Chapter 1:
An Introduction to Wilderness Medicine

“The places where trails do not exist
…are not well marked.”

**NO KIDDING, THERE I WAS...**
You are hiking on a remote trail in the Cimarron Range of the Rocky Mountains when you hear a terrified yell and then see a saddled horse trot quickly down the hill ahead. You come around a rock outcropping and see a 25-year-old man lying on the side of the trail, screaming in pain at the base of a tree. He is holding his right leg which is deformed and bloody. You reach for your cell phone to dial 911, but there is no reception.

What is Wilderness Medicine, Anyway?
*Wilderness Medicine* is commonly defined as the medical care given to a person who is more than an hour away from definitive medical care, such as a hospital or clinic. The development of wilderness medicine has paralleled the evolution of pre-hospital care in the urban setting, beginning with the Napoleonic wars. Surprisingly, the definition of wilderness medicine on Wikipedia matches. See? Everything you read online *is* true!

A Brief History
In the War of 1812, Napoleon’s Surgeon General, Baron Larrey, realized the importance of prompt care in the field, and implemented the first “wilderness first aid” for his troops. He trained many of them to provide basic care for wounds, hypothermia, and dehydration, creating the first recognized large-scale ‘pre-hospital’ care program. Since then, the scope of wilderness medicine has expanded by leaps and bounds to encompass many more aspects of the unique settings that people find themselves in today.

In the years following the Napoleonic wars, the concept of pre-hospital care started to catch on in many urban settings and before long became a concept that was accepted nation-wide.
In 1905, based on her experiences during the Civil War, Clara Barton started the American Red Cross, which to this day focuses primarily on urban first aid & lay-responder level CPR.

The golden hour was created in 1966 by the Department of Transportation as part of its pre-hospital care guidelines. Yes, we realize it’s strange that the Department of Transportation (and not the Department of Health) was the one to create and embrace the whole pre-hospital care initiative.

The University of Virginia is credited with offering the first “Wilderness Emergency Medical Technician” certification training in 1977, after which they created wilderness first aid (or mountaineering first aid as it was then called) for lay-responders. After its huge success, and recognizing that there was no intermediary course, UVA created the wilderness first responder program in 1984.

Since that time, many organizations have sprung up around the country that have now become the leaders of this relatively embryonic field of medicine. Among the most well-known are Stonehearth Open Learning Opportunities (SOLO), Wilderness Medical Institute of NOLS (WMI), Wilderness Medical Associates (WMA), and Center for Wilderness Safety (CWS).

The Golden Day

In an urban setting we normally have access to 9-1-1; and many issues, no matter how minor or severe they may in fact be, can be remedied with the prompt arrival of emergency personnel who quickly whisk you away to the hospital. It is because of this that we are taught about the golden hour, where our goal is to get a patient to the hospital or doctor’s office within 60 minutes of the emergency happening.

In an urban environment, the goal in terms of total care of the patient is to get them to definitive care within one hour. In a wilderness context, since we’re automatically more than sixty minutes away from definitive care, this provides a new and unique challenge. In wilderness medicine, your responsibility is to prevent, recognize, and treat problems as they arise and get your patient to definitive care within 24 hours; or the golden day. Your goal is to stabilize a patient for a possible evacuation, not necessarily to evacuate the patient; there are professionals who are trained to do this!

Urban vs. Wilderness Medicine

Besides the obvious differences of time and distance from definitive care, there are a great number of other differences between emergency situations that arise in an urban versus a wilderness environment. In an urban environment we are more-or-less comfortable with our surroundings, often taking for granted the resources that we have right at our fingertips. Easy access to the 911 system is one of the most basic things that make emergencies “easier” to deal with in an urban environment.

Given the fact that we tend to have relatively easy access to top-notch facilities, professionals, medications, tools, and of course all the basic necessities, there are not many things that you, the responder, really need to handle in an emergency. The limited exposure that we have to the patient before the ambulance arrives on scene, coupled with the
abundance of first aid training available, allows us to find, fix, and forget about an incident without giving a second thought.

In a wilderness or remote setting, things that we take for granted on a daily basis (cell phones, professional help coming right away, and all of those nifty instruments and medications they use), are just out of reach.

There is no Walmart behind every fourth pine tree where you can get the stuff that you forgot to bring with you on your hike; and believe us, we’ve checked. You have what you have; and whatever you’ve left behind is not going to magically appear. Well, that is, unless you’re an expert at MacGyvering. On that note, if you don’t know who MacGyver is, go look it up. Right now – go look it up!

One of the major differences between urban and wilderness first aid is the aspect of extended patient care. In a wilderness context, when you are hours or even days from help, YOU are 911. The knowledge, skills, and abilities that you bring into the backcountry with you may be the difference between life or death for a 25-year-old man who has just been thrown off of a horse and is bleeding out from a femur fracture.

**Extended Patient Care**

Extended patient care is one of the hallmark traits of wilderness medicine. In an urban or semi-rural setting help may only be a few minutes away, whereas in the backcountry help may take hours or days to reach you.

Whether your patient happens to be a family member or a total stranger whom you encounter during your trip through the backcountry, you must remember that this is both a person and a patient. You must consider the things that we generally take for granted on a daily basis including food, water, shelter, thermoregulation, entertainment, going to the bathroom, human contact, and of course humor.

Among the deadliest aspects of any injury or illness (especially in a wilderness context) are the psychological side effects. It has been proven time and time again that a positive attitude and sense of humor in both patients and caregivers are linked with a higher survival rate. This is true whether you are in an urban or wilderness setting.

Just think of how much better you feel when a family member or co-worker makes you smile when you’re having a bad day, even if it’s a quirky joke like “What kind of cat loves going bowling?” (Answer = an alley cat!). Okay. Hopefully you have some better material than ours, but the principle holds true no matter whether you’re downtown, deep in the jungle, or out on the trail.
Chapter 2: Risk Management & Emergency Preparedness

“You can observe a lot by just watching.”

**NO KIDDING, THERE I WAS...**
Your local youth group has been looking forward to a 10-mile trail hike to mark the end of the fall semester for some time now. Since you know the area, you have been asked to be one of two adults on the trip. The morning of the hike while getting dressed, you hear the weather report announce that the winter storm originally not due for another day, has picked up speed and major snow is anticipated for your area by the evening rush hour. Do you cancel the trip?

**WHAT Actually Is Risk?**
Risk management is... well, the management of risk! What is risk though? There’s a difference between Risk and Safety. **RISK is a number or statistic... a possible event or outcome if actions unfold a particular way.** Risk is a concept that denotes a potential negative impact to an asset or some characteristic of value that may arise from some present process or future event. Risk is often used synonymously with the probability of a negative outcome. There are two types of risk: **perceived risk**, which is the risk you imagine to be real, while **actual risk** is the risk that actually exists.

\[
\text{Risk} = (\text{probability of an accident}) \times (\text{negative outcome})
\]

**SAFETY is a judgment call.** Through experience and understanding of the world around us, we begin to be able to make sound judgments. Your ability to make good judgments determines your level of safety.
As we continue to be active in our roles that take us into the wild we continue to learn new ways of looking at this subject and everything associated with it. It isn’t uncommon to experience that feeling of a light bulb turning on in your head… the feeling that makes you say “Oh! I get it now!” These realizations and revelations can spark us to create new or improved approaches to being prepared. This active act of being prepared is risk management in action. The thinking and planning behind it all can be converted into resources that help you manage your risks consistently, time and time again.

As you begin to put your own risk management plan into place and practice, you should make sure that it is clear and concise. It should be like a coloring book; simple, defined lines that shouldn’t be blurred. It should have clear boundaries for actions and if the plan is in place, do as it says. If you don’t know which boundaries are set in stone and which are flexible, do some research or plan for at least some flexibility.

Your plan doesn’t need to tell people how many Band-Aids to use but setting a guideline for stopping and refilling water bottles when the first person finishes a Nalgene (a 1-liter water bottle) is a good example of a set plan of action.

Backcountry Risk Management

In the backcountry you are limited to what you have brought with you and what you can find. There are no stores or hidden closets to go to and find that one forgotten item; however, if your map(s) are current enough to be trustworthy, you might be able to get supplies from nearby buildings or manmade structures.

However, either for the most part you have what you need or you don’t. Because of this, two skills become vitally important to a wilderness medical situation: risk management and adaptability.

There are things that can happen, some of which may be completely preventable and others are completely out of your control (e.g. weather). In either case you can do things in order to prevent or be prepared to deal with them if they do turn into a critical or life-threatening situation.

Wilderness first aid is primarily focused on the skills necessary to handle those risks that result in common injuries and illnesses. Learning these skills is also a lesson in prevention and preparation. By thinking about possible situations that can occur, you should begin to plan ahead and be prepared for, or perhaps even avoid emergencies altogether.

Why Injuries Occur

At least fifty percent of the time the reasons behind why injuries occur are “human-related.” Poor judgment in the use of equipment is the most common reason, followed closely by poorly judging our performance and abilities. Often times, you’ve got folks who will negate common sense in order to appear ‘macho’, or do things without clearly thinking them through which may lead to less-than-desired consequences.
Remember that when you’re making your risk management plan, keep in mind that many common injuries occur simply because we’re guys. We like to TOSS out common sense and reason and let our testosterone rule our behavior. The term TOSS (Testosterone Overrides Simple Solutions) accurately describes this. And don’t forget SAS (Stupid Adult Syndrome)!

Two additional contributing factors to the occurrence of injuries are environmental conditions and equipment failure. While not completely under our control, if managed properly before venturing out into the wild, one can often avoid injuries from these risk factors. Minimizing the associated risk may be managed with prior planning by checking the weather and thoroughly checking your gear before heading out on your next adventure. This whole being prepared thing is paramount, and involves two additional topics: being legally prepared and staying prepared with the ten essentials. We’ll discuss them in just a moment.

**How Often Do Injuries Occur?**

A study done by NOLS published in 2013 showed that over the course of a five-year-span, with over 20,000 participants, only 10% of all participants became injured or ill while participating in either a backcountry or frontcountry wilderness program with the School. Of the total number of those individuals, 54% became injured, and 46% became ill. Of those injured, 43% of all injuries were sprains, strains, and tendon injuries – mainly to ankles. The next most common injury were soft tissue injuries, coming in at a close 39%. Of those who became ill, 51% had a communicable disease (i.e. flu, etc.). As far as severity goes, 47% of all injured participants were evacuated to definitive care within 24 hours – while only 36% of ill participants were evacuated. And while we’re on the topic, let’s go ahead and answer these two super popular questions:

*What are the most common outdoor activities that result in injury?*

1. Backpacking (35%)
2. Camping; includes cooking (10%)
3. Mountain Biking (9%)
4. Canoeing (9%)
5. Hiking (8%)
6. Skiing (6%)
7. Rock Climbing (5%)

*What are the most common contributing factors to injuries in the backcountry?*

1. Fall or Slip (24%)
2. Previous History (9%)
3. Carelessness (8%)
4. Cold Exposure (4%)
5. Animal/Insect Bite/Sting (2%)
6. Weather (1%)
The Ten Essentials

No one expects the unexpected (or the Spanish Inquisition)! We would all love to be prepared to handle anything that could possibly happen to us while we’re out in the backcountry. That would mean hiring a band of Sherpa’s to help you lug all of that gear along though…

Don’t get me wrong, with enough money that could be accomplished; however, it’s not very realistic. Instead, we’ve compiled a list of ten essentials that you should have with you when traveling through the backcountry.

Back when you were a kid, you may have talked about scenarios such as crashing on a desert island and only having time to grab ten things to help you survive. Which ten things would you bring with you? It’s funny how everybody assumes that you survive the crash; a morbid thought, but a valid point. So now, back to those ten essentials…

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<tr>
<th>The &quot;Classic&quot; Ten Essentials</th>
<th>The &quot;New&quot; Ten Essentials</th>
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</thead>
<tbody>
<tr>
<td>1. Map</td>
<td>1. Navigation</td>
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<tr>
<td>2. Compass</td>
<td>2. Sun Protection</td>
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<tr>
<td>3. Sunglasses &amp; Sunscreen</td>
<td>3. Insulation (extra clothing)</td>
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<td>4. Extra Clothing</td>
<td>4. Illumination</td>
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<tr>
<td>5. Headlamp or Flashlight</td>
<td>5. First Aid Supplies</td>
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<td>6. First Aid Supplies</td>
<td>6. Fire</td>
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<td>7. Fire Starter</td>
<td>7. Repair Kit &amp; Tools</td>
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<td>8. Matches</td>
<td>8. Nutrition (Food)</td>
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<td>10. Extra Food</td>
<td>10. Emergency Shelter</td>
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If you look at the items on the two lists above, you will see that the “classic” ten essentials are specific items for you to carry, while the “new” ten essentials list takes a more systems based approach, rather than naming specific items.

As stated by The Mountaineers: Freedom of the Hills, 7th Edition, “The main point of these two lists are to make sure you can properly respond to an emergency, and to ensure that you are well-enough prepared to spend a day or two—or more— in the great outdoors.”

Think back to all of those stories you hear about someone miraculously surviving very harsh conditions; they always focus on how those people managed to find food, shelter, and water.

Let’s talk about all of these essentials to help you truly understand why and how they may be useful. While not in order of importance; combined, they significantly increase your chances of surviving if you become lost or find yourself out in the backcountry (or even frontcountry for that matter).
**navigation**

Now-a-days, when one thinks of navigation, the first thing that comes to mind is the GPS that's probably in your car. You may even use one when you travel, but they don't always work so well when you go off-road, out on the trail.

Therefore, on any trip that involves more than a well-traveled, hard to miss footpath, you should bring along a current topographic map, and a compass.

While the maps provided at visitor's stations or entrance stations are better than nothing, they do not provide the amount of detail that topographic maps contain. For instance, if you stray off the trail and run out of water, the simple maps may be useless. In these situations, a topographic map is essential to find the nearest stream, pond, or other water source.

Accompanying your map should be a good old-fashioned compass. A traditional compass does not require batteries, a power source, or direct line of sight with a satellite. It also weighs next to nothing and can be a real life saver. With all that being said, map and compass are a waste of time if you don't know how to use them. If you frequently travel to or spend time in the wilderness, you should consider taking a course to learn advanced navigation skills, also known as orienteering.

**Sun Protection**

We could easily drone on forever citing research studies that tell us how dangerous sun exposure is for our eyes and for our skin, but even in the short-term, proper skin protection is indispensable. For your eyes, wear protective sunglasses when you're spending any significant amount of time outdoors (yes, even if it's cloudy).

This is especially true when you're above the tree line. The sun can certainly do a number on you, but don't forget about snow and sand blindness, which often do actual damage to your eyesight. Try to select lenses that absorb 97-100% of UVA and UVB radiation (damaging sun rays). We suggest wraparound lenses that keep out the sunlight even from the corners of your eyes. Plus, everyone knows that a great pair of shades can up your cool-factor exponentially!

**Extra Clothing**

So, we've got your eyes covered, now what about the rest of your body? Although, some people may believe that a wicked-dark tan is a good thing, you might disagree when you're trying to carry your pack on your shoulders (especially when you end up looking like a lobster rather than a seasoned islander)!

Conditions can abruptly turn wet, windy, or frigid in the backcountry. It's important to carry an additional layer (or two) of clothing in your pack. If you're lost, extra clothing may get you through the night.

A wool or fleece cap weighs little and is a fine heat-retainer on cold nights. Extra socks are a true blessing if your original pair becomes soaked. Depending on the conditions, consider
carrying a fleece jacket or pile sweater, a waterproof shell or even a compressible parka. Cotton items, which become useless when wet, make poor backup items. Another idea: pack an ultra-light space blanket (or two) for emergencies.

**Illumination**

Besides being awesome for creating shadow puppets, a good light source is a must-have while you’re in the back country. Outside of the city lights, a sunset can be breathtaking, but what happens after that light in the sky goes out? Not having a reliable light source can make it difficult to navigate or perform nearly any task in the dark.

A headlamp is a good option which has the advantage of letting you have your hands free. Modern lanterns offer many options and some even have different settings. Flashlights, while not as hands-free as headlamps, are a good source of directable light (plus, they are the best option for creepy facial illumination for ghost stories).

Carrying a set of replacement bulbs and batteries, or even a backup or alternate light source is always a good idea. Keep your light in an easily accessible section of your pack so you can reach it quickly if you need it. From time to time, check to make sure that your light hasn’t been inadvertently turned on. You want to save your battery for when you really need it!

**First Aid**

Because this is a book on wilderness first aid, there will be a fair amount of attention and detail given to your first aid kits in a later section. What we’re going to talk about here is just the basic information. When it comes to first aid kits, you can buy a pre-made kit, augment a pre-made kit, or better yet, make your own! Regardless, it’s vital that you or someone in your group knows how to use all of the supplies that you’ve got in your kit; otherwise, they are nearly useless.

Pre-made first aid kits are a common selection because companies have taken the guesswork out of where to start when trying to build a kit. Sadly, many kits are going to be inadequate for most outdoor or adventure settings.

Before you embark on any adventures, check your kit to make sure it has enough supplies for the size of your group, and that no supplies are broken, expired, or missing! If you’re interested in building your own kit, the emergency preparedness section of this text has a large portion devoted to first aid kits along with sample lists of what to include. In general, a basic first aid kit should include over-the-counter medications for pain and allergies, splinting materials, and wound supplies.

**Fire**

The picturesque night-time wilderness scene just wouldn’t be complete without a campfire, and maybe a little Kumbaya. Although it can be pretty to look at, fire serves many purposes: keeping critters and bugs away, light, warmth/heat, cooking, signaling, water purification, and instrument sterilization before major surgeries.
Sterilizing your pocket knife for a hernia repair is not suggested; in fact, it’s a very bad idea to attempt any surgical procedures on yourself or anyone else for that matter!

In order to start a fire, you must have two things: a means of lighting said fire and something that will catch fire. A fire starter is a good tool to have with you, as not many of us are skilled in the art of primitive fire starting, nor are these methods fool-proof. An ideal fire-starter will work quickly and keep its flame for more than just a few seconds at a time.

Matches can become wet when traveling and may become useless. If you are going to carry these as your fire-starter, make sure that they are either stored in a waterproof container or are waterproof matches. That flimsy pack you picked up at the bar or gas station just won’t cut it.

Keep in mind though, matches are a limited resource; each match can only be lit once (if at all), may extinguish without notice, and only hold their flame for a limited amount of time. Likewise, mechanical lighters may be a source of flame, but can sometimes fail to spark when you need them. They rely on dry conditions and fuel to be able to create fire, so wet conditions may decrease their ability to work.

Another option may be what’s called a fire-starter (it’s a flint stick) and your knife; by striking the knife against the flint stick, it may create a spark that jumps off into your pile of fuel. This may take a certain amount of practice and skill to be able to produce a spark every time, so you may want to consider attempting it first in a more controlled and comfortable environment before heading out with this tool; or in other words, practice!

To go along with your source of fire, you should bring along some basic tinder that will allow you to transform this small spark into a fire. Some ideas are: dry wood tinder stored in a waterproof container, candles, priming paste, heat nuggets, or even lint collected from your dryer. None of these will take up much space in your pack, but have the capacity to sustain a flame needed to light a fire. Don’t forget that this book is also flammable.

Repair Tools
A knife or multi-use tool can be helpful in multiple situations, such as building a fire, prepping food, or repairing your gear. Even a basic multi-tool should have a minimum of one foldout blade (although two are always better), a flathead screwdriver, a can opener, and a pair of scissors. It’s also nice to have a pair of tweezers, not just to keep your unibrow at bay, but also to remove a painful splinter or stinger. Depending on the size and experience of your group, as well as any potential environmental complications or needs, you may require a more complex multi-tool, or even multiple tools.

nutrition & Hydration
However long you plan on being out, always pack at least one extra day’s worth of food per person. Digesting food requires your body to use energy, so it will create some amount of heat. This little tidbit is especially useful when you are preparing to turn in for the night. At the
same time though, remember to never leave smellables (especially food) in your tent or you will attract animals. There will be more on how to prevent being woken up by a bear sniffing around the food in your tent later on in the book.

Freeze-dried meals are an easy solution to the food problem, but items that don’t require any cooking are good ideas too. We suggest things like energy bars, nuts, dried fruit, and jerky. Look for items that are high in protein and calories; this is definitely not the time to pack diet foods! Your body needs water in order to digest food so you will need to make sure that you have potable water as well.

Shimmering lakes and gently babbling brooks may appear to be fresh, but they may actually harbor microscopic organisms that may leave you more dehydrated than before drinking. Before you go out on your adventure, take the time to prepare your body with proper nutrition and hydration. For everyday activities, we should be drinking around three to four liters of water per day; more if doing more strenuous activities.

Our bodies are constantly losing fluids through evaporation via sweat and breathing, so staying well hydrated is essential. If forced to choose between food and water, remember that our bodies have a much larger reserve of fat and even muscle that can be turned into energy than it has a water reserve.

It’s not likely that you’re going to be able to bring along all of the water that you will need for your trek, so you must be prepared to find additional water sources. There are three basic defense strategies against those nasty microorganisms that may be found in water: boiling, chemical treatment, and straining through a mechanical filter system. All of these have benefits. Hydration is so important that we have devoted an entire section to it later on in this book.

The “Eleventh” Essential

A good head on your shoulders will take you far. One of the first things that most people do when encountering an emergency situation is to panic, forgetting all reason and common sense. Many medical emergencies can be remedied or at least managed long enough for the patient to reach definitive care – but not without using your head and staying calm, cool and collected – the eleventh essential.

*Duck Syndrome* is an example of this eleventh essential. On the surface, you’re like a duck – calm, cool, and collected. Your feathers may be ruffled underneath your outer layer, but it’s not apparent to anyone else but you. That’s how your patient should perceive you. Underwater, your feet are moving a mile-a-minute, and *that* is what you want to hide from your patient.
COMMUNICATION

In today’s society, many people are used to always “being connected”; that is, they have a cell phone on their person. We take it for granted that we can always get into contact with someone pretty easily. However, in a remote setting, you may not be able to receive a cell signal and you may not see someone outside of your group for days, or even weeks! This means that you need to be able to rely on yourself or your crew, so effective communication between all group members is essential. Teamwork, trust, leadership, decision making, risk management, and adaptability are all CRITICAL components of communication when facing any type of emergency (in the wilderness or elsewhere).

Come to think of it, most of those are pretty good skills to have in general! If you’re going with a large group, or one that has not yet gone on an outdoor trip together, make sure you know what roles everyone will be assigned ahead of time. If the group you are venturing out with is one that has worked together previously, there may be more fluidity to roles as your comfort level with each other increases.

One of the most important pieces of communication is the information that you leave with your friends and family back in “civilization.” If they know where you are going and when to expect you to be back, they know when to begin worrying about you. Not to mention, it gives them some idea of what area to start searching in if you fail to return. Before leaving on your adventure, it may behoove you to leave a detailed itinerary with someone back home.

This list should include the emergency contact information for everyone in the group, and you may want to think about giving a copy to more than just one person. A good risk management plan has a phone tree implemented to alert friends and loved ones if the need arises.

Signaling in an Emergency

When out exploring and enjoying Mother Nature, one should never be totally helpless. Luckily, there are devices that may help us to be rescued if an emergency arises. The most basic of signaling tools is bright clothing, which can drastically help increase your visibility. Make sure you pack at least one piece of brightly colored clothing that will stand out from your surroundings. This is a passive method of signaling that you can use while trying to make your way out of the backcountry. Alternatively, you could tie the bright clothing to a makeshift flagpole in a clearing to signal your location.

A primitive, yet effective signaling technique uses smoke and fire to attract attention. Any time you’re dealing with fire, make sure you’re following the basic safety rules; in particular, don’t put yourself in danger while starting a fire and don’t let it get out of control! You should build your fire where it is most likely to be seen by others, such as a high point or in a clearing.

A fire is almost exclusively visible at night, and as mentioned in the section on the ten essentials, can also help keep you warm at night and keep critters away. During the daytime, smoke signals are a much better way to signal rescuers who are looking for you, as smoke can typically be seen for miles. An established fire can easily be turned into a smoky fire by
simply adding leaves and green branches. These will cause the fire to die down and turn into primarily smoke.

As with everything else you do when you’re trying to survive or be rescued, you have to think about your surroundings. For example, if you’re in the middle of a snow whitened area, it may be difficult to spot white smoke. Thick, black smoke can increase your visibility exponentially. It can be created by adding something containing oil or plastic to the fire; just make sure it’s not something that you need (like your water bottle). Though this may not be the most ecologically friendly act, it can work in the short term to help you get rescued.

Phones & Messaging Devices

There are options to help you communicate that rely on technology, but know that some of these can be expensive. You’ve heard it before, but you simply cannot rely solely on your cell phone while in the wilderness.

These days just about everyone has a cell phone. Correction; just about everybody has an iPhone (RIP, Steve Jobs), ‘Crackberry’ or Android phone. What most folks fail to think of is that even the largest carriers don’t have great coverage in most remote or wilderness areas.

Verizon and AT&T; for example, don’t have great coverage of Yellowstone or Great Smokey Mountain national parks, two of the most frequented wilderness areas in the nation! You can always purchase (or rent) a satellite phone for a small chunk of change though.

Renting one might cost you around $25 a day; however, it may cost up to $25 or more per minute to use it! Hopefully you would only be using it in a dire emergency. Using it to order pizza on the trail is most likely not the best use of such a costly device.

This said, just because you’re in the backcountry and you have your cell phone, don’t discount it; try to use it and see if you have service! If you do, all you need now in order to finish the equation is to know where to send emergency responders once you get a hold of them. This is where risk management comes into play.

Another techie option is a personal locator beacon. There are many different types, some using GPS tracking to send a distress signal, and others that transmit a signal on the distress channels monitored by the Air Force Rescue Coordination Center. They are a good option for the serious outdoor enthusiast. Some do not require any subscription fees, so there is only the cost of purchasing the device.

Other types offer more features; including sending a signal that lets your loved ones know that you’ve reached certain pre-designated spots and that you’re okay, along with the ability to send distress signals to rescuers. These types usually require a monthly or annual subscription fee, but can provide peace of mind to you and your family. If you’re interested in a personal locator beacon, you should do your research and decide which device best fits your needs.
Find Me, Spot!

There is a great, cost-effective “backup plan” available to the public, the SPOT (satellite personal tracker), which is a relatively new tool using GPS satellite technology giving hikers and outdoor enthusiasts a simple, cost effective method for tracking progress and communicating with civilization through both email and text messages. The SPOT is relatively inexpensive and offers many additional features such as Google maps tracking and even basic rescue insurance (medevac insurance is extra but is very reasonably priced).

EVACUATION & GETTING RESCUED

Evacuation is an important topic in wilderness first aid. In a wilderness context, it means to take, or have a person taken to a definitive care facility where professional medical care can be administered. Most often, this is an emergency department at a hospital. There are two types of evacuation: self-evacuation and assisted evacuation.

In self-evacuation, the party with the patient takes care of the entire procedure of getting said patient out. This includes the care and feeding of the patient as well as helping move or carry them if need be. In an assisted evacuation (sometimes called an “outside” evacuation or “rescue”), help is required from outside sources, such as a county Sheriff’s department, search and rescue team, or helicopter. These groups will aid in an evacuation or entirely take over the responsibility of care and movement of the patient(s).

Deciding to Evacuate

There are many critical factors to take into consideration when deciding to evacuate. These include the strength of the patient(s), the strength of the group as a whole and the group’s ability to work together in cohesion. Other key things to consider include available equipment, the extent of the patient’s injuries (whether or not they are stable), the difficulty of the terrain, time constraints (if nothing else, resource-wise and medically speaking), and of course, what types of communication you have available to you.

Before evacuating a patient, as a rescuer, you must stabilize your patient. Simply put, this means that you have successfully met four important criteria:

1. All life-threatening conditions are addressed and the patient is stable.
2. Necessary equipment for evacuation has been assessed and prepared.
3. The evacuation plan has been formulated and all parties understand it.
4. The entire group is ready and organized.

Let’s talk more about criteria number one: is your patient stable? A stable patient has a non-
life-threatening condition (or a life-threatening condition that you have successfully managed in the field), no spinal or serious head wound, and consistent, unchanging vital signs.

Once a patient is "stable," you can start thinking about what to do next; making a plan to evacuate, getting help, or if you are alone with the patient, potentially leaving your patient to go get help. That last one can really be a doozy. If you absolutely must leave your patient alone in order to go get help, make sure that your patient is highly visible and has ample shelter from the elements; plus, plenty of food and water.

Remember, if sending a group to go get help, be sure to send three or more people if possible. Remember, there’s safety in numbers. If you can only send one individual, send the most experienced person to get help.

You can always decide to all hike out together as a group with the patient. Components to think about while deciding to evacuate also include elements such as trust, leadership skills, decision making, and risk management.

You want one person to be the team leader and take charge of the situation, another to be the scribe, another to be the group first aider, and so on and so forth. Granted, you may have a very small group and might end up wearing multiple hats.

**Reasons for Evacuation**

You may come across a patient and not know whether to evacuate them, or when to do so. Perhaps the patient’s symptoms don’t seem so bad, when in reality, there’s a lot going on that you simply can’t see. This is especially true of medical emergencies where you cannot immediately see any physical issues. Below are the three major levels for evacuation consideration.

<table>
<thead>
<tr>
<th>😊 – STAY &amp; PLAY</th>
<th>LOAD &amp; GO</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sustained, but not debilitating abdominal pain</em></td>
<td><em>Any loss of consciousness due to a Traumatic Brain Injury</em></td>
</tr>
<tr>
<td><em>High-altitude sickness</em></td>
<td><em>Inability to tolerate fluids orally (for more than 48 hours)</em></td>
</tr>
<tr>
<td><em>Infections that don’t improve</em></td>
<td><em>Large or serious wounds</em></td>
</tr>
<tr>
<td><em>Psychological status that places the patient or rescuers in danger</em></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>😃 – LOAD &amp; GO</th>
<th>😰 – AWWW GEEEZE</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Chest pain (not from obvious trauma)</em></td>
<td><em>Chest pain (not from obvious trauma)</em></td>
</tr>
<tr>
<td><em>Trouble breathing (called dyspnea)</em></td>
<td><em>Trouble breathing (called dyspnea)</em></td>
</tr>
<tr>
<td><em>Prolonged altered level of responsiveness</em></td>
<td><em>Prolonged altered level of responsiveness</em></td>
</tr>
<tr>
<td><em>Debilitating pain</em></td>
<td><em>Debilitating pain</em></td>
</tr>
</tbody>
</table>
Once you have assessed the seriousness of your patients’ issues, you can categorize their evacuation priority as follows. Your “Stay & Play” issues include injuries and illnesses that should be evacuated within the golden day. Certainly, we want to get them out; however, they’ll most likely be fine until you get back to civilization to have a doctor take a look at them.

Folks in the “Load & Go” category should optimally be evacuated within hours, as these injuries and illnesses are serious in nature, but aren’t immediate threats to life; you’ve got some time to get them to definitive care.

Your “Awww Geeze” category patients, on the other hand, need immediate evacuation to definitive medical care and could easily be prime candidates for a helicopter evacuation. These folks need help yesterday!

**Signaling for Help**

There are many ways to get others to notice you; but typically only if they are searching for you. Yelling and screaming at the top of your lungs is not only ineffective, but will also wear you out as well. A whistle may be a better option, given you know how to properly use it and have a good one. Those old whistles that lifeguards used to use with the little pea in them are not only relatively quiet, but if the pea gets soggy or breaks, the whistle is rendered useless.

Metal ones rust, so you most likely want to go with a plastic one such as the Fox40, which is a pea-less rescue whistle, producing 115+ decibels (enough to kill your eardrums for a few hours if you forget to plug your ears). A good whistle can be heard up to about a hundred or so yards upwind, and around half a mile downwind. The magic number of whistle blows for “help” is 3 blasts. Often times, rescuers searching for you will send out 2 short whistle blasts. You should respond with three.

Other methods of signaling for help include making large, colorful ground-to-air symbols for low-flying search planes to see. The larger; the more colorful; the more out of the ordinary; the better! If a search plane spots you, they will dip their wings at you, letting you know that they see you and will send help your way.

Building a smoking bonfire in the middle of an open field using greenery and leaves will certainly attract attention (just beware of drought conditions). Granted, that doesn’t follow Leave No Trace guidelines, but it beats not being found. Just remember, that if you start a forest fire though, there will be hell (and other legal consequences) to pay!

Signal mirrors can be very effective. If a search plane is looking for you, you don’t need to be that good of an aim here; you’re not trying to hit a jumbo jet at 35,000 feet! When you use a signal mirror (or other MacGyvered reflective devices such as an emergency blanket), the key is for your flicker to be persistent.

Something that keeps on flickering and glistening should catch a pilot’s eye with relative ease. Upon spotting your signal, the search plane should dip their wings at you to acknowledge the fact that they see you.
Helicopter Evacuations

Helicopter evacuations are certainly a last resort due to their extreme nature and costliness. According to NASAR (National Association for Search and Rescue), the average cost of a helicopter search and rescue effort costs $10,000 - $15,000; however, this cost could easily be $50,000 or more!

Often times, many government agencies such as the Park and Forest Services may pick up the tab, however if you’re in a public land area and are doing something illegal or against the rules, they may require you to pay for rescue. You could easily be paying for that one!

More and more wilderness areas are starting to now contract out to private helicopter rescue companies, meaning that costs could rise quickly; and you’ll be stuck with the bill! Remember too, that many insurance plans do NOT cover medevac or “wilderness rescues.”

Be sure to check with your insurance provider, or get one of those SPOT devices! This is not to say don’t use a helicopter; but only use them as a last resort OR if your patient meets one of the four most critical criteria for evacuation discussed earlier.

It really boils down to Life vs. Time & Money. Obviously, life should win that one, hands-down!

Chopper’s On Its Way... now What?

Where is your incoming helicopter going to land? Finding a landing zone (LZ) that’s appropriate for a helo to land may be a bit of a challenge. Optimally, you want a large, flat area that’s about the size of a football field.

If that’s not the case, the minimum you can get away with is a 60’ by 40’ area that contains nothing taller than a foot (tree stumps, shrubs...).

Helicopter landings are tricky enough as is, and so you are going to have to prepare your LZ to make things as easy as possible for your pilot to land and access you (and more importantly, the patient).

As the chopper approaches, you’ll want to be kneeling down on the ground and covering your eyes, as rotor-wash will blow anything that’s not nailed down up into your face.

Once the aircraft has landed, do NOT approach it. The crew will most likely wait inside until the rotors have come to a complete stop (rotor blades sag as they slowdown).

This is why it’s important to not approach the helo until its crew approaches you. From there, the crew’s got it and will give you instructions. If at all possible, you want to stay in front of the aircraft as it lands and takes off, as that’s one of the few areas where the pilot can see you and can help to ensure your safety. Never approach the aircraft from the rear.
Wilderness First Aid Kits

If you’ve ever gone to Target or any other name-brand shop to look at first aid kits, you’ve probably seen those 1000 piece first aid kits, and thought “Gee, that’s a lot of stuff! I think I’ll buy it”, only to get home to and open it to find that 900 of the pieces are either Band-Aids or gauze?

Just how useful do you think that kit is going to be out in the woods? If you’re running through a field of thistles and thorns, your kit will be more than sufficient. Then again, if anything else were to happen in said field, you’d probably be wishing that you had a better first aid kit.

When you’re out and about, enjoying the great outdoors, having a proper first aid kit is essential, but there’s a lot more that goes into it than meets the eye. Once you’ve got your kit built, you have to stay active in its upkeep, or it could let you down when you really need it most.
Over time, gloves will dry-rot, or become brittle and will no longer stretch; instead they will tear and break. Alcohol, iodine, and handy-wipes can dry out. Checking them from time to time is worth the cost of opening one out of the batch to ensure they are still good. Keeping your first aid kit with you even when you aren’t in the wilderness promotes being prepared and provides ongoing interaction with your kit.

You should go out of your way to ensure that your kit is water tight. Take this from personal experience; or rather, repeated personal experiences. This is important not only to protect the contents from external threats; for example, falling into the stream, but also from any internal liquids that could accidentally open up or become punctured. We strongly recommend organizing your kit into small zip-lock bags for this reason (as well as for easy access and to keep things organized).

“Smellable” First Aid Items
Water-proofing has its reasons, but one that is commonly overlooked, is the fact that your first aid kit contains a lot of items that are considered “smellables.” Smellables are any items that emit an odor; whether detectible to humans or not.

These items include things that one might not think of such as batteries, tape, medications, ointments, used bandages, and much more. Your first aid kit as a whole is essentially one giant smellable item and must be treated as such. We’ll discuss bears (and mini-bears) later in this book.

Restocking Your First Aid Kit
A simple way to keep track of your kit’s contents after using it is to have an inventory sheet stuck in the kit along with your supplies in order to have a list of every item in your kit and a quantity count for restocking purposes. You should also include an expiration date for when certain items such as medications and gloves should be replaced.

It’s nice to mark down what you use as you use it, but as we all know, that’s not always a possibility. One trick is to take a tally of items used as you pick up the wrappers and clean the scene (Leave No Trace!).

Another idea is to mark down on your SOAP note (or patient assessment form) what was used on the patient. Make it a habit to check your first aid kit before and after each outing, even if you didn’t use it. It is always possible that someone else used the kit and didn’t tell you!

Medications & Perishable Items
Anything with an expiration date, as well as items that can easily breakdown or dry out, should be checked often. Keep an inventory sheet of your kit’s contents so that medications and
other perishables can be replaced in a timely fashion. Expired medications can make people sick or even lead to death. Knowingly using these may also result in legal consequences.

There is no need to bring a 100-count bottle of aspirin with you in your first aid kit. If you were to do that for all of the medications that we recommend, you wouldn’t have any room for any other first aid supplies! Repackaging over-the-counter medications is a common solution to take care of the space issue; however, this only works if done properly.

If repackaging into a Ziploc baggie, don’t just write the name and expiration date of the medication on the outside of the bag. Far too often, the writing on the bags (even if done in permanent marker) comes off and you’re left with random letters and numbers to decipher. This method allows the medication to become pulverized and is not very sanitary. A better option would be to purchase individually wrapped (generic) medication packets. This not only saves you money, but also lots of space! Note that prescribed medications should never be repackaged.

**First Aid Kit Contents**

The actual contents of a well-stocked wilderness first aid kit will vary depending on not only the type and location of the activity that you’re using the kit for, the number of people it’s going to be used for, but also the duration of the outing.

While you certainly want your kit to be versatile enough to handle most any emergency, weight is also a factor. Sure, if we could bring it all with us (but didn’t have to carry it), we’d bring everything plus the kitchen sink! Remember that the best first aid kit contains materials that serve not only their intended purpose, but others as well. Think “MacGyver” and think about the items that you have in your kit and how many other uses they may provide!

Below, we have outlined what we view to be some of the most important items for any wilderness first aid kit. This list represents the recommended contents for a personal first aid kit designed for 1-3 people for a duration of 3-5 days.

<table>
<thead>
<tr>
<th>Basic Tools &amp; Protection</th>
<th>Wounds Management</th>
<th>OTC Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) CPR Mask</td>
<td>(8) Assorted Band-Aids</td>
<td>(2) Aspirin (HEART ATTACKS, PAIN)</td>
</tr>
<tr>
<td>(4) Pairs of Gloves, non-latex</td>
<td>(4) Sterile Gauze Pads, 4&quot;x4&quot;</td>
<td>(8) Ibuprofen (PAIN, SWELLING)</td>
</tr>
<tr>
<td>(2) Pencil &amp; Pen</td>
<td>(2) Sterile Gauze Rolls, 3” or 4”</td>
<td>(2) Acetaminophen (NON-ASPIRIN)</td>
</tr>
<tr>
<td>(2) SOAP Notes</td>
<td>(1) Trauma Gauze Pad, 5&quot;x9&quot;</td>
<td>(4) Diphenhydramine (ANTIHISTAMINE)</td>
</tr>
<tr>
<td>(1) Rescue Instructions/Book</td>
<td>(1) Trauma Gauze Pad, 8&quot;x10&quot;</td>
<td>(2) Loperamide (ANTIDIARRHEAL)</td>
</tr>
<tr>
<td>(1) Silk Tape, 2”</td>
<td>(1) Trauma Gauze Pad, 12&quot;x30”</td>
<td>(8) Triple-Antibiotic Ointment</td>
</tr>
<tr>
<td>(1) Trauma Shears</td>
<td>(1) QuikClot or Hemostatic Agent</td>
<td>(2) Bismuth (UPSET STOMACH)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Orthopedic Injuries</th>
<th>Blisters &amp; Burns</th>
<th>OTC Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) SAM Splint, 36”</td>
<td>(4) Blister Pads</td>
<td>(2) Aspirin (HEART ATTACKS, PAIN)</td>
</tr>
<tr>
<td>(1) Coflex or VetWrap, 2”</td>
<td>(2) Moleskin or Mole foam</td>
<td>(8) Ibuprofen (PAIN, SWELLING)</td>
</tr>
<tr>
<td>(1) Elastic “Ace” Wrap, 4”</td>
<td>(2) Tincture of Benzoin</td>
<td>(2) Acetaminophen (NON-ASPIRIN)</td>
</tr>
<tr>
<td>(2) Triangular Bandage (cravat)</td>
<td>(2) Burn Gel (packet or gauze)</td>
<td>(4) Diphenhydramine (ANTIHISTAMINE)</td>
</tr>
<tr>
<td>(4) Safety or Diaper Pins</td>
<td>(2) Hypodermic Needle (sterile)</td>
<td>(2) Loperamide (ANTIDIARRHEAL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blisters &amp; Burns</th>
<th>OTC Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) Blister Pads</td>
<td>(2) Aspirin (HEART ATTACKS, PAIN)</td>
</tr>
<tr>
<td>(2) Moleskin or Mole foam</td>
<td>(8) Ibuprofen (PAIN, SWELLING)</td>
</tr>
<tr>
<td>(2) Tincture of Benzo</td>
<td>(2) Acetaminophen (NON-ASPIRIN)</td>
</tr>
<tr>
<td>(2) Burn Gel (packet or gauze)</td>
<td>(4) Diphenhydramine (ANTIHISTAMINE)</td>
</tr>
<tr>
<td>(2) Hypodermic Needle (sterile)</td>
<td>(2) Loperamide (ANTIDIARRHEAL)</td>
</tr>
</tbody>
</table>
Medications

Okay, let’s chat about medications. We could spend an eternity on medications, but in the essence of time, we will simply give you a list of the most common over-the-counter and prescription medications you may encounter and their uses.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Common Brands</th>
<th>Used For</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aspirin</strong></td>
<td>Bayer, St. Joseph</td>
<td>Pain, Fever, Heart Attack</td>
</tr>
<tr>
<td><strong>Acetaminophen</strong></td>
<td>Tylenol</td>
<td>Pain, Fever</td>
</tr>
<tr>
<td><strong>Acetazolamide</strong></td>
<td>Diamox</td>
<td>High Altitude Illness</td>
</tr>
<tr>
<td><strong>Activated Charcoal</strong></td>
<td>Acti-Dose</td>
<td>Poisoning</td>
</tr>
<tr>
<td><strong>Albuterol</strong></td>
<td>Proventil, Ventolin</td>
<td>Asthma, COPD, HAP</td>
</tr>
<tr>
<td><strong>Aluminum-Magnesium</strong></td>
<td>Alamag, Maalox</td>
<td>Upset Stomach, Diarrhea</td>
</tr>
<tr>
<td><strong>Azithromycin</strong></td>
<td>Zithromax</td>
<td>Broad-Spectrum Antibiotic</td>
</tr>
<tr>
<td><strong>Bismuth</strong></td>
<td>Pepto-Bismol</td>
<td>Upset Stomach, Diarrhea</td>
</tr>
<tr>
<td><strong>Ciprofloxacin</strong></td>
<td>Cipro</td>
<td>Traveler’s Diarrhea</td>
</tr>
<tr>
<td><strong>Dexamethasone</strong></td>
<td>Decadron, Dexamethasone</td>
<td>HACE</td>
</tr>
<tr>
<td><strong>Diphenhydramine</strong></td>
<td>Benadryl</td>
<td>Allergic Reaction, Vomiting</td>
</tr>
<tr>
<td><strong>Electrolytes</strong></td>
<td>Nuun, GU, Pedialyte, Elixir</td>
<td>Dehydration, Hyponatremia</td>
</tr>
<tr>
<td><strong>Epinephrine</strong></td>
<td>Epipen, Twinject</td>
<td>Severe Allergic Reaction</td>
</tr>
<tr>
<td><strong>Glucose</strong></td>
<td>Glucose, (Cake Icing), Honey</td>
<td>Diabetic Emergencies</td>
</tr>
<tr>
<td><strong>Hydrocortisone</strong></td>
<td>Cortizone</td>
<td>Hives / Rash, Itching</td>
</tr>
<tr>
<td><strong>Ibuprofen</strong></td>
<td>Advil, Motrin</td>
<td>Pain, Swelling, Fever</td>
</tr>
<tr>
<td><strong>Loperamide</strong></td>
<td>Imodium, Kapectate</td>
<td>Upset Stomach, Diarrhea</td>
</tr>
<tr>
<td><strong>Naproxen</strong></td>
<td>Aleve</td>
<td>Pain, Swelling</td>
</tr>
<tr>
<td><strong>Pseudoephedrine</strong></td>
<td>Afrin, Sudafed</td>
<td>Decongestant</td>
</tr>
</tbody>
</table>

To learn more about the nine most common over-the-counter medications, see the appendix of this book, called “Quick Guide to OTC Medications”. The appendix covers aspirin, bismuth, diphenhydramine, ibuprofen, Loperamide, activated charcoal, oral glucose, electrolytes, and acetaminophen.

*Before administering any medication* be sure to confirm the five (and a half) “rights” of medication administration: **PERM-DC**. This acronym is there to help you remember the questions to ask about medications: right **Patient** (is the medication prescribed for that particular patient?); right **Expiration date** (make sure the medication isn’t expired); right **Route** (is it being administered correctly?); right **Medication** (is it in fact the right medication for the issue or condition that the patient is suffering from?); right **Dose** (are they taking the correct amount?); **Contraindications** (are there reasons they should not be taking the medication?).
When Do Medications Actually Expire?

This question is one that we get a lot in class, and used to be a hot-button topic. Now that the FDA and Department of Defense have both done significant studies on the matter, the answer is... yes. I realize that isn’t an acceptable answer to the question at hand, but let me explain the findings.

The general consensus is that most medications become less potent/effective over time, as the bioavailability decreases. While the studies showed that most medications simply become less effective over time, they also showed that several medications do actually go bad, as while potency levels decrease, toxicity levels increase (such as aspirin, for example).

The expiration dates printed on medications denote the time period where the potency of the medication begins to drop below 90%. The FDA requires that a medication’s potency levels be between 90% – 110% to be considered “active”. The conclusion is that for the most part, many drugs (especially OTC medications) actually retain ≥90%+ potency for anywhere from one to five additional years after the printed expiration date, after which they quickly lose potency and become either inert or go bad. The only medications found to retain active potency for upwards of 20 years or more, are amoxicillin (Rx), Cipro (Rx), morphine (Rx), and diphenhydramine (OTC).

MEDICAL-LEGAL CONSIDERATIONS

As a first aider you are in a position that could one day lead to finding yourself defending a lawsuit that claims that you should have done more or less than you did for a patient. In today’s litigious society it’s not only important to know the lingo, but also what some of the following terms mean should you encounter them in the real world.

There is a lot of thought that goes into taking care of a patient besides, “Awww geeeze, what do I do for that?” Fear of legal ramifications is one of the primary reasons that people don’t help others. It’s important to understand that the decisions we make can affect us in more ways than one.

The following legal topics are important to all rescuers regardless of the setting (urban or wilderness) and are pretty serious, so pay attention!

Consent

As a rescuer, before caring for a patient, you MUST get permission to not only touch, but also to start caring for a patient. There are two common types of consent; expressed and implied. It’s important to know the meaning of each; and additionally, when each type of consent is applicable (and when not).

Expressed consent occurs when your patient is able to clearly acknowledge your offer to provide care; whether it be via verbal response, body language or even writing. This is the most likely type of consent that you will encounter.
**Implied consent** is the other type of consent, which applies to a patient who is either unresponsive (unconscious), confused, or otherwise incapable of clearly communicating with you. The law presumes that if the patient were fully responsive and able to communicate and clearly think for themselves, they would agree to your offer of treatment.

If caring for a minor who has a life-threatening condition, the law grants you implied consent due to their age and lack of life experience required to make an informed decision. If present, you **must** have the consent of the child’s parent or guardian in order to provide care. If a parent is present; their word must be heeded, as they are legally responsible for their own child.

![skull](image)

Even if a person denies you permission to care for them; if after which, they then become unconscious, even though they originally said “no”, because they are now unconscious, the law speaks for them, and you have **implied consent**. This does **NOT** mean that you take matters into your own hands and make them unconscious!

**The Good Samaritan Law**

In order to encourage trained first aiders to give care to a person who is in need of emergency care, almost all states have adopted some sort of law to protect those who give care. The Good Samaritan law, which applies to a person who **voluntarily** provides emergency care, was designed to protect the rescuer from successfully being sued unless he or she is negligent or abandons care. Although each state has their own version of the Good Samaritan law, there are typically a few key points which hold true to most state’s versions of the law.

First and foremost, the care you give a patient must be gratuitous. If you have a duty to act (meaning you’re **supposed** to give care), the Good Samaritan law will generally not protect you, although a few states do cover emergency responders such as EMT’s and lifeguards under this law.

The caregiver should be trained or certified in first aid, meaning that he or she must have received the knowledge of what to do from a credible source such as an American Red Cross course. This does not include simply reading it in a book or on the internet.

The caregiver must only do what they’ve been trained or certified to do, or what’s in their Scope of Practice. Just because having had CPR training doesn’t allow you to perform a tracheotomy! Lastly, all caregivers, regardless of skill level or certification, must have consent.

![court](image)

The Good Samaritan law does **not protect** any caregiver from the liability of negligence or abandonment, especially if these actions lead to further harm or death. Just be sure to do what you’ve been trained to do. Even if you only just took a CPR class several months ago and haven’t even thought about CPR since then, it will most likely all come back to you naturally in an emergency. Again, since each state’s Good Samaritan law is slightly different, be sure to check what your state’s law does and does not cover.
A Duty to Act

Having a duty to act means that you are in some sort of position where you are expected to give care OR you have started to provide care to a patient. For instance, a lifeguard is expected to jump in and save little Johnny (who, as you'll notice throughout this book, tends to get injured a lot); or a volunteer EMT who is responding to a call. How strange would it be if you called 9-1-1 and once the ambulance got there, they all just stood around doing nothing?

Not cool! Now, if said lifeguard is not on duty and is walking home from the pool and an old lady collapses on the sidewalk ahead of him, there is nothing legally that states that the lifeguard has to stop and provide care to the woman.

There are certainly ethical considerations that would have to be made, but that’s up to the lifeguard to decide. That said, a few states do have a mandatory duty to act which mandate that in the event of an emergency, as a bystander, you are supposed to do something – even something as simple as dialing 9-1-1 (Seinfeld fans should be familiar with this; it’s how the show ended).

A SIDE NOTE: In most states, legally speaking, care begins when you first touch a patient.

Negligence

Negligence is a term used to describe damages that have resulted from your actions. Typically, there are two main reasons that negligence may occur. If you have been trained and certified to provide first aid and you do something that is beyond your scope of practice (the boundaries of what you have been taught to do), you may be held liable for negligence.

Negligence also occurs when you forget to do something that a reasonable person with your background and training would have known to do. Plain and simple, you messed up; for example, giving two chest compressions and 30 breaths when giving CPR to a patient (which is backwards).

Negligence requires four elements in order for it to hold true in court: (1) a duty to act; (2) a breach of, or failure to perform that duty; (3) physical or psychological injury or death; and, (4) causation; meaning, had you not messed up, there would likely not have been any further injury.

Despite a fear of being sued being the number one reason why a bystander may not help another injured or ill person, Good Samaritans are rarely prosecuted for negligence. Unless you really mess up big time, you’re probably going to be okay. A more common thing to encounter is abandonment, discussed next.
Abandonment

“Gee! Look at the time! If I don’t leave now, I’m gonna miss the game!” Assuming that you’ve started to provide care for a patient, this statement could get you into trouble (especially if you leave the patient right after making said statement)!

Abandonment happens when you terminate care prematurely or you transfer care to a lesser qualified individual and your patient suffers further harm or death after you leave them (because you didn’t finalize your care).

Luckily for us, most states provide us with legal defenses that allow us to stop giving care if need be. Those reasons typically include: the scene being or becoming unsafe, putting rescuers at risk; the patient refusing care (which is not common); the rescuer becoming too exhausted to properly continue care; professional rescuers or bystanders (who have equal or greater training) taking over the care of your patient.

If you are too exhausted to continue providing CPR, for example, and there is a bystander with you who’s never done CPR in his life, so long as you stay there to guide and instruct the bystander in what to do, and they continue CPR for you, most states will recognize this bystander as an “extension” of yourself.

Again, you must stay there to help coach the person. Just showing them how to do it then leaving, would most likely (successfully) be construed as abandonment.

Assault & Battery

We’ve all heard the phrase “NO MEANS NO” – and that’s usually infact the case (unless they go unconscious, of course). If a conscious and reliable patient either does not give permission for you to touch/care for them, or withdraws consent at any time, if you continue to touch or provide care for them, you’re going to be in a heap of trouble.

Assault is defined as committing or ommiting an act which places a patient in fear of bodily harm. In otherwords, not actually touching them, but possibly threatening them verbally or with body language. Battery in this circumstance would be defined as providing care to a patient after they have either denied or withdrawn consent.

Confidentiality

Just like in the doctor’s office, every conversation between you and your patient is considered to be confidential. Any disclosure of information to anyone not providing care to the patient may be considered to be a breach in confidentiality, and could end up as either slander (verbally defaming a person’s character, whether intentional or entirely by accident) or libel (doing so in writing).

It is your responsibility as the responder to not share information about your patient inappropriately or with those who need not know it. Be very careful what you say over the phone or radio as well, as patient confidentiality also extends here.
Instead of saying “My friend Johnny Appleseed hit his head, is now speaking like an idiot and keeps throwing up,” you would say, “We have an 8-year-old male who hit his head and appears to have an altered mental status and is persistently vomiting.”

Just remember, you should never give out or use personal information when talking to others (except for those DIRECTLY involved in the immediate care of the patient), only subjective findings. This also applies to what we call “verbal SOAP”, where rescuers communicate information about their patients over the phone or radio. Because just about anyone these days can listen in to phone & radio conversations, it’s imperative to be genericly specific. For example, you might say “I have a 24-year-old female patient complaining of an injured right forearm”. You don’t know who the patient is, but you know the important stuff about their situation.

**Documentation + SOAP Notes**

Writing down everything that happened during an incident is extremely important for a number of reasons. “If it isn’t written down, it never happened” is a phrase that is commonly used by first responders, meaning that if anything were to go to court, if the event was not recorded well, those small details that fell through the cracks could make or break a caregiver’s livelihood.

Thoroughly documenting your patient assessment findings and treatments not only covers you by documenting your actions, but also gives you a snapshot in time of how your patient is doing.

You can view things like a patient’s overall vital signs to determine whether your current treatment is sufficient or possibly anticipate a far more serious problem down the road. Remember, in wilderness first aid you’ve got plenty of time before help arrives or before you can get your patient to definitive care.

To avoid being libelous; if your patient smells like a brewery, in your documentation, you wouldn’t say “the patient was drunk” but rather, “the patient’s breath smelled of alcohol.” Often times a patient who is hyperglycemic (has a very high level of blood sugar) may smell (and act) like they’ve been drinking, when in fact, they are having a diabetic emergency. More on that later.

Writing down what you’ve found and done probably isn’t your first instinct when providing care to someone out in the wilderness; however, this information can be very useful when handing over patient care to the professionals.

Documentation can also help you track what interventions you’ve done and how your patient is responding. You can easily monitor trends in vital signs and patient status if you’ve got a good documentation system.

One useful tool that tends to work well is called a **SOAP note**. A SOAP note includes four sections: Subjective, Objective, Assessment, and Plan.
The **Subjective** data is not really subjective. Instead, it is a summary of information gathered from your patient. This includes their chief complaint, a brief synopsis of what hurts, and what happened to cause the injury or illness.

**Objective** data is what you observe, including your patient assessment and vital signs. **Assessment** is simply your assessment of the problem, as well as your treatment plan.

Lastly, the **Plan** section details your plan of action, thorough documentation of the care given, and anything else a rescuer (or lawyer) may need to know.

In other words, a SOAP note is a means of keeping track of your patient’s information and the care given. Think of it as your patient’s chart, you can see all of the information in one place including vital signs and how your patient has responded to your treatment.

Keeping track of all of your efforts and interventions also serves as a way of telling your story if legal action is taken. You should never have to think about getting sued for helping someone; but given our litigious society, make sure that the care you provide is well within your scope of practice to hopefully avoid being sued.

**WILDERNESS MEDICAL FIELD PROTOCOLS**

Even though you are not a paramedic on a search and rescue team and are not required to report directly to a medical director for guidelines and direction of what to do in any given situation, there are still certain accepted *protocols* that allow emergency caregivers in wilderness contexts (only) to provide more care than would normally be allowed in an urban environment, where doctors and hospitals are but minutes away.

As a wilderness medicine provider you are held to a higher set of standards than the typical lay person is. If you are working with a group or organization, and are in a wilderness or remote area representing that organization, you are only permitted to do what your organization allows you to do.

Within state regulated healthcare systems, many pre-hospital care providers (ambulances, medevac, fire/rescue departments) operate under the supervision of a medical director (a physician) and use written protocols as treatment guidelines.

Written protocols can't authorize practices that are beyond the scope of practice of a wilderness medicine provider (Wilderness First Aiders, Wilderness First Responders, Wilderness EMTs), but for camps, backcountry and outdoor adventure guiding services, or outdoor programs, protocols supported by a medical advisor are valuable to communicate expectations of care as well as provide supervision and quality control.

State laws regulate who may possess, prescribe, and administer prescription drugs. Within a state’s EMS system there are regulations supporting licensed pre-hospital providers in using prescription medications under the supervision of licensed medical directors. Outside this system a valid prescription is written by a physician (or those specifically recognized under that state’s law) for a specific patient and may only be possessed by and administered to that patient.
Wilderness medicine providers may assist trip participants in the administration of personal prescription medications and may offer OTC medications according to the package label. Wilderness medicine providers should not be making decisions about whether a patient should or should not take their personal medications (unless it's an obvious situation of abuse or harm) without the supervision of a medical advisor and/or written protocols.

When you are working under the auspices of an organization such as the Boy Scouts of America, Sierra Club, or other adventure or wilderness-related company, they are the ones ultimately held liable for your actions.

If your organization sends folks out to wilderness or remote locations on a regular basis (such as BSA high-adventure bases, wilderness areas, trails, rafting trips, etc.), it may behoove them to adopt a set of Wilderness Medical Field Protocols, which have been signed off on by a local physician who has agreed to review and acknowledge the level of care provided in such circumstances.

**Wilderness Medical Protocols:**

1. CPR in Remote Settings
2. Emergency Medication for Asthma
3. Spinal Assessment & Clearance
4. Wounds & Debridement
5. Reduction of Dislocations
6. Emergency Medication for Anaphylaxis

These wilderness medical field protocols are guidelines that pertain to both special care and treatment principles as well as the administration of medications in a wilderness context. As a [certified] Wilderness First Aider (WFA), Wilderness First Responder (WFR) or Wilderness EMT (WEMT), you may be permitted to give over-the-counter medications as well as a few prescribed medications as listed below.

These wilderness protocols are meant specifically for wilderness or remote settings, not to be used in urban settings – under the auspices of a business or organization which has adopted and agrees to the wilderness medical protocols discussed and taught by Center for Wilderness Safety.

A COMPLETE LIST OF WILDERNESS PROTOCOLS IS AVAILABLE AT:  
WWW.WILDSAFE.ORG / PROTOCOLS