse effects.

Contraindications: Severe hypertension, coronary artery disease, lactating women, MAO inhibitor therapy.

Side Effects: Nervousness, restlessness, insomnia, trembling and headache.

Bronchodilator-Prescription

Albuterol

Classification: Bronchodilator

Dose: Two puffs of metered dose inhaler (MDI) with use of a spacer every 4 hours and as needed.

Indications: Shortness of breath or respiratory difficulty thought to be secondary to reactive airway dysfunction (asthma) or HAPE.

Contraindications: Tachycardia secondary to underlying heart condition. Side Effects: Palpitations, tachycardia and tremor.

Epinephrine-Prescription

Epinephrine (e.g. Adrenalin or EpiPen)

Classification: Bronchodilator, antiallergenic, cardiac stimulant.

Dose: .3ml 1:1000 SQ or IM. Repeat as necessary.

Indications: For severe allergic reactions including anaphylaxis and status asthmaticus.

Contraindications: No true contraindications with anaphylaxis. Hypertension, cardiac disease, glaucoma and shock.

Side Effects: Increased heart rate, nervousness, dizziness, lightheadedness, nausea and headache.

Antibiotic-Over-The-Counter

Polymyxin B sulfate/bacitracin (e.g. Polysporin)

Classification: Antibiotic

Dose: Topical

Indications: Contains ingredients for prevention of infection in minor wounds. Works as a lubricant, offers some relief from itching.

Contraindications: Hypersensitivity.

Side Effects: Hypersensitivity reactions-burning, itching, inflammation, contact dermatitis.

Antibiotic-Prescription

Erythromycin

Classification: Antibiotic

Dose: 250mg/6 hrs for 5 days. Take with food.

Indications: For sinus, pulmonary, ear, eye, respiratory and soft tissue infections.

Contraindications: Hypersensitivity, liver disease, hepatitis.

Side Effects: Abdominal discomfort and cramping, nausea, vomiting, diarrhea and rash.

Trimethoprim Sulfamethoxazole (e.g. Septra or Bactrim)

Classification: Antibiotic

Dose: Single strength tablet contains 80mg trimethoprim and 400mg sulfamethoxazole. Double strength tablet contains 160mg trimethoprim and 800mg sulfamethoxazole. Dose is 2 single strength tablets or 1 double strength tablet/12 hours PO. Recommended length, 5 days for UTI and infectious diarrhea, 10-14 days for kidney infection. Indications: For marine wounds, kidney, ear, sinus and some respiratory infections. Best for urinary tract infections. Works with infectious diarrhea if ciprofloxacin unavailable.

Contraindications: Hypersensitivity, anemia.

Side Effects: Nausea, vomiting, diarrhea, decreased appetite, stomach cramps, headache.

Cephalexin (e.g. Keflex)

Classification: Antibiotic

Dose: 250-500mg per 6 hours for at least 5 days.

Indications: For skin, bone, pneumonia and urinary tract infections.

Contraindications: Hypersensitivity. Sensitivity to penicillins.

Side Effects: Oral and vaginal fungal infections, diarrhea and abdominal cramping.

Ciprofloxacin hydrochloride (e.g. Cipro)

Classification: Antibiotic

Dose: 250mg/12 hours PO for UTI. 500mg/12 hours PO for kidney infection, infectious diarrhea, bone and joint infection. See Physician for length of course.

Indications: Best for infectious diarrhea. Okay for bone and urinary tract infections.

Contraindications: Hypersensitivity.

Side Effects: Nausea, diarrhea, vomiting and constipation.

Anti-Fungal-Over-The-Counter

Tolnaftate (e.g. Tinactin)

Classification: Antifungal

Dose: Topical, 2 applications/day

Indications: For treatment of superficial skin fungi such as ringworm, jock itch and athlete's foot.

Contraindications: Hypersensitivity.

Side Effects: Mild irritation.

Miconazole nitrate (e.g. Monistat 3)

Classification: Antifungal

Dose: 200mg vaginal suppositories nightly for three nights or topical cream as needed.

Indications: Vaginal candidiasis.

Contraindications: Hypersensitivity, first trimester of pregnancy.

Side Effects: Itching, burning and stinging.

Anti-Fungal-Prescription

Fluconazole (e.g. Diflucan)

Classification: Antifungal

Dose: 150mg once.

Indications: Vaginal candidiasis.

Contraindications: Hypersensitivity.

Side Effects: Fever, chills, dizziness, drowsiness, headache, constipation, diarrhea, nausea, vomiting, abdominal pain.

Anti-Emetics (Anti-Vomiting) and Anti-Acids-Over-The-Counter

Calcium carbonate (e.g. Tums, Maalox)

Classification: Antacid

Dose: 500mg tablet as needed

Indications: For symptomatic relief of heartburn, acid indigestion, sour stomach and other conditions related to an upset stomach, including intestinal gas problems.

Contraindications: Hypersensitivity.

Side Effects: Swelling of legs and feet, fecal impaction, metabolic alkalosis.

Bismuth subsalicylate (e.g. Pepto-Bismol)

Classification: Antidiarrheal, antinauseant.

Dose:

Indications: For use in the control of diarrhea, nausea and upset stomach. May help prevent "traveler's diarrhea."

Contraindications: Bleeding ulcers, hemophilia, kidney impairment. Should not be taken by the aspirin allergic.

Side Effects: May turn tongue and stool black.

Anti-Emetics (Anti-Vomiting) and Anti-Acids-Prescription

Prochlorperazine (e.g. Compazine)

Classification: Antiemetic

Dose: 5-10mg/6-8 hours PO or 10mg/12 hours PO (Extended release) or 25mg/12 hours rectal suppository.

Indications: Nausea and vomiting.

Contraindications: Hypersensitivity. Glaucoma, bone marrow suppression, liver or cardiac impairment, blood pressure problems, CNS depression.

Side Effects: Muscle spasms of the neck are a common side effect, but are treatable with diphenhydramine.

Promethazine (e.g. Phenergan)

Classification: Antihistamine, antiemetic.

Dose: 12.5-25mg/4-6 hours rectal suppository

Indications: Nausea and vomiting, motion sickness.

Contraindications: Glaucoma, CNS depression, intestinal or urinary tract obstruction.

Side Effects: Drowsiness, disorientation, hypotension and syncope. Muscle spasms of the neck are a common side effect, but are treatable with diphenhydramine.

Anti-Vertigo (Anti-Motion Sickness)-Over-The-Counter

Meclizine (e.g. Antivert, Bonine)

Classification: Antiemetic, antivertigo

Dose: 25-50mg PO per day, 1 hour before exposure to motion.

Indications: Prevention and treatment of motion sickness, vertigo.

Contraindications: Hypersensitivity.

Side Effects: Drowsiness.

Anti-Vertigo (Anti-Motion Sickness)-Prescription

Scopolamine (e.g. Trans-Derm Scop)

Classification: Antinausea, antiemetic

Dose: 1.5 mg transdermal patch. Keep out of eyes. Put one patch behind ear 4-5 hours before needed.

Remove after 72 hours.

Indications: Prevention of motion sickness.

Contraindications: Glaucoma, urinary or intestinal obstruction, tachycardia.

Side Effects: Dry mouth, drowsiness, blurred vision, hallucinations, confusion.

Anti-Diarrheal-Over-The-Counter

Loperamide hydrochloride (e.g. Imodium)

Classification: Antidiarrheal

Dose: 4mg PO initially followed by 2mg PO after each loose stool

Indications: For use in the control of diarrhea. Thought to limit peristalsis. Helpful in evacuating someone with severe diarrhea.

Contraindications: Hypersensitivity. Diarrhea secondary to certain bacteria (e.g., E.Coli) Side Effects: Dry mouth, dizziness, abdominal discomfort.

Anti-Diarrheal-Prescription

Diphenoxylate hydrochloride with atropine sulfate (e.g. Lomotil)

Classification: Antidiarrheal

Dose: 5mg/6 hours PO

Indications: For severe diarrhea. Evacuate after 24 hours with no improvement.

Contraindications: Liver disease, dehydration, glaucoma.

Side Effects: Drowsiness, lightheadedness, dizziness, nausea.

Altitude Medications-Prescription

Acetazolamide (e.g. Diamox)

Classification: Diuretic.

Dose: 250mg/6 to 12 hours PO (prevention dose = 125mg/12 hours PO)

Indications: For prevention and treatment of mild to moderate acute mountain sickness.

Contraindications: Sulfa-allergies, pregnancy, dehydration or renal disease.

Side Effects: Dehydration, tiredness, altered taste, nausea, numbness in extremities and lips.

Dexamethasone (e.g. Decadron)

Classification: Corticosteroid.

Dose: 8mg PO or 10mg IM initially then 4mg/6 hours PO or IM during evacuation.

Indications: For treatment of High Altitude Cerebral Edema and increasing ICP from head trauma.

Contraindications: No absolute contraindications for short-term emergency use except hypersensitivity.

Side Effects: Cough, dry mouth, throat irritation, blurred vision, indigestion, personality and behavioral changes, muscle weakness.

Nifedipine (e.g. Procardia)

Classification: Antihypertensive

Dose: 10mg/8 hours PO or 30-60mg/24 hours PO (Extended release).

Indications: High Altitude Pulmonary Edema (HAPE).

Contraindications: Hypersensitivity. Hypotension.

Side Effects: Peripheral edema, headache flushed skin, dizziness.

Considerations for a

Wilderness Medical Kit

General Comments

There is no magic recipe for creating the ultimate first aid kit. There is no one size fits all when it comes to first aid kits. Your kit should vary depending on group size, activity, season and population. There are however some basic contents that have universal applicability. Do pay attention to expiration dates and damage to contents, ensure that kits are cleaned and repacked after each use and make note of supplies you constantly run out of. Though the beauty of wilderness medicine is the ability to improvise, a good first aid kit goes a long way too!

Consider carrying the following supplies:

Equipment

- Trauma shears
- Tweezers
- Safety pins
- Scalpel
- Thermometer • BP cuff and stethoscope
- Rescue mask (with a one way valve)
- Emergency blanket
- Patient assessment forms
- Epi-Pen

Injury Management

- Gloves (multiple sizes)
- 12cc irrigation syringe (with needle nose tip)
- Providone-iodine solution
- Antiseptic towelettes
- Sterile scrub brush
- Green soap sponges
- Wound closure strips
- Tincture of benzoin swabs
- 2nd Skin® dressings
- Moleskin dressings
- Antibiotic ointment packets

- 1 x 3 fabric bandages
- Knuckle and fingertip fabric

bandages

- 4 x 4 sterile gauze pads
- 3 x 4 non-stick gauze pads
- 3-inch conforming roll gauze.
- 3-inch x 5-yards Coban[®] wrap
- Transparent film dressings
- 1-inch cloth tape
- Wire or SAM[®] splint
- Triangular bandages
- Trauma dressing

Verbal SOAP Report Script

"My name is _____ and my location is _____."

Subjective

"We have a _____ year old male/female patient whose chief complaint is ... (Symptom with OPQRST description (Onset, Provoke/Palliate, Quality, Radiate/Region/Refer, Severity, Time of Onset))."

"The patient states", or "witnesses state" ... (Mechanism of Injury or History of Present Illness).

Objective (Head-to-Toe)

"The patient was found ...(Describe position/location)".

"The patient exam revealed..." (Describe what you found, include pertinent negatives e.g. "The patient (does/does not) report loss of responsiveness, spine pain or tenderness and (has/does not have) normal CSM.>").

"No other injuries found."

Objective (Vital signs)

"At _____AM/PM the patient's vital signs were:"

LOR (AVPU)

HR (rate, rhythm, quality)

RR (rate, rhythm, quality)

SCTM (color, temperature, moisture)

BP (Systolic/Diastolic)

Pupils (PERRL)

T^o

Objective (Patient History)

"The patient reported the following history."

Symptoms: "In addition to the chief complaint patient has...."

Allergies: "Patient is allergic to...."

Medications: "Patient is taking...."

Pertinent medical history: "Patient has a history of...."

Last intake/output: (Describe recent urine/bowel output, water and food intake.)

Events: (Describe pertinent recent events or events that may have caused the problem.)

Assessment

“Based on this Mechanism of Injury there is/is not a possible spine injury.”

“Possible problems include....”

Plan

“Based on a focused spine assessment we have decided to continue/discontinue spine immobilization.”

“We will immobilize/treat the _____ by... (Describe treatment for all possible problems).”

“Our evacuation plan is....”

“We request the following supplies/support...”

Anticipated problems

“We will monitor for... (List anticipated problems and responses). “

Acknowledgement of Risk Form

Name: _____

Date: _____

Activity: _____

For use with Project ASCENT outdoor programming that uses United States Forest Service and the National Parks Service lands and rivers.

Much of the language used herein was adopted from the Project ASCENT and other organizations' acknowledgement of risk forms.

In consideration of Project ASCENT, its agents, employees, trustees, officers, contractors and all other persons or entities associated with it (hereafter referred to as "Project ASCENT"), I agree as follows:

Although Project ASCENT has taken reasonable steps to provide me with skilled staff and appropriate equipment for the activity that I am about to undertake, I acknowledge that this activity has risk, including inherent risks that cannot be eliminated without drastically altering the character of this activity. The same elements that help create the unique character of this activity may also be the same element that causes loss or damage to my equipment, accidental injury, illness, or in extreme cases, permanent trauma, disability or death. I understand that Project ASCENT does not want to reduce my enthusiasm for the activity, but thinks that it is important for me to be informed in advanced about the activities' inherent risks. The follow describes many, but not all, of those risks.

Project ASCENT's outdoor classes and recreational activities generally take place in the outdoor environment where participants are subject to numerous risks, both environmental and otherwise. Activities may vary depending on the course or advertised event, but often include hiking, backpacking, rappelling, kayaking, canoeing, and/or bicycling. Other activities may be undertaken depending upon the intent of the class or outing.

These activities may occur in remote places a significant time and distance away from medical facilities or definitive care; the difficulty of communication and transportation may significantly delay evacuation and transport to a medical facility.

Meals are usually prepared over small portable stoves, although sometimes groups also cook over open fires. Project ASCENT's standard water treatment process uses either boiling or filtering, using methods that kills most viruses and parasites, but may not kill cryptosporidium. Risks generally associated with camping include cuts, burns, blisters, diarrhea, flu-like symptoms, and falling timber or rock.

Travel is by vehicle, on foot, raft, kayaks, canoe, horseback, skis, snowshoes, and by other means. This travel may be over rough unpredictable off-trail terrain, boulder fields, downed trees, rivers, steep slopes, slippery rocks, snow and ice, glaciated terrain, currents, waves and reefs. Associated risks include collision, slipping, falling, being hit by objects, striking objects, capsizing, and drowning, in addition to environmental risks.

Environmental risks and hazards include moving, deep or cold water; insects, snakes and predators; falling, rolling or shifting rock; lightning, avalanches, flash floods, rapidly changing weather, and other unpredictable forces of nature. Possible injuries may include dehydration, sunburn, heat exhaustion and heat stroke, frostbite, hypothermia, high altitude illnesses, and other mild or serious conditions.

Decisions are made by the instructors and campers, often while immersed in the wilderness context. These decisions are dependent upon a variety of perceptions and evaluations that by their nature are imprecise and

subject to error in judgement. Campers may experience unsupervised time during periods where the instructor is not needed for their technical expertise. At all points in time the campers are responsible for their own safety, and should also take ownership for the safety of other campers on the experience.

I am aware that the proposed Project ASCENT activity includes the risk of injury or death to myself. I recognize that the description of risks given above is not complete, and that other unknown or unanticipated risks may result in property loss, injury, or death. I agree to assume the responsibility for the inherent risks in this activity, both those identified in this document as well as those not identified. My participation in this activity is voluntary, that no one is forcing me to participate, and that I am participating with full knowledge of the inherent risks. I am aware that there are other classes or activities that I could take or do instead.

I declare that I am good enough physical fitness to participate in the activity outlined above. If I have medical concerns related to the activity, I have verified with my physician that I am physically and psychologically able to participate in the experience. All information on the medical form is true and complete to the best of my knowledge. I authorize Project ASCENT to obtain or provide emergency hospitalization, surgical, or medical care for me.

I represent that I am fully capable of participating in this activity without causing harm to myself or others. Therefore, I, and my parent(s) or guardian, if I am a Minor, assume and accept full responsibility for me and for injury, death, and loss of personal property and expenses suffered by me and them as a result of those dangers and risks identified herein, and those inherent risks and dangers not specifically identified, and as a result of my negligence in participating in this activity.

I, and my parent(s) or guardian, if I am a minor, have read, understood, and accepted the terms and condition stated herein and acknowledge that this agreement shall be effective and binding upon myself, my heirs, assigns, personal representative of estate, and all of my family members.

Printed Name _____

Signature _____ Date _____

If the camper is under 18, I am signing this as parent or guardian to reflect my agreement to indemnify (that is, protect by payment or reimbursement) Project ASCENT from any claim which may be brought by or on behalf of the camper, or any member of the camper's family, for injury or loss resulting from those inherent risks of the activity, described and not described above, and from the negligence of the camper.

Printed Name _____

Signature _____ Date _____

In Addition:

Waiver and Release

A large percentage of the United States Forest Service, the National Parks Service, and other federal land management agencies do not allow service providers such as Project ASCENT to be released by their campers from liability for injury or other losses occurring on certain public lands. In those areas Project ASCENT is limited to the attached Acknowledgement of Risk form. Your activity may include travel and activities that is not on these public lands; Project ASCENT seeks additional protection for this travel and activities.

*******Please read the following carefully and sign below:*******

I have read and understand the attached Acknowledgement of Risk agreement, and confirm its representations and agree to all its provisions as though they were fully set forth in this document again.

Except with respect to an injury that occurs on public lands whose rules and regulations prohibit my doing so, I acknowledge and assume all risks of the course or activity, known or unknown, inherent or otherwise. In addition, I agree, for myself, my heirs and my personal representatives, to defend, hold harmless, indemnify, release and forever discharge Project ASCENT, and its current and former trustees, officers, employees, agents, insurers, successors and assigns (hereinafter collectively known as "representatives"), from and against any and all claims, demands, actions or causes of actions, whether know or unknown, relating to or arising out of or in conjunction with any damage, death or other consequences to real or personal property, any accident, illness, personal injury, death or other consequences that may result in my participation in the activities, or participation of any other participant, whether such action is authorized as a part of the activities or whether such damage or other consequence is caused by the fault or negligence of Project ASCENT or its trustees, officers, employees, or agents.

Clear thinking is necessary for this activity, therefore I agree to abstain from the use of alcohol or non-prescription drugs before and for the duration of the activity. Additionally I affirm that I have no chronic condition, disability, or other health concerns that would make my participation in these activities inadvisable.

I agree to submit any disagreement under this Waiver and Release first to confidential mediation. If confidential mediation does not resolve the issue, I agree to submit the disagreement to binding arbitration. This arbitration shall take place in Portland, Oregon and shall be conducted according to the rules of the American Arbitration Association. The prevailing party in any arbitration shall be entitled to recover its attorneys' and expert fees and other costs, disbursements and expenses incurred before and during arbitration, as the arbitrator may adjudge reasonable. Further, I agree that this release shall be governed by and construed according to the state of Oregon.

I understand that this release is voluntary in that there are other classes or activities that I could choose to undertake. I have read this release and understand it fully. I understand that signing this release is a condition of my participation in the activities and that this Waiver and Release is legally binding on me. And, I understand that, among other things, I am agreeing to indemnify Project ASCENT and its representatives for injuries, damages or losses that they may cause and giving up certain rights to sue Project ASCENT and its representatives for injuries, damages, or losses that I may incur.

I ASSUME ALL RISKS ASSOCIATED WITH THE ACTIVITIES, WHETHER OR NOT SPECIFIED IN THIS WAIVER AND RELEASE, AND UNDERSTAND THAT Project ASCENT IS NOT A GUARANTOR OF MY SAFETY IN CONNECTION WITH MY PERFORMANCE OF THE ACTIVITIES.

In witness thereof, I have caused this release to be executed this _____ day of _____, 20___. Printed Name

Signature _____ Date _____

The parent or guardian must sign below if the camper is under 18 years of age. In consideration of Project ASCENT's allowing the camper to participate in the activity, the undersigned parent(s) or guardian agree to release Project ASCENT from any claim the parent(s) or guardian may have because of injury or loss suffered by the camper, including injury or loss claimed to be caused by the negligence of Project ASCENT. In addition, the parent(s) or guardian agree to protect and indemnify Project ASCENT from any claim and related expenses or fees, brought at any time by the camper or by anyone on the camper's behalf, or by any member of the camper's family, or by another course participant, arising out of the camper's enrollment or participation in the activity. The undersigned also agree to the terms of mediation and arbitration outlined above. This indemnity includes claims of Project ASCENT's negligence.

Printed Name of Parent(s) or Guardian _____

Signature _____ Date _____

Signature _____

Health and Diet Questionnaire

Project ASCENT

This information is for the trip leaders' information only and is completely confidential

Name: _____ Camp: _____

Phone: _____

Emergency Contact: _____ Relationship: _____

Emergency Contact Phone: (____) _____

ASCENT Camp Information

Project ASCENT camps can be multi-day wilderness expeditions in remote settings, where evacuation to modern hospital facilities is not immediately possible. You must expect extreme weather conditions ranging from snow storms to sleet to extreme heat and humidity. Sudden environmental changes are to be expected and anticipated. Depending on what activity you pursue in your ASCENT Camp, you may be required to carry a heavy load up uneven, steep terrain; paddle for extended periods; sleep outdoors; experience long, tough days; and prepare meals and set up camp. Be sure that you are able to be responsible for yourself.

Participant: Please circle YES or NO for each question. Each must be answered, but keep in mind that a "YES" answer does not necessarily mean you will not be able to attend your ASCENT Camp.

General Medical History

Do you currently or have you ever had:

- | | | |
|--|---------|----|
| 1. Respiratory problems? Asthma? | 1. YES | NO |
| 2. Gastrointestinal disturbances? | 2. YES | NO |
| 3. Diabetes? | 3. YES | NO |
| 4. Hypertension? | 4. YES | NO |
| 5. Bleeding or blood disorders? | 5. YES | NO |
| 6. Hepatitis or other liver diseases? | 6. YES | NO |
| 7. Neurological problems? Epilepsy? | 7. YES | NO |
| 8. Seizures? | 8. YES | NO |
| 9. Dizziness or fainting episodes? | 9. YES | NO |
| 10. Treatment or medication for menstrual cramps? | 10. YES | NO |
| 11. Disorders of the urinary or reproductive tract? | 11. YES | NO |
| 12. Any other health complaint? _____ | 12. YES | NO |
| 13. Do you see a Medical/Physical specialist of any kind? | 13. YES | NO |
| 14. Are you pregnant? | 14. YES | NO |
| 15. Treatment or counseling with a mental health professional? | 15. YES | NO |

16. Cardiac problems?

16. YES NO

Diet

17. Are you a vegetarian?

17. YES NO

If yes, how strict are you? (will you eat fish or chicken? Are you vegan?)

18. If you are vegetarian or vegan, please list some of the meals that you particularly enjoy: _____

19. Please list any foods that you particularly despise: _____

Muscle/Skeletal Injuries

Do you currently or have you ever had:

20. Knee, hip, ankle, shoulder, arm, or back injuries (including sprains) and/or operations?

If so, please explain: _____

Allergies/Medications

21. Any allergies? To insect bites or bee stings?

21. YES NO

If yes, please list them, along with their severity:

22. Are you allergic to any medications? _____

22. YES NO

23. Are you currently taking any medications?

23. YES NO

Medication

Dosage

Side Effects/Restrictions

24. Year of last tetanus immunization: _____. If you cannot remember, was it within the past five years? 24. YES NO

Project ASCENT recommends a current tetanus immunization

25. Do you have a history of frostbite or Acute Mountain Sickness? 25. YES NO

26. Do you have a history of heat stroke or other heat related illness?

Fitness 26. YES NO

27. Do you exercise regularly? 27. YES NO

Activity Frequency Duration/Distance Intensity Level

(Easy/moderate/competitive)

28. Do you smoke? If so, how much? _____ 28. YES NO

29. Swimming ability (CHECK ONE): ___ Non-swimmer ___ Recreational ___ Competitive

PLEASE READ CAREFULLY AND SIGN

The information provided above is a complete and accurate statement of any physical and psychological conditions which may affect my participation in this camp. I realize that failure to disclose such information could result in serious harm to me and fellow participants. I agree to inform Project ASCENT should there be any change in my health status prior to the start of the trip. On the basis of the background information at the beginning of this form, and what I know or suspect about my physical and psychological health, I am fully capable of participating in this ASCENT Camp.

I understand that if I have the potential for a severe allergic reaction to bee stings, insect bites, food, poison oak, or other substances that might be found in the outdoors, it is my responsibility to bring the proper medication with me on this trip.

Participant's Signature: _____ Date: _____

Outdoor Call Guide

Project ASCENT Outdoor Programs

#1 Stabilize the Situation

Victim:

- Has been given immediate medical care.
- Is safe, warm, hydrated and has fuel (food) and on board. 6. Is being reassured and has on-going medical supervision.

The group:

- Is safe, warm, hydrated, and has fuel on board.
- Has assurance, direction, and supervision.
- Is able to help out when possible

#2 Develop a plan, write it down!

Include:

- Document your SOAP note well.
- Brief description of incident with pertinent facts.
- General condition of group members and of the staff working with the emergency.
- Exact location of the group.
- Recommendation for treatment and evacuation; note the type of terrain to be covered, the type of support needed, and helicopter landing sites if applicable.
- Relevant qualifications of the staff (WFR, EMT, etc.)
- Generate a plan for how assistance or the runner themselves will reconnect with the group. If a person is lost:
 - Time and place at which loss of contact started
 - The area and type of search already completed by the group.
 - Physical condition of the lost individual and supplies that they are believed to be carrying.

#3 Call using a cell phone or send runners for help.

- The Specialist/WFR should remain with the group when possible.
- A second Specialist may choose to go out alone, or send campers out in a pair or trio.
- The runners or people making the call need to have a written copy of answers to the above questions, as well as knowledge about who to call.
- The runners need to have a plan for joining back up with the group.

Emergency Numbers

Call 911 first if you have a life-threatening emergency! Then contact Rob/Project ASCENT as soon as is practical. Rob and Project ASCENT always need to be apprised of situations where injury results in need for external help, or if an incident generates public concern.

If the emergency is not a threat to life or limb, place calls in the following order:

- Rob Christensen's work number (406) 799-1793
- Rob Christensen's home phone (406) 799-1793

References

- Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22
June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2
Dec 2004.
<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>
- “Position Statement 26: The Use of Epinephrine in the Treatment of Anaphylaxis.” American Academy of Allergy
Asthma & Immunology. 28
Dec. 2004. <http://www.aaaai.org/media/resources/position_statements/ps26.stm>
- Schimelpfenig, Tod. “Poisons, Stings, and Bites.” Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole
Books, 2000. Chapter 12.
- Specific Protocols for Wilderness EMS Allergic Reactions. Version 1.2 May 19, 1994. The Wilderness
Emergency Medical Services Institute. 2
Dec. 2004. <<http://www.wemsi.org/specific.html>>
- The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.
- Tilton, Buck. “Allergic Reactions and Anaphylaxis.” Wilderness First Responder 2nd ed. Guilford, Connecticut:
The Globe Pequot Press, 2004. Chapter 28.
- Wilderness Field Protocols Protocol 1 Anaphylaxis. 2001. Wilderness Medical Associates. 2 Dec. 2004 <
http://www.wildmed.com/field_protocols/anaphylaxis_protocol05.01.html#top>
- Wilkerson, James A. “Allergies.” Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers
Books, 2001. Chapter 20.
- “Burns.” United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson,
Wyoming: Teton NewMedia, 2001. 3-17.
- Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National
Highway Traffic Safety
Administration United States Department of Transportation. 2 Dec 2004.
<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>
- Forgey, William. “Burn Management.” Wilderness Medical Society Practice Guidelines for Wilderness
Emergency Care 5th ed. Guilford,
Connecticut: The Globe Pequot Press, 2006. Chapter 7.
- Schimelpfenig, Tod. “Burns.” Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000.
Chapter 8.
- Specific Protocols for Wilderness EMS Wounds. Version 1.2 May 19, 1994. The Wilderness Emergency
Medical Services Institute. 2 Dec. 2004.
<<http://www.wemsi.org/specific.html>>

Stewart, Charles E. "Burns." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 2.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Wilderness Wound Management." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 15.

Wilkerson, James A. "Burns." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 8.

ACLS Provider Manual. Dallas, Texas: American Heart Association, 2002.

BLS for Healthcare Providers. Dallas, Texas: American Heart Association, 2002.

"Cardiac/Circulatory." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 4-1.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnsnc.pd>

Schimelpfenig, Tod. "Respiratory and Cardiac Emergencies." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 17.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Cardiac Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 23.

Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National Highway Traffic Safety

Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnsnc.pd>

"Thoracic Trauma." PHTLS Basic and Advanced Prehospital Trauma Life Support. St. Louis, Missouri: Mosby, 2003. Chapter 5.

Schimelpfenig, Tod. "Chest Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 3.

Specific Protocols for Wilderness EMS Chest Injury. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec.

2004. <<http://www.wemsi.org/specific.html>>

Tilton, Buck. "Chest Injuries." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 10.

Wilkerson, James A. "Chest Injuries." *Medicine for Mountaineering* 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 11.

ACLS Provider Manual. Dallas, Texas: American Heart Association, 2002.

Forgey, William. "Myocardial Infarction, Acute Coronary Syndromes, and CPR." *Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care* 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 2.

Goth, Peter and George Garnett. "National Association of EMS Physicians Clinical Guidelines for Delayed/Prolonged Transport Cardiorespiratory Arrest." *Prehospital and Disaster Medicine* Vol. 6 No. 3 July-Sept. 1991: 335-339.

Specific Protocols for Wilderness EMS Cardio Pulmonary Resuscitation. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004. <<http://www.wemsi.org/specific.html>>

Tilton, Buck. "Cardiopulmonary Resuscitation." *Wilderness First Responder* 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 5.

Wilderness Field Protocols Protocol 3 Cardiopulmonary Resuscitation (CPR). 2001. Wilderness Medical Associates. 2 Dec. 2004
<http://www.wildmed.com/field_protocols/cpr_protocol05.01.html#top>

Auerbach, Paul S. "Wilderness Dentistry and Management of Facial Emergencies." *Wilderness Medicine* 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 26.

"Dentistry." United States Special Operations Command. *Special Operations Forces Medical Handbook*. Jackson, Wyoming: Teton NewMedia, 2001. 5-9.

Schimelpfenig, Tod . "Dental Emergencies." *Wilderness Medicine*. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 23.

Specific Protocols for Wilderness EMS Dental Injury. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004. <<http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Common Simple Medical Problems." *Wilderness First Responder* 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 31.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

"Endocrine." United States Special Operations Command. *Special Operations Forces Medical Handbook*. Jackson, Wyoming: Teton NewMedia, 2001. 4-27.

Schimelpfenig, Tod. "Diabetes, Seizures and Unresponsive States." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 9.

Specific Protocols for Wilderness EMS Diabetes. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004.

<<http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Diabetic Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 26.

Auerbach, Paul S. "Wilderness Orthopaedics." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 24.

Forgey, William. "Orthopedic Injuries." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed.

Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 8.

Goth, Peter and George Garnett. "National Association of EMS Physicians Clinical Guidelines for Delayed/Prolonged Transport

Dislocations." Prehospital and Disaster Medicine Vol. 8 No. 1 Jan.-Mar. 1993: 77-80.

Schimelpfenig, Tod. "Fractures and Dislocations." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 5.

Specific Protocols for Wilderness EMS Dislocations. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services

Institute. 2 Dec. 2004. < <http://www.wemsi.org/specific.html>>

Tilton, Buck. "Dislocations." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 13.

"Joint Dislocations." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 3-64.

Auerbach, Paul S. "The Eye in the Wilderness." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 25.

Auerbach, Paul S. "Wilderness Dentistry and Management of Facial Injuries." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 26.

Forgey, William. "Eye Pathology." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 9.

"General Symptoms." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 3-1.

Schimelpfenig, Tod. "Common Non-Urgent Medical Problems." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 24.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Common Simple Medical Problems." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 31.

Wilkerson, James A. "Eye, Ear Nose, and Throat Disorders." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 17.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and

Obstetrics/Gynecology. 22 June 1995. National Highway Traffic Safety Administration United States Department of

Transportation. 2 Dec 2004. <www.nhtsa.dot.gov/people/injury/ems/pub/emtbnsnc.pdf>

"Genitourinary." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 4-87.

"Gynecological Problems." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 3-37.

Schimelpfenig, Tod. "Gender-Specific Medical Concerns." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 20.

Specific Protocols for Wilderness EMS Urinary Tract Infection. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004. <<http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Gender-Specific Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 32.

Wilkerson, James A. "Genitourinary Disorders." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 18.

"General Symptoms." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 3-1.

"Respiratory." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 4-10.

Schimelpfenig, Tod. "Common Non-Urgent Medical Problems." Wilderness Medicine, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 24.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Common Simple Medical Problems." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 31.

Wilkerson, James A. "Eye, Ear Nose, and Throat Disorders." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 17.

Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National Highway Traffic Safety

Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Forgey, William. "Traumatic Brain Injury." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 4.

McCrary, Paul R. and Karen M. Johnston. "Acute Clinical Symptoms of Concussion Assessing Prognostic Significance." The Physician and Sportsmedicine Vol. 30 No. 8 August 2002.

"Head Trauma." PHTLS Basic and Advanced Prehospital Trauma Life Support. St. Louis, Missouri: Mosby, 2003. Chapter 8.

Schimelpfenig, Tod. "Brain and Spinal Cord Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 4.

Tilton, Buck. "Head Injuries." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 9.

Wilkerson, James A. "Head and Neck Injuries." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001.

Chapter 16.

Auerbach, Paul S. "Accidental Hypothermia." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 5.

Forgey, William. "Hypothermia." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 11.

Giesbrecht, Gordon G. "Prehospital Treatment of Hypothermia." Wilderness and Environmental Medicine 12 2001: 24-31.

Schimelpfenig, Tod. "Cold Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 9.

State of Alaska Cold Injuries and Cold Water Near Drowning Guidelines. Revision 01/96. Hypothermia Prevention, Recognition and Treatment. Articles, Protocols and Research on Life-saving skills. 27 Dec. 2004. <<http://www.hypothermia.org/protocol.htm>>

Stewart, Charles E. "Generalized Hypothermia." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 4.

Tilton, Buck. "Cold-Induced Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 16.

Wilkerson, James A. "Cold Injuries." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 23.

Auerbach, Paul S. "Lightning Injuries." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 3.

Forgey, William. "Lightning Injuries." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 14.

Gookin, John. "NOLS Backcountry Lightning Safety Guidelines." Lander, Wyoming: The National Outdoor Leadership School, 2000.

Schimelpfenig, Tod. "Lightning Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 13.

Stewart, Charles E. "Electrical Injuries." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 9.

Tilton, Buck. "Lightning." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 20.

Auerbach, Paul S. "Nonfreezing Cold Injuries." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 7.

Auerbach, Paul S. "Frostbite." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 8.

Forgey, William. "Frostbite/Immersion Foot." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 12.

Schimelpfenig, Tod. "Cold Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 9.

State of Alaska Cold Injuries and Cold Water Near Drowning Guidelines. Revision 01/96. Hypothermia Prevention, Recognition and Treatment. Articles, Protocols and Research on Life-saving skills. 27 Dec. 2004. <<http://www.hypothermia.org/protocol.htm>>

Stewart, Charles E. "Frostbite and Cold Injuries." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 3.

Tilton, Buck. "Cold-Induced Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 16.

Wilkerson, James A. "Cold Injuries." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 23.

Wilkerson, James A., Cameron C. Bangs and John S. Hayward. "Frostbite." Hypothermia Frostbite and Other Cold Injuries. Seattle, Washington: The Mountaineers, 1986. Chapter 7.

Wilkerson, James A., Cameron C. Bangs and John S. Hayward. "Other Localized Cold Injuries." Hypothermia Frostbite and Other Cold Injuries. Seattle, Washington: The Mountaineers, 1986. Chapter 8.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

"Genitourinary." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 4-87.

"Male Genital Problems." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 3-77.

Schimelpfenig, Tod. "Gender-Specific Medical Concerns." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 20.

Specific Protocols for Wilderness EMS Testicular Pain. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004. <<http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Auerbach, Paul S. "Wilderness Orthopaedics." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 24.

Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National Highway Traffic Safety

Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Forgey, William. "Orthopedic Injuries." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 8.

"Musculoskeletal Trauma." PHTLS Basic and Advanced Prehospital Trauma Life Support. St. Louis, Missouri: Mosby, 2003. Chapter 10.

Schimelpfenig, Tod. "Athletic Injuries." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 6.

Schimelpfenig, Tod. "Fractures and Dislocations." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 5.

Tilton, Buck. "Athletic Injuries." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 14.

Tilton, Buck. "Fractures." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 12.

ACLS Provider Manual. Dallas, Texas: American Heart Association, 2002.

BLS for Healthcare Providers. Dallas, Texas: American Heart Association, 2002.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2
Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Schimelpfenig, Tod. "Diabetes, Seizures and Unresponsive States." Wilderness Medicine, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 19.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Neurological Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter

25.

Auerbach, Paul S. "Toxic Plant Ingestions." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 58.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2
Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Forgey, William. "Botanical Encounters." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 17.

Keyes, Linda E., Robert S. Hamilton, and John S. Rose. "Carbon Monoxide Exposure from Cooking in Snow Caves at High Altitude." Wilderness and Environmental Medicine, 12, 2001: 208-212.

Schimelpfenig, Tod. "Poisons, Stings, and Bites." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 12.

Stewart, Charles E. "Plants That Poison." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 8.

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Poisoning Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 27.

Busse, William W. and Robert F. Lemanske, Jr. "Asthma." New England Journal of Medicine Vol. 344, No. 5 February 1, 2001: 350-362.

Emergency Medical Technician-Basic: National Standard Curriculum Module 4 Medical/Behavioral Emergencies and Obstetrics/Gynecology. 22

June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2
Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

"Respiratory." United States Special Operations Command. Special Operations Forces Medical Handbook. Jackson, Wyoming: Teton NewMedia, 2001. 4-10.

Schimelpfenig, Tod. "Respiratory and Cardiac Emergencies." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 17.

Specific Protocols for Wilderness EMS Asthma. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004. <<http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Respiratory Emergencies." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 24.

Wilderness Field Protocols Protocol 6 Severe Asthma. 2001. Wilderness Medical Associates. 2 Dec. 2004 <http://www.wildmed.com/field_protocols/joint_dis_protocol05.01.html#top>

Wilkerson, James A. "Respiratory Disorders." Medicine for Mountaineering 5th ed. Seattle, "Shock and Fluid Resuscitation." PHTLS Basic and Advanced Prehospital Trauma Life Support. St. Louis, Missouri: Mosby, 2003. Chapter 6.

Schimelpfenig, Tod. "Shock." Wilderness Medicine. Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 2.

Tilton, Buck. "Shock." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 7.

Auerbach, Paul S. "Bites by Venomous Reptiles in the Americas." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 48.

Forgey, William. "Reptile Envenomations." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 20.

Gold, Barry S., Richard C. Dart and Robert A. Barish. "Bites of Venomous Snakes." New England Journal of Medicine Vol. 347, No. 5, August 1, 2002: 347-356.

Russell, Findlay E. Snake Venom Poisoning. Great Neck, New York: Scholium International Inc., 1983.

Schimelpfenig, Tod. "Poisons, Stings, and Bites." Wilderness Medicine, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 12.

Stewart, Charles E. "Bites and Stings." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 7.

Tilton, Buck. "North American Bites and Stings." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 21.

Wilkerson, James A. "Animal Bites and Stings." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 25.

Auerbach, Paul S. "Spider Bites." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 46.

Auerbach, Paul S. "Scorpion Envenomation." Wilderness Medicine 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 47.

Forgey, William. "Arthropod Envenomations." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 21.

MMWR Weekly 45 (21) May 31, 1996: 433-436. "Necrotic Arachnidism -- Pacific Northwest, 1988-1996." Centers for Disease Control and Prevention. 27 Dec. 2004. <<http://www.cdc.gov/mmwr/preview/mmwrhtml/00042059.htm>>

Schimelpfenig, Tod. "Poisons, Stings, and Bites." Wilderness Medicine, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 12.

Stewart, Charles E. "Bites and Stings." Environmental Emergencies. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 7.

Tilton, Buck. "North American Bites and Stings." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 21.

Wilkerson, James A. "Animal Bites and Stings." Medicine for Mountaineering 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 25.

Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National Highway Traffic Safety Administration United States Department of Transportation. 2 Dec 2004. <www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Domeier R. M. "Position Paper, National Association of EMS Physicians: Indications for prehospital spinal immobilization." Prehospital Emergency Care 3(3) 1999: 251-253.

Forgey, William. "Spinal Injury." Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 5.

Hoffman J. R. and W. R. Mower. "Out-of-hospital cervical spine immobilization: Making policy in the absence of definitive information." Annals of Emergency Medicine 37 June 2001: 632-634.

"Spinal Trauma." PHTLS Basic and Advanced Prehospital Trauma Life Support. St. Louis, Missouri: Mosby, 2003. Chapter 9.

Schimelpfenig, Tod. "Brain and Spinal Cord Injuries." Wilderness Medicine, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 4.

Tilton, Buck. "Spine Injuries." Wilderness First Responder 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 8.

Wilderness Field Protocols Protocol 4 Spine Injuries. 2001. Wilderness Medical Associates. 2 Dec. 2004. <http://www.wildmed.com/field_protocols/spine_man_protocol05.01.html#top>

Wilkerson, James A. "Head and Neck Injuries." *Medicine for Mountaineering* 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 16.

ACLS Provider Manual. Dallas, Texas: American Heart Association, 2002.

Auerbach, Paul S. "Submersion Incidents." *Wilderness Medicine* 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 68.

Forgey, William. "Submersion Injuries." *Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care* 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 3.

Harries, Mark. "ABC of Resuscitation Near Drowning." *BMJ* Vol. 327 6 Dec. 2003: 1336-1338.

Schimelpfenig, Tod. "Drowning and Cold Water Immersion." *Wilderness Medicine*, Mechanicsburg, Pennsylvania: Stackpole Books, 2000.

Chapter 14.

State of Alaska Cold Injuries and Cold Water Near Drowning Guidelines. Revision 01/96. Hypothermia Prevention, Recognition and Treatment.

Articles, Protocols and Research on Life-saving skills. 27 Dec. 2004. <<http://www.hypothermia.org/protocol.htm>>

Stewart, Charles E. "Near-Drowning." *Environmental Emergencies*. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 11.

Tilton, Buck. "Immersion and Submersion Incidents." *Wilderness First Responder* 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 19.

Emergency Medical Technician-Basic: National Standard Curriculum Module 5 Trauma. 22 June 1995. National Highway Traffic Safety

Administration United States Department of Transportation. 2 Dec 2004.

<www.nhtsa.dot.gov/people/injury/ems/pub/emtbnscc.pdf>

Goth, Peter and George Garnett. "National Association of EMS Physicians Clinical Guidelines for Delayed or Prolonged Transport Wounds."

Prehospital and Disaster Medicine Vol. 8 No. 3 July-Sep. 1993: 253-255.

Forgey, William. "Wound Management." *Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care* 5th ed. Guilford,

Connecticut: The Globe Pequot Press, 2006. Chapter 6.

Schimelpfenig, Tod. "Soft Tissue Injuries." *Wilderness Medicine*, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 7.

Specific Protocols for Wilderness EMS Wounds. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004.

< <http://www.wemsi.org/specific.html>>

The Merck Manual 16th Edition. Rathaway, New Jersey: Merck & Co., Inc., 1992.

Tilton, Buck. "Wilderness Wound Management." *Wilderness First Responder* 2nd ed. Guilford, Connecticut: The Globe Pequot Press, 2004. Chapter 15.

Wilderness Field Protocols Protocol 2 Wound Management. 2001. Wilderness Medical Associates. 2 Dec. 2004.

<http://www.wildmed.com/field_protocols/spine_man_protocol05.01.html#top>

Wilkerson, James A. "Soft-Tissue Injuries." *Medicine for Mountaineering* 5th ed. Seattle, Washington: The Mountaineers Books, 2001. Chapter 6.

Auerbach, Paul S. "Tick-Borne Diseases." *Wilderness Medicine* 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 45.

Auerbach, Paul S. "Wilderness-Acquired Zoonoses." *Wilderness Medicine* 5th ed. St. Louis, Missouri: Mosby, 2007. Chapter 53.

Forgey, William. "Tick-Transmitted Diseases." *Wilderness Medical Society Practice Guidelines for Wilderness Emergency Care* 5th ed. Guilford, Connecticut: The Globe Pequot Press, 2006. Chapter 22.

"Infectious Diseases." United States Special Operations Command. *Special Operations Forces Medical Handbook*. Jackson, Wyoming: Teton New Media, 2001. Chapter 13, 5-33.

Schimelpfenig, Tod. "Poisons, Stings, and Bites." *Wilderness Medicine*, Mechanicsburg, Pennsylvania: Stackpole Books, 2000. Chapter 12.

Specific Protocols for Wilderness EMS Rabies. Version 1.2 May 19, 1994. The Wilderness Emergency Medical Services Institute. 2 Dec. 2004.

<<http://www.wemsi.org/specific.html>>

Stewart, Charles E. "Bites and Stings." *Environmental Emergencies*. Baltimore, Maryland: Williams & Wilkins, 1990. Chapter 7.

Mosby's 2005 Drug Consult for Nurses. Elsevier Mosby, St. Louis, MO. 2005. ISBN 0-323-02847-0.

Ogden MD, Herb and Tod Schimelpfenig. Edited by Drew Leemon. *NOLS Field Medical Protocols and Drug Orders* 2004. Unpublished document.