Reference Guide to Wilderness Medicine

(Provided by: HighCountryExplorations.com)

[Website Author's Notes: This reference guide to wilderness medicine was written by my close friend, James Morrison. He has 14 years of EMT experience in the field and 45 years of mountaineering and backpacking experience in Alaska, California and Washington State. It is a companion to the Wilderness First Aid: A Step-By-Step Field Guide, also written by him. We suggest you download copies of both guides, print them in a greatly reduced, double-sided version, and then add it to your wilderness first aid kit which is also discussed later in this guide.

Enough on downloads. Here are Jim's recommendations for dealing with the most common medical emergencies faced in the wilderness.]

In the "**Wilderness First Aid: A Step-By-Step Field Guide**," also made available on the **High Country Explorations** website, I covered some essential and fundamental things that need to be done quickly when you are first treating an injured or sick person. In the following material I will cover some conditions that are more specific to particular injuries or illnesses. I selected these particular topics because I believe they are important or there are some possible misconceptions. What follows is not all-inclusive. It is impossible for me to fully discuss here what is covered more completely in wilderness medicine texts.

Severe Bleeding

Before getting into the essentials of this section, let me define three terms that are often confused. A bandage is a strip of cloth that is used to hold a dressing, put pressure over a compress or immobilize a limb. A compress is a soft pad or cloth used to apply heat, cold or drugs to the surface of the body and it can be placed over a wound to help control bleeding. A dressing is a sterile covering that you apply directly over the wound.

If there is severe bleeding it is critical that you stop the hemorrhaging quickly. With severe bleeding you don't have time to search for a pair of gloves or proper

bandaging. Use a bandana, a tee shirt or what ever is handy. Even the bare palm of you hand can stop the bleeding if enough pressure is applied to the right spot. If the patient is conscious and alert you can have them apply pressure to the wound if it is easily accessible to them. Direct pressure usually works to stop bleeding. Of course if the wound is on the patient's neck don't apply pressure in a way that will interfere with his or her breathing. If the injury is on the scalp and you suspect the skull might be damaged you need to be careful not to push bone into the brain. In that case apply a bulky dressing, but use only light pressure to stop the bleeding. Having stopped or reasonably slowed the bleeding, you need to apply sterile dressings if you have them. The chance of infection is high in deep wounds, but that is secondary to stopping the bleeding. Apply a pressure bandage over the wound. To make a pressure bandage apply a bulky dressing directly over the wound and then secure bandage with a roll of gauze, adhesive tape or an elastic bandage. If the wound continues to bleed don't take the bulky dressing off. Just add more bulky dressings on top if the old.

The bandage should be tight but not so tight to cut off circulation. Check every so often to be sure you haven't cut off or restricted circulation to the distal part (the part furthest from the heart) of the limb. Pinch down your fingernail (or toenail) and see how it has turned white when released and then almost immediately turns pink. This is an indication of circulation. If it takes more than a couple of seconds to return to the pink color after being pinched it is a sign that circulation has been compromised and you should loosen the bandage slightly and repeat the process. If it is a wound on a limb it is best to immobilize the limb.

To avoid the possibility of getting a disease transmitted by your patient's bodily fluids (like blood) it is safest to wear latex gloves. If I know the victim well and don't believe they have any communicable diseases I personally do not worry too much about that. If you don't have any open wounds on your hands and if you wash your hands well after treating a patient your chances of infection are significantly reduced.

Internal bleeding can result from trauma. Ruptured internal organs or broken bones can cause internal bleeding. Some signs of shock are rapid heart rate, shallow rapid breathing, and weakness. Unfortunately there isn't much you can do for a person with internal bleeding in the wilderness. You need to transport

them to a medical facility as soon as possible. Evacuation becomes the highest priority when internal bleeding is suspected.

Shock

Shock can be a confusing subject. There are many kinds of shock. One type of shock you might have to deal with in the wilderness is called hypovolemic shock. (Also called hypovolaemia.) Hypovolemic shock is caused by reduced blood flow. Bleeding, internally or externally can cause hypovolemic shock. Dehydration and severe burns can also cause it. Whenever you treat an ill or injured patient you should look for signs of shock. This information can provide critical information to other caregivers. Look for rapid breathing, and pale or cool clammy skin. The patient may feel faint, dizzy or nauseated. The pulse may be higher than normal. The patient may become unconscious because of hypovolemic shock. Be sure to report any of these signs and symptoms to SAR or 911 because they are important clues as to the urgency of the patient's clinical condition.

Another type of shock that can be an issue in the wilderness is anaphylactic shock (also called anaphylaxis). Anaphylaxis is a life-threatening type of allergic reaction.

Certain people are severely allergic to bees, wasps, hornets and their brethren. These stings can be life threatening. Insect stings can cause an allergic reaction of the skin, nose, lungs, or throat or all of those. If the airway is compromised the reaction is considered severe. Severe reactions must be treated quickly. The reaction in the throat can block breathing. Typically people who are severely allergic carry an Epipen or an Ana-Kit (epinephrine) that is prescribed by their doctor. Both are mechanisms to inject epinephrine into the patient to counter the reaction. It sounds simple, but it isn't. A second injection may be necessary when the first wears off. The patient should see a doctor as soon as possible after being treated with epinephrine. Read the literature that comes with the kit and if at all possible discuss the procedure with a doctor before injecting the patient. For less serious allergic reactions Benadryl or Chlo-Amine can be taken. These are "over the counter" (OTC) oral antihistamines, and there are other similar products. Again, as with all drugs, read the precautions before taking them. While less than one percent of the people in the United States suffer severe reactions to insect stings, it is important to know what to do. [Note: Conventional wisdom says that a bee stinger should be scraped off and not pinched. However

now it has been suggested that there is no basis for that claim. Getting the stinger out quickly is much more important than how it is removed. See http://bees.ucr.edu/stings.html for more information.]

Treatment of shock

Treat a shocky patient the same as any seriously ill or injured person.

- Don't leave the patient unattended.
- Reassure the patient.
- Keep the patient lying down on an insulating pad.
- Loosen or remove any tight clothing or jewelry that might be constrictive.
- Shelter the patient from the elements;, rain, sun, wind or snow.
- Insulate the patient with a sleeping bag or clothing or both.
- Be alert to changes in the patient's condition (breathing, pulse, skin color and level of consciousness).

Suturing Larger Wounds

Some extensive first aid kits call for needle and thread for use in suturing larger soft tissue wounds. Unfortunately, most wounds you will incur when backpacking will be dirty or contaminated wounds. That is, they contain bacteria that could cause an infection, and likely will if the wound is closed up. Closing up a wound creates a warm damp environment that promotes the multiplication of bacteria. If pus develops and the wound isn't open pus can be forced into surrounding tissues, spreading the infection. Although there is some disagreement on the subject, most experts seem to agree that you should not close up larger, open wounds in the field by suturing or any other method. Suturing done under hospital-like conditions with the proper personnel, equipment and drugs readily available is much safer. Open wounds should be cleaned up as much as possible and then covered with sterile dressings until such time as you can get the patient out for proper treatment.

Fractures and Dislocations

A fracture is a break or crack in a bone. There are two classifications of fractures. Open fracture where the skin is broken and a closed fracture is when the skin is

unbroken. There will usually be pain and swelling. There can also be deformity. Compare the injured part with the opposite side of the body (right arm with left arm, for example). It is best to not move the broken part.

It is best to immobilize an injured limb as you find it. Often a patient with a broken or dislocated arm will be most comfortable holding it across their abdomen. If possible, provide a sling to assist them holding it in that position.

If a bone is displaced at the joint (pulled out of its normal position for example) we call that a dislocation. In many ways we treat dislocations pretty much the same as fractures. There can be bleeding and shock associated with a dislocation, and you should splint and immobilize the body part as best we can. When we splint we should immobilize the fractured or dislocated bone and the joints above and below the fracture.

It is desirable to relocate ("reduce") the dislocation in the field. While it is best done by trained medical personnel you may not have that option. A reduction can alleviate most of the pain and the chance of causing more damage is small. Reduction done quickly is easier than waiting because the muscle will eventually spasm. You will want to maintain some tension (or "traction") for a few minutes or until you fell the part fall back into place. If you don't succeed you can try again. Until you have done this, or seen it done it will seem more difficult than it is. I found a video on YouTube titled "Reducing a Dislocated Shoulder" that was very instructive.

Rules for a reduction:

1) Get in a comfortable position to pull and if it is possible have someone help hold the patient from the opposite direction.

2) Pull steadily and continue to hold tension for about a minute. If the dislocation doesn't reduce move the limb toward the customary alignment while maintaining traction. Do not yank or jerk.

3) Stop the procedure if the pain increases.

4) Treat dislocations with Rest, Ice, Compression, and Elevation (mnemonic: RICE).

Splints

A splint is a rigid or flexible device that we use to stop a movable body part from moving. In the field you will probably have to improvise a splint from what you have available. Trekking poles, foam sit pads, ice axes, tent poles, and even wooden sticks can all be fashioned into acceptable splints. The idea is to immobilize both the fractured bone and the joints above and below the fracture.

Head Trauma

As in any assessment you should try to determine the "mechanism of injury." What forces were involved? Has the patient had any loss of consciousness? Stop bleeding and immobilize the head and neck. If the patient has not lost consciousness then the injury is not as likely to be serious. Loss of consciousness after a head injury is known as a concussion. Patients with a concussion need to be monitored for 24 hours. Relapses into unconsciousness, very bad headaches, vomiting, disorientation, seizures and unequal or unreactive pupils are all signs of a severe head injury and must be treated. Patients with serious head injuries must get medical treatment as soon as possible. Do not give strong painkillers to a person with a head injury. Strong painkillers can impair proper breathing in a patient with head trauma.

Neck and Back Injuries

If you suspect a spinal injury medical authorities recommend that you keep the neck and back perfectly still until an emergency crew arrives. Authorities say to not move someone with a suspected neck or back injury unless absolutely necessary. It is absolutely necessary if you need to clear the airway, do CPR, or if you need to move the patient to stop severe bleeding. Any movement could result in paralysis or even death. This makes treating a patient in the wilderness difficult. It may be a long time before rescue teams arrive and you may be alone. If the person has suffered major trauma from a fall or being hit by something you should check to see if there is a spine injury. Get an idea of what happened from the patient or bystanders. This will help you understand the extent of the injuries. Check the mental status. Look for paralysis, weakness, numbness or tingling. All of these are an indication of a back or neck injury. Look at the spine

and feel for deformity. The neck muscles often spasm in an involuntary attempt to minimize motion at the site of injury. If there are signs or symptoms[1] of a spine injury you will need to immobilize the patient. A cervical collar can be fashioned from bulky clothing or foam from a sleeping pad. The purpose of the cervical collar is to keep the head from moving side to side and up and down. Be careful to not obstruct breathing or circulation. Tell the patient to not move his or her head. To immobilize the spine below the neck a stretcher that is not flexible is required.

Treating Minor Wounds and Abrasions

In my experience, by far the most common first aid in the field is treating minor wounds and abrasions. First aid for wounds usually includes several things; cleaning up the wound, treating and preventing infection, relief of pain and discomfort, protecting from further damage and promoting healing. Antiseptics (e.g., alcohol, Povidone-Iodine) are recommended for cleaning wounds. However, if your first aid kit contains no antiseptics, use purified water for cleaning. To prevent infection and promote healing, application of a double antibiotic ointment (e.g., Polysporin) is highly recommended. Cover the wound to promote healing. A common myth is that leaving wounds open to the air will promote healing. Ideally, for maximum healing the wound or abrasion should be cleaned once or twice a day. Any scabbing should be gently removed and fresh ointment and dressing reapplied. Hydrogen Peroxide used to be a popular antiseptic. However now most authorities agree that hydrogen peroxide damages healthy cells and hinders healing.

Pain Killing and Anti-Inflammatory Drugs

Aspirin and acetaminophen are used to relieve mild to moderate muscle and joint pain and to reduce fever. They are considered the safest. Common brand names for acetaminophen are Tylenol, APAP, Liquiprin and Panadol. Another pain medication is naproxen (Brand names include Aleve, Anaprox, Miranax, and Naprosyn). More powerful than naproxen is Ibuprofen (Brand names Advil and Motrin).

It goes well beyond the scope of this book to discuss all of the studies and warnings about these drugs. They all have side effects and contraindications. Read the literature that comes with the drug and discuss prescription drugs with you doctor.

The American Heart Association suggests aspirin or acetaminophen because aspirin is good for the heart and acetaminophen doesn't affect blood clotting.

It is beyond my expertise to recommend or not recommend stronger prescription painkillers (like Vicodin, Darvoset, Roxicet, or Oxicontin). Some books on wilderness first aid recommend carrying them. There are many complications to taking these, so if you feel you need to carry them discuss that with your physician. There are situations, I suppose, where a strong painkiller could allow you to take care of yourself properly or even permit you to walk out with an injury. On the other hand there are situations where these drugs will exacerbate the problem.

Diabetes

If a member of your party is diabetic they should openly discuss their condition with the others. A diabetic person will normally carry a blood glucose monitor to check blood sugar levels. At least one other person in the party should know how to use it. Everyone in the party should be aware of the signs and treatment of low blood sugar (Hypoglycemia) because that is the most common diabetic emergency. Missing a meal, taking too much insulin or a particularly strenuous hike are all causes of low blood sugar. Some of the signs of low blood sugar are dizziness, confusion, sweating, hunger, shakiness and staggering.
If these symptoms occur the best way to treat the person is to give them sugar. If they are conscious and can swallow give them a half-cup of liquid containing sugar (for example, fruit juice) or candy. If unconscious or unable to swallow put sugar granules under the tongue so it will dissolve and be eventually swallowed. When the signs and symptoms are gone be sure the person checks their own blood sugar and eats a regular meal. High blood sugar is less common and may be hard to distinguish from low blood sugar. Fortunately, giving sugar to either condition does no harm. It simply will not cause the high blood sugar patient to improve. If the patient doesn't improve give them unsweetened fluids and seek medical help (i.e. evacuate) as soon as possible.

Burns

Burns from stoves and campfires are always possible; I suspect most are minor. If you actually fell into a campfire, or were in a burning tent that could be serious. A forest fire also certainly has the potential for inflicting serious burns. The first thing to do is remove any clothing if it is not adhered to the skin. Current thinking is to apply wet dressings to first and second degree burns if the burned area is less than 20% of the victim's body. Immediate cooling the burned area with cool water is a way to reduce further damage from heat. Leave blisters in tact. For more severe burns current Emergency Medical System protocols say to cover more severe burns with a sterile sheet. That may be difficult to duplicate in the wilderness, but the idea is to keep the burn as clean as possible by protecting it. Infection is a serious concern with burns. In addition to treating the burns assess (evaluate) the victim's airway. Is coughing, hoarseness or shortness of breath present? If so the victim may have inhaled smoke or toxic gasses from the fire. In that case you may see black in their mouth or throat. There is a chance he or she could stop breathing and you should be prepared to give mouth-to-mouth ventilation or CPR.

Myths About Burns

There are several well-established myths about treating burns. One is to put butter or oil on the burn. This is bad advice. Oil traps the heat and makes it harder to clean up later. Aloe Vera is another common home remedy for minor burns that many people swear by, but a controlled study done in 2007 reported "Aloe Vera has been traditionally used for burn healing but clinical evidence remains unclear."

Blisters

For beginning hikers with new boots, and for long distance hikers pushing the limits, blisters are not uncommon. The mechanism here is the shear forces (strain) between the layers of skin or between the skin and socks. Eventually there is a breakdown between the layers of the skin and a hot spot or blister occurs. Break in boots gradually. At the indication of a hot spot stop and take care of it. Once a blister has formed you will need a foam backed self-adhesive products to cover the blister. Examples are Moleskin and Molefoam. Your first aid kit should contain some of these and a pair of scissors to cut a hole in the bandage the size of the blister. By cutting a hole in the Moleskin you can avoid

contact with the sensitive blister. You can also cover the Moleskin with a bandage once it is in place.

Eye Injuries

Dirt and other foreign objects in the eye can usually be removed by flushing with water. If there are contact lenses present they should be removed and not replaced until the object is removed and the eye feels normal again and has had a chance to recover. If the eye has been impaled with an object do not remove the object. Instead put a patch over both eyes in an attempt to keep the patient from moving his or her eyes. Evacuate patients with impaled objects in the eye as soon as possible. Patching the eye is important to prevent further damage. Ideally the bandage should hold the eyelid closed over the eye because blinking will cause pain and could further damage the cornea. Improvising such a patch in the field will require tape and layers of soft cloth.

Ultraviolet (UV) radiation is invisible high energy (rays) from the Sun.
This radiation can damage the retina (in the back of the eye) in several ways. No one is immune to the effects of UV on the eyes. There is immediate (snow blindness and pain), and latent damage. There is evidence that age related macular degeneration, Cataracts, and Pterygium (an abnormal mass of tissue on the cornea of the eye) are more common in people who work outdoors.

Prevention is the key. Wearing a brimmed hat and sunglasses that filter UV is important. It is a myth that UV radiation has any benefit to the eye. When at altitude and when on snow or ice the situation is worse. Reflected UV comes in at various angles and it is harder to shield your eyes. Wrap around sunglasses or sunglasses with side shields are necessary. There is more UV radiation in the middle of the day and the summer months.

If you wear prescription glasses you should to talk to your optometrist to be sure your lenses adequately absorb both UV-A and UV-B radiation. Polarization or photosensitive darkening eyeglasses may or may not provide adequate UV protection.

Snow blindness is the burning of the cornea of the eye. The symptoms are pain in the eyes or forehead, and gritty feeling in the eyes. It can last 24 hours. Remove

contact lenses. Avoid rubbing the eyes, it will only hurt and won't help. Make sure you have clean hands. Cover the eyes with bulky moist dressings to keep out light and cool the eyes. Give oral pain meds such as Aspirin, Aleve, Tylenol, or Advil. Reassure the patient that the blindness is only temporary.

Muscle Cramps

I have a friend who, when he gets a leg muscle cramp, stops, takes a potassium pill with a drink of water and waits until the cramp goes away. Since muscle cramps usually go away by themselves in a few minutes it is hard to say if the stop, the potassium, the water, or none of the above have alleviated the cramp. Apparently there are several theories for the causes of muscle cramps. One is dehydration, another is loss of electrolytes, another is an inherited tendency for cramps, and yet another is that environmental (heat or cold) conditions. One scholarly study said that available scientific literature does not support these hypotheses (M. P. Schwellnus; E. W. Derman; T. D. Noakes in the Journal of Sports Sciences, Volume 15, Issue 3 May 1997, pages 277 – 285). Whatever the cause, muscle cramps do seem to be associated with over use and warm environments. Recommend treatment is massaging and stretching the affected muscles. Drinking water that contains salt is also recommended. One half teaspoon of table salt in a liter of water is about right and better than taking a salt tablet because salt tablets can irritate the stomach. Sports drinks are commonly used for fluid and electrolyte replacement. Commonly recommended remedies for prevention of cramps includes stretching (especially the hamstring muscles) and adequate fluid and salt replacement.

Hypothermia

There are lots of misconceptions and some downright myths regarding hypothermia. One of the best (most interesting and perhaps most ill conceived) fictions is that you loose up to half your heat through radiation from your head. It turns out that careful measurements have shown that the rate of heat loss per square inch is about the same for any part of your body surface. There was not faster heat loss through the scalp area when measured. Researchers calculated that the head actually accounted for between 7% and 10% of the body's heat loss. It is the *uncovered* head that looses heat rapidly compared to the rest of the *clothed* body.

Another myth is that the best way to heat up a hypothermic victim is to put them naked in a sleeping bag with a rescuer. Several authorities have weighed in against that. One reason is that the victim has vasoconstricted so he/she no longer is circulating much blood to the surface of the skin. Therefore, they are not going to absorb much heat from the rescuer.

Some people seem to think you should never actively rewarm a hypothermic patient. It is true that rapid moving of cold blood from the limbs to the core could cause a core temperature drop. The reality is that in a wilderness situation (unless you are near a hot springs) you won't be able to rewarm them fast enough to do harm. Being careful not to burn the victim, you can safely put hot water bottles in a sleeping bag with them. Place the bottles or hand warmers under the arm pits and in the groin areas.

Rough handling of severely hypothermic victims can cause a cardiac arrest. Treat hypothermic victims with care. If there is even shallow breathing or a slow heartbeat that is hard to detect do <u>not</u> start CPR. Hypothermic victims normally will have weak vital signs.

Don't let the victim get any colder. Remove wet clothing and replace them with dry clothing. Put the victim in a sleeping bag and insulate from the ground with a pad. Do not try to exercise the hypothermic person and don't rub their limbs because, again, rough handling can cause cardiac arrest.

Never leave a hypothermic person alone. They are in an altered mental state and can make poor decisions and can't take proper care of themselves.

Do what you can to prevent hypothermia in the first place. Use insulation layers, and cover the head and neck. Stay dry by wearing clothing that breathes and wicks away perspiration. Always carry extra clothing, and in cold climates carry at least one sleeping bag in the party, even for a day hike. Stay hydrated and keep up carbohydrate intake because carbohydrates metabolize easily to produce heat and energy. Watch out for your buddy. Just because you feel fine doesn't mean he/she does.

Wind Chill

It feels colder when it is cold and the wind blows. However the so-called “wild-chill chart” is an unrealistic measure of how cold it feels. People who have studied it believe that, for one thing, it generally overstates how cold it will feel. In addition, how warm you feel has a lot to do with your body weight/height ratio and how warmly you dress. Also, if you are in the sun it will seem warmer that not. The wind chill charts will not tell you how cold your exposed skin will get because that is determined solely by the temperature of the air. The wind chill factor is supposedly designed to tell you how quickly your skin will reach the air temperature. The idea of a chart that somehow tells you how the wind adds its chilling effects to cold temperatures seems very attractive. Unfortunately there are too many factors involved to make this “equivalent temperature” a measurable concept.

Frostbite

Frostbite can occur in freezing conditions. The frozen tissue no longer gets a blood supply and dies. The symptoms of frostbite are pain followed by numbness and tingling of the skin. The skin may appear white or grayish. Rewarming can be done with water that is near body temperature to lukewarm, never hot water. Putting frozen hands under the armpits inside the clothing of another person is a thrilling way to warm up frozen fingers. Expect the process of rewarming to take at least a half-hour. Never rewarm a frozen part that you cannot keep thawed. Refreezing a body part makes the problem even worse.

Prevention of frostbite is similar to prevention of hypothermia. Keep exposed skin covered when possible, don’t touch cold objects with bare hands. Some high altitude climbers wear thin gloves under their mittens to protect fingers when mittens are off.

Even though wind chill charts are not perfect, it is true that exposed skin (not covered skin!) will cool off considerably faster in a wind than in calm conditions. Frostbite can be serious and is relatively easy to prevent. Watch the face of your companion for signs of frostbite, and if you fingers or toes loose feeling stop and take care of them. Perhaps the worst situation is climbing in very cold conditions where conditions can change rapidly it isn’t always possible to stop and take care of cold hands and feet quickly.

First Aid Kits

If you do some research on the subject of wilderness first aid kits you will find emergency medical experts recommend a surprising number and variety of items. Furthermore, the experts do not agree with each other on the specific items. So I won't attempt to provide recommendations on what should be included in the first aid kits for various types of trips here. However, if you are interested in the multitude of things the experts recommend in wilderness first aid kits, download the following document available in either Word or PDF format:

Recommended Contents of Wilderness First Aid Kits - Word Format

Recommended Contents of Wilderness First Aid Kits – PDF Format

I'm certain that through experience, trial and error, sound reasoning, or reading books, you will probably develop your own lists, modifying them as necessary for the type of trip.

Equipment isn't a substitute for knowledge. Don't bother to take medical equipment you don't know how to use. What you do in an emergency is more important than what you have. Expect to improvise and adapt. Work with what you have to at least improve the situation.

Most first aid kits will include some drugs or medications. There are often dozens of brand name medications with the same active ingredients. The uses, warnings, contraindications, interactions, dosage and other details are quite extensive and complex even for something as simple as aspirin. I found many good sites on the Internet provide excellent concise information. One of those was "drugs.com." If you repackage your pills into zip lock bags to save weight be sure in include the label information on use and dosage.

As near as I can tell, legal drugs fall into two very general control categories. Over The Counter (OTC) drugs, prescription drugs (Rx). If you want to carry stronger painkillers you should talk to your doctor about that. If you give them to someone else you need to know all of the conditions where the drug might make the patient worse.

Some Final Thoughts

Hopefully you will be able to prevent at least the most serious accidents. If there is an accident follow the logical steps provided above to assess and care for your patient. Working with an injured person in the wilderness will always require you to improvise and adapt to changing conditions. Helping an injured person is sometimes frightening, but using common sense with basic first aid skills will get you through. Take charge and help however you can, it is always better to take prudent action than to do nothing. Discuss these topics with your hiking partners. It might be you who will need help someday.